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**SWEET & MAXWELL**

# Cryptotaxation: A Guide to a Brave New World

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## Abstract

*This article outlines the taxation of cryptocurrencies and discusses the problems of taxing them. The authors have chosen two relevant issues for their readers: the location of cryptoassets and the tax treatment of impairment losses. The article focuses on cryptocurrencies like Bitcoin. The authors do not specifically discuss the taxation of non-fungible tokens (NFTs) or digital gaming items, which have slightly different properties. The authors also do not discuss VAT and cryptoassets—these aspects will be the topic of a separate article.*

## I. Introduction

“We’re working to make the UK a global cryptoassets hub. We want to see the businesses of tomorrow, and the jobs they create, here in the UK.”—Rishi Sunak, Twitter, April 2022.<sup>1</sup>

Mr Sunak’s plan aims to “ensure the UK financial services sector remains at the cutting edge of technology, attracting investment and jobs and widening consumer choice.”<sup>2</sup>

Cryptocurrencies have a global market capitalisation of more than US\$1 trillion, despite their decline since November 2021.<sup>3</sup> Cryptocurrencies have shown significant volatility within the last year, and Bitcoin has, for example, fallen in value by more than 70 per cent against the US\$ between November 2021 and December 2022.<sup>4</sup> It was not the first Bitcoin crash, and presumably will not be the last.<sup>5</sup>

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<sup>1</sup>Rishi Sunak (4 April 2022) *Twitter*, <https://twitter.com/rishisunak/status/1510985313409245184?lang=en> [Accessed 1 February 2023].

<sup>2</sup>Gov.UK, *Government sets out plan to make UK a global cryptoasset technology hub* (4 April 2022), <https://www.gov.uk/government/news/government-sets-out-plan-to-make-uk-a-global-cryptoasset-technology-hub> [Accessed 1 February 2023].

<sup>3</sup>CoinMarketCap, *Global Cryptocurrency Charts*, <https://coinmarketcap.com/charts/> [Accessed 1 February 2023].

<sup>4</sup>Arjun Kharpal and Ryan Browne, “From \$250,000 to \$10,000 price calls: How market watchers got it wrong with bitcoin in 2022” (23 December 2022) *CNBC*, <https://www.cnbc.com/2022/12/23/bitcoin-price-calls-in-2022-how-the-market-got-it-wrong.html> [Accessed 20 February 2023].

<sup>5</sup>CCN, *Nearly Every Major Cryptocurrency is Down at Least 90% from All-time High* (4 March 2021), <https://www.ccn.com/nearly-every-major-cryptocurrency-is-down-at-least-90-from-all-time-high/> [Accessed 20 February 2023].

The warnings of Luke Ellis, CEO of Man Group, come to mind: “There is no inherent worth in it whatsoever. It’s a tulip bulb.”<sup>6</sup>

## II. What are cryptoassets?

“Nothing will come of nothing.”—William Shakespeare, *King Lear*, Act 1, Scene 1.<sup>7</sup>

Cryptoassets are a new category of asset. The precise legal label which is attached to them is secondary. The market in cryptoassets mainly consists of cryptocurrencies (with Stablecoins pegged to a traditional currency being a subcategory) and (crypto) tokens, which can be further divided into non-fungible tokens (NFTs), security tokens and utility tokens, which all have different economic properties.<sup>8</sup>

It is often said that cryptoassets are becoming mainstream.<sup>9</sup> That is not quite correct. What is true to say is that the expansion of cryptoassets has been unrestrained and uncontrolled so far. One symptom of this lack of restraint and control is the recent collapse of crypto exchange FTX Trading Ltd, commonly known as FTX<sup>10</sup> and the wider turmoil in the micro world of cryptocurrencies. These events show the fragility of the crypto markets.<sup>11</sup>

Cryptocurrencies like Bitcoin may indeed have value, but that value is derived solely from a perceived scarcity as their value does not reflect an on-going business, a debt obligation, physical assets, a concept which may produce practical results, a design, or a market.<sup>12</sup>

Cryptocurrencies go back to nothing outside themselves.<sup>13</sup> They are entirely self-contained. The asset itself does not represent anything.<sup>14</sup> They are simply the (virtual) assets.

<sup>6</sup> Jamie Crawley, “‘Tulip Bulb’ Crypto Has ‘No Inherent Worth,’ Man Group CEO Says” (2021) *CoinDesk*, <https://www.coindesk.com/markets/2021/07/26/tulip-bulb-crypto-has-no-inherent-worth-man-group-ceo-says/> [Accessed 1 February 2023].

<sup>7</sup> William Shakespeare, *King Lear*, Act I, Scene 1, line 99, Folger Shakespeare Library.

<sup>8</sup> A good summary can be found at: Canadian Securities Administrator, “Types of Crypto Assets”, <https://www.securities-administrators.ca/investor-tools/crypto-assets/types-of-crypto-assets/> [Accessed 1 February 2023].

<sup>9</sup> Carmen Reichman, “Regulation change could make crypto mainstream, says Bloomberg” (11 April 2022) *Financial Times*, <https://www.ftadviser.com/ftadviser-focus/2022/04/11/clear-regulation-could-make-crypto-mainstream-says-bloomberg/> [Accessed 1 February 2023]; also: Matt Hougan, “Crypto’s Gone Mainstream; Here’s What Comes Next” (16 February 2022) *Forbes*, <https://www.forbes.com/sites/matthougan/2022/02/16/cryptos-gone-mainstream-heres-what-comes-next/?sh=4a8e297b6432> [Accessed 1 February 2023].

<sup>10</sup> FTX stands for Futures Exchange. FTX is a bankrupt cryptocurrency exchange which has been in Chapter 11 bankruptcy proceedings since 11 November 2022, see: Caitlin Ostroff, Vicky Ge Huang and Alexander Gladstone, “FTX Files for Bankruptcy; Sam Bankman-Fried Steps Down as CEO” (11 November 2022) *The Wall Street Journal*, <https://www.wsj.com/articles/ftx-files-for-chapter-11-bankruptcy-11668176869> [Accessed 1 February 2023].

<sup>11</sup> Carol Alexander, “After the FTX crash, here’s what you need to know — the crypto bubble is already bursting” (23 November 2022) *The Guardian*, <https://www.theguardian.com/commentisfree/2022/nov/23/ftx-binance-crypto-market>, [Accessed 1 February 2023].

<sup>12</sup> Eswar Prasad, “Five Myths about Cryptocurrency”, OP-ED (24 May 2021) *Brookings*, <https://www.brookings.edu/opinions/five-myths-about-cryptocurrency/> [Accessed 1 February 2023]. Prasad correctly observed: “Scarcity by itself is not, however, enough to create value—there has to be demand. Since cryptocurrencies cannot easily be used to make most payments and have no other intrinsic uses, the only reason they have value is because many people seem to think they are good investments. If that changed, their value could quickly drop to nothing.”

<sup>13</sup> Prasad, “Five Myths about Cryptocurrency”, OP-ED (24 May 2021) *Brookings*. Prasad acknowledges: “Cryptocurrencies are not backed by anything other than the faith of the people who own them. The dollar, by contrast, is backed by the U.S. government.”

<sup>14</sup> Cryptocurrencies are highly volatile in their price movements. For example, from November 2021 to December 2022, Bitcoin lost more than 70% in value towards the US\$, see Kharpal and Browne, “From \$250,000 to \$10,000

One can sum up cryptoassets as having the following characteristics:

- 1) They do not go back to anything outside themselves. They are self-contained and self-existent. They have no spatial reference and are purely electronic. Cryptoassets are simply a form of electronic communication combined with human hope or ambition.<sup>15</sup>
- 2) They are not attached to any state or jurisdiction or entity. There is no central point of control. They are not governed by a central bank, a board of directors, an issuing authority or physical constraints.
- 3) There is no central register of the existence or ownership of cryptoassets. No land register, share register, bank account, or public document tells you that a cryptoasset exists and who owns it. Those holding them do so in a wholly anonymised way. Things may, however, change in the near future.
- 4) Fungible cryptoassets, like the cryptocurrency Bitcoin, can be traded, or exchanged, one for another. They are held and managed in the form of a blockchain on numerous linked computers as fungible electronic units.
- 5) In a minority of cases, cryptoassets are NFTs and virtual gaming items. In-game items are usually called Skins.<sup>16</sup> “NFTs are unique pieces of software, powered by smart contracts, stored on a blockchain.”<sup>17</sup> NFTs—unlike cryptocurrencies—have unique identification codes that distinguish them from each other. They are a *digital representation* (blockchain-based tokens) of *physical assets*, like artwork, sports cards and rarities.<sup>18</sup> NFTs are held on or through a single computer. NFTs—like other cryptoassets—can only be accessed by an encrypted electronic key that is personal to the holder.
- 6) Cryptoassets only have value for so long as (i) their numbers are restricted, (ii) people want to hold them and are prepared to pay for so doing, and (iii) there are more people who want to hold them than there are holders who want to monetise them.<sup>19</sup>

price calls: How market watchers got it wrong with bitcoin in 2022” (23 December 2022) *CNBC*. In the view of the authors, this mirrors the status of cryptoassets as high-risk investments. One can make large profits but also lose everything if market conditions for cryptoassets change either due to economic, regulatory, accounting or tax changes, or due to a changing risk appetite on the part of the market participants trading in crypto.

<sup>15</sup> One may argue that this is not the case with NFTs, which are one-of-a-kind cryptoassets stored on a blockchain. The token represents a digital file that contains data, which varies according to what it represents. But in the end, even NFTs are no more than a digital representation.

<sup>16</sup> There are thousands of articles on the internet about how to buy and sell Skins on Steam, but this article gives a flavour of what it is all about: Tom Senior, “The Best Steam Skins” (15 May 2022) *PC Gamer*, <https://www.pcgamer.com/the-best-steam-skins/> [Accessed 1 February 2023].

<sup>17</sup> Ian Bradley, “How Taxes on Cryptocurrencies and digital assets will soon take shape” (23 March 2022) *EY*, [https://www.ey.com/en\\_gl/tax/how-taxes-on-cryptocurrencies-and-digital-assets-will-soon-take-shape](https://www.ey.com/en_gl/tax/how-taxes-on-cryptocurrencies-and-digital-assets-will-soon-take-shape) [Accessed 1 February 2023].

<sup>18</sup> OpenSea is the largest market place for buying and selling NFTs. See: “Discover, collect, and sell extraordinary NFTs” *OpenSea*, <https://opensea.io> [Accessed 1 February 2023].

<sup>19</sup> Warren Buffett suggested: “It’s ingenious and blockchain is important but Bitcoin has no unique value at all, it doesn’t produce anything. You can stare at it all day and no little Bitcoins come out or anything like that. It’s a delusion basically”: “Warren Buffett: ‘Bitcoin has no unique value at all’” (February 2019) *CNBC*, <https://www.youtube.com/watch?v=m4vDTAelhCM> [Accessed 1 February 2023].

- 7) Unlike, say, bank money, Bitcoin is held on a distributed ledger system, that is, a number of computers (nodes) each of which maintains a ledger using the blockchain-data-structure. Blocks of transactions are chained together which is why this database architecture is called a “blockchain”. The originality of Bitcoin lies in the blockchain, which provides a way of maintaining, managing and altering the ownership of the items of cryptocurrency held in the blockchain, and where no ledger is either maintained or controlled by a single person or authority.
- 8) The number of Bitcoin represented in the blockchain database is slowly increased at a declining rate of increase by mining, i.e. by the award to nodes of additional units for confirming transactions. When the overall limit of units is reached in about 2140, the question arises, how will Bitcoin be transferable if there is no incentive to maintain the systems necessary to confirm the transfer? If non-transferable, it will rapidly become valueless.
- 9) The units are indestructible. So if units are lost because passwords are lost or owners disappear, they remain fixed in the system, which will become gradually occupied by frozen units.
- 10) The blockchain is unalterable. Past transactions cannot be erased. The only alteration possible is to add new transactions. The distributed peer-to-peer system consists of members whose computers maintain individual copies of an append-only blockchain-data-structure. The history of transaction data is the heart of any blockchain. The blockchain maintains the history of all transactions that have ever happened by storing their transaction data in the block-chain-data structure in the order in which they occurred. Hence, the extraordinary demands which cryptocurrency imposes on computing resources.

### III. From fear to greed and back—or how cryptoassets work

“It takes advantage of the nature of information being easy to spread but hard to stifle.”—Satoshi Nakamoto, *Bitcoin.org*.<sup>20</sup>

To understand how cryptoassets work, one has to go back to the beginning: Bitcoin. On 31 October 2008, anonymous “person(s)” who called themselves Satoshi Nakamoto published a White Paper called “Bitcoin: A Peer-to-Peer Electronic Cash System” (the White Paper).<sup>21</sup>

The timing should be noted. Lehman Brothers filed for Chapter 11 bankruptcy protection on 15 September 2008 in the United States Bankruptcy Court for the Southern District of New York

<sup>20</sup> Satoshi Nakamoto, *Bitcoin.org*; this quote replaced the website link to the original White Paper due to a UK court order demanding to remove the White Paper, see: Sebastian Sinclair, “UK Court Orders Bitcoin.org to Remove White Paper Following Craig Wright Lawsuit” (29 June 2021) *CoinDesk*, <https://www.nasdaq.com/articles/uk-court-orders-bitcoin.org-to-remove-white-paper-following-craig-wright-lawsuit-2021-06> [Accessed 1 February 2023]. The citation can also be found in: “Host of Bitcoin Whitepaper to Attend Court Hearing Over Copyright Infringement in Craig Wright Lawsuit” (28 June 2021) *The Daily Hodl*, <https://dailyhodl.com/2021/06/28/host-of-bitcoin-whitepaper-to-attend-court-hearing-over-copyright-infringement-in-craig-wright-lawsuit/> [Accessed 20 February 2023].

<sup>21</sup> Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System” (2008) *bitcoin*, <https://Bitcoin.org/Bitcoin.pdf> [Accessed 1 February 2023]. The paper can be found in the UK, using the following link: [https://www.ussc.gov/sites/default/files/pdf/training/annual-national-training-seminar/2018/Emerging\\_Tech\\_Bitcoin\\_Crypto.pdf](https://www.ussc.gov/sites/default/files/pdf/training/annual-national-training-seminar/2018/Emerging_Tech_Bitcoin_Crypto.pdf) [Accessed 1 February 2023].

(Manhattan),<sup>22</sup> though it later turned out that the business was completely solvent. It just ran out of liquidity.<sup>23</sup> The break-up process saw the selling of the bank's parts to Barclays and to Nomura at the end of September 2008.

The atmosphere in those days was grim. Huge stock market losses were followed by the American International Group Inc (AIG) bailout by the US Government with US\$85 billion, and a further US\$49 billion under the Troubled Asset Relief Program (TARP),<sup>24</sup> which also funded the newly formed Capital Purchase Program under which the US Treasury supported nine big US banks by purchasing their equity at an amount of US\$188 billion by the end of 2008.<sup>25</sup> At the same time, the UK Government had been obliged to take over the Royal Bank of Scotland,<sup>26</sup> and Lloyds.<sup>27</sup>

In the fire sale of Lehman Brothers to Barclays the Manhattan bankruptcy judge, James Peck, famously said:

“I have to approve this transaction because it is the only available transaction. Lehman Brothers became a victim, in effect the only true icon to fall in a tsunami that has befallen the credit markets. This is the most momentous bankruptcy hearing I’ve ever sat through. It can never be deemed precedent for future cases. It’s hard for me to imagine a similar emergency.”<sup>28</sup>

Thus, cryptocurrencies were invented amidst a financial crisis and a substantial lack of confidence in the traditional banking system.

<sup>22</sup> Wikipedia, “Bankruptcy of Lehman Brothers, Bankruptcy filing”, [https://en.wikipedia.org/wiki/Bankruptcy\\_of\\_Lehman\\_Brothers](https://en.wikipedia.org/wiki/Bankruptcy_of_Lehman_Brothers) [Accessed 1 February 2023].

<sup>23</sup> Kimberley Amadeo, “Lehman Brother’s Collapse, How It Affects You Today”, 29 January 2022, <https://www.thebalance.com/lehman-brothers-collapse-causes-impact-4842338> [Accessed 1 February 2023].

Amadeo noted that the main reason for the bankruptcy was: “The bank had taken on too much risk without a corresponding ability to raise cash quickly. In 2008, it had \$639 billion in assets, technically more than enough to cover its \$613 billion in debt. However, the assets were difficult to sell. As a result, Lehman Brothers couldn’t sell them to raise sufficient funds. That cash flow problem is what led to its bankruptcy.”

An instructive piece on the Lehman bankruptcy outlines the legal background of the bankruptcy proceedings and its aftermath, see: Quinn Emanuel Urquhart & Sullivan, LLP, “December 2018: What We Learned as Lehman’s Bankruptcy Litigators”, <https://www.jdsupra.com/legalnews/december-2018-what-we-learned-as-lehman-20521/> [Accessed 1 February 2023].

<sup>24</sup> “Ultimately, according to the Congressional Oversight Panel, taxpayer funds committed to AIG reached \$182 billion”, see: United States Financial Crisis Inquiry Commission, *Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States* (2011), <https://www.govinfo.gov/content/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf> [Accessed 1 February 2023], p.350.

<sup>25</sup> United States Financial Crisis Inquiry Commission, *Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States* (2011), p.375.

<sup>26</sup> For a short period, RBS was the biggest bank in the world by assets. Government ownership was 84% in 2009, see RBS, “Our Turnaround Story”, [https://www.rbs.com/rbs/about/the\\_bank\\_we\\_are\\_becoming.html](https://www.rbs.com/rbs/about/the_bank_we_are_becoming.html) [Accessed 1 February 2023].

<sup>27</sup> Lloyds had retained an aura of financial solidity until the catastrophic acquisition of the HBOS group.

<sup>28</sup> Reuters, “Judge approves Lehman, Barclays pact” (20 September 2008), <https://www.reuters.com/article/us-lehman-barclays-idUSN1932554220080920> [Accessed 1 February 2023]; BBC, “Judge approves US\$1.3 billion Lehman deal” (20 September 2008), <http://news.bbc.co.uk/1/hi/business/7626624.stm> [Accessed 1 February 2023].

The anonymous author(s), naming themselves Satoshi Nakamoto, outlined in their White Paper a vision of how individuals could digitally hold, send and receive “electronic cash” without a trusted intermediary in the middle.<sup>29</sup>

The novelty of cryptocurrency is that the middleman is cut out—neither a bank nor any other payment processor would stand in the middle between the persons sending and receiving cryptocurrency. No central register would exist to hold them, and the transactions would not pass through any intermediary.<sup>30</sup> In early January 2009, the software for that process was released and the first Bitcoin was minted and the Bitcoin network was launched.<sup>31</sup>

Money wired between the private clients of banks often takes two days or more to be processed as the banks involved in the transaction need to come to a consensus over the status of the accounts. That process produces an audit trail, which allows external verification. With Bitcoin, the process was speeded up—by using a single distributed database, also known as “ledger”, that is accessible to everyone around the world.<sup>32</sup>

A value transfer on a peer-to-peer basis without a trusted intermediary has an advantage: if the status of a database can be agreed at any time, the usual delays in synchronising the databases of two banks can be reduced significantly.<sup>33</sup> The concept of Bitcoin picked up rapidly. The fear of a banking crash driving its invention was substituted by greed for higher and higher returns—from dollar parity in February 2011 to an amount of above £48,000 per Bitcoin (abbreviated as BTC in the markets and XBT by ISO) on 12 November 2022.<sup>34</sup>

One needs to consider how a transaction in Bitcoin works in order to appreciate the economic potential as well as its potential downfall. The following description is based on CFA Institute Research Foundation paper by Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals*, which illustrates the execution of a Bitcoin transaction<sup>35</sup>:

- 1) If A wants to send 5 BTC to B, it sends the message: “A wants to send 5 BTC to B” to all computers that run a copy of the current Bitcoin database. The so-called

<sup>29</sup> Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System” (2008) *bitcoin*, Abstract.

<sup>30</sup> Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System” (2008) *bitcoin*, p.1: “What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party. Transactions that are computationally impractical to reverse would protect sellers from fraud, and routine escrow mechanisms could easily be implemented to protect buyers. In this paper, we propose a solution to the double-spending problem using a peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions. The system is secure as long as honest nodes collectively control more CPU power than any cooperating group of attacker nodes.”

<sup>31</sup> Matt Hougan and David Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021, CFA Institute Research Foundation), p.2.

<sup>32</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.3.

<sup>33</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.3.

<sup>34</sup> Market Summary, Google Finance, [https://www.google.com/finance/?sa=X&ved=2ahUKEwiTm\\_vSnMb7AhXLTKQEHfdbAxwQ6M8CegQICBAG](https://www.google.com/finance/?sa=X&ved=2ahUKEwiTm_vSnMb7AhXLTKQEHfdbAxwQ6M8CegQICBAG) [Accessed 1 February 2023].

<sup>35</sup> A detailed description of how Bitcoin and the mining process works can be found in: Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), pp.4–7.

- private key, which is a unique password assigned to her, lets her sign the message so that the network knows the message is coming from her and not someone else.<sup>36</sup>
- 2) The computers in the Bitcoin network have each a copy of the current database and can confirm that A owns 5 BTC. At that point in time, the particular transaction has only been proposed, and no computer has updated the “ledger” so far. The transactions are placed initially in a “waiting room”, where they await confirmation. The system can rapidly distribute the message to ensure every participant is aware of the particular transaction because it is not settled yet.<sup>37</sup>
  - 3) When A proposes her transaction to the network, many other participants are also sending messages as they also want to send their Bitcoin to various recipients. At that stage, the “miners” enter the network. “Miners” are computers that are located around the world and which aggregate groups of valid new transactions, so called “blocks”, and propose them for settlement.<sup>38</sup>
  - 4) At any given time, ten-thousands of miners are competing with each other for the right to settle the next block. The competition involves solving a complex mathematical puzzle. The mathematical puzzle is a list of characters which represents the computer’s output. In order to solve the puzzle, the miners have to find the correct input so if this input is entered, the result is the correct output.<sup>39</sup>
  - 5) Miners can propose a new block only if they solve the puzzle. If a miner is able to successfully add a block to the blockchain, they will receive 6.25 BTC as a reward.<sup>40</sup> This payment is what incentivises miners to verify each transaction and maintain the database.<sup>41</sup>
  - 6) Once a miner solves the puzzle, it can post the solution and propose a block of transactions to the network.<sup>42</sup> Other members of the network verify the correctness of the solution.<sup>43</sup>
  - 7) If the transactions are valid and the solution is correct, network participants update their copy of the database to reflect the new transactions, including the transaction between A and B. Only at that point in time will the transaction between A and B be considered settled.<sup>44</sup>

<sup>36</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.4.

<sup>37</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.5.

<sup>38</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.5.

<sup>39</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.5.

<sup>40</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.5.

<sup>41</sup> Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System” (2008) *bitcoin*, p.4.

<sup>42</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.6.

<sup>43</sup> Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System” (2008) *bitcoin*, p.3.

<sup>44</sup> Hougan and Lawant, *Cryptoassets: The Guide to Bitcoin, Blockchain, and Cryptocurrency for Investment Professionals* (2021), p.6.



## IV. Regulation

“Accordingly, the most important point to stress is that we should not, like sheep, follow the herd of creatures in front of us, making our way where others go, not where we ought to go.”—Lucius Annaeus Seneca, *Dialogues and Essays*.<sup>45</sup>

Non-identification of owners of cryptoassets may soon be a thing of the past. UK crypto firms had until 31 March 2022 to align themselves with anti-money laundering (AML) laws or leave the country.<sup>46</sup> At around the same time, the European Parliament agreed on draft rules on supervision, consumer protection and environmental aspects of cryptoassets, including cryptocurrency, and the Economic and Monetary Affairs Committee of the European Parliament adopted its negotiating position on new rules on cryptoassets.<sup>47</sup>

In 2022 the European Parliament, the Commission and the Council discussed an AML regulatory package that would make it mandatory for financial institutions to reveal information on various parties’ dealing with cryptoassets. So called “unhosted wallets”, which allow anyone to hold, store and transfer cryptoassets without being “hosted” by a financial institution or credit service provider, would have to shut down in the EU if the draft legislation was implemented—unless some concessions or transition periods were introduced.<sup>48</sup> Voices in both the banking industry and the crypto community became louder in warning that this could be the end of crypto in the EU as we know it.<sup>49</sup>

Countries have responded differently to the challenges—while the EU aims to introduce new comprehensive *regulations* and measures to combat money laundering (Regulation on Markets in Crypto-assets (MiCA)),<sup>50</sup> the UK has opted for “light regulation”, requiring crypto-businesses to register and ensure compliance with anti-money laundering and counter-terrorist financing regulations.<sup>51</sup>

<sup>45</sup> Lucius Annaeus Seneca, *Dialogues and Essays, On the Happy Life, To Gallio* (2008, OUP).

<sup>46</sup> Sally Hickey, “FCA allows ‘small number’ of crypto firms to trade after deadline” (1 April 2022) *FT Adviser*, <https://www.ftadviser.com/investments/2022/04/01/fca-allows-small-number-of-crypto-firms-to-trade-after-deadline/> [Accessed 1 February 2023].

The article explains that in 2021, a “Temporary Registration Regime” was introduced to allow all cryptocurrency firms to continue trading during the registration process with the FCA.

<sup>47</sup> European Parliament, press release, *Cryptocurrencies in the EU: new rules to boost benefits and curb threats* (14 March 2022), <https://www.europarl.europa.eu/news/en/press-room/20220309IPR25162/cryptocurrencies-in-the-eu-new-rules-to-boost-benefits-and-curb-threats> [Accessed 1 February 2023].

<sup>48</sup> Jack Schickler, “EU Crypto Laundering Plans Could Overwhelm Authorities, Bank Regulator Says” (27 April 2022) *CoinDesk*, <https://www.coindesk.com/policy/2022/04/27/eu-crypto-laundering-plans-could-overwhelm-authorities-bank-regulator-says/> [Accessed 1 February 2023].

<sup>49</sup> Schickler, “EU Crypto Laundering Plans Could Overwhelm Authorities, Bank Regulator Says” (27 April 2022) *CoinDesk*.

<sup>50</sup> European Commission, press release, *Beating financial crime: Commission overhauls anti-money laundering and countering the financing of terrorism rules* (20 July 2021), [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_21\\_3690](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3690) [Accessed 1 February 2023]; European Parliament, Briefing, *EU Legislation in Progress, Markets in crypto-assets (MiCA)*, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/739221/EPRS\\_BRI\(2022\)739221\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/739221/EPRS_BRI(2022)739221_EN.pdf) [Accessed 1 February 2023].

<sup>51</sup> UK Government, Policy Paper, *Factsheet: cryptoassets technical* (updated 18 January 2023), <https://www.gov.uk/government/publications/economic-crime-and-corporate-transparency-bill-2022-factsheets/fact-sheet-cryptoassets-technical#:~:text=Cryptoassets%27%20application%20and%20infrastructure%20are,market%20cap%20neared%20%243%20trillion> [Accessed 21 February 2023].

However, digital assets are fleeting and many crypto firms and other market participants, who are trading in them, are highly mobile. Thus, the attempt to regulate cryptoassets can only truly succeed if done on a global basis. Such regulation would, however, defy the very notion of crypto: an independent peer-to-peer electronic transaction system removed from the scrutiny and control exercised by governments, central banks, banks and any other payment system providers. Current trends need to be observed carefully—they lead not only towards a tighter regulation of current peer-to-peer transactions, but there are also efforts to issue a digital currency by central banks, like the digital yuan (abbreviated as e-CNY).<sup>52</sup>

What the foregoing may mean in the long term for traditional currency and cash remains to be seen. The trend, however, is undeniable: there are efforts to progress cryptocurrency from a peer-to-peer payment system towards a central bank issued digital currency—which may not only bring an end to physical cash as we know it, but may, at the same time, make the monetary transactions of every single human on earth completely transparent and controllable.<sup>53</sup>

China has banned cryptocurrencies (including mining and transactions) but has issued the digital yuan as one of the first Central Bank Digital Currencies (CBDC) to track spending and all currency movements.<sup>54</sup> India followed with the pilot of its own digital rupee.<sup>55</sup> Indeed, a brave new world.

## V. Accounting of cryptocurrencies

“In order to know an object, I must know not its external but all its internal qualities.”—Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*<sup>56</sup>

Nakamoto explicitly referred to Bitcoin as “electronic cash”, maintaining that: “A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution.”<sup>57</sup>

But how do we define, characterise and measure cryptoassets, particularly cryptocurrencies, for accounting purposes? The central issues are how cryptocurrencies are classified and if they are measured at historic cost or fair value less costs of sale, and impairments.

<sup>52</sup> Arendse Huld, “China Launches Digital Yuan App — All You Need to Know” (22 September 2022) *China Briefing from Dezan Shira & Associates*, <https://www.china-briefing.com/news/china-launches-digital-yuan-app-what-you-need-to-know/> [Accessed 1 February 2023]; also: Eric Dunne, “China Doles Out Free Digital Yuan During New Year to Boost Adoption” (updated 6 February 2023) *inside bitcoins*, <https://insidebitcoins.com/news/china-doles-out-free-digital-yuan-during-new-year-to-boost-adoption> [Accessed 21 February 2023].

<sup>53</sup> Instructive with respect of the potential control and scrutiny that governments can obtain by issuing digital currencies: Jennifer Conrad, “China’s Digital Yuan Works Just Like Cash—With Added Surveillance” (8 November 2022) *Wired*, <https://www.wired.com/story/chinas-digital-yuan-ecny-works-just-like-cash-surveillance/> [Accessed 21 February 2023].

<sup>54</sup> Conrad, “China’s Digital Yuan Works Just Like Cash—With Added Surveillance” (8 November 2022) *Wired*. The author rightfully observes: “If somebody goes crosswise with the government, suddenly their e-wallets could disappear, or they can’t even get in a taxi or go to a restaurant.”

<sup>55</sup> “RBI Digital Rupee: E-Rupee to be Piloted by 5 More Banks in 9 More Cities Soon” (updated 8 February 2023) *Zeenews*, <https://zeenews.india.com/personal-finance/rbi-digital-rupee-e-rupee-to-be-piloted-by-5-more-banks-in-9-more-cities-soon-2571152.html> [Accessed 20 February 2023].

<sup>56</sup> Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, Translation by CK Ogden (1922, Kegan Paul, Trench, Trubner & Co Ltd), para.2.01231.

<sup>57</sup> Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System” (2008) *bitcoin*, Abstract, p.1.

## A. Classification

In the White Paper, Nakamoto identifies the purpose of Bitcoin as follows:

“Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. [...] The cost of mediation increases transaction costs [...], and there is a broader cost in the loss of ability to make non-reversible payments for non-reversible services. [...] These costs and payment uncertainties can be avoided in person by using physical currency, but no mechanism exists to make payments over a communications channel without a trusted party. *What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party.*”<sup>58</sup>

Bitcoin was intended to be a peer-to-peer *electronic cash system* by its founder.

The International Financial Reporting Standards (IFRS) Interpretations Committee based its tentative decision on the holding of cryptocurrencies as concerning

“cryptocurrencies with all of the following characteristics:

- (a) a cryptocurrency that is a digital or virtual currency recorded on a distributed ledger and uses cryptography for security.
- (b) a cryptocurrency that is not issued by a jurisdictional authority or other party.
- (c) a holding of a cryptocurrency that does not give rise to a contract between the holder and another party.”<sup>59</sup>

If one considers the accounting treatment without prejudice based on the economic properties of cryptocurrencies, the following choices should be considered: IAS 7 Statement of Cash Flows (IAS 7), IAS 32 Financial Instruments: Presentation (IAS 32), IFRS 9 Financial Instruments (IFRS 9), IAS 38 Intangible Assets (IAS 38) and IAS 40 Investment Property (IAS 40).

### 1. IAS 32: financial asset?

Accounting cryptocurrencies as a financial asset at “fair value through profit or loss” (FVTPL) in accordance with IFRS 9 would have the policy advantage of having a ready system that measures cryptocurrencies in a timely manner. To be able to do so, cryptocurrencies must meet the definition of IAS 32.

If a cryptocurrency is a *financial asset within IAS 32*, it must be an asset that is:

- 1) *cash*;
- 2) *an equity instrument* of another entity;
- 3) *a contractual right*
  - (a) to receive cash or another financial asset from another entity; or

<sup>58</sup> Nakamoto, “Bitcoin, A Peer-to-Peer electronic cash system” (2008) *bitcoin*, Introduction, p.1, emphasis added.

<sup>59</sup> IFRS, Interpretations Committee Meeting, “Holding of Cryptocurrencies”, Agenda ref 12 (June 2019), <https://www.ifrs.org/content/dam/ifrs/meetings/2019/june/ifric/ap12-holdings-of-cryptocurrencies.pdf> [Accessed 1 February 2023], p.1.

- (b) to exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity; or
- 4) *a contract* that will or may be *settled in the entity's own equity instruments* and is:
  - (a) a non-derivative for which the entity is or may be obliged to receive a variable number of the entity's own equity instruments; or
  - (b) a derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments. For this purpose, the entity's own equity instruments do not include puttable financial instruments classified as equity instruments in accordance with paragraphs 16A and 16B, instruments that impose on the entity an obligation to deliver to another party a pro-rata share of the net assets of the entity only on liquidation and are classified as equity instruments in accordance with paragraphs 16C and 16D, or instruments that are contracts for the future receipt or delivery of the entity's own equity instruments.<sup>60</sup>

The IFRS Interpretations Committee “concluded that a holding of cryptocurrency is not a financial asset”<sup>61</sup> because it is neither cash (nor cash equivalent) and further highlighted that cryptocurrency is not “an equity instrument of another entity” and “does not give rise to a contractual right for the holder and it is not a contract that will or may be settled in the holder's own equity instruments”.<sup>62</sup>

Although the authors agree with the latter part of the statement, the case for or against cryptocurrencies being “digital cash” or “cash equivalents” is more complex and deserves further investigation.

IAS 7 concerns *cash and cash equivalents* but it does not define cash. Thus, to determine if cryptocurrency is digital cash, one must look at IAS 32 Financial Instruments: Presentation, which says that “*currency (cash) is a financial asset* because it represents the medium of exchange and is, therefore, the basis on which all transactions are measured and recognised in financial statements”.<sup>63</sup>

**(1) The case against digital cash** In a traditional currency setting (a fiat-based system), a currency or cash is anything the state orders to be money, and the market accepts to be money. Thus, a legal tender takes place, and central banks issue the countries' currency in return for securities. In theory, the monetary system is open-ended, and a currency is unlimited.

However, the value of a currency is related to the general outputs of an economy. In theory, depending upon central bank policies, the money supply expands and contracts as the economy grows and shrinks.

<sup>60</sup> IAS 32, para.11.

<sup>61</sup> IFRS, *IFRIC Update March 2019*, Holding of Cryptocurrencies—Agenda Paper 4 (March 2019), <https://www.ifrs.org/news-and-events/updates/ifric/2019/ifric-update-march-2019/#1> [Accessed 1 February 2023].

<sup>62</sup> IFRS, *IFRIC Update March 2019*, Holding of Cryptocurrencies—Agenda Paper 4.

<sup>63</sup> IAS 32, para.AG3.

By contrast, most cryptocurrencies are not issued or backed by any government, except for the digital yuan. There is no legal tender.<sup>64</sup> Bitcoin and other cryptocurrencies only exist in a finite number of electronic units, and the value of the units depends upon the operation of a market, bringing buyers and sellers together.

The IFRS Interpretations Committee states that:

“[...] it is not aware of any cryptocurrency that is used as a medium of exchange and as the monetary unit in pricing goods or services to such an extent that it would be the basis on which all transactions are measured and recognised in financial statements. Consequently, the Committee concluded that a holding of cryptocurrency is not cash because cryptocurrencies do not currently have the characteristics of cash.”<sup>65</sup>

Thus, the IFRS Interpretation Committee argues that cryptocurrency is not cash because it cannot be readily exchanged for any good or service.<sup>66</sup>

**(2) The case for digital cash** The majority view that classifies cryptocurrencies as neither currency nor cash can be contested on a number of grounds.

First, the classification of cryptocurrency as an asset class is a moving target for accounting purposes. For example, the digital yuan meets the criteria of a currency and money,<sup>67</sup> and the Central Bank of the Bahamas issued the Sand Dollar in 2020. Ten countries have fully launched a digital currency, and 105 countries, representing 95 per cent of the global GDP, are at least exploring the launch of Central Bank Digital Currencies (CBDC).<sup>68</sup> Thus, the legal tender argument does not apply to CBDCs.

Secondly, some merchants accepted cryptocurrencies as a means of payment for their goods before the sharp decline in the value of cryptocurrencies in 2022.<sup>69</sup> There were, therefore, already indications in the market that Bitcoin was seen as a means of paying for goods and services. Indeed, Microsoft accepted Bitcoin as a payment method as early as 2014.<sup>70</sup>

Thirdly, Bitcoin was sold at automated teller machines (ATMs) in the UK and is now sold at cash machines in Germany. In the UK, there were a total of 81 Bitcoin ATMs, where people could buy cryptocurrency at a cash machine. The Financial Conduct Authority (FCA) shut down

<sup>64</sup> PWC, “Cryptographic assets and related transactions: accounting considerations under IFRS”, *In depth: A look at current financial reporting issues* (December 2019), No. 2019-05, <https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf> [Accessed 1 February 2023], p.5, 2.2.1.

<sup>65</sup> IFRS, *IFRIC Update March 2019*, Holdings of Cryptocurrencies, Agenda Paper 4.

<sup>66</sup> IFRS Viewpoint, “Accounting for cryptocurrencies — the basics” (May 2018), <https://www.grantthornton.global/globalassets/1.-member-firms/global/insights/article-pdfs/ifrs/ifrs-viewpoint-9---accounting-for-cryptocurrencies-the-basics.pdf> [Accessed 1 February 2023], p.4.

<sup>67</sup> Huld, “China Launches Digital Yuan App – All You Need to Know” (22 September 2022) *China Briefing, from Denzan Shira & Associates*; also: Kent Thune, “Digital Yuan: China’s Digital Currency” (updated 6 October 2022) *Seeking Alpha*, <https://seekingalpha.com/article/4453452-digital-yuan> [Accessed 21 February 2023].

<sup>68</sup> Atlantic Council, “Central Bank Cryptocurrency Tracker”, <https://www.atlanticcouncil.org/cbdctracker/> [Accessed 1 February 2023].

<sup>69</sup> Rohit KVN, “After Bitcoin, Tesla now accepts Dogecoin cryptocurrency for merchandise purchase” (2022) *Deccan Herald*, <https://www.deccanherald.com/business/technology/after-Bitcoin-tesla-now-accepts-dogecoin-cryptocurrency-for-merchandise-purchase-1071023.html> [Accessed 1 February 2023].

<sup>70</sup> Gabriella Modderman, “Who accepts Bitcoin as payment?” (5 June 2022) *Cointelegraph*, <https://cointelegraph.com/explained/who-accepts-Bitcoin-as-payment> [Accessed 1 February 2023].

those unregulated Bitcoin ATMs in March 2022.<sup>71</sup> Despite this, Bitcoin continues to have the appearance of cash.

Fourthly, we need to take a closer look at what Bitcoin stands for. The inventor of Bitcoin intended to create a peer-to-peer electronic cash system and this supports the categorisation of Bitcoin as cash. Further, cryptocurrency can be seen as behaving like cash but without the backing of a government. The public sees cryptocurrency as something that symbolises monetary value. It is seen as a means of storing value outside a traditional monetary system.

Fifthly, their classification as an intangible asset does not fit the character of cryptocurrencies. When compared to goodwill, trademarks and copyrights, which have been accumulated in a business and contain a substantial economic value created over the years, cryptocurrencies are highly volatile, as can be seen by the many ups and downs in recent years. Cryptocurrencies behave more like high-risk financial assets or volatile currencies such as the Turkish Lira.

Sixthly, cryptocurrencies like Bitcoin can be converted into cash either at a Bitcoin exchange or by using a third-party broker and paying a fee. Of course, the value of Bitcoin depends on supply and demand. Bitcoin sellers can sell their Bitcoin at such a decentralised exchange and convert it into cash if a buyer is willing to pay the amount requested, although the prices are highly volatile.

Lastly, if cryptocurrencies are something other than digital cash, that will also have consequences as far as the tax treatment of cryptocurrencies is concerned. Classification as a financial asset and accounting of cryptocurrencies at FVTPL could benefit governments for tax policy reasons. The accounting and taxation rules that govern financial assets are a well-developed system that allows many taxation issues regarding loss recognition, ring-fencing of losses and avoidance schemes to be dealt with. Classification of cryptocurrencies as financial assets (and not intangible assets) in the financial accounts can be helpful in addressing such taxation issues.

That said, the accounting world does not—at the time of writing this article—see cryptocurrency as digital cash as Nakamoto originally intended.

**(3) Cash equivalent?** “Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.”<sup>72</sup>

Against the qualification of cryptocurrencies as being “cash equivalent”, it has been argued that because cryptocurrencies are highly volatile, they cannot be regarded as cash equivalent.<sup>73</sup> That argument seems strong, as illustrated by the following comparison: from 20 January 2020 to 19 January 2023, the maximum US dollar against Turkish Lira volatility was approximately 80 per cent, whereas the maximum US dollar against Bitcoin volatility was 432 per cent, according

<sup>71</sup> BBC, “Bitcoin cash machines ordered to shut down in UK” (11 March 2022) *BBC News*, <https://www.bbc.com/news/technology-60709209> [Accessed 1 February 2023].

<sup>72</sup> IAS 7, para. 6.

<sup>73</sup> Grant Thornton, “IFRS Viewpoint, Accounting for Cryptocurrencies — the basics” (May 2018), <https://www.granthornton.global/globalassets/1.-member-firms/global/insights/article-pdfs/ifrs/ifrs-viewpoint-9---accounting-for-cryptocurrencies--the-basics.pdf> [Accessed 1 February 2023].

to the GARCH volatility analysis.<sup>74</sup> Still, Bitcoin has only been around for 13 years, and it may become less volatile over the years.

In favour of the notion of being “cash equivalent”, it can be said that CBDCs, such as the digital yuan, can be seen as cash-like as there is legal tender. Furthermore, goods and services in China’s retail sector can be bought with the digital yuan.<sup>75</sup>

A distinction between the digital yuan and Bitcoin seems arbitrary as Bitcoin de facto functions as an alternative payment method conducted through the internet without the perceived or real constraints that other money transfer methods, such as bank transfers and money wires, provide.<sup>76</sup>

Although there are important arguments for regarding cryptocurrencies as “digital cash” or cash equivalent, the UK accounting community currently does not agree because (1) cryptocurrencies are not backed by a government or central bank, (2) they are not considered legal tender in almost all jurisdictions, and (3) to be a measure of value, money has to have a degree of stability of value which is absent in the case of cryptocurrencies.

## 2. IFRS 9: derivative?

Some might consider whether or not a cryptocurrency can be regarded as some form of derivative because they seem complex and novel. According to John Hull, a derivative is defined as “a financial instrument whose value depends on the value of other, more basic, underlying variables”.<sup>77</sup>

The accounting definition of derivative is well-known. It is set out in Appendix A to IFRS 9. The same definition is to be found verbatim in the Glossary of Appendix 1 to FRS 102, where a derivative is defined as:

“A *financial instrument* or other contract with all three of the following characteristics:

- (a) its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable (sometimes called the ‘underlying’), provided in the case of a non-financial variable that the variable is not specific to a party to the contract;
- (b) it requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors; and
- (c) it is settled at a future date.”<sup>78</sup>

Cryptocurrency has none of the characteristics outlined in the definition set out in IFRS 9.

<sup>74</sup> Bitcoin to US Dollar GARCH Volatility Analysis, <https://vlab.stern.nyu.edu/volatility/VOL.BTCUSD%3AFOREX-R.GARCH> [Accessed 1 February 2023].

<sup>75</sup> Oriol Caudevilla, “China’s digital yuan can leverage the Belt and Road Initiative” (12 August 2022) *China Daily*, <https://www.chinadaily.com.cn/a/202208/12/WS62f9a7d1a310fd2b29e722e9.html> [Accessed 1 February 2023].

<sup>76</sup> Alternative Payments, “Bitcoins and other Cryptocurrencies”, <https://www.alternativepayments.com/payment-methods/Bitcoin.html> [Accessed 1 February 2023].

<sup>77</sup> John Hull and Sankarshan Basu, *Options, Futures, and Other Derivatives*, 10th edn (2018, Pearson), p.1.

<sup>78</sup> Financial Reporting Council, “FRS 102, The Financial Reporting Standard applicable in the UK and the Republic of Ireland” (March 2018), [https://www.frc.org.uk/getattachment/69f7d814-c806-4ccc-b451-aba50d6e8de2/FRS-102-FRS-applicable-in-the-UK-and-Republic-of-Ireland-\(March-2018\).pdf](https://www.frc.org.uk/getattachment/69f7d814-c806-4ccc-b451-aba50d6e8de2/FRS-102-FRS-applicable-in-the-UK-and-Republic-of-Ireland-(March-2018).pdf) page 293 [Accessed 1 February 2023].

First, it is not a financial instrument. Paragraph 11 of IAS 32 defines a financial instrument as “a contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity”.<sup>79</sup> As seen above, cryptocurrency does not qualify as a financial asset. Hence, it cannot qualify as a financial instrument either.

Secondly, none of the three criteria outlined in (a) to (c) of the Glossary of Appendix 1 to FRS 102 are fulfilled, namely:

- as regards (a) the “underlying” is the cryptocurrency itself;
- as regards (b) the full cost of the net investment has to be paid up front;
- as regards (c) settlement is not at a future date.

Thus, although cryptocurrency itself may be an eligible underlying for a derivative contract, it cannot be regarded as a derivative itself—neither for economic nor for legal and accounting purposes.

### 3. IAS 40: investment property?

Before the recent crash of cryptocurrencies in 2022, Bitcoin & Co were often described as “digital gold”, and cryptocurrency firms were ready to claim that people would make the deal of their lifetime if they bought cryptocurrencies.

This claim is at least doubtful. As can be seen from the recent decline of cryptocurrencies, one must be cautious. Cryptocurrencies are, without a doubt, risky and volatile investments.

“Investment property is property (land or a building or part of a building or both) held (by the owner or by the lessee under a finance lease) to earn rentals or for capital appreciation or both.”<sup>80</sup>

Thus, although cryptocurrencies are often held for capital appreciation, they would certainly not fall in to any of the real estate categories mentioned in IAS 40.<sup>81</sup> Simply speaking, they are digital and cannot be touched.

### 4. IAS 38: intangible asset?

In a tentative agenda decision of the IFRS Interpretations Committee, cryptocurrency is regarded as an “intangible asset” under IAS 38 unless it is “held for sale in the ordinary course of a business” in which case IAS 2 Inventories applies.<sup>82</sup>

The June 2019 Agenda Paper cites paragraphs 8 and 12 of IAS 38 and maintains:

“The Committee observed that a holding of cryptocurrency meets the definition of an intangible asset in IAS 38 on the grounds that (a) it is capable of being separated from the

<sup>79</sup> IAS 32, para.11.

<sup>80</sup> IAS 40, para.5.

<sup>81</sup> IAS 40, para.8.

<sup>82</sup> IFRS, *IFRIC Update March 2019*, Holding of Cryptocurrencies, Agenda Paper 4; also IFRS, *IFRIC Update June 2019*, Holding of Cryptocurrencies—Agenda Paper 12, <https://www.ifrs.org/news-and-events/updates/ifric/2019/ifric-update-june-2019/#8> June 2019 [Accessed 1 February 2023].



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.”<sup>83</sup>

PwC states:

“Holding a unit of a cryptocurrency typically does not give the holder a contractual right to receive cash or another financial asset, nor does the cryptocurrency come into existence as a result of a contractual relationship. Moreover, cryptocurrencies do not provide the holder with a residual interest in the assets of an entity after deducting all of its liabilities. Therefore, cryptocurrencies that we have seen so far (November 2019) do not meet the definition of a financial asset.”<sup>84</sup>

**(1) What are the grounds for it?** IAS 38 Intangible Assets defines an intangible asset as “an identifiable non-monetary asset without physical substance”.

**(2) Do the three definitional criteria cumulatively apply?** The authors maintain that one can argue either way (see above V.A.1.(1) to (3)).

*(a) Identifiable?* Bitcoins do not have unique identities. However, Bitcoin balances are stored in uniquely identifiable “transaction outputs” that can only be spent by the owner of the recipient address.<sup>85</sup>

According to the definition of IAS 38, an asset is identifiable if it either:

- “(a) is *separable*, i.e., 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, regardless of whether the entity intends to do so; or
- (b) arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations”.<sup>86</sup>

Grant Thornton maintains: “Cryptocurrency holdings can be traded on an exchange or in peer-to-peer transactions, and therefore meet this part of the definition.”<sup>87</sup>

It is argued that because cryptocurrencies are capable of being separated from the holder and sold or transferred individually, they are also identifiable.<sup>88</sup>

<sup>83</sup> IFRS, *IFRIC Update June 2019*, Holding of Cryptocurrencies—Agenda Paper 12.

<sup>84</sup> PwC, “Cryptographic assets and related transactions: accounting considerations under IFRS”, *In depth: A look at current financial reporting issues* (December 2019), No.2019-05, p.5, 2.2.1.

<sup>85</sup> Ivy Wigmore, *Bitcoin Address*, <https://www.techtarget.com/whatis/definition/Bitcoin-address> [Accessed 1 February 2023].

<sup>86</sup> IAS 38, para.12, emphasis added.

<sup>87</sup> Grant Thornton, “IFRS Viewpoint, Accounting for Cryptocurrencies — the basics” (May 2018), <https://www.granthornton.global/globalassets/1.-member-firms/global/insights/article-pdfs/ifrs/ifrs-viewpoint-9---accounting-for-cryptocurrencies--the-basics.pdf> [Accessed 1 February 2023], p.6.

<sup>88</sup> Crowe, “Accounting for cryptocurrencies in the financial statements” (1 June 2021), <https://www.crowe.com/my/insights/how-should-cryptocurrencies--be-accounted--for-in-the--financial-statements> [Accessed 1 February 2023]; ACCA, “Accounting for Cryptocurrencies”, <https://www.accaglobal.com/in/en/student/exam-support-resources/professional-exams-study-resources/strategic-business-reporting/technical-articles/cryptocurrencies.html> [Accessed 1 February 2023].

It is said that cryptocurrencies like Bitcoin are easily transferrable in peer-to-peer transactions or on an exchange. It should be noted, however, that Bitcoins can only be transferred in the Bitcoin system if miners propose the next block for settlement in the blockchain. Thus, talking about peer-to-peer transactions is confusing as they can only be moved within the Bitcoin system when the next block is settled. The authors agree, however, that Bitcoins can be purchased and sold at decentralised Bitcoin exchanges.

Thus, as long as there are buyers and sellers, Bitcoin holders can convert their Bitcoin into cash, just like any other currency. Therefore, as cryptocurrencies can be traded at an exchange, Bitcoin & Co should be considered identifiable.

*(b) Non-monetary asset?* Cryptocurrencies are regarded neither as cash nor cash equivalent—see above. IAS 21 defines monetary assets as “units of currency held and assets and liabilities to be received or paid in a fixed or determinable number of units of currency”.<sup>89</sup>

It has been argued that the value of a cryptocurrency “is not fixed or determinable but subject to major variations that arise from supply and demand and cannot be predicted. Therefore, it is not monetary but non-monetary in nature.”<sup>90</sup>

The value of cryptocurrency is not fixed. It fluctuates like other currencies but is more volatile. Through decentralised currency exchanges, cryptocurrency can be exchanged for a precisely determinable amount of fiat currency. Like every other traditional currency, Bitcoin also depends on supply and demand for it in the market, even if it is not backed by the economic growth of an economy and even if it is not legal tender.<sup>91</sup>

*(c) Without physical substance?* As cryptocurrencies are digital, they do not have a physical presence.

In summary, accounting firms in the UK take the view—based on the considerations outlined above—that cryptocurrencies should be treated as intangible assets under IAS 38 as appropriate.

## *B. Measurement of cryptocurrencies*

In the case of individuals, gains or losses are recorded on a realisation (cash) basis.

For *businesses and companies*, there are the following possibilities: cost model, revaluation model or fair value model.

The *fair value model* will be applied if cryptocurrencies are held in the context of *trading activity*. For *businesses and companies* holding cryptocurrencies as an *investment*, the *cost or revaluation model* should apply.

If the *cost model* is used, intangible assets are measured at cost upon initial recognition. They are subsequently measured at cost, less accumulated amortisation<sup>92</sup> and impairment losses.

<sup>89</sup> IAS 38, para.8.

<sup>90</sup> Grant Thornton, “IFRS Viewpoint, Accounting for Cryptocurrencies — the basics” (May 2018), p.6.

<sup>91</sup> Animesh Singh, “Can cryptocurrency be converted into cash?” (31 October 2021) *NTDV Profit*, <https://www.ndtv.com/business/can-cryptocurrency-be-converted-into-cash-read-on-to-find-out-2594499> [Accessed 1 February 2023].

<sup>92</sup> When applying IAS 38, many accountancy firms regard cryptocurrencies as having “an indefinite useful life when there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity” (IAS 38, para.88), with the result, that cryptocurrencies shall not be amortised (IAS 38, para.107) but either annually (IAS 38, para.108(a)) tested for impairment or “whenever there is an indication that the intangible asset may be

If applying the *revaluation model*, intangible assets can be accounted for at a revalued amount if there is an active market for them. That is the case for major cryptocurrencies like Bitcoin, but it may not be the case for illiquid cryptocurrencies.

It should be noted that the same measurement model should be used for all assets in an asset class. Hence, if a business is holding different cryptocurrencies for investment purposes and there is not an active market for all cryptocurrencies held, those assets should be measured using the cost model.

## 1. Critical voices

**(1) Accounting literature** In a 2019 paper, Smith, Petkov and Lahijani differentiate between externally and internally created cryptoassets. They propose to record externally created cryptoassets “at cost and amortize based on their useful life (if such can reasonably be determined). Alternatively, test for impairment on a periodic basis.”<sup>93</sup> They suggest this differentiation because “different accounting treatments for externally acquired versus internally generated intangible assets present earnings management opportunities”.<sup>94</sup>

**(2) Australia** The Australian Accounting Standards Board (AASB) maintains that neither the cost model nor the revaluation model in IAS 38 provide relevant information on cryptocurrencies.<sup>95</sup>

It is interesting to read the reasoning of the AASB which addresses many valid concerns:

“We do not believe that IAS 38’s measurement guidance provides relevant information, because:

- IAS 38 is written from the perspective of assets (without physical substance) used in the production of cash flows. It is not designed to deal with items held for speculative or investment purposes or for items with cash-like features used for the payment of goods or services;
- Cost approach:
  - Cost is a historical measurement and does not provide current information;
  - Amortisation reflects the pattern of consumption which is irrelevant for items held for investment purposes;

impaired” (IAS 38, para.108(b)). See for example: Grant Thornton, “IFRS Viewpoint, Accounting for Cryptocurrencies – the basics” (May 2018), p.8: “Given that cryptocurrencies are designed to act as a store of value over time, our view is that they would be considered to have an indefinite life for the purposes of IAS 38”; PwC, “Cryptographic assets and related transactions: accounting considerations under IFRS”, *In depth: A look at current financial reporting issues* (December 2019), No.2019-05, pp.6–7, 2.2.2.

<sup>93</sup> Sean Stein Smith, Rossen Petkov and Richard Lahijani, “Blockchain and Cryptocurrencies — Considerations for Treatment and Reporting for Financial Services Professionals” (2019) 19 *The International Journal of Digital Accounting Research* 59, 69, [http://www.uhu.es/ijdar/10.4192/1577-8517-v19\\_3.pdf](http://www.uhu.es/ijdar/10.4192/1577-8517-v19_3.pdf) [Accessed 1 February 2023].

<sup>94</sup> Smith, Petkov and Lahijani, “Blockchain and Cryptocurrencies — Considerations for Treatment and Reporting for Financial Services Professionals” (2019) 19 *The International Journal of Digital Accounting Research* 59, 69–74. Also, Pearl Tan and Tracey Zhang, “Cryptocurrency Framework” (February 2021) *Accounting and Business*, <https://abmagazine.accaglobal.com/global/articles/2021/feb/technical/cryptocurrency-framework.html> [Accessed 1 February 2023].

<sup>95</sup> Henry Venter, “Digital Currency — A case for standard setting activity”, ASSB, EEG Meeting, Agenda Paper 2D (May 2018), <https://www.ifrs.org/content/dam/ifrs/meetings/2018/may/eeg/ap2d-digital-currencies-paper.pdf> [Accessed 1 February 2023], p.17.

- Impairments would only recognise decreases in value;
- Revaluation approach:
  - IAS 38 only allows a revaluation approach when active markets exist for an intangible assets. Under IAS 38, if a market becomes inactive, the entity will not be permitted to continue the use of the revaluation and records only subsequent amortisation and impairment from the point when the market became inactive. On the other hand, IFRS 13 *Fair Value Measurement* guidance adequately and robustly considers fair value measurements in scenarios where markets become inactive;
  - Revaluation changes are not always reflected in profit or loss. Consequently, profit and loss is not appropriately reflecting the performance of an asset held for speculative purposes or for items with cash-like features.”<sup>96</sup>

The AASB concludes:

“In our opinion, fair value measurements are the most appropriate measurement basis for both the Statement of Financial Position and the Statement of financial performance. Furthermore, we believe that the most relevant and useful information would be if changes in fair value are presented in the statement of profit or loss.”<sup>97</sup>

**(3) US Financial Accounting Standards Board** On 12 October 2022, the Financial Accounting Standards Board (FASB) published a tentative board decision made at an FASB Board Meeting, namely that:

“The Board decided to require an entity to:

1. Measure crypto assets at fair value, using the guidance in Topic 820, Fair Value Measurement.
2. Recognize increases and decreases in fair value in comprehensive income each reporting period.
3. Recognize certain costs incurred to acquire crypto assets, such as commissions, as an expense (unless the entity follows specialized industry measurement guidance that requires otherwise).

The Board also considered:

1. Various measurement alternatives for crypto assets with inactive markets and decided not to pursue those alternatives.
2. Whether to provide implementation guidance relative to the application of fair value measurement of crypto assets and decided not to provide additional measurement guidance as part of this project.

<sup>96</sup> Venter, “Digital Currency — A case for standard setting activity”, ASSB, EEG Meeting, Agenda Paper 2D (May 2018), pp.17–18.

<sup>97</sup> Venter, “Digital Currency — A case for standard setting activity”, ASSB, EEG Meeting, Agenda Paper 2D (May 2018), p.19.

3. Whether there should be a difference for private companies for the measurement of crypto assets and decided that the measurement and recognition requirements should be the same for all entities.<sup>98</sup>

Thus, the US FASB effectively asks businesses to measure cryptoassets at fair value.

## 2. Current UK position

Most companies and businesses are likely to apply the cost model. Given that there is no definitive categorisation as yet (financial instrument, inventory, cash equivalent, intangible fixed asset), there will be a temptation to choose a classification (and measurement) that accords with the preferred accounting and tax outcome.

Thus, if the cost model is applied, only impairments losses will be recognised, whereas increases in value above cost will not be recognised; that means, no accruals.<sup>99</sup>

Consequently, the taxation of earnings can be deferred by allowing deductions for impairment losses for tax purposes, even if the digital assets are not sold and stand at an overall (economic) gain because of subsequent price increases (see below section VI.B.).

## VI. Cryptotaxation

“The time will come when diligent research over long periods will bring to light things which now lie hidden.”—Lucius Annaeus Seneca, *Natural Questions*.<sup>100</sup>

HMRC define cryptoassets as “cryptographically secured digital representations of value or contractual rights that can be transferred, stored [and] traded electronically”.<sup>101</sup>

HMRC define four main types of cryptoassets:

- 1) exchange tokens;
- 2) utility tokens;
- 3) security tokens;
- 4) stablecoins.

Stablecoins promise to “minimise volatility as they may be pegged to something that is considered to have a stable value such as a fiat currency (government-backed, for example US dollars) or precious metals such as gold”.<sup>102</sup>

There are many interesting questions regarding the taxation of cryptoassets. The authors have chosen two topics that they believe are of particular relevance.

<sup>98</sup> FASB, “Tentative Board Decisions” (12 October 2022), <https://www.fasb.org/Page/PageContent?pageId=/meetings/pastmeetings/10-12-22.html&bcpath=fff> [Accessed 1 February 2023].

<sup>99</sup> Similar: Venter, “Digital Currency — A case for standard setting activity”, ASSB, EEG Meeting, Agenda Paper 2D (May 2018), p.18: “Impairments would only recognise decreases in value”.

<sup>100</sup> Lucius Annaeus Seneca, *Natural Questions (The Complete Works of Lucius Annaeus Seneca)* (2014, University of Chicago Press).

<sup>101</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO10100, “Introduction to cryptoassets: what are cryptoassets”, <https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual/crypto10100> [Accessed 1 February 2023].

<sup>102</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO10100, “Introduction to cryptoassets: what are cryptoassets”.

### A. Location of cryptoassets

Cryptoassets exist in the cloud. Cryptoassets are digital in nature. As such HMRC hold that “the location of the cryptoasset will be determined by the residency of the beneficial owner”.<sup>103</sup> In other words cryptoassets are connected to the state of residence of the owner for the purposes of both international private law and tax law.

But it is not that simple as HMRC support a bifurcated approach:

1) “Where the cryptoasset is simply a digital representation of an underlying asset then the location of the underlying asset will determine the location of the cryptoasset.”<sup>104</sup>

HMRC give an example of where a digital token represents gold bullion and maintains that the location of the cryptoasset will be the physical location of the gold bullion. The same applies to intangible assets like share capital or debt.<sup>105</sup> Sections 275 to 275B of the Taxation of Chargeable Gains Act 1992 (TCGA) provide an exhaustive list of the different types of assets for CGT purposes and their location,<sup>106</sup> including immovable property.

Stablecoins are diverse and can either be pegged to a fiat currency or precious metals. There are also crypto-backed stablecoins and algorithmic stablecoins that use computer algorithms to control price fluctuations.<sup>107</sup> That does not automatically mean that the location of the stablecoins is where the issuer of the stablecoins holds the underlying US dollar, as foreign currencies are not contained in the list of sections 275 to 275B TCGA. In the case of stablecoins pegged to gold, the location of any physical gold is not decisive for the location of the stablecoins as the pegging does not represent “the beneficial interest in one gold bar”.<sup>108</sup> Instead, the value of the stablecoins is merely hedged with gold or gold-linked financial instruments.

According to the principles outlined by HMRC, the location of an NFT over real estate should be the location of the real estate itself if the NFT is a mere representation of the real estate.<sup>109</sup>

In contrast, an NFT over a specific artwork does not have the location where the artwork is located as the artwork does not fall within the exhaustive list of sections 275 to 275B TCGA.

However, if art NFTs are own creations by digital artists that do not represent any underlying physical artwork,<sup>110</sup> the authors believe that they would fall under alternative 2) below.

2) If no underlying asset exists, for example in the case of cryptocurrencies or art NFTs that do not represent an underlying artwork (see above), the only identifiable party is the beneficial

<sup>103</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO22600, “Cryptoassets for individuals: Capital Gains Tax: determining the location of exchange tokens”, “No Underlying Asset”, <https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual/crypto22600> [Accessed 1 February 2023].

<sup>104</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO22600, “Cryptoassets for individuals: Capital Gains Tax: determining the location of exchange tokens”, “Underlying Asset”.

<sup>105</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO22600, “Cryptoassets for individuals: Capital Gains Tax: determining the location of exchange tokens”, “Underlying Asset”.

<sup>106</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO22600, “Cryptoassets for individuals: Capital Gains Tax: determining the location of exchange tokens”, “Underlying Asset”.

<sup>107</sup> Michelle Legg, “What are stablecoins and how is it taxed?” (24 August 2022) *Koinly Blog*, <https://koinly.io/blog/what-are-stablecoins-how-are-they-taxed/> [Accessed 1 February 2023].

<sup>108</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO22600, “Cryptoassets for individuals: Capital Gains Tax: determining the location of exchange tokens”, “Underlying Asset”.

<sup>109</sup> Taxation of Chargeable Gains Act 1992 s.275(1)(a) names real estate.

<sup>110</sup> Jakob Hale, “Top 10 most expensive NFTs ever sold” (8 December 2022) *Dexerto*, <https://www.dexerto.com/tech/top-10-most-expensive-nfts-ever-sold-1670505/> [Accessed 2 February 2023].

owner of the cryptoasset. Consequently, HMRC propose “that the location of the cryptoasset will be determined by the residency of the beneficial owner”<sup>111</sup> as determined by the Statutory Residence Test.<sup>112</sup>

In principle, if a UK resident taxpayer is taxed on the remittance basis, then, as a rule, foreign income and gains are only taxed in the UK to the extent to which they are remitted to the UK.

The location rule for cryptoassets without underlying assets is changing that. If a resident, non-domiciled taxpayer holds cryptoassets, those assets will have mostly (see above) a UK situs because of the UK residence of the holder (beneficial owner) of the cryptoassets. That those assets are in fact held outside the UK does not matter, as the residence (not the domicile) of the beneficial owner of the cryptoassets is decisive.<sup>113</sup>

The Society of Trust and Estate Practitioners (STEP) takes a different view with respect to cryptoassets without underlying assets, criticising HMRC’s stance as lacking legal basis.<sup>114</sup> The solution proposed by STEP looks instead to the location of the private key, the tool used to implement any cryptoasset transaction.

However, the location of the private key will simply be that of the legal or natural person who is the owner, so this reformulation may add little of substance.

### *B. Impairment losses*

HMRC’s fundamental position is that cryptoassets do not constitute currency or money and that they are to be taxed based on their nature and usage. Thus, the accounting treatment of cryptoassets plays a decisive role. Businesses and companies investing in cryptoassets commonly account for them as intangible assets under IFRS 38, in the same way as goodwill, trademarks or patents (see above).

Based on the classification as intangible assets, businesses and companies can recognise impairment losses for movements below cost but do not account for any movement above cost in their financial accounts until the disposal of the cryptoassets.

Tax compliance has been a concern for governments worldwide. US companies, such as MicroStrategy, show significant impairment losses in their accounts. For example,

<sup>111</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO22600, “Cryptoassets for individuals: Capital Gains Tax: determining the location of exchange tokens”.

Instructive: Natasha Oakshett, Lauren Rapeport, Ed Cubitt, “Taxation of cryptoassets: location, location, location” (21 September 2021) *Withersworldwide*, <https://www.withersworldwide.com/en-gb/insight/taxation-of-cryptoassets-location-location-location> [Accessed 1 February 2023].

<sup>112</sup> HMRC, Internal Manual, *Residence, Domicile and Remittance Basis Manual* (9 March 2016, updated 12 January 2023), RDRM11000, “Residence: The Statutory Residence Test (SRT): contents”, <https://www.gov.uk/hmrc-internal-manuals/residence-domicile-and-remittance-basis/rdrm11000> [Accessed 1 February 2023].

<sup>113</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO22600, “Cryptoassets for individuals: Capital Gains Tax: determining the location of exchange tokens”.

<sup>114</sup> STEP, *Guidance Note: Location of Cryptocurrencies — an alternative view* (2021), [https://www.step.org/system/files/media/files/2021-09/step\\_note\\_location\\_of\\_cryptocurrencies-an\\_alternative\\_view\\_0.pdf](https://www.step.org/system/files/media/files/2021-09/step_note_location_of_cryptocurrencies-an_alternative_view_0.pdf) [Accessed 1 February 2023].

“[a]s of December 31, 2022, the carrying value of MicroStrategy’s digital assets (comprised of approximately 132,500 bitcoins) was \$1.840 billion, which reflects cumulative impairment losses of \$2.153 billion since acquisition”.<sup>115</sup>

The use of impairment losses by some US companies to minimise their profits and gains in their financial accounts may have triggered the recent response by the FASB to require companies to account for their cryptocurrency investments at fair value.

By changing the accounting treatment of cryptoassets from a historical cost measurement less impairment to fair value accounting, the FASB have also addressed the issue of companies using impairment losses to offset other gains without disposal of the cryptocurrency holdings. It remains to be seen if the IFRS Foundation will follow the FASB’s tentative change of the accounting policy on the measurement of cryptoassets.

Based on the accounting treatment of cryptocurrencies as intangible assets, the tax analysis set out below should apply:

If a company holds cryptocurrencies as an investment, “they are liable to pay Corporation Tax on any gains they realise when they dispose of it”.<sup>116</sup> A sole trader is liable to pay capital gains tax under TCGA on any realised gains. In the case of a partnership or limited liability partnership, the partners are either liable to pay corporation tax if the partners are a company or capital gains tax if the partner is an individual.<sup>117</sup> If a company or business disposes of cryptocurrencies for less than the allowable costs, it realises a capital loss upon disposal.

In the *Cryptoassets Manual*, HMRC maintain in CRYPTO41300, “Cryptoassets for businesses: Corporation Tax: allowable costs” that:

“Section 38 of the Taxation of Chargeable Gains Act (TCGA) 1992 provides for the types of costs which can be deducted. HMRC’s view is that these include:

- the *consideration (in pound sterling) originally paid for the asset*
- *transaction fees* paid for having the transaction included on the distributed ledger
- advertising for a purchaser or a vendor
- professional costs to draw up a contract for the acquisition or disposal of the tokens
- costs of making a valuation or apportionment to be able to calculate gains or losses.”<sup>118</sup>

In addition, some exchange fees are allowable if they satisfy section 38 TCGA.<sup>119</sup>

The following examples will show the accounting and tax treatment of impairment losses.

<sup>115</sup> MicroStrategy, press release, *MicroStrategy Announces Fourth Quarter 2022 Financial Results* (2 February 2023), [https://www.microstrategy.com/en/investor-relations/press/microstrategy-announces-fourth-quarter-2022-financial-results\\_02-02-2023](https://www.microstrategy.com/en/investor-relations/press/microstrategy-announces-fourth-quarter-2022-financial-results_02-02-2023) [Accessed 21 February 2023].

<sup>116</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO41200, “Cryptoassets for businesses: Corporation Tax: Corporation Tax on chargeable gains — introduction”, <https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual/crypto41200> [Accessed 1 February 2023].

<sup>117</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO41200, “Cryptoassets for businesses: Corporation Tax: Corporation Tax on chargeable gains — introduction”.

<sup>118</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO41300, “Cryptoassets for businesses: Corporation Tax: allowable costs”, <https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual/crypto41300> [Accessed 1 February 2023].

<sup>119</sup> See HMRC Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO41300, “Cryptoassets for businesses: Corporation Tax: allowable costs” for a list of allowable exchange fees.



The accounting issue arises from the tension between balance sheet recognition (historical cost) and upward or downward revaluation/impairment. The tax treatment will follow the accounting treatment; hence if an impairment loss is recognised in the financial accounts, it will also show in the tax accounts. Where cryptoassets are held by a company, the normal assumption is that they are held in the course of business. For accounting purposes, cryptoassets are accounted for as either:

- Inventory (IAS 2/FRS 102, section 13); or
- Intangible assets (IAS 38/FRS 102, section 18).

The classification depends upon whether they are acquired with the intention of selling them within 12 months (stock) or holding them for a longer period (intangible assets).

### 1. Inventory

If held as inventory, cryptoassets will be valued at the year-end at the lower of cost and net realisable value. That means that there will be the usual stock adjustment at the year-end. Unsold stock is an add-back to profit because it represents a cost of the next year's sales, not of this year's sales. Cost of goods sold is (opening stock + purchases – closing stock).

*Example 1:* At the start of the financial year (1 January 2022), X Ltd held cryptocurrency acquired for \$400. In the course of the year, it purchased cryptoassets for \$500. And sold assets for \$600. At the year-end, its inventory was worth \$500. So its trading profit was:

Sales			600
Opening inventory	400		
Purchases	500		
Inventory available for sale		900	
Closing stock		(500)	
Cost of goods sold			(400)
Profit			200

*Example 2:* At the start of the financial year (1 January 2022), X Ltd held cryptocurrency acquired for \$400. In the course of the year, it purchased cryptoassets for \$500. The cryptocurrency falls in value. It sells the stock for \$200. At the year-end, its inventory was worth \$100.

Sales			200
Opening inventory	400		
Purchases	500		
Inventory available for sale		900	
Closing stock		(100)	
Cost of goods sold			(800)
Profit (Loss)			(600)

So profit and the impairment of the inventory are recognised for accounting and tax purposes through the stock adjustment, which goes to the income statement. Profit is credited to revenue, and the loss on inventory is charged against revenue. In substance, this is the application of fair value accounting to cryptoassets.

## 2. Intangible assets

If the cryptoassets are classified as *fixed assets*, in the form of intangible property, they come within IAS 38.<sup>120</sup>

Recognition principles for intangible assets other than goodwill are prescribed in IAS 38, paragraphs 21 to 23/FRS 102, paragraphs 18.4 to 18.8.

An intangible asset is recognised as an asset

“if, and only if

- (a) it is probable that future economic benefits that are attributable to the asset will flow to the entity; and
- (b) the cost or value of the asset can be measured reliably.”<sup>121</sup>

Intangible assets normally represent future economic benefits, which accrue over a period of time. However, cryptoassets may produce future economic detriments rather than future economic benefits.

They will be intangible assets, which have been acquired, not internally created assets.

They will usually form part of a fluctuating pool of assets. Hence the classification as intangible fixed assets stretches current definitions.

HMRC regard cryptoassets as intangible assets but not as intangible fixed assets with the result that “the corporation tax rules for intangible fixed assets (Corporation Tax Act 2009 Part 8)” do not apply.<sup>122</sup> HMRC suggest that an intangible fixed asset

“has been created or acquired by a company for use on a continuing basis. Exchange tokens which are simply held by the company, even when held in the course of its activities, will not meet this definition.”<sup>123</sup>

The initial measurement of intangible assets is at cost.<sup>124</sup>

IAS 38, paragraphs 74 to 75/FRS 102, paragraphs 18.18 to 18.18H prescribe two models for measurement after initial recognition, namely:

- 1) cost model;
- 2) revaluation model.

<sup>120</sup> FRS 102, s.18.

<sup>121</sup> IAS 38, para.21.

<sup>122</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO41150, “Cryptoassets for businesses: Corporation Tax: intangible fixed assets”; also: BDO, “How cryptoassets are treated for business tax purposes” (11 December 2019), <https://www.bdo.co.uk/en-gb/insights/tax/corporate-tax/how-cryptoassets-are-treated-for-business-tax-purposes> [Accessed 1 February 2023].

<sup>123</sup> HMRC, Internal Manual, *Cryptoassets Manual* (30 March 2021, updated 3 November 2022), CRYPTO41150, “Cryptoassets for businesses: Corporation Tax: intangible fixed assets”.

<sup>124</sup> IAS 38, para.24.

**(1) Cost model** The cost model involves carrying cryptoassets at historic cost until disposal less any accumulated impairment losses.<sup>125</sup>

It is usually said that cryptocurrencies have an indefinite life.<sup>126</sup> Hence, they are not amortised but tested for impairment.<sup>127</sup> That means that companies may carry profits in their accounts that are not recognised for tax purposes because only any downward movements are recognised. In contrast, any upward movements are not recognised for tax purposes.

*Example 3:* In the financial year ending 31 December 2021 X Ltd buys cryptocurrency for \$500 which is valued at \$1,000 at year end (no recognition of the increase in the value of the cryptocurrency at the year-end for tax purposes).

In the next financial year X Ltd buys cryptocurrency for \$1,000. At the end of this financial year (31 December 2022) its holdings of cryptocurrency are valued at \$200 because the impairment losses are recognised.

Year end	Income	Balance sheet	Revaluation reserve	SOCIE <sup>128</sup>	Tax
31 December 2021	0	500	500	500	0
31 December 2022	(1,100)	(1,100)	(500)	(1,600)	(1,100)

*Example 4:* In the financial year ending 31 December 2021 X Ltd buys cryptocurrency for \$500 which is valued at \$1,000 at year end. At the end of the financial year its holdings of cryptocurrency are valued at \$1,500. At the end of the following financial year it sells the cryptocurrency for \$2,000.

Year end	Income	Balance sheet	Revaluation reserve	SOCIE	Tax
31 December 2021	0	500	500	500	0
31 December 2022	0	500	1,000	1,000	0
31 December 2023	1,500	0	0	1,500	1,500

**(2) Revaluation model** Under the revaluation model, by contrast, the intangible asset is carried at its fair value at the date of revaluation.

IFRS require that certain classes of income or expense should be disregarded when calculating profit or loss and should instead be present in the Statement of Other Comprehensive Income (OCI).

IAS 38 generally requires that surpluses arising on the revaluation of intangible non-current assets should be taken to OCI.

<sup>125</sup> IAS 38, para.74.

<sup>126</sup> Compare fn.92 above; also: ACCA, “Accounting for cryptocurrencies”, <https://www.accaglobal.com/in/en/student/exam-support-resources/professional-exams-study-resources/strategic-business-reporting/technical-articles/cryptocurrencies.html> [Accessed 21 February 2023]: “It appears that cryptocurrencies should be considered as having an indefinite life for the purposes of IAS 38. An intangible asset with an indefinite useful life is not amortised but must be tested annually for impairment.”

<sup>127</sup> IAS 38, paras 107–111.

<sup>128</sup> Statement of changes in equity.

This accounting treatment ensures that unrealised revaluation gains are excluded from profit and are not available for payment of a dividend. Such gains will not be reclassified to income in a subsequent period.

However, if the revaluation shows a decrease in value, this must be recognised as an expense when calculating the entity's profit or loss for tax purposes.

This treatment is modified if a revaluation gain reverses a previously realised expense or a revaluation decrease reverses a previous revaluation gain.

A revaluation gain is recognised as income if it reverses a previous revaluation decrease in respect of the same item.

By the same token, a revaluation loss can be debited to the revaluation reserve and not taken to income to the extent that it reverses a previous revaluation gain.

*Example 5:* The balance sheet of a company shows the following non-current intangible assets (cryptocurrency).

The company uses the revaluation model.

It makes no purchases or disposals after 31 December 2019. The accounting reference date is 31 December.

Date	Intangible assets (balance sheet)	Revaluation increase (decrease)	Revaluation reserve	OCI	Income
31 December 2019	500,000	0	0		
31 December 2020	700,000	200,000	200,000	200,000	0
31 December 2021	800,000	100,000	300,000	100,000	0

*Example 6:* The balance sheet of a company shows the following non-current intangible assets (cryptocurrency).

The company uses the revaluation model.

It makes no purchases or disposals after 31 December 2019. The accounting reference date is 31 December.

Date	Intangible assets (balance sheet)	Revaluation increase (decrease)	Revaluation reserve	OCI	Income
31 December 2019	500,000	0	0		
31 December 2020	400,000	(100,000)	(100,000)		(100,000)
31 December 2021	600,000	200,000	100,000		100,000

*Example 7:* The balance sheet of a company shows the following non-current intangible assets (cryptocurrency).

The company uses the revaluation model.

It makes no purchases or disposals after 31 December 2019. The accounting reference date is 31 December.

Date	Intangible assets (balance sheet)	Revaluation increase (decrease)	Revaluation reserve	OCI	Income
31 December 2019	500,000	0	0		
31 December 2020	400,000	(100,000)	(100,000)		(100,000)
31 December 2021	600,000	200,000	200,000	100,000	100,000
31 December 2022	100,000	(500,000)	(300,000)	(100,000)	(400,000)

**(3) Disposal of a revalued intangible asset** When an intangible asset is disposed of, any revaluation gain included in the revaluation reserve in respect of that asset is taken into income and can be transferred to retained earnings.

The transfer is recorded in the statement of changes in equity (SOCIE) and does not affect the statement of comprehensive income.

*Example 8:* The balance sheet of a company shows the following non-current intangible assets (cryptocurrency).

The company uses the revaluation model.

It makes no purchases after 31 December 2018 and disposes of the holding on 31 December 2021 for \$600,000. The accounting reference date is 31 December.

Date	Intangible assets (balance sheet)	Revaluation increase (decrease)	Revaluation reserve	OCI	SOCIE	Income (expense)
31 December 2018	400,000					
31 December 2019	500,000	100,000	100,000	100,000		
31 December 2020	350,000	(150,000)	(150,000)	(100,000)		(50,000)
31 December 2021	(350,000)		150,000		250,000	250,000

## VII. Conclusion

“A conclusion is simply the place where you got tired of thinking.”—Dan Chaon, *Stay Awake*.<sup>129</sup>

The authors cannot say where the future of cryptoassets might lie, and they think it is quite hard to predict as people remain in the dark about the origins of cryptocurrency.

Several questions remain despite, or perhaps because of, the steep rise and fall in value of cryptocurrencies like Bitcoin. These questions include: who was (or were) the mysterious inventor(s) of Bitcoin and what were their intentions?

Did an ambitious Japanese cryptographer who wanted to make the world “a better place” invent cryptocurrency so that transactions could be executed outside the traditional banking system with fewer transaction costs, speedier execution and less control in a peer-to-peer system that could not be tampered with?

Or were the inventors of crypto people who saw it as a get-rich-quick-scheme which also allowed them to circumvent the taxman?

<sup>129</sup> Dan Chaon, *Stay Awake: Stories* (Ballantine Books, 2012).

Or is cryptocurrency only the first step on the path away from the era of analogue money and towards the era of digital currencies issued by central banks leading to a unified global monetary system with all its advantages and disadvantages?

Crypto flourished for 13 years in the depths of the internet without being overly scrutinised by governments around the world because of its anonymity, flexibility and speed. Governments cannot shut down the entire cryptoasset world. They may, however, be able to impose regulatory burdens on some of its players.

Only time will tell if crypto comes out of the cold, or if it will melt like snow in the digital wallets of its users.

In terms of taxation, the authors believe that current accounting arrangements are capable of ensuring that the general body of taxpayers could subsidise a downward spiral in crypto values through the deductibility of crypto losses. That raises a variety of tax policy issues that need to be addressed by legislators.

The fact is that crypto is here. It is not going to be un-invented, and it is important to seek to get its measure.