EUROPEAN BANKING AUTHORITY

EBA Report

9 January 2019

Report with advice for the European Commission

on crypto-assets

EUROPEAN BANKING AUTHORITY

Contents

Abbreviations and glossary 3

Executive summary 4

1. Background and rationale 5

2. Application of current EU financial services law to crypto-assets 12

3. Anti-money laundering/countering the financing of terrorism 20

4. Financial insitutions' activities involving crypto-assets 22

5. Concluding observations and next steps 29

Abbreviations and glossary

AML/CFT	anti-money laundering and countering the financing of terrorism
AMLD	Anti-Money Laundering Directive (Directive 2015/849/EU)
AMLD5	Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending the AMLD, and amending Directives 2009/138/EC and 2013/36/EU
BCBS	Basel Committee on Banking Supervision
CRD	Capital Requirements Directive (Directive 2013/36/EU)
credit institution	defined in point (1) of Article 4(1) of Regulation (EU) No 575/2013
CPMI-IOSCO	Committee on Payments and Market Infrastructures – International Organisation of Securities Commissions
CRR	Capital Requirements Regulation (Regulation (EU) No 575/2013)
DLT	distributed ledger technology
EBA	European Banking Authority
EIOPA	European Insurance and Occupational Pensions Authority
electronic money institution	defined in point (1) of Article 2 of Directive 2009/110/EC
EMD2	second Electronic Money Directive (Directive 2009/110/EC)
ENISA	European Union Agency for Network and Information Security
ESAs	European Supervisory Authorities (the EBA, EIOPA and ESMA)
ESMA	European Securities and Markets Authority
FATF	Financial Action Task Force
FSB	Financial Stability Board
ICO	initial coin offering
ICT	information and communication technology
institution	credit institution/investment firm
investment firm	defined in point (2) of Article 4(1) of the Capital Requirements Regulation
MiFID	Markets in Financial Instruments Directive
payment institution	defined in point (4) of Article 4 of Directive (EU) 2015/2366
PSD2	second Payment Services Directive (Directive 2015/2366/EU)
VC	virtual currency

Executive summary

Crypto-assets are a type of private asset that depend primarily on cryptography and distributed ledger technology as part of their perceived or inherent value. A wide range of crypto-assets exist, including payment/exchange-type tokens (for example, the so-called virtual currencies (VCs)), investment-type tokens, and tokens applied to access a good or service (so-called 'utility' tokens).

The EBA has been undertaking work in relation to VCs for some time.[1] However, further to the request from European Commission Vice President Dombrovskis for the European Supervisory Authorities (ESAs) to carry out additional work to assess the applicability and suitability of current EU law to crypto-assets, and as outlined in the EBA's March 2018 FinTech Roadmap,[2] the EBA has carried out an additional analysis, the findings of which are set out in this report.

Crypto-asset-related activity in the EU is regarded to be relatively limited and, at this time, such activity does not appear to give rise to implications for financial stability.

However, based on the analysis conducted by the EBA, typically crypto-assets fall outside the scope of EU financial services regulation (the EBA identifies in this report only limited cases in which crypto-assets may qualify as electronic money) and specific services relating to crypto-asset custodian wallet provision and crypto-asset trading platforms do not constitute regulated activities under EU financial services law. Moreover, divergent approaches to the regulation of these activities are emerging across the EU.

These factors give rise to potential issues, including regarding consumer protection, operational resilience, market integrity and the level playing field.

In this light the EBA sets out in this report advice to the European Commission regarding the need for a comprehensive cost/benefit analysis to determine what, if any, action is required at the EU level at this stage to address these issues, specifically with regard to the opportunities and risks presented by crypto-asset activities and new technologies that may entail the use of crypto-assets. The EBA also advises the European Commission to have regard to the latest recommendations and any further standards or guidance issued by the Financial Action Task Force (FATF) and to take steps where possible to promote consistency in the accounting treatment of crypto-assets.

The EBA also identifies in this report a number of steps that it will take in 2019 to enhance monitoring in relation to financial institutions' crypto-asset activities, including with regard to consumer-facing disclosure practices.

---

[1] See paragraph 1 of this report.

[2] See: https://www.eba.europa.eu/-/eba-publishes-its-roadmap-on-fintech.

1. Background and rationale

1.1 Background

1. Consistent with the EBA's role in monitoring existing and new or innovative financial activities pursuant to Article 9 of the its Founding Regulation[3] the EBA has been actively considering issues relating to one form of crypto-asset, the so-called virtual currencies (VCs), for some time, having issued in:

    a. December 2013 an EBA warning on VCs, to make consumers aware of the risks;[4]

    b. July 2014 and August 2016, two opinions on VCs,[5] which *inter alia* recommended that supervisory authorities "discourage" credit institutions, payment institutions and electronic money institutions from buying, holding or selling VCs, and recommended bringing certain VC actors into the scope of the AMLD;[6]

    c. February 2018, jointly with the other ESAs, a further warning on the risks of buying or holding VCs.[7]

2. On 20 December 2017, the ESAs received a letter from European Commission Vice President Dombrovskis requesting further work on crypto-assets. The Commission's March 2018 FinTech Action Plan[8] also envisages the need for further work, in particular to attain a better understanding of the applicability and suitability of EU regulation to crypto-assets to address potential financial stability, market integrity, investor and consumer protection, personal data protection, and money laundering and terrorist financing-related risks. The FinTech Action Plan envisages that this work should be done in coordination with the Basel Committee on Banking Supervision (BCBS), the Financial Stability Board (FSB), the Committee on Payments and Market Infrastructures – International Organisation of Securities Commissions (CPMI-IOSCO) and other international standard-setters. The FinTech Action Plan goes on to state that, further to this work, the European Commission will assess whether regulatory action at the EU level is required.

[3] See: https://www.eba.europa.eu/about-us/legal-framework/founding-texts-and-mandates.

[4] See: http://www.eba.europa.eu/-/eba-warns-consumers-on-virtual-currencies.

[5] See: http://www.eba.europa.eu/documents/10180/657547/EBA-Op-2014-08+Opinion+on+Virtual+Currencies.pdf and https://www.eba.europa.eu/documents/10180/1547217/EBA+Opinion+on+the+Commission%E2%80%99s+proposal+to+bring+virtual+currency+entities+into+the+scope+of+4AMLD.

[6] Legislative amendments to the AMLD set out in the AMLD5 implement the EBA's recommendation and will reduce anonymity and increase traceability of transactions by requiring crypto-asset exchanges and custodian wallet providers in the EU to carry out customer identification and to exercise due diligence (see Chapter 3 of this report). The AMLD5 (recital (10)) also reflects the EBA's conclusion that virtual currencies should not be confused with 'electronic money' within the scope of the EMD2 or 'funds' within the scope of the PSD2.

[7] See: https://www.eba.europa.eu/documents/10180/2139750/Joint+ESAs+Warning+on+Virtual+Currencies.pdf.

[8] See: https://ec.europa.eu/info/sites/info/files/180308-action-plan-fintech_en.pdf.

3. For this reason, in the EBA's March 2018 FinTech Roadmap,[9] the EBA undertook to carry out a regulatory mapping of the applicability to crypto-assets of current EU financial services law within the EBA's sphere of responsibility.[10] In conducting this work the EBA has coordinated closely with ESMA in relation to its work on initial coin offerings (ICOs) and its assessment of whether crypto-assets may qualify as 'financial instruments' under Directive 2014/65/EU (MiFID) (and the consequences that follow from the application of securities and markets law); and with both ESMA and EIOPA in relation to the monitoring of financial institutions' exposures to crypto-assets.

4. The EBA examines in this report:

   a. the applicability of the EMD2 and PSD2 to crypto-assets and issues arising in relation to crypto-asset custodian wallet provision and to crypto-asset trading platforms building on the EBA's Opinion of July 2014 on VCs;[11]

   b. the recommendations adopted by the FATF in October 2018 to mitigate the risks of money laundering and the financing of terrorism arising from specified activities involving, in FATF terminology, virtual assets;[12]

   c. the extent to which institutions (credit institutions and investment firms), payment institutions and electronic money institutions are engaging in activities involving crypto-assets and regulatory and supervisory implications.

1.2 Rationale

5. The use of crypto-assets, which depend primarily on cryptography and distributed ledger technology (DLT), has evolved rapidly in the last couple of years. Today their use extends well beyond tokens for payment-type purposes (the VCs, sometimes also referred to as crypto-currencies or 'payment/exchange' tokens) to include 'investment' or 'security' tokens representing debt or equity claims on the issuer and 'utility' tokens used to provide access to applications or services (commonly involving DLT).

6. Sometimes crypto-assets can have characteristics that enable their use for more than one purpose (means of exchange, investment, and access) at any single point in the lifecycle of the asset, and some have characteristics that change during the course of the lifecycle. See Box 1 for an indicative and simplified summary of the different types of crypto-assets.

---

[9] See: https://www.eba.europa.eu/-/eba-publishes-its-roadmap-on-fintech.

[10] See the EBA's Founding Regulation (as amended): https://www.eba.europa.eu/about-us/legal-framework/founding-texts-and-mandates.

[11] See: http://www.eba.europa.eu/documents/10180/657547/EBA-Op-2014-08+Opinion+on+Virtual+Currencies.pdf.

[12] See: http://www.fatf-gafi.org/publications/fatfgeneral/documents/outcomes-plenary-october-2018.html.

Box 1: Basic taxonomy of crypto-assets

At present there is no common taxonomy of crypto-assets in use by international standard-setting bodies. However, generally speaking, a basic taxonomy of crypto-assets comprises three main categories of crypto-asset:

Payment/exchange/currency tokens	Investment tokens	Utility tokens
Often referred to as VCs or crypto-currencies. Typically do not provide rights (as is the case for investment or utility tokens) but are used as a means of exchange (e.g. to enable the buying or selling of a good provided by someone other than the issuer of the token) or for investment purposes or for the storage of value. Examples include Bitcoin and Litecoin. 'Stablecoins' are a relatively new form of payment/exchange token that is typically asset-backed (by physical collateral or crypto-assets) or is in the form of an algorithmic stablecoin (with algorithms being used as a way to stabilise volatility in the value of the token).	Typically provide rights (e.g. in the form of ownership rights and/or entitlements similar to dividends). For example, in the context of capital raising, asset tokens may be issued in the context of an ICO which allows businesses to raise capital for their projects by issuing digital tokens in exchange for fiat money or other crypto-assets. Examples include Bankera.	Typically enable access to a specific product or service often provided using a DLT platform but are not accepted as a means of payment for other products or services. For example, in the context of cloud services, a token may be issued to facilitate access.

However, there is a wide variety of crypto-assets some of which have features spanning more than one of the categories identified above. For example, Ether has the features of an asset token but is also accepted by some persons as a means of exchange for goods external to the Ethereum blockchain, and as a utility in granting holders access to the computation power of the Ethereum Virtual Machine.

7. The rapid expansion in the types of crypto-assets and the purposes for which they can be applied gives rise to questions about the applicability and suitability of the current regulatory framework, particularly taking account of risks to consumers (e.g. from the absence of appropriate disclosures regarding the risks involved in crypto-asset activities, and fraudulent ICOs) and to market integrity (e.g. in terms of the integrity of price discovery mechanisms) or from the potential use of crypto-assets in the context of money laundering,[13] and the opportunities arising (e.g. in the context of new technologies, such as DLT which has significant potential to transform the provision of some forms of financial service (see Box 2), and ICOs as a new means of capital raising[14]).

[13] For example, as identified in the European Parliament report *Virtual currencies and central banks monetary policy: challenges ahead*: http://www.europarl.europa.eu/cmsdata/149900/CASE_FINAL%20publication.pdf.

[14] On which, see further, ESMA's January 2019 *Advice on Initial Coin Offerings and Crypto-assets.*

Box 2: Distributed Ledger Technology (DLT)

DLT enables the storage, update and validation of information in a decentralised way.

The EBA has observed that DLT is being piloted by a number of financial institutions, for example, in the context of trade finance and in the management of customer due dilligence documentation.[15] ESMA has also reported on the use of DLT in the context of securities markets[16] and ENISA has reported its use in the context of cybersecurity and information security.[17] The ECB, among others, has also issued several reports in this area, for example, in the context of securities post-trading.[18] Various bodies have reported critically on the energy consumption that some DLT (particularly in the context of VCs) entails.[19]

A well-known example of DLT is blockchain, which is the technology underlying Bitcoin.[20] However, DLT does not always entail the use of crypto-assets.

Focussing on Bitcoin blockchain (a public blockchain[21]), the DLT can be used to record the transfer of a Bitcoin from one person (person A) to another (person B) as follows:

- Person A holds in a digital wallet 'public' and 'private' keys, generated via cryptography. Person B also holds 'public' and 'private' keys. The private keys are used to control the ownership of their respective Bitcoins. Public keys are essential for identification and private keys (which are kept secret by the holders) are used for authentication and encryption.

- Person A generates a transaction that includes A's address, B's address and A's private key (without disclosing what A's private key is). The transaction is broadcast to the entire DLT network, which can verify from A's private key that A has the authority to transfer the crypto-asset on the address it is sending from.

The private key is what grants A (or, as the case may be, B) ownership of the crypto-assets at a given address. Losing a private key is equivalent to losing the right to dispose of assets, hence the need to keep private keys safe.

---

[15] See the EBA's July 2018 *Report on the prudential risks and opportunities arising for institutions from FinTech*: https://www.eba.europa.eu/documents/10180/2270909/Report+on+prudential+risks+and+opportunities+arising+for+institutions+from+FinTech.pdf.

[16] See ESMA's Report on the use of DLT in the context of securities markets: https://www.esma.europa.eu/system/files_force/library/dlt_report_-_esma50-1121423017-285.pdf.

[17] See: https://www.enisa.europa.eu/publications/blockchain-security.

[18] See: https://www.ecb.europa.eu/pub/pdf/scpops/ecbop172.en.pdf.

[19] See, for example, the Bank for International Settlements (BIS) Annual Report 2018: https://www.bis.org/publ/arpdf/ar2018e5.pdf, which refers in Graph V.4 to the energy consumption related to selected crypto-currencies.

[20] For further reflections on the use of DLT in connection with crypto-currencies, see for example section 2 of *Distributed Ledger Technology (DLT) and Blockchain*, World Bank Group (December 2017): http://documents.worldbank.org/curated/en/177911513714062215/pdf/122140-WP-PUBLIC-Distributed-Ledger-Technology-and-Blockchain-Fintech-Notes.pdf.

[21] This can be contrasted with, for example, some of the private DLT subject to pilots by financial institutions, for example in the trade finance sphere (see footnote 15).

Digital crypto-asset wallets are used to store public and private keys and to interact with DLTs with a view to allowing users to send and receive crypto-assets and monitor their balances. Crypto-asset wallets come in different forms. Some support multiple crypto-assets/DLTs while others are crypto-asset/DLT specific. There are software/hardware wallets and so-called cold/hot wallets.[22]

DLT networks typically provide their own wallet functions, for example, Bitcoin Core for Bitcoin or Mist Browser for Ethereum.[23] There are also specialized wallet providers. Some wallet providers, so-called custodial wallet providers, not only provide wallets to their clients but also hold their crypto-assets (i.e., their private keys) on their behalf.

8. International standard-setting bodies (BCBS, CPMI-IOSCO, FATF, FSB) are taking forward initiatives with respect to some of the issues raised by crypto-assets.[24] For instance the BCBS recently carried out a crypto-asset stock take to assess banks' exposures to crypto-assets and is now monitoring such exposures on a biannual basis as part of the Basel III monitoring exercise and is working to develop a set of proposals to clarify the prudential treatment of such exposures.[25]

9. At the EU level it is important to provide clarity about the applicability of current EU financial services law to crypto-assets/activities to ensure that there is a common understanding of the extent to which current legislation addresses the risks and supports the opportunities relating to crypto-assets and DLT.

10. In view of the foregoing, the EBA has been gathering information to gain a better understanding of the scale of crypto-asset activities carried out by institutions (credit institutions and investment firms), payment institutions, electronic money institutions, and (insofar as practicable) other firms not currently subject to a scheme of prudential or conduct of business regulation pursuant to current EU financial services law and the issues raised, focusing on issues relating to consumer protection, and the resilience of the financial system from a prudential and financial crime perspective.

11. The EBA has drawn on a range of data sources to inform its work. These include:

    a. the results of targeted EBA data gathering exercises to which the competent authorities responded, focusing primarily on the use of crypto-assets in the context of payment-type activities, regulatory perimeter issues and the crypto-asset

[22] A software wallet is an application which may be installed locally, e.g., on a computer or mobile phone, in which case it is only accessible from that specific computer or mobile phone. Other software wallets are run in the cloud, meaning that they are accessible from any computing device or location. A hardware wallet is a physical device, such as a USB key. Hot wallets are connected to the internet while cold wallets are not. Software wallets are usually hot wallets, while hardware wallets tend to be cold wallets, although there may be some variations. Hot wallets are generally seen as less secure because of their propensity to be hacked from the internet. Yet, while crypto-assets in hot wallets may be spent at any time, a cold wallet has to be 'connected' to the internet first. Some hardware wallets provide enhanced security features, e.g., by requiring the user to physically press or touch the wallet in order to sign a transaction.

[23] Ethereum defines its wallet as 'a gateway to decentralized applications on the Ethereum blockchain. It allows one to hold and secure ether and other crypto-assets built on Ethereum, as well as write, deploy and use smart contracts'.

[24] For example, see the July 2018 FSB report on crypto-assets: http://www.fsb.org/wp-content/uploads/P160718-1.pdf.

[25] See: https://www.bis.org/press/p180920b.htm.

activities that institutions, payment institutions and electronic money institutions are permitted to carry out/observed as carrying out, and prudential issues;

b. ad hoc engagements with regulated financial institutions and industry associations;

c. publications by academics, competent authorities and international standard-setting bodies.

12. With regard to the information acquired from the competent authorities, it is important to recall that the statutory mandates of the authorities typically frame the monitoring, regulation and supervisory functions of the authorities by reference to the regulated financial services specified in EU and national law (the regulatory perimeter). Accordingly, many competent authorities do not hold, and do not have the power to acquire, information about the activities of firms beyond their respective regulatory perimeters. For this reason, information provided to the EBA about the activities of such firms is limited and has been supplied on a 'best efforts' basis.

13. The data gathered by the EBA has informed the EBA's observations set out in this report about the applicability and suitability of the AMLD, the CRD/CRR, EMD2 and PSD2 to crypto-assets/activities involving crypto-assets.

1.3 Legal basis

14. The legal basis for this report and advice is Article 9(4) of the EBA's Founding Regulation (Regulation No 1093/2010) which requires the EBA to establish a committee on financial innovation '*which brings together all relevant competent national supervisory authorities with a view to achieving a coordinated approach to the regulatory and supervisory treatment of new or innovative financial activities and providing advice for the Authority to present to the European Parliament, the Council and the Commission*'.[26] Article 34(1) of the Regulation also enables the EBA, upon request from the European Parliament, the Council or the Commission, or on its own initiative, to provide opinions to the European Parliament, the Council and the Commission on all issues related to its area of competence.

1.4 'Crypto-assets' as described for the purposes of this report

15. In this report, unless otherwise stated, the EBA intends the term 'crypto-asset' to be understood as follows:

Crypto-asset means an asset that:

a. depends primarily on cryptography and distributed ledger technology (DLT) or similar technology as part of its perceived or inherent value,

[26] See footnote 10 for the link to the EBA's Founding Regulation (as amended).

b. is neither issued nor guaranteed by a central bank or public authority,[27] and

c. can be used as a means of exchange and/or for investment purposes and/or to access a good or service.

16. Importantly, the analysis set out in this report does not focus exclusively on crypto-assets as a means of exchange (as was the case for previous EBA publications in this area, reflecting the predominant application of crypto-assets at the time of those publications) but extends to a consideration of crypto-assets through the prism of specific questions regarding the applicability and suitability of the AMLD, CRD/CRR, EMD2 and PSD2 to crypto-assets/activities involving crypto-assets.

17. The term 'crypto-asset' has been selected in line with the approach favoured by international standard-setting bodies such as the BCBS and the FSB.

[27] The EBA is aware that some central banks and public authorities are considering the notion of publicly issued crypto-assets but none are yet in existence in the EU. Such assets would be likely to have significantly different risk characteristics as compared to privately issued crypto-assets and therefore are not considered in this report.

2. Application of current EU financial services law to crypto-assets

18. Crypto-assets are not recognised in any of the Member States or by the European Central Bank as fiat money (i.e. value designated as legal tender, typically in the form of notes or coins), 'deposits' or as 'other repayable funds', as referred to in point (1) of Article 4(1) of the CRR.[28]

19. However, in view of the recent proliferation of different types of crypto-assets for different purposes, the EBA has carried out an assessment of whether crypto-assets may qualify as 'electronic money' within the EMD2 or as 'funds' under the PSD2. This is intended to complement ESMA's analysis of whether crypto-assets may qualify as 'financial instruments' within the scope of the MiFID.[29]

20. The EBA's findings are set out in this chapter, along with the EBA's observations regarding crypto-asset wallet provision and crypto-asset trading platforms and advice to the European Commission. Issues relating to the AMLD are considered in Chapter 3 of this report.

2.1 The EMD2 and the PSD2

21. As a preliminary remark, in assessing whether the EMD2 and the PSD2 apply to an activity involving a crypto-asset, it is essential for an assessment to be carried out on a case-by-case basis, bearing in mind that different crypto-assets have different characteristics, which in some cases may change during the lifecycle of the asset, and that a 'substance over form' approach should be adopted.

2.1.1 EMD2

22. A crypto-asset will qualify as 'electronic money' as defined in point (2) of Article 2 of the EMD2 only if it satisfies each element of the definition:

    'Electronic money' means 'electronically, including magnetically, stored monetary value as represented by a claim on the issuer which is issued on receipt of funds for the purpose of making payment transactions as defined in point 5 of Article 4 of [PSD2], and which is accepted by a natural or legal person other than the electronic money issuer'.

23. Five competent authorities reported to the EBA a handful of cases in which proposals for business models entailed crypto-assets that would, in the opinion of those competent

[28] For further information see the EBA's *Opinion and Report on the perimeter of credit institutions*: https://www.eba.europa.eu/-/eba-publishes-an-opinion-on-the-perimeter-of-credit-institutions.

[29] See footnote 14.

authorities, satisfy the definition of 'electronic money', the issuance of which may be carried out only by 'electronic money issuers' defined in Article 2(3) of the EMD2 (including, credit institutions, electronic money institutions, and certain public bodies) (see Box 3 for examples).[30]

Box 3: Crypto-assets and 'electronic money'

The following examples, included in this report for illustrative purposes only, demonstrate cases in which one or more competent authorities have assessed a proposed business model and determined that a crypto-asset would qualify as 'electronic money'.

Company A wishes to create a Blockchain-based payment network. The network is open meaning that both merchants and consumers can participate. Company A explains that it intends to issue a token which is intended to be the means of payment in the network. The token is issued on the receipt of fiat currency and is pegged to the given currency (e.g. EUR 1 to 1 token). The token can be redeemed at any time. The actual payment on this network is the underlying claim against Company A or the right to get the claim redeemed.

In the assessment of the competent authority the token:

a) is electronically stored;[31]
b) has monetary value;
c) represents a claim on the issuer;
d) is issued on receipt of funds;
e) is issued for the purpose of making payment transactions;
f) is accepted by persons other than the issuer.

Therefore, in the assessment of the competent authority, Company A's proposed token satisfies the definition of 'electronic money' under the EMD2. Consequently the issuance of Company A's proposed token would require, in the assessment of the competent authority, an authorisation of Company A as an electronic money institution (unless a relevant exemption is available).

Company B looks to create an e-money platform based on DLT that uses 'smart contracts'[32] to transfer donations to a charity. Upon receipt of the fiat donations in a segregated bank account at a financial institution, the firm creates a token representing exactly the received amount. This token is then deposited in the donor's wallet, ready to be pledged to a specific charity or redeemed at par value.

---

[30] Indeed several competent authorities have issued publicly reports or other analysis indicating that crypto-assets will qualify as electronic money in relevant cases (e.g. see from MT: https://www.mfsa.com.mt/pages/viewcontent.aspx?id=692 and from the UK: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752070/cryptoassets_taskforce_final_report_final_web.pdf).

[31] For instance, using magnetic chips or single electronic servers, or on DLT. As is clear from recital (8) of the EMD2, the definition of electronic money should cover electronic money whether it is held on a payment device in the electronic money holder's possession or stored remotely at a server and managed by the electronic money holder through a specific account for electronic money. That definition should be wide enough to avoid hampering technological innovation and to cover not only all the electronic money products available today in the market but also those products which could be developed in the future.

[32] 'Smart contracts' (sometimes referred to as 'chain code' or as 'persistent scripts') are automated scripts that execute certain transactions once (pre-defined) conditions are met.

Instead of an instant transfer from the donor to the charity, the tokens are only released to the charity (via the use of 'smart contracts') once pre-agreed conditions are met by the charity and validated by an independent third party. The charity would then receive tokens that could be redeemed at the issuer (in this case Company B), at par value upon request, effectively resulting in a fiat fund wire transfer to the charity via traditional payment rails. This network would be accessible only by verified users. The tokens are not openly tradable on secondary markets. As with the previous example, this token satisfies the criteria of e-money as set out in the EMD2.

24. Hence there may be cases where, based on the specific characteristics of the crypto-asset in question, the asset will qualify as 'electronic money' and will therefore fall within the scope of the EMD2.[33] In such cases, authorisation as an electronic money institution is required to carry out activities involving electronic money pursuant to Title II of the EMD2 unless a limited network exemption applies in accordance with Article 9 of that Directive.

2.1.2 PSD2

25. Crypto-assets are not banknotes, coins or scriptural money. For this reason crypto-assets do not fall within the definition of 'funds' set out in point (25) of Article 4 of the PSD2 unless they qualify as 'electronic money' for the purposes of the EMD2.

26. Should a firm propose to carry out, using DLT, a 'payment service' as listed in Annex I to the PSD2 (such as the execution of payment transactions, including issuing 'payment instruments'[34] and/or acquiring payment transactions and money remittance[35]) with a crypto-asset that qualifies as 'electronic money' such activity would fall within the scope of the PSD2 by virtue of being 'funds'.

2.1.3 Concluding observations on crypto-assets and the perimeter under EMD2 and PSD2

27. Reflecting on the analysis above, and that set out in ESMA's *Advice on Initial Coin Offerings and Crypto-assets* on the qualification of some crypto-assets as 'financial instruments' under the MiFID, in terms of the application of current EU financial services law to crypto-assets, the current perimeter of regulation is such that crypto-assets may, depending on

---

[33] This conclusion does not contradict the previous recommendation that VCs should not be confused with electronic money (footnote 6) as, generally speaking, crypto-assets do not tend to conform to the characteristics of electronic money.

[34] 'Payment instruments' are defined in point (14) of Article 4 of the PSD2 as a personalised device(s) and/or set of procedures agreed between the payment service user and the payment service provider and used in order to initiate a payment order. The issuing of payment instruments is defined in point (45) of Article 4 of the PSD2 as a payment service by a payment service provider contracting to provide a payer with a payment instrument to initiate and process the payer's payment transactions.

[35] 'Acquiring payment transactions' is defined in point (44) of Article 4 of the PSD2 as a payment service provided by a payment service provider contracting with a payee to accept and process payment transactions, which results in a transfer of funds to the payee. 'Money remittance' is defined in point (25) of Article 4 of the PSD2 as a payment service where funds are received from a payer, without any payment accounts being created in the name of the payer or the payee, for the sole purpose of transferring a corresponding amount to a payee or to another payment service provider acting on behalf of the payee, and/or where such funds are received on behalf of and made available to the payee.

their characteristics, qualify as financial instruments, electronic money or none of the foregoing.[36]

Diagrammatic representation of the ambit of EU financial services law referred to in the report with regard to crypto-assets[37]

28. As a result, and based on the analysis to date, it appears that a significant portion of activities involving crypto-assets do not fall within the scope of current EU financial services law (but may fall within the scope of national laws). Consequently, activities involving such crypto-assets are not subject to a common scheme of regulation in the EU. This gives rise to potential issues, including those regarding consumer protection (e.g. stemming from inadequate disclosures regarding the risks entailed in the crypto-asset activity) and the level playing field, which the EBA considers warrant further analysis (see section 2.4). Moreover, the fact that a crypto-asset may fall within the scope of current EU financial services law, does not necessarily mean that all risks associated with the crypto-asset activity concerned are effectively mitigated. This too demands further analysis (section 2.4).

2.2 Crypto-asset trading platforms and custodian wallet providers: consumer protection considerations

29. In the EBA's warnings and opinions of 2013, 2014, and 2016[38] the EBA highlighted the risks arising from two emerging forms of activity involving crypto-assets:

    a. crypto-asset trading, usually through digital platforms operated by providers engaged in exchange services between crypto-assets and fiat currencies or other crypto-assets (e.g. the exchange of VCs such as Bitcoin for Ethereum);[39] and

    b. custodian wallet provision (services to safeguard/store private cryptographic keys granting rights to access and transfer crypto-assets).

---

[36] This basic conclusion is also reflected in, for example, the ECB's February 2015 report referred to in footnote 18.

[37] The diagram is not intended to be a representation, from a quantitative basis, of the percentage of crypto-assets covered (or otherwise) under current EU financial services law. Instead, it is intended to illustrate the three 'buckets' into which a crypto-asset, depending on its characteristics and uses, may fall.

[38] See paragraph 1.

[39] From a user perspective, crypto-asset trading platforms tend to function similarly to e-brokerages, allowing users to buys, sell and trade crypto-assets.

30. In particular, the EBA highlighted the risks of money laundering and the financing of terrorism, and recommended in July 2014 that providers engage in exchange services between virtual currencies and fiat currencies and that custodian wallet providers become 'obliged entities' within the scope of the AMLD (see Chapter 3 of this report).

31. The EBA also highlighted risks relating to consumer protection reported by competent authorities and summarised in Box 4.[40]

Box 4: Consumer protection: crypto-asset trading platforms and custodian wallet providers

In the EBA's warnings and opinions of 2013, 2014, and 2016 the EBA highlighted risks to consumers in connection with services provided by crypto-asset trading platforms and custodian wallet providers, including those from:

- absent/inadequate conduct of business rules, including requirements for specific disclosures about the risks inherent in crypto-assets/crypto-asset activities and the transparency of information requirements and the regulatory status (if any) of the firms concerned;
- absent/inadequate suitability checks (e.g. regarding the riskiness of a crypto-asset activity relative to a consumer's risk appetite);
- inadequate governance arrangements to ensure risks are appropriately managed and mitigated, for example in the context of operational resilience, including ICT security, potentially resulting in the risk that crypto-assets may be stolen;
- absent/inadequate arrangements to segregate the assets of consumers from those held on the own account of firms;
- absent/inadequate arrangements to mitigate conflicts of interest;
- inadequate advertising rules, potentially leading to misleading marketing/promotions, or aggressive solicitation by phone or email;
- absent compensation schemes, such as deposit guarantee schemes, investor protection schemes or any other compensation schemes protecting the customers of the entity;
- absent/inadequate complaints handling and redress procedures;
- a lack of a legal framework determining the rights and obligations of each party, especially liabilities rules.

[40] See also ESMA's *Advice on Initial Coin Offerings and Crypto-assets* for a discussion of the crypto-assets risks and issues for consideration by regulators.

32. The EBA's conclusions set out in the December 2013, July 2014 and August 2016 warnings and opinions regarding the risks arising to consumers from services provided by crypto-asset trading platforms and custodian wallet providers remain valid. Moreover, the EBA observes that in some Member States legislative measures have been promulgated or are being considered to create new classes of activity involving crypto-asset trading platforms or wallet provision for which some sort of (tailored) regulation or registration is required, driven primarily by concerns about consumer protection. While the extent of the engagement in these activities is relatively limited, the emergence of divergent approaches across the EU could pose risks to the level playing field and thus an EU framework at an early stage may be justified.

2.3 Observations on other developments at the national level: consumer protection considerations

33. The EBA notes that, to address risks arising for consumers from specified crypto-asset activities, in some jurisdictions, in addition to the promulgation of warnings regarding the risks involved (further to the EBA and joint ESA warnings referred to in paragraph 1), some authorities have adopted, or plan to consult on, a ban on the sale of some crypto-asset products.

34. In particular, in BE the FMSA has issued a ban on the selling or trading of derivatives with a VC underlying[41] and in the UK the relevant authorities will consult in 2019 on a potential prohibition of the sale to retail consumers of derivatives referencing certain types of crypto-assets (for example, exchange tokens), including contracts for difference, options, futures and transferable securities.[42]

35. A proliferation in national approaches across the EU could, again, pose risks to the level playing field.

2.4 Advice to the European Commission on the need for further analysis

36. The competent authorities have reported to the EBA that it is their understanding that crypto-asset activity levels in their jurisdictions remain low and do not, at this stage, present a threat to financial stability, a finding which aligns with the observations of the FSB.[43]

37. However, some issues arise, in particular with regard to consumer protection, market integrity and the level playing field, in view of the fact that:

[41] See: https://www.fsma.be/en/news/ban-marketing-certain-financial-products.

[42] See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752070/cryptoassets_taskforce_final_report_final_web.pdf.

[43] See footnote 24.

a. current EU financial services law does not apply to a number of forms of crypto-asset/activity,

b. specific services relating to crypto-asset custodian wallet provision and crypto-asset trading platforms may not constitute regulated activities under EU law, and

c. the emergence of divergent approaches across the EU has been identified.

38. For these reasons the EBA considers that there would be merit in the European Commission carrying out a cost/benefit analysis to assess whether EU level action is appropriate and feasible at this stage to address the issues set out above.

39. The EBA observes that the European Commission is better-placed to carry out this analysis bearing in mind that, in the vast majority of cases, activities involving crypto-assets fall outside the scope of the supervisory remits of the competent authorities and, therefore, the competent authorities (and therefore the EBA and the other ESAs) do not have available comprehensive data on crypto-asset activities outside the current financial services regulatory perimeters under EU and national law. Furthermore, crypto-asset activities give rise to a wide range of issues, within and outside the financial sector, hence the need for a cross-sectoral approach.

40. In carrying out any cost/benefit analysis and, as appropriate, developing any proposals for EU-level action, the EBA notes the desirability of:

a. **A holistic and balanced approach**: Taking into account the potential application of DLT and crypto-assets beyond the financial sector [44] and the cross-cutting implications that arise it would be desirable for a holistic approach to be adopted for the assessment of opportunities and risks relating to crypto-assets, avoiding focusing on the application of crypto-assets in a specific sector and building on initiatives already underway (e.g. the European Commission's Blockchain Observatory). The EBA also draws attention to the energy consumption entailed in some crypto-asset activity[45] and the need for the cost/benefit analysis to take account of considerations relating to the sustainable development of the financial sector and other climate-related EU initiatives.[46] This analysis will take into account the EU's support of and commitment to the Paris Agreement and any other EU initiatives.

b. **An activities-based approach**: Taking into account that crypto-assets may be issued in a decentralised way and may vary significantly in their characteristics and

[44] See for example, European Parliament resolution of 3 October 2018 on distributed ledger technologies and blockchains: building trust with disintermediation: http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2018-0373+0+DOC+XML+V0//EN&language=EN.

[45] See footnote 19.

[46] See BIS annual report 2018. See too the EU support for the Paris Agreement https://ec.europa.eu/clima/policies/international/negotiations/paris_en and EU Climate Action: https://ec.europa.eu/clima/policies/international/paris_protocol_en.

uses, it would be desirable to focus the cost/benefit analysis on activities involving crypto-assets (i.e. an activities-based approach). This would support a holistic assessment of the opportunities and risks presented – for instance as regards utilities tokens to access new technologies and security tokens as a new means of raising capital and of financing the real economy (see paragraph 6).

c. **A focus on the access points to the traditional financial system and consumers**: In order to assess the impact of crypto-asset activities on the resilience of the financial sector and standards of consumer protection, it would be desirable to focus on the interconnectedness of crypto-asset activities with the traditional financial system and with consumers. This approach can also help inform an assessment of the feasibility and effectiveness of measures to address any issues identified. In this respect, the EBA draws attention to previous analysis it has provided with regard to VCs.[47]

d. **A coordinated international response:** Given that this is a complex, fast-moving and cross-border issue, the desirability of keeping channels open with international bodies, such as the FATF, the FSB and the BCBS, and third country authorities, is recognised. Such an approach would help the European Commission to develop an informed analysis, as well as any future coordinated action.

e. **Future-proofing**: Given the pace and complexity of change, it would be desirable for a technologically neutral and future-proof approach to be adopted in developing any proposals should it be concluded that EU-level action is needed.

2.5 Continuous monitoring by the EBA of the regulatory perimeter

41. The EBA underscores the need for business models involving crypto-assets to be assessed on a case-by-case basis in order to establish whether or not, based on the circumstances, a relevant regulatory scheme under EU financial services law is applicable, in which case a firm looking to carry out activities relating to those crypto-assets must conform to the regulatory and supervisory requirements pursuant to the scheme in question.

42. Consistent with the EBA's role in monitoring innovation and the regulatory perimeter, the EBA will continue to monitor the emergence of new activities and business models involving crypto-assets, leveraging competent authorities' monitoring efforts at the national level, and will keep under review the applicability and suitability of relevant EU law and the need for any further actions at EU level.

[47] See paragraph 1. The EBA underscores, in particular, its opinion (as articulated previously) about the unsuitability of the EMD2 and PSD2 for the regulation of VCs as an activity, again, calling for holistic solutions.

3. Anti-money laundering/countering the financing of terrorism

43. In the July 2014 Opinion the EBA recommended bringing into the scope of the AMLD VC-to-fiat exchanges and providers of VC custodian wallet services in order to mitigate the risks of money laundering and the financing of terrorism arising from those activities. Legislative amendments to this effect were ultimately agreed in the context of the AMLD5 negotiations such that providers engaged in exchange services between VCs and *fiat* currencies as well as custodian wallet providers, are now listed among the 'obliged entities' within the scope of the AMLD. The AMLD5 is required to be implemented in national law by 10 January 2020.

44. As noted in other parts of this report, the characteristics and uses of, and services offered in relation to, crypto-assets have evolved rapidly in recent years and, since the EBA's 2014 Opinion, services such as crypto-to-crypto exchanges (whereby one crypto-asset can be exchanged for another type of crypto-asset) have become more prevalent. In this chapter of the report the EBA sets out its advice to the European Commission in the light of the latest recommendations of the FATF of October 2018.

3.1 FATF recommendations

45. The FATF, noting the need for greater clarity about the application of AML/CFT requirements to activities involving, in its terminology, "virtual assets", adopted on 19 October 2018 changes to the FATF Recommendations and Glossary that clarify how the Recommendations apply in the case of financial activities involving virtual assets.[48]

46. These changes notably include new definitions of 'virtual assets'[49] and 'virtual asset service providers', with the effect that the jurisdictions are recommended to have within the scope of AML/CFT obligations any natural or legal person (not covered elsewhere under the FATF Recommendations) who, as a business, conducts one or more of the following activities or operations for or on behalf of another natural or legal person:

    a. exchange between virtual assets and fiat currencies;

    b. exchange between one or more other forms of virtual assets;

[48] See: http://www.fatf-gafi.org/publications/fatfrecommendations/documents/regulation-virtual-assets.html.

[49] In defining 'virtual asset', the FATF refers to digital representations of value that can be digitally traded or transferred and can be used for payment or investment purposes, including digital representations of value that function as a medium of exchange, a unit of account, and/or a store of value. The FATF emphasises that virtual assets are distinct from fiat currency (a.k.a. 'real currency', 'real money', or 'national currency'), which is the money of a country that is designated as its legal tender.

c. transfer of virtual assets;

d. safekeeping or administration of virtual assets or instruments enabling control over virtual assets; and

e. participation in and provision of financial services related to an issuer's offer and/or sale of a virtual asset.

47. The EBA understands that the changes will be discussed by the FATF in the coming months and that standards or supplemental guidance will be issued as appropriate to further elaborate and clarify the latest changes.

3.2 Advice to the European Commission on the need for further analysis

48. The EBA fully supports actions to enhance the resilience of the financial system by reducing AML/CFT risks. The EBA notes the latest call from the FATF for jurisdictions to take urgent legal and practical action to address money laundering and terrorist financing risks relating to virtual assets, including in relation to providers of services not currently within the scope of the AMLD (e.g. crypto-to-crypto exchanges).

49. The EBA recommends that the European Commission have regard to the latest FATF recommendations and any further standards or guidance issued by the FATF as part of a holistic review of the need, if any, for action at the EU level to address issues relating to crypto-assets (see section 2.4). In particular, the EBA notes that any wider assessment by the European Commission of any extension to the EU regulatory perimeter with regard to crypto-asset activities (e.g. in terms of the establishment of new authorisation or registration requirements from a prudential/conduct of business perspective) would be relevant to a consideration of the implementation of the FATF recommendations (which require an authorisation or registration scheme to be in place for the five entities newly identified in the recommendation and glossary).

50. For completeness, the EBA draws the attention of the European Commission to the upcoming ESA Joint Opinion on the risks of money laundering and terrorist financing affecting the EU's financial sector, which highlights potential money laundering and terrorist financing risks associated with new technologies, including VCs.[50]

[50] Anticipated date for publication: January 2019.

4. Financial institutions' activities involving crypto-assets

51. In light of the widening applications of crypto-assets, the EBA has carried out an analysis of institutions (credit institutions and investment firms), payment institutions and electronic money institutions' activities involving crypto-assets.[51] A summary of observed crypto-activities is set out in this chapter.

52. The EBA goes on to explore in this chapter the availability of supervisory powers under current EU law to mitigate any potential risks to the financial soundness of institutions, payment institutions and electronic money institutions arising from crypto-asset activities and sets out the EBA's proposals for monitoring enhancements. The EBA also reflects on the need for action to ensure that consumers receive adequate disclosures and are not misled about the applicable rights and safeguards in relation to services involving crypto-assets. The EBA also sets out its advice to the European Commission regarding the need to take steps, where possible, to promote convergence in the accounting treatment of institutions' exposures to crypto-assets.

4.1 Crypto-asset activities underway and anticipated trends

53. The EBA has assessed, via the competent authorities, whether institutions, payment institutions and electronic money institutions are currently carrying out activities in relation to crypto-assets.[52] The vast majority of competent authorities cited challenges in providing this information due to the absence of granular reporting requirements for such activities, noting that regular reporting requirements are not sufficiently granular to require information on crypto-asset activity. However, seven competent authorities reported that certain activities are being carried out as follows:

[51] Current EU law does not prohibit financial institutions, including credit institutions, investment firms, payment institutions and electronic money institutions, from holding or gaining exposure to crypto-assets or from offering services relating to crypto-assets. (These types of firm are permitted, pursuant to their licence status, to carry out specified regulated financial services listed in the relevant directive – see Annex I to the CRD, Annex I to the PSD2 and the EMD2. However, in addition, these firms may carry out other business activities unless expressly prohibited as a matter of national law.)

[52] Competent authorities were invited by the EBA to report whether they have observed institutions, payment institutions or electronic money institutions carrying out crypto-asset activities and, for institutions, their expectations regarding the prudential treatment. Identified activity channels include: owning crypto-assets directly, market-making, lending against crypto-asset collateral, clearing or trading derivatives with crypto-asset underlyings, lending to entities engaged in crypto-asset activities, underwriting ICOs, and providing custody wallet or trading platform services in relation to crypto-assets.

Table 1: Institutions' crypto-asset activities reported by competent authorities

Type of regulated entity	Observed activity/number of competent authorities reporting that activity
Institution (credit institution/investment firm as defined in Article 4 of the CRR)	Owning crypto-assets directly (1) Making-markets (1) Lending against crypto-asset collateral (1) Clearing or trading derivatives with crypto-asset underlying (3) Investing in products with crypto-assets underlyings (1) Lending to entities dealing directly or indirectly with crypto-assets (4) Providing custody/wallet services (1) Providing exchange services for crypto-assets to fiat currency (1) or for other crypto-assets (1) Other crypto-asset activity (1)
Payment institution	Owning crypto-assets directly (1) Providing custody/wallet services for crypto-assets (1) Providing exchange services for crypto-assets to fiat currency (2) or to other crypto-assets (1) Other crypto-asset activity (1)
Electronic money institution	Owning crypto-assets directly (1) Crypto-asset liabilities (1)

54. Quantitative data on these activities has proved largely elusive for the reasons stated in paragraph 53. However, crypto-asset-related activity is regarded to be relatively limited confirming that, at this time, such activities do not appear to give rise to implications for, or risks to, financial stability (in line with the findings set out in the FSB's October 2018

report entitled *Crypto-assets markets - Potential channels for future financial stability implications*[53]).

55.Explaining the limited activities reported to the EBA, competent authorities noted that heed has been taken of the warnings by the EBA (and the other ESAs) of the risks of engaging in crypto-asset activity, particularly for speculative investment purposes. The market volatility of VCs, particularly since December 2017, has also impacted interest. However, going forward, competent authorities noted that the interest of regulated financial institutions in crypto-asset activities is likely to grow, particularly in the context of the increasing use of DLT-based solutions which may entail the use of some sort of crypto-asset for access purposes (i.e. 'utility' type tokens).

4.2 Risk mitigation: supervisory powers under EU law

56.Activities involving crypto-assets do not typically involve regulated financial services under EU law (see Chapter 2) and, therefore, of themselves constitute 'other business activities' of institutions, payment institutions and electronic money institutions (if they are regulated financial services pursuant to EU law then the relevant supervisory regime will apply).

57.In carrying out such activities institutions, payment institutions and electronic money institutions must have in place appropriate arrangements to mitigate the operational, including ICT, and reputational risks involved (e.g. in relation to credit institutions, see Article 74 of the CRD outlined in Table 2). The EBA draws attention to the availability of supervisory powers (Table 2) to enforce these requirements and to mitigate risks identified in the course of supervisory reviews and evaluations. Other powers may also be available under national law (e.g. to prohibit other business activities not linked to the carrying out of regulated financial services where this activity could impair the financial soundness of the firm concerned).

Table 2: Supervisory powers (sample - EU law)

Institution	Supervisory powers/legal basis under EU law
Institution	Article 74 CRD (internal governance): *Institutions are required to have robust governance arrangements, which include a clear organisational structure with well-defined transparent and consistent lines of responsibility, effective processes to identify, manage, monitor and report the risks that they are or might be exposed to, adequate internal control mechanisms, including sound administration and*

[53] See: http://www.fsb.org/wp-content/uploads/P101018.pdf and the FSB Chair's letter to G20 Finance Ministers and Governors dated March 2018: http://www.fsb.org/2018/03/fsb-chairs-letter-to-g20-finance-ministers-and-central-bank-governors/.

	accounting procedures and remuneration polices and practices that are consistent with and promote sound and effective risk management. These arrangements, processes and mechanisms are required to be '*comprehensive and proportionate to the nature, scale and complexity of the risks inherent in the business model and the institutions' activities*' – i.e. including in the context of other business activities. Articles 97 CRD (supervisory review and evaluation process) and Article 104 CRD (supervisory powers): In the course of the supervisory review and evaluation process, competent authorities are required to determine if the arrangements, strategies, processes and mechanisms, implemented by institutions and the own funds and liquidity held by them ensure a sound management and coverage of risks. In the event the competent authorities determine that the measures are insufficient to ensure a sound management and coverage of risks, the competent authorities may exercise any of the powers referred to in Article 104 of the CRD, for example: - to restrict or limit the business, operations or network of institutions or to request the divestment of activities that pose excessive risks to the soundness of the institution; - to require the reduction of the risk inherent in the activities; - to impose additional own funds or liquidity requirements.
Payment institution	Article 11(5) PSD2 (granting of authorisation): *Where an institution is engaged in business activities other than payment services, competent authorities may require the establishment of a separate legal entity for the payment services business, where the non-payment services activities of the payment institution impair or are likely to impair either the financial soundness of the payment institution or the ability of the competent authority to monitor the payment institution's compliance with all obligations laid down by the Directive.* Article 8(2) and Article 9(3) PSD2 (own funds): Power to impose higher own funds requirements based on an evaluation of the risk-management processes, risk loss data base and internal control mechanisms of the payment institution. Article 23 PSD2 (supervision)

	Competent authorities may require (among other actions) the reporting of additional information, carry out onsite inspections, impose additional capital requirements, in particular where non-payment services activities of the payment institution impair or are likely to impair the financial soundness of the payment institution (Article 23(3) of PSD2).
Electronic money institution	As for payment institutions (see Article 3(1) and Article 6(1)(e) EMD2).

58. Consequently, competent authorities have available a range of robust supervisory powers that can be applied effectively to mitigate the risks arising from credit institutions, payment institutions and electronic money institutions' other business activities, including crypto-asset activity. In the context of the subject matter of this report, the EBA does not identify a need for these powers to be expanded.

4.3 Accounting and prudential treatment of institutions' exposures to/holdings of crypto-assets and advice for the European Commission

59. The EBA also explored the applicability of the existing prudential framework to crypto-assets. In particular, this review included the relevant capital requirements and liquidity requirements.

60. As regards the prudential treatment, the EBA notes that the BCBS is currently taking forward work, in which the EBA is actively engaged, to clarify the prudential treatment of banks' exposures to/holdings of crypto-assets.[54] The outcome of this work may, in time, necessitate the amendment or clarification of the prudential framework under the CRD/CRR as regards institutions' exposures to/holdings of crypto-assets. The EBA stands ready to provide such further advice to the European Commission as may be appropriate on the completion of the BCBS work and, in the meantime, will keep under review the need for any guidance to support a common application of the current rules under the CRD/CRR.[55]

61. The EBA also observes that no competent authorities have currently a specific Pillar 2 treatment for crypto-assets. However, competent authorities, in the course of the supervisory review and evaluation process (Article 97 CRD), are required to determine if the arrangements, strategies, processes and mechanisms implemented by institutions and the own funds and liquidity held by them are sufficient to ensure a sound management and

[54] See: http://www.fsb.org/wp-content/uploads/P160718-1.pdf.

[55] It is to be noted that similar work should be performed with respect to the prudential treatment of crypto-assets for payment institutions and electronic money institutions trading such assets for own account (as PSD2 and EMD2 provide certain methods for the calculation of own funds requirements for these institutions but it is unclear how crypto-assets should be taken into account).

coverage of institutions' risks arising from the institutions' activities, including other business activities (e.g. involving crypto-assets). Where competent authorities determine the arrangements etc. to be insufficient, the competent authorities may, for example, impose additional own funds requirements under Pillar 2 (see Article 104 CRD for the supervisory powers available).

62. Moreover, it appears that there is a need to clarify the appropriate accounting treatment of crypto-assets, which in most cases would provide a link to the existing prudential treatment. The EBA notes the absence of clarity at the level of international and national accounting standard setting bodies about whether, for example, a holding of a crypto-asset should be treated as an intangible asset. The EBA also observes that the absence of clarity regarding the accounting treatment may give rise to queries about the consequential prudential treatment under current EU law (the CRD/CRR). The EBA observes that, without the necessary clarifications, divergent approaches could emerge undermining the level playing field.

63. Pending further regulatory developments, including the outcome of the BCBS work, the EBA notes that competent authorities and institutions should adopt a conservative prudential approach to the treatment of exposures to crypto-assets in Pillar 1, supplemented by Pillar 2 requirements if necessary to achieve this outcome. The EBA recommends that the European Commission take steps where possible to promote consistency in the accounting treatment of crypto-assets.

4.4 Monitoring enhancements: EBA actions in 2019

4.4.1 Scale and nature of activities involving crypto-assets

64. In the majority of Member States, competent authorities expect (and in many cases legally require) institutions, payment institutions and electronic money institutions to inform them of any material changes to the business models, including in relation to other business activities such as crypto-activities (and in one Member State financial institutions are required to inform the competent authority of such changes). However, due to the absence in most jurisdictions of specific reporting requirements for crypto-asset activities of institutions, payment institutions and electronic money institutions, some competent authorities are not well-equipped to monitor these activities and any risks arising and therefore are impeded in their capacity to take such supervisory actions as may be necessary.

65. In view of the challenges that competent authorities are facing, the EBA will develop in 2019 a common monitoring template which competent authorities can choose to issue to institutions, payment institutions and electronic money institutions (and, as appropriate, other financial institutions) to monitor the level and type of activity underway. This template will be developed taking account of the crypto-asset template developed by the

BCBS and will be used for the information-gathering exercise done by the EBA to support further monitoring of crypto-assets.

4.4.2 Promotion of crypto-asset activities

66. The EBA is aware from monitoring activities by some competent authorities that some financial institutions may, in the course of the promotion of their other business activities (including those relating to crypto-assets) be failing to disclose appropriately the risks involved in such activities. For example, some regulated firms may not be disclosing appropriately that their crypto-asset services are not regulated financial services or they may even present unregulated activities as regulated financial services. By way of another example, consumers may not receive information explaining that safeguards applying to certain forms of regulated activity do not extend to activities involving crypto-assets. For instance, as noted in paragraph 18, crypto-assets are not deposits; therefore, if crypto-assets are held by a bank on behalf of a customer they do not benefit from protection under Directive 2014/49/EU on deposit guarantee schemes (the DGSD). By way of another example, segregation rules under the EMD2 or the PSD2 do not apply to holdings of customers' crypto-assets (unless those assets are considered electronic money).

67. It is vital that consumers are not misled about the nature of the regulatory safeguards applicable in the context of financial institutions' crypto-asset activity. Therefore the EBA will carry out in 2019 an assessment of business practices of institutions, payment institutions and electronic money institutions regarding crypto-asset advertising (which should be balanced, clear and not misleading), pre-contractual information and the risks related to crypto-asset transactions for consumers (lack of legal framework, liquidity risk etc.), and the disclosure of the rights and safeguards available to consumers in the context of any crypto-asset services provided by those institutions, to assess what, if any, actions are needed to ensure high standards of consumer protection.

68. For completeness, the EBA notes that the disclosure practices of firms that are outside the current scope of prudential and conduct of business regulations under EU law and are carrying out crypto-asset activities may also warrant attention. However, the EBA is unable to take steps in this respect in view of the fact that such firms appear to fall outside the scope of the EBA's (and in the vast majority of cases its competent authorities) statutory remit.

4.4.3 Other monitoring actions

69. The EBA will keep under review the need to carry out any other monitoring exercises, for example, in relation to operational or other conduct of business risks arising from institutions, payment institutions and electronic money institutions activities involving crypto-assets.

5. Concluding observations and next steps

70. The use of crypto-assets, which depend on cryptography and DLT, has evolved rapidly in recent years and is anticipated to continue to do so as the technologies continue to be piloted within and beyond the financial sector.

71. Based on the current assessments of the competent authorities, crypto-asset-related activity in the EU is regarded as relatively limited, confirming that, at this time, such activities do not appear to give rise to implications for, or risks to, financial stability. However, because some crypto-assets/activities do not appear to fall within the scope of current EU financial services law and are highly risky, as identified in this report, risks arise with regard to consumer protection, operational resilience, and market integrity. Moreover, the proliferation of legislative and supervisory actions at the national level, driven by consumer protection considerations, gives rise to risks for the level playing field. Crypto-assets also give rise to other issues which are beyond the scope of competence of the EBA (e.g. regarding accounting and tax treatment).

72. For these reasons, in this report the EBA advises the European Commission to carry out a cost/benefit analysis to assess, on a holistic basis, whether EU-level action is appropriate and feasible at this stage to address the issues identified. Such a cost/benefit analysis should take account of the potential application of DLT and crypto-assets beyond the financial sector, and should extend to aspects relating to the environmental impact of some crypto-asset activity. The EBA also advises the European Commission to have regard to the latest recommendations and any further standards or guidance issued by the FATF as part of a holistic review of the need, if any, for action at the EU level, and calls on the Commission to take steps where possible to promote consistency in the accounting treatment of crypto-assets.[56]

73. The EBA will keep under review the need for any further actions within the scope of its statutory competence and stands ready to support the European Commission in relation to any further analysis of issues arising in relation to crypto-assets. In the meantime the EBA will take forward in 2019 the following actions:

    a. the development of a common monitoring template which competent authorities can issue to institutions, payment institutions and electronic money institutions (and, as appropriate, other financial institutions) to monitor the level and type of crypto-asset activity underway (section 4.4.1);

[56] See sections 2.4 and 3.2 and paragraph 63 of this report.

b. the assessment of business practices of institutions, payment institutions and electronic money institutions regarding crypto-asset advertisings (which should be well-balanced, clear and not misleading), pre-contractual information about the risks related to crypto-asset transactions for consumers (lack of legal framework, liquidity risk etc), and the disclosure of the rights and safeguards applicable to consumers in the context of any crypto-asset services provided by those institutions to assess what actions are needed to ensure high standards of consumer protection (section 4.4.2);

c. report to the European Commission on the conclusion of the BCBS work with regard to the prudential treatment of banks' holdings of/exposures to crypto-assets (section 4.3);

d. keep under review the need for any guidance to support a common application of the current prudential rules under the CRD/CRR as regards institutions' exposures to/holdings of crypto-assets (section 4.3) (ongoing);

e. carry out continuous monitoring of innovation and of the regulatory perimeter, including with regard to crypto-asset activities (section 2.5) (ongoing).