

## Tackling the challenges of crypto-assets – the state of play with regulation

*Since the first Bitcoin block was mined in 2009, thousands of different crypto-assets have been created. This cryptosystem has increasingly attracted public attention in recent years. A series of scandals, spectacular bankruptcies and crises have exposed the system as a source of potential risk. Despite the general interest in the cryptosystem, it is a small, largely self-contained niche when compared with the traditional financial system, which means that – at least for the time being – it is fairly unlikely that crises in the cryptosystem could pose a threat to financial stability.*

*In terms of preventive regulation, however, competent authorities worldwide are faced with the question of how to deal with crypto-assets with a view to limiting potential future risks to financial stability. Regulatory approaches are generally guided by the principle of “same activity, same risk, same rules” – in other words, focusing on the economic function of an activity, irrespective of the technological means used. At the same time, regulation should be formulated in such a way that it does not hinder innovation – and the technology underlying the cryptosystem certainly presents an opportunity to make the financial system more efficient. In addition, regulation should take account of the fact that crypto-assets can vary in their design and function.*

*With regard to the cryptosystem, the principle of “regulate and contain” has now become established: first, the cryptosystem itself should be regulated, and second, potential contagion risks between the cryptosystem and the traditional financial system should be contained.*

*In terms of regulating the cryptosystem, the European Union (EU) has taken a major step forward and adopted a comprehensive rulebook, the Markets in Crypto-Assets Regulation (MiCAR). MiCAR directly addresses cryptosystem participants, including issuers of crypto-assets and providers of crypto-asset services. In future, these participants will be required to comply with a number of rules designed to help protect investors and keep potential risks in check.*

*In a move to contain contagion risks, the Basel Committee on Banking Supervision (BCBS) has developed an internationally harmonised standard for banks’ exposures to the cryptosystem. Banks are expected to comply with this standard when they take on exposures to crypto-assets. For example, the standard defines capital requirements geared towards the risk posed by different types of crypto-assets. Overall, the standard is designed to ensure that banks are protected as well as possible against risks from the cryptosystem even if they have taken on direct exposures.*

*The aforementioned regulatory initiatives have established initial guard rails. But the cryptosystem is rapidly evolving, meaning that what is a robust regulatory framework today might already be showing cracks tomorrow. With that in mind, both MiCAR and the Basel standard are already being examined to determine the extent to which provisions need to be adjusted to keep up with new developments. Overall, crypto-assets are thus likely to remain firm fixtures on the agendas of international, European and national regulatory bodies for years to come.*

## ■ Introduction

*Idea behind crypto-assets is nothing new*

When the concept of Bitcoin was made public in a November 2008 paper authored by the pseudonymous Satoshi Nakamoto, this marked a critical juncture on the path to a new, digital form of money.<sup>1</sup> Ever since the 1980s, if not before, computer specialists and idealists had been attempting to bring together the internet, cryptography and money. Their aim was to develop digital money that everyone could use anytime and anywhere, free from government control.

*Cryptosystem is constantly evolving*

Today, there are thousands of crypto-assets besides Bitcoin, and it is no longer just specialists who engage with crypto-assets. A very large number of participants with different backgrounds now operate in the various sectors of the cryptosystem: people living in regions lacking a sufficient traditional financial infrastructure, small investors who want to see how the cryptosystem works, speculators hoping to make a quick profit and criminals relying on the supposed anonymity of the cryptosystem to launder money or engage in other illegal activities. Traditional financial institutions are also operating in the cryptosystem, investigating, for example, what kind of efficiency gains the underlying distributed ledger technology (DLT)<sup>2</sup> might deliver.<sup>3</sup>

*Cryptosystem poses risks*

Given how rapidly the cryptosystem is evolving, possible risks and regulatory implications must be considered. The cryptosystem itself is a potential source of various risks that can also affect the traditional financial system. For example, it is in many respects highly concentrated: the two largest crypto-assets, Bitcoin and Ether, account for just under 70% of market capitalisation.<sup>4</sup> Trading in crypto-assets is also concentrated on a small number of platforms. At the same time, liquidity in the system depends on a small number of stablecoins – crypto-assets that are backed by traditional assets.<sup>5</sup> In the event of a run on a stablecoin, the reserves of traditional assets backing it could open up a channel of contagion between

the cryptosystem and the traditional financial system. There is also a danger of stablecoins increasing the risk of currency substitution in regions of the world where there is a lack of established financial infrastructure or confidence in monetary stability.<sup>6</sup> In addition, the cryptosystem often involves high leverage, with loans mostly secured by uncovered and thus volatile crypto-assets. On top of this, market structures are complex and opaque.

The risks inherent in the cryptosystem may well take on a systemic dimension, which raises the question of the extent to which the traditional financial system could also be affected. The size of the cryptosystem is one factor that plays a role in the risk it poses to the traditional financial system. When compared with the traditional financial system, the cryptosystem is actually little more than a niche. However, the past has shown that even small market segments can lead to major crises. What is more important than relative size is the fact that the cryptosystem and the traditional financial system have so far barely interacted with each other. Most of the channels through which crises in the cryptosystem could affect the traditional financial system are therefore of little relevance today. This is a snapshot, however – the risks emanating from the cryptosystem will depend on how it evolves over time.

*Risks to traditional financial system so far limited*

When considering a preventive approach, regulators are therefore faced with the question of how they should treat the cryptosystem. A fairly simple method would be to prohibit all activities related to crypto-assets, at least in one's own jurisdiction. Alternatively, the cryp-

*Various approaches to addressing risks posed by crypto-assets*

<sup>1</sup> See, for example, Deutsche Bundesbank (2021a).

<sup>2</sup> Characterised by its decentralised data storage, DLT is the technology on which the blockchain is based.

<sup>3</sup> See, for example, Deutsche Bundesbank (2021b or 2023).

<sup>4</sup> See <https://coinmarketcap.com/charts/>

<sup>5</sup> As the largest stablecoin (measured by market capitalisation), Tether accounts for just over 70% of trading on the largest platforms; see <https://www.theblock.co/data/crypto-markets/spot/share-of-trade-volume-by-pair-denomination>

<sup>6</sup> See Financial Stability Board (2023a).

tosystem could be left to itself, with the only measures taken being those to ensure that the traditional financial system remains unaffected by potential crises. The third and final option would be to regulate the cryptosystem to ensure its stability, too, and to protect investors and consumers.

A ban on all activities related to crypto-assets would constitute a significant intervention by the government. Moreover, a ban could mean that it takes longer for beneficial innovations to catch on, if they catch on at all.

To protect the traditional financial system from adverse developments in the cryptosystem, a containment strategy could also be pursued. Regulators would focus on limiting the links between the cryptosystem and the traditional financial system. Crises in the cryptosystem would therefore not pose a direct threat to general financial stability.

However, there are also grounds for considering regulation of the cryptosystem itself. First, an unregulated cryptosystem would take zero account of important concerns, including consumer protection and money laundering prevention. Second, the possibility of the cryptosystem expanding beyond its niche over time and becoming a relevant part of the financial system cannot be ruled out. And third, risks traditionally associated with financial services do not usually disappear simply because the services are carried out by other technological means. For this reason, “same activity, same risk, same rules” is a guiding principle for establishing a regulatory framework – where an activity has an economic function that has an equivalent in the traditional financial system and is thus exposed to the same risk, it should be subject to the same regulation.<sup>7</sup> Moving activities to the cryptosystem must not be a way of circumventing regulation.

Regulating the cryptosystem itself is therefore a key component in dealing with crypto-assets. Against this background, national, European

and international bodies have decided to establish minimum standards for the regulation of cryptosystems. In the EU and Germany, regulatory measures aim to provide scope for innovation through a clear framework whilst at the same time minimising risks to the financial system and ensuring consumer protection.

Looking at established banks, the BCBS<sup>8</sup> has decided to treat crypto-assets within the traditional regulatory framework for the banking system in order to contain contagion risks. Overall, regulators are thus following the “regulate and contain” approach mentioned previously.

The following sections provide an overview of the main initiatives to regulate the cryptosystem itself and to regulate banks’ exposure to crypto-assets.

## Regulating the cryptosystem: the EU Markets in Crypto-Assets Regulation (MiCAR)

The EU Markets in Crypto-Assets Regulation (MiCAR)<sup>9</sup> directly addresses cryptosystem participants.

The European Commission presented the corresponding legislative proposal on 24 September 2020 as part of the Digital Finance Package.<sup>10</sup> In addition to the proposal on MiCAR, the package included, amongst other things, the Digital Operational Resilience Act (DORA),<sup>11</sup> a proposal for a pilot regime for market infra-

*MiCAR – a harmonised European legal framework for crypto-assets*

<sup>7</sup> See Financial Stability Board (2023), p. 3.

<sup>8</sup> The task of the BCBS is to establish global standards for the prudential regulation of banks.

<sup>9</sup> Regulation (EU) 2023/1114 of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 (text with EEA relevance).

<sup>10</sup> See European Commission (2020).

<sup>11</sup> Regulation (EU) 2022/2554 of 14 December 2022 on digital operational resilience for the financial sector and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014, (EU) No 909/2014 and (EU) 2016/1011.

### Dates of application – an overview

Provisions	Applicable from
Asset-referenced tokens (ARTs)	30 June 2024
E-money tokens (EMTs)	30 June 2024
Authorisation and ongoing supervision of crypto-asset service providers (CASPs)	30 December 2024
All other MiCAR provisions that are not directly applicable under Article 149(4) of MiCAR	30 December 2024
Individual articles	29 June 2023

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structures based on DLT<sup>12</sup> and a digital finance strategy. MiCAR was published on 9 June 2023 and entered into force on 29 June 2023.

The provisions set out in MiCAR, which are explained in more detail below, have varying dates of application (see the chart above).

The main objective of MiCAR is to create a harmonised European legal framework for all crypto-assets that are not already covered by other existing EU regulations.<sup>13</sup> MiCAR is intended to support innovation and make it possible to harness the potential of crypto-assets whilst ensuring that financial stability, the smooth operation of payment systems and monetary policy transmission and investor protection are maintained.

In this context, MiCAR makes an explicit distinction between (i) various activities relating to the issuance and offers of crypto-assets and (ii) crypto-asset services.

The main points covered by Article 1 of MiCAR are:

- requirements for issuers of asset-referenced tokens and e-money tokens<sup>14</sup> and crypto-asset service providers as well as supervisory requirements for, amongst other things, the

management and organisation of these participants;

- transparency and disclosure requirements for offers to the public and admissions of crypto-assets to trading;
- requirements for protecting the holders of crypto-assets and the clients of undertakings offering crypto-asset services;
- requirements for the disclosure of inside information; measures to prevent insider dealing, unlawful disclosure of inside information and market manipulation related to crypto-assets.

The European Banking Authority (EBA) and the European Securities and Markets Authority (ESMA) are currently developing regulatory technical standards (RTSs), implementing technical standards (ITSs) and guidelines based on

<sup>12</sup> Regulation (EU) 2022/858 of 30 May 2022 on a pilot scheme for market infrastructures based on distributed ledger technology, and amending Regulations (EU) No 600/2014 and (EU) No 909/2014 and Directive 2014/65/EU.

<sup>13</sup> Some crypto-assets, particularly those that are financial instruments within the meaning of the provisions of the Markets in Financial Instruments Directive II (MiFID II), fall within its scope of application and not within the scope of application of MiCAR. See Recital 3 of MiCAR.

<sup>14</sup> These types of tokens are commonly referred to as stablecoins.

MiCAR. These are intended to further specify and make applicable the provisions in MiCAR that apply to issuers of e-money tokens and asset-referenced tokens as well as to crypto-asset service providers.

## Definitions and addressees of MiCAR

*Introduction of a harmonised European definition of crypto-assets*

Article 3(1) number 5 of MiCAR introduces a definition of the term crypto-assets in Europe. This definition is an umbrella term that is further broken down into (i) asset-referenced tokens (ARTs), (ii) e-money tokens (EMTs), (iii) utility tokens and (iv) other crypto-assets that do not fall into any of the other categories (see the chart on p. 78).

*Exceptions for MiFID financial instruments, e-money and deposits*

MiCAR does not apply to crypto-assets that are covered by other EU regulations. MiCAR therefore does not apply, inter alia, to crypto-assets belonging to one or more of the following categories: (i) financial instruments within the meaning of the Markets in Financial Instruments Directive II (MiFID II)<sup>15</sup> (e.g. tokenised securities), (ii) e-money<sup>16</sup> within the meaning of the Electronic Money Directive II (EMD II),<sup>17</sup> with the exception of EMTs within the meaning of MiCAR, (iii) deposits within the meaning of the Deposit Guarantee Schemes Directive, and (iv) structured deposits within the meaning of MiFID II.<sup>18</sup>

*Addressees of MiCAR*

The addressees of MiCAR are natural and legal persons and certain other undertakings<sup>19</sup> that are engaged in the issuance, offer to the public<sup>20</sup> and admission to trading of crypto-assets or that provide services related to crypto-assets in the EU (Article 2(1) of MiCAR). MiCAR distinguishes between issuers and offerors (see the chart on p. 79).

*Crypto-asset services*

MiCAR sets forth a catalogue<sup>21</sup> of ten different crypto-asset services that closely mirrors the catalogue of MiFID activities. In particular, MiCAR lists: (i) providing custody and administration of crypto-assets on behalf of clients; (ii)

the operation of a trading platform for crypto-assets; (iii) the exchange of crypto-assets for funds; (iv) the exchange of crypto-assets for other crypto-assets; (v) the execution of orders for crypto-assets on behalf of clients; (vi) the placing of crypto-assets; (vii) the reception and transmission of orders for crypto-assets on behalf of clients; (viii) providing advice on crypto-assets; (ix) providing portfolio management on crypto-assets; and (x) providing transfer services for crypto-assets on behalf of clients.

Crypto-asset services that are provided in a fully decentralised manner without any intermediary do not fall within the scope of the Regulation. This applies to crypto-assets without a determinable issuer, including Bitcoin, for example. However, it should be noted that crypto-asset service providers offering services relating to crypto-assets without a determinable issuer do fall within the scope of MiCAR. This means, for example, that a crypto-asset service provider that renders services related to or using Bitcoin is covered by the scope of MiCAR.

*Exception of activities performed in a decentralised manner*

<sup>15</sup> Directive 2014/65/EU of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.

<sup>16</sup> E-money is defined as any electronically – including magnetically – stored unit of monetary value as represented by a claim on the issuer which is issued on receipt of funds for the purpose of making payment transactions and which is accepted by a natural or legal person other than the e-money issuer. Examples of e-money are reloadable chip cards or prepaid cards.

<sup>17</sup> Directive 2009/110/EC of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC.

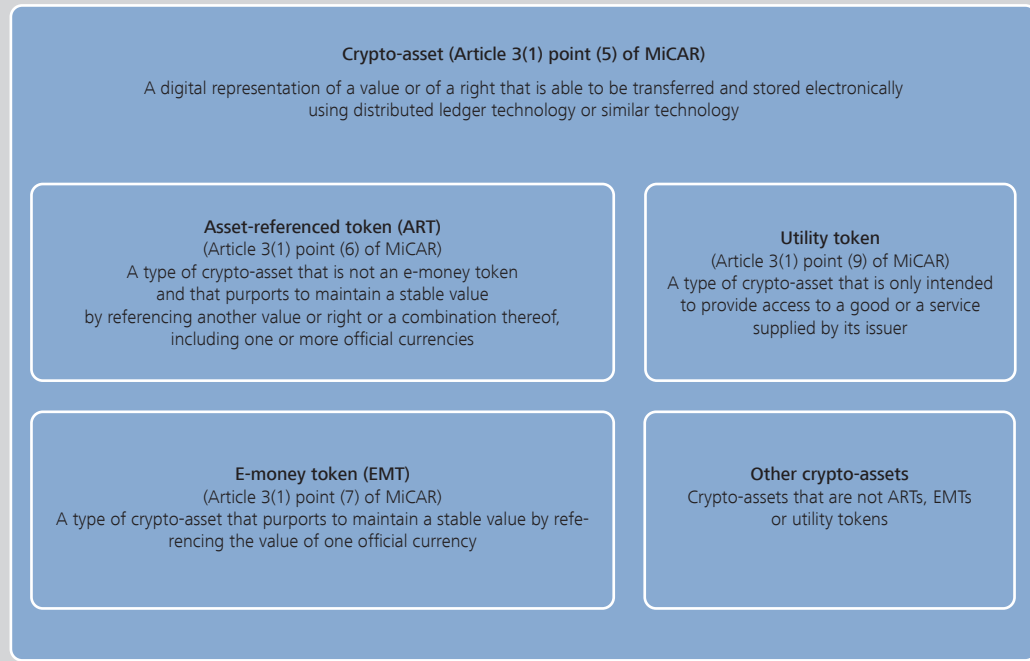
<sup>18</sup> See Article 2(4) of MiCAR.

<sup>19</sup> With regard to other undertakings (e.g. commercial partnerships), it should be borne in mind that the legal form ensures a level of protection for third parties' interests equivalent to that afforded by legal persons and they are subject to equivalent prudential supervision (see Article 16(1) subparagraph 3 and Article 59(3) of MiCAR).

<sup>20</sup> An offer to the public is defined as a communication to persons in any form, and by any means, presenting sufficient information on the terms of the offer and the crypto-assets to be offered so as to enable prospective holders to decide whether to purchase those crypto-assets.

<sup>21</sup> See Article 3(1) number 16 of MiCAR; the individual definitions are then outlined in Article 3(1) numbers 17 to 26 of MiCAR.

## Definitions of crypto-assets in MiCAR



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## Rules for offerors of crypto-assets

### Requirements for issuers of ARTs<sup>22</sup>

*Comprehensive requirements for issuers of ARTs*

Authorisation requirements as well as ongoing obligations are envisaged for issuers of ARTs. An offer of ARTs to the public or the application for their admission to trading on a trading platform of crypto-assets generally requires authorisation granted by the competent authority.<sup>23</sup> Authorisation is conditional on the issuer of the ARTs being a legal person or another undertaking established in the EU, for instance. The issuer must draw up and publish a crypto-asset white paper.<sup>24,25</sup> This white paper must also be submitted and approved as part of the application for authorisation.

Authorisation is not required if the outstanding value of the ART does not exceed €5 million or the equivalent value in another currency over a period of 12 months, or if the offer to the pub-

lic of the ART is addressed solely to qualified investors where the ART can only be held by such investors.<sup>26</sup> However, issuers are still required to draw up a crypto-asset white paper and submit it to the competent authority for approval.

Issuers of ARTs must comply with a number of requirements. Alongside various obligations pertaining to communication, publication, notifications, complaints-handling procedures, disclosure, governance and business organisation, the issuer must hold sufficient own funds,<sup>27</sup> draw up a recovery plan and a redemption plan<sup>28</sup> and maintain a reserve<sup>29</sup> that

<sup>22</sup> These types of tokens are commonly referred to as stablecoins.

<sup>23</sup> See Article 16 in conjunction with Article 20 of MiCAR.

<sup>24</sup> Binding information document on the crypto-asset.

<sup>25</sup> See Article 17 in conjunction with Articles 18 et seq. and 28 of MiCAR.

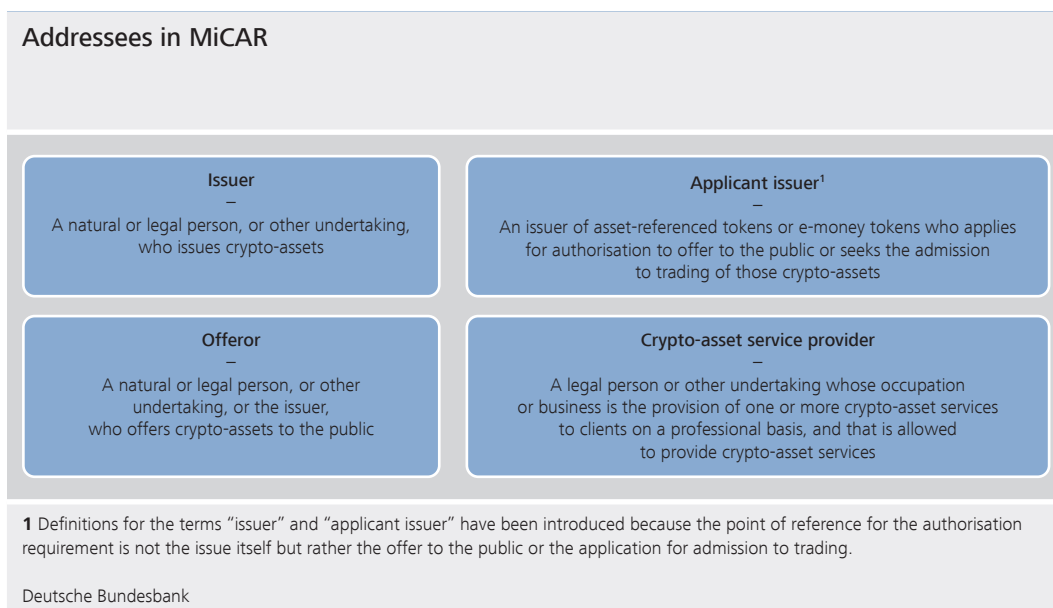
<sup>26</sup> See Article 16(2) of MiCAR.

<sup>27</sup> See Article 35 of MiCAR.

<sup>28</sup> See Articles 46 et seq. of MiCAR.

<sup>29</sup> See Article 36(1) of MiCAR.





covers the risks associated with the assets referenced by the ARTs. How the reserve assets must be held in custody and invested is specified for the reserve.

Credit institutions authorised in the EU<sup>30</sup> do not need to be explicitly authorised to offer ARTs to the public or to apply for admission to trading. However, they must likewise draw up a crypto-asset white paper and submit it to the competent authority for approval. In addition, they must comply with the other requirements.<sup>31</sup>

### Requirements for issuers of EMTs

In the EU, only credit or e-money institutions that have already been authorised may offer EMTs to the public or apply for admission to trading for these tokens.<sup>32</sup> To do so, they must submit a crypto-asset white paper to the competent authority and publish it.<sup>33</sup>

Since e-money tokens are very closely related to e-money – as the name suggests – EMTs are explicitly considered to be e-money. Therefore, MiCAR stipulates that EMT issuers must largely comply with the provisions set out in the EMD II – with only a few specific adjustments due to MiCAR. Central requirements include EMT holders’ right to redeem their tokens at par

value<sup>34</sup> at any time as well as compliance with security requirements.

If the EBA classifies ARTs or EMTs as significant on the basis of several criteria (size, scope, interconnectedness, etc.), issuers must comply with additional requirements. These include, for example, higher own funds requirements and additional reserve management requirements.<sup>35</sup>

### Provisions for other crypto-assets

Although an offer to the public or an admission to trading of crypto-assets other than ARTs or EMTs do not require authorisation, MiCAR sets out some necessary requirements that must be adhered to.<sup>36</sup> An offer to the public or an application for admission to trading in the EU may only be made by legal persons. They must draw up and publish a crypto-asset white paper and submit it to the competent authority. Require-

*Classification as significant ARTs and EMTs*

*No authorisation requirement for offering crypto-assets that are not ARTs or EMTs*

*Only already authorised credit institutions or e-money institutions are eligible to offer EMTs*

<sup>30</sup> Pursuant to Article 3(1) number 28 of MiCAR, a credit institution is as defined in Article 4(1) number (1) of Regulation (EU) No 575/2013 and authorised under Directive 2013/36/EU.

<sup>31</sup> See Article 17 of MiCAR.

<sup>32</sup> See Article 48(1) of MiCAR.

<sup>33</sup> See Article 51(13) and (14) of MiCAR.

<sup>34</sup> See Article 49(4) of MiCAR.

<sup>35</sup> See Article 35(3) in conjunction with paragraph 6(a) of MiCAR.

<sup>36</sup> See Articles 4 to 9, 13 and 14 of MiCAR.

ments for marketing communications and rules of conduct must be met, and token holders must be granted rights of withdrawal.

Exceptions to the obligations outlined above are provided, for example, if other crypto-assets are offered free of charge as ARTs or EMTs or if these crypto-assets involve mining rewards.<sup>37</sup>

## Rules for crypto-asset service providers

*Rules for crypto-asset service providers*

As a general rule, crypto-asset services pursuant to MiCAR may only be provided by providers that are established in the EU and authorised as crypto-asset service providers by the competent authority.<sup>38</sup> However, certain undertakings, such as credit institutions, investment firms and e-money institutions, are allowed to provide all or specific crypto-asset services without separate authorisation.<sup>39</sup> They simply have to inform the competent authority before providing the planned activity using the information specified in MiCAR. Pursuant to MiCAR, crypto-asset service providers also have to comply with certain provisions, including holding own funds, compliance with governance requirements and safeguarding crypto-assets and clients' funds.<sup>40</sup> Specific obligations also apply depending on the service. For instance, a crypto-asset service provider that provides custody must enter into an agreement with clients with predetermined minimum content.<sup>41</sup> Where a trading platform for crypto-assets is operated, own-account trading is prohibited.

With the exception of the own funds requirements, all of the above-mentioned requirements also apply to undertakings that do not require a separate authorisation for this service. By contrast, the own funds requirements for these undertakings are governed by the applicable sectoral supervisory legislation.

Crypto-asset service providers may provide these services throughout the EU by means of

cross-border services or by establishing a branch. They must notify the competent authority of this intention (see the chart on p. 81).

*Passporting opportunities for crypto-asset service providers*

## Competent authorities in Germany

In Germany, the Federal Financial Supervisory Authority (BaFin) in cooperation with the Bundesbank supervise the issuers of ARTs and EMTs and also crypto-asset service providers. However, MiCAR stipulates that supervision is to be fully transferred to the EBA in the case of significant ARTs<sup>42</sup> and partially transferred in the case of significant EMTs<sup>43</sup>. In the case of credit institutions and e-money institutions, the EBA will exercise these supervisory powers in close cooperation with the other competent authorities.

## MiCAR and German law

Crypto-assets were already subject to German law even before MiCAR. Owing to the law transposing the amending directive to the Fourth EU Anti-Money Laundering Directive (Federal Law Gazette I, 2019, p. 2602), German legislators established a very broad definition of crypto-assets in the Banking Act (*Kreditwesen-*

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<sup>37</sup> See Article 4(3)(b) of MiCAR. In the case of crypto-assets such as Bitcoin, mining describes the procedure used to process, secure and synchronise transactions. Miners provide the system with computing power for this purpose. High power consumption means that the computing power is very costly. Miners are remunerated with mining rewards (units of the crypto-asset and proportionate transaction fees).

<sup>38</sup> See Article 59(1)(b) in conjunction with Article 63 of MiCAR.

<sup>39</sup> See Article 59(1)(a) in conjunction with Article 60 of MiCAR.

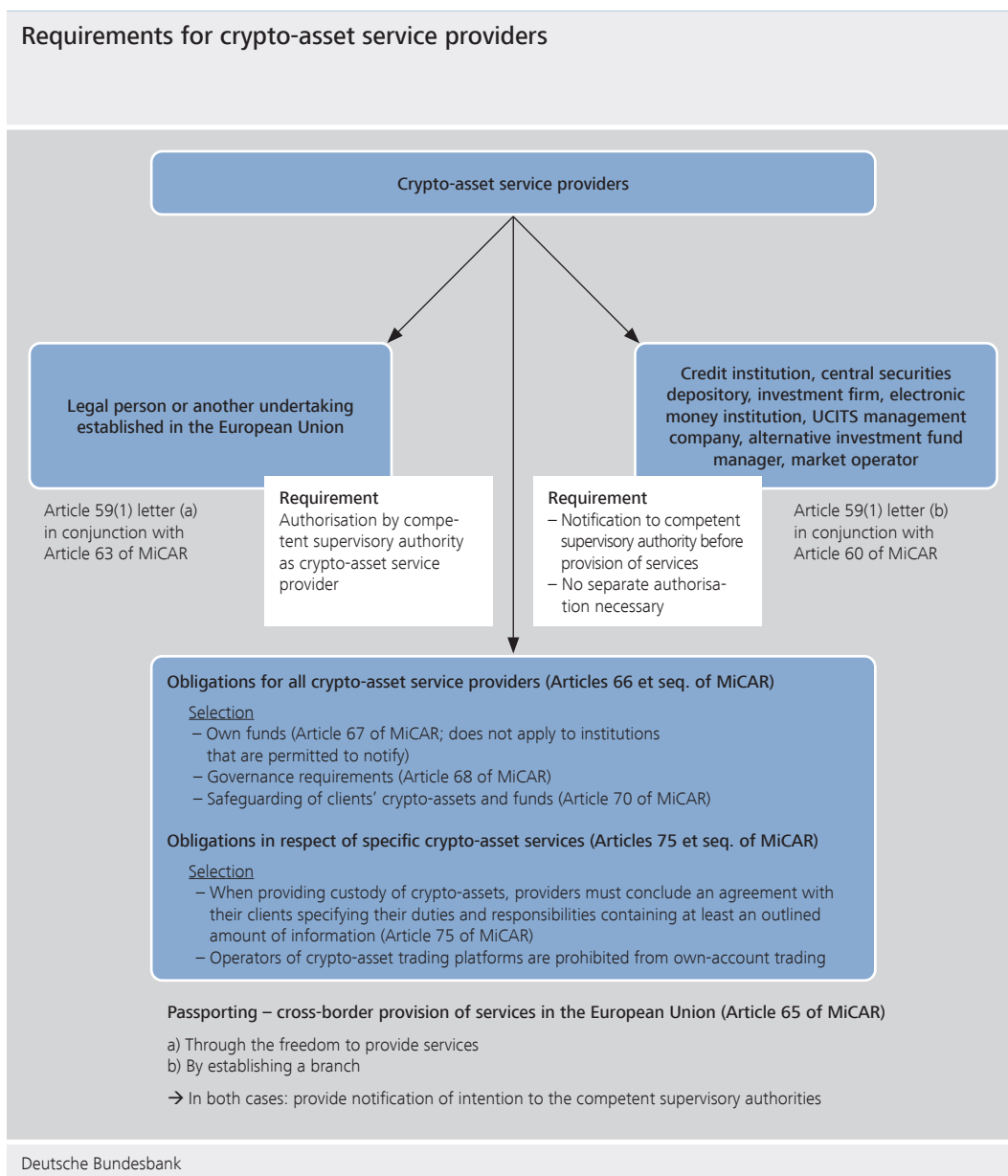
<sup>40</sup> See Articles 66 to 70 of MiCAR.

<sup>41</sup> See Article 75(1) of MiCAR.

<sup>42</sup> See Article 43(7) of MiCAR.

<sup>43</sup> See Article 56(6) of MiCAR.





gesetz)<sup>44</sup> back in 2020. At the same time, crypto-custody business was also added to the Banking Act as a new financial service and crypto-assets as a new financial instrument. These existing national rules need to be adjusted on account of the provisions under MiCAR.

This adjustment will be made through a new crypto-asset markets oversight act (*Kryptomärkteaufsichtsgesetz – KMAG*)<sup>45</sup>. It will contain, amongst other things, more detailed provisions governing BaFin's tasks and powers and its cooperation with the Bundesbank. It will also include rules for transferring existing au-

thorisations for conducting crypto-custody business. The existing national definition of a crypto-asset will be brought into line with the

<sup>44</sup> Crypto-assets within the meaning of this Act are a digital representation of value that is not issued or guaranteed by a central bank or public authority and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange or payment by virtue of an agreement or actual practice or used for investment purposes and which can be transferred, stored and traded electronically; see Section 1(11), sentence 4 of the Banking Act.

<sup>45</sup> The KMAG is integrated into the Financial Market Digitalisation Act (*Finanzmarktdigitalisierungsgesetz – FinmadiG*, omnibus law), which also implements and specifies, amongst other things, the Digital Operational Resilience Act (DORA) Directive and the DORA Regulation. See Federal Ministry of Finance (2023).

European definition. The category “crypto-custody business” will be maintained in the Banking Act under the new name of “qualified crypto-custody business” (*qualifiziertes Krypto-verwahrsgeschäft*). This serves to maintain the authorisation requirement for the custody of crypto-assets that do not fall within the scope of MiCAR. Qualified crypto-custody business comprises the custody of cryptographic financial instruments and the safeguarding of cryptographic keys, which are, for example, used to enable access to crypto-securities.

## The Basel standard for the prudential treatment of banks’ crypto-asset exposures

While MiCAR is aimed directly at cryptosystem participants, the BCBS focuses on banks’ exposures to the cryptosystem.

*New BCBS standard defines minimum requirements for banks’ crypto-asset exposures*

In December 2022, the BCBS added an additional standard (SCO60)<sup>46</sup> to the Basel framework. This new standard sets out the prudential treatment of banks’ crypto-asset exposures and is designed to shield the traditional financial system from risks arising from the cryptosystem. Overall, the standard only defines minimum requirements. This means that individual jurisdictions still have the option of generally prohibiting crypto-assets, restricting banks’ exposure to this segment or regulating such exposure more strictly than the standard requires.

## Definitions in the Basel standard

With regard to the definition of crypto-assets, the Basel standard takes a broad approach, similarly to MiCAR, and generally includes private digital assets that are based on cryptography and DLT or similar technologies.<sup>47</sup>

The standard distinguishes between two groups of crypto-assets based on a set of clas-

sification conditions (see the upper table on p. 86) and sets out different requirements for these groups, especially with regard to capital requirements. The chart on p. 85 provides a schematic representation of the structure of the standard; its elements are explained in detail on the following pages.<sup>48</sup>

Both tokenised traditional assets (Group 1a), such as bonds issued with DLT, and crypto-assets with an effective stabilisation mechanism (stablecoins) (Group 1b) may qualify for Group 1. If crypto-assets do not meet the classification conditions specified in the standard (see the upper table on p. 86), they must be classified in Group 2. Unbacked crypto-assets must always be assigned to Group 2; the most prominent example here being Bitcoin.

The classification conditions are designed to ensure that the risk profile of crypto-assets in Group 1 is comparable to that of traditional assets<sup>49,50</sup>. Based on the principle of “same activity, same risk, same rules”, the standard essentially applies the existing Basel framework to these crypto-assets as far as capital requirements are concerned. A tokenised corporate bond in the banking book, for example, could generally receive the same risk weight as a conventional corporate bond in the banking book. By contrast, the standard assumes higher or novel risks for Group 2 crypto-assets and provides for a conservative regime to contain these risks for banks.

*For the purposes of capital requirements, crypto-assets are divided into two groups based on a set of classification conditions*

*Minimum requirements take into account the different risk profiles of crypto-assets*

<sup>46</sup> See Basel Committee on Banking Supervision (2022a).  
<sup>47</sup> The definitions are worded as follows: “Cryptoassets are defined as private digital assets that depend on cryptography and distributed ledger technologies (DLT) or similar technologies. Digital assets are a digital representation of value, which can be used for payment or investment purposes or to access a good or service.”  
<sup>48</sup> See Basel Committee on Banking Supervision (2022a).  
<sup>49</sup> The standard defines traditional assets as those assets that are covered by the Basel framework and which do not fall under the crypto-asset definition introduced in the standard.  
<sup>50</sup> For information on the background to the emergence of the standard, see also the preceding consultations: Basel Committee on Banking Supervision (2021, 2022b).

## The work of the Financial Stability Board on crypto-assets

As an international body coordinating the supervision and regulation of international financial markets, the Financial Stability Board (FSB) has also been increasingly focussing on the risks posed by crypto-assets in recent years. Its aim in this regard has been to promote a comprehensive and internationally standardised regulatory approach.

To this end, the FSB published recommendations on the regulation, supervision and oversight of “global stablecoin” (GSC) arrangements in October 2020.<sup>1</sup> GSCs are stablecoins<sup>2</sup> that could be potentially used on a large scale across multiple jurisdictions as a means of making payments and/or as a store of value. These properties mean that GSCs could pose particular risks to financial stability.

The FSB subsequently published a comprehensive global regulatory framework for crypto-asset activities in July 2023. The framework consists of two sets of recommendations that define minimum international standards for the regulation, supervision and oversight of crypto-assets. In view of the greater risks posed by GSCs, the FSB has decided to maintain separate recommendations for these crypto-assets. At the same time, however, the FSB supplemented them by a second set of recommendations that is applicable to any crypto-asset and crypto market, including stablecoins and decentralised finance (DeFi).

The FSB’s recommendations focus primarily on financial stability risks and have been intentionally formulated in general and principles-oriented terms. They are based on the principles of “same activity, same risk, same rules” and technological neutral-

ity. The principles are flexible enough not to require a specific regulatory framework for their implementation. Therefore, it is up to each jurisdiction to decide whether to implement the recommendations by adopting a new regulation (as in the case of the Markets in Crypto-Assets Regulation, MiCAR) or by applying or extending an existing one. The FSB’s recommendations are also designed to allow international standard-setting bodies such as the Basel Committee on Banking Supervision enough scope to develop granular standards.

The status of implementation of the two sets of recommendations in the respective jurisdictions is to be reviewed at the end of 2025.<sup>3</sup> In the interim, the FSB and the International Monetary Fund will work together towards ensuring that the recommendations are implemented globally in an as harmonised manner as possible.<sup>4</sup>

Based on the principles set out in the FSB’s recommendations, other international standard-setting bodies are currently examining the extent to which their respective standards can already be applied to crypto-assets and stablecoins, or if further guidance is required.

Of particular note in this context is a report published by the Bank for International Settlements’ Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) in July 2022. The report

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<sup>1</sup> See Financial Stability Board (2020).

<sup>2</sup> The report defines stablecoins as crypto-assets that aim to maintain a stable value relative to a specified asset, or a pool or basket of assets.

<sup>3</sup> See Financial Stability Board (2022b).

<sup>4</sup> See also International Monetary Fund and Financial Stability Board (2023).

examines the extent to which the Principles for Financial Market Infrastructures (PFMI) can be applied to stablecoin arrangements.<sup>5</sup> Following the principle of “same activities, same risks, same rules”, the report essentially finds that the PFMI can be applied to systemically important stablecoin arrangements. At the same time, the report also sets out additional specific recommended actions for a number of the Principles in respect of stablecoin arrangements.<sup>6</sup>

IOSCO also published a consultation report in May 2023 proposing recommendations addressed to the respective jurisdictions on the regulation and supervision of crypto-asset service providers.<sup>7</sup> It focuses on considerations on the protection of investors and their assets and the organisation of crypto-asset trading. The final report is expected in 2024.

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<sup>5</sup> See Committee on Payments and Market Infrastructure and International Organization of Securities Commissions (2022).

<sup>6</sup> This relates to Principles 2 (governance), 3 (framework for the comprehensive management of risk), 8 (settlement finality) and 9 (money settlements). See Committee on Payments and Market Infrastructure and International Organization of Securities Commissions (2022, p. 12-21).

<sup>7</sup> See International Organization of Securities Commissions (2023).

Individual institutions are required to continuously check whether the crypto-assets they hold meet the classification conditions. At the same time, institutions are required to inform the supervisory authorities of their assessment results. Supervisors, in turn, may disagree with institutions' assessments and override classification decisions.

## Rules for crypto-assets in Group 1 of the Basel standard

*Capital requirements for Group 1 crypto-assets essentially in line with the existing framework*

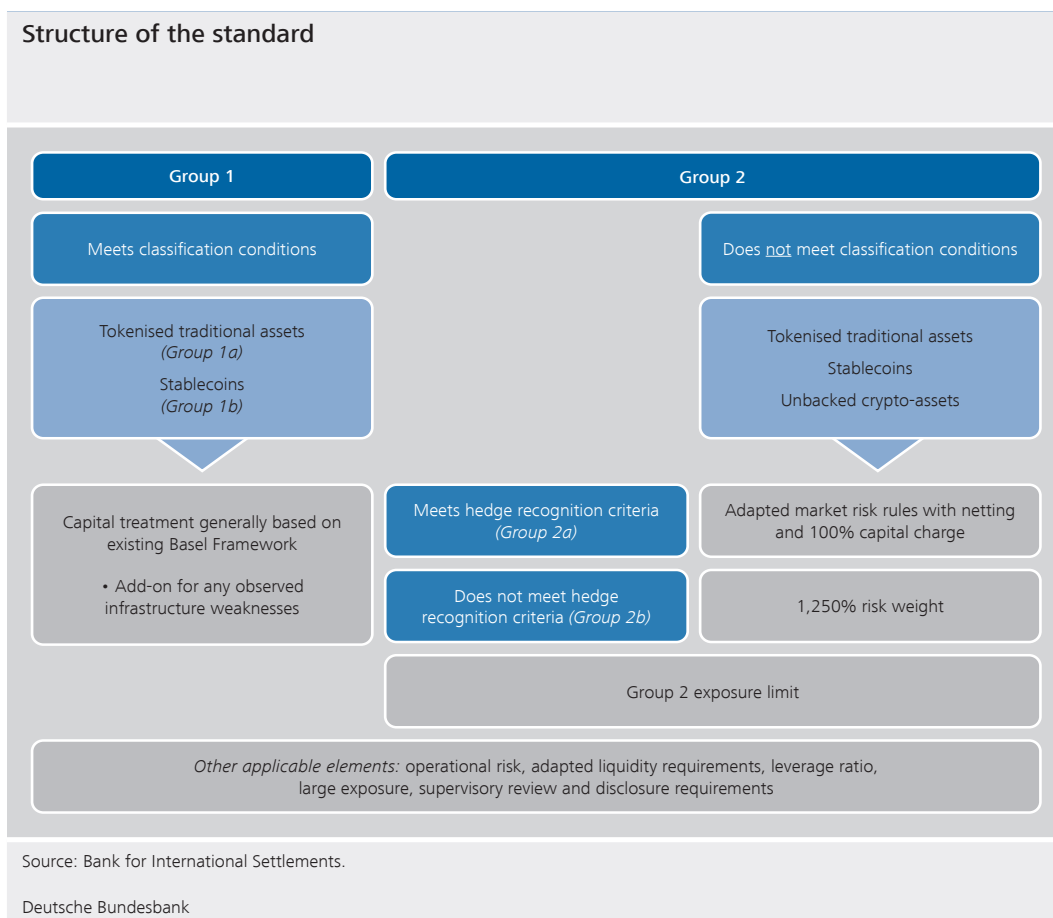
For Group 1 crypto-assets, the standard specifies how institutions should apply the existing provisions of the Basel framework for calculating credit, market and counterparty credit risk of these crypto-assets. The same applies to credit valuation adjustment (CVA) risks. Following the same logic, institutions can, for example, also apply internal models to Group 1 crypto-assets; the overview below illustrates these regulations.

The possibility of recognising crypto-assets as collateral for the purpose of credit risk mitigation is limited to Group 1a crypto-assets, as the crypto-assets in Group 1b require redemption, which entails additional counterparty credit risk.

The new standard also includes an infrastructure risk add-on, which is a flexible instrument that allows supervisors to respond to potential additional risks arising from the underlying technology. This add-on is initially set to zero, but can be increased by supervisors if corresponding risks arise that are not already adequately taken into account elsewhere.

## Rules for crypto-assets in Group 2 of the Basel Standard

As these crypto-assets are riskier, the standard sets out separate capital requirement rules for Group 2. The starting point is a simple, conser-



*Conservative approach to capital requirements for Group 2 crypto-assets*

vative approach, which generally provides for a risk weight of 1,250% for these crypto-assets, i.e. if the total capital ratio is 8%, these assets must, in principle, be backed entirely with capital. This approach does not distinguish between crypto-assets in the banking and trading books and does not differentiate between credit and market risks, including CVA risks.<sup>51</sup> The counterparty credit risk must additionally be backed by capital. The standard excludes the use of internal models and the recognition as collateral for crypto-assets in Group 2 (see the lower table on p. 86).

Nevertheless, the standard recognises that, even for Group 2 crypto-assets, risks can in some cases be reduced through hedging. Group 2 is subdivided accordingly: For Group 2a, the standard defines an adapted version of the requirements for market, CVA and counterparty credit risk, allowing institutions to net risk positions to a limited extent. One prerequisite for classification as Group 2a is that there is a

functioning market for the respective crypto-assets that allows the advantages of hedging to be realised effectively (see the table on p. 87).

In view of the higher risks that Group 2 crypto-assets pose, the BCBS has decided to explicitly limit an institution's maximum permissible risk exposure to this group of crypto-assets. An institution's total exposure to Group 2 crypto-assets may not exceed 2% of the institution's tier 1 capital and should generally be below 1% of tier 1 capital. If the institution exceeds the 1% limit, it must treat the excess amount as belonging to Group 2b. If the institution exceeds the 2% limit, the capital requirements of Group 2b apply to all Group 2 crypto-assets.

<sup>51</sup> In certain cases, supervisors may impose additional capital charges for higher default risks associated with short crypto positions and crypto derivatives.

### Classification conditions for Group 1 (condensed presentation)

1. Tokenised traditional assets or crypto-assets with effective stabilisation mechanisms
a. Digital representations of traditional assets using cryptography, DLT or similar technologies with the same level of credit and market risk and the same rights for the holder as the traditional form of the asset
b. Effective stabilisation mechanism: <ul style="list-style-type: none"> <li>– Redeemable for a predefined amount</li> <li>– Design minimises fluctuations in market value</li> <li>– Enables adequate risk management</li> <li>– Monitoring options for reserve assets</li> <li>– Passed redemption risk test</li> <li>– Supervised and regulated issuer</li> </ul>
2. Documentation and legal enforceability of all rights, obligations and interests in all jurisdictions where the asset is issued/redeemed and settlement finality
3. Robust risk governance and risk control policies and practices as well as traceability of all participants and transactions
4. Supervision of important stakeholders, e.g. regarding management of reserve assets or redemption of crypto-assets
Deutsche Bundesbank

### Further requirements of the Basel standard

*Application of other elements of the Basel framework*

Irrespective of the individual groups, the new standard also sets out how other elements of the Basel framework are to be applied to crypto-assets. For example, institutions must take crypto-assets into account in the leverage ratio, the large exposure regime and the calculation of operational risks. Institutions should also take due account of the specific risks of crypto-assets in their internal risk management, for example technological or legal risks. Supervisors, in turn, should expand their supervisory

review process accordingly. Institutions must disclose business activities and risks as well as risk management measures.

Liquidity risks associated with crypto-assets (or crypto-liabilities) are identified on the basis of the existing prudential definitions and classifications in accordance with the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). Accordingly, Group 1a crypto-assets and liabilities are treated in the same way as their traditional counterparts. This allows tokenised versions of highly liquid assets to be included in the LCR liquidity buffer. Other

### Comparison of selected elements of the Basel framework for various groups

Element	Group 1a	Group 1b	Group 2
Separate banking book and trading book treatment	✓	✓	✗
Use of internal models	✓	✓	✗
Recognition as collateral for the purpose of credit risk mitigation	✓	✗	✗
Deutsche Bundesbank			



Requirements for inclusion in Group 2a (condensed presentation)
1. The crypto-asset exposure is one of the following:
a. A direct holding of a spot Group 2 crypto-asset where there exists a derivative or exchange-traded fund (ETF)/exchange-traded note (ETN) that is traded on a regulated exchange that solely references the crypto-asset
b. A derivative/ETF/ETN that references a Group 2 crypto-asset where the derivative/ETF/ETN has been explicitly approved by a jurisdiction's markets regulators for trading or the derivative is cleared by a qualifying central counterparty
c. A derivative/ETF/ETN that references a derivative/ETF/ETN that meets criterion (b) above
d. A derivative/ETF/ETN that references a crypto-asset-related reference rate published by a regulated exchange
2. The bank's crypto-asset exposure, or the crypto-asset referenced by the derivative/ETF/ETN, is highly liquid, i.e. it meets the minimum requirements for market capitalisation and trading volumes
3. Sufficient data regarding price, trading volumes and market capitalisation are available over the previous year
Deutsche Bundesbank

crypto-assets and related activities are classified according to their liquidity characteristics as follows, irrespective of the group classification described above.

- Stablecoins of Group 1b and certain stablecoins of Group 2 are treated as non-liquid securities; such holdings are thus subject to a required stable funding (RSF) factor of 85% in the NSFR.
- The payment flow assumptions for own-issued stablecoins in groups 1b and 2 are treated like own-issued collateralised securities.
- Other crypto-assets are subject to the most stringent treatment possible in the LCR and NSFR, i.e. holdings in or claims on these assets are not to be considered as liquid assets or inflows in the LCR and are subject to an RSF factor of 100% in the NSFR, while liabilities in these assets are subject to an outflow rate of 100% in the LCR when due within 30 days and do not contribute to stable funding in the NSFR.

## Implementation of the Basel standard

The members of the BCBS have agreed to implement the new standard in their respective jurisdictions by 1 January 2025.<sup>52</sup> Corresponding discussions have also commenced in the European Union. The review of the Capital Requirements Regulation (CRR) and the Capital Requirements Directive (CRD) that is currently underway is intended to initially introduce a transitional regime for the treatment of crypto-assets.

*Implementation: transitional regime envisaged in the EU*

## ■ Outlook

The regulatory initiatives presented make an important contribution to the regulation of the cryptosystem. They help to protect consumers and to maintain financial stability and the smooth operation of payment systems without hindering innovation.

*Previous regulatory initiatives are important steps*

It is now important that the regulation adopted to date is implemented consistently and swiftly. In Europe, this means transposing the Basel standard into European law; in Germany, it means adopting the national legislative amend-

<sup>52</sup> See Basel Committee on Banking Supervision (2022c).

ments necessary for MiCAR and adapting supervisory activities to the requirements of the regulation.

However, despite the regulatory progress made so far, one point is clear: the cryptosystem and the technologies on which it is based are rapidly evolving. It is therefore to be expected that change in this area will remain a constant for the time being. And with this change, regulation must also evolve where necessary.

*However, the regulatory journey will continue*

Regulators are aware of this necessity. The BCBS is already looking into some follow-up questions:<sup>53</sup> For example, it is currently reviewing some aspects of the classification conditions for Group 1b (stablecoins), including the appropriate composition of reserve assets for these crypto-assets.

And although the EU, with MiCAR, is at the forefront of global crypto regulation, it became clear already during the negotiations that there may still be gaps in MiCAR that should be closed. Examples include staking<sup>54</sup> and lending, which thus far do not fall under MiCAR's scope of application. The same applies to decentralised finance (DeFi). The main challenge in the case of DeFi is to define potential addressees for regulation and supervision.<sup>55</sup> At the same time, the collapse of the FTX crypto trading platform in November 2022, in particular, pointed to a further need for action under MiCAR.<sup>56</sup> Even if MiCAR had already been in force, the regulation would not have fully covered FTX's business practices. This is mainly because MiCAR does not provide the possibility of consolidated supervision or of additional prudential requirements for the bundling of several activities.

For all these reasons, MiCAR requires the European Commission to present a report on the

latest developments with respect to crypto-assets by 30 December 2024.<sup>57</sup> This report should include, amongst other things, assessments of the necessity and feasibility of regulating lending and borrowing of crypto-assets and of the appropriate regulatory treatment of crypto-assets without an issuer. The European Commission may, if appropriate, present a concrete legislative proposal alongside the report.

From today's perspective, it is impossible to say with any certainty how the cryptosystem will evolve going forward. Given the potential risks, a preventive regulatory approach is prudent. However, it needs to be accompanied by additional measures.<sup>58</sup> First, the cryptosystem is still fairly opaque; while MiCAR improves the situation, it would make sense to go further here and cover areas of the cryptosystem that do not yet fall under MiCAR's scope of application. Second, the cryptosystem is largely detached from geographical structures and thus provides scope for regulatory arbitrage; a globally harmonised regulatory approach would be desirable.

While the regulatory progress made so far is considerable, we have not yet come to the end of the road, and there is no telling where the end of the road will be. Going forward, the topic of crypto-assets will continue to be a key focus of regulators around the world.

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<sup>53</sup> See Basel Committee on Banking Supervision (2023).

<sup>54</sup> Staking is a process in which network participants can receive rewards by locking their crypto-assets and making them available to validate network transactions or as a source of liquidity for others.

<sup>55</sup> On the topic of DeFi, see also Deutsche Bundesbank (2021c).

<sup>56</sup> See: <https://de.cointelegraph.com/news/ecb-president-reiterates-calls-for-mica-ii-in-response-to-ftx-collapse>

<sup>57</sup> See Article 142 of MiCAR.

<sup>58</sup> See also Buch (2023).

## Other regulatory initiatives

In addition to the standards and laws described above, a number of other regulatory initiatives expressly extend the possibility of using distributed ledger technology (DLT) in the financial sector.<sup>1</sup>

### Pilot regime for DLT-based market infrastructures

One of the three pillars of the European Commission's digital finance package adopted in 2020 is the introduction of a regulatory sandbox for the use of DLT in market infrastructures. The pilot regime (Regulation on a pilot regime for market infrastructures based on distributed ledger technology) has been applicable in the European Union since 23 March 2023. It creates a simplified supervisory framework for the trading and settlement of tokenised securities within the meaning of the Markets in Financial Instruments Directive II (MiFID II).

The Regulation provides for three new types of financial market infrastructures: DLT multilateral trading facilities, DLT settlement systems, and DLT trading facilities and settlement systems used in tandem. As a baseline, these infrastructures must comply with the provisions of MiFID II, the Markets in Financial Instruments Regulation (MiFIR) and the Central Securities Depository Regulation (CSDR). However, investment firms, market operators and central securities depositories can apply to their national supervisory authorities for exemptions from these requirements for a period of six years provided that the use of DLT justifies such exemptions. The supervisory authority may, however, impose compensatory measures aimed at meeting the objectives of the original requirements.

A number of thresholds have been put in place to prevent market infrastructures becoming too large and thus posing a risk to financial stability. For example, a new financial instrument may not be included in trading or settlement if this would result in the total market value of all the securities included exceeding €6 billion.<sup>2</sup> Should the market value of all financial instruments included reach €9 billion (e.g. via increases in market value), a transition strategy must be implemented, i.e. conversion to a traditional infrastructure for which no further exemptions apply.<sup>3</sup> This transition strategy must also be implemented if the exemptions granted no longer apply after the six-year period.

It remains to be seen if the pilot regime will actually make it easier to get technical innovations off the ground in the EU. The appeal of the pilot regime is diminished by the fact that the high costs involved in setting up a financial market infrastructure are paired with an operating period of just six years.<sup>4</sup> Potential users of the infrastructure also need to consider if they wish to incur the one-off connection and utilisation costs given this limited operating period.

One of the strengths of the regime is its highly customisable supervisory framework for infrastructure operators, thanks to the

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<sup>1</sup> Money laundering and the financing of terrorism are covered by the German Ordinance on Enhanced Due Diligence Obligations for the Transfer of Crypto-Assets (Crypto-Asset Transfer Ordinance) (*Verordnung über verstärkte Sorgfaltspflichten bei dem Transfer von Kryptowerten (Kryptowertetransferverordnung)*) (Federal Law Gazette 2023 I No 135).

<sup>2</sup> See Article 3(2) sentence 1 of Regulation (EU) 2022/858.

<sup>3</sup> See Article 3(3) sentence 1 of Regulation (EU) 2022/858.

<sup>4</sup> See Recital 48 of Regulation (EU) 2022/858.

exemptions that can be applied for in each case. However, this customised approach also increases complexity for supervisors, operators and users of financial market infrastructures. The European Securities and Markets Authority is endeavouring to counteract this by publishing the authorisations and exemptions that have been granted on its website.<sup>5</sup>

### German Electronic Securities Act<sup>6</sup>

The German Electronic Securities Act (*Gesetz über elektronische Wertpapiere, eWpG*) makes it possible to issue bearer debt securities, Pfandbriefe and shares in special funds in a purely electronic format whereby the issuer records them in an electronic securities register. The eWpG does not cover registered securities and order bonds, however.

Before the eWpG came into force, with the exception of government bonds, financial instruments classified as securities under civil law had to be securitised in a physical certificate. The transfer of these securities is carried out under the principles of property law alongside the application of civil law provisions on the protection of good faith. To facilitate comparable marketability and legally compliant acquisition for electronic securities, too, these securities are deemed to be “things” (res) in a legal sense via a legal fiction. This means the transfer of electronic securities is also governed by the principles of property law.

The eWpG distinguishes between two types of electronic securities registers, namely central securities registers and crypto-securities registers.<sup>7</sup> A crypto-securities register must be maintained on a tamper-proof system that records data in chronological order and safeguards them against unauthorised deletion and retroactive modi-

fication.<sup>8</sup> The requirements governing how the system should be designed have been formulated in a technology-neutral manner; the aim is not to specify DLT or any particular form of this technology. Furthermore, the eWpG does not state that a DLT-based system for recording data complies with legal requirements at all times.<sup>9</sup> Since 10 June 2021, maintaining crypto-securities registers has been deemed a financial service requiring a licence within the meaning of Section 1(1a) number 8 of the German Banking Act (*Kreditwesengesetz*).

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<sup>5</sup> See Recital 47 of Regulation (EU) 2022/858.

<sup>6</sup> See eWpG, 3 June 2021 (Federal Law Gazette I p. 1423).

<sup>7</sup> See Section 4(1) in conjunction with sections 12 and 16 of the eWpG.

<sup>8</sup> See Section 16(1) of the eWpG.

<sup>9</sup> See German Bundestag (2021), pp. 59 f.

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