

December 2018

# Cryptos

Recommendations for a regulatory  
framework

DeNederlandscheBank

EUROSYSTEM



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# Summary

Cryptos – and the related initial coin offerings (ICOs) – are an inherently cross-border phenomenon. They enable the worldwide digital exchange of value without the involvement of third parties. Both the value and popularity of cryptos surged in 2017, reaching a peak in January 2018. Between this peak and the end of 2018, the cryptomarkets have seen a marked, downward trend. The Dutch Authority for the Financial Markets (AFM) and De Nederlandsche Bank (DNB) have repeatedly warned about the significant risks associated with cryptos, particularly with regard to financial crime and the vulnerability to deception, fraud, manipulation and cybercrime. These inherent risks are still present in the current crypto markets. However, in current markets the impact of these risks on Dutch consumers is limited as a result of the declining interest in cryptos since the January 2018 peak, and the awareness of the risks among Dutch consumers. At the same time, we acknowledge the potential of specific functional crypto applications and the underlying technology (blockchain or otherwise). Eventually, cryptos may also open up opportunities for the funding of small and medium-sized enterprises (SMEs), provided that investors receive clear and enforceable rights in return, as is the case with e.g. shares and bonds.

Given the international nature of cryptos, an internationally coordinated regulatory framework is needed to address the risks effectively. That is why the AFM and DNB have the following two recommendations for the Dutch Minister of Finance.

- 1. Introduce a licensing regime for fiat-crypto exchange platforms and crypto wallet providers, to ensure effective implementation of the revised European anti-money laundering directive.** Cryptos are susceptible to financial crime due to the anonymous, cross-border nature of crypto transactions. The fourth European anti-money laundering directive has been revised for this reason, with the standards in the revised directive now also applying to platforms that enable the exchange of cryptos to fiat money and vice versa, as well as to crypto wallet providers. The AFM and DNB recommend a licensing regime under the Anti-Money Laundering and Anti-Terrorist Financing Act (*Wet ter voorkoming van witwassen en financieren van terrorisme - Wwft*) because this enables applicants to be assessed, and if necessary rejected, before they enter the market. Such a licensing regime requires clear communication about the scope of *Wwft* supervision for crypto service providers, as the *Wwft* is not concerned with protecting consumers or setting prudential standards. This must prevent misguided expectations of supervision on the part of consumers and service providers.
- 2. Amend the European regulatory framework to enable blockchain-based development of SME funding, and reconcile the national and the European regulatory definitions of security.** We recommend advocating for the amendment of the European regulatory framework to enable the offering and trading of cryptos that are comparable to shares or bonds. For example, this necessitates more proportionate rules for small-scale trading, and requirements that do not unnecessarily hamper the infrastructural benefits of blockchain technology in the settlement and custody of cryptos. The scope of European legislation applicable to corporate funding should shift towards a substance-over-form approach, to ensure that new funding models are covered by the applicable rules. At the national level, we advise to amend the unnecessarily restrictive definition of security to reflect the broader definition used in European legislation. This will allow the AFM to include certain cryptos within the scope of its supervisory perimeter. Amending the definition is also desirable in anticipation of potential European consensus on the qualification of certain cryptos as security under present legislation.

We will continue to monitor the crypto markets and will stay alert to crypto-related activities of regulated financial institutions. For example, we will continue our critical approach towards regulated institutions that offer or intend to offer crypto wallets, or that facilitate the trade in non-regulated cryptos such as Bitcoin. At the international level, we will continue to contribute to policy-making. We will also take appropriate action if changing market circumstances require us to do so, when possible in an internationally coordinated manner.

# 1 Motivation and background

## Motivation – the rise of cryptos

The AFM and DNB have been closely and critically monitoring the rise and development of cryptos<sup>1</sup> as a digital, global and decentral phenomenon. In our capacity as supervisory authorities we have repeatedly warned about the risks associated with cryptos and the related initial coin offerings (ICOs). These risks have become increasingly prominent with the growing popularity of cryptos, particularly with respect to criminal use and the susceptibility of cryptos to deception, fraud, manipulation and cybercrime. At the same time, we acknowledge the potential of the innovative technology behind cryptos (blockchain or otherwise) for applications within and outside financial services. Against this background and in response to his request, the AFM and DNB have prepared a joint advisory report for the Dutch Minister of Finance with recommendations on an appropriate response to the rise of cryptos.<sup>2</sup>

## Background – previous efforts and initiatives

This report builds on earlier efforts and initiatives of the AFM and DNB regarding cryptos.

## Warnings

The AFM and DNB have issued several warnings about the risks associated with cryptos and ICOs.<sup>3</sup> Some examples are listed below.

- Cryptos are generally outside the scope of financial supervision and therefore lack the protection of financial regulation.
- The value of cryptos is primarily based on speculation and frequently lacks a clear underlying valuation. As a result, crypto prices can be highly volatile.
- Due to the anonymous and cross-border nature of transactions, cryptos are susceptible to deception, fraud, manipulation, cybercrime and money laundering.
- The risks surrounding ICOs are comparable to those associated with cryptos. Specific risks related to ICOs also include a lack of transparency, overestimation of expected yields and underestimation of the expertise needed to distinguish viable business models from unviable propositions. A crypto and ICO hype, like the one that occurred at the end of 2017, may blind consumers to these risks. The AFM has advised consumers not to participate in ICOs.<sup>4</sup>
- DNB does not regard cryptos as money because they do not function as a medium of exchange, store of value and unit of account.

## Links with financial supervision

The AFM and DNB have also clarified the relationship between cryptos and financial supervision. Cryptos such as Bitcoin and Ether are not subject to financial supervision but, generally speaking, financial products and services based on cryptos are. For example, in July 2017 DNB stated that crypto service providers may fall within the scope of financial supervision if they hold repayable funds.<sup>5</sup> In 2017, the AFM explained that the activity of

<sup>1</sup> We use the more neutral term crypto in this report, defined in accordance with the definition in the fifth anti-money laundering directive (AMDL5, see Chapter 2).

<sup>2</sup> Our recommendations are limited to cryptos only, and do not address the use of distributed ledger technology (DLT) and blockchain applications not involving cryptos.

<sup>3</sup> See e.g. DNB's warnings of 3 December 2013, 8 May 2014, 10 July 2014, 13 November 2017 and the DNB Position Paper for the round table of the House of Representatives on 24 January 2018, as well as the AFM's warnings of June and November 2017, warnings in various media, and the AFM Position Paper for the round table of the House of Representatives on 24 January 2018.

<sup>4</sup> AFM, *Initial Coin Offerings (ICOs): serious risks*, <https://www.afm.nl/en/professionals/onderwerpen/ico>.

<sup>5</sup> DNB, *InnovationHub – Frequently Asked Questions*, <https://www.dnb.nl/en/supervision/innovationhub/veelgestelde-vragen-aan-de-innovationhub/index.jsp>.

managing an investment fund that invests in cryptos falls within the scope of its supervision, and clarified the circumstances in which ICOs are subject to financial supervision. In November 2018, the AFM clarified that real estate investments offered in the form of cryptos may fall under its supervision.<sup>6</sup>

### Critical approach towards regulated entities

Given the significant risks associated with cryptos, the AFM and DNB have adopted a critical attitude towards providers of regulated crypto-based financial products and services, among other things to prevent that consumers perceive cryptos as a safe investment. For example, in December 2017 the AFM reminded providers of Bitcoin futures of their duty of care towards their customers, and their non-professional customers in particular. In June 2018, the AFM expressed its concerns on whether exempted managers of alternative investment funds that invest in cryptos are able to comply with the licensing requirements.<sup>7</sup> The AFM and DNB repeatedly pointed out the integrity risks attached to crypto-related services to regulated institutions, including in a public warning in July 2014.<sup>8</sup> In particular, the lack of an entity bearing final responsibility for crypto transactions conflicts with many of the current rules and supervisory standards. This is because Bitcoin and many other cryptos are created in a decentral way using algorithms and without a central entity bearing responsibility for this process. Furthermore, blockchain technology enables peer-to-peer exchange of value without the involvement of an intermediary bearing final responsibility for the transaction.

### Research

The AFM and DNB have conducted research and carried out experiments relating to cryptos.

- In February 2018, the AFM held a survey among crypto owners in the Netherlands. The results showed that the majority of Dutch consumers purchased cryptos for a relatively low value (69% purchased them for a value of less than EUR 1,000), that they are aware of the key risks and that 80% are familiar with the AFM's warnings.<sup>9</sup>
- In February 2018, DNB published a Working Paper on retailers' acceptance of crypto payments in the Netherlands. This indicated that acceptance of cryptos is limited to 2% of the retailers participating in the study.<sup>10</sup>
- In June 2018, DNB examined the use of blockchain technology for financial market infrastructures. According to the study, blockchain technology currently fails to meet the very high demands of a financial market infrastructure due to shortcomings when it comes to capacity (scalability), high energy consumption and the lack of finality with such value transfers.<sup>11</sup>
- In October 2018, the AFM conducted another survey among crypto owners in the Netherlands.<sup>12</sup> This revealed that the interest in cryptos had dropped sharply since the second quarter of 2018. Only 8% of the present crypto owners purchased their first cryptos after the first quarter of 2018. Furthermore, 60% of consumers indicate that purchasing cryptos has become less attractive compared to the start of 2018.

<sup>6</sup> AFM, *Crypto's met vastgoed als onderliggende waarde vallen onder toezicht* (23 November 2018 - in Dutch only), <https://www.afm.nl/nl-nl/nieuws/2018/nov/cryptos-vastgoed>.

<sup>7</sup> AFM, *AFM has serious doubts whether managers of investment funds in cryptos are able to comply with licence requirements* (14 June 2018), <https://www.afm.nl/en/nieuws/2018/juni/beheerders-bi-vergunningeisen-cryptos>.

<sup>8</sup> DNB, *DNB waarschuwt banken en betaalinstanties voor integriteitsrisico's bij virtuele valuta's* (10 July 2014 - in Dutch only), <https://www.dnb.nl/nieuws/dnb-nieuwsbrieven/nieuwsbrief-betaalinstanties/nieuwsbrief-betaalinstanties-juli-2014/dnb309446.jsp>.

<sup>9</sup> AFM, *Investeren in crypto's in Nederland: Marktonderzoek onder Nederlandse consumenten* (26 July 2018 - in Dutch only), <https://www.afm.nl/crypto>.

<sup>10</sup> DNB, *DNB working paper 585: What drives bitcoin adoption by retailers?* (1 March 2018), <https://www.dnb.nl/en/news/dnb-publications/dnb-working-papers-series/dnb-working-papers/Workingpapers2018/dnb373270.jsp>.

<sup>11</sup> DNB, *DNBulletin: DNB experiments with blockchain technology* (7 June 2018), <https://www.dnb.nl/en/news/news-and-archive/DNBulletin2018/dnb376502.jsp>.

<sup>12</sup> AFM, *Cryptobezitters in Nederland: stand van zaken, update van het marktonderzoek onder Nederlandse consumenten* (December 2018 - in Dutch only), <https://www.afm.nl/crypto>.

### **Contact with market participants via the InnovationHub**

Through the InnovationHub (a platform where market participants can submit questions about regulation in the context of innovative concepts), the AFM and DNB have had regular discussions with potential providers of crypto-related products and services. These discussions have contributed to a better understanding of the various forms of crypto-related services in the Netherlands and their development.

## 2 Cryptos: a description

### Various definitions and functions of cryptos

Various jurisdictions and forums use different definitions when referring to cryptos, such as virtual assets, cryptocurrencies or crypto assets. We have chosen to use the more neutral term cryptos, since the phenomenon is still in development, takes on many forms and currently does not function as money. The definition used in this report matches that of the definition in the fifth anti-money laundering directive ((EU) 2018/843, AMLD5), which is currently the only official definition of cryptos in European legislation:

*"a digital representation of value that is not issued or guaranteed by a central bank or a public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically".*

The above definition forms a starting point to delineate the concept of cryptos. In addition, a functional perspective can be useful for understanding the various forms that have emerged over the past few years. We therefore adopt a taxonomy that is frequently used internationally, and that distinguishes between three overlapping categories of cryptos (see Figure 1).<sup>13</sup> It is important to note that these categories are highly interconnected (i.e., cryptos can have multiple functions simultaneously) and that their function may change over time. For example, an investment crypto may transform over time into a utility or payment crypto.

1. **Transaction cryptos:** cryptos as a means for general transactions or value transfers (which does not imply that they are an alternative to existing fiat money such as euro's or dollars). Users can effect global peer-to-peer transactions without the involvement of a third party (such as a bank).
  - Bitcoin is the best-known example. Other examples include Litecoin and Dash.
2. **Utility cryptos:** cryptos as an entitlement to the use of, or access to, a specific application or service offered by or through a provider's platform (blockchain-based or otherwise).
  - A well-known example is Ether, which gives users the right to use or access services running on the underlying Ethereum network, e.g. smart contracts.
  - Another example is Filecoin, with which users can purchase decentralised cloud storage from one another.
3. **Investment cryptos:** cryptos used as an alternative for, or addition to, existing financial instruments.
  - Some investment cryptos qualify as financial instruments as defined in the Dutch Financial Supervision Act (*Wet op het financieel toezicht – Wft*), e.g. shares, bonds or units in an investment fund offered in the form of cryptos. This type of crypto is subject to financial supervision.
  - Other investment cryptos share similarities with existing financial instruments or regulated activities, for example because they are used to fund business activities. However, they are structured in a

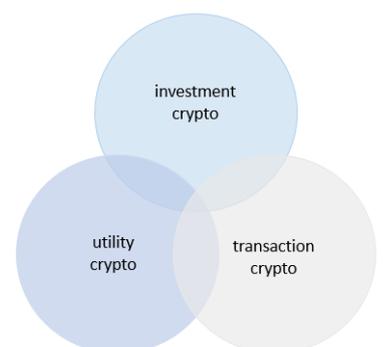


Figure 1 – Crypto taxonomy

<sup>13</sup> The UK Financial Conduct Authority (FCA) and the Swiss Financial Market Supervisory Authority (FINMA) use a similar categorisation.

way that prevents them from qualifying as financial instruments. They therefore fall outside the scope of financial supervision.

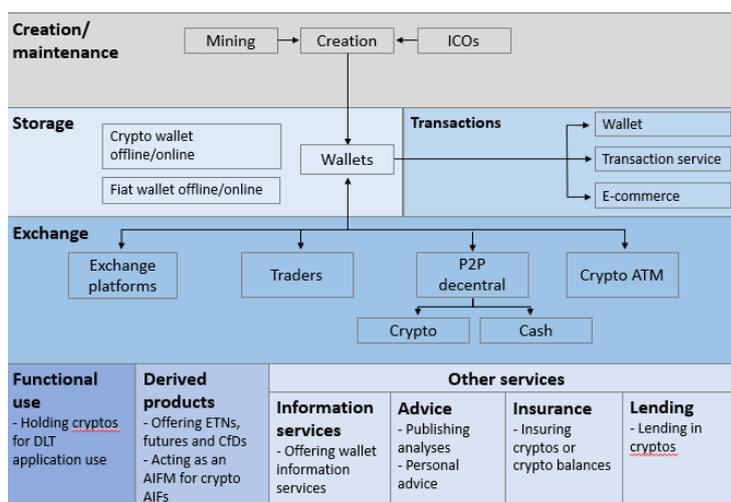
- The application of the technology underlying cryptos enables the registration of the ownership rights to existing assets in the form of cryptos (a process called tokenisation). For example, the economic ownership rights of assets (e.g., gold) can be tokenised and traded via cryptos. Usually this concerns cryptos with an investment purpose, but it can also take the form of a utility or payment crypto.

### Crypto offerings: ICOs

In general, cryptos are offered through an initial coin offering (ICO). In functional terms, ICOs share similarities with an initial public offering (IPO). It is a mechanism through which cryptos can be publicly offered to interested parties. ICOs are relatively easy to set up through blockchain networks such as Ethereum, which offer the option to create new cryptos using the network's existing transaction validation process. This allows third parties to program and create their own cryptos without having to create an underlying blockchain network. Cryptos created in this manner (often referred to as tokens) can be investment, transaction or utility cryptos, and are offered through a central entity that controls and monitors the amount, features and offering process.

### Ecosystem of crypto service providers

Cryptos were initially set up to function without the involvement of intermediary parties. However, an ecosystem has emerged over the last few years consisting of various parties offering all sorts of crypto services. This ecosystem largely functions independently of the financial system. For a better understanding, we have charted the various activities involved to provide an overview of the functioning of this ecosystem and its interactions with the financial system (see Figure 2). The activities can be performed in respect of investment, utility and payment cryptos. The most relevant activities are described below.<sup>14</sup>



De Nederlandsche Bank (DNB)

Figure 2 – Crypto services ecosystem

<sup>14</sup> A full overview of these crypto-related activities is set out in Appendix 2.

## Exchange

Many of the crypto services are aimed at facilitating the exchange between cryptos and fiat money, often combined with custodial services (see the section on storage below). In some cases it also involves facilitating the exchange between different cryptos, e.g. from Bitcoin to Ether. We distinguish the following variants:

- Central exchange platforms where customers can exchange cryptos for other cryptos or fiat money, using the platform as intermediary.
- Platforms functioning as electronic bulletin boards that facilitate peer-to-peer crypto transactions between users.
- Traders buying or selling cryptos for own account in exchange for fiat money or other cryptos.
- ATMs where users can buy and sell Bitcoin or other cryptos in exchange for cash.

Providers engaged in exchange services between cryptos and fiat money fall within the scope of the revised anti-money laundering directive (AMLD5), which now also includes crypto services within its scope.

## Storage

Another principal activity involves offering storage services, i.e. wallets. A crypto wallet provides insight into a user's crypto balance and contains the public and private key belonging to that crypto. The public key compares to a bank account number; the private key compares to a PIN code and is used to sign crypto transactions. We distinguish between services where the wallet service provider holds the public as well as the private key (custodial services), and services where the user retains the private key (non-custodial services). AMLD5 only applies to parties that secure both the public and private keys for holding, storing and transferring their customers' cryptos.

## Creation and maintenance

Cryptos can be created in various ways.

- With cryptos such as Bitcoin, creation of new cryptos is determined by algorithms and provided as remuneration for participants (also referred to as miners) who validate transactions in the network. These cryptos are created in a decentral way, through the network.
- With other cryptos, e.g. Ripple or Stellar, a central party is responsible for offering pre-mined cryptos according to a predefined set of rules.
- Many cryptos are offered through an ICO, and a central party is responsible for the offering.

## Functional use in blockchain networks

Cryptos may be needed for use of or within a blockchain network. For example, you need Ether to use the services of the Ethereum blockchain network such as running blockchain applications and smart contracts.

## Transactions

Cryptos can be accepted as a medium of exchange for goods or financial services, whereby the supplier of these goods or services receives cryptos directly in its wallet. Some suppliers use intermediary services that convert cryptos to fiat money, so that the supplier does not need to hold a crypto wallet. Transactions in fiat money can also be facilitated using cryptos, e.g. for cross-border retail payments.

### **Regulated financial products and services**

Various regulated financial products and services have cryptos as their underlying value. Examples include futures, contracts for difference (CfDs), exchange-traded notes (ETNs) and alternative investment funds. These products and services are subject to AFM supervision insofar as they are offered in or from the Netherlands.

## 3 Global and national market trends

The evolution of cryptos is primarily internationally-oriented given their inherent cross-border nature, and cannot be confined to the Dutch market alone.

### Crypto markets have contracted globally

For a long time, cryptos were considered a niche product that was hardly known to the general public. This changed in 2017, when the popularity of cryptos rocketed and the total market capitalisation of global crypto markets increased by more than USD 780 billion to a peak around USD 800 billion in January 2018. Despite this very sharp increase over a short period, the crypto markets' total size was at its peak still moderate compared to other markets. For example, the global primary money stock (M1) stood at around USD 34.4 trillion<sup>15</sup> and the global stock markets at around USD 79 trillion<sup>16</sup> as at 31 December 2017. Following the peak in early 2018, crypto prices dropped, leading to a total market capitalisation of around USD 110 billion by mid-December 2018 (see Figure 3).<sup>17</sup> The Bitcoin price shows high volatility and a marked downward trend: from nearly USD 20,000 in December 2017 down to USD 3,400 in mid-December 2018 (see Figure 4). Transaction volumes have also seen a marked downward trend since January 2018 (see Figure 4).

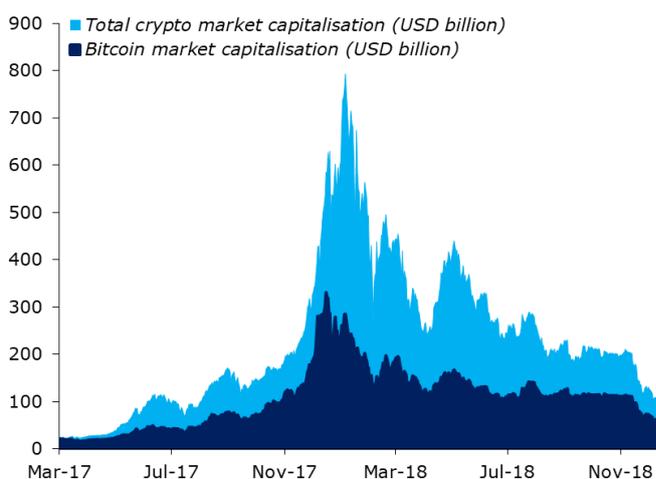


Figure 3 – Crypto market capitalisation  
Source: Coin.Dance

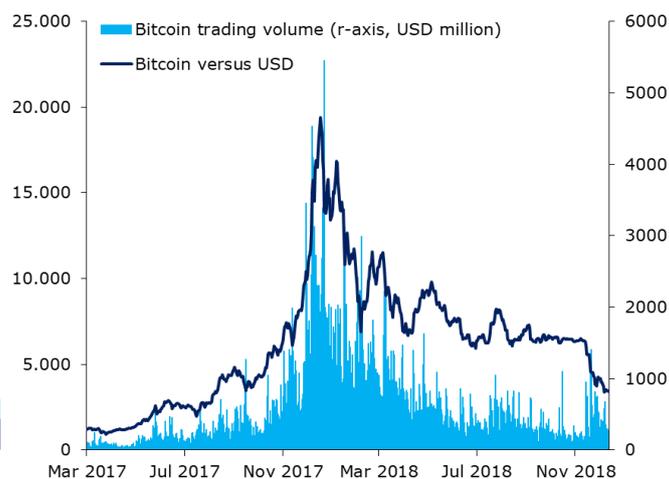


Figure 4 – Bitcoin price and volume movements  
Source: data.bitcoinity.org

In recent years a crypto ecosystem has emerged, primarily based around crypto exchange and custody. From the creation of Bitcoin in 2008, the number of cryptos quickly grew to around 5,400.<sup>18</sup> Many of these cryptos are no longer operational.<sup>19</sup> At a global level, some 200 platforms are active that facilitate the exchange between different cryptos as well as between crypto and fiat money.<sup>20</sup> Binance (Hong Kong), OKEx (Belize) and Huobi (Singapore) are examples of larger exchange platforms, with daily trading volumes amounting to hundreds of millions of dollars.<sup>21</sup> Across the world there are more than 4,000 crypto ATMs where users can exchange cryptos for cash. This number is still growing.<sup>22</sup>

<sup>15</sup> CIA, *The World Fact book*, <https://www.cia.gov/library/publications/the-world-factbook/geos/xx.html>.

<sup>16</sup> The World Bank, <https://data.worldbank.org/indicator/CM.MKT.LCAP.CD>.

<sup>17</sup> Source and footnote: these figures are derived from unofficial sources. No official figures are available due to the unregulated nature of cryptos.

<sup>18</sup> Coinlib, <https://coinlib.io/coins>, accessed on 3 December 2018.

<sup>19</sup> The list on deadcoins.com features some 930 cryptos, accessed on 3 December 2018.

<sup>20</sup> CoinMarketCap, <https://coinmarketcap.com/exchanges/volume/24-hour/>, accessed on 3 December 2018.

<sup>21</sup> CoinMarketCap, <https://coinmarketcap.com/exchanges/volume/24-hour/>, accessed on 3 December 2018.

<sup>22</sup> Coinatmradar, <https://coinatmradar.com/charts/growth/>, accessed on 3 December 2018.

ICOs have experienced a similar development. Although reliable and validated figures are lacking, at a global level some USD 10 to 22 billion in capital was raised from the public through ICOs by the end of November 2018<sup>23</sup> compared to USD 4 to 7 billion in 2017.<sup>24</sup> Purposes ranged widely from building new blockchains to creating financial applications or setting up gambling platforms. From the peak in January 2018 until December 2018, the number of ICOs and the total amount of capital raised showed a sharp decline of around 90% (see figure 5).<sup>25</sup> The number of ICOs that successfully achieved their funding targets saw a similar trend: based on available information, this number had fallen by 82% in November 2018 compared to the peak in May 2018.<sup>26</sup>

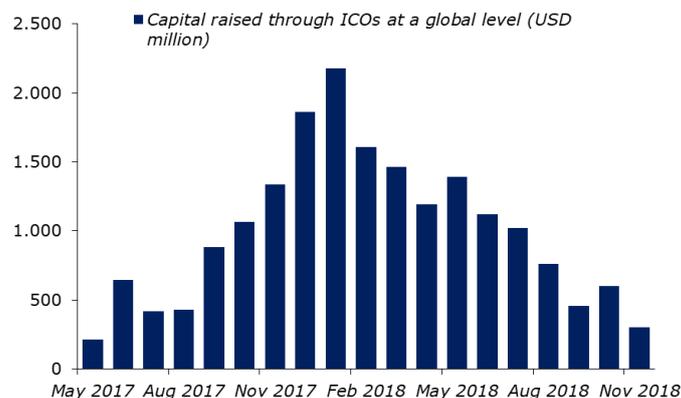


Figure 5 – Monthly capital raised through ICOs at a global level in USD

Source: Autonomous Research

## Dutch market developments follow the global trend

In the Netherlands, the number of crypto owners increased sharply over a short period. In February 2018, some 490,000 households (580,000 individuals) owned cryptos, compared to 135,000 households in September 2017.<sup>27</sup> AFM research (February 2018) indicates that 69% of these Dutch owners purchased cryptos for an amount not exceeding EUR 1,000, and that 10% of the Dutch owners participated in ICOs.<sup>28</sup> The number of crypto owners in the Netherlands declined by 100,000 between February 2018 and September 2018.<sup>29</sup>

Dutch consumers mostly regard cryptos as a speculative asset.<sup>30</sup> They use cryptos for retail payments only to a limited extent. In February 2018, DNB published research on retailers' acceptance of crypto payments in the Netherlands, which indicates that it is limited to 2% of the retailers participating in the study.<sup>31</sup> An important reason for this limited acceptance appears to be the lack of demand from consumers.

Additional AFM research from October 2018 reveals that consumers' interest dropped sharply after the first quarter of 2018.<sup>32</sup> Only 8% of the present crypto owners made their first purchase after March 2018. Furthermore, 60% indicate that purchasing cryptos has become less attractive during the past year. They cite falling prices as the main reason. The reduced interest in cryptos is also signalled by the fact that crypto owners

<sup>23</sup> Autonomous Next, <https://next.autonomous.com/crypto-utopia/>; Coindesk, <https://www.coindesk.com/ico-tracker>; Coinschedule, <https://www.coinschedule.com/stats.html>.

<sup>24</sup> EY, *EY research: initial coin offerings (ICOs)* (December 2017), [https://www.ey.com/Publication/vwLUAssets/ey-research-initial-coin-offerings-icos/\\$File/ey-research-initial-coin-offerings-icos.pdf](https://www.ey.com/Publication/vwLUAssets/ey-research-initial-coin-offerings-icos/$File/ey-research-initial-coin-offerings-icos.pdf); Autonomous Next, <https://next.autonomous.com/crypto-utopia/>.

<sup>25</sup> Autonomous Next, <https://next.autonomous.com/crypto-utopia/>.

<sup>26</sup> ICORATING, <https://icorating.com/statistics/market/>.

<sup>27</sup> Kantar TNS, *Aantal Nederlandse beleggers cryptovaluta geëxplodeerd, maar nog geen kwart ervan staat op winst* (8 February 2018 - in Dutch only), <http://www.tns-nipo.com/nieuws/persberichten/aantal-nederlandse-beleggers-cryptovaluta-geexplod>.

<sup>28</sup> AFM, *Cryptobezitters in Nederland: stand van zaken, update van het marktonderzoek onder Nederlandse consumenten* (December 2018 - in Dutch only), <https://www.afm.nl/crypto>.

<sup>29</sup> Kantar TNS, *Aantal Nederlandse investeerders met 100.000 afgenomen* (13 September 2018 - in Dutch only), <http://www.tns-nipo.com/nieuws/persberichten/aantal-crypto-investeerders-met-100-000-afgenomen>.

<sup>30</sup> 61% of consumers who purchased cryptos indicate that they regard it as a (speculative) investment.

<sup>31</sup> DNB, *DNB working paper 585: What drives bitcoin adoption by retailers?* (1 March 2018), <https://www.dnb.nl/en/news/dnb-publications/dnb-working-papers-series/dnb-working-papers/Workingpapers2018/dnb373270.jsp>.

<sup>32</sup> AFM, *Cryptobezitters in Nederland: stand van zaken, update van het marktonderzoek onder Nederlandse consumenten* (December 2018 - in Dutch only), <https://www.afm.nl/crypto>.

seem to be less involved with their portfolios. In January, two thirds of them checked their portfolio more than once every week. In October, this had declined to one third. A similar trend can be seen with the – much smaller – group of ICO investors, where interest also declined after the first quarter of 2018. The high risk of fraud is mentioned as a reason for this, in addition to declining prices. As with the previous study, most owners purchase cryptos to make a profit or to speculate while they are hardly interested in using cryptos as a medium of exchange.

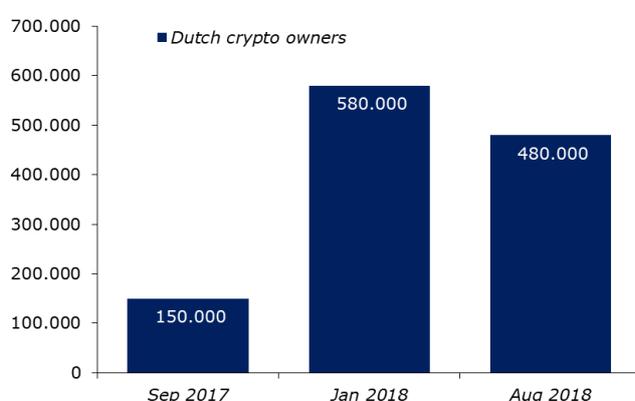


Figure 6 – Dutch crypto owners  
Source: Kantar TNS, AFM

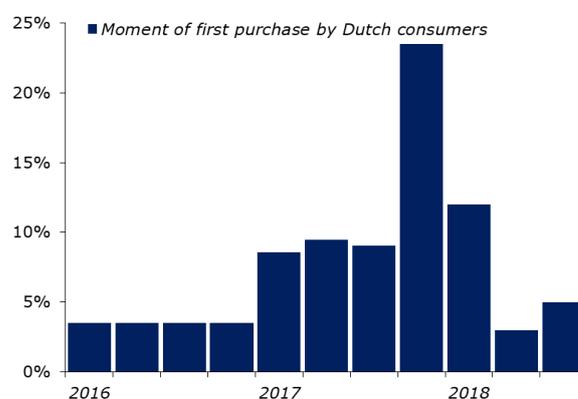


Figure 7 – First purchase by Dutch consumers  
Source: Kantar TNS, AFM

Note: Figures for 2016 are only available on a yearly basis. In the figure they have been spread evenly over the quarters.

Joint AFM and DNB research shows that in October 2018 some forty crypto services providers were established in the Netherlands, including exchange platforms, crypto ATMs, traders and wallet providers. Most of these service providers offer exchange services in the form of proprietary trading, including via crypto ATMs. Some of them also offer custodial services. Some 10 crypto ATM providers operate in the Netherlands.<sup>33</sup> In addition, there are two central exchange platforms where customers can effect crypto transactions and exchange cryptos for euros. By comparison: the daily traded Bitcoin volume on the Netherlands' largest platform is negligible and amounts to only 0.01% of the total Bitcoin volume (in euros) traded on platforms globally.<sup>34</sup>

Only indicative figures are available on the number of ICOs specifically offered from the Netherlands. Based on the available information, this number is limited:<sup>35</sup> from 2017 up to November 2018 there have been some 98 Dutch ICOs compared to some 4,600 ICOs worldwide in the same period.<sup>36</sup> After the peak of crypto popularity in January 2018, it has become increasingly difficult for Dutch ICO providers to raise capital. At the start of 2018 many ICOs were able to achieve their funding targets within weeks, but Dutch ICOs launched after that period took much more time to achieve their funding targets. In the InnovationHub, AFM and DNB also received signals from ICO providers that consumer interest strongly declined over the course of 2018.

<sup>33</sup> Coinatmradar, <https://coinatmradar.com/charts/growth/>, accessed on 3 December 2018.

<sup>34</sup> CoinMarketCap, <https://coinmarketcap.com/>, compared to the volume traded on BL3P on 11 December 2018 (<https://bl3p.eu/nl/>).

<sup>35</sup> ICObench, <https://icobench.com/icos>.

<sup>36</sup> Autonomous Next, <https://next.autonomous.com/crypto-utopia/>.

# 4 Cryptos: risks and opportunities

## Risks

Various risks are associated with cryptos. The main risks are described below.

### Financial crime

Several EU studies on the risks of financial crime relating to cryptos have recently been completed.<sup>37</sup> They show that crypto services, and the conversion of cryptos into fiat money and vice versa in particular, carry a high risk of money laundering and terrorist financing. This is, among other things, due to the anonymity of crypto transactions. Both the AFM and DNB have highlighted this risk in their January 2018 position paper.<sup>38</sup> Indicative of this risk is that the Dutch Financial Intelligence Unit (FIU-the Netherlands) registered a sharp increase in the number of notifications for unusual transactions, many of which were crypto-related.<sup>39</sup>

In addition to the direct risks of money laundering and terrorist financing, financial institutions that facilitate crypto service providers are also exposed to indirect integrity risks. For example, their indirect relationships with crypto traders through such crypto service providers may have an adverse impact on their reputation. There are also broader integrity risks arising from the use of cryptos, e.g. non-compliance with sanctions, tax evasion, fraud or conflicts of interest. These crypto-related integrity risks for the present-day financial sector are also acknowledged by the EU and the G20.<sup>40</sup>

### Consumer protection

Consumers are exposed to various risks, some of them inherent to cryptos, related to purchasing, selling and custody of cryptos. The main risks are described briefly below.

Significant market risk:

- An intrinsic valuation of cryptos is very difficult or impossible because its price formation is primarily based on speculation. There is a real risk that the value of many cryptos may fully and permanently evaporate, especially in the case of cryptos without any intrinsic value.<sup>41</sup>
- The speculative nature of cryptos also leads to highly volatile prices. Small news can trigger significant price movements.
- The crypto markets are not yet mature, and businesses or projects offering cryptos via ICOs often lack a fully functional product or service. There is also the risk that consumers may overestimate the expected returns and underestimate the expertise needed to distinguish promising business models from unviable propositions. Consumers may lose some or even all of their investment in ICOs. The lack of transparency associated with ICOs enhances these risks.
- Crypto service providers may go bankrupt due to mismanagement or failing operational management. This is a significant risk for consumers, due to the lack of transparency and the immaturity of the market.

<sup>37</sup> Keatinge, T., D. Carlisle, and F. Keen, *Virtual currencies and terrorist financing: assessing the risks and evaluating responses* (May 2018), study commissioned by the European Parliament, DG Internal Policies; R. Houben and A. Snyers, *Cryptocurrencies and blockchain: Legal context and implications for financial crime, money laundering and tax evasion* (July 2018), study commissioned by the European Parliament, DG Internal Policies.

<sup>38</sup> AFM/DNB Position Paper for the round table of the House of Representatives on cryptos on 24 January 2018.

<sup>39</sup> In its position paper for the round table meeting of the Dutch House of Representatives on 24 January 2018, FIU-the Netherlands reported a surge in the number of notifications for unusual transactions related to cryptos, from an average of 300 per year to almost 5,000. Almost 90% of these were related to Bitcoin.

<sup>40</sup> See Appendix 1.

<sup>41</sup> The list on deadcoins.com features some 930 cryptos, accessed on 3 December 2018.

- The underlying blockchain technology is still very much in development. Coding errors may lead to consumers permanently losing their cryptos or access thereto.

Significant risk of fraud:

- Cryptos are vulnerable to deception and fraud due to their highly technical nature, the international dimension and the pseudo-anonymity of transactions. Consumers may become victims to fraud because of misleading information or non-existing propositions.
- The risk of fraud with ICOs is high. Estimates vary, as the exact number of fraudulent ICOs cannot be established due to a lack of validated data.<sup>42</sup>
- Reliable pricing is difficult, given the risk of crypto price manipulation.<sup>43</sup> This mainly concerns manipulation in the form of pump-and-dump strategies, i.e. orchestrated price gains with the aim of dumping the cryptos at a higher price, but also wash trades (feigning trade activities) and insider trading by crypto platform staff members. Barring a few exceptions, central trading platforms do not have a system in place to detect, let alone prevent, this type of manipulation. The US regulator SEC considers this risk to be a key reason not to allow regulated financial instruments based on Bitcoin.<sup>44</sup>
- Cybercrime is another form of fraud. There are many international examples of central exchange platform hacks where customers' cryptos have been stolen. Hackers have stolen an estimated USD 1 billion in cryptos from exchange platforms across the globe in 2018.<sup>45</sup> Other forms of cybercrime include phishing and installing malware on victims' computers for crypto mining purposes.

The following observations are relevant with respect to the risks for consumers in the Netherlands. First, compared to the peak in early 2018, fewer Dutch consumers are now exposed to these risks. The AFM survey among crypto owners (referred to in the previous chapter) shows that interest in cryptos among Dutch consumers fell sharply since early 2018.<sup>46</sup> Only a small share of consumers made their first crypto purchase after the first quarter of 2018, and 60% of the crypto owners believe that holding cryptos has become less attractive. Compared to the start of 2018, the number of crypto owners decreased by 100,000. This decline in popularity may also render crypto fraud less interesting for criminals. Second, the survey revealed that most Dutch crypto owners are aware of the risks to which they are exposed. Although the inherent risks are still present, their impact on Dutch consumers is smaller compared to early 2018. Also, those who purchase cryptos seem to be aware of the associated risks.

### Financial stability

In relative terms, the outstanding market value of cryptos is limited compared to fiat money liquidity. That is why the crypto market is not regarded as a significant risk to financial stability at the moment. The Financial Stability Board (FSB) came to the same conclusion given that even at the peak in January 2018, the total global crypto

<sup>42</sup> According to some sources, the percentage of fraudulent ICOs was as high as 81% in 2017, see for example Satis, *Cryptoasset Market Coverage Initiation: Network Creation* (11 July 2018), [https://research.bloomberg.com/pub/res/d28giW28tf6G7T\\_Wr77aU0gDgFQ](https://research.bloomberg.com/pub/res/d28giW28tf6G7T_Wr77aU0gDgFQ).

<sup>43</sup> See for example WSJ, *Bots Are Manipulating Price of Bitcoin in 'Wild West of Crypto'* (2 October 2018), <https://www.wsj.com/articles/the-bots-manipulating-bitcoins-price-1538481600>; or Bloomberg, *Top Regulator Worries That Crypto Markets Could Be Full of Manipulation* (22 March 2018), <https://www.bloomberg.com/news/articles/2018-03-22/top-regulator-frets-crypto-markets-could-be-full-of-manipulation>.

<sup>44</sup> SEC, <https://www.sec.gov/rules/sro/cboebzx/2018/34-83913.pdf>.

<sup>45</sup> Reuters, *Cryptocurrency theft hits nearly \$1 billion in first nine months: report* (10 October 2018), <https://www.reuters.com/article/us-crypto-currency-crime/cryptocurrency-theft-hits-nearly-1-billion-in-first-nine-months-report-idUSKCN1MK1J2>.

<sup>46</sup> AFM, *Cryptobezitters in Nederland: stand van zaken, update van het marktonderzoek onder Nederlandse consumenten* (December 2018 - in Dutch only), <https://www.afm.nl/crypto>.

market value amounted to less than 1% of global gross domestic product (GDP). It is also relevant that cryptos are not used as an alternative to fiat money and only have limited applications in the real economy and financial transactions. The interconnectedness with the rest of the financial system is therefore considered to be limited.<sup>47</sup>

New questions are arising about the consequences of cryptos for financial stability as a result of the rapid development in the crypto markets. Increased use of cryptos may pose a threat to financial stability. Together with the Committee on Payments and Market Infrastructures (CPMI), the FSB developed a framework for monitoring the financial stability implications of crypto market developments.<sup>48</sup> DNB is a member of both the CPMI and the FSB and contributes to these monitoring efforts.

## Opportunities

Notwithstanding the risks, the AFM and DNB also acknowledge that the crypto markets are developing rapidly and that certain functional applications of cryptos and the underlying technology (blockchain or otherwise) have potential. The opportunities in question are as follows.

### Functional use

The AFM and DNB see opportunities for the functional use of the blockchain technology using cryptos. Continuous progress is made in terms of technological improvements and new applications for the real economy. Various (non-financial) blockchain applications have been developed, such as ticket sale trading platforms and decentral cloud storage platforms, where consumers can exchange their utility crypto products and services. This presents opportunities for more innovative, efficient and cost-effective services compared to existing centrally organised services. Cryptos can be used as a means to pass on the cost of maintaining and securing a blockchain network to the users. This is particularly relevant for blockchain networks that are set up with the aim of administrating specific information and making it accessible to the public at large, e.g. for administrating the origin of diamonds or music copyrights. In the financial sector there are also regular news items about experiments with financial blockchain-based applications. For example, the tokenisation of certain assets (i.e. when a crypto represents a specific right or ownership of something in the real world, such as gold). This enables people to take advantage of the benefits of blockchain technology, in particular the inherent tradability.

### Corporate funding

Insofar as the particular crypto offered presents a clear and enforceable right (as is the case with e.g. shares and bonds), corporate funding through cryptos may eventually grow into a supplemental form of capital market funding. Offerings of cryptos that are comparable to shares (or bonds) are also referred to as security token offerings (STOs). This provides opportunities for SME funding. Using the blockchain technology, offerors can directly attract capital from investors without the involvement of third parties. This can create efficiency gains and lower the costs of attracting funding. It can also help to improve the liquidity of this type of capital due to the inherent tradability of these rights through blockchain technology. As such, cryptos that are comparable to shares or bonds may help to make the capital markets more accessible to SMEs, although market developments are still incipient. For example, it is not yet clear whether the disintermediation of activities in this context will increase

<sup>47</sup> FSB, *FSB Chair's letter to G20 Finance Ministers and Central Bank Governors* (18 March 2018), <http://www.fsb.org/wp-content/uploads/P180318.pdf>.

<sup>48</sup> FSB, *Crypto-asset markets: Potential channels for future financial stability implications* (10 October 2018), <http://www.fsb.org/wp-content/uploads/P101018.pdf>.

the risks for consumers as there are fewer participants – if any at all – in the process to select better-quality offerings.

### **Cross-border retail payments**

The AFM and DNB also acknowledge that cryptos and the underlying technology have the potential to make cross-border retail payments (i.e., remittances) both cheaper and faster. Cryptos can be held anywhere in the world and converted into national currencies through exchange services. Funds could be transferred quicker (in 1-24 hours rather than days) and for substantially lower costs (from 1% up to 3%). In principle, it will make transactions transparent. The use of cryptos could also contribute to financial inclusion. Users do not need a bank account and can make transactions using their mobile phone. This can be a solution in areas where only a limited number of people have access to a bank account. Given the steep increase in the global volume of remittances to USD 500 billion, the potential is substantial.<sup>49</sup> A key question is if and how the risks related to money laundering and terrorist financing can be addressed adequately with this type of service provision. Correspondent banking is becoming increasingly difficult in some countries now that banks are leaving these markets, for example for integrity legislation-related reasons.<sup>50</sup>

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<sup>49</sup> BIS, *Annual Economic Report Chapter 5: Cryptocurrencies: looking beyond the hype* (17 June 2018), <https://www.bis.org/publ/arpdf/ar2018e5.pdf>.

<sup>50</sup> CPMI, *Cross-border retail payments* (16 February 2018), <https://www.bis.org/cpmi/publ/d173.pdf>.

# 5 Importance of an internationally coordinated framework to address risks

The main risks of cryptos are financial crime and the susceptibility to deception, fraud, manipulation and cybercrime. Due to the inherent cross-border characteristics of cryptos, an internationally coordinated regulatory framework is needed to address these risks effectively. After all, crypto service providers seeking to circumvent a national supervisory regime can simply relocate to a jurisdiction with a less stringent regime. This will hamper the enforcement of national rules. At the same time, a jurisdiction with a regime that is more permissive than its foreign counterparts may attract undesirable propositions. Also, supervision of crypto services often requires a new interpretation of existing rules and supervisory standards, for which international knowledge exchange and collaboration is desirable or sometimes even required.

Below is a description of the international frameworks that are relevant when shaping effective national policies. These frameworks are based on the work of various international bodies and national initiatives (see Appendix 1).

## There is agreement on the approach to financial crime risks

The risks of financial crime (see Chapter 4) are widely acknowledged internationally, including by the G20, Financial Action Task Force (FATF) and the European Union (EU). As a result, the EU amended its fourth anti-money laundering directive, widening the scope to include specific crypto service providers (AMLD5). These anti-money laundering rules, which already apply to banks and financial institutions, will also apply to:

- service providers engaged in exchange services between virtual currencies and fiat money; and
- crypto wallet providers that hold, store and transfer cryptos on behalf of their customers.

These crypto service providers form part of a wider crypto ecosystem, operating at the access point to the financial sector. For the moment, other categories of crypto service providers, such as exchange platforms that offer crypto-crypto services only, do not fall within the scope of AMLD5. This may change in the future, for example as a result of revised FATF recommendations.

In summary, AMLD5 requires crypto service providers to conduct risk analyses, perform customer due diligence, monitor customer transactions and notify unusual transactions to the Dutch Financial Intelligence Unit (FIU-NL). In addition, management must be fit and proper to meet these requirements. AMLD5 also requires that these crypto service providers are registered. The directive is an instrument that ensures a minimum level of regulatory harmonisation. Member states are therefore free to opt for a licensing regime.

AMLD5 provides an internationally coordinated regulatory framework to address the risk of financial crime, and it must be implemented in Dutch law before 10 January 2020. Additionally, the FATF recently issued its revised recommendations, clarifying how they apply to crypto services. Following up on this, the FATF is working on guidelines to ensure effective implementation of the revised recommendations in national legislation (including EU law).

## Present frameworks for consumer protection are incomplete

For consumer protection purposes, a distinction is made between investment cryptos and pure utility or payment cryptos.

### Framework for investment cryptos

The use of blockchain technology may eventually provide added value to capital markets. The technology enables rights to be traded without a central trading infrastructure, and is therefore suitable to be applied on a small scale. To regulate this market, it makes sense to align with existing European capital markets legislation. This European regulatory framework,<sup>51</sup> which forms the basis for national legislation, regulates among other things the attraction of corporate funding, the trade in financial instruments and investor protection. Applying this framework to investment cryptos is, however, currently ineffective in two ways. At present, the combination of these two forms of ineffectiveness provides an undesirable incentive to structure cryptos outside of the regulatory perimeter<sup>52</sup> as is illustrated in Figure 8.

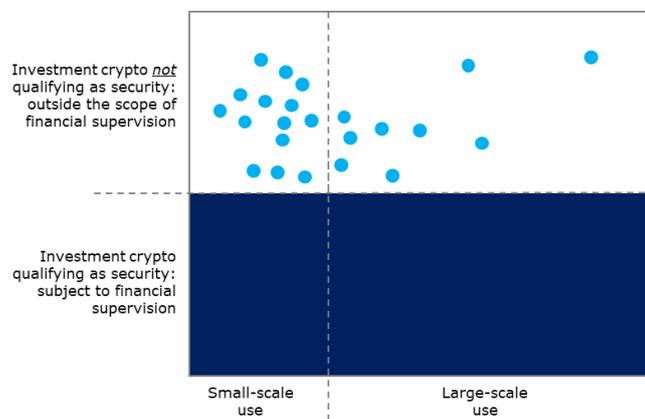


Figure 8 – Cryptos currently offered in the Netherlands fall outside the scope of financial supervision (number and size for the purpose of illustration)

### Rules are not proportionate and do not take into account the benefits of blockchain technology

Once cryptos meet the definition of security (which are financial instruments), the full set of European legislation for financial instruments will apply. This is the case, for example, if a crypto is equivalent to a transferable share or bond. In this context, there are two obstacles hampering the development of SME funding through blockchain technology:

1. In European legislation,<sup>53</sup> on which the national rules are based, the relevant exemptions for small-scale use have not been consistently applied to trading. As a result, the costs for ensuring compliance with trading laws and regulations can be disproportionately high when it concerns SME funding. This issue shares similarities with the issues concerning crowdfunding<sup>54</sup> and the call for non-bank financing that the European Commission already described in its 2014 Capital Markets Union action plan.<sup>55</sup>

<sup>51</sup> They concern directives and regulations for service provision, trade, settlement and custody of financial instruments (MiFID, MiFIR, SFD, CSD and CSDR), transparency of issuing institutions (Transparency Directive), market abuse (MAD/MAR) and collective investment (AIFM and UCITS).

<sup>52</sup> The initiatives to structure cryptos within supervision are currently insufficiently concrete, or are adjusted once the AFM points out to providers that the crypto offered may fall within the scope of financial supervision.

<sup>53</sup> These are the MiFID/MiFIR, which are quick to impose an obligation for trading to take place on a regulated market (RM) or a multilateral trading platform (MTF), as well as the related market abuse requirements under the MAD/MAR.

<sup>54</sup> European Commission, *Crowdfunding*, [https://ec.europa.eu/info/business-economy-euro/growth-and-investment/financing-investment/crowdfunding\\_en](https://ec.europa.eu/info/business-economy-euro/growth-and-investment/financing-investment/crowdfunding_en).

<sup>55</sup> European Commission, *Capital Markets Union*, [https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union\\_nl](https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union_nl).

2. Furthermore, the current regulatory framework<sup>56</sup> may also unnecessarily hamper the application of blockchain technology because it insufficiently takes into account the benefits of blockchain technology underlying cryptos with respect to clearing, settlement and custody. The use of decentral blockchain networks may enable the merger of these activities in the chain of trading, clearing, settlement and depository. This could create efficiency gains, reduce counterparty risk and lower the risk of errors in the settlement process, thereby lowering overall costs.<sup>57</sup> Under the current regulatory framework these benefits cannot be sufficiently unlocked, as it requires these activities to be separated.

*It is easy to attract non-regulated funding due to the limited scope of the regulatory framework*

Second, ineffectiveness arises from the fact that providers can easily circumvent the regulatory framework because new forms of financing such as ICOs are not adequately covered under its present scope. Both at the European and the national level, the definition of security is form-based (i.e., as a debt certificate or ownership right) rather than activity-based (i.e., attracting risk-bearing capital).<sup>58</sup> ICOs allow funding models that do not qualify as issuances of shares or bonds, and therefore allow offerors to evade corporate funding rules. For example, most ICOs concern utility cryptos – a prepaid right to access or use a provider's future services. This type of funding model, often deliberately structured in this way, does not qualify as security under the *Wft*. Consequently, the applicable rules for corporate funding do not apply and investors are not offered the same protection applicable to similar, regulated, activities.

*The number of national regimes for ICOs in other EU countries is limited*

Most EU countries do not have a national regulatory regime for ICOs in addition to the existing EU regime. Exceptions are France and Malta, which have established specific rules for investment cryptos. Outside the EU there is also no consensus about the best approach to address the risks for consumers with ICOs. Some jurisdictions have established specific regimes, but most assess on a case-by-case basis whether an ICO falls under existing capital market rules.

**An internationally coordinated regulatory framework for cryptos without a funding purpose is absent**

A broad, internationally coordinated regulatory framework for pure utility and transaction cryptos aimed at protecting consumers is also absent in Europe. Some smaller jurisdictions, such as Malta, have introduced additional regulation for trading in cryptos generally, while Germany recognises cryptos such as Bitcoin as a unit of account – and hence as a financial instrument. France, on the other hand, has decided not to introduce additional requirements for cryptos that do not have a funding purpose, to prevent such requirements from hampering innovation. In the UK, the Financial Conduct Authority (FCA), the Bank of England and the Ministry of Finance have in their joint report on cryptos not yet recommended such additional regulation. Outside Europe, regulatory regimes vary widely as well. China, for example, has banned cryptos altogether, while Japan recognises Bitcoin as a payment instrument and has set up a licensing system for crypto exchange platforms aimed at integrity, security and internal procedures.

<sup>56</sup> The CSD, the CSDR and the SFD.

<sup>57</sup> The European Securities and Markets Authority (ESMA) has acknowledged these benefits: [https://www.esma.europa.eu/system/files\\_force/library/dlt\\_report\\_-\\_esma50-1121423017-285.pdf](https://www.esma.europa.eu/system/files_force/library/dlt_report_-_esma50-1121423017-285.pdf).

<sup>58</sup> MiFID defines security as follows in Article 4.1 (44): *those classes of securities which are negotiable on the capital market, with the exception of instruments of payment, such as:*

- a) *shares in companies and other securities equivalent to shares in companies, partnerships or other entities, and depositary receipts in respect of shares;*
- b) *bonds or other forms of securitised debt, including depositary receipts in respect of such securities;*
- c) *any other securities giving the right to acquire or sell any such transferable securities or giving rise to a cash settlement determined by reference to transferable securities, currencies, interest rates or yields, commodities or other indices or measures;*

## 6 Recommendations

### From findings to two policy recommendations

Based on the analysis set out in the previous chapters, the AFM and DNB conclude the following.

1. **Chapter 3:** After its peak in early 2018 until the end of 2018, the crypto markets have shown a sharp decline in price and volume both in the Netherlands and abroad. ICOs have followed a similar trend.
2. **Chapter 4:** Cryptos carry **substantial risks**. Most prominent among them are the high risks of financial crime, general market risks and the risk of fraud for consumers. Due to the declining popularity of cryptos, the impact of these risks on Dutch consumers seems to have declined compared to the start of 2018. Cryptos do not currently pose a risk to financial stability. Besides risks, we also see **potential** for certain functional applications of cryptos and the innovative underlying technology. They can facilitate the further development of blockchain applications, such as the tokenisation of assets. Insofar as the relevant cryptos present a clear and enforceable right (as with shares and bonds), corporate funding using cryptos could eventually develop into a supplemental form of capital market funding. In addition, cryptos may contribute to making cross-border retail payments safer and faster.
3. **Chapter 5:** The cross-border nature of cryptos **necessitates international coordination** for effective national regulation. To date, only the anti-money laundering and terrorist financing rules have been adequately aligned internationally as a result of AMLD5. In respect of investment cryptos there is a European regulatory framework for capital markets, but this is inadequate. As yet, there is no European consensus on the standards that provides consumer protection in the case of exchange and custody services relating to pure utility and transaction cryptos such as Ether and Bitcoin.

These findings form our **framework for the formulation of policy recommendations**. The risks of financial crime and the substantial risks to which consumers are exposed must be addressed in an effective manner. As mentioned above, an effective approach requires international coordination, something which to date has only been achieved for financial crime. At the same time, we seek to provide adequate room for the potential of cryptos, and the innovative technology that underlies them, to further develop. This means that measures aimed at addressing risks must be proportionate.

This framework matches the **four criteria that the Dutch minister of Finance has formulated** for a new policy on cryptos:<sup>59</sup>

1. Shortcomings in consumer and investor protection must be addressed when necessary, but these measures must be proportionate.
2. The integrity of the financial system must be safeguarded.
3. The innovative technology behind cryptos must be maintained, such as the underlying cryptography and distributed ledger technology (DLT).
4. The cross-border nature of cryptos requires international coordination. After all, national rules are easy to circumvent or difficult to enforce.

Based on our findings and these four criteria, we have formulated two central policy recommendations.

**Recommendation 1:** Introduce a licensing regime under the Anti-Money Laundering and Anti-Terrorist Financing Act (*Wet ter voorkoming van witwassen en financieren van terrorisme – Wwft*) for fiat-crypto exchange platforms

<sup>59</sup> Dutch Ministry of Finance, *Kamerbrief over de ontwikkelingen rondom cryptovaluta* (8 March 2018 - in Dutch only), <https://www.rijksoverheid.nl/documenten/kamerstukken/2018/03/08/kamerbrief-over-de-ontwikkelingen-rondom-cryptovaluta>.

and crypto wallet providers, aimed at preventing money laundering and terrorist financing through crypto exchange and custody services, thereby ensuring effective implementation of the revised European anti-money laundering directive.

**Recommendation 2:** Advocate amendments to the European regulatory framework to harness the potential of blockchain technology for SME funding, and reconcile the national and European regulatory definitions of security. Adjustments are needed to make European legislation proportionate to small-scale activities to prevent it from hampering the benefits of blockchain technology. At the same time, the new financing models that have emerged with the rise of cryptos show that a broader definition of security is required at a European level to bring new forms of corporate funding under the scope of applicable laws and regulations. That is why we recommend that the national definition of security is reconciled with the broader definition in European legislation, as this will enable the AFM to bring cryptos that are comparable to securities within the scope of its supervision based on the current rules.

### Recommendation 1: introduce a licensing regime under the *Wwft*, aimed at preventing money laundering and terrorist financing through crypto exchange and custody

The AFM and DNB recommend the introduction of a licensing regime under the *Wwft*, aimed at decisively implementing the requirements imposed by AMLD5. Cryptos carry high financial crime risks, to which crypto service providers can be exposed as well as today's financial sector via their indirect exposure to such risks. Despite the waning popularity of cryptos, these risks remain significant. After all, criminals can still use cryptos to conceal the origin of their funds. These risks must be addressed effectively, which can be achieved as a result of the international coordination of countermeasures that AMLD5 provides.

#### Why opt for this form of AMLD5 implementation?

We advocate the introduction of a licensing regime aimed at restricting market access to those parties that demonstrably satisfy the AMLD5 requirements. Compared to a registration regime, the key benefit of a licensing regime is that it allows pre-market entry assessment to establish whether parties satisfy or will be able to satisfy the AMLD5 requirements. As a consequence, preventing the relevant risks will not primarily be dependent on ongoing *Wwft* supervision, which is also prescribed by AMLD5. In addition, parties that fail to satisfy the requirements may lose their licence and, therefore, market access. A registration regime is in this respect less effective, because it only allows for a limited substantive assessment of these parties. However, supervision based on a licensing regime may require more resources than supervision based on a registration regime.

The AFM and DNB recommend bringing the licensing regime under the *Wwft*, an act specifically designed to prevent money laundering and terrorist financing. Many financial institutions are subject to a licensing regime under the *Wft*. However, supervision based purely on the *Wwft* and aimed at the prevention of money laundering and terrorist financing does not sufficiently serve the *Wft* objectives, i.e. consumer protection and financial stability. The *Wft* requirements for sound and ethical operational management could, however, be indirectly incorporated into the *Wwft* to ensure effective AMLD5 implementation. This offers some opportunities to tighten supervision if necessary, but only insofar as imposing these *Wft* standards can contribute to the *Wwft*'s underlying objective: prevent abuse of the financial system for money laundering or terrorist financing purposes.

For now we recommend limiting the licensing regime to fiat-crypto exchange platforms and crypto wallet providers, in line with AMLD5. Money laundering and terrorist financing can be tackled most effectively for these services that create the connection between fiat money and cryptos. By restricting the *Wwft* licensing regime to such services, we intend to introduce a proportionate measure that addresses the largest integrity risks for the financial sector while leaving room for further technological innovation. This is a consideration that is also prevalent in AMLD5. Nonetheless, the scope of supervision may need to be expanded in the future, for example as a result of further amendments to European legislation based on FATF recommendations.

### Why not introduce a licensing regime that also offers consumer protection?

Within the scope of financial supervision, the supervisory authorities have instruments at their disposal to deal with fraud or suspected fraud related to cryptos.<sup>60</sup> Outside financial supervision, general criminal law applies. The legislature is in principle free to incorporate consumer protection requirements into a licensing regime for the exchange and custody of cryptos. However, we recommend not imposing any such additional national requirements that go beyond those needed for effective implementation of AMLD5. Partly because of the cross-border nature of cryptos, additional national legislation aimed at consumer protection could at the moment not significantly contribute to reducing risks for consumers in the Netherlands. Consequently, the costs of supervision would outweigh the benefits. That is why we believe it is more effective to monitor developments in the crypto markets, to contribute to consumer risk awareness and to contribute actively to an internationally coordinated framework that addresses the most significant risks (e.g., through ESMA and EBA). The following considerations apply.

- **An internationally coordinated framework is absent:**  
Currently there is no clear international consensus on the consumer protection standards that should be adopted. Service providers can easily circumvent unilaterally imposed national rules by simply moving abroad. Also, jurisdictions with less stringent regimes may attract undesirable propositions (see Chapter 5).
- **Less pressing need to establish additional rules:**  
Compared to early 2018, consumer interest in cryptos sharply declined in the Netherlands. Moreover, Dutch consumers seem to be aware of the risks associated with cryptos. As a result, the inherent risks of cryptos for Dutch consumers seem to have declined. Consequently the need to establish additional rules regarding consumer protection has become less pressing.
- **The effect of national regulation is limited:**  
Exchanging and storing cryptos exposes customers to risks. A logical approach to addressing such risks would be to regulate the central platforms on which cryptos are exchanged and stored. However, the largest platforms, which are also used by Dutch consumers,<sup>61</sup> are located outside the Netherlands. Addressing these risks effectively therefore requires an approach that goes beyond national borders, given that the Dutch legislature is unable to subject these foreign platforms to additional rules directly. The number of Dutch-based central platforms is very small, and their trading volumes are negligible compared with the largest platforms globally (see Chapter 3). The number of Dutch-based providers of

<sup>60</sup> The AFM recently imposed an order subject to penalty on Dutch Crypto Mining B.V. (DCM), an entity that failed to meet the AFM's request for information. As a result, the AFM could not verify legal compliance. See: <https://www.afm.nl/nl-nl/nieuws/2018/okt/lod-dcm> (in Dutch only).

<sup>61</sup> This emerged from surveys conducted by the AFM among Dutch crypto holders in February and October 2018. See AFM, *Investeren in crypto's in Nederland: Marktonderzoek onder Nederlandse consumenten* (26 July 2018 – in Dutch only), <https://www.afm.nl/crypto>; and *Cryptobezitters in Nederland: stand van zaken, update van het marktonderzoek onder Nederlandse consumenten* (December 2018 – in Dutch only), <https://www.afm.nl/crypto>.

exchange or custody services is limited, not exceeding 30. These mostly offer direct trading services, meaning the provider trades for own account and assumes the risks of any hacks.

- **The general market risk remains:**

National regulation is unable to address the general market risk associated with cryptos adequately. In particular for decentralised cryptos such as Bitcoin, it is impossible or virtually impossible to determine the intrinsic value. Consequently, the prices of these cryptos are highly volatile and the cryptos mainly serve speculative purposes. National regulation of custody and exchange for these cryptos is unlikely to change this.

Clear communication about the scope of *Wwft* supervision for crypto service providers is essential to avoid misguided expectations on the part of consumers and providers. For example, a provision could be included in the *Wwft*, stipulating that the supervisory authority may attach conditions to granting a licence. This could be used to prevent supervised crypto service providers from using the limited scope of supervision for advertising purposes.

## Recommendation 2: amend the European regulatory framework for corporate funding

We recommend advocating amendments to the European regulatory framework for corporate funding, which should create opportunities for developing SME funding using blockchain technology. Pending such structural amendments, we recommend bringing the restrictive Dutch definition of security in line with the broader definition used in European legislation. Imposing national measures on cryptos offered outside the scope of financial supervision is not advisable for now.

### What amendments should be made to the European regulatory framework?

1. The application of blockchain technology may eventually facilitate small-scale trading in financial instruments (see Chapter 5). We therefore recommend adopting a more proportionate approach to the rules applicable to trading in financial instruments<sup>62</sup> that is in line with the philosophy underpinning the exemptions in European legislation (e.g., with respect to public share offerings). These aim to ensure that small-scale offerings, offerings to a restricted circle and offerings to professionals are not subject to disproportionately onerous requirements. Because exempted activities are not subject to supervision, they are generally susceptible to abuse. Accordingly, it is important to balance the interest of more accessible trading carefully with the risk of abuse.
2. In addition, legislative amendments<sup>63</sup> are required to remove unnecessary obstacles to the application of blockchain technology underlying those cryptos that qualify as a security. Requirements relating to clearing, settlement and custody must offer flexibility to merge these activities with blockchain technology.
3. With respect to the definition of security,<sup>64</sup> we recommend creating the necessary room in European legislation to allow supervisory authorities to adopt a substance-over-form approach when qualifying existing or new corporate funding activities. The new funding models that have emerged with the rise of ICOs show that there is limited room to apply capital market requirements under the current national and European regulatory frameworks. As a consequence, service providers can simply set up their ICOs without being subject to supervision, at relatively low costs.

<sup>62</sup> These are the MiFID/MiFIR, which are quick to impose an obligation for trading to take place on a regulated market (RM) or a multilateral trading platform (MTF), as well as the related market abuse requirements under the MAD/MAR.

<sup>63</sup> The CSD, the CSDR and the SFD.

<sup>64</sup> The definition of security as included in Article 4:1(44) of the MiFID.

### Adjusting the scope of the current definition of security in national legislation offers some flexibility

We recommend bringing the national definition of security in line with the definition used in European legislation. This will provide some flexibility to bring specific investment cryptos under the scope of supervision that is based on current applicable requirements. This amendment is illustrated in Figure 9.

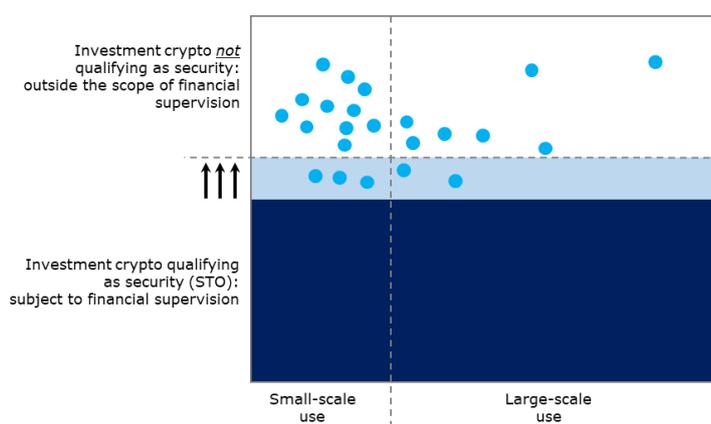


Figure 9 - Bringing the definition of security in line with the broader European definition in MiFID will provide more flexibility to bring specific investment cryptos under the scope of supervision.

Supervisors are working hard, primarily through ESMA, to harmonise their approaches towards investment cryptos.<sup>65</sup> Given the possible future consensus at a European level on the qualification of specific investment cryptos as security under current European legislation, the AFM should preferably have the same discretion to interpret the meaning of security as other European supervisors. The European definition lists three categories of security, with the words "such as"<sup>66</sup> as a crucial qualification. This offers some flexibility to classify investment cryptos as security if their characteristics are comparable with those examples listed in the article, i.e. a share or bond. While the national definition is based on European legislation, it merely gives an exhaustive list of the three categories and does not incorporate the words "such as". This restricts the AFM's flexibility to interpret the term security in line with European legislation.

While this amendment will not subject all investment cryptos in the Netherlands to supervision, we nevertheless believe it is desirable to create a level European playing field. We realise that as a result of this measure disproportionate European rules may become applicable to some investment cryptos. However, in our view, harmonised European supervision is of overriding importance.

### Why not introduce additional national rules governing crypto offerings outside the scope of financial supervision?

The Dutch legislature can only regulate nationally those crypto offerings that are currently not subject to supervision. This is because cryptos that meet the definition of security (and that are therefore subject to financial supervision) are already regulated at a European level. We are, however, of the opinion that a separate

<sup>65</sup> ESMA has set up a task force dealing with ICOs which is expected to issue its recommendations in late 2018.

<sup>66</sup> The *Wft* defines security as follows:

- a. a transferable share or other equivalent transferable security or right other than an apartment right;
- b. a transferable bond or other transferable securitised debt; or
- c. any other transferable security issued by a legal entity, partnership or institution that entitles the holder to acquire a security referred to under a. or b. above by exercising the rights attached to it or through conversion, or that gives rise to cash settlement;

national regime for cryptos falling outside the definition of security does relatively little to mitigate the risks to which investors are exposed. The following considerations apply.

- **The effect of national legislation is limited in the absence of an internationally coordinated framework:**

Even with a proportionate regime, the risk remains that providers circumvent national supervision by simply relocating abroad (see Chapter 5). This will hamper enforcement of national rules. Such a scenario is realistic, given the wide variation in laws and regulations governing ICOs within Europe.

- **The future development of ICOs is unclear:**

National rules pertain to those ICOs that do not offer clear and enforceable right to investors. They only receive a prepaid right to access or use a service or product that is still to be developed. Such ICOs were mainly popular during the peak of crypto popularity, when investors primarily speculated on rapid price increases. At the time, unfavourable terms and conditions were of lesser relevance. However, in the absence of any speculative motives, investors are likely to become more critical of the terms and conditions they are offered. Based on current developments in the ICO market described in Chapter 3, the future of this type of ICO is uncertain. It is unclear whether investors will remain interested in ICOs without a clear and enforceable right to future returns, now that the popularity of cryptos has declined.

- **Designing a proportionate framework is complex:**

It is unclear how proportionate regulation should be defined in the rapidly changing crypto markets. Designing such rules will take time, and is expected to be complex due to the relationships with existing legal concepts, particularly with respect to the definition of security. This will increase the cost of regulation.

## 7 Concluding remarks

Setting up a national *Wwft* licencing regime aimed at preventing money laundering and terrorist financing via crypto exchange and custody requires that some aspects of it are developed in more detail. For example, the need for a transitional regime and agreements regarding foreign entities targeting the Dutch market need to be further investigated. The application of *Wwft* standards must be specified in more detail to counter anonymous transactions and the means to effect them. These standards must also provide sufficient scope for the application of innovative technologies that can help to adequately perform *Wwft* requirements when performing crypto services, such as transaction monitoring and customer due diligence. Finally, it is important that communication about the limitations of *Wwft* supervision is clear to help consumers perceive risks accurately, and to ensure that they take adequate countermeasures themselves.

Regardless of the recommendations in this report, and any additional supervisory activities ensuing from them, the AFM and DNB will continue to monitor developments in the crypto markets. Although the markets have seen a sharp decline in terms of volume and price, they are still evolving rapidly. It cannot be ruled out, therefore, that the popularity of cryptos may surge again. This could have an impact on the nature and size of risks and opportunities. We remain alert to the risks related to cryptos, and will continue to issue warnings when necessary. As long as the risks regarding consumer protection and financial crime continue to be significant, we will remain alert to regulated providers of crypto-based financial products and services. For example, we will maintain our critical stance towards regulated institutions that offer or intend to offer crypto wallets, or facilitate trading in non-regulated cryptos such as Bitcoin. Meanwhile, we will continue our research and experiments with regard to cryptos and the underlying technology.

The AFM and DNB will also examine how additional supervisory requirements, if needed, can be designed in an effective and proportionate manner. This is of particular importance since further tightening of supervision in the future cannot be ruled out. For example, in addition to a renewed popularity of cryptos, it may well be the case that additional standards can be imposed and enforced effectively when new international rules or standards are created. At the same time, we seek to give the innovative technology underlying cryptos sufficient room to develop. We therefore welcome an ongoing dialogue with market participants, for instance through the InnovationHub and our joint regulatory sandbox (*Maatwerk voor Innovatie*). We will also continue to contribute actively to international policy-making with respect to cryptos.

# Appendices

## 1. Overview of international initiatives

- The **G20** acknowledges that technological innovation underlying crypto-assets has the potential to improve the efficiency and inclusiveness of the financial system and the economy in general. However, there are still issues with respect to consumer and investor protection, market integrity, tax evasion, money laundering and terrorist financing. At some point, cryptos may also have implications for financial stability. It is against this background that the G20 calls on international standard-setting bodies (SSBs) to continue their monitoring of cryptos and their risks, and to assess multilateral responses as needed.<sup>67</sup>
- According to the **Financial Stability Board (FSB)** cryptos do not pose a significant risk to global financial stability at this time. To support monitoring and timely identification of emerging financial stability risks in a rapidly evolving market, the FSB will identify metrics and any data gaps. It has set up a framework for this purpose in collaboration with the **Committee on Payments and Market Infrastructures (CPMI)**. The FSB acknowledges that cryptos raise a number of issues around consumer and investor protection and around their use to shield illicit activity, money laundering and terrorist financing. At the same time, the technologies underlying them have the potential to improve the efficiency and inclusiveness of both the financial system and the economy. Given the global nature of these markets, the FSB believes that further international coordination is warranted.<sup>68</sup>
- Global, digital access to cryptos is easy and hence creates opportunities for money laundering and terrorist financing, according to the **Financial Action Task Force (FATF)**. In October 2018, the FATF adopted changes to its recommendations that clarify how the recommendations apply to crypto services providers, using a broader definition than that applied in AMLD5 and also encompassing crypto-crypto exchange platforms. The FATF will prepare guidance to help countries implement the revised recommendations effectively.<sup>69</sup>
- In its Fintech Action Plan, the **European Commission** describes how cryptos and the underlying blockchain technology offer opportunities for financial markets and infrastructures, but that their use at the same time presents risks. The risk of money laundering and terrorist financing in particular is regarded as significant to highly significant. The scope of the anti-money laundering directive (AMLD5) was recently extended to also apply to two categories of crypto services providers, i.e. crypto wallet providers and crypto exchange platforms.<sup>70</sup>
- In its Roadmap to Fintech report, The **European Banking Authority (EBA)** explains that it will conduct work on the regulatory mapping of the current requirements for cryptos in coordination with the **European Insurance and Occupational Pensions Authority (EIOPA)** to assess whether the current regulatory framework is appropriate.<sup>71</sup>

<sup>67</sup> G20, *Communiqué* (March 2018), [https://www.mof.go.jp/english/international\\_policy/convention/g20/180320.pdf](https://www.mof.go.jp/english/international_policy/convention/g20/180320.pdf).

<sup>68</sup> FSB, *FSB Chair's letter to G20 Finance Ministers and Central Bank Governors* (18 March 2018), <http://www.fsb.org/wp-content/uploads/P180318.pdf>. FSB, *Crypto-asset markets: Potential channels for future financial stability implications* (10 October 2018), <http://www.fsb.org/wp-content/uploads/P101018.pdf>.

<sup>69</sup> FATF, *Regulation of virtual assets* (19 October 2018), <http://www.fatf-gafi.org/publications/fatfrecommendations/documents/regulation-virtual-assets.html>.

<sup>70</sup> European Commission, *FinTech Action plan* (8 March 2018), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0109>.

<sup>71</sup> EBA, *EBA publishes its Roadmap on FinTech* (15 March 2018), <https://www.eba.europa.eu/-/eba-publishes-its-roadmap-on-fintech>.

- The **European Securities and Markets Authority (ESMA)** has set up a Task Force to formulate an appropriate response to cryptos and ICOs. It expects to issue its advice to the European Commission by the end of 2018.
- With the Landau report, **France** has adopted the position that cryptos do not have to be regulated, and that they may develop within their own virtual environment. Prevention of contagion of the financial system is a priority, and regulatory efforts will therefore focus on the interaction between cryptos and fiat money. France will develop an opt-in visa regime for ICOs, under which providers can opt for voluntary regulation. This requires providers to submit an application for assessment to the French market authority (AMF). After approval, the offerors will be included on a whitelist of ICOs with a visa. The requirements for a visa include having a legal entity with its registered office in France, and mechanisms to safeguard and monitor the allocation of the capital raised. Information in the accompanying white paper must be accurate, clear and transparent, and should list the relevant risks to investors.
- In **Germany**, the BaFin generally regards cryptos as a unit of account and therefore as financial instruments. Entities and persons wishing to facilitate cryptos acquisitions, or to engage in commercial crypto trading or preform exchange services on online platforms must apply for a licence with BaFin. In February 2018, BaFin published information on its assessment of ICOs and cryptos. ICOs are assessed on a case-by-case basis to determine whether they qualify as financial instruments or security.
- In the **United Kingdom**, the HM Treasury, the FCA and the Bank of England (BoE) jointly set up a Crypto assets Taskforce. The Taskforce issued its report in October 2018,<sup>72</sup> proposing a robust implementation of AMLD5 and consultations to find an approach to money laundering and terrorist financing that goes beyond the requirements set out in AMLD5. The FCA wishes to clarify when investment crypto are subject to supervision, and the government plans to hold a consultation about the possibility of bringing ICOs under supervision. Given the challenges associated with the supervision of transaction cryptos, a separate consultation will be held in 2019. The Taskforce stresses the importance of an internationally coordinated response to cryptos.
- **Switzerland** wishes to facilitate parties with legitimate innovations to navigate the regulatory landscape and launch projects that are in accordance with Swiss law. ICOs are assessed on a case-by-case basis. To determine which laws and regulations are applicable, the regulator will look at an ICO's economic function and purpose. Switzerland applies a similar categorisation of cryptos as the AFM and DNB in this report (investment, transaction and utility cryptos).
- **Malta** has developed national legislation to regulate the exchange and custody of cryptos, and has created a regulatory framework for ICOs and blockchain-related services. ICOs that do not qualify as a financial instrument must register with the Maltese supervisory authority. These ICOs must meet several requirements aimed at transparency, and the whitepaper accompanying the ICO must include

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<sup>72</sup> MH Treasury, FCA and BoE, *Cryptoassets Taskforce: final report* (29 October 2018), <https://www.gov.uk/government/publications/cryptoassets-taskforce>.

standardised information. **Gibraltar** developed specific laws and regulations for the promotion, distribution and sale of cryptos.<sup>73</sup>

- The **United States** Securities and Exchange Commission (SEC) repeatedly stated that it regards most ICOs as security. US case law has a broad, principle-based approach to the concept of security. Consequently, the SEC regards most ICOs as security and subject to its supervision. The US supervisory authorities actively combat fraudulent ICOs and other breaches of financial supervision regulation.<sup>74</sup>
- In **Japan**, cryptos fall under the rules for electronic money in the Payment Service Act. Following the regulation of exchange platforms, the Japanese supervisory authority received more than 100 licence applications and expanded its supervisory capacity. Japan has set requirements for crypto exchange platforms with respect to their integrity, security and internal procedures. This applies both to existing and new exchange platforms. All exchange platforms are subjected to an on-site inspection by the supervisory authority before they are granted a licence. Japan also developed basic guidelines for ICOs.
- In **China** it has been illegal to exchange legal tender for cryptos and vice versa since September 2017. ICOs are prohibited, as are all other crypto-related activities such as offering, buying, selling and exchanging them. Foreign crypto exchanges have also been excluded from the Chinese market since early 2018. China has blocked all websites related to crypto trade or ICOs.
- After an initial period of reservation, **South Korea** is now taking steps to regulate the crypto market. Since July 2018, it regards exchanges as regular financial enterprises. This means they are entitled to use banking services. Since October 2018, local banks may offer virtual bank accounts on exchanges to facilitate crypto trading for customers, provided that all AML/KYC requirements have been complied with. South Korea is currently investigating the option of legalising ICOs and crypto trading.

<sup>73</sup> GFSC, *Distributed Ledger Technology Regulatory Framework*, <http://www.gfsc.gi/dlt>.

<sup>74</sup> CNBC, *State regulators expand 'Operation Cryptosweep' to 200 initial coin offerings* (28 August 2018), <https://www.cnbc.com/2018/08/28/state-regulators-expand-operation-crypto-sweep-to-200-initial-coin-offeringinvestigations.html>.

## 2. Overview of crypto-related activities

### Creation and maintenance

- a) **Creating cryptos that are necessary for the functioning of a blockchain network (native cryptos).**

Creating cryptos such as Bitcoin or Ether with which transactions can be settled in a blockchain network. These cryptos are essential to the functioning of the network because they are used as compensation for the validation of transactions in the network and the required computational capacity (contrary to non-native cryptos that function on an existing blockchain). Native cryptos can be created by an accountable party in exchange for payment (Ripple or Stellar), or gradually brought into circulation by means of an algorithm (mining) without a party accountable for their creation.
- b) **Creating cryptos that are not necessary for the functioning of a blockchain network (non-native cryptos).**

Offering cryptos through a smart contract operating on an existing blockchain network, without such cryptos being necessary for the functioning of this network. These cryptos are also referred to as tokens and are offered by a central party, often through ICOs.
- c) **Offering cryptos without compensation (airdrops).**

Offering cryptos to users for free, for example to create awareness, an active market or community, and possibly to raise capital in the future.
- d) **Assisting a party with offering cryptos.**

Examples include large law firms or consultants that provide advice on the offering of cryptos or the white paper accompanying an ICO, assistance with marketing, or data validation services.
- e) **Maintaining crypto networks (mining).**

Contributing to the validation of transactions in a blockchain network, e.g. by creating crypto blocks with a cryptographic encryption in exchange for cryptos as is the case with Bitcoin (mining), or by approving proposed amendments to the network's operational rules in accordance with the consensus model of the crypto in question.
- f) **Operating a collective crypto mining business.**

Operating a business that has crypto mining as its core business, in which participants can buy rights to the proceeds of the business' mining activity.

### Transactions

- a) **Accepting cryptos as a medium of exchange for goods and services**

Acceptance of cryptos by a supplier of goods or services. The buyer delivers cryptos to the seller (i.e., legal retailer) in exchange for the goods and services. Cryptos are not converted to fiat money in these transactions.
- b) **Effecting crypto transactions for third parties without conversion to fiat money.**

The party effecting the transaction receives cryptos on behalf of its customers/retailers and subsequently sends cryptos to the intended recipient. Contrary to fiat money, peer-to-peer transfer of cryptos is possible. This activity therefore encompasses services that make the transfer more user-friendly (e.g., the party effecting the transaction sends Bitcoin and the intended receiver receives Bitcoin) or that facilitate crypto conversion (e.g., the party effecting the transaction sends Bitcoin and the intended receiver receives Ether). The following activities fall into this category:

  - i. issuing crypto payment cards or instruments such as apps, visa cards, prepaid cards;

- ii. facilitating transactions for third parties (exchanges and platforms also facilitate transactions between cryptos); and
  - iii. facilitating money transfers.
- c) **Effecting crypto transactions for third parties with conversion to fiat money.**  
Transactions in which the sender transfers cryptos and the recipient receives fiat money or vice versa. In both cases there is an intermediary party effecting the transfer. Such intermediary parties include service providers that enable customers to pay for goods or services with cryptos on retailers' websites.
- d) **Effecting transactions in fiat money using cryptos as a means of transport.**  
In this type of transaction, payments in fiat money are processed using cryptos. For example, someone purchases a product from a foreign retailer and pays in their local fiat money. The fiat money is then exchanged for cryptos at a local exchange. In the retailer's country, the cryptos are exchanged for the retailer's local fiat money and transferred to the retailer. If the entire chain were to be executed by a single party, this would constitute an activity subject to a licensing requirement (payment services). In this case, the chain has been cut into four parts that individually may not be subject to a licensing requirement.

### Trade and exchange

- a) **Offering a multilateral trade or exchange facility for cryptos.**  
Offering a trading facility, whereby crypto transactions take place under the control of the platform and where users often have direct access to the platform (crypto exchange). The buy and sell intentions of third parties with respect to cryptos are brought together to create an agreement in accordance with the rules of the platform, without the platform being a counterparty to the transactions that are effected.
- b) **Offering a peer-to-peer bulletin board for cryptos.**  
A decentral platform announcing the buy and sell intentions of third parties with respect to cryptos (an electronic bulletin board). All transactions are effected on a peer-to-peer basis, without intervention by the platform.
- c) **Trading and exchanging cryptos for own account.**  
Buying or selling cryptos for own account in exchange for other cryptos or fiat money (all profits and losses are for the trader's account). These traders can also operate as an intermediary between a trading platform and the final buyer or seller, enabling private individuals to easily buy and sell cryptos. The platform provider sets the buy and sell prices.
- d) **Offering crypto conversion services in exchange for cash (crypto ATMs).**  
Offering crypto ATMs for e.g. Bitcoin, which allow the conversion of cash to cryptos and vice versa.

### Storage

- a) **Providing crypto custody services.**  
Managing and safeguarding cryptos in wallets on behalf of customers. Control over the cryptos is transferred to the platform provider. Cryptos can be stored and managed in single-customer wallets or in shared wallets, with the platform provider managing customers' ownership rights in its own administrative system.
- b) **Offering non-custodial crypto wallets.**  
Offering hardware or software tools with which customers can store the private keys associated with their cryptos. Customers themselves remain responsible for the safekeeping of their cryptos. These wallets can be offered in various forms, e.g. online wallets, paper wallets, hardware wallets and software wallets.

c) **Offering fiat custody services for crypto trading.**

Providing accounts in which customers deposit fiat money, which can only be used for crypto trading with the account provider. This facilitates the quick and easy purchase and sale of cryptos.

**Offering information services**

a) **Offering a wallet information service.**

Offering consolidated information about cryptos held by the customer (possibly combined with other financial information).

**Offering advice**

a) **Publishing analyses regarding cryptos.**

Offering, publically or otherwise, analyses, insights, research results, projections or other general recommendations regarding cryptos (e.g., by consultants, celebrities promoting certain cryptos or bloggers publishing analyses).

b) **Offering personal advice regarding cryptos.**

Offering tailored advice to customers regarding the benefits of executing one or more specific crypto transactions.

**Functional use**

a) **Holding cryptos for DLT application use.**

A party holding crypto positions without the intention to trade but with the aim of facilitating the use of distributed ledger technology (DLT). In some situations, cryptos are required as a means to effect transactions and execute smart contracts on a public blockchain network. The cryptos are used to pay the transaction costs.

**Insurance**

a) **Insuring cryptos or crypto balances.**

Cryptos and crypto balances can be insured against loss, as is the case with all possessions. Exchanges can, for example, indicate that they are insured against loss resulting from hacking, physical theft and fraud by staff members.

**Lending**

a) **Lending in cryptos.**

Offering lending agreements to third parties whereby credit is provided in cryptos or the credit recipient must effect transactions in cryptos. Examples include:

- short spot hedging;
- market making; and
- additional working capital.

## Derived products

a) **Offering exchange-traded notes (ETNs).**

Offering an exchange-traded note (ETN), with the ETN tracking a crypto-based index (i.e., the ETN payment is linked to the performance of the crypto index). Contrary to exchange-traded funds, tracked crypto assets are not held on the offeror's balance sheet. Insofar as these products are offered in or from the Netherlands, they are subject to the AFM's supervision.

b) **Acting as an alternative investment fund manager (AIFM) for crypto AIFs.**

Managing one or more alternative investment funds (AIFs) that invest in cryptos. Unless they are exempted, AIFMs fall under the AFM's supervision with respect to the *Wwft* and the *Wft*.

c) **Offering futures and contracts for difference (CfDs).**

Offering futures or CfDs with cryptos as the underlying value. A crypto future is a tradable, standardised futures contract based on going long or short on the crypto's price performance with a fixed term to maturity. A CfD is a contract with which the investor agrees to pay or receive the difference arising from the crypto's price performance. Futures are common in the professional segment and CfDs in the retail segment. Insofar as these products are offered in or from the Netherlands, they are subject to the AFM's supervision.