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# DISCUSSION PAPER

## [ACCOUNTING FOR CRYPTO- ASSETS: HOLDER AND ISSUER PERSPECTIVE]

[2020]

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Comments should arrive no later than [Comment Deadline Date]. EFRAG will place all comments received on the public record unless confidentiality is requested.

## EFRAG Research Activities in Europe

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This paper is part of EFRAG's research work. EFRAG aims to influence future standard-setting developments by engaging with European constituents and providing timely and effective input to early phases of the IASB's work. Four strategic aims underpin proactive work:

- engaging with European constituents to understand their issues and how financial reporting affects them;
- influencing the development of International Financial Reporting Standards ('IFRS Standards');
- providing thought leadership in developing the principles and practices that underpin financial reporting; and
- promoting solutions that improve the quality of information, are practical, and enhance transparency and accountability.

More detailed information about our research work and current projects is available on the EFRAG website.

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## EXECUTIVE SUMMARY

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### Motivation for research

ES1 The EFRAG project on the accounting for crypto-assets (EFRAG crypto-project) is motivated by the growth potential, associated risks, increased regulatory attention and identified potential accounting gaps as elaborated upon below.

### Growth potential, associated risks and increased regulatory attention

ES2 Due to the inherent risk and growth potential of crypto-assets, there has been heightened attention by different types of regulators on market developments and risks related to crypto-assets. These includes attention from regulators whose purview is consumer protection, financial stability, market integrity and investor protection.

ES3 There is a recognised need for the strengthening of regulatory oversight on crypto-assets activities as a precursor to crypto-assets becoming mainstream. The potential regulatory enhancement necessitates a parallel review and where needed the development of accounting requirements as part of the investor protection regime that can contribute to transparency and enhance information on entities exposure.

### Potential accounting gaps

ES4 In 2018, the IASB decided to adopt a monitoring stance premised on the low prevalence of crypto-assets amongst IFRS reporting entities. In 2019, IFRS IC issued an agenda decision clarifying the appropriate accounting treatment for a subset of crypto-assets (i.e. cryptocurrencies where there is no claim on issuer). Cryptocurrencies represent a significant proportion of the crypto-assets universe from a valuation standpoint. Some stakeholders have supported a monitoring stance by the IASB and emphasised that any risk mitigation and investor and consumer protection should be addressed through enhanced regulatory guidance particularly as these assets are yet to become mainstream for a majority of entities.

ES5 EFRAG crypto-project has been conducted and this DP developed on the premise that there are reasons why the clarification or update of IFRS requirements for crypto-assets may be needed. These reasons are further described below.

### *IFRS IC clarification excluded key areas*

ES6 In clarifying<sup>1</sup> the accounting of cryptocurrencies with no claim on any issuer, the IFRS IC considered the accounting requirements for intangible assets, inventory, cash and financial asset and decided that cryptocurrencies have the characteristics of either intangible asset or inventory depending on the purpose of holding the cryptocurrency.

ES7 Nonetheless, holding of some crypto-assets including cryptocurrencies where there is a claim on the issuer (e.g. some stable coins, security tokens, utility tokens) and the issuance of crypto-assets fell outside the scope of the IFRS IC clarification agenda decision. Several stakeholders including participants of the EFRAG crypto-project outreach have expressed the need for the IASB to broaden the scope of its clarification.

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<sup>1</sup> <https://www.ifrs.org/-/media/feature/meetings/2019/june/ifric/ap12-holdings-of-cryptocurrencies.pdf>

### Unaddressed issues and stakeholders expectations

ES8 Respondents to the IFRS IC agenda decision highlighted several unaddressed issues under current IFRS requirements.

ES9 Consistent with feedback to the IFRS IC agenda decision, the December 2019 Accounting Standards Advisory Forum (ASAF) staff paper<sup>2</sup> on the 2020 IASB agenda consultation indicates that some stakeholders expect a review and revision of current IFRS requirements to allow appropriate accounting for crypto-assets (e.g. revision of IAS 38 *Intangible Assets* and allowing accounting policy choice or the development of a standalone crypto-assets standard). Hence, the EFRAG research project can inform the IASB 2020 agenda.

### Diversity in current practice

ES10 The feedback to the IFRS IC draft agenda decision consultation is indicative of diversity in the application of IFRS Standards within certain jurisdictions as shown by the evidence (Table 1) provided by the Canadian securities administrator in its response<sup>3</sup> to the IFRS IC tentative agenda decision. As discussed in **Chapter 3: paragraph 3.39**, one stakeholder cited an examples of similar entities (i.e. exchanges) located in Australia and Hong Kong that apply different subsequent measurement to their cryptocurrencies holding in a manner that lessens the comparability of their reporting. It is hard to obtain EU jurisdictions data on entities that are holders of crypto-assets and their applied accounting method, but the indication of diversity in practice within other IFRS reporting jurisdictions is indicative of the need for IFRS clarification that can help to narrow the diversity in practice.

Table 1: Diversity in practice in measurement of cryptocurrency holdings by entities

<u>Standard Applied</u>	<u>Number of Entities</u>	<u>Percentage</u>
IAS 8.11 (to arrive at FVTPL)	16	39 %
IAS 2.3(b)*	11	27 %
IFRS 9 – FVTPL	4	10 %
IAS 38 – Cost Model	1	2 %
IAS 38 – Revaluation Model	4	10 %
Not determinable	5	12 %
Total	<b>41</b>	<b>100%</b>

Source: CSA comment letter to IFRS IC agenda decision

### Updates could inform IFRS requirements for analogous transactions

ES11 Regardless of whether or not the innovation, growth and uptake of crypto-assets is sustained and whether or not they eventually become mainstream for institutional actors, issues that arise in accounting for crypto-assets could have broader implications. In reviewing the accounting for crypto-assets transactions under IFRS, consideration could be made on similarities and differences between crypto-assets and analogous areas for which IFRS Standards provide none or limited specific guidance including certain types of investment (such as commodities), emission rights and rights arising from loyalty programmes and similar schemes.

<sup>2</sup>December 2019 ASAF Staff Paper, <https://cdn.ifrs.org/-/media/feature/meetings/2019/december/asaf/ap1-agenda-consultation.pdf>

<sup>3</sup>[https://www.securities-administrators.ca/uploadedFiles/General/pdfs/LECAC\\_Cryptocurrency\\_HoldingsTADResponse.pdf](https://www.securities-administrators.ca/uploadedFiles/General/pdfs/LECAC_Cryptocurrency_HoldingsTADResponse.pdf)

### ***Could affect potential IFRS reporters and IFRS entities counterparties***

ES12 Furthermore, regardless of the low prevalence of crypto-asset holdings by current IFRS reporting entities, consideration of areas for the clarification or enhancement of IFRS guidance is useful because

- Smaller unlisted entities that are holders or issuers of crypto-assets may become listed and thereafter become IFRS reporting entities meaning that the potential universe of IFRS reporting entities with crypto-assets activities could grow in the future; and
- At an aggregate level, there are significant holdings of crypto assets by unlisted entities and these entities could be counterparties to IFRS reporting entities.

### ***Gaps arising due to national standard setter (NSS) guidance***

ES13A high-level analysis of NSS' guidance (both national GAAP and in jurisdictions that apply IFRS) shows diversity of requirements and underlying principles across jurisdictions. The diversity in requirements and underlying principles across different NSS guidance and some evidence of diversity in practice by holders within the jurisdictions supports the case for reviewing existing IFRS requirements.

### ***Key conclusions (To be developed later)***



## QUESTIONS TO CONSTITUENTS

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EFRAG invites comments on all matters in this DP, particularly in relation to the questions set out below. Comments are more helpful if they:

- address the question as stated;
- indicate the specific paragraph reference to which the comments relate; and/or
- describe any alternative approaches that should be considered.

All comments should be received by [Submission date].

**[Question 1- Accounting for crypto-assets holders]- TO FORMULATE AFTER TEG DISCUSSION**

**[Question 2- Accounting for crypto-assets issuers] TO FORMULATE AFTER TEG DISCUSSION**

**[Question 3-Potential market developments and their implications]**

# CHAPTER 1: INTRODUCTION

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## Overview of crypto-assets

- 1.1 There are different definitions of crypto-assets including one where crypto-assets, including coins and tokens, are defined as a cryptographically secured digital representation of value or contractual rights on some type of distributed ledger technology (DLT) decentralised network (e.g. Blockchain<sup>4</sup>) which is a public transaction database.
- 1.2 In contrast to traditional forms of money which are controlled using centralised banking systems, crypto-assets typically use decentralised control allowing two parties can transact with each other directly without the need for an intermediary.
- 1.3 Although the markets are evolving fast, the two most common type of crypto-assets are Bitcoin and Ether. Bitcoin was the first crypto-asset launched in 2009. Other than its function as a cryptocurrency, Bitcoin represents an innovative technology and payment network developed by Satoshi Nakamoto, Bitcoin's pseudonymous creator which is sometimes referred to as "Web 3", a fundamental change to the internet as we know it today.
- 1.4 Bitcoin was essentially born of despair and mistrust in the financial markets. It was beginning of 2009 and the world was in the midst of the worse financial crises since the Great Depression – banks were collapsing, businesses were closing and people were losing their home; and worse people were losing the life savings. Amongst the financial chaos, Satoshi Nakamoto, believed he had a solution. It come in the form of a 'electronic cash system' that replaced centralised payment systems like banks and governments in favour of a peer-to-peer payments network supported by an online ledger known as a blockchain. Many suggest that crypto-assets are redefining and reshaping the financial system and that critics are either ignoring, or simply not understanding, the promise they hold.
- 1.5 Crypto-assets have grown significantly both in number and in overall market capitalisation albeit dominated by a few cryptocurrencies (i.e. Bitcoin which has 54% market share and the top 5 cryptocurrencies have 75% of market share). According to Frost & Sullivan<sup>5</sup>, the growth of the global crypto-assets industry revenue grew by 230.8% between 2013 and 2017. There has been also significant volatility in the market capitalisation of crypto-assets pointing to their risky nature. For example, the price of each Bitcoin rose from near zero in 2009 to an all-time high of USD 18,000 during 2017, with a significant loss of value with a low of near USD 3,200 during 2018 before having some recovery and closing 2019 at near USD 7,200.

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<sup>4</sup> There are other DLT platforms apart from Blockchain including: Directed Acyclic Graph (DAG); Radix (Tempo) is a public trustless decentralised ledger; Hashgraph, and Holochain.

<https://www.datadriveninvestor.com/2019/02/14/what-are-the-different-types-of-dlts-how-they-work/>

<sup>5</sup> Frost and Sullivan

- 1.6 Despite their growing significance, crypto-assets remain relatively immaterial compared to mainstream asset classes (e.g. equity, fiat currency). Notably, a recent ECB report highlights that the market cap of crypto-assets is equivalent to 1% of euro-area GDP, 4% of market capitalisation of technology giants FAANG<sup>6</sup>, 1.2% of Euro-area M1 money supply and 0.8% M3 money aggregates. Furthermore, recent ECB and FSB publications state that they do not pose systemic risk. They are also primarily owned by retail clients or individuals rather than by institutions.

### Diversity of crypto-assets

- 1.7 Crypto-assets vary widely in design and purpose. In some cases, crypto-assets represent securities, such as shares in a company. However, more often, crypto-assets serve some cryptocurrency or functional use that is unregulated, such as prepayment for access to a product or service that is to be developed using funds raised in the ICO. In many cases crypto-assets have different combinations of claims and rights that can change over the life of the crypto-assets. This creates a significant challenge for accounting purposes in terms of which standard to apply and how to classify a crypto-asset.
- 1.8 As detailed in **Appendix 2:**, crypto-assets reflect differing characteristics that range from pure payment-type cryptocurrencies (such as Bitcoin), to digital tokens (such as utility tokens that entitle the holder to a pre-defined good or service from an identifiable counterparty), hybrids that include both payment and utility features and stable coins (that aim to provide price stability). Another distinction is the one made between coins and tokens. A coin (i.e. payment coin and other coins) resides on its own blockchain while a token (e.g. payment token, utility token, security/asset token and other tokens including hybrid tokens) resides a top another blockchain. For example, bitcoin resides on the Bitcoin blockchain and Gemini dollar is a payment token that resides on the Ethereum blockchain.
- 1.9 At the time of writing approximately 5.000 different crypto-assets were traded or listed on various crypto-asset exchanges with a total market cap of USD 198 billion.<sup>7</sup> The purpose and application of crypto-assets vary significantly and can change since their initial launch. Many crypto-assets have been issued through what is referred to as an Initial Coin Offering (ICO), while others are traded or exchanged for fiat currencies or other crypto-assets after issuance on specialised trading platforms.
- 1.10 Adding to the volume dimension and diversity of crypto-assets currently on the market is the absence of a harmonised classification taxonomy at both an EU and global basis. This creates room for significant accounting and regulatory diversity and interpretation amongst market participants. It is also important to assess the fitness for purpose of accounting and regulatory framework as the functionality, terms and conditions of crypto-asset continue to evolve.
- 1.11 There is no legal definition of crypto-assets, as there is for securities in various jurisdiction; however some crypto-assets are considered securities by local regulators. There are various subsets of crypto-assets; which are used for a variety of purposes, including as a means of exchange, as a medium to provide access to blockchain-based goods or services, and as a way to raise funding for an entity developing activities in this area.

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<sup>6</sup> Facebook, Apple, Amazon, Netflix and Google (FAANG)

<sup>7</sup> 4924 items Coinmarketcap as at 12 December 2019.

## Objectives and scope

- 1.12 With the development of this DP, the EFRAG research project on crypto-assets (EFRAG crypto-project) has the following objectives:
- a) Undertaking a problem definition that primarily outlines existing approaches and identify issues related to accounting for crypto-assets whilst assessing factors that can justify the need for clarification of IFRS requirements. These factors include the significance of crypto-assets activities, related economic characteristics, rights and obligations, regulatory requirements, trends and potential market developments.
  - b) While the EFRAG crypto-project had initially intended to focus on problem definition as a first phase (phase 1) to be followed by accounting solutions development (phase 2); the research findings and recent and forthcoming developments including the issuance of guidance by several national standard setters, has prompted the DP to go beyond only focusing on the problem definition and to also formulate and propose initial next steps for IFRS standard setting development. In this regard, the DP outlines the areas where IFRS clarification or enhancement is needed and to a limited extent presents a preliminary view on the approach that could be taken by the IASB
  - c) To enable stakeholders to give feedback on the above two objectives of the DP. Depending on constituents feedback, the focus of the research may then be on detailing specific proposals for the IASB to consider to address any areas where there are gaps in the accounting for crypto-assets and analogous transactions.
- 1.13 The scope of the EFRAG crypto-project includes the following crypto-assets categories that are further enumerated upon in **Appendix 2**:
- a) Cryptocurrencies (coins and payment tokens);
  - b) Security and asset tokens;
  - c) Utility tokens;
  - d) Other types of tokens (e.g. hybrid tokens, pre-functional tokens)
- 1.14 Furthermore, in the context of considering the issuance, buying, holding and selling of crypto-assets, the EFRAG crypto-project includes the following crypto-assets related activities:
- a) Crypto-assets issuers: Initial Coin Offerings (ICOs) and similar offerings;
  - b) Crypto-assets holder entities on own behalf and on behalf of others: Payment services, investment and other holding objectives (e.g. access to distributed network goods and services);
  - c) Crypto-assets related services: Storage and custodial services and mining services.
- 1.15 As the purpose of this DP is ultimately to influence IFRS requirements, the analysis of crypto assets activities is focused on entities and not on individuals

## Deliverables

- 1.16 The EFRAG project is envisioned to have the following deliverables:
- a) This DP that combines the issuance and holding of crypto-assets as there are symmetrical considerations whilst assessing issuer and holder accounting issues (e.g. holder rights are typically issuer obligations for crypto-assets where there is a claim on issuer).
  - b) If necessary, a second discussion paper to be issued in 2020 that focuses on outstanding issues related to crypto-assets.

## Methodology

- 1.17 As noted above, in conducting the research, to fulfil the objectives of the EFRAG project it is necessary to assess existing accounting requirements and guidance. It is also necessary to consider factors that can justify the need for enhancement or clarification of IFRS requirements. These factors include the significance of crypto-assets activities, related economic characteristics, rights and obligations, regulatory requirements and potential market developments.
- 1.18 The development of this DP was conducted in the following two sub-phases
- a) A “preliminary desktop research” phase,
  - b) A phase to corroborate and enhance findings that included outreach to crypto-assets experts.

### “Desktop research” phase

- 1.19 The EFRAG crypto-project team conducted a review of related IASB and NSS, accounting firm, regulatory, legal, academic and other specialist literature. The review of academic literature had input from the EFRAG academic panel
- 1.20 The literature review helped to identify issues related to accounting for crypto-assets
- 1.21 To identify prevalence and trends of crypto-assets activities; the EFRAG crypto-project team sourced data related to ICOs from data aggregator publicly available databases.
- 1.22 The EFRAG crypto-project team explored whether, in order to evaluate the prevalence of crypto-assets holdings or exposure by listed EU entities, it would be useful to apply artificial intelligence software (AlphaSense and Sentieo) for a textual analysis of their external reporting and communication documents (filed documents, management presentations). A pilot test using the AI software highlighted the difficulty in obtaining granular entity-specific data and showed that such an approach was unlikely to lead to any conclusion that differed from the IASB staff findings that showed limited prevalence of crypto-assets amongst IFRS reporting entities.
- 1.23 There were several limitations with the preliminary secondary research, which was conducted using publicly available databases and information on accessible websites. These limitations include:
- a) Lack of data on holder entities;

- b) Lack of data that is disaggregated by type of crypto-assets (e.g. payment tokens versus utility tokens versus security tokens);
- c) Lack of robust, accessible documentation on related rights and obligations;
- d) Lack of sufficient granular data related to EU countries that demonstrates the materiality of ICOs for IFRS reporting entities;
- e) Lack of data indicating the size of entities issuing ICOs and indicating the prevalence of this activity for listed versus unlisted entities;
- f) Inconsistencies and lack of comparability of key data points (e.g. number and market capitalisation of crypto-assets, failure rate of ICOs) across different data aggregators/databases.

### “Outreach” phase

- 1.24 To augment and corroborate the findings from the preliminary secondary research, EFRAG issued a public call for crypto-assets experts to participate in the EFRAG crypto-project.
- 1.25 This resulted in the participation and/or written feedback from 25 experts with diverse functional backgrounds and type of organisations and from 13 different countries including some leading markets.

Category	Number of participants
Academic	1
Accounting Standard-Setter	2
Adviser	1
Auditor	8
Blockchain research organisation	1
Crypto Assets Intermediary	3
Crypto Exchange	1
Non-custodial wallet provider	1
DLT Platform or software developer	2
Regulator	2
Institutional Investor	1
Payment services firm	1
Lawyer	1
<b>Total</b>	<b>25</b>

- 1.26 The objective of the outreach was to attain the following:
- a) Enhance insights on economic characteristics, rights and obligations that could have accounting implications for holders and issuers of crypto-assets. The need for input from experts arose due to the opacity of accessible white papers.
  - b) To corroborate the EFRAG crypto-project preliminary findings and enhance understanding on the accounting guidance and regulation that is applicable in different jurisdictions.

- c) To corroborate the EFRAG crypto-project preliminary findings on the prevalence of issuers and entities that are holders of their own account and on behalf of others.
  - d) To enhance insights on trends and potential significance of crypto-assets that could help give a sense of potential significance for IFRS reporting entities.
- 1.27 To allow for an effective and structured interview process, a questionnaire was developed based on the objectives of the research. The questionnaire was to help outreach participants to identify, prepare and focus on the questions that they were well suited to address during the interview. They were not required to answer all the questions but only those that they could readily address from their existing knowledge and where they did not need to undertake research and data gathering efforts. Some participants (8 of the 25) only provided written questionnaire responses.
- 1.28 To a large extent, the outreach corroborated the desktop research findings and also provided additional including examples of crypto-assets with specific rights. The outreach findings are integrated in the analysis across all the following chapters.
- 1.29 However, there were limited insights from the outreach on how enhancements in technology might influence innovation of the next generation of crypto-assets or whether the next generation of crypto-assets would have features that would necessitate their consideration as a unique type of assets under IFRS Standards and NSS guidance.

## Structure of the Discussion Paper

- 1.30 The rest of the DP is structured as follows
- a) Chapter 2 – *Gives an overview of crypto-asset activities and economic characteristics*
  - b) Chapter 3 –  **Holders accounting**–  *outlines existing guidance and areas for clarification or enhancement for accounting by holders on own behalf and on behalf of others*
  - c) Chapter 4 –  **Issuers accounting**–  *outlines existing guidance and areas for clarification or enhancement for accounting by issuers*
  - d) Chapter 5 –  **Valuation** –  *outlines emergent valuation theories and how to identify active markets*
  - e) Chapter 6-**Implications of potential market developments** –  *outlines potential market developments that may contribute to mainstreaming and increased institutional uptake of crypto-assets*
  - f) Appendices include:
    - (i) Appendix 1: Background: Crypto-asset activities; outlines details of ICO and custodial services activities
    - (ii) Appendix 2: Background: Details and examples of economic characteristics, rights and obligations;

- (iii) Appendix 3: Regulatory requirements; outlines regulatory requirements across different jurisdictions
- (iv) Appendix 4: Bibliography; and
- (v) Appendix 5: Glossary of terms



## CHAPTER 2: OVERVIEW OF CRYPTO-ASSETS ACTIVITIES , ECONOMIC CHARACTERISTICS AND REGULATION

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- 2.1 The assessment of significance and trends of crypto-assets activities is part of establishing whether accounting standard setting activity should occur. This chapter has a summary on the significance of crypto-assets issuance and holder entity activities with a more detailed analysis in **Appendix 1**:
- 2.2 This chapter also has a summary of the assessment of economic characteristics, rights and obligations as these informs the analysis of accounting by both holders and issuers with a more detailed analysis is included in Appendix 2:

### Significance of crypto-assets issuance activities

#### Issuance – ICO's and similar initial offerings

- 2.3 As background material on the issuance activities, **Appendix 1**: has a detailed definition and description of the key economic features of ICO's and similar initial offerings activities such as Initial Exchange Offerings (IEO's) and Securitised Token Offerings (STO's). The description includes an outline of the distinguishing features between ICOs and the conventional funding via initial public offerings (IPOs) The data and analysis on the prevalence and trends of ICO activities was gathered during the EFRAG crypto-project's desktop research and outreach to crypto-assets experts. Some key findings include the following:
- a) The ICO market began in 2014 and has experienced rapid growth, raising a total of approximately USD 24.7 billion up to the end of Q1 2019 with the completion of over 5000 ICO projects in over 50 countries. European Economic Area (EEA) countries that rank<sup>8</sup> in the Top 10 for ICO activity are UK, Switzerland, Estonia and Germany. ICOs also occur in multiple industries, although publicly available data indicates that financial services leads the issuance volume.
  - b) The growing significance of ICOs as a source of finance for some business sectors is evident as blockchain start-up ICOs have outstripped venture capital (VC). In the 14 months to February 2018, blockchain start-ups raised<sup>9</sup> nearly USD1.3 billion in traditional VC rounds worldwide; compared to USD4.5 billion raised by ICO projects.
  - c) During the EFRAG crypto-project outreach, there was indication of a substantial decline in ICO activity in 2019, within and outside of the EU. This is mainly because of the increased regulatory scrutiny of ICOs and a move towards STO's that are subject to securities regulations.

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<sup>8</sup> The top five jurisdictions are the United States, British Virgin Islands, Singapore, Switzerland and the United Kingdom.

<sup>9</sup> According to Crunchbase database.

- 2.4 Despite the recent decrease in ICO's, outreach participants did not consider the decline in ICO's to be permanent. However, they considered that greater regulatory scrutiny was a prerequisite for increased institutionalisation and uptake of crypto-assets activities including the growth of ICO's and similar offerings.

## Significance of crypto-assets holder entities' activities

### Crypto-assets holder entities

- 2.5 It proved easier to obtain aggregate data related to issuance than it was to obtain aggregate data on holder entities (i.e. on own account and account of others). This situation simply reflects that holder entities are not widespread because of the early stage of market development where regulatory oversight is not at the level of robustness necessary to attract institutional investors. Furthermore, there are limited and quite niche use cases of crypto-assets on blockchain platforms. Consequently, crypto-assets holdings tends to be dominated by retail investors or individuals.
- 2.6 Consistent with the 2018 analysis by IASB staff and the findings of different publications (EBA, ECB), this research concludes that only a small number of large IFRS reporting companies have crypto-assets exposure or holdings. Nonetheless, the EFRAG crypto-project's outreach feedback and review of literature, identified some entities in Australia, Canada, France, Hong Kong and Switzerland that either only had crypto-assets activities or also reported on their crypto-assets holdings.
- 2.7 Although it was challenging to obtain aggregate data that could precisely depict the trends and extent of pervasiveness of holder entities, feedback from the EFRAG crypto-project outreach indicated that a significant proportion of holder entities are financial institutions in intermediary roles providing services to retail investors in a specialist sense or as part of a broader offering (i.e. intermediary holders of crypto-assets on behalf of others). This feedback is consistent with the findings of the January 2019 EBA report<sup>10</sup>, which highlighted that seven EU national competent authorities were aware of the following activities conducted by credit institutions, investment firms, electronic money institutions and payment service firms within their jurisdiction:
- a) Owning crypto-assets;
  - b) Lending against crypto-asset collateral;
  - c) Clearing or trading with derivatives with crypto-asset underlying;
  - d) Investing in products with crypto-assets' underlyings;
  - e) Lending to entities dealing directly or indirectly with crypto-assets;
  - f) Providing exchanges services for crypto-assets to fiat currencies or for other crypto-assets.

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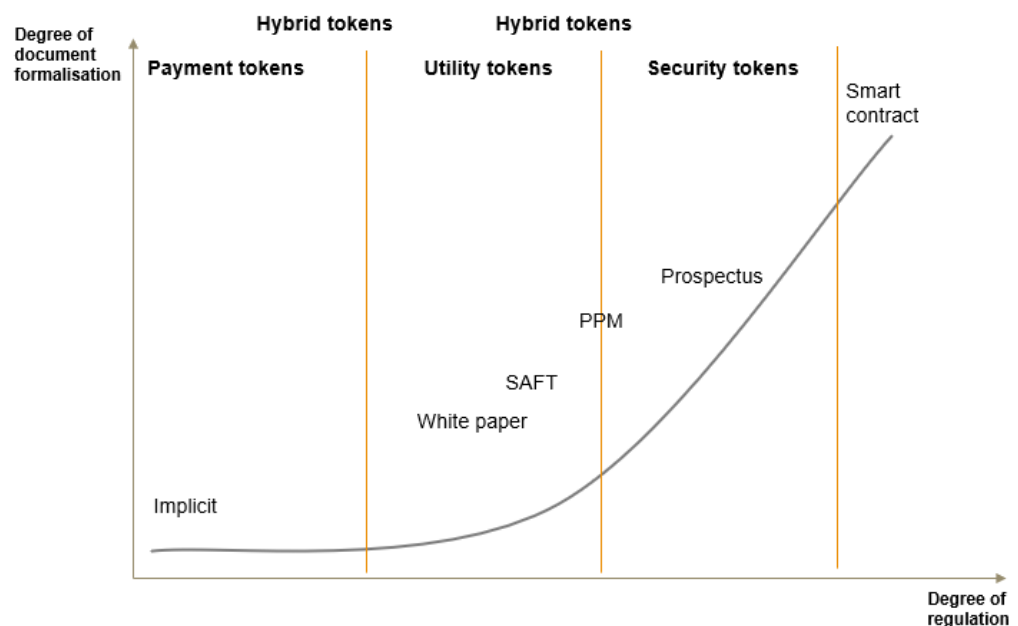
<sup>10</sup> European Banking Authorities, January 2019, *Report with advice for the European Commission on Crypto-assets* <https://eba.europa.eu/documents/10180/2545547/EBA+Report+on+crypto+assets.pdf>

- 2.8 Furthermore, the 2019 ESMA publication<sup>11</sup> estimates that there are 200 global crypto-assets trading platforms albeit that the largest platforms are outside the EU and are in the US and Asia.
- 2.9 As part of background information on intermediary holders including custodial service providers, **Appendix 1:** has a detailed description of key technological features of custodial services that have economic control implications (i.e. private key, different types of wallets) and some aggregate trend data on wallets.

## Overview of economic characteristics, rights and obligations

- 2.10 **Appendix 2:** has a detailed description of the economic characteristics, rights and obligations of crypto-assets. The analysis shows that there is a spectrum and diversity in the level of formalisation of underlying rights and obligations associated with crypto-assets. At this stage of market development, crypto-assets are characterised by relatively immature, opaque contracting arrangements that can make it challenging to precisely identify the underlying rights and obligations for some crypto-assets and this is a source of some of the accounting challenges.

Figure 1: Degree of formalised documentation across different crypto-assets



PPM- Private purchase memorandum; SAFT- Simplified agreement for future tokens (Appendix 2 has more details)

<sup>11</sup> European Securities Markets Authority, January 2019, Advice Initial Coin Offerings and Crypto-Assets

[https://www.esma.europa.eu/sites/default/files/library/esma50-157-1391\\_crypto\\_advice.pdf](https://www.esma.europa.eu/sites/default/files/library/esma50-157-1391_crypto_advice.pdf)

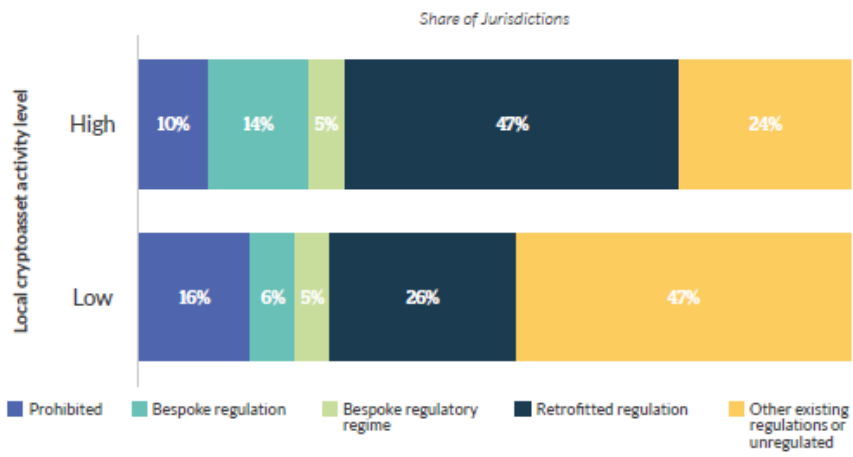
- 2.11 The analysis of accounting issues in this DP aligns with the classification of economic characteristics, rights and obligations that is based on the taxonomy commonly applied in accounting, regulatory and legal literature (i.e. including but not being limited to three main classes of crypto-assets, namely: payment tokens, utility tokens and security tokens). But there is also a recognition that any chosen taxonomy is by definition static and will likely have limited usefulness over time and an argument can be made that, any categorisation of types of crypto-assets risks becoming obsolete due to ongoing innovation in features and technological developments.
- 2.12 In addition, it can be misleading to assign specific crypto-asset tokens to a fixed category, if those particular tokens can serve different purposes depending on different holders and whenever their “best use” for each holder evolves over time. For example, at its inception, Ether constituted a way to provide access to a technology platform (and it remains a means of accessing smart contracts). However, its increased use as a medium of exchange has impacted its use as a means of access. For these reasons, some national standard setters (e.g. France) have either avoided or only had minimal reference to the distinctive categories within commonly applied taxonomy (i.e. payment tokens, utility tokens, security tokens) whilst developing their accounting guidance. Similarly, the analysis of regulatory requirements (highlighted in **Appendix 3:**), shows diversity in approaches to classification using the taxonomy classification across jurisdictions. For instance, the Cambridge review of regulatory requirements of 23 jurisdictions showed that only 32% applied the taxonomy classification.
- 2.13 Nonetheless, for the purposes of this research, a taxonomy based distinction provides a useful starting point for assessing economic characteristics, rights and obligations and thereafter facilitates that analysis of related accounting issues. Besides, a taxonomy that includes hybrid tokens, does not preclude the analysis of accounting challenges that may arise due to the hybrid characteristics of any crypto-asset.

## Overview of regulation

- 2.14 Overall, there is varied regulation across jurisdictions as highlighted by a 2019 Cambridge publication<sup>12</sup>, which highlights the differing regulatory responses across 108 jurisdictions with either low or high crypto-asset activity (discussed further in **Appendix 3:**).

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<sup>12</sup> Cambridge Center for Alternative Finance, *Global Cryptoasset Regulatory Landscape Study*  
[https://www.jbs.cam.ac.uk/fileadmin/user\\_upload/research/centres/alternative-finance/downloads/2019-04-ccaf-global-cryptoasset-regulatory-landscape-study.pdf](https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2019-04-ccaf-global-cryptoasset-regulatory-landscape-study.pdf)



## CHAPTER 3: HOLDERS ACCOUNTING

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- 3.1 As outlined in paragraph **1.12** of the introduction chapter, the objective of this DP is to provide a problem definition of matters pertaining to the accounting for crypto-assets and lay out initial possible steps for the clarification or enhancement of IFRS requirements. Consequently, the objective of this chapter is to:
- a) delineate existing holders' accounting approaches under IFRS and under a selection of NSS guidance;
  - b) identify areas where stakeholders have expressed the need for either clarification or enhancements of IFRS holders related requirements;
  - c) describe suggested alternative holders' accounting approaches; and
  - d) provide a potential roadmap for developing accounting solutions related to holders under IFRS requirements.
- 3.2 The analysis in this chapter also makes a distinction between the accounting issues for holders on own account and holders on behalf of others (e.g. custodians, brokers and exchanges). The review of crypto-asset activities and business models has shown that at this stage of market development, a significant proportion of entities that are holders of crypto-assets are likely to be holders on behalf of others. As detailed in the analysis below, entities that are holders of crypto-assets on behalf of others need to assess whether these assets can be recognised on their statement of financial position.

### Framework for analysing possible holders' accounting approaches

- 3.3 Crypto-assets are assets as they can be considered to meet the IFRS conceptual framework definition of assets. The IFRS Conceptual Framework defines an asset as a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity. Based on this definition, crypto-assets are assets because they:
- a) Arise from transactions on the DLT network
  - b) Are a digital representation of value and ownership rights and confer potential economic benefits to their holders. As detailed in the **Appendix 2 (Economic characteristics, rights and obligations section)**, some crypto-assets can, to a limited extent, have economic attributes similar to currencies (e.g. be a means of exchange), others can have investment value and others can confer economic benefits related to participation in network configuration or consumption of network products or services.
- 3.4 As outlined in the chapter on valuation (**Chapter 5: Valuation**), the economic value of different tokens can reflect: their perceived value which in turn is a by-product of the supply and demand dynamics; or their intrinsic value reflecting current or future cash flow generation ability; or expected economic utility from the rights of participation in or consumption of network products. In other words, there is both value in exchange and/or value in use for different crypto-assets.
- 3.5 On the premise that crypto-assets are assets, the following questions arise for purposes of determining the appropriate accounting:

- a) What type of assets are they?
  - b) Are they a unique asset type or do they fall within existing asset categories of IFRS requirements? And what ought to be the implications for recognition and measurement for crypto-asset holders?
  - c) Are current IFRS measurement requirements suitable for crypto-asset holders?
  - d) Are there special accounting considerations for holders on behalf of others?
  - e) Are there any unique accounting issues for holders that arise from the operational features of DLT platforms (e.g. forks)?
- 3.6 The analysis of the above questions guides the identification of possible accounting approaches.
- 3.7 The analysis of possible accounting approaches is broken down into
- a) The analysis of existing guidance which is informed by:
    - (i) Analysis of IFRS Interpretation Committee (IFRS IC) agenda decision clarification on accounting for cryptocurrencies
    - (ii) High-level analysis of national standard setters (NSS) guidance for holders
    - (iii) Review of accounting firm and academic literature
    - (iv) Outreach feedback
  - b) The analysis of identified challenges related to recognition and measurement of crypto-assets:
    - (i) Analysis of unresolved issues following IFRS IC agenda decision clarification on cryptocurrencies
    - (ii) Analysis of stakeholders high-level expectations for the IFRS 2020 agenda consultation
    - (iii) Review of accounting firm and academic literature
    - (iv) Outreach feedback

### Existing guidance- holders on own behalf

- 3.8 The analysis of existing guidance for holders on own behalf is broken into
- a) IFRS IC clarification agenda decision
  - b) National standard setters guidance.

## **IFRS IC clarification agenda decision**

- 3.9 In November 2018, based on an analysis and conclusion by IASB staff that crypto-assets were not sufficiently prevalent amongst IFRS reporting entities, the IASB decided to monitor crypto-assets developments but not to undertake related standard setting activity.
- 3.10 Subsequently, in March 2019 the IFRS IC issued a tentative agenda decision for public comment that clarified<sup>13</sup> the accounting for cryptocurrencies. The final agenda decision was issued in June 2019.

### ***Scope of IFRS IC agenda decision***

- 3.11 In its agenda decision IFRS IC described cryptocurrencies as crypto-assets with all the following characteristics:
- a) a digital or virtual currency recorded on a distributed ledger that uses cryptography for security.
  - b) not issued by a jurisdictional authority or other party.
  - c) does not give rise to a contract between the holder and another party.

### ***IFRS IC agenda decision analysis***

- 3.12 The IFRS IC agenda decision clarifies that cryptocurrencies should be accounted for under IAS 2 *Inventories* when held for sale in the ordinary course of business or else they should be accounted for under IAS 38 *Intangible Assets*. The Committee observed that a holding of cryptocurrency meets the definition<sup>14</sup> of an intangible asset in IAS 38 on the grounds that
- a) it is capable of being separated from the holder and sold or transferred individually; and
  - b) it does not give the holder a right to receive a fixed or determinable number of units of currency (i.e. non-monetary asset).
- 3.13 IAS 38 defines an intangible asset as an identifiable non-monetary asset without physical substance. Cryptocurrencies are neither physical assets nor monetary assets based on the IAS 38 definition.
- 3.14 IAS 38 does not apply to intangible assets held for sale in the normal course of business and such intangible assets should be accounted for in accordance with IAS 2. The Committee observed that
- a) IAS 2 applies if an entity holds cryptocurrencies for sale in the ordinary course of business

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<sup>13</sup>[https://www.ifrs.org/-/media/feature/meetings/2019/june/IFRS\\_IC/ap12-holdings-of-cryptocurrencies.pdf](https://www.ifrs.org/-/media/feature/meetings/2019/june/IFRS_IC/ap12-holdings-of-cryptocurrencies.pdf)

<sup>14</sup> Paragraph 8 of IAS 38 *Intangible Assets* defines an intangible asset as 'an identifiable non-monetary asset without physical substance'.

Paragraph 12 of IAS 38 states that an asset is identifiable if it is separable or arises from contractual or other legal rights. An asset is separable if it 'is capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable asset or liability'.

Paragraph 16 of IAS 21 *The Effects of Changes in Foreign Exchange Rates* states that 'the essential feature of a non-monetary item is the absence of a right to receive (or an obligation to deliver) a fixed or determinable number of units of currency'.



- b) If an entity is a broker-trader of cryptocurrencies then it should consider the requirements of paragraph 3 (b) of IAS 2 for commodities broker-trader who measure their inventories at fair value less costs to sell.

3.15 IFRS IC concluded that holding of a cryptocurrency is

- a) **not cash** based on the description of cash on paragraph AG3 of IAS 32 whereby the Committee is not aware of any crypto-currency that is used as a medium of exchange and as the monetary unit in pricing of goods or services to such an extent that it would be the basis on which all transactions are measured and recognised in financial statements;
- b) **not a financial asset** because it is not cash nor does it meet the definition of a non-financial asset under Paragraph 11 of IAS 32 because
  - (i) It is not an equity instrument of another entity.
  - (ii) It does not give contractual right to the holder
  - (iii) It is not a contract that will or may be settled in the holder's own equity instrument

3.16 The IFRS IC clarification is consistent with the commentary in a 2016 publication by the Australian Accounting Standards Board (AASB)<sup>15</sup> and a 2018 publication by Chartered Professional Accountants of Canada (CPA Canada)<sup>16</sup>. The AASB and CPA Canada publications also note that cryptocurrencies are **not investment property** as they are not property as defined under IAS 40 *Investment Property*.

### **IFRS IC agenda decision conclusion**

3.17 In summary, in clarifying the accounting of cryptocurrencies, IFRS IC considered the accounting requirements for intangible assets, inventory, cash and financial asset and clarified that cryptocurrencies have the characteristics of either intangible asset or inventory depending on the purpose of holding the cryptocurrency. Thereafter the measurement basis requires consideration of the intention of the holder

- a) Cryptocurrencies held as an investment- accounted for under IAS 38 with two measurement alternatives cost model and revaluation model (using other comprehensive income rather than recognising changes through profit or loss)
- b) Cryptocurrencies held ordinarily in the course of business- accounted for under IAS 2 with measurement at the lower of cost or net realisable value
- c) Broker-trader business model where cryptocurrencies held for trading similar to commodities- accounted for under IAS 2 under paragraph (3b) with measurement at FVTPL

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<sup>15</sup> Australian Accounting Standards Board, 2016. *Digital currency- A case for standard setting activity*. A Perspective by the Australian Accounting Standards Board.

[https://www.aasb.gov.au/admin/file/content102/c3/AASB\\_ASAB\\_DigitalCurrency.pdf](https://www.aasb.gov.au/admin/file/content102/c3/AASB_ASAB_DigitalCurrency.pdf)

<sup>16</sup> CPA Canada, May 2018. *An introduction to Accounting for Cryptocurrencies*.

<https://www.cpacanada.ca/en/business-and-accounting-resources/financial-and-non-financial-reporting/international-financial-reporting-standards-ifs/publications/accounting-for-cryptocurrencies-under-ifs>

- 3.18 The IFRS IC clarification also clarified disclosures requirements including the applicable IFRS 13 *Fair Value Measurement* requirements if an entity measures cryptocurrencies at fair value and the disclosure requirements applicable to its holdings of cryptocurrencies.

### **IASB staff related observations**

- 3.19 The IASB staff analysis of stakeholder comments to the IFRS IC agenda decision highlight the following:
- a) FVTPL can be applied when cryptocurrencies are held under the broker-trader business model under IAS 2 paragraph 3 (b)
  - b) If an entity is not holding cryptocurrencies for sale in the ordinary course of business and there is an active market, it can elect to measure its holdings at fair value applying IAS 38.
  - c) Any entity holding cryptocurrencies must apply the applicable disclosure requirements in IFRS standards and this could include fair value information to the extent that such information is relevant

### **National standard setter (NSS) holders' guidance**

- 3.20 A high-level analysis of NSS' guidance (both national GAAP and in jurisdictions that apply IFRS) affirms the view that there is diversity of requirements and underlying principles across jurisdictions. Table 3.1 has a breakdown of a selection of NSS guidance related to holders.

Table 3.1. Selection of NSS holders requirements

<b>Jurisdiction</b>	<b>Nature</b>	<b>Measurement</b>
<b>Canada</b>	<p>Assessment to qualify as an asset necessary for each individual cryptocurrency</p> <ul style="list-style-type: none"> <li>• Intangible assets</li> <li>• Inventory</li> </ul>	<p>IAS 8 Accounting <i>Policies, Changes in Accounting Estimates and Errors</i></p> <p>IAS 38 <i>Intangible Assets</i></p> <p>Subsequent measurement: either at cost (cost method) or at fair value (revaluation method)</p> <p>IAS 2 <i>Inventories</i></p> <p>Lower of cost and net realisable value</p>
<b>France</b>	<p>Excluding tokens presenting the characteristics of securities, the following categories depending on business purpose of holder</p> <ul style="list-style-type: none"> <li>• Tokens held for own use (recorded as an intangible fixed asset)</li> <li>• Tokens held as investment (specific investment category)</li> </ul>	<p><i>Intangible fixed assets</i></p> <p>Amortised over useful life (period of expected services)</p> <p><i>Tokens held as investments</i></p> <p>Fair value measurement</p> <p>Fair value gains or losses deferred until realisation</p> <p>In case of deferred loss position, provision to P&amp;L for the amount</p> <p>Full disclosures on conditions of fair value determination due to current characteristics of</p>

		markets
<b>Japan</b>	Uncertain whether legal property rights can be attached to virtual currencies. Nevertheless they are seen as assets for accounting purposes.  Seen as an independent category of assets.	Active market: FVPL
<b>Lithuania</b>	Financial asset with categorisation depending on business purpose of holder <ul style="list-style-type: none"> <li>• Investment: Other investments</li> <li>• Held for payment- financial asset recorded as current assets</li> </ul>	FVPL
<b>Slovakia</b>	ST financial asset other than cash	Fair value
<b>Switzerland</b>	Accounting policies are derived from the law (i.e. Swiss Code of Obligations). The following categories depending on business purpose of holder <ul style="list-style-type: none"> <li>• Financial asset (current assets or non-current assets)</li> <li>• Inventory</li> <li>• Intangible assets</li> </ul>	Financial asset- Fair value Inventory- lower of cost or fair value
<b>Netherlands</b>	The following categories depending on business purpose of holder <ul style="list-style-type: none"> <li>• Intangible fixed asset</li> <li>• Inventory</li> <li>• Other investment</li> </ul>	Intangible fixed asset: acquisition cost or at fair value Inventory: acquisition price Other investments: initial cost or fair value (through profit or loss or through OCI with recycling)

3.21 The below observations can be made on NSS guidance.

3.22 Unlike the IFRS IC clarification, the scope of holders accounting issues by NSS is broader than just cryptocurrencies with no claim on issuer.

3.23 There is varied categorisation of crypto-assets across the NSS guidance and in many cases it depends on the business purpose of the holder. The categorisation of crypto-assets include:

- a) Unique or independent asset category (Japan ASBJ recognises crypto-assets as a unique asset);
- b) Intangible asset category usually applied for cryptocurrencies and utility tokens within different NSS guidance when not held in the ordinary course of business;
- c) Inventory category usually applied for cryptocurrencies and some utility tokens within different NSS guidance if held in the ordinary course of business;
- d) Financial asset (including long-term and short term investment) category usually applied for security and asset tokens within different NSS guidance;

- e) Prepayment asset category usually applied for some utility tokens within different NSS guidance. It is the appropriate classification because a prepayment asset is recorded where an entity has paid for services before delivery of those goods and services.
- 3.24 Across the NSS guidance, there are varied approaches towards the measurement of crypto-assets
- a) FVPL if there is active market (e.g. Japan)
  - b) Measurement based on intention of acquirer (e.g. France guidance where measurement depends on if held for own use or held for investment)
  - c) Lower of cost or net realisable value when crypto-assets are recognised as inventories
  - d) Cost or revaluation approach for subsequent measurement of crypto-assets recognised as intangible assets
  - e) Own accounting policy choice (IAS 8 *Accounting Policies and Accounting Estimates*)
- 3.25 The rationale of classification of crypto-assets (cryptocurrencies, some utility tokens) as intangible assets within NSS guidance is consistent with the IFRS IC clarification agenda decision (i.e. identifiable non-monetary asset without physical substance that can be separated from holder and sold individually).
- 3.26 As noted in paragraphs **3.31** and **3.32**, the IASB has not clarified the accounting for crypto-assets that are not cryptocurrencies with no claim on the issuer (e.g. utility tokens, security and asset tokens). Accounting firm publications propose that the prepayment asset is the appropriate classification for holders of some utility tokens and financial asset is the appropriate classification for holders of security and asset tokens.
- 3.27 However, as noted in the accounting firm publications (E&Y), there is very limited guidance in IFRS on accounting for prepayment assets. Furthermore, notwithstanding the NSS and accounting firms' guidance on appropriate asset classification (i.e. financial assets, prepayment asset, intangible or inventory); this research has not come across any illustrative evidence of entities actual accounting practices by holders that verifies consistency with the NSS and accounting firms guidance.
- 3.28 Utility tokens in their variety of rights as described in **Appendix 2** can be seen as analogous to club memberships, loyalty cards, airline point cards, gift vouchers and subscriptions and timeshare rentals. And the appropriate treatment of utility tokens could be extrapolated from the accounting practices. But this research has not critically assessed either the IFRS reporting requirements or entities reporting practices for transactions that are analogous to those of holders of utility tokens (e.g. reviewing reporting of entities that are holders of airline loyalty miles). This is an aspect that could be further examined whilst developing or clarifying the appropriate guidance for utility tokens.

3.29 Table 3.2 below provides a summary of possible initial and subsequent measurement approaches related to crypto-assets under IFRS and NSS guidance

Table 3.2 summary of initial and subsequent measurement approaches related to crypto-assets

	Initial measurement	Subsequent measurement	Measurements in carrying amount
Intangible assets (IAS 38)- Revaluation model (accounting policy choice but requires existence of active market)	Cost	Fair value less any accumulated amortisation and impairment	Movements above cost- Other Comprehensive Income  Movements below cost- Profit and loss
Intangible assets (IAS 38)- Cost model	Cost	Cost less any accumulated amortisation and impairment	Movements below cost- Profit and loss
Inventory (IAS 2)- Commodity broker-trader exception	Cost	Fair value less costs to sell	Profit and loss
Inventory (IAS 2)- Other	Cost	Lower of cost and net realisable value	Movements below cost- Profit and loss
Financial asset (IFRS 9)	Cost	Fair value through profit and loss	Movements above and below cost- Profit and loss
Prepayment asset	Cost	Subject to impairment testing under IAS 36	Movements below cost- Profit and loss
Considered unique asset (i.e. Japan)	Cost	Fair value through profit and loss	Movements above and below cost- Profit and loss

### Possible areas for standard setting for holders on own behalf

3.30 Standard setting for holders may be required in respect of

- a) Crypto-assets excluded from the scope of IFRS IC agenda decision;
- b) Identified challenges related to recognition and measurement of crypto-assets.

## Guidance on crypto-assets excluded from scope of IFRS IC agenda decision

- 3.31 As noted earlier, the IFRS IC agenda decision clarification only addressed cryptocurrencies where there is no claim on the issuing party. There is a need for an enhanced understanding of the economic characteristics and accounting implications for crypto-assets that are not in the scope of the IFRIC clarification (e.g. stable coins, security and asset tokens, utility tokens, stable coins and hybrid tokens).
- 3.32 Several stakeholders have called for standard setting to address the unique characteristics of cryptocurrencies and other crypto-assets. For example, the 2016 publication by the AASB<sup>17</sup> expressed the view that there are no IFRS standards that deal with investments in intangible assets or with commodity type investments that are neither financial instruments nor inventory.
- 3.33 France's standard setter (ANC) observed that the IFRS IC clarification may raise the following issues:
- a) Some stakeholders consider that it may not be so easy to determine whether certain cryptocurrencies are in scope of the IFRS IC clarification as it may be challenging to ascertain if such cryptocurrencies have a claim on the issuer.
  - b) In determining the prudential regulatory capital of banks, intangible assets are deducted from own funds. Hence, as was the case with introduction of IFRS 16, where there was a clarification by the Basel Committee, that for regulatory capital determination purposes, "right of use" leased assets were to be treated as being equivalent to owning the underlying leased assets and this negatively affected banks' undertaking of leasing transactions that would be deemed equivalent to their owning intangible assets. In similar fashion, the classification of cryptocurrencies as intangible assets, could discourage banks' holding of crypto-assets other than for trading purposes.

## Identified recognition and measurement challenges

### **Some stakeholder questions relevance of IAS 38 measurement requirements**

- 3.34 Several respondents<sup>18</sup> to the March 2019 IFRS IC tentative agenda decision expressed the view that both IAS 38 and IAS 2 were not written with cryptocurrencies in mind, particularly when considering their price volatility and use as speculative investments. These respondents observed that the requirements of IAS 38 and IAS 2 do not provide useful information. A variety of approaches to measurement of cryptocurrencies were proposed by different respondents and these include:
- a) FVPL for cryptocurrencies in active markets (as required by Japan- ASBJ)

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<sup>17</sup> Australian Accounting Standards Board, 2016. *Digital currency- A case for standard setting activity*. A Perspective by the Australian Accounting Standards Board.  
[https://www.aasb.gov.au/admin/file/content102/c3/AASB\\_ASAB\\_DigitalCurrency.pdf](https://www.aasb.gov.au/admin/file/content102/c3/AASB_ASAB_DigitalCurrency.pdf)

<sup>18</sup> There were 16 of 20 respondents supported standard setting in addition to or instead of finalising the agenda decision

- b) FVPL for all cryptocurrencies
  - c) Measurement should be based on the intention of the acquirer
  - d) Scope out cryptocurrencies from IAS 38 and allow an IAS 8 accounting policy choice for cryptocurrencies other than inventory (proposed by IOSCO and Canadian Standard Setter).
- 3.35 The AASB publication concluded that although cryptocurrencies could be accounted for under IAS 2 or IAS 38, measurement under these two standards does not provide relevant information to users of financial statements and proposed the need for standard setting for digital currencies.
- 3.36 In alignment to the IFRS IC agenda decision feedback, the 2019 December ASAF meeting staff paper<sup>19</sup> on the 2020 IASB agenda indicates that some stakeholders still expect a review and revision of requirements including
- a) revision of IAS 38 definition of intangibles and allowing accounting policy choice (IAS 8) in the near term; or
  - b) development of a new crypto-assets standard in the long term.
- 3.37 One of the EFRAG crypto-project outreach participants indicated that in their jurisdiction, some holders are not satisfied with applying the intangible asset accounting model in IAS 38 to holdings of crypto-assets.
- a) These holders think that the cost model (cost less amortisation less impairment) is not representative of their business and that such accounting (particularly useful life and impairment) is judgmental and operationally challenging.
  - b) These holders also think that the revaluation model's use of other comprehensive income is not representative of their business. They also think that the model's reference to an "active market" is unhelpful as "active market" can be difficult for some holders to evidence. Issues related to identifying an "active market" are discussed in Chapter 5.
  - c) Some have questioned whether the exclusions in paragraph<sup>20</sup> 7 of IAS 38 should be applied to crypto-assets as it is for insurance contracts or expenditure on the exploration for, or development and extraction of, oil, gas and mineral deposits.
  - d) Some holders prefer fair value through profit or loss measurement for crypto-assets because this measurement could better reflect the performance of their investments.

<sup>19</sup>December 2019 ASAF Staff Paper, <https://cdn.ifrs.org/-/media/feature/meetings/2019/december/asaf/ap1-agenda-consultation.pdf>

<sup>20</sup> Paragraph 7 states that "Exclusions from the scope of a Standard may occur if activities or transactions are so specialized that they give rise to accounting issues that may need to be dealt with in a different way....".

- 3.38 Another issue associated with the classification of cryptocurrencies as intangible assets and raised by Sixt and Hammer (2019) is that of cash flow statement impacts of applying IAS 38. The authors assert that the application of IAS 38 does not yield relevant information to users of financial statements in cases where entities accept fiat currencies or crypto-assets as a means of payment for their deliveries and supplies. In general, there is need to consider if/how accounting for non-cash considerations ought to be updated to reflect the exchanges involving crypto-assets.
- 3.39 Sixt and Himmer (2019)<sup>21</sup> page 42 demonstrates why the IAS 38 measurement approach is questionable by comparing two popular crypto companies Bitmain (Hong Kong) that applies the cost model and Bitcoin Group Ltd (Australia) that applies the revaluation model. According to the authors, this results in incomparable financial statements and cash flow statements that do not give a true and fair view of cash flow from investing activities.

#### ***Need for clarification on impairment testing issues***

- 3.40 Under IAS 38, subsequent measurement is either amortisation if they have a definite useful life or impairment if they have an indefinite useful life. AICPA identifies several issues relating to impairment when they are assumed to have an indefinite useful life. These include the unit of account for impairment testing

#### ***Need for clarification of accounting for hybrid tokens including certain stable coins***

- 3.41 Hybrid tokens create challenges by displaying features of different types and changing their nature either over time or depending on the context and/or effective use by their holders.
- 3.42 For example, in the case of Binance BNB coin, there is a combination of utility (as the BNB can be used to pay transaction fees on the exchange) and security features (as Binance periodically burns BNB in a way to redistribute part of its revenue to its token holders). In such grey zone, the primary purpose for holding the token shall probably drive the classification. The primary purpose of the BNB is probably to pay for the transaction fees - on top of which holders are entitled to periodic distributions – but if holders are only looking for the security feature, this shall probably yield a security classification.
- 3.43 The above would also apply to ETH for example, which combine utility feature (i.e. used to run Dapps) and payment features since ETH is a commonly accepted crypto-currency.
- 3.44 Some of the NSS guidance (e.g. France) proposes the need for the application of two sets of guidance. However, in the absence of clear IFRS guidance strictly defining the way to consider multiple features or to identify and cope with their primary feature, there is likely to be diversity in practice in the accounting for hybrid tokens.
- 3.45 An upcoming area where accounting clarification will be required is the concept of central bank digital currency (CBDC), a stable coin issued by a given central bank.

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<sup>21</sup> Sixt and Himmer, 2019.



- 3.46 There would be question of the equivalence of CBDC with cash, its legal tender feature and whether or not a right to restitution will be granted to token holders. There is ongoing development in this idea of CBDC, not only with the recent announcement of China PBOC of course but also very recently in France which has just announced their intention to move in this field in 2020.
- 3.47 An additional question of accounting implications would arise were the Libra project to eventually create a privately issued stable coin tied up to an underlying basket of currencies and other money market instruments issued by states and central banks of different jurisdictions. In effect, the Libra project would result in a hybrid stable coin combining the feature of a stable coin and those of a CBDC.

***Initial recognition of crypto-assets acquired in barter/non-cash exchanges***

- 3.48 When an entity acquires crypto-assets in exchange for cash the initial recognition is at cost. A question could arise on the initial recognition when holder entities received the crypto-assets in exchange for goods, services or other dissimilar crypto-assets.

## Summary of accounting for holders

- 3.49 Table 3.3 below outlines the assumptions of applicable accounting for different crypto-assets based on the above analysis of existing guidance and alternative approaches based on stakeholder expectations articulated in possible areas for standard setting also described above. These have been identified based on the taxonomy that is defined in Appendix 2 taking account of the limitations of any taxonomy classification (e.g. classification categories may become obsolete, there are hybrid/multi-class tokens etc) that results in some NSS (e.g. France) not applying a taxonomy based classification during their development of accounting guidance- as acknowledged in paragraphs **2.11** and **2.12** and **Appendix 2**.
- 3.50 The applicable accounting reflects the identified possible applicable accounting for crypto-assets and assumes that the combination of the function/business purpose and the economic nature including holder rights forms the conceptual basis for classification, recognition and measurement of different crypto-assets.

Table 3.3. Economic characteristics, rights, possible applicable accounting and possible required standard setting .

HOLDING	ECONOMIC CHARACTERISTICS AND HOLDER RIGHTS	CLARIFIED OR ASSUMED APPLICABLE IFRS ACCOUNTING	PROPOSED APPROACHES TO ENHANCING IFRS AND/OR AREAS NEEDING CLARIFICATION
Cryptocurrencies with no claim on issuer	<ul style="list-style-type: none"> <li>Implied rights to exchange for equivalent goods and services with counterparties that accept</li> </ul>	<p>As per IFRS IC agenda decision either IAS 38 or IAS 2 is applicable for cryptocurrencies with no claim on issuer and they are classified as either intangible assets or inventory.</p> <p><u>Asset classification could depend on purpose/holder intention</u></p> <ul style="list-style-type: none"> <li>Intangible assets</li> <li>Inventory</li> </ul>	<p>Revision of IAS 38 definition of intangibles in business and allowing accounting policy choice (Proposed by some as a near- term approach).</p> <p>Clarifications should occur within a unified crypto-assets standard (proposed by some as a long-term approach)</p>

		<p><u>Measurement depends on purpose/holder intention</u></p> <ul style="list-style-type: none"> <li>• Cost or revaluation model (for intangible asset)</li> <li>• Lower of cost or net realizable value or FVPL (for inventory)</li> </ul>	
E-money tokens- Cryptocurrencies and utility tokens that qualify as e-money and some emergent stable coins	<ul style="list-style-type: none"> <li>• Fungibility, tradability and transferability</li> <li>• Claim on issuer, implicit rights</li> </ul>	<p><u>Asset type</u></p> <ul style="list-style-type: none"> <li>• Financial asset</li> </ul> <p><u>Measurement</u></p> <ul style="list-style-type: none"> <li>• FVPL</li> </ul>	<p>Revise definition of cash under IFRS and clarify whether crypto-assets that qualify as e-money based on jurisdictional definition can be classified as cash and treated as analogous to foreign currencies.</p> <p>Clarifications should occur within a unified crypto-assets standard (proposed by some as a long-term approach)</p>
Security and asset tokens	<ul style="list-style-type: none"> <li>• Fungibility, tradability and transferability</li> <li>• Contractual entitlement to ownership interest or control of the token issuer</li> <li>• Revenue rights- rights to financial benefits from revenue streams of the issuer/operator</li> <li>• Debt- right to set cash flows from the economic activities of the issuer/operator</li> <li>• Profit sharing-right to financial profit from the economic activities of the issuer/operator</li> </ul>	<p><u>Asset type</u></p> <ul style="list-style-type: none"> <li>• Financial asset</li> </ul> <p><u>Measurement possibly depends on intended holding period</u></p> <ul style="list-style-type: none"> <li>• FVPL</li> <li>• FVOCI</li> </ul>	<p>Clarification on whether IFRS 9 with a financial asset classification is applicable for security and asset tokens.</p> <p>Clarification of implications of holding period intention.</p> <p>Clarifications should occur within a unified crypto-assets standard (proposed by some as a long-term approach)</p>

	<ul style="list-style-type: none"> <li>• Claims in bankruptcy as equity interest holder or creditor</li> <li>• Rights similar to derivatives instruments (e.g. Reference to other crypto-assets as underlying, granting the holder an option to purchase one or more investment interests)</li> <li>• Rights to future tokens (e.g. Simple Agreement for Future Tokens)</li> <li>• Convertibility of a non-security token into a token or instrument with one or more investment interests</li> <li>• Property ownership rights, Usufruct-Right to fruit from property</li> </ul>		
Utility tokens	<ul style="list-style-type: none"> <li>• Fungibility, tradability and transferability in some cases</li> <li>• Claim on issuer</li> <li>• Rights to access products or services of Token Platform</li> <li>• Rights to purchase or sell existing or future products or services</li> <li>• Right to partial ownership of a product</li> <li>• Rights to mining activities (Proof of status mining)</li> <li>• Rights to contribute labour, effort or resource to a system</li> <li>• Right to contribute, programme or create features of a system</li> </ul>	<p><u>Asset classification could depend on holders business purpose and/or on the nature of the utility token (i.e. specific rights)</u></p> <ul style="list-style-type: none"> <li>• Prepayment asset</li> <li>• Intangible assets</li> <li>• Inventory</li> <li>• Financial assets</li> </ul> <p><u>Measurement depends on holders' business purpose</u></p> <ul style="list-style-type: none"> <li>• Cost with impairment test (for prepayment asset)</li> <li>• Cost or revaluation model (for intangible asset)</li> <li>• Lower of cost or net realisable value or FVPL (for inventory)</li> </ul>	<p>Clarification of the applicable IFRS for different types of utility tokens and/or development of principles of appropriate classification of utility tokens (i.e. intention of holder versus intrinsic characteristics and nature of specific utility tokens).</p> <p>Clarifications should occur within a unified crypto-assets standard (proposed by some as a long-term approach)</p>

	<ul style="list-style-type: none"> <li>• Right to decide on products, services, functionalities to be offered or deleted within the Token Platform</li> <li>• Rights to vote on matters of governance, management and operation of Token Platform</li> </ul>	<ul style="list-style-type: none"> <li>• FVPL or FVOCI (for financial asset and depending on intended holding period)</li> </ul>	
Hybrid tokens including some stable coins	Combination of utility, security or payment token features	Not clear	<p>Clarification or development of principles for the accounting for multiple feature crypto-assets.</p> <p>Clarifications should occur within a unified crypto-assets standard (proposed by some as a long-term approach)</p>
Pre-functional tokens	Will convert to tokens (usually but not necessarily to utility tokens)	<p><u>Asset classification could depend on holders business purpose and/or on the nature of the token it will convert to (i.e. specific rights)</u></p> <ul style="list-style-type: none"> <li>• Prepayment asset</li> <li>• Intangible assets</li> <li>• Inventory</li> <li>• Financial assets</li> </ul> <p><u>Measurement depends on holders' business</u></p>	<p>Clarification of the applicable IFRS for pre-functional tokens including principles of appropriate classification of utility tokens (i.e. intention of holder versus nature of the tokens it will convert to).</p> <p>Clarifications should occur within a unified crypto-assets standard (proposed by some as a long-term approach)</p>

		<p><u>purpose</u></p> <ul style="list-style-type: none"> <li>• Cost with impairment test (for prepayment asset)</li> <li>• Cost or revaluation model (for intangible asset)</li> <li>• Lower of cost or net realisable value or FVPL (for inventory)</li> <li>• FVPL or FVOCI (for financial asset and depending on intended holding period)</li> </ul>	
SAFT	Rights to future tokens and considered as securities	<p><u>Asset type</u></p> <ul style="list-style-type: none"> <li>• Financial asset</li> </ul> <p><u>Measurement</u></p> <ul style="list-style-type: none"> <li>• FVPL</li> </ul>	<p>Clarification on whether IFRS 9 with a financial asset classification is applicable for security and asset tokens.</p> <p>Clarification of implications of holding period intention.</p> <p>Clarifications should occur within a unified crypto-assets standard (proposed by some as a long-term approach)</p>

## Issues related to holders on behalf of others

- 3.51 This section considers accounting by entities that hold crypto-assets on behalf of others (e.g. custodial service and wallet providers, exchanges and brokers) herein also referred to as intermediary holders.
- 3.52 Custodial or brokerage related holding of crypto-assets is similar to financial institutions holding digitally represented financial assets on behalf of its clients. But there are unique features to the nature of crypto-assets and how they are managed (e.g. unlike electronic fiat currency, crypto-assets can only be transferred by the holder of the private key) and this can have implications on economic control of these assets.

### Accounting implications of intermediary holder either having a “principal or agent” role

- 3.53 The appropriate asset recognition needs an evaluation of whether the intermediary holder is a de facto principal or agent. Several publications<sup>22</sup> note that of holders of crypto-assets on behalf of others could either have contractual arrangements
- a) where the client has a direct ownership of the crypto-asset held (i.e. intermediary holder fulfills an agent role) ; or
  - b) that only represent the clients contractual right to the crypto-assets (i.e. intermediary holder fulfills a principal role).
- 3.54 Table below lays out the accounting implications depending on whether the depositor client or intermediary holder has economic control of the crypto-assets.

Table 4.4: Accounting implications of bearer of economic control in intermediary holding arrangement

	<b>Depositor client accounting</b>	<b>Custodian or intermediary holder accounting</b>
<b>Situation 1:</b> <i>Custodian or intermediary holder has economic control and bears significant risk and reward of crypto-assets</i>	Depositor client recognises an asset receivable tied to the value of the crypto-asset	Custodian or intermediary holder recognises crypto-assets as an asset and records a corresponding liability
<b>Situation 2:</b> <i>Depositor client has economic control and bears significant risk and reward of crypto-assets</i>	Depositor client recognises crypto-assets	Crypto-assets are off-balance sheet for the custodian or intermediary holder

## Depositor client versus intermediary holder: Who has economic control of crypto-assets?

- 3.55 Economic control is the power to obtain the future economic benefits of an item while restricting the access of others to those benefits. Economic control can depend on
- a) Contractual terms and conditions;
  - b) Laws and regulation governing custodians in different jurisdictions
  - c) How the custodian manages and stores the crypto-assets
- 3.56 The combination of feedback from the EFRAG crypto-project outreach, advisory firm input, review of accounting firm publications (E&Y, KPMG and PwC)<sup>23</sup>, NSS guidance (France guidance that is in development and Japan) and a recent AICPA practice aid<sup>24</sup> -has shed some light on several factors that would need to be considered in determining who has economic control on the crypto-assets. To determine whether or not the intermediary holder has economic control, the following factors should be considered as indicators (i.e. no single factor is determinative):
- a) Are there legal or regulatory frameworks applicable to the intermediary holder and depositor client (within the jurisdiction of the reporting entity) and does the framework specify the owner of the crypto-asset?
  - b) Do the terms of the contractual arrangement between the depositor client and the intermediary holder indicate whether the client depositor will pass title, interest, or legal ownership of the crypto-asset to the intermediary holder?
  - c) Does the intermediary holder have the right (explicit or implicit under contract terms, law or regulation) to sell, transfer, loan, encumber or pledge the deposited crypto-assets for its own purposes without depositor client consent or notice or both?
  - d) What are the rights of depositor clients in the event of bankruptcy, liquidation, or dissolution of the custodian? Would the deposited crypto-assets be isolated from creditors? If not, do the clients have a preferential claim in such circumstances?

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<sup>23</sup> Ernst and Young, August 2018, Applying IFRS, Accounting for Holders of Crypto-Assets

[https://www.ey.com/Publication/vwLUAssets/EY-applying-ifs-accounting-by-holders-of-crypto-assets/\\$File/EY-applying-ifs-accounting-by-holders-of-crypto-assets.pdf](https://www.ey.com/Publication/vwLUAssets/EY-applying-ifs-accounting-by-holders-of-crypto-assets/$File/EY-applying-ifs-accounting-by-holders-of-crypto-assets.pdf)

KPMG, 2018. Institutionalization of cryptoassets: Cryptoassets have arrived. Are you ready for institutionalization?

<https://assets.kpmg/content/dam/kpmg/us/pdf/2018/11/institutionalization-cryptoassets.pdf>

PwC, December 2019. *Cryptographic assets and related transactions: accounting considerations under IFRS* (PwC publication)

<https://www.pwc.com/gx/en/audit-services/ifs/publications/ifs-16/cryptographic-assets-related-transactions-accounting-considerations-ifs-pwc-in-depth.pdf>

<sup>24</sup> AICPA, 2019, Accounting and Auditing Digital Assets – Practice Aid

<https://www.aicpa.org/content/dam/aicpa/interestareas/informationtechnology/downloadabledocuments/accounting-for-and-auditing-of-digital-assets.pdf>



- e) Does the client can transfer the crypto-assets to another exchange or to their own wallet?
- f) Does the depositor have the ability to withdraw the deposited crypto-asset at any time and for any reason? If not, what contingencies are associated with the rights to receive the deposited crypto-asset? Are there technological or other factors that would prevent timely withdrawal notwithstanding contractual, legal or regulatory rights?
- g) Are there side agreements affecting rights and obligations of the depositor and the custodian?
- h) Are there “off-chain” transactions recorded outside of the underlying blockchain that should be considered?
- i) Do depositor clients bear the risk of loss if the deposited crypto-assets is not retrievable due to in case of loss of the private keys by the third party, either due to operational breach or cybersecurity attack, theft or fraud? To the extent restitution rights apply, it would be an indicator that the intermediary holder ought to recognise a corresponding liability due to the depositor client on their balance sheet.
- j) Could the depositor client be impeded by the custodian in any way from receiving all economic benefits of controlling crypto-assets, including price appreciation?
- k) Is the crypto-asset held in a multi-signature wallet and if so, what are the signatures required to execute a transaction? Who holds the key to the multi-signature wallet and how is ownership evidenced through any applicable arrangements?
- l) Are the clients’ crypto-assets are held separately or commingled with those of other clients? Below is an elaboration of implications and the indicators of whether clients crypto-assets are held separately.
- m) Which party is entitled to the benefit in the case of a hard fork? Below is an elaboration.

### ***Are clients crypto-assets held separately or commingled?***

- 3.57 As noted above, the intermediary holder’s segregation of depositor clients crypto-assets as opposed to the commingling of clients crypto-assets with those of other clients is an indicator that the client has economic control.
- 3.58 The EFRAG crypto-project outreach highlighted that in some jurisdictions such as France and Switzerland, the ability to segregate clients crypto-assets is considered to be determinative of whether the intermediary holder recognises crypto-assets on their statement of financial position. The Swiss Financial Market Supervisory Authority has a general rule that to allow off-balance sheet treatment the crypto-assets need to be clearly separable per customer and that a pooled wallet setup with a separate ledger is not sufficient for off-balance sheet treatment.
- 3.59 As identified in the December 2019 PwC publication, the following factors are indicators of segregation of clients crypto-assets by the intermediary holder.

- a) Whether the rights and obligations of the entity and its clients are set out in a contract or whitepaper (if any); whether the rights and obligations are contractually enforceable; and whether external legal opinions are available as evidence. Enforceability is assessed in the context of specific laws and regulations addressing crypto-assets, to the extent that such laws and regulations exist, and in the context of other laws and regulations where they do not.
- b) Whether there is a reconciliation between the crypto-assets held by the entity on behalf of the clients and the individual holdings of each client, as reflected in their account statement. Similarly, whether there is a reconciliation between the transactions in crypto-assets carried out in the market and the orders executed on behalf of the individual clients, to assess whether each transaction could be attributed to the relevant client. Also, how frequently such reconciliation is performed.
- c) Traceability to a dedicated blockchain address (not all transactions can be individually traced to a dedicated blockchain address). If the crypto-asset is traceable to a dedicated blockchain address of the client, this is more likely to indicate segregation.
- d) Whether the crypto-assets is held in an account/wallet of the entity or at a third party, and whether the third party keeps a record of crypto-assets held on behalf of clients. If the crypto-asset is held in an account/wallet at a third party, this is more likely to indicate segregation.
- e) Whether the entity holds clients' crypto-assets in hot or cold wallets. An entity might allow clients to hold some amounts in a hot wallet for frequent trading, and some other amounts from the same client in a cold wallet for safe-keeping. Whether the client or the entity holds and is able to use the private key to the wallet might also be relevant. If the crypto-assets is held in cold wallets, and the private key is held and can only be used by the client, this is more likely to indicate segregation.

### ***Does client depositor or intermediary holder benefit from DLT hard forks?***

- 3.60 DLT-blockchain represents a record of all transactions (i.e. ledger) and this record is kept by all the permission-less network participants. The cryptographic rules (i.e. software protocol) for recording transactions gets updated as new transactions occur. The updated software protocol for recording transactions requires consensus from a majority of network participants
- 3.61 A hard fork occurs when, at a point in time, there is a disagreement amongst network participants about the required DLT software protocol updates and thereafter one or more alternative software protocols<sup>25</sup> is enacted for purposes recording subsequent transactions. A hard fork is currently only applicable to crypto-currencies.

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<sup>25</sup> Examples of forks in the Bitcoin DLT are the creation of Bitcoin ALL, Bitcoin Cash Plus, Bitcoin Smart, Bitcoin Interest, Quantum Bitcoin, Bitcoin Lite, Bitcoin Ore, Bitcoin Private, Bitcoin Atom, Bitcoin Pizza, Bitcoin Gold and Bitcoin Diamond.

- 3.62 A soft fork is also an update to the blockchain protocol; however, one version (assumed to be the updated or new version) is supposed to be adopted by the majority and will become the dominant one. In effect, a fork creates two sub-versions of the initial blockchain and related crypto-asset as the next state and can be soft (maintaining the compatibility of the two new versions of the software) or hard (making them incompatible).
- 3.63 Consequently, on occurrence of a hard fork, the intermediary holder of a cryptocurrency coin will have the original cryptocurrency coin and an additional alternative cryptocurrency coin. In effect, after a hard fork, the intermediary holder is left with an existing asset (which could be less worth than before) and a new asset.
- 3.64 One of the EFRAG crypto-project outreach participants indicated awareness of an intermediary holder who had sudden possession of new tokens during hard forks (i.e. hard fork dividend) and had the right to decide whether or how to distribute the new tokens. Another participant indicated that it depends on which hard fork, was a new crypto-asset created and was it valuable, did the client request for it. The participant was only aware of Paymium being online when the fork of Bitcoin and Bitcoin Cash occurred. Paymium did not automatically provide its clients with the created alternative cryptocurrency but did so only on a case-by-case basis for clients that had made a request.
- 3.65 A question could arise on the effective rights of the clients who deposited the pre-forked crypto-asset with the intermediary holder (e.g. exchange). The consultancy firm that provided specialist advise to the EFRAG crypto-project noted the following:
- a) In practice, there is usually a clear policy from crypto-exchanges in event of occurrence of hard forks that guides the decision on whether to list either both of the forked crypto-assets (i.e. pre-fork updated version and alternative version to pre-fork updated version) or only one of the two.
  - b) In the latter case, depositors of the pre-forked crypto-asset are left with the choice to redeem or to have their holding converted in the newly forked crypto-asset. Should the exchange refuse to list the forked crypto-assets, the depositor of the pre-forked crypto-asset has no other choice than removing its holding from the exchange and seeking alternative repositories (e.g. own wallet or another exchange).
  - c) According to the consultancy firm, in practice, forks (hard or soft) have not resulted in crypto-assets with differing features than the pre-forked one. Accordingly, the occurrence of a fork has tended to not materially change the rights potentially attached to crypto-assets.

### Possible standard setting- holders on behalf of others

- 3.66 Table 3.5 below summarises some of the indicators of control described in paragraphs . As noted, no single factor is determinative

Table 3.5: Implications of indicative factors

<b>Indicators that depositor client has economic control of crypto-assets</b>	<b>Indicators that intermediary holder has economic control of crypto-assets</b>
<ul style="list-style-type: none"> <li>• Legal contract or jurisdiction regulatory frameworks stipulates intermediary</li> </ul>	<ul style="list-style-type: none"> <li>• Client crypto-asset are commingled with other clients crypto-assets</li> </ul>

<p>holder is the agent</p> <ul style="list-style-type: none"> <li>• Client crypto-asset is segregated in a separate wallet</li> <li>• Restriction on use and transfer of crypto-assets by intermediary holder</li> <li>• Client bears risk of loss (i.e. no restitution) in the event of theft, hacking</li> <li>• Client can benefit from hard fork</li> </ul>	<ul style="list-style-type: none"> <li>• Client rights are unsecured in event of bankruptcy, liquidation or dissolution of intermediary holder entities</li> <li>• Intermediary holder has the ability to borrow, sell, transfer, loan, encumber or pledge the deposited crypto-assets for its own purposes without depositor client consent</li> <li>• Client could get restitution in the event of theft, hacking</li> <li>• Intermediary holder can benefit from hard fork</li> </ul>
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3.67 Other than the application of IAS 8, there is no explicit guidance within IFRS on the accounting treatment of entities in a principal versus agent type relationship in respect of crypto-assets holdings. Issues on principal versus agent accounting arise across different IFRS standards and clarification or development of related requirements for crypto-assets can be done to ensure consistency in how these matters are addressed across different IFRS standards.

3.68 Due to the diversity of contractual arrangements and the existence and content of jurisdictional regulatory requirements in respect of third party holding of crypto-assets, it would be helpful to have IFRS guidance clarifying if/when custodial holding should be on or off-balance sheet. The accounting for holders on behalf of others needs IFRS clarification including on the following:

- Clarifying the application of indicative criteria to determine which party (depositor client versus intermediary holder) has economic control of the crypto-assets
- Clarifying which IFRS respectively applies for the depositor client that records an asset receivable and the intermediary holder (IAS 2, IAS 38, IFRS 9).
- Clarifying whether the custodian credit risk exposure should be considered when determining the value of the receivable asset.

## Other holder accounting issues

### Cash definition within IFRS may need updating

3.69 Several respondents to the IFRS IC agenda decision clarification highlighted that the definition of cash under IFRS may be too restrictive and needs to be updated. Two respondents emphasised that the medium of exchange ought to be the defining characteristic of cash and questioned whether crypto-currencies need to be a unit of account for recognition financial statements akin to a functional currency. A respondent observed that the implied definition of cash in paragraph AG 3 of IAS 32 relates to the concept of functional currency and noted that cryptocurrencies are similar to foreign currency and as per paragraph 8 of IAS 21 *The Effects of Changes in Foreign Exchange Rates* foreign currency is a currency other than the functional currency of the reporting entity.

- 3.70 Furthermore, crypto-assets including some cryptocurrencies can qualify as e-money under the jurisdictional regulatory definitions. For example, as highlighted in a January 2019 EBA report, there have been identified cases in some jurisdictions (UK, Malta) of where some crypto-assets meet the definition of e-money due to there being a claim on an issuer. In addition, some stable coins can be defined as e-money based on the ECB definition outlined. In any case, even if cryptocurrencies with claim on an issuers and some stable coins were to qualify as cash for accounting purposes, as noted in paragraph 28 they fall outside the scope of the IFRS IC clarification.
- 3.71 The IASB staff paper<sup>26</sup> on the IFRS IC final agenda decision acknowledges the need for a future review of the definition of cash under IFRS requirements. However, the IASB staff do not agree with the view that paragraph AG 3 of IAS 32 relates to definition of functional currency under IAS 21 *The effects of Changes in Foreign Currency Rates*.

### **Behavioural consequences of prudential treatment of intangible assets in the banking sector**

- 3.72 In determining the prudential regulatory capital of banks, intangibles assets are deducted from own funds. Hence, as was the case with introduction of IFRS 16, where there was a clarification by the Basel Committee, that for regulatory capital determination purposes, “right of use” leased assets were to be treated as being equivalent to owning the underlying leased assets and this negatively affected banks’ undertaking of leasing transactions that would be deemed equivalent to their owning intangible assets. In similar fashion, the classification of cryptocurrencies as intangible assets, could discourage banks’ holding of crypto-assets other than for trading purposes.

### **Possible additional disclosures**

- 3.73 As highlighted in paragraph 3.18, the IFRS IC clarification also clarified disclosures requirements including the applicable IFRS 13 *Fair Value Measurement* requirements if an entity measures cryptocurrencies at fair value and the disclosure requirements applicable to its holdings of cryptocurrencies (e.g., IAS 2, IAS 38, IFRS 13) and noted in paragraph 3.19, this could include fair value information to the extent that such information is relevant.
- 3.74 Nonetheless, some stakeholders have made proposals for specific disclosure requirements related to holders and some of these may overlap with the implied disclosure requirements communicated by the IASB (see preceding two paragraphs). For instance, the 2018 CPA Canada publication and Sixt and Hammer (2019) propose the following holders related disclosures as possible additional disclosures when material:
- a) The types of crypto-assets shown in the financial statements, its important characteristics and the purpose of holding (e.g., investing, buying of good and services);
  - b) The number of units of the crypto-assets held at year end;
  - c) The accounting policy for them and how this was determined;
  - d) The most important features of crypto-assets like rights acquired;

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<sup>26</sup> [https://www.ifrs.org/-/media/feature/meetings/2019/june/IFRS\\_IC/ap12-holdings-of-cryptocurrencies.pdf](https://www.ifrs.org/-/media/feature/meetings/2019/june/IFRS_IC/ap12-holdings-of-cryptocurrencies.pdf)

- e) Entities adopting a cost approach under IAS 38 should consider disclosing the fair value of the respective crypto-assets held. In addition, fair value changes after reporting date (non-adjusting events) and historical information on the volatility of the crypto-asset should also be considered irrespective of whether they are accounted for at cost or at revaluation under IAS 38.

## Concluding remarks and observations

- 3.75 As is the case with the IFRS IC agenda decision, for most of the analysed NSS guidance, the classification and measurement consider the intention of the holder (i.e. except for the Japan guidance where crypto-assets are considered a unique asset type). The asset classification is determined through combination of considering the business purpose of holding the crypto-asset and, to varied extent, considering the underlying economic characteristics of (i.e. asset type is determined by function or business purpose and by nature).
- 3.76 The preliminary view of the EFRAG research project is that the combined consideration of the function and nature is a sufficient basis for determining their classification, recognition and measurement for holders of crypto-assets but there is need for greater consideration of the nature (i.e. specific rights) including considering whether the measurement approaches under existing IFRS guidance result in the faithful representation of the economic nature of crypto-asset transactions.
- 3.77 The EFRAG research project team acknowledges that to develop accounting standards for holders of crypto-assets considering both their function and nature, means that accounting standard setters ought to have the ability to describe and categorise crypto-asset transactions of a similar economic nature (i.e. transactions ought to be capable of being standardised). However, as noted in the introduction section and **Appendix 2:**, there is diversity in types, relative opacity of rights and obligation and an ongoing and rapid innovation of crypto-asset products. **Appendix 3:** also highlights that there is no consensus or harmonisation in the classification taxonomies applied by regulators across different EU jurisdictions and globally. The combination of these factors, could easily lead to a conclusion that there are so many “moving and unknown” parts associated with crypto-assets and these are not conducive and do not enable accounting standard setting at this point in time.
- 3.78 Nonetheless, the following arguments can be made justifying the ability to develop accounting standards for crypto-asset holders based on existing or to be developed classification taxonomies:
- a) As noted in **Appendix 3:**, a Cambridge 2019 publication<sup>27</sup> on the regulatory landscape of crypto-assets, which reviewed the classification of crypto-assets across 23 jurisdictions, found that 32% of them make a distinction and have an explicit classification for different crypto-assets.

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<sup>27</sup> Cambridge Center for Alternative Finance, 2019, *Global Cryptoasset Regulatory Landscape Study*

[https://www.jbs.cam.ac.uk/fileadmin/user\\_upload/research/centres/alternative-finance/downloads/2019-04-ccaf-global-cryptoasset-regulatory-landscape-study.pdf](https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2019-04-ccaf-global-cryptoasset-regulatory-landscape-study.pdf)

- b) The existence of taxonomies, which are at least applied by some regulators, means that a similar categorisation of crypto-assets ought to be also possible for accounting standard setting purposes. Some stakeholders have argued against current taxonomies that classify crypto-assets into three main categories (i.e. payment tokens, utility tokens and security tokens) with the view that these categories are static and risk being overtaken by innovation and they do not take full account of the hybrid features of crypto-assets.
- c) However, the fundamental rights and economic characteristics of a broad spectrum of crypto-assets are in substance economically similar to existent “non crypto-assets” transactions ( e.g., foreign currency holding, investment in commodities, holders of loyalty miles, emission rights). These fundamental characteristics are not fast moving and are unlikely to become obsolete economic features whether it is in relation to crypto-assets or to analogous transactions. Hence, for a subset of existing and next generation of crypto-assets, a taxonomy classification can have ongoing relevance for accounting standard setting purposes.
- d) **Appendix 2:** has a granular breakdown of the fundamental distinctive rights for utility tokens and security tokens and gives some examples of crypto-assets that have these fundamental distinctive rights. The granular breakdown of rights can mitigate potential concerns that utility tokens and security tokens classification may be too broad for accounting purposes. It can also enable comparison to analogous “non-crypto-asset” transactions and thereafter consideration of the appropriate accounting treatment.
- e) Some of the noted rapid innovation may be in the hybridisation of crypto-asset features rather than in their fundamental economic characteristics. Besides, a taxonomy that clearly identifies fundamental distinguishing economic characteristics and rights- would seem to enable rather than blur the conceptual thinking about the appropriate required accounting for hybrid tokens. For instance, a taxonomy classification ought to enable conceptual thinking on how the bifurcation of component attributes could occur for accounting purposes and it also helps to identify the predominant component features of hybridised crypto-assets.
- f) Finally, the EFRAG research project team is not aware of any evidence showing that the growth of hybrid tokens has impacted the existence of crypto-assets with “pure play” features (e.g. those that are exclusively payment tokens). Hence, a taxonomy is still useful for a not insignificant subset of crypto-assets (i.e. those that are not hybrid tokens).

3.79 Hence, even if there is no global consensus on a taxonomy classification and there is legitimate criticism of the usefulness of the current commonly referenced taxonomy that divides crypto-assets into three main categories (payment tokens, utility tokens and security tokens); there is no reason why any other more suitable classification taxonomy cannot be developed to guide the consideration of the accounting of economically similar crypto-asset transactions. As described in **Appendix 2:**, there is ongoing conceptualisation<sup>28</sup> on the development of classification taxonomies alongside the commonly referenced taxonomy and this should at least enable accounting standard setting.

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<sup>28</sup> A recent academic research paper proposed 14 classification categories -Lausen, J. 2019. *Regulating Initial Coin Offerings? A Taxonomy of Crypto-Assets*. Research Paper.

- 3.80 In the preceding sections, and in paragraph **(Table 3.3)**, several areas have been identified where accounting requirements under IFRS needs either clarification or enhancement.
- a) Principally, it seems that a significant proportion of crypto-assets including most cryptocurrencies can be considered to be either intangible assets or inventory when they are intangible assets not being held for sale in ordinary course of business. Nonetheless, they are a unique type of intangible asset and the current measurement requirements under IAS 38 were not developed with crypto-assets in mind. Some stakeholders have expressed concern that IAS 38 requirements results in financial reporting outcomes (i.e. income statement and cash flow statement presentation) that do not reflect the economic substance of these assets.
  - b) There are a variety of rights associated with utility tokens and there is need for clarification on whether it is either the intrinsic rights of different utility tokens or the holders business purpose and/or intended holding period that should guide their accounting. Similarly, there is need for guidance that clarifies how to address the multiple features of hybrid tokens including some stable coins.
  - c) There is need for a review of definition of cash to ascertain whether e-money tokens can be classified as cash and a possible update of disclosure requirements.
- 3.81 In respect of entities that hold crypto-assets on behalf of others, as described in paragraphs **3.51** to **3.68**, technological features of crypto-assets (i.e. private keys and wallet arrangements) can impact how they are stored and managed during custodial arrangements. Accordingly, they can be indicative of who has economic control in such arrangements (i.e. principal versus agent) and therefore needs to recognise the crypto-assets on the statement of financial position.
- 3.82 Other than the application of IAS 8, there is no explicit guidance within IFRS on the accounting treatment of entities in a principal versus agent type relationship in respect of crypto-assets holdings. Issues on principal versus agent accounting arise across different IFRS standards (IFRS 15 *Revenue for Contracts with Customers*) and clarification or development of related requirements for crypto-assets can be done to ensure consistency in how these matters are addressed across different IFRS standards.
- 3.83 In order to clarify and possibly enhance these different aspects of accounting by holders of crypto-assets, some stakeholders have called for the development of a unified standard instead of an approach that only clarifies and amends the current fragmentary applicable guidance (i.e., IAS 38, IAS 2, perhaps IFRS 9 and current accounting approaches for prepayment assets under IFRS).



- 3.84 Furthermore, the development of a unified IFRS standard can potentially allow the IASB to conduct a robust evaluation of the unique characteristics of crypto-assets, and to undertake a critical evaluation of current IFRS requirements related to analogous transactions (commodity brokerage, holders of loyalty miles, emission rights...). A unified standard could present an opportunity to update the guidance for both crypto-assets and where needed to the guidance for analogous transactions. That said, the pros and cons of different approaches to standard setting should be considered. In effect, there seems to be the following three plausible options:
- a) Amend applicable IFRS standards (IAS 2, IAS 38, IFRS 9- for holders) and allow the application of IAS 8. This may allow preparers to apply what they consider to be the most relevant measurement basis for crypto-assets but it is also likely to entrench or increase the current diversity in practice;
  - b) Develop a unified, standalone crypto-assets standard that addresses the various areas of clarification. This may allow a holistic review, clarification or enhancement of the accounting for crypto-assets but it is likely to be only appropriate if these assets become mainstream and pervasive, But it is not the purpose or within the capacity of the EFRAG research project team to predict the future outlook for crypto-assets activities.
  - c) Develop a standard that addresses any identified gaps in the current generation and next generation of crypto-assets but also addresses the gaps in accounting for analogous transactions (e.g. investments in commodities and emission rights). This approach will likely have the highest marginal benefit and impact for the development of IFRS Standards as it is not limited to a particular type of transactions but it may necessitate lengthy standard setting and fail to provide timely answers to stakeholders that need clarification in several areas that have been highlighted in this chapter.

## CHAPTER 4: ISSUERS ACCOUNTING

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- 4.1 In contrast to holders' accounting where at least the IFRS IC issued clarification for accounting by holders for a subset of crypto-assets (i.e. cryptocurrencies with no claim on issuer), issuers accounting is unaddressed. There is also less NSS guidance (i.e. addressed by fewer NSS) related to issuers than that related to holders. Nonetheless, some respondents to the IFRS IC agenda decision expressed disappointment about the exclusion of accounting for issuances and related issues.
- 4.2 This DP is focused on problem definition in the accounting for crypto-assets and it considers issuer accounting in this chapter alongside holders accounting (Chapter 3:) as there can be symmetry in issuer and holder considerations (e.g. for some tokens holder rights can be issuer obligations). The focus of the problem definition and this chapter is on identifying issues on issuer accounting that either need enhancement and clarification within IFRS requirements.
- 4.3 The focus of this chapter is not on proposing solutions for issuer accounting under IFRS.

### Which IFRS Standard to apply to ICO (issuer) proceeds?

- 4.4 As explained in Appendix 1:, an ICO is a means of raising funds for an existing or future crypto-asset project by issuing tokens (also referred to as digital tokens) to subscribers/potential investors. Despite recent declining trends, as discussed in Appendix 1:, ICO funding has been a growing source of funding for some business sectors.
- 4.5 When an ICO is undertaken, the issuer (ICO entity) receives consideration which can be in the form of fiat currency, crypto-assets (e.g., Bitcoin and Ether being two of the popular crypto-assets used in ICO exchange transactions) or a combination of fiat currency and crypto-assets.
- 4.6 Each ICO will generally have unique terms and conditions. Furthermore, other than issuance of tokens considered to be equivalent to securities, the ICO issuance remains largely unregulated in many jurisdictions, providing further scope for varied terms and conditions. It is therefore crucial for issuers (and particularly potential investors) to review the whitepaper or underlying documents accompanying the ICO token issuance, and to understand what exactly is being offered to investors. For investors in particular, in situations where rights and obligations arising from a whitepaper or their legal enforceability are unclear, legal advice might be needed to determine the relevant terms.
- 4.7 Feedback from the consultancy firm confirmed that token issuers vary greatly depending on the type of crypto-assets involved but also within a given category. In the absence of identifiable issuers, contractual obligations are not relevant in the case of payment tokens. Looking at utility tokens issuers, obligations from the issuers will be limited to those formalized in their whitepaper but will mostly not be legally binding in the absence of applicable regulatory framework. Lastly, issuers of security token will be required to comply with the mandatory/discretionary contractual arrangement disclosed in their PPM or prospectus..

- 4.8 The varied design and purpose of crypto-assets have a direct impact on the commitments and obligations undertaken by ICO the issuer at issuance date and in subsequent periods as the obligations of the issuer can change over the life of the crypto-asset.
- 4.9 Where consideration (proceeds) for the ICO is not in the form of cash but another crypto-asset, the transactions might be an exchange of similar goods or services. However, research suggests that it is unlikely that an ICO will be an exchange of similar goods or services, because no two crypto-assets are generally alike.
- 4.10 A 2019 PwC publication<sup>29</sup> notes that ICOs might be considered to be securities by a securities regulator, but it is important to note that there is no uniform global view. As a result, issuers should monitor regulatory developments closely and consider the impact that any changes might have on financial reporting.
- 4.11 Assuming that there is an exchange transaction, the consideration received by the issuer is recorded as the debit side of the journal entry. However, a challenging question is how to account for the “credit side”. In the absence of clarification by the IASB, the preliminary conclusion of this research, informed by accountancy firm publications and feedback from the EFRAG crypto-project outreach, is that ICO issuers can apply one or a combination of the following IFRS Standards:
- a) IFRS 9 *Financial Instruments* – as a financial liability likely to be applicable for issuance of security and asset based tokens
  - b) IAS 32 *Financial Instruments Presentation* – as an equity instrument likely to be applicable for issuance of security and asset based tokens
  - c) IFRS 15 *Revenue from Contracts with Customers* – as a prepayment for future goods or services (for example access to a platform) likely to be applicable for issuance of utility tokens to holders that can be considered potential customers
  - d) IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* – as an obligation leading to a provision (such as a constructive obligation) is likely to be applicable for issuance of utility tokens to holders that may not qualify as contract customers.
- 4.12 Assuming that there is no exchange transaction, and the issuer has not undertaken a commitment (explicit or implicit) to the holder or other party, the issuer would recognise the credit side of the journal entry as a gain/ income in profit or loss.

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<sup>29</sup> PwC, December 2019. *Cryptographic assets and related transactions: accounting considerations under IFRS* (PwC publication)

<https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf>

- 4.13 Some security and asset-backed tokens have distinct features of securities and one could readily conclude that their ICO issuance results in financial liabilities (they represent a contract to buy or sell a non-financial item that can be settled net in cash or another financial instrument, or by exchanging financial instruments) for the issuing entity. Hence issuers of these tokens would likely apply IFRS 9 for recognition and measurement of the financial liabilities and IAS 32 for the presented classification.
- 4.14 However, it is less clear which IFRS Standard would apply for the issuance of hybrid type tokens. Hybrid tokens have multiple features, can be used for multiple purposes by different holders and their underlying obligations can change over time. These different features contribute to the challenge of identifying the appropriate accounting treatment by issuers of hybrid tokens. Certain hybrid-type tokens might contain embedded derivatives and IFRS 9 might be applicable.
- 4.15 There is currently an emerging trend, especially in the US, to develop and trade crypto-asset derivatives (such a futures) on which case the guidance in IFRS 9 might apply - directly or by analogy. But the accounting approaches for the issuance of other hybrid tokens may be less straightforward yet feedback from the EFRAG crypto-project outreach indicated that hybrid tokens are widespread (i.e. besides cryptocurrencies, many tokens have hybrid features). In effect, the accounting for hybrid tokens issuance is an aspect that needs clarification.
- 4.16 The application of IFRS 15 also raises a number of challenges where it would be helpful to have IFRS clarification. A key issue is the determination of the timing of revenue recognition and outstanding performance obligation/s (i.e. the timing of transfer of control of network goods and services from issuer to holder of token etc.). The applicability of IFRS 15 is premised on the existence of enforceable implicit and/or explicit contracts with customers. However, as described in paragraphs A2.32 to A2.37, there can be a challenge with the enforceability of rights and obligations associated with issued tokens. In particular, there is an overall lack of contractual enforceability and legal evidence of the issuer obligations related to some of the issued utility tokens.
- 4.17 Similarly, another question that needs IFRS clarification is if and when the IAS 37 becomes applicable for crypto-asset issuing entities, and for what type of obligation should a recognising as a provision be recognised and under what circumstances or point in time should it be derecognised . Should , IAS 37 be applicable if the issuance is not within the scope of IFRS 15?
- 4.18 The views from accounting firms on which IFRS Standards might apply to ICO issuance and related issues and NSS guidance are discussed in the following sections.

### Framework for analysis possible issuer accounting approaches

- 4.19 For the purposes of determining which IFRS Standard might apply and discuss the related accounting issues, it is useful to determine the underlying rights and obligations between the ICO issuer and the holder of the crypto-assets. A similar understanding would be needed for other forms of issuance which are not ICOs. Appendix 2: considers in more detail rights and obligations and contractual arrangements associated with crypto-assets.

- 4.20 There is consequently no generally applied definition of a crypto-asset. Furthermore, there is a noted variation in accounting treatment across EU jurisdictions with some EU countries having developed specific ICO accounting guidance (following the development of local regulatory requirements for ICOs), and other EU jurisdictions recommending or requiring local GAAP accounting requirements which are often in line with or similar to tax accounting.
- 4.21 EU countries with specific accounting requirements include France and Lithuania. Other European countries with some form of local GAAP requirements for ICO issuance include Switzerland and Luxemburg. One such country outside of the EU is Japan, where an exposure draft on the accounting requirements for ICOs and STOs is expected in the first half of 2020.
- 4.22 Another useful point of reference for ICO issuer accounting, are the accounting firms publications including a December 2019 PwC publication<sup>30</sup> (referred to in the rest of this chapter as PwC publication). Reference was also made to other accounting firm publications that covered issuance accounting to varying degrees.
- 4.23 In the paragraphs below is an overview of the
- a) analysis of accounting firms' publication guidance;
  - b) Existing NSS guidance.

### **Accounting firms' publication guidance**

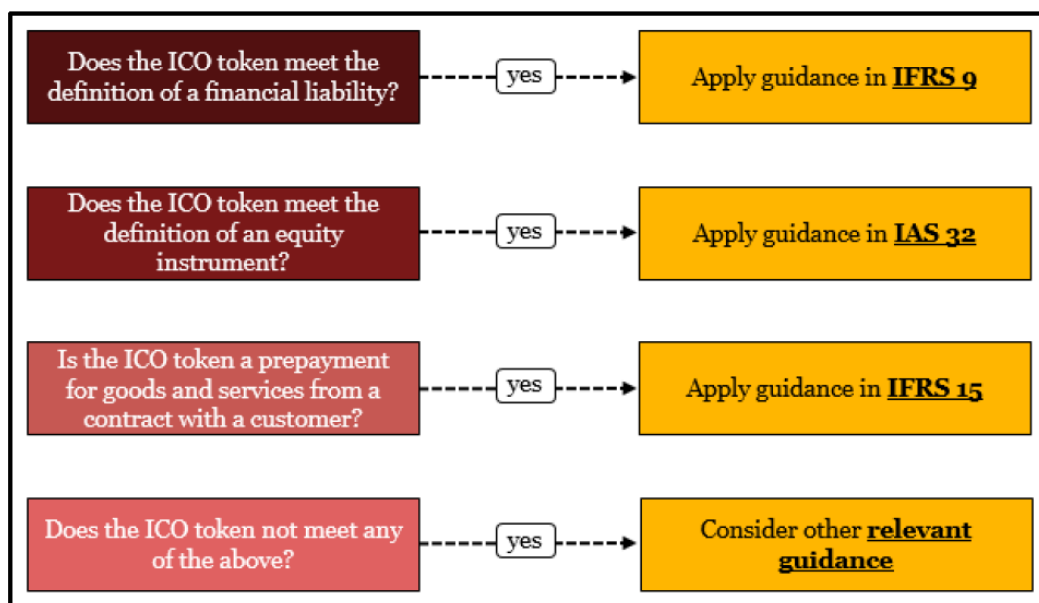
#### ***Accounting for ICOs by the issuer***

- 4.24 The PwC publication provides the following possible analysis framework of accounting models to consider when determining the nature of, and accounting for, the issued ICO token, noting that consideration of the contract terms is needed, to understand the nature of the ICO token issued and the obligations of the issuer.

Source: PwC publication

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<sup>30</sup> <https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf>



### Financial liability

- 4.25 An issuer of an ICO token should assess whether a token meets the definition of a financial liability under IAS 32.<sup>31</sup>
- 4.26 If the ICO token is a financial liability, the accounting would follow the applicable guidance in IFRS 9. Many ICO tokens will not meet the definition of a financial liability, but there are situations where the terms and conditions might provide for a refund of proceeds up to the point of achieving a particular milestone. There might be situations in which the contract creates a financial liability at least up to the point at which the refund clause falls away.

<sup>31</sup> Specifically, an entity would consider the definition in IAS 32, which states that a financial liability is:

- a contractual obligation to deliver cash or another financial asset to another entity or to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity or
- certain contract that will or might be settled in the entity's own equity instruments, such as those that violate the principle stated in paragraph 11 of IAS 32 (commonly known as the 'fixed-for-fixed' principle)

### Equity instrument

- 4.27 IAS 32 defines an equity instrument as any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Typically, ICO tokens do not provide the holders with such a residual interest; for example, they do not give the holders rights to residual profits, dividends, or entitlement to proceeds on winding up or liquidation. These ICO tokens might therefore lack the characteristics of an equity instrument. Careful consideration is needed to assess whether the rights to the cash flows only relate to a specific project or whether, in substance, they provide rights to residual cash flows of the ICO entity.

### Revenue transaction/prepayment for goods and services

- 4.28 The ICO entity should consider whether the ICO token issued is in substance a contract with a customer that should be accounted for under IFRS 15. IFRS 15 would apply if (1) the receiver of the ICO token is a customer, (2) there is a 'contract' for accounting purposes, and (3) the performance obligations associated with the ICO token are not within the scope of other IFRS Standards.
- 4.29 To determine whether a contract with a customer exists, an ICO entity should consider whether the whitepaper, purchase agreement and/or other accompanying documents create 'enforceable rights or obligations'. The ICO entity also needs to determine if a contract with a customer exists under IFRS 15.
- 4.30 In many circumstances, ICO issuers might use the consideration received in the ICO to develop and maintain a software platform (often an integral part of the ICOs future business model). The ICO token could provide the holder with access to the platform which might be operated as part of the entity's ordinary activities. This might result in the holders meeting the definition of 'customers', from the perspective of the ICO entity. In this case, the proceeds from the ICO could be revenue of the issuing entity, which will likely be initially deferred (deferred payments).
- 4.31 Determining the performance obligations, how they are satisfied and the period over which to recognise revenue will be judgemental and will depend on the specific facts and circumstances of the ICO offering.

### Other relevant guidance

- 4.32 PwC notes that when an IFRS Standard cannot be identified, the hierarchy in IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors* should be considered in determining the appropriate accounting treatment for crypto-assets. PwC is of the view that even if the arrangement does not give rise to a financial instrument or a promise to deliver goods or services to a customer, there is likely to be a legal or constructive obligation to the subscriber. This might result in the issuer recognising a provision in accordance with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*.

### **Other ICO related issues**

- 4.33 The PwC publication considers the accounting for the following ICO related issues:
- a) pre-sale agreements (SAFTs)

- b) own ICO tokens exchanged for third party services
- c) own tokens exchange for employee services.

### ***Pre-sale agreements (SAFTs)***

- 4.34 As explained in **Appendix 2: paragraph A2.28**, a Simple Agreement for Future Tokens (SAFT) is simply a pre-ICO token issuance allowing entities to attract seed investors and lock in funding in private sales prior to a public ICO sale.
- 4.35 The SAFT issuer will typically settle the SAFT using an ICO token price that is discounted by a predefined amount (for example, a 10% discount to the ICO token price at issuance). Thus, on a successful ICO, the SAFT investor will receive a number of tokens equal to the value of what was originally invested, plus a return equal to the specified discount on the ICO token. In some cases, an investor acquires the right to a participation in the issuing company.
- 4.36 The terms of a SAFT can vary, impacting the accounting treatment. Factors to consider include (but are not limited to) the characteristics/features that the tokens will have, and the rights to which the future holders will be entitled. Typically, the SAFT terminates if the ICO does not happen on or by a stated date, at which time the entity is required to return to the investor the amount originally invested (or a portion thereof).

### Accounting for pre-functional tokens and SAFTs

- 4.37 A key accounting question is whether the pre-functional token represents a financial liability. This could be the case when the issuing entity is required to return to the investor the amount originally invested or a portion thereof, if the platform/product fails to be developed.
- 4.38 On the other hand, if the tokens underlying the SAFT represent a pre-payment for future goods or services the question is whether IFRS 15 should be applied, or whether the consideration received should be recognised as a pre-payment (in case it is outside the scope of IFRS 15). If the pre-functional tokens clearly entitle the holder to future goods and services those tokens would not be considered a financial instrument<sup>32</sup>. This guidance is consistent with the views expressed by PwC in its publication.
- 4.39 However, on the basis that the occurrence of a successful ICO is beyond the control of the entity, and the characteristics of the tokens to be issued might be unclear, some might view the SAFT as containing a financial obligation, because it represents a contractual obligation to deliver cash if the ICO does not occur by the stated date. In such a case, the SAFT might be viewed as a financial liability of the issuer in accordance with IAS 32 at initial recognition. There might also be other embedded features which require further assessment, such as embedded derivatives based on the specific terms of the arrangement.

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<sup>32</sup> It is usually not a contract “to buy or sell a non-financial item that can be settled net in cash or another financial instrument, or by exchanging financial instruments, as if the contracts were financial instruments”. [IFRS 9 para 2.4].



### *Own ICO tokens exchanged for third party services/ employee services*

- 4.40 Some issuers of ICO tokens might choose to keep some tokens generated through the ICO, to use as a means of payment for goods or services. The generation of ICO tokens for own use does not generate proceeds for the ICO entity. The act of generating ICO tokens is not, in itself, an exchange transaction.
- 4.41 Some argue that generating ICO tokens is similar to a retail store printing vouchers for discounts on future purchases at the store and not distributing them to customers. Therefore, according to PwC it seems appropriate that such an event would not be considered for accounting purposes. This situation changes once the vouchers are provided to third parties in exchange for consideration – or, in accounting terms, once an exchange transaction takes place.

#### Third party services

- 4.42 Sometimes, ICO tokens are provided to third parties for services, such as developing a platform. To determine the appropriate accounting, it is important to obtain a clear understanding of the economic substance of the exchange between the issuer and the third party.
- 4.43 PwC in its publication provides the following examples on possible approaches to applying existing IFRS Standards to own ICO tokens exchanged for third party services:
- a) if the payment is to develop software, can the costs be capitalised as part of the intangible, based on the applicable IFRS guidance, or should they be expensed (for example, research and development guidance under IAS 38)?
  - b) the credit side of the entry is determined by the obligations that the ICO entity incurred as a result of issuing the ICO tokens. This assessment determines the applicable IFRS Standard. For example, where the ICO tokens provide an entitlement promise to deliver future goods or services to a customer (such as a discount on future services provided by the ICO entity), the credit side of the journal entry should be determined based on IFRS 15. In this case, the revenue from providing the ICO tokens should be measured at the fair value of the goods and services received by the ICO entity.

#### Employee services

- 4.44 Some ICO entities might reward their employees in the form of a specific number of tokens generated through the ICO IAS 19 *Employee Benefits* or IFRS 2 *Share-based Payment*, might need to be considered based on the characteristics of the ICO tokens generated. Our research has found that rewarding employees, as well as founders of the ICO start-up entity, with ICO tokens is very common in the ICO environment. In some cases, employee are remunerated mainly in crypto-assets, of which ICO tokens would comprise a sub-set of their remuneration.

- 4.45 According to PwC, unless the ICO tokens meet the definition of an equity instrument of the ICO entity (that is, a contract that has a residual interest in the assets of the ICO entity after deducting all of its liabilities), the arrangements would not meet the definition of a share-based payment arrangement under IFRS 2. Instead, they would fall within the scope of IAS 19 as a non-cash employee benefit (issued at cost or fair value).

### Existing NSS guidance

- 4.46 There are at least two countries, France and Lithuania, that have developed specific accounting guidance for ICO issuers and related issues. However, there could be other EU developments in this space at the time of writing this DP. Outside of the EU, Japan is also developing ICO guidance.
- 4.47 A number of other EU countries have development/adapted local GAAP accounting guidelines that are either consistent or deemed acceptable for tax purposes. These local GAAP guidelines are not analysed in this DP due to differences in tax regimes differ across jurisdictions and due to the lack of a full picture on the different jurisdictional tax-related requirements.

### France

- 4.48 The Loi Pacte in France passed into law (summer 2019), a comprehensive legal framework for ICO issuers and businesses dealing with tokens which are legally defined. The accounting regulation developed by the French accounting Standards authority (ANC) was published in 2018 and is summarised below.
- 4.49 When developing the accounting regulation, it was decided not to classify tokens between security/currency/utility, considering the lack of consistent definitions and the pace at which the underlying technology is evolving making any definition of a token short-lived and subject to ongoing changes.

### *Accounting for ICOs by the issuer*

- 4.50 The accounting treatment of the tokens will depend on the rights and obligations associated with the token and on the commitments made by the ICO issuer regarding each token category issued as expressed in the whitepaper of the ICO and any other relevant document. ICO issuing entities are required to distinguish between tokens featuring characteristics of securities and other tokens.
- 4.51 The accounting regulation further specifies that unissued (unsubscribed) tokens should not be recognised in the statement of financial position, and would be disclosed in the notes to the financial statements.
- 4.52 No specific accounting requirements were developed for tokens featuring characteristics of securities. Given that such tokens have similar characteristics similar to securities and equity instruments (such as shares and bonds), the accounting treatment follows standards for similar financial instruments under the French accounting framework.

### **Other tokens**

- 4.53 The issuing entity will recognise consideration for other tokens based on the amount paid by subscribers - net of VAT or similar taxes, if any (these are recognised separately). The issuing entity will recognise a liability for the consideration received in an ICO based on the commitments/obligations associated with the token issued and recognise revenue in profit and loss based on the delivery of goods or services.
- a) if tokens have features similar to debt, they are recognised as “loans and similar debts”
  - b) if the tokens represent services to be provided or goods to be delivered in the future, they will be recognised as “prepaid income”. Payment/exchange tokens (this is, regular cryptocurrencies) will fall into this category, even though most typically would not represent any future service or good. More broadly, all cryptocurrencies (including bitcoin and ethers) will qualify as “tokens” under this regulation, and not only tokens issued by a specific company following an ICO. The issuer will recognise income in profit or loss according to the delivery of goods or services.
  - c) if the issuer has no implicit or explicit obligation to the token holders, the funds collected by the issuer will be recorded as income in profit or loss.
- 4.54 If the tokens have a hybrid feature (for example utility token plus security features), the accounting will be based on the two separate features.
- 4.55 The issuer will need to disclose various information concerning the issuance, the rights and obligations attached to the tokens, the accounting principles applied with respect to the issued tokens, unissued tokens, the tokens’ market value as at the end of the period and other relevant information concerning the impacts of the tokens in case of conditions and disclaimers attached to tokens.

### **Pre-functional tokens and Own tokens exchanged for third party/ employee services**

- 4.56 The French guidance discusses the accounting for pre-functional tokens and SAFT agreements when they are refundable.
- 4.57 The French guidance informs that for tokens allocated to employees and other contributors to the activities of the issuer at privilege conditions and ICO issuer must recognise a discount by reference to the price paid by independent parties (or market value in case of absence of subscription to the ICO open to such parties at the date of token allocation).

### **Lithuania**

- 4.58 The accounting by the ICO entity is premised on whether ICO tokens are in circulation (issued) or not and also on the rights and obligations arising from the tokens. Issued tokens are tokens that the ICO token has launched to the public and which it does not keep for own purposes.

- 4.59 Similar to the French accounting guideline on ICO issuance, the Lithuania guidelines inform that the value of tokens circulated during an ICO depends on the commitments and obligations undertaken by the ICO issuer to the purchaser of the tokens, the rights or powers granted to the holders of the tokens, period of the use and liquidity. The Lithuanian guidelines explain that, usually, all essential ICO conditions, including also the rights granted to the purchasers of the tokens, commitments of the issuer and other terms and conditions should be specific in the white paper that accompanies the ICO and could be considered as a prospectus equivalent to when issuing securities.
- 4.60 The issuing entity must record a liability depending on the rights granted to holders of the ICO tokens. Guidance is provided in relation to:
- a) accounting for pre-ICO expenses
  - b) accounting for ICO issuance.

#### **Accounting for pre-ICO expenses**

- 4.61 An ICO is often carried out by issuing tokens by the issuing entity in exchange for another crypto-asset or, in rare cases, for fiat currency.
- 4.62 Before undertaking an ICO, the ICO entity must decide on which platform it will use to launch the ICO, obtain the necessary licences for ICO purposes, prepare a White Paper for their circulation, create a Smart Contract corresponding to appropriate login protocols and to perform other work. During this preparatory period, the costs of the company are covered from the own capital of the company or borrowed capital. If these costs do not meet the definition of “Intangible assets” under local GAAP, they are recognised as expenses. If costs satisfy the requirements for recognition as intangible assets, they may be shown as intangible assets.

#### **Accounting for the ICO issuance**

- 4.63 ICO tokens that are not circulated (issued) during an ICO (and remain the property of the issuers) are not recognised and are recognised only when the active market of token stabilises. As explained in paragraph 4.40, some ICO issuers choose to keep some tokens generated through the ICO, to use as a means of payment for goods or services or employee services.
- 4.64 The rights granted to the purchasers of tokens by the ICO entity may be the same as the rights of the holders of securities. Therefore, the liabilities of an issuer of tokens will depend on the nature of the rights granted. They may be similar to the rights of the holders of debt, equity instruments or other financial instruments. Issuer recognises a liability if it has an obligation or commitment to the holder:
- a) Payment tokens – payment tokens generally do not grant clear rights in the future for their holders to get a specific service, goods or assets from the company circulating them. The consideration received by the issuing entity of such tokens may be designated for the establishment of the payment platform and its ongoing functioning – in this case the issuer recognises a liability as a payment received in advance (pre-payment). The liability is derecognised once the issuer commitments or obligations towards the holders have been fulfilled

- b) Security tokens - the right granted to the purchasers of ICO tokens may be the same as the rights of the holders of securities. Therefore, the accounting by the issuer of a security token may be similar to the rights of the holders of debt, equity instruments or other financial instruments under local Lithuanian GAAP.
- c) Utility tokens - the issuer recognises a liability for the obligation to the holder of the tokens for goods or services to be provided in the future; the issuer must assess whether the liability is fixed or variable.

#### **Other issues related to ICO issuance**

4.65 Additional specific issues that needed further analysis including:

- a) ICO issue costs - Accounting for ICO issue costs incurred by the issuer including development costs associated with setting up a platform to launch an ICO. These are analogous to IPO costs. The guidelines under Lithuanian GAAP address this issue and account for issue costs either as intangible assets (if they meet the definition) or as expenses recognised immediately in profit or loss. Lithuanian GAAP does not differentiate between issue costs incurred for different types of tokens.
- b) Own ICO tokens - accounting for crypto-assets that remain in the property of the issuer of the ICO (also often the founder of the crypto-asset) and are not placed in circulation. The PwC publication discusses this issue and provides accounting guidelines under IFRS.
- c) Airdrops - accounting for “airdrops” (i.e. Crypto-assets given away for free in an ICO (or subsequent to the ICO)).

## Summary of applicable accounting for issuers and areas for clarification

### Summary of applicable accounting for different issued crypto-assets

4.66 Table 4.3 below outlines the assumptions of applicable accounting for different crypto-assets based on the above analysis of existing guidance. The applicable accounting reflects the identified possible applicable accounting for crypto-assets.

Table 4.1. Obligations, possible applicable accounting and possible required standard setting .

ISSUED CRYPTO-ASSET	ISSUER OBLIGATIONS	ASSUMED APPLICABLE IFRS ACCOUNTING	AREAS NEEDING CLARIFICATION
Cryptocurrencies (payment tokens) with no claim on issuer	<ul style="list-style-type: none"> <li>None</li> <li>However, need to consider whether the transaction is an exchange transaction</li> </ul>	<ul style="list-style-type: none"> <li>Recognise revenue under IFRS 15 or</li> <li>Gain in profit or loss</li> </ul>	Determining whether or not the transaction would fall under the scope IFRS 15 may need clarification
E-money tokens- Cryptocurrencies and utility tokens that qualify as e-money and some emergent stable coins	<ul style="list-style-type: none"> <li>Claim on issuer, implicit obligations</li> </ul>	<ul style="list-style-type: none"> <li>Recognise revenue under IFRS 15 when issuer meets obligation(s)</li> </ul>	Identifying the obligation(s) at issuance date and period over which obligation(s) is(are) met may need clarification
Security and asset tokens	<ul style="list-style-type: none"> <li>In principle none</li> <li>Contain characteristics that are similar to securities</li> </ul>	<ul style="list-style-type: none"> <li>Recognise a financial liability under IAS 32 and IFRS 9</li> </ul>	<ul style="list-style-type: none"> <li>Determining whether it's a financial liability under IAS 32 and IFRS 9 may need clarification</li> </ul>
Utility tokens	<ul style="list-style-type: none"> <li>Claim on issuer, explicit and implicit obligations</li> </ul>	<ul style="list-style-type: none"> <li>Recognise revenue under IFRS 15 when issuer meets obligation(s) and/or</li> <li>Recognise a provision (such as a constructive obligation) if the transaction</li> </ul>	<ul style="list-style-type: none"> <li>Identifying the obligation(s) at issuance date and period over which obligation(s) is(are) met may need clarification</li> <li>Identifying whether to apply IAS 37 in</li> </ul>

		falls outside of the scope of IFRS 15	case transaction is not within the scope of IFRS 15
Hybrid tokens with multiple features including some stable coins	<ul style="list-style-type: none"> <li>Claim on issuer, explicit and implicit obligations combined with no claim (in case of payment feature)</li> </ul>	<ul style="list-style-type: none"> <li>Accounting based on a combination of cryptocurrency (payment token) and utility token</li> </ul>	<ul style="list-style-type: none"> <li>Same clarifications as for payment tokens and utility tokens</li> </ul>
Pre-functional tokens and SAFT	<ul style="list-style-type: none"> <li>Claims on the issuer will depend on the type of token – payment/security/utility</li> </ul>	<ul style="list-style-type: none"> <li>Accounting will depend on the type of pre-functional I token issued and the issuer obligations</li> </ul>	<ul style="list-style-type: none"> <li>Needs clarification</li> </ul>
Free tokens, Issuance costs, unissued tokens, reacquired tokens	<ul style="list-style-type: none"> <li>Requires further examination</li> </ul>	<ul style="list-style-type: none"> <li>Requires further examination</li> </ul>	<ul style="list-style-type: none"> <li>Requires further examination</li> </ul>

## Concluding remarks and observations

- 4.67 The diversity of crypto-assets with varied and sometimes unique economic features, rights and obligations; can make it difficult to assess which IFRS Standard should be applied for their issuance by reporting entities.
- 4.68 The preliminary view of this research informed by accounting firm publications and feedback from the EFRAG crypto-project outreach is that ICO issuers can apply one or a combination of different IFRS Standards (IFRS 9, IAS 32, IFRS 15 and IAS 37) to recognise either a liability or equity or revenue or performance obligation or provision; following the issuance of different crypto-assets.
- 4.69 The accounting principles within the French and Lithuanian local GAAP ICO guidance detailed above are consistent with the above preliminary conclusion of applicable IFRS accounting standards for issuers of crypto-assets.
- 4.70 However, there are a number of issuer accounting areas that would likely need clarification or enhancement of existing IFRS Standards. The areas that need clarification include the applicability of IFRS 15 for issuance of tokens (i.e. when issued tokens such as utility tokens entitle holders to network goods and services) under circumstances where there may be questions on the enforceability of the arrangements between the issuing entity and holder. Similarly, clarification of circumstances for the applicability of IAS 37 (for instance when there is a constructive obligation) is needed.
- 4.71 Another area for clarification is the appropriate IFRS requirements for the issuance of hybrid tokens with multiple features, used for multiple purposes and whose obligations may change over time. Some of accounting challenges arise from the lack of clarity on the precise nature obligations undertaken by the ICO issuer.
- 4.72 Furthermore, as explained in paragraph 4.65, there are a number of ICO issuance related issues identified in the NSS guidance (i.e. airdrops or free tokens, accounting treatment of entities holding issued own tokens and issuance costs) that need further examination of accounting implications under IFRS requirements. There are also issues highlighted in the accounting firm publications that merit further examination and clarification under IFRS requirements including: pre-sale agreements (SAFTs); own ICO tokens exchanged for third party services; and own tokens exchange for employee services (measured at cost or fair value) and disclosure in respect to unissued tokens.
- 4.73 As noted earlier, there can be symmetrical considerations in the accounting for holders and issuers of some crypto-assets (e.g. rights and obligations of utility tokens). In addition, in the holders accounting chapter, an argument is made for the development of a unified crypto-assets accounting standard instead of possible piecemeal clarifications and amendments to the current fragmentary applicable guidance. A potential unified crypto-assets standard could address holders and issuers accounting including the related issuer accounting areas for clarification or IFRS standards enhancement that have been identified in this chapter.



## CHAPTER 5: CRYPTO-ASSETS VALUATION

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- 5.1 A chapter on valuation is included in this DP because the faithful representation of crypto-assets issuance and acquisition transactions within financial statements, depends on their appropriate valuations, which in turn depends on the availability of mechanisms for price discovery (e.g. active markets) and the existence of suitable valuation approaches.
- 5.2 The question of appropriate valuation arises due to the unique and/or multiple element characteristics of different crypto-assets and the novel features of business models that issue crypto-assets. For instance; most entities raising capital through ICOs are at the initial stages of development, often not even operating businesses but just funding ideas. The expected pay-off from an ICO token depends on the intention of token holders either as customers or investors. For example, utility tokens which grant their holders access to the token's ecosystem, product or service, results in token being holders more akin to customers than investors.
- 5.3 At the same time, once tokens are listed on an exchange they can be sold in the secondary market by both customers and investor holders. Thus the expected return from tokens (whether issued in an ICO or bought in a secondary market) could be a combination of the value derived from the ecosystem of the token, prospects of future profit distribution and future resale price. Thus traditional asset pricing methods might not be appropriate to value a token for an ICO process (or thereafter). In other words, there can be overlaps in characteristics and valuation approaches applied for traditional asset classes but there are also unique features that may necessitate different valuation methodologies.
- 5.4 Furthermore, the feedback to the EFRAG crypto-project outreach indicated that stakeholders in some jurisdictions struggle to identify active markets and therefore it is necessary to have a sense of how entities may be determining value in the absence of active markets. One view is that an active market for a crypto-asset exists only when crypto-fiat exchanges published by reliable sources exist. Under this view, crypto-to-crypto exchanges should not be considered when determining if there is an active market.
- 5.5 Finally, an examination of the valuation methodologies can provide further insight on the nature and sources of economic value of crypto-assets in a manner that is helpful for thinking about the nature of asset (e.g. their intellectual property and other intangible asset features) and corresponding appropriate accounting requirements.

## Crypto-assets valuation methodologies

- 5.6 The literature on valuation methodologies for crypto-assets is in early stages of development. A 2018 EC report<sup>33</sup> highlights first attempts made towards developing a theoretical framework around crypto-currency valuation. They note that as an example, Bolt and van Oordt (2016) developed an economic framework to analyse the value of a crypto-currency. The researchers applied Fisher's (1911) quantity relation to how the value of a crypto-currency responds to changes in the speculative position of investors. Their theoretical framework shows that three elements are important for its value:
- a) the current value of the crypto-currency to make payments;
  - b) the decision of forward-looking investors to buy crypto-currency, thereby effectively regulating its supply; and
  - c) the elements that jointly drive future consumer adoption and merchant acceptance of crypto-currency.
- 5.7 The EC report mentions that this model just one of many possible models. One of the complexities not captured by this model are transaction costs which include the costs to reward miners for maintaining the networks. The report acknowledges that the blockchain technology and related crypto-assets are still in early stages of development making it hard to derive a robust methodology for their valuation.
- 5.8 More recently, a 2019 the CBV Institute research paper<sup>34</sup> (CBV research paper) provides an analysis of suitable valuation approaches for crypto-assets. The CBV research paper affirms that despite the recent and rapid proliferation of the crypto-asset market, there is still significant ambiguity in professional communities about the valuation techniques available and applicable for crypto-assets. The CBV research paper aims to fill that void by providing a meaningful and practical synthesis of select valuation thought leadership related to crypto-assets.
- 5.9 The CBV examines three valuation approaches frequently included in the crypto-asset valuation discourse:
- a) Cost of Production
  - b) Equation of Exchange
  - c) Network Value to Transactions Ratio.
- 5.10 The CBV research also provides a list of (yet evolving) valuation considerations in respect of each. The CBV valuation framework and valuation approaches are discussed below.

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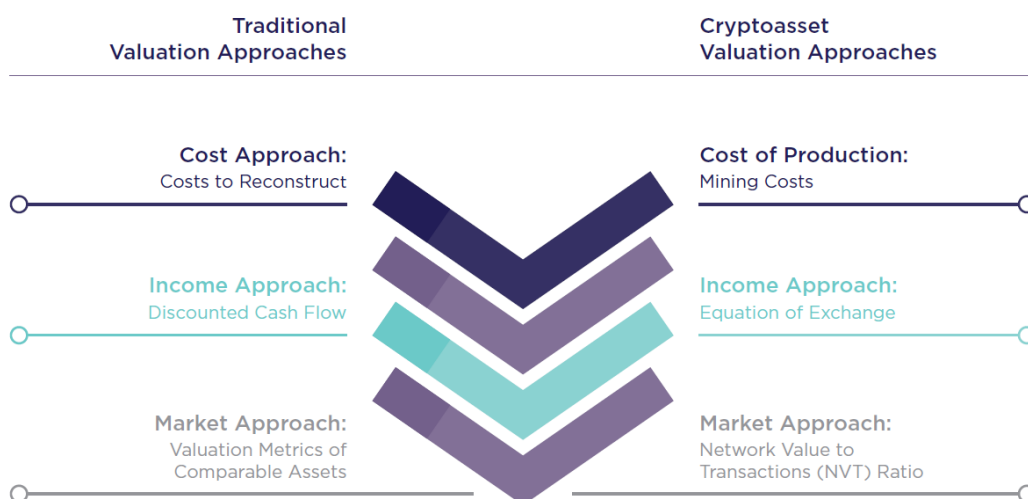
<sup>33</sup> European Commission, 2018. *European Financial Stability and Integration Review* (2018)

<sup>34</sup> Singh, T.K. and Tylar, J. CBV Institute, 2019, Decrypting Crypto: An Introduction to Crypto-assets and a study of select valuation approaches, Journal of Business Valuation

<https://cbvinstitute.com/wp-content/uploads/2019/12/DecryptingCrypto-Final-DIGITAL-VERSION.pdf>

## CBV Institute research report - Valuation Framework

- 5.11 The CBV Institute research report explains that their research identified a number of parallels to existing valuation theories, particularly in relation to the valuation of intellectual property (IP) as follows:
- pronounced similarity between certain characteristics of crypto-assets and IP. For example, IP is described as a non-monetary asset “that manifests itself by its economic properties. It does not have physical substance but grants rights and economic benefits to its owner...” These same qualities are likely equally applicable to crypto-assets.
  - the crypto-asset valuation approaches examined in this paper are analogous to the three approaches commonly advanced in traditional valuation, being the cost, income/cash flow, and market approaches.
- 5.12 The CBV research paper highlights parallels between emergent crypto-asset valuation approaches and the traditional valuation approaches that are recognised within accounting literature including IFRS Standards (i.e. cost approach, income approach and market approach).



Source: CBV research paper

## Cost of production

### *Valuation theory*

- 5.13 The CBV Institute research paper notes that one of the intuitive crypto-asset valuation approaches is Adam Hayes' Cost of Production method. Under this approach, the cost of producing or mining a crypto-asset (specifically, bitcoin, in Hayes' research) may provide an indicator of its lower bound value.

- 5.14 Hayes' proposed methodology falls neatly under the cost approach from IP valuation, under which one estimates the cost to reconstruct<sup>95</sup> the subject asset assuming that "no prudent buyer would pay more for IP rights than the cost to construct a substitute of equal desirability and utility."
- 5.15 Under the Hayes' methodology, miners, operating in a competitive market and incentivised by the expectation of profits, will continue to produce (or mine) only as long as the variable cost of production is less than or equal to the market price of the mined coin. The Cost of Production approach, therefore, seeks to estimate the cost to produce (or mine) on a per coin basis.
- 5.16 Under the cost of production valuation method. the first step in determining a miner's production costs on a per coin basis involves calculating daily production costs – the CBV Institute research paper cites the following calculation – production cost per day = electricity cost x mining hours per day x hashing power x average energy efficiency. They provide an example oh how this calculation is applied.

### *Valuation considerations*

- 5.17 Despite the technical jargon, the CBV Institute research paper Hayes' Cost of Production approach is, perhaps, one the most straightforward crypto-asset valuation methodologies. While it certainly helps identify the building blocks of value, practitioners should be aware of certain of its limitations:
- a) Lack of applicability under PoS consensus mechanism
  - b) Transaction fees not considered
  - c) Non-monetary incentives of miners not considered
  - d) Mining centralisation
  - e) Cost ≠ Value.

### *Equation of exchange*

#### *Valuation theory*

- 5.18 The second valuation approach explored in the CBV Institute research paper is Chris Burniske's Equation of Exchange, which based on existing literature, seems to be frequently applied in valuing utility tokens. The CBV paper notes that the Burniske's valuation approach is similar to the classic discounted cash flow (DCF) method (an income based approach) frequently used in the valuation of businesses and IP.
- 5.19 Furthermore, the CBV paper explains that under the typical DCF analysis, an asset's value is determined by discounting the future expected cash flows based a risk-adjusted rate of return. However, utility tokens do not directly generate cash flows, and therefore it is hard to ascertain the intrinsic value for token holders in the traditional sense. Burniske assumes that the economic utility a token holder is instead correlated with the size of the economy the token is expected to support and in which the token holder will hopefully participate (i.e. its network value, somewhat akin to a public company's market capitalisation). Burniske characterises this measure as "current utility value" (CUV).

- 5.20 In similar fashion, Burniske and Takar<sup>35</sup> (2018) examine the fundamentals of valuing crypto-assets. They consider the white paper to be the starting point for valuation and identify the factors influencing the intrinsic value of crypto-assets including network associated factors such as the community and the market place that naturally develops around the asset. They note that there are two kinds of value that the community places on any kind of crypto-asset: utility value which is similar to the CUV referred to in the CBV paper (see preceding paragraph) and speculative value.

#### **Valuation considerations**

- 5.21 The CBV Institute research paper concludes that Burniske's Equation of Exchange shares many characteristics with traditional cash flow valuation approaches. While this parallel may help ease the thought transition to crypto-assets, practitioner should be aware of certain critical nuances in its application, including the following:
- a) Cash Flow v. Current Utility Value
  - b) Model Inputs: Garbage In, Garbage Out?
  - c) Different Discounting Methodology.

#### **Network Value to Transactions Ratio**

##### **Valuation theory**

- 5.22 The third approach examined by the CBV Institute research paper is the Network Value to Transactions (NVT) ratio, a market-based valuation approach first introduced by Willy Woo. This approach requires that the value-relevant metric evaluated in the valuation is "daily transaction volume".
- 5.23 The components of the NVT ratio are as follows:
- a) The numerator, the crypto-asset's network value, is akin to a public company's market capitalisation (i.e. the total market value of all coins or tokens in circulation).
  - b) The denominator, daily transaction volume, measures the crypto-asset's on-chain transaction volumes, expressed in fiat currency. In contrast to the P/E ratio where the denominator represents a company's earnings, many crypto-assets do not generate cash flows. Therefore, the daily transaction volume is used as a proxy for earnings and represents the value flowing through the network on a given day.

##### **Valuation considerations**

- 5.24 The NVT ratio, one of the most popular crypto-asset market-based valuation approaches, may provide a methodology to evaluate or test the fundamental value of crypto-assets. However, at present, there are a number of limitations of which practitioners should be mindful, including the following:
- a) Lack of historical data

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<sup>35</sup> Chris Burniske and Jack Takar, *Cryptoassets The Innovative Investor's Guide to Bitcoin and Beyond*

- b) Several variants of the initial NVT ratio
- c) Challenges in identifying meaningful comparators.

### **CBV research report conclusion on valuation approaches**

5.25 The CBV Institute concludes that the three valuation approaches examined herein are still in the initial stages of development and, given the various noted limitations, are likely to continue to undergo significant refinement as the crypto-asset market matures. Nevertheless, their respective contributions to the crypto-asset valuation discourse has been significant. Specifically, the approaches highlight a set of new and important factors that valuation practitioners should consider, such as:

- a) Is the crypto-asset asset a digital coin or a digital token?
- b) If a digital coin, what type of consensus mechanism does the crypto-asset employ to validate transactions? What value implications arise as a result?
- c) What does the crypto-asset allow a user to do? Is it a general means of payment across different networks or a grant of access?
- d) What product/service will the crypto-asset provision and is it useful?
- e) What are the value drivers?

### **Other fair value considerations for crypto-assets**

5.26 The outreach conducted during our research indicated that there is still a great concern in relation to measurement at fair value of crypto-assets. Overall, there is significant judgement involved in determining the fair value applicable to the valuation of crypto-assets, i.e. whether a specific market has sufficient liquidity and arm's length activity to constitute an active market as defined in IFRS 13.

5.27 Some respondents to the outreach referred to the insights provide in the PwC publication and the challenges encountered, especially given that markets for crypto-assets are rapidly evolving, determining the fair value can be complex:

- a) Many crypto-assets show a high volatility of prices and markets might remain open 24/7. So the time at which a reporting entity values the crypto-assets might be important
- b) There might be several markets for a particular crypto-assets that meet the definition of an active market under IFRS 13, and each of those markets might have different prices at the measurement date. Determining the principal market for the asset might be challenging
- c) Establishing whether an active market exists might be challenging because crypto-assets are frequently traded primarily into other crypto-assets, as opposed to fiat currencies. Some respondents to the EFRAG outreach viewed these non-fiat exchange as a constraint to meeting the definition of an active market.

5.28 The PwC publication considers the following:

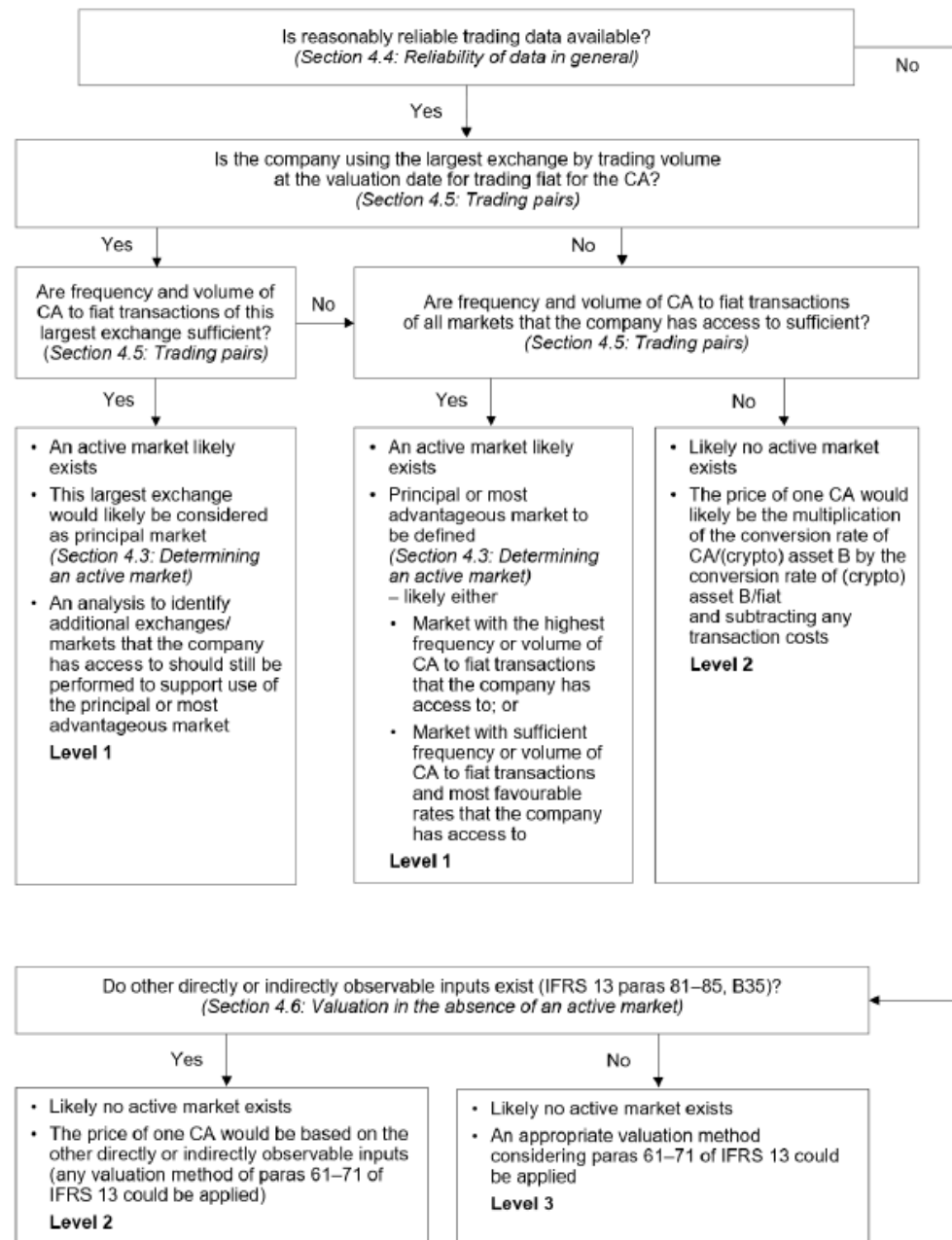
- a) The fair value hierarchy of IFRS 13 *Fair Value Measurement*

- b) Determining an Active Market
- c) Valuation in the absence of an active market
- d) Disclosures

### **The fair value hierarchy of IFRS 13**

- 5.29 Fair values under IFRS 13 are divided into a three-level fair value hierarchy (level 1(active market), level 2(observable inputs) and level 3 (unobservable inputs).
- 5.30 Generally, IFRS 13 gives precedence to observable inputs over unobservable inputs. If a valuation is not based on level 1 inputs at the reporting date (for example, because there is not an active market at the date or time of reporting), the value will need to be determined using a valuation model. The objective in such valuations should be to estimate what the exit price of the entity's position at the valuation date would be.
- 5.31 The PwC publication provides the following decision-tree to help determine a valuation method.

Source: PwC publication



## Determining an active market

5.32 The first step in considering the fair value of a cryptographic asset is to determine if an active market exists for that cryptographic asset at the measurement date (in other words, whether a level 1 valuation can be performed). IFRS 13 defines an active market as one “in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis”.

5.33 A benchmark for evaluating the depth of a market could include active trading days within a given time period. The average daily turnover ratio, which is calculated by dividing the average daily trading volume by the total amount of cryptographic assets outstanding, is a metric for volume that could also be considered. IFRS 13 does not define specific thresholds on frequency and volume to determine if an active market exists. This means that the conclusion requires professional judgement.



- 5.34 In some cases, there might be several markets for a particular cryptographic asset that meet the definition of an active market, and each of those markets might have different prices at the measurement date. In these situations, IFRS 13 requires the entity to determine the principal market for the asset.
- 5.35 Furthermore, the principal market will be the market with the greatest volume and level of activity for the relevant crypto-asset which the entity holding the crypto-asset can access. IFRS 13 also informs that if there is not a clear principal market (that is, because there are several markets with approximately the same level of activity). IFRS 13 defaults to the most advantageous market within the group of active markets to which the entity has access with the highest activity levels. Determining a principal market for crypto-assets might be difficult.
- 5.36 The PwC publication further informs that other issues that arise in determining if there is an active market are:
- a) In some cases, there might be significant price fluctuations between markets. These could result in a difference between the price in the principal (or most advantageous) market and the actual price received, and hence in day one gains or losses, when using a fair value model. The existence of such price differences would not, of itself, be an indicator that there is no active market
  - b) Some cryptographic assets aim to be backed by a fiat currency – for example, for one cryptographic token to represent the value of US\$1. However, because these cryptographic assets are not considered a foreign or functional currency in the definition of IAS 21, they are treated no different to other cryptographic assets with regard to determining if an active market exists.
- 5.37 The importance of identifying active markets is reinforced by the CBV Institute research paper that reviewed the reporting practices of 32 holder entities in a particular jurisdiction (Canada) and found that a majority of the studied companies applied either Level 1 or Level 2 fair values. Similarly, the review of the financial statements of a Switzerland based financial institution (Vontobel) shows that the crypto-assets are only recognised based on Level 1 fair value.

### **Valuation in the absence of an active market**

- 5.38 As mentioned in paragraph 5.4, determining an active market under IFRS 13 is not straightforward; with some sharing the view that an active market for a crypto-asset exists only when crypto-fiat exchanges published by reliable sources exist. It is therefore necessary to have a sense of how entities may be determining value in the absence of active markets.
- 5.39 Many cryptographic assets will not have an active market as described by IFRS 13, and so they will need to be valued using a valuation technique. In determining an appropriate valuation technique, IFRS 13 indicates that the technique should be appropriate in the circumstances, and it should maximise the use of relevant observable inputs and minimise the use of unobservable inputs.
- 5.40 For a crypto-asset, observable inputs might include information obtained on bilateral transactions outside an active market, certain quotes from brokers, and other information, given that many markets are still unregulated.

- 5.41 In general, a valuation model should be applied consistently from period to period. The market for cryptographic assets is evolving rapidly, and so valuation techniques used by market participants are also likely to evolve. IFRS 13 permits an entity to change valuation techniques (or change weightings amongst multiple valuation techniques) where the change results in a measurement that is equally, or more, representative of fair value, in the circumstances. Such factors include, changes in the market conditions, New markets and new information. All these factors are key considerations for crypto-assets and the markets in which they operate which are continuously evolving.

## Concluding remarks and observations

- 5.42 The EFRAG research has established that there is an emergence of valuation methodologies tailored for crypto-assets. The new valuation methodologies are comparable to and have some overlapping attributes with the traditional valuation approaches recognised within accounting literature including IFRS standards (i.e. cost, income and market based approaches) but also have differentiated feature particularly in respect of assessing the intrinsic value of utility tokens, which is typically derived from the issuing network's growth potential.
- 5.43 These emergent valuation methodologies also provide further insight on the nature and sources of economic value of crypto-assets in a manner that is helpful for thinking about the nature of these assets (e.g. their intellectual property and other intangible asset features) and the corresponding appropriate accounting requirements.
- 5.44 There is also indicative guidance from accounting firm publications on the determination of active markets for crypto-assets. The importance of identifying active markets is reinforced by a CBV Institute research paper<sup>36</sup> that reviewed the reporting practices of 32 holder entities in a particular jurisdiction (Canada) and found that a majority of the studied companies applied either Level 1 or Level 2 fair values. Similarly, the review of the financial statements of a Switzerland based financial institution (Vontobel<sup>37</sup>) shows that the crypto-assets are only recognised based on Level 1 fair value.

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<sup>36</sup> Singh, T.K. and Tylar, J. CBV Institute, 2019, Decrypting Crypto: An Introduction to Crypto-assets and a study of select valuation approaches, Journal of Business Valuation

<https://cbvinstitute.com/wp-content/uploads/2019/12/DecryptingCrypto-Final-DIGITAL-VERSION.pdf>

<sup>37</sup> [https://www.vontobel.com/siteassets/about-vontobel/downloads/2018-12-31\\_gv\\_annual-report\\_en.pdf](https://www.vontobel.com/siteassets/about-vontobel/downloads/2018-12-31_gv_annual-report_en.pdf) 9

## CHAPTER 6: IMPLICATIONS OF POTENTIAL MARKET DEVELOPMENTS

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- 6.1 The preceding chapters assess the accounting issues raised by the current generation of crypto-assets. To conclude this DP, this chapter puts forward tentative conclusions and possible implications of potential market developments.
- 6.2 As noted earlier, crypto-assets are currently insignificant in scale relative to mainstream currencies and asset classes (e.g. equities, bonds and commodities). Hence, this section also aims to identify factors that could potentially contribute to greater institutionalisation of crypto-assets or similar DLT assets. This could be factors that could influence a critical mass of adoption of certain crypto-assets as a means of payment. Or, if any, factors that could incentivise and enhance possible large size entities' participation in the blockchain token economy. Greater uptake by institutions translates to increased applicability of IFRS requirements and strengthens the case for the review of existing IFRS requirements.
- 6.3 This chapter also examines other institutionalisation factors such as the existence of suitable valuation approaches and price discovery capacity that influence the faithful representation of crypto-assets transactions.
- 6.4 Finally, this chapter assesses whether there is any indication of technology driven innovation and/or features of the next generation of crypto-assets and digital assets that may necessitate unique accounting treatment.

### Increased adoption and scalability potential

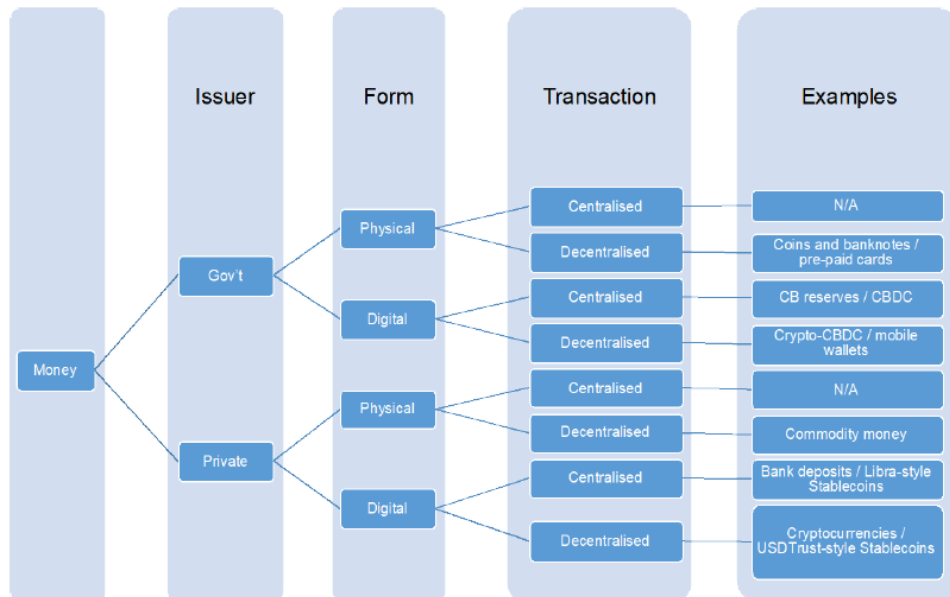
- 6.5 As depicted in below diagram from the European Parliament publication<sup>38</sup>, cryptocurrencies including next generation types (stable coins, CBDC) are increasingly considered as being part of the taxonomy of money.

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<sup>38</sup> European Parliament, November 2019, The Future of Money- Compilation of Papers

[http://www.europarl.europa.eu/RegData/etudes/STUD/2019/642364/IPOL\\_STU\(2019\)642364\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2019/642364/IPOL_STU(2019)642364_EN.pdf)

**Figure 8: A taxonomy of money**



Source: Bruegel updated from Claeys et al (2018). Note: CBDC = central bank digital currency.

- 6.6 However, as noted earlier in **Appendix 2:**, the limitations of cryptocurrencies as a means of exchange arise due to their lack of legal tender status and due to technological limitations on the trading and validation process that result in a much lower volume of transactions for cryptocurrencies than is the case for the platforms for processing traditional fiat currencies. Furthermore, their high volatility and low liquidity limits their capacity to serve as either a store of value or unit of account.
- 6.7 The EFRAG crypto-project outreach showed that there are varied expectations across different jurisdictions regarding the current and potential acceptance of crypto-assets as a means of payment for goods and services; ranging from scepticism on the need for a payment system in crypto-assets to their acceptability in some countries as a means of payment even without legal tender status.
- 6.8 In effect, the following interrelated imperatives are needed to enhance the uptake of crypto-assets
- Enhancing trust:** Limited acceptability is influenced by the need for enhancement in regulation and consumer protection regimes. There is a general view that market developments in crypto-assets would highly depend on regulatory developments including stronger and more reliable customer and investor protection
  - Increased scalability and processing efficiency:** As noted in Appendix 2 that describes economic characteristics and echoed during the EFRAG crypto-project outreach, the limited scalability and relatively low processing speed of crypto-asset transactions as being an impediment to their greater uptake.
  - Price stability:** Herein lies the role of stable coins. Some participants to the EFRAG crypto-project outreach observed that for stable coins (a less volatile form of cryptocurrency) to be successful, they would need to be launched and controlled by a central authority such as a Central Bank.

These respondents considered that centralised control was a necessary feature for crypto-assets to be both trusted and scalable. However, permissioned network based crypto-assets could be counter to the 'decentralised control' objective that motivated the permission-less network based crypto-assets innovation in the first place. There is an ongoing search for the technology and counterparties interaction arrangement that ensures widespread acceptance and participation without surrendering the initial intended benefits of the DLT platform based innovations.

- d) **Credible price discovery and valuation of crypto-assets transactions**
- e) **Institutional grade data:** Currently, unlike in more mature markets such as equities or fixed income, there are no rules about what data needs to be reported.

### Price discovery capacity and valuation

- 6.9 The EFRAG crypto-project outreach brought to light the lack of standardised valuation methods for tokens (including ICO and secondary market tokens). Many respondents considered that normal valuation techniques did not work to value crypto-assets. Valuation tends to be driven by market speculation or what some term 'fear of missing out' factors used in sales and promotional techniques such as capped funding and fixed price subscription.
- 6.10 Compared to tokens already listed on an exchange, ICO token valuation is even more difficult as they are typically issued at development stage or even pre-development stage before the 'product' is developed and before a market for the 'product' had been established. Furthermore, many tokens have a hybrid nature, for example Ether (it can serve as a utility token and a currency/means of exchange) which brings further complexity with valuation.
- 6.11 **Valuation issues are** elaborated on in Chapter 5.

### Implications of technology innovation

- 6.12 Finally, there is a question of whether ongoing innovation in distributed ledger technology (DLT) and crypto-asset product design may evolve in a manner that has both economic and accounting implications in the near future.
- 6.13 For example, whether unlike current crypto-assets that in many cases can be considered to fall under existing accounting asset categories (i.e. intangible asset or inventory for cryptocurrencies, investment/financial asset for security tokens, prepayment for utility tokens), the next generation of crypto-assets may have features that make them truly unique assets ( i.e., they wouldn't fit into existing IFRS categories and require a new IFRS standard).
- 6.14 Some EFRAG crypto-project outreach participants pointed to features that could impact on the scalability of DLT networks and by implication on the economic benefits that network participants derive. But it is difficult to assess whether these features will change the nature of underlying crypto-assets and required accounting. The highlighted features include the following:

- a) Greater application of Ricardian contracts<sup>39</sup> (i.e., smart contracts with legal content) and programmability of assets. Ricardian contracts could enhance the enforceability of crypto-assets obligations.
- b) Embedded privacy features
- c) Improvements in network governance and “proof of stake” based validation of transactions.
- d) Cross-chain interoperability: There are many blockchains and other DLT platforms supporting the near 5,000 crypto-assets. These platforms are fragmented and operate in silos tailored for particular use cases. Efforts towards enhancing the interoperability of blockchain networks could enhance ease of use and scalability of networks.
- e) Quantum computing capacity, which if realised, will result in significant enhancement to current computing capacity (processing speed and problem solving capacity). Quantum computing<sup>40</sup> presents both a threat and opportunity for the cryptographic process that underpins crypto-assets transactions.

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<sup>39</sup> <https://www.eoscanada.com/en/introduction-to-ricardian-contracts>

<sup>40</sup> <https://medium.com/@tiogacapital/https-medium-com-tiogacapital-the-quantum-threat-to-crypto-asset-ownership-43bbd3997fb9>

## APPENDIX 1: BACKGROUND-CRYPTO-ASSET ACTIVITIES

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A1.1 This appendix includes:

- a) A detailed definition and description of the economic characteristics of ICOs and similar offerings. It also provides data on the prevalence and trends of ICOs and similar offerings;
- b) A detailed description of key features of custodial process (i.e. wallets, private and public keys) that could impact economic control and data on growth trends of wallets.

### ICOs and similar offerings

#### Overview of issuer activities

##### *ICO's*

- A1.2 An ICO is a means of raising funds for a current or future crypto-asset project by issuing digital tokens to potential investors. The ICO market began in 2014 although only a few ICO's occurred in the early years given the technical constraints to 'launch' an ICO. In 2015, the ICO process was streamlined with the introduction of the crypto-asset Ethereum that introduced a standardised platform for launching ICO tokens (referred to as the ERC20).
- A1.3 The Ethereum network's fundraising effort was one of the first significant examples of this new type of capital formation (around USD18 million was raised) and paved the way for the ICO boom that would peak in 2018. It also represented a milestone for blockchain technology as the Ethereum distributed ledger added the smart contract feature, which allowed for the processing of complex workflows, and not solely the recording of transactions in digital assets, as was the case for bitcoin. Ethereum has since become the technology of choice for ICOs because it is the dominant smart contract-enabled network by a variety of metrics.
- A1.4 The issuer of an ICO will typically publish an information document referred to as a "white paper". This document (which is unaudited) provides information about the tokens (crypto-assets) being issued in the ICO. However, the information content of white papers can vary significantly and often lacks robust information on the purpose of the crypto-asset and what rights a holder might have. Furthermore, white papers are not useful in determining specific rights and obligations between the issuer and the holder (potential holder) of the crypto-asset.
- A1.5 Different research indicates that the European Economic Area (EEA) countries that rank in the Top 10 for ICO activity are UK, Switzerland, Estonia and Germany. ICOs also occur in multiple industries, although publicly available data indicates that financial services leads the issuance volume.

## **Emergence of Security Token Offerings and Initial Exchange Offerings**

A1.6 The crackdown on a few ICOs by security regulators, coupled with some of the risks and security issues associated with ICOs, has resulted in the rise of other forms of token offerings such as Security Token Offerings (STOs) and Initial Exchange Offerings (IEOs). STOs and IEO's started to attract high levels of investor attention in 2019 and it is expected to continue to attract investor interest given their nature and the existing regulatory environment.

### **Security Token Offerings**

A1.7 A Security Token Offering (STO) is the mechanism for issuance of security tokens, which are similar in nature to traditional securities as they provide an economic stake in a legal entity. In 2019, STO's started picking up mainly because of the increasing oversight and regulation on ICOs in some jurisdictions and also because of potential loss in investor confidence in ICOs.

A1.8 Despite the concerns in ICOs, a study issued by Inwara<sup>41</sup> found that in 2018 the number of STOs in any quarter is much smaller than the corresponding number of ICOs. In the United States and well as other jurisdictions, STO's are deemed to be securities and are subject to securities regulations.

### **Initial Exchange Offerings**

A1.9 Initial Exchange Offerings (IEO's) provide a framework in which the exchange hosting the IEO acts as intermediary between the developers of the crypto-assets who wish to launch the crypto-assets and the contributors (those that buy the crypto-assets when they are first issued).

A1.10 Unlike an ICO (which is managed by the project developers), an IEO is managed on a cryptocurrency exchange platform on behalf of the IEO issuer. The exchange will conduct a screening of the company wanted to undertake the ICO as well as undertake the necessary know your customer (KYC) regulatory or voluntary requirements. IEOs began in 2018 and present a more secure form of investing in initial offerings of a crypto-assets as investors can rely on the due diligence performed by the exchange hosting the IEO offering. A number of IEO's have recently taken place on the Binance exchange.

A1.11 According to a report published in May 2019 by ICObench.com there have been 42 IEOs raising USD 266 million as at the end of April 2019. Almost half of these funds were raised by IEO's in Singapore and Hong Kong. IEOs in the EU have raised less than USD 50 million (mainly Estonia, Bulgaria, Germany and Switzerland).

## **Rationale for ICO's – issuer and investor perspectives**

A1.12 ICOs have a number of benefits from the issuer's perspective when compared to other established forms of raising funds including IPOs:

- a) Low cost of funding: ICOs have become an important source of low-cost funding in the crypto-asset market by avoiding intermediaries and payment agents.
- b) Easier access to secondary markets and quick liquidity: ICOs provide liquidity that start-ups can obtain in a short period of time. Presuming ICO

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<sup>41</sup> Data from Iwana.com



investors receive their tokens as planned, secondary market trading will commence as soon as the project lists its token on cryptocurrency exchanges. In contrast, VC-funded projects remain relatively illiquid until funds become available, either upon an exit through a sale or an IPO. Investors have to wait before being able to monetise their investment.

- c) Builds the potential customer base: As investors have the opportunity to get in on the ground floor of a project, they also provide the start-up with a community of potential users for its blockchain product when it goes live. An analysis by an academic working paper of 253 ICOs between 2014 and 2017 showed that ICO tokens granted contributors the rights to access platform services in 68% of cases. The VC model does not offer the same multi-purpose possibility (i.e. of acquiring investors who are also potential customers).

A1.13 ICOs have a number of benefits from the investor's perspective when compared to other established forms of raising funds including IPOs:

- a) Attractive returns: Many ICO's have offered significant returns to investors; which according to some studies, have seen average returns of 179% from the ICO price to the first day's opening market price, over a holding period that averages just 16 days. Benedetti and Kostovetsky (2018) conclude that tokens are sold in ICOs at a significant discount to their market price (and a much greater discount than IPOs) generating at least an 82% average abnormal return for the investor (weighted by capital invested).
- b) Investment is accessible to wide pool of potential investors: Arguably an advantage ICOs possess vis-à-vis VCs is that virtually everyone can invest in the majority of ICOs. In contrast, VCs usually require a substantial initial outlay and tend to serve the wealthier investor segments, including institutions such as hedge funds, private equity firms and high net worth individuals.

### Key economic features and risks of ICOs

A1.14 The term ICO has been derived from the term IPO (initial public offering) whereby a private firm lists its shares on a public stock exchange. However, unlike an IPO process in which a company is required to comply with strict and costly registration procedures prescribed by securities regulators, to the extent that crypto-assets are not classified as securities, the ICO process remains largely unregulated in many parts of the world.

### ICO's versus IPO's

A1.15 The ICO process has both similarities and differences with an IPO process for companies that list on traditional stock exchanges. In both cases, investors exchange fiat (or crypto-assets in case of an ICO) for shares (tokens in case of an ICO) that have monetary value and are traded on a secondary market. However, there are important differences.

- a) The ICO market is largely unregulated, whereas the IPO market follows a strict process defined by regulation where compliance can be costly and mandatory, governed by security regulators to protect the interest of investors. With an ICO, there is usually little information about the issuer (developer) undertaking the ICO, and none of the documents voluntarily shared by the issuer, such as the whitepaper, need to be audited or independently verified. This is why an ICO can be issued quickly

compared to an IPO which can take months to complete due to the auditing process, internal control and governance implementation, registration process and other requirements.

- b) ICOs are more similar to a crowdfunding model than to an IPO. Unlike shares in a company, crypto-asset tokens typically do not provide any form of control over the issuing company. Instead they are viewed as contributions to develop a project to which the token holder will be entitled to goods and/or services. However, some crypto-asset tokens have security-like features and are considered to be securities by security regulators in some jurisdictions. In addition, some tokens are issued as security tokens.
- c) Unlike IPOs that are generally conducted by companies with well-established technologies and products, the vast majority of ICOs are for projects that are at a very early stage of development; and only few of the entities have pre-existing products making ICOs a much riskier investment than IPOs.
- d) Unlike securities issued through an IPO, tokens issued in an ICO typically do not include voting rights, anti-dilution protections and other features that are typical of a security issued in an IPO and are not subject to the more rigorous governance and audit requirements that oversee the entity conducting the ICO.

### ICO risks

- A1.16 One of the key risks of ICOs is the high failure rate but there are other risks including those arising from the limited transparency of whitepapers issued during ICOs and the absence of legally binding and enforceable contractual agreements. As mentioned above, the enforceability of the whitepapers remain an open question.
- A1.17 Inadequate regulation and poor documentation increases the likelihood of ICOs failing and investors losing their capital. A study by Satis Group (2018), an ICO advisory firm, found that around 78 percent of ICOs issued in 2017 were identified as scams or failed. However, the research paper<sup>42</sup> published by the highlights that 81% of a sample of 253 ICOs that were examined, successfully closed their offering.
- A1.18 Overall the evidence indicates that ICOs can be labelled as failed for a number of reasons, the main reason being not having reached the minimum funding goal, in which case the common, but not universal, practice is to refund the contributors. A failed ICO may also be the result of a security flaw such as a hack attack which subsequently results in the suspension of the token distribution.

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<sup>42</sup> Adhami, S., Giudid, G., Martinazzi, S. 2018. : *Why do businesses go crypto? An empirical analysis of Initial Coin Offerings*, Working Paper, Bocconi University, Politecnico di Milano, School of Management.

A1.19 An academic working paper<sup>43</sup> concludes that disclosure and the information environment of crypto-asset token issuers are positively associated with the likelihood of successfully completing an ICO and with the amount of funds raised.

### **ICO measurement and valuation issues**

A1.20 Due to their novel characteristics, estimating the value of crypto-asset tokens that are issued during an ICO is fraught with challenges that are further elaborated on in Chapter 5: that focuses on measurement and valuation issues

## **Prevalence and trends**

### **Approach and limitations of analysis**

A1.21 The prevalence and trends analysis is based on data from multiple sources, including specialised crypto-asset web aggregators, which highlights developments and trends within the ICO market<sup>44</sup>, and academic and non-academic research papers.<sup>45</sup>

A1.22 There are limitations to the data obtained from crypto-assets website. Our research has identified differences in the available data and often it is difficult to explain why differences exist although it seems that in some the differences relate to different basis of presentation (for example in a particular year, the data could relate to ICO's issued or ICOs that raised funds). Furthermore, the periods examined by the various studies and data reports vary and it is not always possible to provide a consistent period analysis of data for the purpose of this research paper. In order to provide a comprehensive trend analysis, we have used data from different sources and in some representing periods.

### **Key findings**

A1.23 Since 2014, the ICO market has raised approximately USD 24.7 billion up to the end of Q1 2019 with the completion of over 5000 ICO projects in over 50 countries.<sup>46</sup> According to data from ICObench, almost half of the amount raised – approximately USD 12-14 billion was raised in 2018 of which more than 60% was raised in the first half of the year. However, a report published by the European Central Bank (May 2018) informs that funds raised by ICOs in 2018 amounted to EUR 19 billion. One explanation for the different levels of funding reported by different sources is the general lack of consistent data on ICOs and the parameters used to source the data.

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<sup>43</sup> Bourveau, B., De George, E.T., Ellahie, A., and Macciocchi.D., 2018. *Initial Coin Offerings: Early Evidence on the Role of Disclosure in the Unregulated Crypto Market*. Working Paper, Columbia University, London Business School and Utah University.

[https://www.marshall.usc.edu/sites/default/files/2019-03/thomas\\_bourveau\\_icos.pdf](https://www.marshall.usc.edu/sites/default/files/2019-03/thomas_bourveau_icos.pdf)

<sup>44</sup> The data aggregator websites include CoinDesk.com, CoinmarketCap, ICObench.com, and icodata.com. Where available we have indicated which ICO data is specific to the EU.

<sup>45</sup> Satis Group Research paper Cryptoasset Market Coverage Initiation: Network Creation

Adhami et al (2018)

Bourveau et al (2018).

<sup>46</sup> Data from ICOBench.com

- A1.24 Data from ICObench shows that ICO growth has been declining since the second half of 2018. One of the reasons for this decline, was the significant decrease in the price of Bitcoin (since its peak in early 2018 of approximately USD 20.000) followed by the decline in value for all other crypto-assets (also referred to as altcoins in crypto-asset language). In December 2018, Bitcoin recorded a price of approximately USD 3.000 but since recovered to approximately USD 7.000 (mid-May 2019). According to data from ICObench the number of completed ICOs continued to decline in 2019. To some extent, ICOs are being replaced by IEO's. At the start of January 2020, Bitcoin was trading at USD 7585<sup>47</sup>Bitcoin and other crypto-assets remain highly volatile, and at this stage it is hard to say how this might affect the market growth. Some respondents to the EFRAG outreach were of the view that despite the slowdown, they did not think the ICO was 'over'. Some believe that 2020 will be a year of 'wait and see', as many jurisdictions, within the EU and beyond, are a more serious look at implementing crypto regulation.
- A1.25 Research indicates that ICOs today not only present a significant challenge to VCs as far as blockchain start-up financing is concerned, but they are attracting considerably more investor interest. According to Crunchbase (an investor data platform), funding from ICOs have exceeded VC finance in the last few years for projects in the blockchain sector. In the 14 months to February 2018, Crunchbase observed that blockchain start-ups raised nearly USD1.3 billion in traditional VC rounds worldwide; compared to USD4.5 billion raised by ICO projects.
- A1.26 Based on data analysed at to the end of 2018, the top five jurisdictions by ICO funds raised are the United States, British Virgin Islands, Singapore, Switzerland and the United Kingdom. Other EU countries ranking in the top 10 are Estonia and Germany. Data from ICObench (as at November 2019), shows that the United States continued to lead the countries that raised the most funds in 2019 with Singapore leading the most successful ICOs with the highest number of the projects that had raised funds.

## Storage and Custodial services

### Overview of storage and custodial Activities

- A1.27 There are different ways to store and safeguard crypto-assets. A holder can store its crypto-assets:
- in its own crypto-asset wallet, either acquired or set up on the internet; or
  - use a custodial service provider.
- A1.28 A crypto-asset wallet is a software program secured by private and public keys and interacts with various blockchain to enable users to send and receive crypto-assets and monitor their balances. The following features are central to understanding the concept of crypto-asset wallet and how crypto-assets are safeguarded.
- Wallets can be created using Internet software services and the information can be placed on any computer or mobile device.

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<sup>47</sup> Coinmarketcap on 6 January 2020 17.16 GMT+1.

- b) Wallets can send and receive crypto-assets to any other crypto-asset wallet without the need for the transaction to be recorded or processed by a third party (such as a bank). Thus, transactions are anonymous to anyone other than the transacting parties.
- c) Each wallet is accessible only through the use of a cryptographic algorithms that sets the password called public and private keys.
- d) The commonly used wallets are referred to as (1) cold storage and (2) hot storage.
- e) Wallets can be safeguarded using custodial (third-parties) and non-custodial services (self-custody).

A1.29 The data from a Cambridge University study - 2nd Global Crypto-asset Benchmarking Study (December 2018) - portrays the use of different types of custodial services including cold storage and hot storage facilities. However, the data lacks granular information related to the EU.

## Key economic features and risks

### *Keys and wallets*

A1.30 Crypto-assets might be held by an entity or other party by acquiring or setting up a crypto wallet. In such cases the holder will control the public and private keys.

### *Public and private keys*

A1.31 A public key (or public address) can be thought of as the equivalent of a bank account number, which suffices for the purposes of receipt of funds/other parties sending funds to an individual. Some compare a public key to an email address that can be used to receive and send crypto-assets.

A1.32 However, unlike a bank account, the crypto-asset balance in a given public address can be viewed by anyone who knows the address, although the identity of the address owner is not recorded on the blockchain.<sup>48</sup> A recent article published in December 2018 by Chainanalysis *Mapping the Universe of Bitcoin's 460 million Addresses*, reports that the Bitcoin blockchain has over 460 million (public) addresses on its network, although only 172 million are economically relevant — they are controlled by people or services who currently own bitcoin.

A1.33 In cryptography, a private key is similar to a bank account password, security token and account number combined into one and is used as an address to receive crypto-assets. The private key allows the owner of the crypto-assets (or any holder that knows the private key) to open a crypto-asset wallet and send crypto-assets to another address (public key). Private keys provide a high level of security. Private keys (like public keys) typically involve a complicated and difficult to remember password.<sup>49</sup>

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<sup>48</sup> For example, this is how a Bitcoin public key looks like (it always starts with 1):  
1EHNa6Q4Jz2uvNExL497mE43ikXhwF6kZm

<sup>49</sup> In Bitcoin, a private key is a 256-bit number, which can be represented one of several ways. Here is a private key in hexadecimal - 256 bits in hexadecimal is 32 bytes, or 64 characters in the

- A1.34 Knowledge of the private key equals control of the crypto-assets in the corresponding address(es). It is important to note that many crypto-asset holders – via online wallets or exchanges – do not have access to their private keys. This makes them fully dependent on the proper functioning, security and backup procedures of online wallets or exchanges, as well as the integrity of the wallet designers to effectively manage private keys. From a counterparty risk perspective, if a user does not have control of the private key, it could be seen as ‘a creditor’ of the private key holder.
- A1.35 Once a crypto-asset transaction is made, it is not possible to reverse it, as no entity is allowed to alter signed transactions on the blockchain. Furthermore, if a private key is lost it is not possible to recover it any crypto-assets connected to that lost private key will be lost. There are a number of safety concerns linked to private keys.
- a) First, private keys are a prime target for hackers especially if kept in online wallets (hot wallet storage). This occurs not only with individual users, but also with exchanges that, other than trading services, also hold crypto-assets assets on behalf of customers (custodial services). An example is the case of Mt. Gox (a Japanese exchange), at that time the world’s leading Bitcoin exchange, which reported a loss of approximately 850,000 bitcoins belonging to customers and the company in 2014. The exchange subsequently went bankrupt.
  - b) A second concern is the loss of the private key. The loss of crypto-assets due to owners (or exchanges holding on behalf of owners) forgetting their private keys has become quite common, hence a reliable storage and recovery mechanism is essential. A recently reported case was the death of the CEO of a Canadian exchange (Quadrigacx) who was the only person with the cryptographic keys to access approximately USD 145 million of cryptocurrencies kept in cold storage to mitigate the risk of hacks.

### *Crypto-asset wallets*

- A1.36 Crypto-asset wallets have evolved over time to support a number of technical and commercial services and the increased demand for more secure safe-keeping of crypto-assets. The commonly used wallets to store crypto-assets are cold storage and hot storage. These types of wallets can be used either by an exchange or by an individual user.
- A1.37 There are trade-offs involved in choosing between a cold wallet and a hot wallet. Cold wallets are generally more cumbersome to access, and usually involve longer waiting times to undertake a transaction. Hot wallets are internet wallets and are usually faster and grant quicker access to the funds. However, cold wallets are a safer means of storing the private keys for the crypto-assets.
- a) Cold storage - Cold storage is an offline wallet for storing customers’ private keys, which allows access to and control over the customers’ crypto-assets. With cold storage, the digital wallet is stored on a platform that is not connected to the internet. Methods of cold storage include various forms of hardware wallets (for example the Nano Ledger). Cold storage is generally considered a safer form of storing private keys, since

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range 0-9 or A-F. For example, this is how a typical Bitcoin private key might look (it always starts with 5) - 5Kb8kLf9zgWQnogidDA76MzPL6TsZZY36hWXMssSzNydYXYB9KF

cold wallets are less vulnerable to internet and network-based theft and hacking and require physical access. Generally speaking cold storage is used to store larger amounts of crypto-assets and for users that need to access funds less frequently. Some crypto-asset exchanges provide cold storage facilities

- b) Hot wallet storage - Hot wallets refer to keeping private keys on an online device. Examples of hot wallets are web-based, desktop and mobile wallets running on connected machines. Hot wallets are generally used to store smaller amounts of crypto-assets and are generally suited to users that trade more frequently.

### **Crypto-assets held on behalf of third parties**

- A1.38 Crypto-assets might also be held by a custodian (such as trading platform or a bank or similar financial institution).
- A1.39 Trading platforms hold assets for their clients in their own wallets. They generally have access to clients' private keys and therefore also have power of disposal over third-party assets. As the trading platform accepts money or cryptocurrencies from clients and transfers them to other clients, thereby acting as an intermediary, it can be considered to be providing a service relating to payments, which is a regulated activity in some EU and other jurisdictions. More traditional custodial providers, such as banks or similar financial institutions, typically only safekeeping services. However, it might be that some financial institutions provide a combination of custodial and trading services. The implications of the terms of custodial services on accounting treatment is further discussed in **Chapter 3**:
- A1.40 An example of third-party custodial services for crypto-assets is Swissquote, a Swiss registered financial institution that started to provide cryptocurrency trading and custodial services in 2017. The following is an extract taken from Swissquote 2017 annual report;

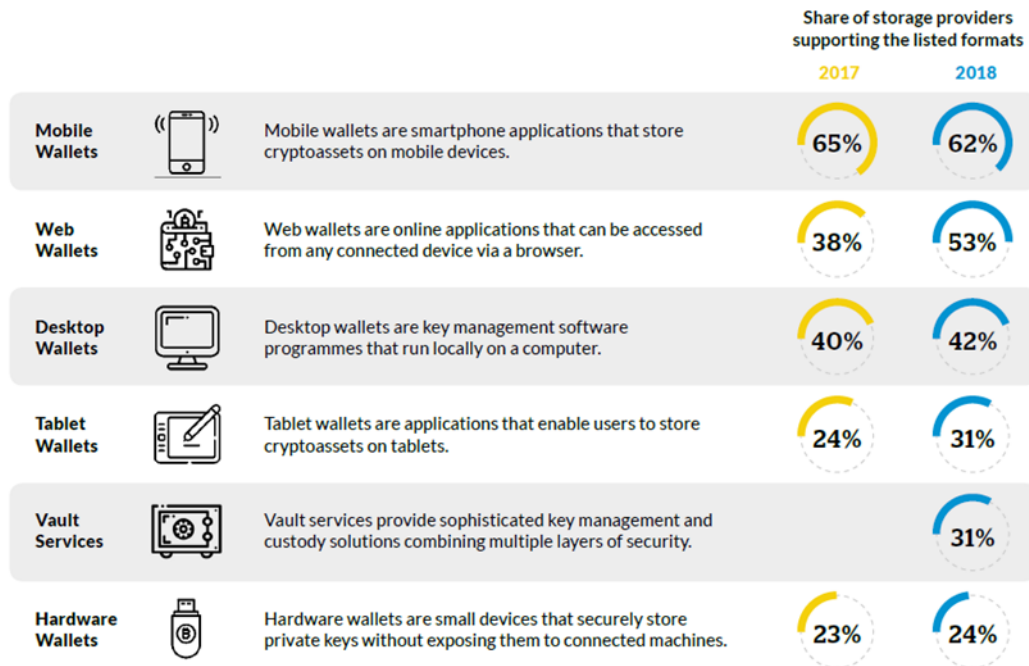
*'Since 2017, the Group offers cryptocurrencies trading services to its clients. In that context, the Group keeps the holdings in cryptocurrencies acquired by its clients in custody either directly or with a third-party custodian. The Group holds all cryptocurrencies credited to the client accounts solely as nominee (fiduciary basis) on behalf of its clients, which remain the legal and beneficial owner of such holdings. The Group itself has no direct claim to the cryptocurrencies, as they are assets belonging to its clients. When analysing the contractual terms and economic substance of the arrangements in place, the Group determined that (i) it must not record these holdings on its statement of financial positions because they would not fall within the bankruptcy estate of the Group and (ii) the general IFRS definitions of an asset and liability were not met.'*

## **Prevalence and trends**

### **Crypto-asset wallets**

- A1.41 The Cambridge University study indicates that mobile wallets are the most common way of holding crypto-assets; although support is increasing for web wallets. Figure 2 illustrates this trend (in relation to the global study and not specific to the EU).
- A1.42 Figure 2 – Storage providers for crypto-assets

Source: Cambridge University study



A1.43 Figure 3 shows the global evolution of wallet options between 2017 and the second quarter of 2018. Mobile and web wallets (hot wallets) are the most widely offered storage formats, though cold storage vault services (cold wallets) have gained in popularity in late 2017 with the influx of institutional investors. As previously mentioned, cold wallets offer a safer storage option than hot wallets.

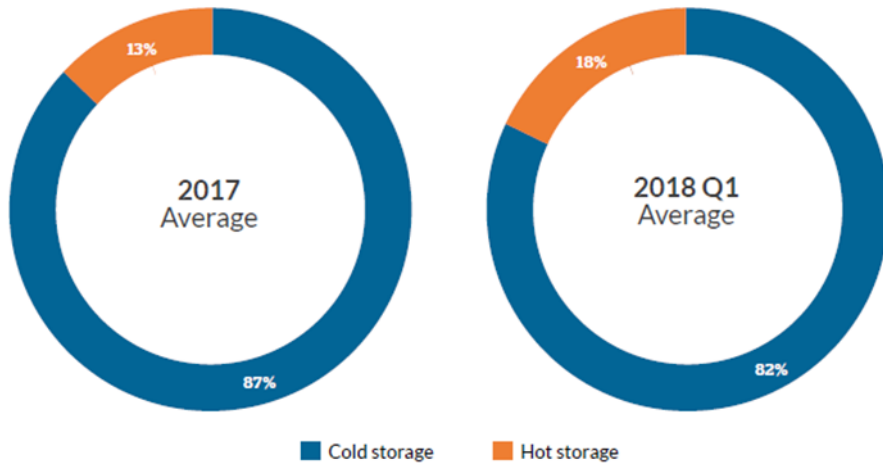
A1.44 The Cambridge University study shows that large storage providers support an average of three of the above types, compared to an average of two storage types supported by small wallet providers. Storage-only service providers are more likely to specialise in a particular activity, as opposed to multi-segment entities that provide a range of crypto-asset services

### Cold storage versus hot storage

A1.45 Figure 3 indicates that the share of funds in cold storage in 2018 has slightly decreased over 2017.

Figure 3 Share of crypto-asset funds (source: Cambridge University study)





## APPENDIX 2: BACKGROUND-ECONOMIC CHARACTERISTICS, RIGHTS AND OBLIGATIONS

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### Key economic characteristics and role of taxonomy

- A2.1 According to market data aggregator coin market cap<sup>50</sup>, there are >2000 crypto coins and tokens. Due to the variety and sometimes hybrid economic characteristics of crypto-assets, it is challenging to readily identify all their unique economic characteristics, rights and obligations.
- A2.2 Correspondingly, a taxonomy that classifies and distinguishes different types of crypto-assets based on common characteristics can be indicative of the economic characteristics, asset type and facilitate the analysis of appropriate accounting for different crypto-assets. A suitable taxonomy is in place if it effectively distinguishes crypto-assets based on their technical layer, purpose, underlying asset, functionality and legal status.
- A2.3 In a generic sense, crypto-assets can fulfil three key distinctive economic functions, namely:
- a) serve as a means of exchange (payment);
  - b) provide investment or speculative value (akin to a security);
  - c) confer economic benefits related to participation in network configuration or consumption of network products or services (utility).
- A2.4 Variants of the above three economic functions are commonly reflected in the taxonomies for crypto-assets used in regulator, legal firm, accountancy firm and academic literature.
- A2.5 But it cannot be overlooked that any chosen taxonomy is by definition static and will likely have limited usefulness over time. To begin, any categorisation of types of crypto-assets risks becoming obsolete due to ongoing innovation in features and technological developments. In addition, it can be misleading to assign specific crypto-asset tokens to a fixed category, if those particular tokens can serve different purposes depending on different holders and whenever their “best use” for each holder evolves over time. For example, at its inception, Ether constituted a way to provide access to a technology platform (and it remains a means of accessing smart contracts). However, its increased use as a medium of exchange has impacted its use as a means of access. For these reasons, some national standard setters have either avoided or only had minimal reference to the distinctive categories within commonly applied taxonomy (i.e. payment tokens, utility tokens, security tokens) whilst developing their accounting guidance.
- A2.6 Nonetheless, for the purposes of this research, a taxonomy based distinction provides a useful starting point for assessing economic characteristics, rights and obligations and thereafter facilitates that analysis of related accounting and regulatory requirements. Besides, it helps to identify specific crypto-assets where accounting challenges may arise due to hybrid characteristics.

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<sup>50</sup> <https://coinmarketcap.com/>

## Taxonomy applied in DP

A2.7 For the purposes of this project, the below eight categories of coins<sup>51</sup> and tokens outlined form the basis of analysis. These categories are not always mutually exclusive.

- i) Cryptocurrencies (coins and payment tokens)
- ii) Security and asset tokens
- iii) Utility tokens
- iv) Hybrid tokens
- v) Stable coins
- vi) E-money tokens
- vii) Pre-functional tokens
- viii) Simplified Agreement for future tokens (SAFTs)- as outlined below SAFTs are linked to crypto-assets and are securities.

A2.8 As noted, there are three key economic functions (payment, investment or speculative, utility) but the breakdown into eight categories also enables the definition and distinctive analysis of issues related to stable coins and e-money tokens, notwithstanding that these two categories of crypto-assets could also be payment or security or hybrid tokens.

A2.9 There are other classification taxonomies. For example, Sixt and Himmer (2019)<sup>52</sup> describes consumer tokens that seem similar to utility tokens and further breaks these down to voucher tokens and work tokens. These authors further disaggregate security tokens into equity tokens, debt tokens and revenue tokens. Another academic paper (Lausen, 2019<sup>53</sup>) identifies a 14 category taxonomy. The variety of taxonomy classification approaches shows that there is no single taxonomy that is the right one and superior to others for analytical purposes.

## Taxonomy applied in DP

### *Cryptocurrencies (coins and payment tokens)*

A2.10 These refer to coins or tokens issued through the DLT platform but have no claim against any issuer. Cryptocurrencies are a type of virtual currency that share several characteristics of fiat money (i.e. fungibility, tradability, divisibility, countable and transferability) but unlike fiat currency, are not backed by any central authority, do not have legal tender status and have no claim on any counterparty.

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<sup>51</sup> The difference between a coin and token is that a coin is issued on the crypto-asset developer's platform (e.g. Bitcoin, Ethereum) whereas a token can be issued on other platform

<sup>52</sup> Sixt, E. and Himmer, K. 2019. Accounting and Taxation of Crypto-Assets. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3419691](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3419691)

<sup>53</sup> Lausen, J. 2019. Regulating Initial Coin Offerings? A Taxonomy of Crypto-Assets. Research Paper. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3391764](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3391764)

- A2.11 They can fulfil the three functions of money/fiat currency (means of exchange, store of value and unit of account) in the blockchain economy and only to a very limited extent fulfil the functions of fiat currency outside of the blockchain economy. There tends to be a question mark on the unit of account feature which varies significantly across jurisdictions.
- A2.12 Well-known examples of cryptocurrencies include Bitcoin, Ether, Litecoin, Monero and Z-cash. Examples of payment tokens include: Gemini dollar, Ripple, Partici and Utility Settlement coins.
- A2.13 The limitation of cryptocurrencies as a means of exchange arises due to their lack of legal tender status and due to the technological limitations of the trading and validation process, which results in a much lower volume of transactions for cryptocurrencies than is the case for the platforms for processing traditional fiat currencies. For example, Bitcoin and Ethereum (when used as a means of payment) can add a maximum of seven and 20 transactions per second to their respective ledgers. In contrast, the credit card company visa can process 56,000 transactions per second. Furthermore, their high price volatility and low liquidity limits their capacity to serve as either a store of value or unit of account.

### **Security and asset tokens**

- A2.14 These refer to tokenized assets or traditional financial instruments (debt or equity) governed by securities laws and financial instruments regulatory framework. Below is a description of security and asset tokens included in the December 2019 PwC publication.
- A2.15 Security tokens are digital tokens based on the blockchain technology that are similar in nature to traditional securities. They can provide an economic stake in a legal entity: sometimes a right to receive cash or another financial asset, which might be discretionary or mandatory; sometimes the ability to vote in a company decisions and/or a residual interest in the entity. The value of a security token is derived from the success of the entity.
- A2.16 Asset-backed tokens is a digital token based on blockchain technology that signifies and derives its value from something that does not exist on the blockchain but instead is a representation of ownership of a physical asset (e.g. natural resources such as gold or oil) Its inherent value is based on the underlying asset.
- A2.17 Examples of security tokens and asset tokens include: Documo Royal Mint Gold (RMG coin) and Maecenas.

### **Utility tokens**

- A2.18 These refer to tokens granting access to existing or yet to be developed future products or services of a Blockchain-based platform. They play a pivotal role in launching new platform, attracting potential customers and network participants and are designed to align interest of both users and owners of the platform.

A2.19 Some examples of utility coins or tokens include: Filecoin, Golem, BAT, Ox and Gamecredits- MGO universal gaming tokens<sup>54</sup>. Below is an illustrative description of value proposition of Basic Attention Tokens(BAT), a utility token, excerpted from the related white paper<sup>55</sup>.

Business model excerpt BAT

Present ecosystem	BAT token ad payments
User frustration over loading time	Fast loads
Walled gardens	Free software, open source infrastructure
Bandwidth wasted	Low bandwidth overhead
Screen clutter	Uncluttered screen
Irrelevant ads	Ads tuned to user interests
Security issues	No malware
Viewability problems/attribution	Secure attribution/attention score
Advertiser uncertainty about delivery	Perfect delivery certainty
CPM/click based	Attention-based
Reader attention not valued	Reader is paid for attention
Publisher revenues lowering	Larger publisher revenues
Expensive ad buys due to middlemen	Efficient ad buys
Complex/expensive viewability metrics	Simple/free viewability metric
User's privacy violated	Perfect user privacy

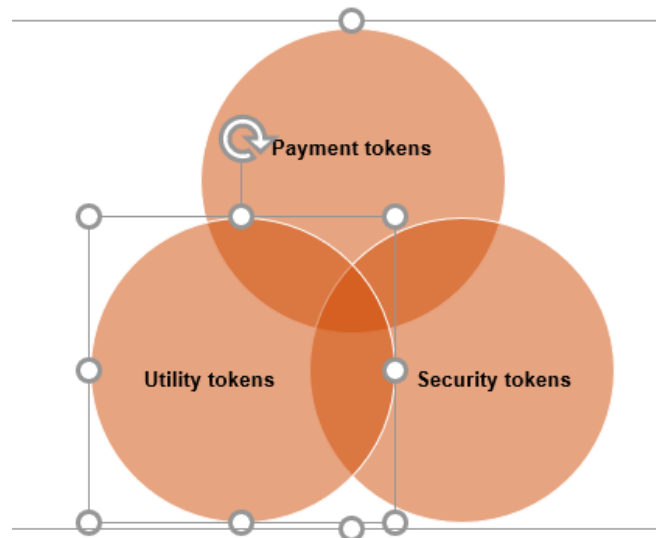
### Hybrid tokens

A2.20 As depicted in below diagram, there are hybrid tokens with or overlapping multiple characteristics (e.g. having utility token, payment token and security token features at the same time). They can be used for different purposes by their owners during the holding period. And at a point in time, specific hybrid token can be used for different purposes by different users.

A2.21 An example of a hybrid token is Ether that has features of an asset token, it is also accepted as a means of exchange of goods external to the Ethereum blockchain and as a utility in granting holders access to the computation power of the Ethereum virtual machine. Other hybrid token examples include NEO, Binance BNB and Neumark.

<sup>54</sup> <https://www.mobilego.io/>

<sup>55</sup> <https://basicattentiontoken.org/wp-content/uploads/2017/05/BasicAttentionTokenWhitePaper-4.pdf>



### Stable coins

A2.22 A stable coin is a crypto-asset backed by real world assets, fiat currencies and in some special cases other cryptocurrencies. Stable coins attempt to solve the problem of high volatility. Linkage of the crypto-asset to a stable asset hedges against the impact of price volatility and is intended to incentivize trust in payment tokens as a means of payment. Analogies can be drawn between the intent underlying the issuance of stable coins and the role that the gold standard had in inculcating trust in currencies during the 19<sup>th</sup> century and parts of the 20<sup>th</sup> century. There are different types of stable coins including

- a) Fiat currency backed stable coins (USDC)
- b) Other crypto-currency backed stable coins
- c) Asset backed stable coins
- d) Algorithmically stabilised coins (i.e. algorithm that either increases or decreases supply of coins to influence volatility of value)
- e) Not every stable coin fits into a single classification category as they can be a derivative, a unit in a collective investment scheme, a debt security, e-money, or another type of specified investment

### E-money tokens

A2.23 E-money tokens is a classification category that is proposed in the guidance of the UK FCA issued in July 2019. It encompasses tokens that meet the definition of e-money including there being a claim on the issuer. Some stable coins, payment, utility and security tokens can qualify as e-money based on jurisdictional authorities definition.

A2.24 A May 2019 ECB definition considers that crypto-assets do not qualify as “electronic money<sup>56</sup>” under the Second Electronic Money Directive (EMD2)- as they are not and do not represent a claim on the issuer. The ECB definition also does not consider crypto-assets to be “scriptural money<sup>57</sup>”. However, a January 2019 EBA report highlights that there are cases where some crypto-assets could qualify as electronic money- as has been identified by five national competent authorities including Malta and the UK.

A2.25 That said, unlike the other types of tokens, the categorisation of crypto-assets as e-tokens is yet to be widely applied in crypto-assets literature.

### **Pre-functional tokens**

A2.26 Direct-token pre-sales’ or pre-functional tokens are tokens that are transferable via a protocol on the DLT network, but cannot yet offer utility on the network. Effectively, these are tokens issued before the network is launched and will typically convert to utility tokens once the network is active.

A2.27 There can be uncertainty on whether pre-functional tokens are in substance equivalent to a security or to product sales. They could be considered as equivalent to pre-network launch product sales that should be available for any consumer. But in some jurisdictions (e.g. US), pre-functional tokens are typically issued with accompanying Simple Agreements for Future Tokens (SAFTs) and are only open only for accredited investors thus seem to be considered as securities.

### **Simplified Agreements for Future Tokens (SAFT)**

A2.28 Simplified Agreement for Future Tokens (SAFT’), which are agreements that represent their holders rights to future tokens. SAFTs relate to pre-functional tokens, are only available in some jurisdictions and considered as equivalent to issued securities. SAFTs bifurcate the securities and token components of a transaction while preserving the many benefits associated with ICOs” and keeping the utility component (the “functional token” not as likely to be a security) separate from the security-like component (the “non-functional token”).

A2.29 Although described alongside crypto- tokens, SAFTs are contracts granting rights to tokens and are de facto securities.

### **Associated rights and obligations**

A2.30 The analysis of crypto assets associated rights and obligations is broken down as follows:

- a) Documentation of rights and obligations and types of contractual arrangements
- b) Rights of crypto-assets holders on own behalf
- c) Illustrative examples

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<sup>56</sup> ECB defines e-money as electronically stored monetary value as represented by a claim on the e-money issuer, which is issued on receipt of funds, for the purposes of making payment transactions, and which is accepted by a natural or legal person other than the electronic money issuer.

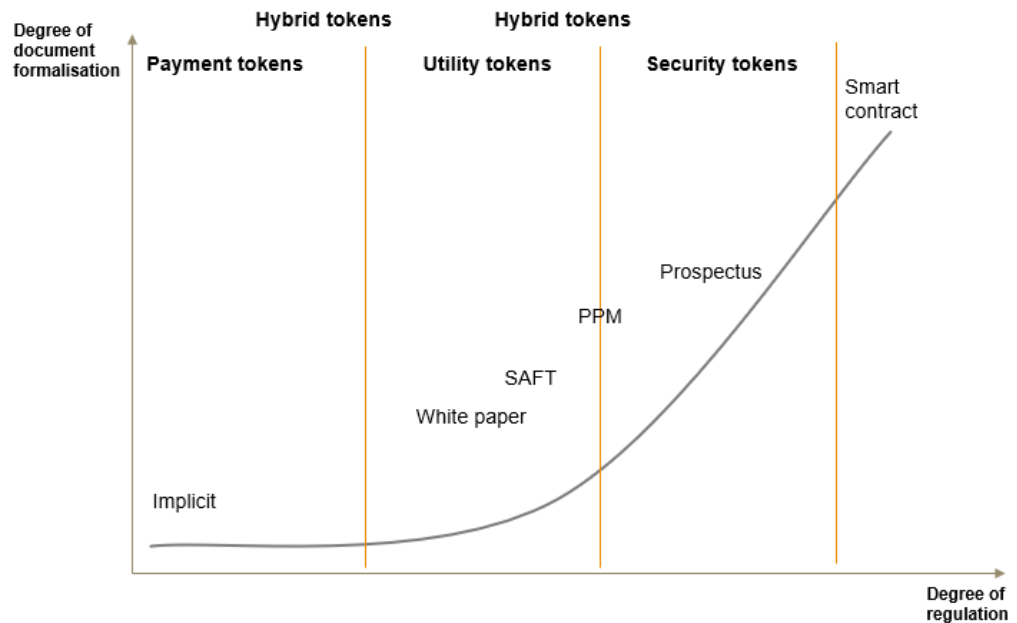
<sup>57</sup> Scriptural money means deposit balances held on account at a credit institution or a central bank, or electronic money.

- d) Rights of holders on behalf of others
- e) Obligations of crypto-assets issuers

### **Documentation of rights and obligations and types of contractual arrangements**

- A2.31 The combination of high diversity of crypto-assets, velocity of transactions, numerous types of stakeholders and lack of regulatory guidance created room for heterogeneous practices when it comes to the source and depth or content/formalism of crypto-assets rights and obligations.
- A2.32 Accordingly, there is a spread/continuum in practice the formalisation and robustness of documentation of rights and obligations associated with crypto-assets.
- A2.33 Starting from the absence of explicit formalisation up until very explicit information disclosure documents enforced by law or code, as follow:
- a) Implicit to the market (algorithm based)
  - b) White paper
  - c) Contract (e.g. SAFT type)
  - d) Private Placement Memorandum (PPM)
  - e) Prospectus
  - f) Smart contracts
- A2.34 The below is an outline of rights associated with different types of crypto-assets
- a) Payment/exchange tokens: There is usually an implicit contract between participants and no explicit documentation of rights and obligations.
  - b) Security and asset tokens: Economic rights and obligations are therefore extensively documented either in a PPM or a Prospectus as in traditional capital markets. These might refer to contractual cash flows, exposure to issuing entity benefits (discretionary dividend), voting rights or any residual interest in the issuing entity for example.
  - c) Utility tokens: Rights and obligations of holders/issuers are typically documented in a whitepaper. In the absence of regulatory guidance, there is variation in the robustness, accuracy and quality of white papers.
  - d) Hybrid tokens: Due to hybrid characteristics, there are additional challenges to understand the effective rights and obligations attached to these tokens. as they are spread amongst implicit market conventions and explicit information disclosures documents of variable level of formalisation.





## Rights of crypto-assets holders on own behalf

### *Payment tokens*

A2.35 In the absence of any explicit contractual arrangements between the decentralised network managing the issuance of crypto-currencies and their holders, combined with the absence of legal tender feature; no formal rights can be attached to payment tokens. However, market participants in payment tokens would be aware of the implicit contractual arrangements embedded within the consensus mechanism/protocol governing the issuance of these tokens.

### *Security and asset tokens*

A2.36 Economic rights attached to security tokens are more easily identifiable as they directly refer to some expected revenue streams, whether mandatory (in the case of debt like underlying) or discretionary (in the case of dividend streams of equity like underlying) or cash flows from an underlying asset such as real estate.

A2.37 In addition, the existence of a comprehensive regulatory framework for traditional financial instruments and securities laws provide clarity on the information disclosures requirements and de facto on the economic rights and obligations attached to them.

A2.38 Examples of contractual rights and obligations attached to securities include but are not limited to:

- a) Rights to revenue streams
- b) Governance rights
- c) Residual interest in the net assets of the issuing entity
- d) Ownership rights

- e) Conversion rights

### Utility tokens

A2.39 While the absence/presence of information disclosures document is quite clear in the case of payment/security tokens respectively, things are much more of a grey area when it comes to utility tokens.

- a) A first critical aspect to consider here is that utility token issuance is not a regulated activity in most jurisdictions, accordingly the information disclosures documents (i.e. whitepapers) are not legally binding. Accordingly, the potential rights attached to these tokens are not “legal rights” as such even if some enforcement mechanisms might apply on a case-by-case basis.
- b) The second critical aspect is the significant diversity in the rights attached to utility token which is as broad as the creativity of the issuing entity and the complexity of the expected business model of the underlying platform.

A2.40 While significant diversity exists in practice, we can however identify different key categories of rights that might be attached to them. These rights revolves around the actions that token holders are allowed to perform on the underlying platform or the benefits that they can obtain from it. The following rights can be identified from existing literature:

- a) Access rights: allow token holders to access the platform or a network or effectively pay the existing transaction fees to use the platform;
- b) Payment rights: give the right to token holders to pay for products or services available on the underlying platform - act as platform dedicated medium of exchange;
- c) Transaction validation/Blocks creation rights: specific to Proof-of-Stake and gives the right to holders to stake, validate blocks and obtain returns from it;
- d) Governance rights: allow token holder to influence the decision making process and evolution/development of the underlying platform;
- e) Contribution rights: refer to rights of holders to play some roles in maintaining the platform but different from governance or validation rights;
- f) Discretionary revenues rights: in some cases, holders can be entitled to discretionary revenues from the underlying platform but without any kind of voting rights attached.

### Hybrid tokens

A2.41 Rights and obligations attached to hybrid tokens broadly vary depending on:

- a) The effective hybridation (mix of payments/utility/security features);
- b) How the hybridation effectively materialises (over time vs depending on the use by token holders);
- c) Whether or not the primary feature of the token is driving the categorization

A2.42 As an example of area for discussion, a critical point for classification of token is whether or not a product or service is available at the time of issuance. In the absence of product or service, these tokens are usually qualified as security token and the substance of the issuance considered as fund raising activity even if the tokens are not providing any residual interest in the issuing entity nor any rights of ownership or claim on the issuer.

A2.43 In all cases, the rights and obligations attached to hybrid tokens will reflect the above considerations on the one hand and our discussion about the rights attached to the different types of token taken individually. The exact fact patterns will drive the analysis which output will rely on significant judgement in the absence of clear regulatory guidance.

### Illustrative examples

A2.44 Below are examples of crypto-assets related to different holder rights (and implied issuer obligations)

<b>Associated Rights</b>	<b>Examples of crypto-assets</b>
<b>Utility tokens</b>	
Rights to access products or services of Token Platform	<i>VeChain, Nexxus coin</i>
Rights to purchase or sell existing or future products or services	
Right to partial ownership of a product	<i>Monolith token</i>
Rights to mining activities	<i>Tezos, Livepeer token</i>
Rights to contribute labour, effort or resource to a system	
Right to contribute, programme or create features of a system	<i>Dock, MakerDAO token</i>
Right to decide on products, services, functionalities to be offered or deleted within the Token Platform	<i>Tezos</i>
Rights to vote on matters of governance, management and operation of Token Platform	<i>Tezos</i>
<b>Security tokens</b>	
Contractual entitlement to ownership interest or control of the token issuer	<i>Digishare token</i>
Revenue or profit rights- rights to financial benefits from revenue streams or profits of the issuer/operator	<i>VMC coin, TradeCloud</i>
Debt- right to set cash flows from the economic activities of the issuer/operator	<i>Rokkex token</i>

Claims in bankruptcy as equity interest holder or creditor	
Rights similar to derivatives instruments (e.g. Reference to other crypto-assets as underlying, granting the holder an option to purchase one or more investment interests)	
Rights to future tokens (e.g. Simple Agreement for Future Tokens)	
Convertibility of a non-security token into a token or instrument with one or more investment interests	
Property ownership rights, Usufruct- Right to fruit from property	
<b>Hybrid Tokens</b>	<i>Nexo, Binance BNB, Ether</i>

### Legal obligations related to crypto-assets issuers

A2.45 Obligations from token issuers vary greatly depending on the type of crypto-assets involved but also within a given category.

- a) In the absence of identifiable issuers, contractual obligations are not relevant in the case of payment tokens.
- b) Looking at utility tokens issuers, obligations from the issuers will be limited to those formalized in their whitepaper but will mostly not be legally binding in the absence of applicable regulatory framework.
- c) Lastly, issuers of security tokens will be required to comply with the mandatory/discretionary contractual arrangement disclosed in their PPM or prospectus.

## APPENDIX 3: RELATED REGULATION

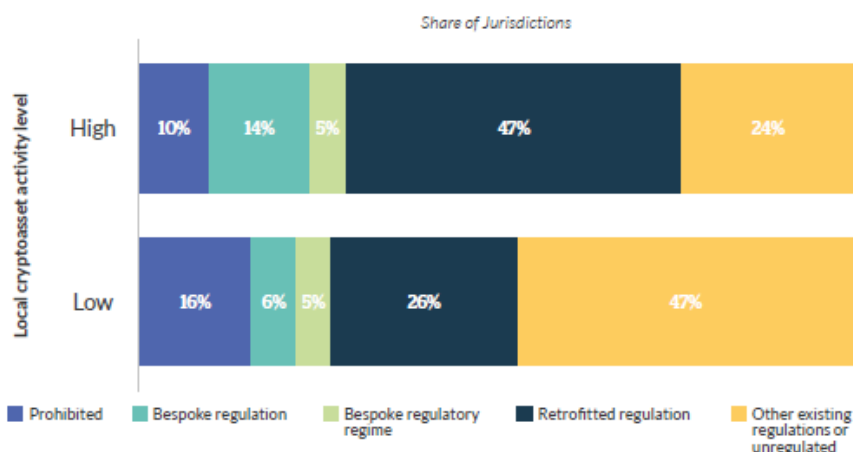
A3.1 The economic characteristics of different crypto assets (e.g. whether or not they are either economically equivalent to securities or fiat e-money) has an influence on the type of regulation that is applied to them in different jurisdictions- and influences the requirements related to the issuance, secondary trading and holding of crypto-assets. Consequently, the prevailing regulatory requirements can be indicative of the economic characteristics of different crypto-assets and can serve as an input to assessing the appropriate accounting guidance for both holders and issuers of crypto-assets.

### Overview of regulatory responses

A3.2 A review of legal and regulatory literature shows that apart from consumer protection and market integrity oriented requirements (e.g. know your customer and anti-money laundering requirements).

A3.3 Cambridge 2019 publication<sup>58</sup> on regulatory classification shows the varied responses to regulation

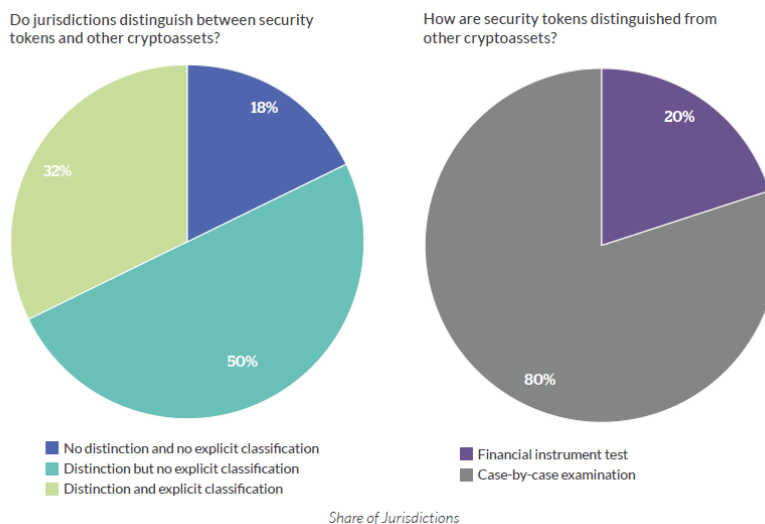
Figure 9: Regulatory response by level of cryptoasset activity in selected jurisdictions<sup>77</sup>



<sup>58</sup> Cambridge Center for Alternative Finance, 2019, *Global Cryptoasset Regulatory Landscape Study*

[https://www.jbs.cam.ac.uk/fileadmin/user\\_upload/research/centres/alternative-finance/downloads/2019-04-ccaf-global-cryptoasset-regulatory-landscape-study.pdf](https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2019-04-ccaf-global-cryptoasset-regulatory-landscape-study.pdf)

A3.4 Cambridge publication analysed 23 jurisdictions, and showed that 32% have a distinction and explicit classification.



A3.5 Only four of the 23 selected jurisdictions do not explicitly distinguish between security tokens and other crypto-assets, primarily due to two opposing logics: either the distribution of crypto-assets is prohibited (e.g. China’s ban on ICOs), or the absence of a token classification framework is expected to help jurisdictions stay flexible and keep abreast with the emergence of new types of crypto-assets (e.g. Bermuda and Thailand). Of the analysed jurisdictions, 32% have created a clear classification framework for crypto-assets. In general, existing frameworks tend to divide crypto-assets into three main categories (payment tokens, utility tokens and security tokens).

A3.6 There is varied level of regulation across jurisdictions. For example, in the US there is a fairly broad definition of securities through the application of the Howey test<sup>59</sup>, whereby utility tokens are likely to be considered<sup>60</sup> securities. In addition, regulators tend to adopt a substance over form approach and therefore it does not mean that if an issuer describes a token as a utility token, the regulator will concur with such a classification.

59 The 1946 case- *SEC v Howey* considered the case of a hotel operator in Florida that sold interests in a citrus grove to its guests. The operator claimed that it was selling *real estate* rather than *securities*. However, these sales also included service contracts for Howey-in-the-Hills Service, Inc., to manage the grove property on the new owner’s behalf — and these “optional” service contracts were heavily advertised as being a lucrative investment. In ruling that this did, in fact, constitute the sale of a security, the Supreme Court created the aptly named “**Howey Test**”: a set of jointly sufficient conditions required for a given asset to be considered a security. <https://blog.sfox.com/what-are-utility-tokens-and-how-will-they-be-regulated-89cfb6bb2a45>

The Howey test applied to determine whether a) was money invested b) Is a profit expected and c) does expected profit depend on the efforts of others

60 SEC Chairman Jay Clayton in testimony to the Senate in 2018 claimed that there is no token issuance that he did not consider to be a security

## Examples of regulatory content

A3.7 The following paragraphs outline different categories of regulation with a non-exhaustive high-level description of regulation across a selection of jurisdictions.

A3.8 **E-money related regulation:** There is varied regulation related to E-money tokens and payment services as shown by the below examples;

- a) The ECB publication implies that crypto-assets would fall outside scope of application of the payments services regulation. However, the EBA pointed to the existence of fact patterns in jurisdictions (UK and Malta) that would result in certain crypto-assets falling under e-money related regulation. The EBA highlighted feedback from five competent authorities of cases<sup>61</sup> that would qualify as e-money.
- b) The Bank of France does not consider cryptocurrencies to constitute money or legal tender but they may qualify as “intangible movable property” under French civil law.
- c) Despite a 2018 court of appeal ruling to the effect that bitcoin was not a financial instrument, the German Federal Financial Supervisory Authority (BaFin) considers cryptocurrencies that have the character of cash to be a financial instrument. In contrast, in 2013, the Dutch Ministry of Finance concluded that cryptocurrencies are neither e-money nor financial products within the meaning of the Dutch Financial Supervision Act (DFSA).
- d) Japan regulates most crypto-assets under the Payment Services Act (i.e. crypto-assets with no issuer such as bitcoin, those where the issuer exists but has no obligation (“rightless tokens”) and those where the issuer exists and has obligations such as providing goods or services in the future (utility tokens)).

A3.9 **Security tokens related regulation:** In an EU context this will include MIFID 2, Transparency directive, Prospectus directive. Below are a few examples of countries’ regulation

- a) In March 2018, BaFin issued an advisory letter stating that it will assess on a case-by-case basis whether an ICO token constitutes a) a financial instrument as per MIFID II b) a security within the meaning of the German Prospectus Act or c) a capital investment within the meaning of the German Capital Investment Act.
- b) France’s Autorite Des Marches Financiers (AMF) makes a distinction between utility tokens and security tokens. The AMF conclude that because certain crypto-assets derivatives can qualify as financial contracts, they are subject to regulations application to financial instruments.

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<sup>61</sup> EBA describes two example including a Company A that wishes to create a blockchain-based payment network and issues a token in exchange for fiat currency and is pegged to the given currency. 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.

- c) The Dutch Central Bank (DNB) and Dutch Authority for the Financial Markets (AFM) has provided guidance for qualification as a financial instrument.
- d) The UK FCA guidance stated that security tokens should be regulated under securities regulation.
- e) In Japan, security tokens are treated as securities and regulated under the Electronic Record Transfer Rights (Financial Instruments and Exchange Act).

A3.10 **Utility tokens related regulation:** Even though utility tokens may escape the net of securities regulation due to their failure to be classified as security tokens, the Financial Stability Board acknowledges the need for supervision and regulatory surveillance of utility tokens. In some jurisdictions (e.g. US, Japan) utility tokens are regulated under payment services or securities regulation. There is also rather rare bespoke regulation related to utility tokens (Antigua).

A3.11 **Pre-functional tokens related regulation:** Pre-functional tokens that convert to utility tokens at a future date with accompanying Simple Agreements for Future Tokens (SAFTs) that are open only for accredited investors seem to be considered to be securities in some jurisdictions (e.g. US). But these tokens could also be considered as being simply pre-network launch product sales that should be available for any consumer. It is not clear whether there is a common view on the appropriate categorisation and regulation of pre-functional tokens.

A3.12 **Unregulated tokens** in several jurisdictions (e.g. UK, Netherlands) typically include utility tokens, most cryptocurrencies as they do not meet the definition of e-money.



## APPENDIX 4: GLOSSARY OF TERMS

A4.1 The Table below outlines a glossary of terms

TERM	DESCRIPTION
Airdrops	Issuance of tokens for free by platform developers/ICOs issuers. It is one of the ways that crypto-assets get into circulation.
Blockchain	One type of distributed ledger technology (DLT) in which details of transactions and smart contracts are recorded on the ledger in the form of blocks of information. Transactions result in new blocks being added to the block chain via a computerised process (i.e. cryptographic process).
Blockchain token economy companies	Companies business models that entail participation or blockchain-based decentralised ecosystems  A blockchain-based token economy has emerged, driven by the explosive growth in the value and variety of crypto-assets
Crypto-asset platform developer	Coin developers on own platform (e.g. Bitcoin, Ethereum)
Other crypto-asset definitions  Crypto-asset (as defined by France Loi Pacte)- is a definition of crypto-assets that is independent of DLT and does not give prominence to the role of the cryptographic process in the creation, transfer and recording of digital assets	Any digital representation of an instrument which is not issued or guaranteed by a central bank or by a public authority, which is not necessarily attached to a legal tender currency and which does not have the legal status of a currency , but which is accepted by natural or legal persons as a means of exchange and which can be transferred, stored or exchanged electronically.
Cryptography/Cryptographic	The conversion of data into private code using encryption algorithms, typically for transmission over a public network.
Crypto-asset 'coin versus token'	The difference between a coin and token is that a coin is issued on the crypto-asset developer's platform (e.g. bitcoin on Bitcoin blockchain, Ether on the Ethereum blockchain) whereas a token can be issued on other platform (e.g. Gemini dollar, Filecoin and Documo issued on the Ethereum blockchain)
Decentralised applications (Dapps)	A decentralized application is a computer application that runs on a distributed computing system. DApps have been popularized by distributed ledger technologies such as the Ethereum Blockchain, where

	DApps are often referred to as smart contracts.
Digital asset versus Digitised asset	<p>A digital asset is an electronic record in which an individual has a right or interest. They do not exist in physical form.</p> <p>A digitised asset is an asset (which may be a security or physical asset) the ownership of which is represented in an electronic record (e.g. ownership of real estate represented on a digital ledger).</p> <p>Digital and digitised assets are represented on an electronic ledger that is not necessarily a blockchain. Digital and digitised assets on a blockchain are commonly referred to as “blockchain tokens”. The process of digitising assets is also referred to as “tokenisation”.</p>
Distributed ledger technology (DLT)	Technology that allowed a repeated digital copy of the ledger of transactions. DLT is built upon public-key cryptography (publicly known and essential for identification) and confidential private-keys, which are used for authentication and encryption during transactions (i.e. transfer of funds). Block chain is one type of DLT but there are others (DAG, Tempo).
Distributed consensus mechanism	The process of network participants within a DLT environment of agreeing on one state or result in the distributed ledger.
Fork	<p>A fork is a change to the DLT protocol that can arise for several reasons (e.g. security, or if part of the community wants to take the project in a different direction). Hard fork creates two versions of the protocol and an additional alternative crypto-asset. Examples of forks in the Bitcoin DLT are the creation of Bitcoin ALL, Bitcoin Cash Plus, Bitcoin Smart, Bitcoin Interest, Quantum Bitcoin, Bitcoin Lite, Bitcoin Ore, Bitcoin Private, Bitcoin Atom, Bitcoin Pizza and Bitcoin Gold.</p> <p>A soft fork is also an update to the blockchain protocol; however, one version (assumed to be the updated or new version) is supposed to be adopted by the majority and will become the dominant one.</p>
Initial coins offerings (ICOs)	An operation through which companies, developers raise capital for their projects in exchange for crypto-assets. It is one of the key mechanisms for the supply or issuance of crypto-assets.
Mining-Proof of work (PoW)	Mining-is a process of establishing consensus to verify and confirm transactions within a DLT environment. It occurs while updating new transactions on the distributed ledger. PoW requires a cryptographic process and is an energy and computational power

	intensive process that tends to occur in jurisdictions with cheap electricity. PoW validation is open to all participants in the network.
Proof of stake (PoS)	PoS is a form of consensus mechanism within a DLT environment that requests network participants to demonstrate ownership of a pre-defined crypto-asset. Participants can mine or validate block transactions according to their ownership of crypto-assets. Hence, only participants with ownership stakes in the network can undertake PoS.
Permissioned DLT	A DLT network in which only those parties that meet certain requirements are entitled to participate in the validation and consensus process.
Permission-less DLT	A DLT network in which virtually anyone can become a participant in the validation and consensus process. Common for cryptocurrencies (e.g. Bitcoin)
Private key	Required to send crypto-assets. Anyone with the key has sole access to the funds.
Public key	Public key is the identifier that allows receipt of transferred crypto-assets.
Pre-functional tokens	Direct-token pre-sales' or pre-functional tokens are tokens that are transferable via a protocol on the DLT network, but cannot yet offer utility on the network. Effectively, these are tokens issued before the network is launched and will typically convert to utility tokens once the network is active
Simplified agreements for future tokens (SAFTs)	SAFTs are agreements that represent their holders rights to future tokens. SAFTs are only available in some jurisdictions (e.g. US) and are typically classified as securities.  SAFTs work by "bifurcating the securities and token components of a transaction while preserving the many benefits associated with ICOs" and keeping the utility component (the "functional token" not as likely to be a security) separate from the security-like component (the "non-functional token")
Smart contracts and Ricardian contracts	A Smart Contract is a machine readable set of instructions that organizes and controls the arrival of events, and the initiation of actions. A Ricardian Contract is a document that outlines the intentions and the actions that will be undertaken. The Ricardian Contract is the <i>best effort</i> to record the agreement, smart contract is the execution of said agreement.  In addition to crypto-assets, some blockchain platforms also support smart contracts. The most prominent smart contract is Ethereum.

Taxonomy	System of grouping objects of common interest in a domain based on common characteristics
Crypto-asset classification taxonomy (as noted elsewhere in the DP, there is no consensus on the definition of classification categories)	<p>Below are elements of commonly applied categorisation of tokens</p> <ul style="list-style-type: none"> <li>• <i>Cryptocurrencies (coins and payment or exchange tokens)</i></li> <li>• <i>E-money tokens (proposed by the UK FCA but not yet a widely applied categorisation)</i></li> <li>• <i>Security tokens-</i> Tokens with specific rights and obligations similar to specified investments (equity, debt, unit investment)</li> <li>• <i>Utility tokens-</i> Tokens that can confer a variety of network-associated rights including granting holders access to a current or prospective product or service</li> <li>• <i>Other (hybrid tokens and pre-functional tokens)</i></li> </ul>
Tokens	<p>As noted above tokens are crypto-assets residing on existing other blockchain and not on developers blockchain.</p> <p>France Loi Pacte definition- Constitutes a token any intangible asset representing, in digital form, one or more rights, which can be issued, recorded, stored or transferred by means of a DLT making it possible to identify, directly or indirectly, the owner of said asset .</p>
Virtual currency (defined by the AML directive)	A digital representation of value that is neither issued by a central bank or a public authority, nor necessarily attached to a fiat currency, but is accepted by natural or legal persons as a means of payment and can be transferred, stored or traded electronically.
Wallet provider (Hot wallet and cold wallet)	A firm that offers storage services to holders of crypto-assets and these could be online (hot wallet) or offline (cold storage).

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Statis



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