Cryptoassets in Insolvencies: Selected Difficulties and Necessary Guidelines

Rebecca Parry and Paula Moffatt, Nottingham Trent University

rebecca.parry@ntu.ac.uk and paula.moffatt@ntu.ac.uk

Background

In this paper we build on our findings from the AHRC funded project *Mapping Grey Areas in International Legal Approaches to The Failure of Crypto Firms*[1] as well as Prof Moffatt's report with Prof Dominik Skauradszun on *Crypto-assets in Restructuring and Insolvency*, which was prepared for the Conference on European Insolvency and Restructuring Law, 'CERIL'.[2]

[1] See: https://www.ntu.ac.uk/about-us/events/events/2024/8/mapping-grey-areas-in-international-legal-approaches-to-the-failure-of-crypto-firms sponsored by INSOL International and the Istanbul Bar Association.
[2] Available from https://www.ceril.eu/news/ceril-report-2023-3-on-crypto-assets-in-restructuring-and-insolvency.

1. Introduction

Cryptoassets have grown in popularity in recent years, with 12% of UK adults identified by the Financial Conduct Authority (FCA) in 2024 as having purchased these assets. They are likely to be a common feature of insolvency estates. Therefore, while the law is inevitably slow to catch up with innovative activities, there is nevertheless increasing recognition that the crypto sector is becoming mainstream, evidenced by the introduction of the UK's digital assets bill[3] and the EU's 2023 Markets in Crypto-assets Regulation (MiCAR).[4] Yet this legislation is only a first step, as the legal issues in this sector remain beset with uncertainties, not least as to what will happen in the event of an insolvency. Cryptocurrencies and crypto service providers operate in a volatile market, making insolvencies likely. The legal impacts of insolvencies in the crypto sector are also complex, international in dimension, and largely under-researched.[5] Understanding the ramifications of crypto sector insolvencies is therefore becoming an increasingly urgent problem to address.

In this paper we will build on our AHRC funded project on Mapping Grey Areas in International Legal Approaches to The Failure of Crypto Firms[6] as well as Prof Moffatt's report with Prof Dominik Skauradszun on Crypto-assets in Restructuring and Insolvency, which was prepared for the Conference on European Insolvency and Restructuring Law, 'CERIL'.[7]

The AHRC project included an international workshop in August 2024 involving practitioners and researchers from 20 countries and the development of a website www.crypto-insolvencies.com. This project enabled us to identify several areas in which cryptoassets are likely to present difficulties in insolvencies. There are complexities presented by different types of cryptoassets as well as different types of crypto service provider. These are well brought out in the CERIL report. There can

[3] HL Bill 67 Property (Digital Assets etc) Bill [HL] 59/1 (as amended in Special Public Bill Committee), 4 February 2025.
[4] Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937.
[5] We acknowledge the significant progress made by the UK Jurisdiction Task Force Legal Statement on Digital Assets and English Insolvency Law, available from https://lawtechuk.io/our-reports/ and UNIDROIT, 'Digital Assets and Private Law', https://www.unidroit.org/work-in-progress/digital-assets-and-private-law/.
[6] See: https://www.ntu.ac.uk/about-us/events/events/2024/8/mapping-grey-areas-in-international-legal-approaches-to-the-failure-of-crypto-firms
[7] Available from https://www.ceril.eu/news/ceril-report-2023-3-on-crypto-assets-in-restructuring-and-insolvency.

manifestly be great enthusiasm for these assets among some purchasers, and also risks of misunderstanding. Some legal and insolvency practitioners will have a good understanding of these assets but others will not, and there is a risk of different approaches developing.

In this paper we address one of the recommendations made by participants at the AHRC project's August workshop for the development of guidelines for practitioners. These guidelines would include the characterisation of cryptoassets, asset-backed stablecoins and unbacked tokens including memecoins such as Dogecoin[8] and Pepe,[9] and utility tokens.[10] The project also had a consumer protection focus, recognising that there can be significant misunderstandings of the nature of cryptoassets and crypto businesses, including what the risks are in the event of an insolvency.

Cryptoassets and crypto service providers

We begin by clarifying our terminology regarding cryptoassets and crypto asset service providers (CASPs). Cryptoassets may constitute realisable assets in insolvency proceedings, while the entities operating them can themselves become insolvent. CASPs may appear in insolvencies as debtors or as custodians holding debtors' property.

In our experience, many people will mentally switch off when discussion turns to cryptoassets as the underlying technology can be off-putting. From an insolvency perspective, however they are of interest as a realisable asset.[11] At the simplest level they are merely units of exchange, and in that sense akin to fiat currencies, although with limited places where they can be spent whilst in the form of digital assets.[12]

[8] Dogecoin website available at https://dogecoin.com/.
[9] Pepe website available at https://www.pepe.vip/.
[10] Tokens that "offer voucher-like rights to non-monetary goods or services": Theodora Kostoula, Valuation of cryptoassets in EU insolvency: Challenges and prospects' (2022) 32 International Insolvency Review 8-40, 14.
[11] The authors note that Andrew Small from the Insolvency Service is keen for insolvency practitioners to start thinking of cryptoassets simply as "recoverable assets".
[12] However there are significant differences: cryptoassets do not fall within existing definitions of currency or foreign currency. See fn 70.

While digital assets are transferred electronically, remember that the same is true for most transactions involving traditional (fiat) currencies today.[13] Just as we rarely consider the cryptographic security behind electronic fiat transfers, we generally don't need to focus on the underlying cryptography of cryptocurrencies for most practical purposes.[14] Stablecoins, which have an asset backing, are increasingly coming under regulatory regimes globally[15] but there is also strong interest in unbacked cryptoassets, notably Bitcoin, where the value depends on market sentiment and where markets are largely unregulated globally.

	Unbacked cryptoasset	**Stablecoin**
Properties	A digital currency enabling individuals to trade directly with each other or via an exchange. Typically, unregulated and with no intrinsic value. Can be highly volatile in value.	A cryptoasset whose value is fully or partially tied to a reserve asset, such as a fiat currency or precious metal, or which uses an algorithm to adjust the number of coins in response to demand. Less volatile than conventional cryptoassets but not as regulated as many other financial investment opportunities.
Examples	Bitcoin (BTC), Ether (ETH), Dogecoin (DOGE), Solana (SOL)	Tether (USDT), USD Coin (USDC,) Binance USD (BUSD,) Dai (DAI), True USD (TUSD)
Reason for creation	An alternative to investments requiring traditional financial intermediaries	A less volatile alternative to conventional cryptoassets
Usage	Trading and online payment via e.g. a crypto debit card or directly with some vendors.	Online payment via e.g. a crypto debit card or directly with some vendors. Can be used as a gateway for trades with fiat currency or other crypto. Can be an nvestment if aiming for cryptoassets with a stable value.

The crypto economy initially emerged as an alternative to traditional financial systems, using cryptographic methods to validate and record transactions, preventing double spending, so that traditional intermediaries were not required. However, cryptoassets have progressively integrated into mainstream finance through specialised intermediaries known as CASPs. While peer-to-peer transactions remain possible, their technical complexity exceeds most users' capabilities. This skill and knowledge gap prompted the development of intermediaries including crypto exchanges providing

[13] Benjamin Geva, 'Cryptocurrencies and the Evolution of Banking, Money and Payments' in Chris Brummer (ed), *Cryptoassets, Legal, Regulatory, and Monetary Perspectives* (OUP, 2019), 31; *Ruscoe v Cryptopia Ltd (in liquidation)* [2020] NZHC 782, [106].

[14] Normally we would expect intermediaries to make this easy for us but there can be problems, exemplified by George Sandeman, '"I was careful and followed instructions closely, but still lost my crypto"' BBC News 21 April 2025, available at https://www.bbc.co.uk/news/articles/c93gydxj8n7o.

[15] Stablecoins can be a stable store of value and can potentially compete with fiat currencies and therefore they have been the subject of regulatory reforms in many countries. See Todd D Kanaster et al, *Stablecoin Regulation Gains Global Momentum* (S&P Global, 10 February 2025), available at https://www.spglobal.com/ratings/en/research/articles/250210-stablecoin-regulation-gains-global-momentum-13400761.

trading platforms and crypto custodians offering storage and security services. Consequently, many crypto transactions now involve CASPs functioning as intermediaries with custodial responsibilities, creating a parallel but distinct system to conventional financial intermediaries like banks. Many of the main CASPs serving the UK market are registered, in accordance with requirements, with the FCA. The process of realising cryptoassets for the estate may therefore in many cases be easier than might be expected. Anecdotal evidence indicates that these CASPs have been found to be cooperative with investigations.

3. Why practitioners need guidelines: some selected difficulties

Insolvency practitioners need to maximise the returns from the insolvency estate. To do this, they need to understand what assets belong to the insolvency estate and then realise them. Recognising that cryptoassets will be unfamiliar to many there are already several short guides from various law firms.[16] Arguably more centralised guidance is needed.

The development of cryptoassets has, in some cases, made the process of realising the insolvency estate less straightforward – we are all used to dealing with real property, and tangible and intangible personal property, including intellectual property, but the emergence of cryptoassets – which are a form of digital asset - have thrown up some novel problems.[17] Many of those initial concerns are now better understood, and we would note two areas where tremendous progress has been made.

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[16] See e.g. Nicola Nolan, 'Crypto assets: A new line of enquiry and recovery for insolvency practitioners' (DLA Piper, 19 May 2021); By Paul Apáthy, Susannah Wilkinson and James Emmerig, 'Crypto winter is here – what does it mean for insolvency practitioners?' (Herbert Smith Freehills, 1 August 2022), available at https://www.herbertsmithfreehills.com/insights/2022-08/crypto-winter-is-here-%E2%80%93-what-does-it-mean-for-insolvency-practitioners; Francis Wilks and Jones, Cryptocurrency and insolvency: a guide for insolvency practitioners (September 2021), available at https://www.franciswilksandjones.co.uk/wp-content/uploads/2021/09/Cryptocurrency-and-insolvency-a-guide-for-insolvency-practitioners-Sept-2021.pdf; RSM, 'An IP's guide to cryptocurrency' (5 November 2021) available at https://www.rsmuk.com/insights/contentious-insolvency/an-ip-guide-to-cryptocurrency; Tim Carter, 'cryptocurrency: Key Considerations for Insolvency Practitioners (21 February 2023, Stevens & Bolton), available at https://www.stevens-bolton.com/site/insights/articles/cryptocurrency-key-considerations-for-insolvency-practitioners; LexisNexis, 'Cryptoassets in Insolvency' available at https://www.lexisnexis.co.uk/legal/guidance/crypto-assets-in-insolvency; Neil Robson, Daniel J Davis and Ethan Trotz, 'Weathering the Crypto Winter: Tools for Insolvency Practitioners' (Katten, 20 October 2022), available at https://katten.com/weathering-the-crypto-winter-tools-for-insolvency-practitioners; John Adams, 'Broken Hearts – Digital Assets in Insolvency: Practical Aspects for Insolvency Practitioners' (Penningtons Manches Cooper, 10 February 2025), available at https://www.penningtonslaw.com/news-publications/latest-news/2025/broken-hearts-digital-assets-in-insolvency-practical-aspects-for-insolvency-practitioners.

[17] Discussed at a comparatively early stage by Janis Sarra and Louise Gullifer, 'Crypto-claimants and bitcoin bankruptcy: Challenges for recognition and realization' (2019) 28 International Insolvency Review 223.

First, the law of England Wales recognises cryptoassets as property, and there is a body of case law to support this.[18]

This conclusion has been reinforced by the work of the UK Law Commission's excellent Digital Assets project,[19] led by our originally intended chair, the incredible Professor Sarah Green. The project differentiated those digital assets which are property – and therefore capable of being transferred or exchanged for value – from those which are not, concluding that cryptoassets are capable of being subject to property rights even though they may not necessarily fall within the concept of a chose in action[20] or a chose in possession. The Law Commission's work has led to a draft bill.[21]

This position is similarly accepted in many other jurisdictions.[22] It is also reflected in the UNIDROIT principles on digital assets and private law[23] and MiCAR.[24]

Second, the statement of the UK Jurisdiction Taskforce on Digital Assets and English Insolvency Law (2024) has – rightly in the authors' opinion - confirmed that English insolvency law is in pretty good shape when it comes to dealing with cryptoassets. This is because existing legal principles are generally sufficient to address the majority of practical issues that are likely to arise.

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[18] The strongest authorities are *AA v Persons Unknown* [2019] EWHC 3556 (Comm), 'crypto currencies are a form of property capable of being the subject of a proprietary injunction', as it was referred to in *Tulip Trading Limited (A Seychelles Company) v Bitcoin Association For BSV & Ors* [2023] EWCA Civ 83, para 24; and *D'Aloia v Persons Unknown* [2024] EWHC 2342 (Ch). Cryptoassets have also been held to be property in various interim hearings: *Robertson v Persons Unknown*, Case No. CL-2019-000444, 15 July 2019; *Elena Vorotyntseva v Money-4 Limited t/a Nebeus.Com, and others* [2018] EWHC 2596 (Ch); *Fetch.AI v Persons Unknown* [2021] EWHC 2254 (Comm); *Danisz v Persons Unknown and Huobi Global Ltd* [2022] EWHC 280(QB). For a contrary analysis see however Robert Stevens, 'Crypto is not Property' (2023) 139 LQR 628, as well as policy arguments against legislation to clarify the status of digital assets.

[19] UK Law Commission, *Digital Assets: Final Report* HC 1486 Law Com 412 (27 June 2023) ix, available online at https://www.lawcom.gov.uk/project/digital-assets/ (accessed on 13 July 2023).

[20] See however Duncan Sheehan, 'Cryptoassets are Choses in Action' [2025] Butterworths Journal of International Banking and Financial Law 231, preferring this interpretation and characterising cryptoassets as fungible and fully interchangeable assets which are normally held on trust under an equitable tenancy in common.

[21] HL Bill 67 Property (Digital Assets etc) Bill [HL] 59/1 (as amended in Special Public Bill Committee), 4 February 2025.

[22] *Philip Smith and Jason Kardachi (in their capacity as joint liquidators) v Torque Group Holdings Limited* [2021] BVIHC (COM) 0031 (British Virgin Islands); *Ruscoe v Cryptopia Ltd (in liquidation)* [2020] NZHC 782 (New Zealand); *B2C2 v Quoine* [2020] SGCA(I) 02 i

[23] The UNIDROIT Principles on Digital Assets and Private Law, adopted by the UNIDROIT Governing Council at its 102nd session (10-12 May 2023) and published on 4 October 2023.

[24] Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937.

To the extent that it is insufficient, a flexible approach is likely to be bolstered by the recommendation of the Law Commission that the development of the law relating to cryptoassets should be a matter for the common law, which can adapt to address emerging issues.

Nevertheless, although cryptoassets are becoming increasingly common, they are still not sufficiently widely used for everyone to understand. The particular difficulties we have selected for discussion relate to the perceived lack of clarity about:

- the terminology relating to cryptoassets
- how they work – if they are part of an insolvency estate how can they be accessed?
- whether the particular cryptoassets in question have value and - if they do -
- how to realise that value on insolvency

The question of valuation is an acute problem in this context and is one of the most challenging aspects for insolvency practitioners. This is because of the volatility of the pricing of unbacked cryptoassets and some stablecoins,[25] which can both soar and plummet within short periods of time. We consider the implications of this in more detail later.

Creating guidelines on how to deal with cryptoassets in an insolvency, as well as strategies for the identification of crypto holdings, can therefore help to provide clarity and a standardised approach for insolvency professionals.[26]

By the same token, many consumers will also benefit from clearer information about the nature and type of cryptoassets in the market and their attendant risks, a point that we briefly address at the end. This includes understanding what will happen to their assets if a CASP they are involved with (for example, an exchange, or custodian) becomes insolvent.

[25] Not all stablecoins are backed by assets with a stable value. The 'death spiral' of the Terra project's algorithmic stablecoin is an example of how a value can plummet where there is no an asset backing. See Antonio Briola, David Vidal-Tomás, Yuanrong Wang, Tomaso Aste, 'Anatomy of a Stablecoin's failure: The Terra-Luna case' (2023) 52 Financial Research Letters 103358.

[26] As an example see the Australian Financial Security Authority, 'Dealing with cryptocurrency in a bankrupt estate', available at https://www.afsa.gov.au/professionals/dealing-cryptocurrency-bankrupt-estate, accessed 27 March 2025.

In a recent illuminating discussion with the Insolvency Service's Andrew Small and Neil Freebury about crypto related matters in the insolvency sphere we discussed the different reasons for using cryptoassets in the first place, and the likely different attitudes to crypto usage among different groups.

In the UK, an FCA report on why people buy cryptoassets suggested – albeit based on a limited data source – two main reasons.[27] The first is a belief that they will make money from them, and the second is fear of missing out. However, a more recent FCA report suggests a shift in thinking: people now see cryptoassets as an investment (so they are purchased as a store of value) and are likely to buy them because they have been influenced by friends and family to do so.[28]

We can also briefly note that in some emerging economies, cryptoassets are used for very different reasons.[29] For example, an individual may be socially excluded and have no access to finance through standard banking channels.[30] Crypto provides an alternative means that is accessible to anyone with internet access and can enable them to trade and prosper. For others, the faster transaction speeds and ability to transact at any time of day will offer advantages over bank transactions. Crypto may also be more stable than the fiat currency in their jurisdiction; or, as we discussed with Neil and Andrew, for geographical reasons, individuals may not be able to access cash physically, but they can always deal in crypto digitally on their phones.

When these aspects are coupled with recent suggestions from the US that they will be deregulating their crypto industry, stockpiling Bitcoin and aiming to become the 'crypto capital', it becomes easier to see that cryptoassets are not going anywhere, and that take up is likely to increase rather than decrease.[31]

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[27] https://www.fca.org.uk/publication/research/how-and-why-consumers-buy-cryptoassets.pdf, 14.
[28] https://www.fca.org.uk/publication/research-notes/cryptoasset-consumer-research-2024-wave-5.pdf, 26.
[29] See for example Rebecca Parry and Hakan Sahin, 'Cryptoassets, expectation gaps and consumer protection: the case of Türkiye' (2024) 1(4) Law, Ethics and Technology 0011.
[30] See the example in Paul Vigna and Michael J Casey, *The Age of Cryptocurrency* (Picador, 2015) of a girl in Afghanistan who was paid in Bitcoin as she did not have access to a bank account. This enabled her to achieve greater independence.
[31] The White House, Fact Sheet: President Donald J. Trump Establishes the Strategic Bitcoin Reserve and U.S. Digital Asset Stockpile (6 March 2025) https://www.whitehouse.gov/fact-sheets/2025/03/fact-sheet-president-donald-j-trump-establishes-the-strategic-bitcoin-reserve-and-u-s-digital-asset-stockpile/. Rachel Reeves, UK Chancellor of the Exchequer has also recently demonstrated a willingness to embrace cryptoassets. See: https://www.gov.uk/government/news/new-cryptoasset-rules-to-drive-growth-and-protect-consumers accessed 14.05.2025.

These developments reinforce the need for clarity and standardisation of approaches for insolvency practitioners when it comes to realising cryptoassets on insolvency.

So, what guidelines do insolvency practitioners need?

4. Guidelines that standardise and simplify terminology

It is clear that there are plenty of people who are familiar with crypto terminology and its associated jargon, but there are also plenty of people who just think it also sounds too complicated and difficult, and shy away from using the technology or in any way engaging with it.[32]

There is therefore a great need for simplification and standardisation of the language into terms that are commonly used in everyday practice. This should be easily achievable, since, as the UK Jurisdiction Task Force has already identified, we already have established principles that can apply to cryptoassets in the same way that they apply to other assets.

Notably, having established that cryptoassets can be subject to property rights, we add that it is then very easy for them to fall within the Insolvency Act 1986 definition of property – which is an extremely wide definition:

> "property" includes money, goods, things in action, land and every description of property wherever situated and also obligations and every description of interest, whether present or future or vested or contingent, arising out of, or incidental to, property. [33]

Whilst this is an extremely broad (and in some respects circular) definition, it is important to note that there is still some debate as to the nature of cryptoassets as property.[34] As previously discussed, the Law Commission's wider review of digital assets, found that digital assets presented some uncertainties and complexities in respect of existing property law categorisations.[35] Some cryptoassets were neither

[32] As we discussed with Andrew Small.
[33] IA 1986, s 436(1).
[34] In what follows we discuss the position in England and Wales. For discussion of differences in common law and civil law approaches to property and how this relates to cryptoassets see Pınar Çağlayan Aksoy, 'The Applicability of Property Law Rules for Crypto Assets: Considerations from Civil Law and Common Law Perspectives' [2023] Law, Innovation & Technology 1.
[35] Law Commission, *Digital Assets, Final Report* Law Com No 412, Presented to Parliament pursuant to section 3(2) of the Law Commissions Act 1965 Ordered by the House of Commons to be printed on 27 June 2023, HC 1486.

things in action (legal rights or claims that are enforceable by action), nor were they things in possession (tangible things), but were to be treated under property law as capable of being things to which personal property rights can relate.[36] A third category of personal property rights, capable of including digital assets, including cryptoassets, is therefore proposed in the Law Commission's Property (Digital Assets etc) bill.

For the purpose of the insolvency estate, however, the law is arguably already clear enough. Rather than trying to understand each and every type of cryptoasset on the market, we can begin to think of them in more straightforward terms as "recoverable assets" in the same way that all the other assets of the insolvency estate are recoverable.[37] We are already used to dealing with ordinary fiat currency in electronic form and cryptoassets are not so different. Many cryptoassets will be in the custody of regulated CASPs who are likely to cooperate.

Having said that, it will be necessary to supplement the guidelines with a glossary explaining the nature of the main types of product that fall within the generic term "cryptoasset", as well as how to identify which type of asset is being dealt with. For example, frequently used terms include cryptocurrency, utility token, non-fungible token, and stablecoins, to name a few.[38] We also address the concept of cryptoassets in more detail in Appendix 1 and provide a glossary in Appendix 2.

Understanding this matters because the job of the insolvency practitioner is ultimately about maximising returns to creditors, and some of these products are more likely to hold their value than others.

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[36] Ibid, Chapter 3.

[37] We welcome and endorse Andrew Small's desire to standardise this characterisation.

[38] Some definitions are set out in Visa, The Crypto Phenomenon: 2022 Consumer Attitudes & Usage (2022), 7: "Cryptocurrencies are currencies such as Bitcoin and Ether that are unaffiliated with any government or central bank; Stablecoins are backed by a reserve asset (e.g., fiat currency held at commercial banks); Central Bank Digital Currencies (CBDCs) are emerging digital versions of cash issued by a country's central bank" and Investopedia: "Central Bank Digital Currencies (CBDCs) are emerging digital versions of cash issued by a country's central bank; Crypto tokens are digital representations of interest in an asset or used to facilitate transactions on a blockchain. They are often confused with cryptocurrency because they are also tradeable and exchangeable; A cryptocurrency is used for making or receiving payments using a blockchain, with the most popular cryptocurrency being Bitcoin (BTCUSD). Altcoins are alternative cryptocurrencies that were launched after the massive success achieved by Bitcoin. The term means alternative coins—that is—cryptocurrency other than Bitcoin. They were launched as enhanced Bitcoin substitutes that have claimed to overcome some of Bitcoin's pain points. Litecoin (LTCUSD), Bitcoin Cash (BCHUSD), Namecoin, and Dogecoin (DOGEUSD) are typical examples of altcoins. Though each has tasted varying levels of success, none have managed to gain popularity akin to Bitcoin's." See https://www.investopedia.com/terms/c/crypto-token.asp (27.02.2025).

Distinguishing those cryptoassets which are more likely to have value from those which are not, also requires a basic understanding of the system in which they operate. This is because cryptoassets exist within autopoietic systems – that is, systems which are entirely self-referential. They only cross into mainstream financial systems at the point of exchange into fiat currency.[39]

However, not all cryptoassets will have value. Notably, there is no intrinsic value in any unbacked cryptoasset – there will only be a market if someone else is prepared to buy it. Many memecoins have been launched in an effort to catch public attention, often with humour and imitation of existing memecoins, although few have achieved success and many are now worthless.[40] Non-fungible tokens are another example of this – they may represent a piece of digital art for example. However, as with many things, beauty is in the eye of the beholder, and there may not be a market when it comes to selling as no one else may want it. (One thinks of the Dutch tulips).[41] Utility tokens are another example: they allow users of a crypto network to obtain certain benefits within that system, such as game play – outside that system, they may have no benefit at all and therefore no sale value.[42] Our AHRC review found that documentation for utility tokens is typically exceedingly poor or unavailable.

That said, in practice, the value of Bitcoin in the last 5 years has typically yo-yoed around $50,000.[43] Those purchasing Bitcoin through intermediaries will typically invest an amount in fiat currency which will be converted by the exchange to a Bitcoin value. The purchaser will gain a fractional share that is satisfied from a pool of Bitcoin.

[39] This requires an "off-ramp", such as a crypto exchange that provides this service.
[40] Nicou Asgari, 'Billion dollar squirrel: Trump effect fuels crypto's 'memecoin' boom' Finanical Times, 4 December 2004. The $TRUMP memecoin also sparked imitators: Oliver Hawkins et al, 'Donald Trump's memecoin copycats spark fears for investors' Financial Times, 7 February 2025.
[41] See, for example: https://www.investopedia.com/terms/d/dutch_tulip_bulb_market_bubble.asp, accessed 5 May 2025.
[42] On valuation of utility tokens see the discussion during the memorandum opinion in *Re FTX Trading Ltd*, US Bankruptcy Court for the State of Delaware Case No. 22-11068 (JTD) where utility tokens that had value at the start of the insolvency proceedings were found to have lost any value subsequently. Available at https://www.restructuring-globalview.com/wp-content/uploads/sites/21/2024/07/FTX-Estimation-Order.pdf, accessed 14 April 2025.
[43] John Edwards, 'Bitcoin's Price History' (Investopedia, 23 January 2025), available at https://www.investopedia.com/articles/forex/121815/bitcoins-price-history.asp.

To protect against a potential loss in value, some cryptoassets are "tethered" to fiat currency,[44] or a commodity (such as gold), [45] and are collateralised and exchangeable. For example, those backed by dollars can be exchanged for US dollars on demand. Others will be "wrapped" around another cryptoasset, such as Bitcoin. Such approaches provide these cryptoassets with a greater stability or tradability between blockchains. These are the so-called "stablecoins".

So, one way of thinking about cryptoassets in terms of trying to assess whether they are likely to hold their value – and to keep the terminology simple - is to consider whether they are backed or unbacked, terminology which is increasingly being used.[46] It is accordingly important for the guidelines to standardise terms and simplify language.

5. Guidelines for crypto realisation processes

To realise the value of any cryptoassets held within the insolvency estate you have to know how to get hold of them. Again, this may sound like it would be a technical process and can be off-putting. However, insolvency practitioners can be supported to do this with clear guidelines setting out process steps.[47]

The steps are relatively straightforward to some extent if we remember that crypto is widely used in emerging economies and generally by phone - so the technology is readily accessible and has been created for ease of use. The debtor's crypto and/or the means to access it may be held via a CASP. As we noted above, the main CASPs serving the UK market are registered with the FCA and are likely to be cooperative with investigations.

[44] In practice many will have holdings in US dollars or US dollar equivalent investments. There will be regular audits and certification of these holdings.
[45] For example, Alloy by Tether uses gold reserves. See <https://tether.io/news/tether-announces-launch-of-alloy-by-tether-a-new-digital-asset-backed-by-tether-gold/> 17 June 2024, accessed 14 April 2025.
[46] Rebecca Parry and Hakan Sahin, 'Cryptoassets, expectation gaps and consumer protection: the case of Türkiye' (2024) 1(4) Law, Ethics and Technology 0011
available at https://www.elspublishing.com/papers/j/1851303832896483328.html; Financial Conduct Authority, 'Crypto: the Basics' 10 May 2024, available at https://www.fca.org.uk/investsmart/crypto-basics.
[47] See also the guidance in Australian Financial Security Authority, 'Dealing with cryptocurrency in a bankrupt estate', available at https://www.afsa.gov.au/professionals/dealing-cryptocurrency-bankrupt-estate, accessed 27 March 2025.

Nevertheless, a basic understanding of how cryptoassets are traded and stored on a blockchain (or digital ledger) will help the insolvency practitioner. We provide the key points here and consider issues in more detail in Appendix 1.

Broadly, cryptoassets will be held in a decentralised or a centralised system.

A decentralised system is one where the insolvent debtor is transacting for themselves on a peer-to-peer basis via a blockchain and therefore will require a reasonable level of user-knowledge. There are decentralised, DeFi, exchanges such as Uniswap and Pancake Swap that can facilitate this. Transactions will be crypto to crypto without any fiat currency being exchanged. Any custodial function in a decentralised system is only likely to be fleeting, however, limited to what is necessary to facilitate transactions conducted via the blockchain and using smart contracts; therefore, DeFi exchanges may not hold significant values of assets. This type of exchange is also less common.

A centralised system is one which is controlled by a single entity, managing user accounts and transactions. Various CASPs of this type have emerged as intermediaries so that customers do not need to transact peer to peer using a blockchain. Centralised crypto exchanges will be the "way in" to crypto investment for most users and it is likely that many debtors who hold crypto will do so via a centralised exchange. Those serving the UK market are required to be registered with the FCA. Some will offer on/off ramps where fiat currency may be exchanged for crypto and vice versa. These CASPs may also act as custodians but not all will have clear legal documentation in this regard and not all will segregate customer assets. Not all exchanges provide custodial services themselves, and a third-party custodian may be used.

What can make cryptoassets seem offputtingly technical can be the blockchain processes that are used for transaction verification in place of traditional intermediaries.[48] The CERIL report explains blockchain as a digital ledger which operates on a decentralised peer-to-peer network of computers (nodes), without any data being stored or regulated centrally; instead, data is distributed and shared among

[48] For a clear and concise account of a transaction on the bitcoin blockchain see *Tulip Trading v Van der Laan* [2023] EWCA Civ 83, paras 21-25 per Birss LJ.

all participants of the network. Transactions are recorded in a secure and permanent way through means of cryptography, which is used to link the created blocks of data.[49] When a person orders a transaction on a blockchain (e.g. a transfer of cryptocurrency), the transaction is recorded pseudonymously. Pseudonymity means that the involved parties and their personal information remain unrevealed.[50]

It is important to recognise that these systems will cross borders and that this may lead to issues about the applicable law on insolvency. There is no global consensus on how to address these issues when they arise, although there has been some work on potential solutions, notably Principle 5 of the UNIDROIT Principles on Digital Assets.[51] Some CASPs deliberately choose to operate in jurisdictions with light-touch regulation or to operate in a way that does not clearly indicate a strong association with any jurisdiction.[52] In this paper we can only touch upon relevant international issues however and will focus on domestic transactions.

To recover cryptoassets from an insolvency estate, an insolvency practitioner will need the insolvent debtor to provide the electronic key codes[53] that give access to the debtor's wallet where these key codes are stored. There will be a public key, which enables the crypto to be located, as well as a private key needed to authorise a transfer of the crypto.

All of this assumes that an insolvent debtor will act in good faith in an insolvency and that the wherewithal to access assets is made available to the insolvency practitioner. However, where there is bad faith dealing, insolvency practitioners will need to understand the potential mechanisms for following or tracing and recovering

[49] We describe here the 'proof of work' model, which is used to ensure that only honest blocks of transactions are recorded. This is done through solving a difficult mathematical puzzle which anyone, acting as a node, can race to solve. Puzzles are very hard to solve but easy to verify once solved. Essentially solving is done through a guessing game where they try different numbers (called 'nonces') until they find one that produces a specific pattern when run through a special formula. Each winner of the race to add each block will receive newly created bitcoins as a reward (currently 6.25 bitcoins plus transaction fees). Once verified, everyone updates their copy of the blockchain with the new block, and the race starts again for the next block. Due to energy consumption concerns the 'proof of stake' method has evolved and we describe this in Appendix 1.

[50] Paula Moffatt, Dominik Skauradszun CERIL report https://www.ceril.eu/news/ceril-report-2023-3-on-crypto-assets-in-restructuring-and-insolvency 31.

[51] The UNIDROIT Principles on Digital Assets and Private Law, adopted by the UNIDROIT Governing Council at its 102nd session (10-12 May 2023) and published on 4 October 2023.

[52] Risks of regulatory arbitrage have been noted by the Financial Stability Board, *Assessment of Risks to Financial Stability from Crypto-assets* 16 February 2022; and the International Organisation of Securities Commissions (IOSCO), *Policy Recommendations for Crypto and Digital Asset Markets Final Report* IOSCO, 16 September 2023. See also Sideris Draganidis, 'Jurisdictional arbitrage: combatting an inevitable by-product of cryptoasset regulation' (2022) 31 Journal of Financial Regulation and Compliance 170.

[53] These are very long codes that may be stored online in a key wallet or they may be written down somewhere.

cryptoassets belonging to the insolvency estate.[54] This is because it is extremely easy for bad actors to move cryptoassets across the blockchain out of the reach of the true owner or insolvency practitioner in a matter of minutes, and this will be done anonymously.

There are strategies that can be adopted in these circumstances. For example there may be clues in the software associated with cryptoassets or in bank transfers that have indications of crypto transactions, or suspect files.[55] These processes can also be aided by the creativity of software developers and the courts.[56] There are sophisticated blockchain analytics tools that can be used to identify transactions, as well as transaction patterns and details of transactions such as transfer timestamps which can help in wider evidence gathering.[57] It is also worth noting that it is possible to come after the cryptoassets even if the holder is unknown, following the case *Fetch.AI*.[58]

Insolvency practitioners can, of course, benefit from the standard tools of the trade when it comes to asset tracing or following, and the worldwide freezing order remains an important part of the armoury.[59] In this respect, we note the work of UNCITRAL Working Group V (Insolvency), which is close to finalising a toolkit for civil asset tracing.[60]

[54] It is beyond the scope of this paper to address the very real issue of the use cryptoassets for criminal activity, including its role in money laundering and terrorism financing. Steps have been taken to address this with the introduction of Part 4 of the Economic Crime and Corporate Transparency Act 2023 which amends the Proceeds of Crime Act 2002 to allow for the confiscation and recovery of cryptoassets. Rebecca Parry is currently undertaking further research in this area.

[55] Jose Carles, Laurent Le Pajolec and David Orsula, 'Digital Gold: Implications of crypto assets under an insolvency scenario' (2021, Summer) Eurofenix 12.

[56] The criminal aspect of asset tracing, is hugely important: asset recovery in this area has led to the US and UK governments becoming holders of the largest store of bitcoin respectively globally (disturbingly, North Korea is third after a recent hack.

[57] Meredith Fitzpatrick, 'How to Use Blockchain Analytics to Investigate Insolvency in Crypto Lending Services' (Forensic Risk Analysis, 3 October 2023), available at https://www.forensicrisk.com/news-and-insights/how-to-use-blockchain-analytics-to-investigate-insolvency-in-crypto-lending-services.

[58] *Ion Science Ltd v Persons Unknown* [2020] Commercial Court (unreported); *Mooij v Persons Unknown* [2021] EWHC (unreported).

[59] It is noted (from anecdotal in-session discussions at the Insolvency Service Conference at UCL on 8 April 2025) that FCA authorised crypto-exchanges appear to be responding with the necessary proactivity when faced with freezing orders.

[60] Latest version available at: Working Group V: Insolvency Law | United Nations Commission On International Trade Law.

Returning to the specific steps that need to be included in the guidelines, assuming that you have a cooperative insolvent debtor, what does the insolvency practitioner need to do to access the insolvent debtor's digital account?

- They will first need to access the insolvent debtor's digital wallet, which will either be online or in a device.[61] The debtor's codes that are needed to access their cryptoassets will be recorded in the wallet.
- To operate the account the insolvency practitioner will need to have two key codes.
- First, the public key, which is a series of numbers and letters and is associated with a private key. The public key enables the holder of the wallet to be identified by other users of the network and allows the conclusion of transactions between users of the blockchain. It therefore operates in a similar way to an email address.
- The private key is also a series of numbers and letters and is similar to a password. Customers may have used their digital wallet to store their private key or it may be written down somewhere. The private key will enable the insolvency practitioner to access the wallet,[62] authorise transactions within the blockchain, and prove ownership of the cryptoassets.[63]

Once the insolvent debtor's assets are located, the insolvency practitioner can then control what happens next. The realisation of cryptoassets presents numerous distinctive challenges, however, as noted in the CERIL report and summarised here:

- Not only can cryptoassets be transferred extremely quickly across the blockchain,[64] but this transfer will be anonymous. This means that insolvency practitioners must take a proactive approach to investigating and controlling any cryptoassets as soon as they are appointed if they are not to be moved beyond their reach.

[61] Many users will use an online 'hot' wallet provided by a CASP, either an exchange or dedicated wallet provider, as intermediary. There are also offline 'cold' wallets that are devices similar to flash drives that for access require a 'seed' phrase. This phrase would be needed from the debtor.
[62] As noted above, if the wallet is an offline device the seed phrase will be needed.
[63] Paula Moffatt, Dominik Skauradszun CERIL report https://www.ceril.eu/news/ceril-report-2023-3-on-crypto-assets-in-restructuring-and-insolvency 32.
[64] *Danisz v Persons Unknown and Huobi Global Ltd* [2022] EWHC 280(QB): "this is a form of transaction whereby, at the click of a mouse, an asset can be dissipated".

- Although it is not an area that we can discuss in detail in this paper, it is nevertheless important to note that trying to locate cryptoassets is time consuming and may require specialist assistance.
- And locating cryptoassets is not the same as taking a look at the Companies House register, for example, to see what has been recorded: there are no official registers of that type[65] and cryptoassets will not be visible to anyone visiting the debtor's premises or business.
- Insolvency practitioners will also suffer from a dearth of regulation – there are no bespoke rules for realising these assets, including – as we will come on to discuss shortly - how to store and value them and the timing of any exchange.
- On top of this, there is the lack of expertise amongst practitioners, many of whom, as the CERIL report explained "have never established crypto wallets, managed private keys, or conducted crypto transfers, resulting in considerable apprehension when tasked with liquidating these digital assets".[66]

One point of good practice that the Australian Financial Security Authority has recommended is that as soon as cryptoassets are identified, they should be transferred to a wallet held by the insolvency practitioner. This would preferably be an encrypted, offline, wallet to limit the potential for hacks.[67] Preferably an account of this type should be set up in advance of an appointment.

Given the potential for cryptoassets to be used for nefarious purposes, including money laundering, practitioners should be alive to the presence of risk indicators.

6. Guidelines on valuation and process of sale or distribution in kind

Once the insolvency practitioner has brought the cryptoassets within their control, they will need to work out what to do with them for the purposes of realising their value.

[65] Although a blockchain is itself a type of register. Note: the authors are merely noting the absence of a statutory register, not advocating for one.
[66] Paula Moffatt, Dominik Skauradszun CERIL report https://www.ceril.eu/news/ceril-report-2023-3-on-crypto-assets-in-restructuring-and-insolvency 27.
[67] Jose Carles, Laurent Le Pajolec and David Orsula, 'Digital Gold : Implications of crypto assets under an insolvency scenario' (2021, Summer) Eurofenix 12, 13.

It is clear that cryptoassets such as bitcoin do not fall within the definition of a currency or a foreign currency as a matter of English law,[68] even if they are legal tender in El Salvador and Central African Republic. We note that the term 'cryptocurrency' can be misleading as it implies a high level of safeguards that one would associate with fiat currencies. This term has however often been used and – in line with our recommendation for standardisation of language - we prefer the term cryptoasset.

The circumstances will determine whether there is an obligation to convert a cryptoasset to fiat currency, or whether there should be a distribution of the cryptoasset in kind.

At this point, three questions become relevant:

First, who is the debtor?

- A company, a partnership, an individual?

This is a straightforward question to determine the broad insolvency process to be followed.

The second question is what is the insolvent debtor's relationship to the cryptoassets in question?

- Are they a CASP, for example, a crypto exchange, or a crypto custodian?

Or

- Do they own the cryptoassets as part of their savings or investment portfolio? Do they use an online or offline digital wallet? If it is an online wallet, are they in direct control of the wallet, or is the wallet controlled by a crypto-custodian? If it is an offline wallet, do they have the 'seed' phrase to access it?

This matters for several reasons. First, because although the insolvent debtor may technically be in control of assets stored in an online cryptoasset wallet, they may be acting in their capacity as a CASP. Their relationship with the assets that they control may not be that of owner.

[68] For an excellent analysis of the position see the UK Jurisdiction Task Force Legal Statement on Digital Assets and English Insolvency Law, available from https://lawtechuk.io/our-reports/ paras 56-89.

If the insolvent debtor is a CASP, they may be holding the cryptoassets on trust for the CASP customers. In such circumstances, the cryptoassets will not fall within the insolvency estate as they belong to the CASP customers. Alas, customer contracts are not always clear as to proprietary entitlements and approaches set out in contracts are not always complied with in practice.

This means that if a customer has instructed a CASP to hold and manage the cryptoassets on their behalf without creating a trust, then the assets will fall within the insolvent CASP's estate. In this instance the customer will have only a personal claim.

The preliminary findings of the AHRC workshop in August 2024 identified a need for best practice approaches to the terms of service provided by the crypto industry as well as clarity regarding proprietary issues. Proper terms and conditions that set out the obligations of a CASP and confirming when cryptoassets are and are not subject to a trust will go a long way to resolving this. This approach would save time and costs for insolvency practitioners on insolvency as it would demonstrate whether the certainty of intention, subject and object required for English law is satisfied. An adjunct would be for the FCA to ensure that Principle 10 of the Principles for Business - which requires firms to provide adequate protection for client assets when the firm is responsible for them - applies equally to CASPs which do not fall within the definition of a "firm" for the purposes of the Financial Services and Markets Act 2000 (and they may well not).[69]

The third question is one with probably the most challenging consequences for an insolvency practitioner. That is, if there is a choice of insolvency process, which one has been chosen? For example, if a corporate insolvency, is the company in administration or liquidation or is it undergoing a restructuring process?

This question become very important in the context of asset realisation. If it is assumed that cryptoassets belonging to the insolvency estate can be located and the insolvency practitioner granted access to them for the purpose of realising their value, the insolvency practitioner may be faced with a valuation dilemma.

[69] FCA Handbook PRIN 2.1 The Principles 2.1.1.R Principle 10 available at: https://www.handbook.fca.org.uk/handbook/PRIN/2/1.html?date=2025-04-01#D3.

This is because cryptoassets are notoriously volatile. This volatility can have a material impact on the potential realisations for the insolvency estate.

- Where a company goes into liquidation the liquidator has discretion as to the management of the realisation process.[70]
- In administration, the administrator must get the best price reasonably obtainable when selling the company's assets.[71]
- In a Companies Act 2006 Part 26A restructuring where cryptoassets form a major part of the assets of the company, they will also form a significant yet uncertain part of the value of that company.

As cryptoassets do not fall within existing definitions of currency or foreign currency, there is no obligation to exchange them for fiat currency.[72]

In an administration, if the cryptoassets are subject to security, they can easily be transferred in kind to the secured creditors.

However, in other circumstances how do you address the fact that the value of the cryptoassets may fluctuate between the date of insolvency and the date of sale? It raises the following issues:

- It can make a difference in restructurings, as junior creditors may consider that crypto's volatility gives the potential for future increased value which should be reflected in the valuation and that fixing the value at one point in time is unfair to them.[73]
- There are implications for voidable transactions as both s 238 on transactions at undervalue and s 423 on transactions defrauding creditors require a comparison

[70] IA 1986 s168(4).
[71] *Re Charnley Davies Ltd (No.2)* [1990] BCC 605, 618. [There is a discussion in this case about how to value an insolvent insurance co - i.e. not on the basis of its premiums, as it would have lost goodwill and customers and competitors.]
[72] This is discussed at paras 65 and 66 of the UK Jurisdiction Taskforce Legal Statement and Digital Assets and English Insolvency Law (available from https://lawtechuk.io/our-reports/): "Although an obligation expressed in a specific quantity of digital assets is an obligation to pay (or deliver) a specific quantity of the digital assets in question, it is not a debt for a liquidated sum that can be expressed as a "'money sum". The use of the term "debt" in section 267(2)(b) of the Insolvency Act 1986 implies or requires that the obligation in question must be "monetary": section 123(3) specifically refers to the sum demanded under a valid statutory demand in the prescribed form for the purposes of Section 123(1)(a) as a "money sum".66 An obligation to pay (or deliver) a specific quantity of digital assets does not satisfy that requirement because digital assets cannot be treated as money, at least not yet. In *Miller v Race* Lord Mansfield said that what is treated as money "by the general consent of mankind" is given "the credit and currency of money to all intents and purposes".43 Digital assets, even where used as a means of payment, do not yet have such credit and currency."
[73] Douglas G Baird, 'Bankruptcy Minimalism' (2024) 98 American Bankruptcy Law Journal 493, 495.

of values given and received by debtors. What if there has been a significant change in the value of the cryptoasset after the transaction? The starting point is the value of the consideration at the date of the transaction[74] but there is discussion of how there might be regard to subsequent events in valuing assets in *Re Thoars (No 1)*[75] and *(No 2)*[76]. Clearly it is not appropriate to fully have regard to what has happened after the transaction as this would in effect be valuation at the date of the hearing. Subsequent events can however shed light on the value of the asset at the time of the transaction. For example, a sale of property at a fair market price that takes place after the suspect transaction may be used as evidence of the value of the property at the time of the suspect transaction.[77] Having regard to subsequent events may resolve uncertainties that were present at the time of the transaction, for example a precarious covenant that turns out to be worthless.[78] Examples where there is an element of chance, such as a lottery ticket, were discussed as illustrations that it will not always be appropriate to have regard to hindsight. The main circumstance in which it will be appropriate to have regard to events after the suspect transaction would be to resolve ambiguities. How far there might be regard to value fluctuation in relation to cryptoassets is still to be considered. Arguably any fluctuations in the value of the cryptoasset since the time of the transaction should be disregarded as volatility is inherent to the character of unbacked cryptoassets.

- Volatility can also impact on returns to creditors, on the value of security and a sharp drop where cryptoassets are a substantial part of the collateral can lead to a creditor being unsecured.
- If cryptoassets are a substantial part of the debtor's assets the volatility will impact on the creditors' prospects of being paid in a liquidation.[79]

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[74] *Phillips v Brewin Dolphin Bell Lawrie Ltd* [2001] 1 WLR 143, para 26.
[75] [2002] EWHC 2416 (Ch).
[76] [2003] EWHC 1999 (Ch).
[77] *Stanley v TMK Finance Ltd* [2011] Bus LR Digest D93, para 16. Although note that this will not always be appropriate e.g. if there has been a significant change in the market after the first transaction.
[78] Phillips v Brewin Dolphin Bell Lawrie Ltd [2001] 1 WLR 143.
[79] In the Canadian *Quadriga* case crypto prices had risen between the start of the insolvency and the date of the case, leading to disputes as to when the cryptoassets should be converted to fiat. See *Endorsement of the Honourable Mr Justice Hainey in the matter of Quadriga Fintech Solutions Corp, Whiteside Capital Corporation and 0984750BC Ltd d/b/a Quadriga CX and Quadriga Coin Exchange* [2019] Ontario Supreme Court of Justice CV-19-627184-00CL, CV-19-627185-00CL, CV-19-627186-00CL.

Theodora Kostoula's instructive paper considers possible valuation mechanisms, albeit concluding that whilst they are all flawed, some may have merit depending on the cryptoasset and the circumstances.[80]

Seeking certainty in the valuation process is difficult, regardless of which method you use. There is merit in Kostoula's suggestion that you take the date of insolvency as the valuation date, even if you retain an option to review that valuation at a later stage to take advantage of any potential uplift that might be to the advantage of all creditors.[81]

The process of realising the assets and making distributions to creditors can raise difficult issues. If you sell at a lower value than the value at the outset of the insolvency, then you may reduce the amount of fiat currency available to distribute to all the creditors, who would get a smaller cash dividend than they would if there was a distribution in kind.

It may not be possible to transfer cryptoassets on a like for like basis if there is no equivalent to the one that forms part of the insolvency estate or if, as in the case of the Voyager collapse, distribution in kind was too complicated. You may therefore have to sell the cryptoassets which form part of the insolvency estate in order to be able to pay the claims of unsecured creditors. In the case of an insolvent CASP, a downside of this would be that selling a lot of the same asset could flood the market and reduce the value. Release of the cryptoassets in tranches would be a way to avoid this.

So what should be done here? Guidelines are clearly needed to support IPs in their decision-making processes.

In their forthcoming text, Skauradszun and Kümpel suggest a process, whereby insolvency practitioners track the performance of a particular cryptoasset over a period

[80] Theodora Kostoula, Valuation of cryptoassets in EU insolvency: Challenges and prospects' (2022) 32 International Insolvency Review 8-40, 25.
[81] Theodora Kostoula, Valuation of cryptoassets in EU insolvency: Challenges and prospects' (2022) 32 International Insolvency Review 8-40, 27. Herbert Smith Freehills comment on an emerging practice in the Caribbean of converting cryptoassets to USD throughout the insolvency proceedings and not just at the commencement or at the end. See Herbert Smith Freehills *The IP's toolkit for cryptoassets: Investigate? Safeguard? Sell?* <https://marketing.hsf.com/20/33497/landing-pages/the-ip-s-toolkit-for-cryptoassets----investigate-safeguard-sell.pdf>, p4 accessed 7 April 2025.

of time.[82] By tracking this information it becomes possible to identify an average price. If the insolvency practitioner sells at this price, it will be difficult to argue that they have unfairly harmed the interests of creditors.[83] They go on to recommend setting up a contract for the sale on the platform at the chosen price.

As part of a standardisation process, it may make sense for some of this data to be tracked by, for example, the Insolvency Service so that there can be a reference point for insolvency practitioners. From a resource perspective, this may need to be limited to a few key trackers in view of the plethora of cryptoassets on the market, but the task could preferably be automated.

Best practice would also dictate that a process of valuation should be agreed with the creditors at a creditors' committee.[84] They may be able to indicate whether they would prefer to receive payment in kind. However, it is notable that creditors' committees are often now held online and poorly attended, so this may of uncertain benefit.[85]

The UK Jurisdiction Task Force recommends that insolvency practitioners seeking to determine what to do should obtain specialist advice.[86] However, as this advice may be inconsistent since different advisers may take different approaches, and is also likely to add to the costs of the insolvency, a better approach would be to identify a series of standard principles in a Statement of Insolvency Practice or similar guidance as a starting point.

The benefit of this is approach is that it will reduce the wrangling over valuation that would generate costs and delays and reduce the value of the insolvency estate.

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[82] Dominik Skauradszun and Jeremias Kümpel ,'Kryptowerte und Insolvenz' (in German) in Sebastian Omlor and Mathias Link (eds), *Kryptowhärungen und Token*, 3rd ed (Fachmedien Recht und Wirtschaft in Deutscher Fachverlag GmbH, 2023).

[83] IA 1986 Schedule B1 para 74. An insolvency practitioner should check that they are adequately insured. If concerned, they could also seek directions from the court as to whether their approach is approved.

[84] IA 1986 ss98, 101 (creditors voluntary liquidation), IA 1986 ss 136(4), 141 (compulsory liquidation) IA 1986 Sched B1, Paras 51, 57 (administration).

[85]Begbies Traynor Group notes that even when in person creditors' meetings for companies in liquidation were standard practice (prior to April 2017), many were attended by only the insolvency practitioner and the company director. 'What happens at a creditors' meeting when a company is insolvent?' https://www.begbies-traynorgroup.com/articles/insolvency/what-happens-at-a-meeting-of-creditors-when-a-company-is-insolvent accessed 13 October 2024.

[86] UK Jurisdiction Task Force Legal Statement on Digital Assets and English Insolvency Law, available from https://lawtechuk.io/our-reports/ para 168.

7. Guidelines or fact sheets for consumers

We see the benefit of the simplification of language and terminology for insolvency practitioners as something that should be replicated to help consumers. To this end, we include a glossary in Appendix 2.

For example, we avoid the term “cryptocurrency” as it can be misunderstood; it is not a form of money or legal tender.

Similarly, do not like the use of the term “investment” in relation to cryptocurrency as it suggests a level of consumer protection and regulatory oversight, common in investment contexts, that does not (in most cases) exist in relation to crypto purchases.

We think that there is merit in the development of a factsheet for consumers about cryptoassets in insolvencies. We briefly note the important work done by our colleagues, particularly Liz Curran, around the need for greater support for access to justice and the role of public legal education in this.[87] In this climate there is a need for clear and accessible information for consumers.

8. Concluding remarks

While huge progress has been made in demystifying crypto, there is clearly more work to be done and discussion to be had on this topic.

The point of this paper is to start the conversation about what the guidelines for insolvency practitioners need to cover as an outcome of our AHRC funded project and work with CERIL. Our work will continue as there is a proposed follow-up project to the pitched to the AHRC to address regulatory gaps and improve information for consumers. We welcome the opportunity to work with the Insolvency Service and other bodies on this endeavour.

28 May 2025

[87] Liz Curran, Jane Ching and Jane Jarman, ‘Regulatory Leadership on Access to Justice’ Released by Legal Service Consumer Panel on 1 April 2025.

Appendix 1: Analytical Framework

Cryptoassets can be understood through the analytical framework developed by Davis and colleagues for financial assets,[88] which helps to clarify terminology commonly encountered in respect of cryptoassets. Within this, they are characterised as **digital assets**, [89] in being recorded on media that is only accessible electronically. Cryptoassets are fundamentally **intangible** in nature, lacking physical mass or substance.[90] They exist independently of any hardware (like digital wallets) that may store access information related to them. As intangible entities, **cryptoassets come into existence when a record of them is made**, typically when they are first issued or minted.[91]

Issuance of a cryptoasset can be done by various entities including individuals, organizations, companies, or even central banks.[92] However, for our purposes, we exclude central bank-issued digital currencies as they align more closely with traditional financial systems. Unlike government-backed fiat currencies, standard cryptoassets are minted on blockchain networks, [93] which serve as permanent, immutable electronic ledgers of all transactions.

Property in the cryptoasset, as a thing, depends on legal relations concerning the thing as between the property holder and the rest of the world.[94] These rights crucially include the **ability to exclude others** from accessing or controlling the asset[95] (or the holder's defined share of it). Blockchain technology facilitates this exclusivity by maintaining an unalterable record of transactions, effectively preventing the "double-spending" problem where the same intangible asset could otherwise be used for

[88] Ronald Davis et al, *Financial Institutions in Distress* (Oxford University Press, 2023), Chapter 2. We are grateful to Riz Mokal for bringing this taxonomy to our attention. We however use our original backed or unbacked terminology, rather than their anchored or unanchored distinction, to discuss cryptoassets.
[89] Ronald Davis et al, *Financial Institutions in Distress* (Oxford University Press, 2023), 40-1.
[90] The Law Commission note however that cryptoassets so have a "tangible, albeit highly distributed, existence in that they rely on real physical infrastructure including hardware, the work of humans and/or machines, energy expenditure, network effects, liquidity and integration in existing social, economic or financial infrastructure". Law Commission, *Digital Assets, Final Report* Law Com No 412, Presented to Parliament pursuant to section 3(2) of the Law Commissions Act 1965 Ordered by the House of Commons to be printed on 27 June 2023, HC 1486, 20, footnote 68.
[91] Ronald Davis et al, *Financial Institutions in Distress* (Oxford University Press, 2023), 19.
[92] The Solana blockchain makes the process very easy. See Oliver Hawkins et al, 'Donald Trump's memecoin copycats spark fears for investors' Financial Times, 7 February 2025
[93] There is more than one blockchain, although the Bitcoin blockchain and the Ethereum blockchain are by far the most well-known.
[94] Ronald Davis et al, *Financial Institutions in Distress* (Oxford University Press, 2023), 19.
[95] Ronald Davis et al, *Financial Institutions in Distress* (Oxford University Press, 2023), 19, 41.

multiple transactions. Although a public blockchain[96] is a distributed ledger, without a single physical location, which can be accessed by anyone with an internet connection, it is nonetheless a unitary ledger.[97]

A cryptoasset therefore has been held to meet the definition of 'property' in *National Provincial Bank v Ainsworth*[98] in being 'definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability', both in the case of Bitcoin[99] and in the case of stablecoins.[100] As briefly noted above, there has been consistent case law acceptance of this point. The characteristics of a cryptoasset flow from the blockchain on which the cryptoasset is recorded. The cryptoasset is **definable** on the blockchain by means of the public key, it is **identifiable by third parties** as the blockchain is on a shared publicly accessible ledger, it is in its nature **capable of assumption by third parties** in that there is a market for cryptoassets, it has **permanence and stability** in that the blockchain record is immutable, so that the cryptoasset will be available at the public key address until a valid transfer of it is made using the private key and recorded on the blockchain.[101]

The approach to characterisation of cryptoassets will not always be the same for different types of cryptoasset. An obvious difference is the lack of any identifiable counterparty in some instances. This can impact on whether they may be regarded as, for example, financial assets. Davis et al define a **financial asset** as 'a legal claim on another with a net positive value for the claimant',[102] listing as examples shares, insurance policies, derivatives and pension rights. From the perspective of an insolvency estate, those cryptoassets with a net positive value will be important and in principle can be conceived as financial assets.[103] They will not always be subject to a legal claim on another, however. There is no ultimate counterparty against whom

[96] Private blockchains are also used e.g. to record transactions in an immutable way or to verify the authenticity of products.
[97] Ronald Davis et al, *Financial Institutions in Distress* (Oxford University Press, 2023), 42. This is absent any fork in which the blockchain is fragmented by two blocks are simultaneously mined as the blockchain is updated, deliberately or unintentionally. A common history is shared prior to the fork.
[98] [1965] AC 1165, HL.
[99] *AA v Persons Unknown* [2019] EWHC 3556 (Comm), referred to in *Tulip Trading Limited (A Seychelles Company) v Bitcoin Association For BSV & Ors* [2023] EWCA Civ 83, para 24 'a cryptoasset such as Bitcoin is property'.
[100] *D'Aloia v Persons Unknown* [2024] EWHC 2342 (Ch) (USDT).
[101] See *Blockchain Tech Pty Ltd* [2024] VSC 690 in which the Supreme Court of Australia. What is transferred to a transferee may differ depending on the type of blockchain: Timothy Chan, 'The Nature of Property in Cryptoassets' (2023) 43 Legal Studies 480–98, 491-3. https://doi.org/10.1017/lst.2022.53.
[102] Ronald Davis et al, *Financial Institutions in Distress* (Oxford University Press, 2023), 21.
[103] Ibid, 41.

Bitcoin, recorded at a private key address on a blockchain, can be redeemed. The same can be said in respect of cryptoassets that are issued by decentralised autonomous organisations, 'DAO's.[104] By contrast, a stablecoin will commonly have a right to redemption: for example $1 of a US dollar backed stablecoin is purportedly capable of being redeemed for $1.[105] Of course, it may be pointed out that a fiat currency i.e. money created by a central bank, is not a liability against anyone either.[106] The value of fiat currencies depends on factors including confidence in the state which has issued the currency. The same can be said for unbacked crypto, that is, cryptoassets with no redemption value, where not issued by an identifiable entity.

Transfer of a cryptoasset

Each cryptoasset has two key components:

- A public address linked to the blockchain, which functions as its identifier
- A private key required to authorize transfers of the asset

When transferring a cryptoasset, the owner initiates the process using their private key. The transaction then enters a temporary holding area known as the "memory pool" or "mempool" until validation occurs. Transactions in this waiting room will be validated in blocks. The Bitcoin blockchain operates as an open, distributed ledger accessible to anyone with internet access. Its revolutionary contribution to financial technology lies in enabling direct peer-to-peer value transfers without requiring trusted third parties like banks or payment processors. This elimination of traditional intermediaries represents a fundamental shift in how financial transactions can be conducted.

What, exactly, does a person acquiring a cryptoasset gain, however? Is it just a bunch of electrons; or a string of data? The best explanation, as identified by Sarra and Gullifer, is that a person acquiring a cryptoasset gains the 'ability to generate a transfer, in return for which the transferee is prepared to transfer valuable consideration, which is likely to be fiat or [a cryptoasset], or a real-world asset'.[107] The private key gives the holder of a cryptoasset the power to effect a transaction but is no more than a 'key to

[104] Kara Bruce, Chris K Odinet, Andrea Tosato, 'Bankrupt Crypto Organizations' (forthcoming) North Carolina Law Review, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5115277.
[105] For a discussion of different redemption rights see Kara Bruce, Christopher K Odinet, Andrea Tostato, 'The Private Law of Stablecoins' (2022) 54 Arizona State Law Journal 1073-1160, 1110-1114.
[106] Ronald Davis et al, *Financial Institutions in Distress* (Oxford University Press, 2023), 24.
[107] Janis Sarra and Louise Gullifer 'Crypto-claimants and Bitcoin bankruptcy: challenges for recognition and realization' (2019) 28 International Insolvency Review 233 at 243.

a safe'.[108] The 'transactional ability' to validly generate the transfer is what is of value.[109]

Cryptographic basis

Bitcoin's security and transaction validity rely on a consensus mechanism known as Proof of Work (PoW). This system requires network participants called "miners" to solve complex cryptographic puzzles—essentially computational challenges that demand significant processing power and energy consumption. When miners successfully solve these puzzles, they earn the right to verify and add a new block of transactions to the blockchain, receiving newly created bitcoins as a reward for their efforts.

This verification process serves multiple critical functions in securing the network against attacks, creating a tamper-evident record of all transactions, putting new assets into circulation and eliminating the need for any centralised authority to validate transactions.

A different approach to verification is taken by the Ethereum blockchain, which has transitioned to a fundamentally different mechanism called Proof of Stake (PoS). Under this system participants who validate transactions can earn rewards. They must first "stake" 32 ETH (Ethereum's native cryptocurrency) as collateral.[110] A validator will then be randomly selected from the pool of stakers to verify new blocks of transactions. Selected validators examine proposed transactions, confirm their validity, and add them to the blockchain, upon which they will receive a reward of ETH. Proof of Stake offers several advantages over Proof of Work, including dramatically reduced energy consumption, lower barriers to participation, and potentially enhanced security against certain types of attacks.

[108] Timothy Chan, 'The Nature of Property in Cryptoassets' (2023) 43 Legal Studies 480–98, 485. https://doi.org/10.1017/lst.2022.53.
[109] Ibid, 485.
[110] This is a substantial amount for ordinary investors, since ETH has had a typical price in the $1000 to $5000 range in the last three years. In practice many investors will contribute part of the stake as part of a larger group.

Appendix 2 Glossary

The Glossary is divided into

1) Core blockchain concepts
2) Security and key management
3) Types of tokens
4) Network participant roles
5) Consensus mechanisms
6) Transaction elements
7) DeFi terminology
8) Market terminology
9) Technical processes

1) Core Concepts

Blockchain: 'A type of distributed ledger which records transaction information in 'blocks', distributed amongst a network of nodes that work together to reach consensus on updates to the shared ledger, creating an auditable 'chain' of transactions'.[111] The most well-known are the Bitcoin, Ethereum and Cardano blockchains although there are others, including private blockchains.

CASP: A cryptoasset service provider, such as an exchange or custodian. The EU definition is 'a legal person or other undertaking whose occupation or business is the provision of one or more crypto-asset services to clients on a professional basis'.[112] Cryptoasset exchange providers are among those who must be registered with the FCA and comply with the UK money laundering regulations to operate legally in the UK.

Cryptoasset: 'any cryptographically secured digital representation of value or contractual rights that – a. can be transferred, stored or traded electronically, and b. that uses technology supporting the recording or storage of data (which may include distributed ledger technology)'.[113] We focus on those used as a medium of exchange or store of value. Although this type of cryptoasset is commonly termed as 'cryptocurrency' we reject that term as misleading.

Custody: The holding and safekeeping of cryptoassets on behalf of clients by a CASP.

Decentralisation: The distribution of power, control, and decision-making across a network rather than being concentrated in a single authority.

[111] Financial Conduct Authority, 'Regulating cryptoassets: Admissions & Disclosures and Market Abuse Regime for Cryptoassets Discussion Paper', December 2024, Glossary.
[112] EU Regulation on Markets in Crypto-assets, (EU) 2023/1114) 'MiCAR', Article 3, paragraph 1, point 15.
[113] Financial Services and Markets Act 2000, s 417 as amended by the Financial Services and Markets Act 2023 c. 29 Pt 6 s.69(4)(a) (August 29, 2023)

Digital Asset: A 'thing that is digital or electronic in nature'.[114] This is a broad category that includes cryptoassets, encompassing any electronically stored value or contractual right.

Distributed Ledger Technology (DLT): Any database that is spread across multiple sites, regions, or participants.

Fiat-Backed Stablecoin: Stablecoins which 'include stablecoins that seek to maintain a stabilised value of the cryptoasset by reference to, and which may include the holding of, one or more specified fiat currencies'.[115]

Stablecoin: 'a category of cryptoassets that aim to maintain a stable value relative to a specified asset, or basket of assets, providing perceived stability when compared to the high volatility of unbacked cryptoassets'.[116] The category includes Fiat-Backed Stablecoins. Also referred to as **'asset-referenced tokens'**.[117]

Unbacked Cryptoasset: Cryptoassets that do not reference a specified asset or basket of assets to maintain their value.[118]

2) Security and Key Management

Cold Storage: Keeping private keys offline, including in a hardware wallet, to protect against unauthorized access or hacking.

Hardware Wallet: A physical device designed to securely store private keys offline.

Private Key: 'a string of numbers and letters used in cryptography, similar to a password, which enables the owner to obtain access to a wallet, authorise transactions within the blockchain, and prove ownership of the cryptoassets'.[119]

Public Key: A string of numbers and letters, associated with a private key, which enables the holder of the wallet to be identified by other users of the network and allows the conclusion of transactions between users of the blockchain.[120]

Seed Phrase: A series of words (typically 12 or 24) that can regenerate a wallet's private keys if lost. If the seed phrase is also lost this can prove very expensive.

[114] Property (Digital Assets) Bill [HL], HL Bill 67, version accessed 17 April 2025.
[115] Financial Conduct Authority, *Regulating cryptoassets Phase 1: Stablecoins* (November 2023), 1.5.
[116] Financial Stability Board, *Assessment of Risks to Financial Stability from Crypto-assets* (16 February 2022), adopted by the Financial Conduct Authority, *Regulating cryptoassets Phase 1: Stablecoins* (November 2023), 1.4.
[117] This is the terminology in 'MiCAR', Article 3(1)(6).
[118] Financial Conduct Authority, 'Crypto: the Basics' 10 May 2024, available at https://www.fca.org.uk/investsmart/crypto-basics.
[119] CERIL Report 2023-3 on Crypto-assets in Restructuring and Insolvency 31 October 2023, Annex 1.
[120] CERIL Report 2023-3 on Crypto-assets in Restructuring and Insolvency 31 October 2023, Annex 1.

Wallet: A device or service that stores users public and private keys, allowing them to interact with various blockchains and to send and receive cryptoassets.[121] They can be either offline (cold storage)[122] or online (hot wallet).

3) Types of Tokens

Governance Token: A type of utility token that grants holders voting rights in a blockchain protocol's governance decisions.

Non-Fungible Token (NFT): A unique cryptoasset that represents ownership of a specific item or piece of content.

Security Token: A cryptoasset that represents ownership in an external asset or enterprise. These digital tokens are used, inter alia, for the process of crowdfunding a new cryptocurrency or a (blockchain) project. Their value is derived from exogenous, tradeable, tangible assets.[123]

Utility Token: A 'type of cryptoasset that is only intended to provide access to a good or a service supplied by its issuer'.[124] This type of cryptoasset is designed for a specific use case within a blockchain ecosystem.

4) Network Participants

DAO (Decentralised Autonomous Organization): An organisation represented by rules encoded as a computer program, it is transparent and controlled by shareholders rather than a central authority. Control is effected through smart contracts and governance tokens. In practice many DAOs will use another business medium as a 'wrapper' in order to gain legal personality to interact with the outside world.

Miner: In Proof of Work systems, individuals or entities who dedicate computing power to validate transactions and secure the network.

Node: 'a device or process that is part of a network and that holds a complete or partial replica of records of all transactions on a distributed ledger',[125] including those that participate in the validation process for transactions under the Proof of Work system

Validator: In Proof of Stake systems, participants who lock up (stake) tokens to participate in transaction validation.

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[121] Financial Conduct Authority, 'Regulating cryptoassets: Admissions & Disclosures and Market Abuse Regime for Cryptoassets Discussion Paper', December 2024, Glossary.
[122] A well-known example shows that it can be a problem if the device is lost. See Steven Morris, 'Judge halts attempt to retrieve £600m bitcoin wallet from Welsh dump' (Guardian, 9 January 2025), available at https://www.theguardian.com/uk-news/2025/jan/09/judge-halts-attempt-to-retrieve-600m-bitcoin-wallet-from-welsh-dump.
[123] CERIL Report 2023-3 on Crypto-assets in Restructuring and Insolvency 31 October 2023, Annex 1.
[124] MiCAR, Art. 3(1)(9).
[125] MiCAR, Art. 3(1)(4)

Whale: An individual or entity that holds a significant amount of a particular cryptocurrency.

5) Consensus Mechanisms

Byzantine Fault Tolerance (BFT): The ability of a distributed system to reach consensus despite some nodes failing or acting maliciously.

Consensus Mechanism: 'the rules and procedures by which an agreement is reached, among DLT network nodes, that a transaction is validated'.[126]

Delegated Proof of Stake (DPoS): A variation of PoS where token holders vote for delegates who validate transactions on their behalf.

Proof of Stake (PoS): A consensus mechanism where validators are selected to create new blocks based on the number of coins they have staked.

Proof of Work (PoW): A consensus mechanism where miners compete to solve complex mathematical puzzles to validate transactions and create new blocks.

6) Transaction Elements

Block: A collection of transactions grouped together and added to the blockchain after validation.

Hash: A fixed-length output produced by running data through a cryptographic algorithm, serving as a digital fingerprint.

Mempool: The 'memory pool' of transactions that are waiting to be added to the blockchain as a block.

Merkle Tree: A data structure used in blockchains to efficiently verify the integrity of transaction data.

Nonce: A number used once in cryptographic communications, particularly in Proof of Work mining.

7) DeFi (Decentralized Finance)

Automated Market Maker (AMM): A protocol that uses liquidity pools to enable automated trading without order books.

Decentralized Exchange (DEX): A cryptocurrency exchange that operates without a central authority and allows direct peer-to-peer cryptocurrency transactions.

Liquidity Pool: A collection of funds locked in a smart contract to facilitate trading on decentralized exchanges.

[126] MiCAR Art. 3(1)(3).

Smart Contract: Self-executing contracts with the terms directly written into code, automatically enforcing agreements.

Yield Farming: The practice of staking or lending crypto assets to generate returns or rewards.

8) Market Terminology

Altcoin: Any cryptocurrency other than Bitcoin.

Coin Burning: Taking cryptoassets out of permanent circulation by means such as sending cryptoassets to a wallet with no access key etc.[127]

Fork: A split in a blockchain resulting in two separate chains, either through a soft fork (backward compatible) or hard fork (not backward compatible).

HODL: A term derived from a misspelling of "hold" that describes the strategy of buying and holding cryptoassets long-term regardless of market fluctuations.

Market Capitalization: The total value of a cryptocurrency, calculated by multiplying the current price by the circulating supply.

9) Technical Processes

Gas: A fee required to execute transactions or smart contracts on some blockchains, particularly Ethereum.

Halving: A programmed event where the reward for mining new blocks is cut in half, reducing the rate at which new coins are created.

Layer 2: Solutions built on top of existing blockchains to improve scalability and efficiency without changing the base layer protocol.

Mining: The process of validating transactions and adding them to the blockchain through solving complex mathematical problems.

Minting: Creating new digital coins or tokens on a blockchain network.[128]

Sharding: A scaling solution that partitions a blockchain into smaller, more manageable segments to increase transaction throughput.

[127] Financial Conduct Authority, 'Regulating cryptoassets: Admissions & Disclosures and Market Abuse Regime for Cryptoassets Discussion Paper', December 2024, Glossary.
[128] Financial Conduct Authority, 'Regulating cryptoassets: Admissions & Disclosures and Market Abuse Regime for Cryptoassets Discussion Paper', December 2024, Glossary.