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Investing in crypto coins: a Q & A

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Table of contents

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Investing in crypto coins: a Q & A

Last year the hype around crypto coins and blockchain reached a high in society and prices of crypto coins skyrocketed on financial markets. This year, the story is more painful and the fear of missing out has abated. Is the hype over or are circumstances normalised? Will the technology of blockchain, crypto coins and initial coin offerings (ICOs) evolve with time? These are still interesting questions.

This client publication is an informative piece about crypto coins and investing in them. It is written for clients that are already a bit familiar with crypto coins. Clients that are not so much into crypto coins can read it as well, but some parts might be a bit technical.

In this publication, we describe the conceptual framework of crypto coins. What are they, how do we define the different types of crypto coins and how do we look at them from a risk/return perspective. We do not give an opinion or advise on the different kinds of crypto coins like Bitcoin, Ripple, Ethereum, Bitcoin Cash or on companies active in crypto coins or blockchain that are mentioned in this informational document. This paper answers the following ten questions:

1. What is a crypto coin?
2. How big is the world of crypto coins?
3. How can you trade and store crypto coins?
4. Does ABN AMRO advise clients on crypto coins?
5. How does ABN AMRO classify crypto coins? .
6. What is the risk-return profile (business cycle)?
7. Are crypto coins a new asset class?
8. How sustainable are crypto coins?
9. How do the Dutch tax authorities look at crypto coins?
10. What are the challenges, opportunities and misconceptions?

1. What is a crypto coin?

A crypto coin is a digital or virtual coin, that uses blockchain technology.

Crypto coins are based on blockchain technology. In this paper we do not want to go too much into details of explaining blockchain, but it is important to realise that blockchain is decentralized and difficult to counterfeit. It is an encrypted record of blocks in the right order of time. Every new block contains new transactions and a digital fingerprint (a "hash") to the previous block, which creates a chain. Therefore it is called blockchain. The fact that it is encrypted and decentralized, makes it difficult to hack.

Hacking, for example, could be that somebody hacks into a computer and changes a transaction in the past. Because it is a decentralized system, the blockchain is also stored at other computers. They mirror each other to see if their blockchain is still the same. In case of a hack, all other computers in the network will instantly notice that the blockchain on the hacked computer is different. Therefore they will reject the hacked block and will keep on working on their non-corrupted version of the blockchain.

Transactions with crypto coins are validated by miners. When validated, the transaction is processed and added to the block. In return, miners are paid in transaction fees and newly issued crypto coins of the specific crypto coin transaction they validated.

Bitcoin was the first crypto coin, created in 2009. It was done so by a still unknown identity using the name Satoshi Nakamoto. Bitcoin is a virtual currency and sees itself as an alternative for fiat currencies.

2. How big is the world of crypto coins?

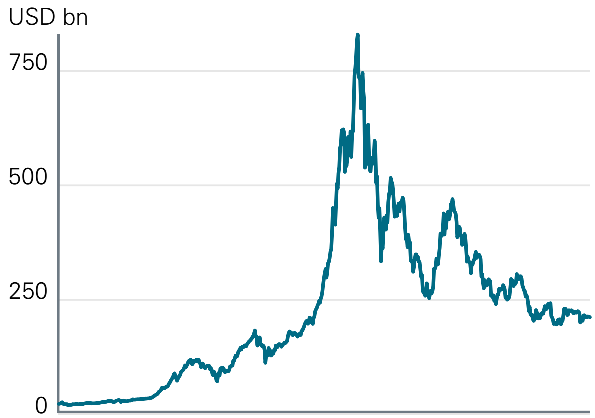
According to coinmarketcap.com the total market capitalization of crypto coins is currently USD 209 billion (as of 23 October 2018) and consists of more than 2,000 different crypto coins. The top five crypto coins are by far the biggest and represent 79% of the total market capitalization. They consist of:

1. Bitcoin (USD 112bn market cap and 54% of total market cap)
2. Ethereum (USD 21bn and 10% of total market cap)
3. Ripple (USD 18bn and 9% of total market cap)
4. Bitcoin Cash (USD 8bn and 4% of total market cap)
5. EOS (USD 5bn and 2% of total market cap)

Although crypto coins in the Top 5 or Top 10 do not change that much, the total number of crypto coins and the total market capitalization does. Over the last few years, a lot of new crypto coins have been introduced, although many of these have no value anymore. On deadcoins.com you can find a list of 911 coins, that are no longer active, which shows that not every coin offering is a success.

Total market capitalization reached its high on 8 January 2018, with a total market cap. of USD 828.5 billion, while the total market cap on 1 January 2017 was USD 17.7 billion (see Figure 1).

Figure 1: Total cryptocurrency market capitalization January 2017 – October 2018



Source: coinmarketcap.com

Recently, around 100,000 people stopped investing in crypto coins in the Netherlands. According to research agency Kantar TNS 480,000 Dutch citizens are still invested, against 580,000 in January. Of this number, more than 75% have less than EUR 1,000 invested in crypto coins. According to earlier research from Maurice de Hond, people in the Netherlands owned EUR 3 billion in crypto coins in January 2018.

3. How can you trade and store crypto coins?

When you want to start trading crypto coins, you first have to buy crypto coins with fiat money. This can be done at so called 'exchange offices'. At these 'exchange offices' it is also possible to trade in some crypto coins. Most of the time these are the most common crypto coins. Examples of these 'exchange offices' are Coinbase and Kraken, but there are also many others operating around the globe.

Once you own crypto coins trading in the most common (but also in other less common) crypto coins can be done via crypto coin exchanges. On these exchanges, the offering of crypto coins to trade in is thus much wider than on an exchange office. According to Bloomberg the largest exchanges by volume are Binance, Huobi and OKEX.

To store crypto coins a digital wallet is needed. A digital wallet is secured with a private key. Anyone who knows the private key has access to the wallet, so it is important to keep it safe.

The blockchain itself is practically impossible to hack and never has been. However, wallets can and have been hacked. There are different ways to store a wallet. This can be done at an exchange, like Coinbase, on a computer or on a portable digital stick like a Trezor or a Ledger Nano. If the private key is lost, access to the wallet is also lost, which means the funds are lost. This is permanent if the private key cannot be recovered.

return to table of contents

Storage of crypto coins is a sensitive subject and theft is common. For this problem, banks could offer a solution. There are banks looking into offering clients wallets to store their crypto coins at the bank.

4. Does ABN AMRO advise clients on crypto coins?

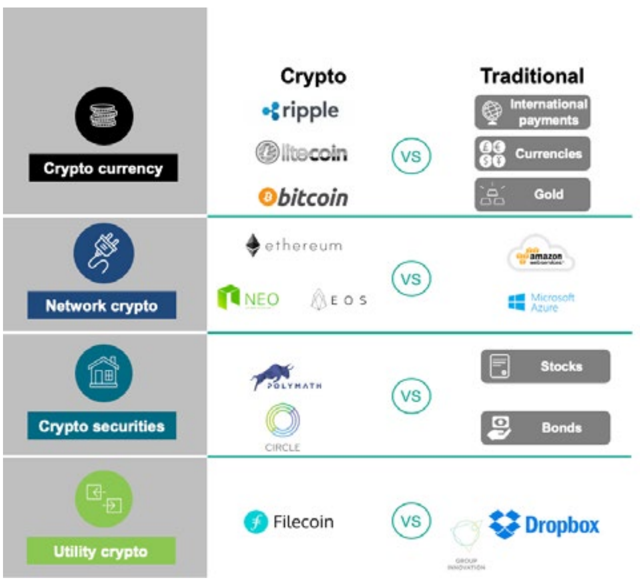
At this moment, ABN AMRO does not advise clients to invest in crypto coins or facilitate transactions. The main reason for this is that the values of crypto coins are very volatile, and we find it extremely difficult to make an analysis of their valuation. Maybe even more important, the crypto coin market so far lacks transparency and regulation.

5. How does ABN AMRO classify crypto coins?

In general, crypto coins are often considered as one of a kind. This is not the case, since crypto coins can have different functions. ABN AMRO classifies crypto coins in four different kinds of cryptos or four different use cases (see Figure 2). These four use cases are:

a) Crypto currency
b) Network crypto
c) Crypto security
d) Utility crypto

Figure 2: The four main use cases of cryptocurrencies



Source: ABN AMRO Innovation Centre

Bitcoin is an example of a Crypto currency, while Ethereum is an example of a Network crypto. We classify Polymath as a Crypto security and Filecoin as a Utility crypto.

Below the four different use cases are explained in more detail including how they can be valued.

Crypto currency. This is probably the best-known use case of a crypto coin. The Crypto currency sees itself as an alternative to a traditional or fiat currency, like the euro or the dollar. Consequently it sees itself as a medium to exchange and a store of value. As it is an international currency, transactions should be cheaper and go faster than current international transactions. Contrary to fiat currencies it is not issued by a central bank or supervised by a government.

However, for a currency it is essential that people have trust in it. Trust comes with price stability, transparency and regulation. This is something that, for example, Bitcoin lacks at the moment.
A currency does not have a valuation. It only has a price. As a forecasting tool for price developments technical analysis is often used.

Network crypto. This is used to pay for the computational power that is required to run apps and smart contracts[1] on a blockchain platform. Such a platform can work much more efficiently than in the centralized world. Take for example real estate transactions. For the transactions you need land registers, valuation reports of the real estate and a notary for the official transfer. The notary will also check if everything is ok and limits the settlement risk. When all this data is encrypted and safely stored on the blockchain, you do not need all these reports and services anymore. In a way, it cuts out the middle man and can offer the service against a lower fee. The platform's valuation can be based on its fee income or derived from the value of services it represents.

Crypto security. This is best compared with a listed stock or bond. When someone has a business plan or runs a business and needs extra capital, that person can issue a coin. This is called an ICO or initial coin offering. The white paper related to the crypto security contains the whole business

1 A smart contract is a self-executing contract without the need of third parties, which can be built for example on the Ethereum blockchain. The agreement and rules of the agreement between the buyer and the seller is digitally stored and encrypted

return to table of contents

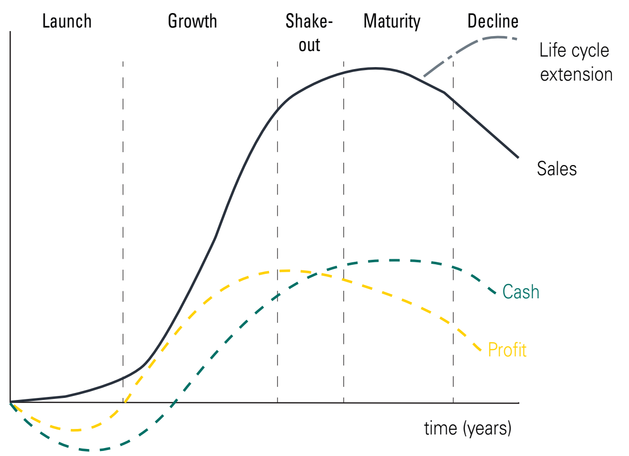
plan of the business activity that is raising capital. The white paper gives investors insight in the coin and the underlying value. An ICO is comparable with an initial public offering (IPO). An IPO happens when a firm receives a listing on the stock exchange. With an IPO, a firm issues a prospectus with all the legal and financial information. A prospectus with an IPO is more or less the same as the white paper with an ICO. The value of the coin will fluctuate with the value of the underlying company/project and its expected future cash flows. Crowdfunding via an ICO should be more efficient and more transparent than an IPO. It is easier to reach people via the internet and costs will probably be lower. This is because intermediaries like investment banks do not have to be paid to get access to capital markets.

Utility crypto. This is a platform for trading a utility. This can be the case for buying cloud space, sharing media content or trading something, for example, green energy. It has low barriers to entry. The utility itself and making it exchangeable both represent a value.

6. What is the risk-return profile (business cycle)?

Talking about the risk-return profile of crypto coins, we first have to look at the business cycle of a company. When you start a company (launch) you need a lot of money. Start-up costs are high and your business is not making money yet (see Figure 3). This is a very risky phase, because you have to set up the business, make investments, create a brand and customer awareness. Sales will slowly pick-up, while profit is lagging behind. A lot of companies do not make it till the next phase, the growth phase. In this phase the company grows and becomes bigger. In this phase, sales growth is rapid and cash flows become positive. In the next two phases, growth slows and in the final phase it even declines. If the company reinvents itself, it can postpone the decline phase. This can happen multiple times and applies to a lot of companies. In the decline phase you go bankrupt or consolidations/ acquisitions occur.

Figure 3: The five stages of a business life cycle



Source: Corporate Finance Institute, CFI

ICOs are not only a new technological development, the companies or business plans behind them are still in the launch phase. From a risk-return perspective it is not only the very high risk of the launch phase of a company, also the technology applied is still in a development phase. Investing in such a project contains a lot of risk. When it succeeds, returns will be high, but a lot of business plans will probably not succeed.

Although an ICO is comparable with an IPO, an IPO generally happens later in the business cycle. Start-ups generally receive capital from venture-capitalist (VC) or private equity (PE) parties. This is risky business and these professional investors have in depth knowledge of markets and experience of how to run a business. According to consultant PWC, ICOs are eating out VC/ PE funding, especially in technology- and blockchain-related start-ups.

Realize that investing in ICOs means that you are competing on knowledge with professional investors like venture capitalists or private equity parties. Therefore, it is important to make a sound analysis of the business model of the ICO. Read the white paper and understand the investment. We all know the success stories of Uber and Airbnb, and these stories sound very tempting, but a lot of start-ups never come that far.

7. Are crypto coins a new asset class?

We do not believe crypto coins are a new asset class. An asset class is traditionally defined as a broad group of investments that tend to react similarly in different market conditions. They are also generally governed by the same rules and regulations. It is easy to see how the three basic asset classes of stocks, bonds and cash (money market

return to table of contents

instruments) can fall within this definition. Looking at the non-transparent, unregulated and speculative nature of crypto coins, it is hard to make the argument that it represents a new asset class. There is also a very limited track record to observe performance or to determine the impact of market conditions – if any.

However, the technology is still in its early stages and needs to evolve. When that happens and it also becomes transparent and regulated, the Network crypto, the Crypto security and the Utility crypto can represent a proper business model. A business model, which generates cash flow or has an intrinsic value and can be valued. In that way, it can become a new asset class, which can be compared to other assets classes and their risk-return profile.

8. How sustainable are crypto coins?

So far, crypto coins are not sustainable on several grounds. The most important disadvantage is the use of energy for mining and approving transactions. This is especially the case with Bitcoin, even though it does not apply to all crypto coins. Consultant PWC estimates (source: Economist, July 2018) that the global energy consumption to run Bitcoin software is about equal to the total energy consumption of Ireland. In numbers, Bitcoin consumes 22 terawatt-hours a year, which is almost four-times as much as what Google, with all its servers, consumed in 2015. Due to the fact that mining becomes more difficult, the growth in energy consumption has been and will be exponential.

Secondly, the ideology of Bitcoin was to bring power back to the people and create a world in which everybody was equal. The people coming up with the idea of Bitcoin saw a society with no or a very small government and many members were anti-capitalists. Equality is one of the 17 sustainable development goals of the UN.

The reality is a bit different. Bitcoin and other crypto coins created another 'Top 1%' of extremely wealthy people, the crypto millionaires and billionaires. According to Bloomberg, around 1,000 people own 40% of Bitcoins. The idea was that everybody could mine Bitcoins, but these days it takes a lot of computing power. You need specific computers, which is a huge investment.

Nevertheless, crowdfunding through ICOs can more easily focus on private individuals instead of institutional investors. Citizens could also create a community, in which they share knowledge, create a social network or offer a service/product. Via an ICO other people can join that community, making it stronger and sharing in the benefits. Because it has no focus on profit, it should be cheaper than commercial companies. Time will tell if this becomes reality or remains an ideology.

9. How do the Dutch tax authorities look at crypto coins?

Crypto coin investments, like other investments, are taxed in Box 3 of Dutch income taxes. The crypto coin investment is taxed from the start of the year. When buying crypto coins during the year, the investment is taxed starting from the first of January of the following year.

For example, someone buys some crypto coins on 15 November 2018. They do not apply to the tax return for 2018. When that person still owns the crypto coins on 1 January 2019, they will apply to Box 3 of the tax return for 2019 with the value on 1 January 2019.

It is possible that crypto coins are taxed in Box 1 of your income tax. In that case, the crypto coins are not an investment. A miner is such an example. The income with mining is then taxed at maximum of 51.95%, depending on the total income.

When owning crypto coins, it is important that relatives have knowledge of this. In case of death and the inheritance, the private key is needed to be able to open the wallet. The private key is a sensitive subject, but it is better to arrange this when still alive. A notary can help, for example.

In any case, it is best to discuss reporting your crypto coins to the tax authorities with a fiscal advisor. For more information see:
https://financialfocus.abnamro.nl/vermogen/bitcoin-en-belasting/

10. What are the challenges, opportunities and misconceptions?

Challenges

- Safety & reputation risks

Crypto coins have safety and reputation risks. Hacks, governance issues, criminal activities and market manipulation have all taken place. The entrance of mature players, like Coinbase, improved audit and advice, compliance tools and an updated legal framework are developments to address these issues.

- Liquidity & execution risk

High price volatility and the slow processing time of transactions lead to liquidity and execution risk. The solution for these risks are regulation, including regulated market makers and an efficient transaction process. The development of efficient validation algorithms and intermediate settling (Lightning network) are developments to address these issues.

- Regulation

So far the regulatory framework is still unclear. Customers need better protection, governance has to improve, as well as the legal status. This will build trust and make the world of crypto coins transparent.

Despite the introduction of futures trading on Bitcoins, the US Securities and Exchange Commission declined several crypto exchange-traded funds so far. Nevertheless, these are small steps to better regulation. PWC sees Switzerland, Singapore and, to a lesser extent, the US, as the global ICO hubs, also with regards to regulation.

Opportunities

- The biggest opportunity for crypto coins and blockchain is to make value chains and processes more efficient, in particular when they are cross-border and/or involve many parties. That has economic value. The rise of internet companies like Amazon, Uber, Airbnb etc. is a solution for inefficient intermediaries in the real world. Smart contracts can do the same. A smart contract is a self-executing contract without the need of third parties. The agreement and rules of the agreement between the buyer and the seller is digitally stored and encrypted. Intermediaries like banks, real estate agents, notaries etc. are affected by this technology. But also complex sectors like healthcare can greatly benefit from more efficient and secure exchange of information and transactions. Crypto coins that have this part of the market in focus are Network cryptos, Crypto securities and Utility cryptos.

Misconceptions

- All crypto coins are like Bitcoin.

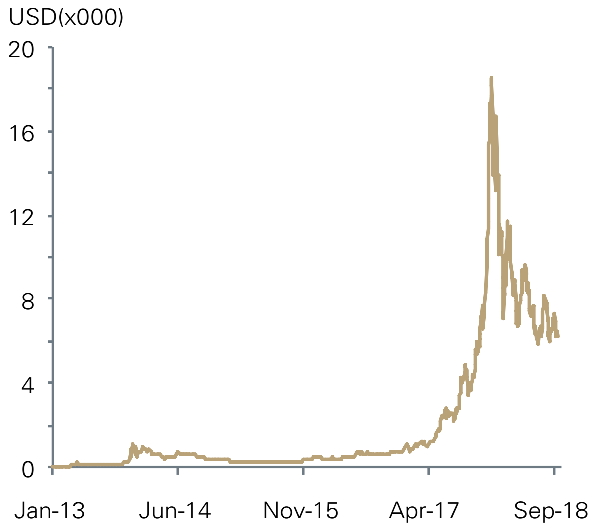
Our four use cases show that this is only one way to look at crypto coins. Bitcoin is a Crypto currency.

- The limited amount of Bitcoins will lead to higher prices

There are currently 17 million bitcoins which will rise to a maximum of 21 million. Because of scarcity, the reasoning is that Bitcoin prices will go up. For this reasoning to be economically true, Bitcoin has to have an intrinsic value. The question is, if it has. However, this does not mean that the price cannot go up. The price can increase as long as someone else is willing to pay a higher price. Even though it has no intrinsic value. (See Figure 4.)

But, let's assume it has an intrinsic value and people trust it and it is accepted as a world currency. As a currency, it has a price and is a store of value, but it is not an asset. Price

Figure 4: Price development of Bitcoin in USD



Source: Bloomberg, ABN AMRO

return to table of contents

stability with currencies are key for trust. The increase in Bitcoin is then related to the change in purchasing power, which is dependent on economic growth and inflation.

Bitcoin has only limited acceptance as a medium of exchange. In the Netherlands, less than 2% of online stores accept Bitcoins and this number has hardly changed in recent years. The reason is that consumers do not trust it. As long as consumers do not trust it, online stores will not accept it. However, consumers do not trust it, because it is not widely accepted. This reasoning has no end.

- Bitcoin is digital gold

Bitcoin had no intrinsic value, while gold has some. Gold is used for industrial and electronic products. It is also used in jewellery. Furthermore, vaults of central banks still have a lot of gold reserves, while they also possess foreign currencies. The gold standard is history, but these reserves and the fact that a government can collect taxes, gives value to and trust in fiat currencies. Zimbabwe and Venezuela are examples where trust evaporated because of an inefficient government.

- Bitcoin and blockchain are the same. I believe in the future of blockchain and investing in Bitcoin or other crypto coins is one way to benefit from it.

Blockchain is not dependent on Bitcoin, while Bitcoin is dependent on blockchain.

return to table of contents

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