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Developments in Documenting Digital Asset Derivatives

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The Short Read

As the size of the digital assets market, and the range of available digital assets, has grown in recent years, so too has the number of interested market participants. On the buy side, demand has been growing for derivatives on digital assets, and on the sell side, dealers have been assessing what role they wish to play in this market. The growth of the asset class has also piqued the interest of regulators, policy makers and central banks.

Thus far, to document over-the-counter (OTC) digital asset derivatives, market participants have used either an ISDA Master Agreement with adapted confirmations and adapted versions of existing ISDA definitions, or their own bespoke agreement which may not be based on ISDA documentation at all.

Existing ISDA documentation does not adequately cover a number of unique features of the digital asset class, leading to greater risk for one or both trade counterparties, depending on which side of the trade they sit. As a result, ISDA is seeking to develop legal standards for the digital asset derivatives market, primarily through its "Digital Assets Legal Group". ISDA's recent paper "Contractual Standards for Digital Asset Derivatives"[1] (the "ISDA Paper") is a first step towards this goal.

Exchange-traded derivative contracts referencing certain cryptocurrencies have been available for some time, with Bitcoin and Ether futures contracts showing high levels of trading volumes. However, progress with OTC digital asset derivatives has been limited by a hesitancy by traditional swap dealers to get involved in this market – this being one of the reasons for the slow development of standardised OTC documentation.

Total assets under management of crypto hedge funds were estimated at around US$ 3.8 billion[2] for 2020 and have presumably grown since then.

The International Swaps and Derivatives Association, Inc. ("ISDA") estimates the market value of the crypto asset class to be around US$ 3 trillion[3].

This *Briefs for the Buy side* considers issues raised in the ISDA Paper as well as documentation currently in use for documenting digital asset derivatives.

ISDA's Paper: "Contractual Standards for Digital Asset Derivatives"

What are digital assets?

In its paper published in December 2021 entitled "Contractual Standards for Digital Asset Derivatives"[4] (the "ISDA Paper"), ISDA notes that a precise definition of a digital asset is elusive given the speed at which the market and associated technology is developing. The

United States Commodity Futures Trading Commission ("CFTC") describes a digital asset as something that can be "stored and transmitted electronically, and has associated ownership or use rights"[5] whilst the Financial Stability Board ("FSB") has described a digital asset as "a digital instrument that is issued or represented through the use of distributed ledger or similar technology"[6]. Under English law, cryptocurrencies (a sub-set of the broader category of digital assets) are a form of property[7].

Categorising digital assets

Differentiating digital assets into clear categories is complicated by the use of conflicting jargon and terminology in the market and, in any event, the dividing line between one category of digital asset and another is easily blurred. Some simplified categories of digital assets are:

- exchange tokens – which may be referred to as cryptocurrencies, cryptocoins or payment tokens, such as Bitcoin or Ether, whose primary purpose is as a medium of exchange (i.e., as payment for goods or services);
- security tokens – such as TZROP, which may provide specific rights in respect of an underlying asset such as ownership, repayment of a specific sum of money or entitlement to a share in future profit;
- utility tokens – such as Filecoin, which upon redemption provide access to a product or service; and
- stablecoins – such as Tether, which are pegged against a stable asset, such as a fiat currency.

The ISDA Paper draws a broader distinction between:

(a) "native digital assets", which exist solely as a digital record (for example, Bitcoin and Ether); and

(b) "asset-referenced digital assets", which reference an underlying asset or contractual right (for example, a central bank digital currency (called a "CBDC"), which is a digital form of a country's official currency, and stablecoins).

Investment manager exemption

Whilst the various issues market participants should consider before investing in digital assets is beyond the scope of this *Briefs for the Buy side*, a tax issue would appear to act as an incentive to using derivatives. Subject to satisfying certain conditions, an investment manager based in the United Kingdom ("UK") will seek to rely on the 'investment manager exemption' whereby income from investment transactions undertaken on behalf of a non-UK resident fund will not be brought within scope of UK tax. As digital assets do not appear to fall within the scope of the exemption, profits from trading such assets may fall within the UK tax net. Digital asset *derivatives*, on the other hand, appear to fall within the exemption.

Use of digital asset derivatives

Current state of play

As noted in the ISDA Paper, "derivatives will play a crucial role in the digital asset market, facilitating price discovery, increasing liquidity and allowing market participants to hedge [risks]".

Ether and Bitcoin futures contracts are now well established and popular[8] (and have, by an overwhelming margin, the largest trade volumes in the cryptocurrency futures market).

By comparison, OTC derivatives are at a more nascent stage; although non-deliverable forwards and non-deliverable OTC currency

options referencing an Ether or Bitcoin price are becoming more common.

There appears to be a substantial appetite on the buy side for a wider range of OTC digital asset derivatives to be made available – for example, total return swaps.

The market is not expecting a sudden proliferation of OTC derivatives encompassing the full range of the digital asset class (indeed, the ISDA Paper notes that "due to their nature, certain types of asset-referenced digital asset are unlikely to be the immediate focus of the derivatives markets [including] digital assets that are intended to operate as cash equivalents…. or digital assets that are unique so there is no liquid market or proxy for hedging purposes").

Reasons for slow development

OTC digital asset derivatives have been slow to develop to date for a number of reasons, including:

- regulatory uncertainty (over the digital asset itself and regulation of the markets, infrastructure and service providers);
- jurisdictional differences in regulatory approach (for example, ranging from local bans on Bitcoin mining in Chinese provinces to El Salvador's adoption of Bitcoin as legal tender, whilst the United States Securities and Exchange Commission and the CFTC are actively engaging in determining how their existing regulatory frameworks should apply to digital assets);
- a lack of robust and efficient infrastructure;
- cybersecurity and operational risk;
- reputational risk (on both the buy and the sell side);
- difficulties in creating suitable risk management processes around such products;
- difficulties for dealers in hedging exposure; and
- a lack of standardisation in contractual standards.

The ISDA Paper focuses on the last of these reasons.

Current documentation in use

Futures

Futures contracts are documented under futures clearing agreements, in the normal course, and may be traded on a number of exchanges including the Chicago Mercantile Exchange ("CME") and unregulated exchanges such as Binance or Kraken.

OTC digital asset derivatives

To document OTC digital asset derivatives, dealers may use an ISDA Master Agreement and 'leverage' off the 2002 ISDA Equity Derivatives Definitions, the 1998 FX and Currency Options Definitions and/or the 2005 ISDA Commodity Definitions as a basis for specific transaction-level provisions.

Forwards and OTC options

A market has been developing in forwards and OTC options in Bitcoin and Ether documented using adapted versions of Master Confirmation Agreements for Non-Deliverable Forward (or Currency Option) Transactions, referencing futures market reference rates.

In the case of Bitcoin underlyers, these may use CME's reference rates for Bitcoin (in US Dollars), which are based on a regional end of day benchmark. The CME CF Bitcoin Reference Rate is published at 4:00pm London time based on an aggregation of trade executions between 3:00pm and 4:00pm London time on certain specified exchanges (and is used as the benchmark rate for settlement of all CME Group Bitcoin futures). From 28 February 2022, a second reference rate – the CME CF Bitcoin Reference Rate New York published at 4:00pm New York time – is also available.

Swaps on Exchange-Traded Funds (ETFs)

Swaps on crypto-themed ETFs are documented using more conventional swap documentation suitable for swaps on ETFs.

Bespoke agreements

Alternatively, dealers/brokers specialising in digital assets may use their own bespoke template agreements, which may appear more akin to terms and conditions, not reflecting the 'bilateral' relationship which is at the core of the ISDA Master Agreement. Bespoke agreements may lack features of the ISDA Master Agreement, including effective close-out/netting provisions and collateral provisions.

The ISDA Paper

Working group

As digital assets (and digital asset derivatives) are expected to become an established part of the financial market landscape, ISDA are racing to get ahead of the game. In September 2021, ISDA announced that it had formed a digital asset legal and documentation working group to explore standardisation of contractual terms for digital asset derivatives. As mentioned above, dealers have not adopted a uniform approach to documenting digital asset derivatives and ISDA has commented[9] that this is "not ideal: it results in a lack of standardization that may ultimately hamper transparency and liquidity and lead to higher levels of risk". The overall aim of the ISDA initiatives in this area is to promote the development of a robust legal framework with common standards to support the safe growth of the asset class by facilitating new hedging tools and common defined terms and expectations[10].

The ISDA Paper sets out a number of key issues to consider as "the first steps" in developing contractual standards applicable to digital asset derivatives. It begins with a consideration of some prevailing macro topics and how they may affect the content of contractual standards, including:

- market infrastructure;
- the lack of, and uncertainties in, the regulatory landscape both in terms of the 'market' and the 'asset'; and
- that some digital assets may have recognised 'property rights' in certain jurisdictions but not in others. It also notes that "digital assets may also be based on other technologies [than blockchain or distributed ledger technologies]". In which case, in any contractual standards one would need to be adaptable to account for both changes in blockchain or distributed ledger technologies and the creation and evolution of new technologies.

This *Briefs for the Buy side* highlights below some novel features of the digital asset derivatives market explored in the ISDA Paper which will have an impact on the future standardisation of contractual terms. As outlined in the ISDA Paper, ISDA intends to produce a set of templates and definitions for digital asset derivatives.

For completeness, it is worth noting that the FSB has recently published its own "*Assessment of Risks to Financial Stability from Crypto-*

assets" report[11], which highlights vulnerabilities arising in certain segments of the crypto asset markets which may present a risk to global financial stability.

Disruption events

The ISDA Paper devotes a section to disruption events which may impact digital asset derivative transactions and looks at how parties may wish to deal with such eventualities in documentation terms. In short, it will be necessary to: (i) identify the range of possible events that might affect a transaction; (ii) determine how such events can be observed; (iii) develop the criteria and thresholds for determining whether an event may constitute a disruption event; and (iv) clearly set out the consequences of the event (e.g., an adjustment to, or termination of, the transaction). ISDA stresses that the consequences should be as deterministic as possible (to aid and enable automation) whilst recognising that in certain circumstances greater discretion may need to be exercised by a party or the calculation agent. Thus, any standardised terms must be flexible enough to cater for both approaches.

Disruption events are common in ISDA definitional booklets – in particular, in the widely-used 2002 ISDA Equity Derivatives Definitions.

That the 2002 ISDA Equity Derivatives Definitions are still very much in use 20 years later (and in preference to the more recently published 2011 ISDA Equity Derivatives Definitions) is a testament not only to thoughtful and practical drafting, but to the nature of the equities asset class itself which has not fundamentally changed, nor has the basic operation of the markets on which equity securities are traded. Contrast the equities asset class with the evolving and uncertain nature of both the digital assets themselves and their markets, and one can imagine the challenges involved in producing a set of templates and definitions for digital asset derivatives.

The ISDA Paper considers a number of potential disruption events grouped into 'technology-related events' and 'market-related events' and highlights certain general principles for consideration when determining the consequences of a particular type of event. Set out below are a few examples.

Technology-related events

Forks

Changes to the underlying technology connected to a digital asset may change the nature of the digital asset and thus may have an impact on a digital asset derivative. A 'fork' is a specific example of such a change and is applicable where the digital asset is blockchain-based. Different types of forks may occur, including by a change in protocol or an adoption of different blockchains.

A fork may cause a separation of a digital asset into separate digital assets with different characteristics. Markets may not automatically support the successor assets. Such a process may be seen as similar to a 'stock split' affecting equity securities (i.e., where an issuer splits existing shares into new shares), however there appear to be many 'unknowns' with such processes in the digital assets market. There may be uncertainty as to whether the derivative will continue in respect of successor assets and/or be correctly valued. Whatever type of fork has occurred, the contractual framework will need to provide for adjustments or fallbacks so that the derivative either terminates upon the occurrence of the fork or continues in effect with appropriate modifications.

Airdrops

An airdrop refers to the distribution of new digital assets to current holders and can be used for promotional purposes or following a 'hard' fork (i.e., where the new protocol is incompatible with the old protocol). This may result in an increase in the market value of the digital

asset, which is something which would need to be addressed.

Cybersecurity/technological disruptions

Disruptions caused by cyberattacks, bugs and other technological disruptions could have an effect on the valuation of, and the ability to settle or hedge, the derivative. The appropriate consequence could depend on whether or not the disruption was scheduled to occur and its severity.

Market-related events

Infrastructure

This covers a range of risks, including reliability or availability of services, resilience and business continuity and lawfulness of activities. A specific issue of concern is a potential loss of access to the digital asset (i.e., loss of ownership rights). Unlike traditional (i.e., non-digital) assets, verification of ownership or the ability to access or deal with the digital asset may depend on a 'private key' which is necessary for the 'owner' to access the relevant infrastructure platform through which the digital asset is held. Loss of a private key, or the transfer of the digital asset to another address, may result in an inability to access or trade the asset. Given the wide variety of these types of events and the impact they may have on a transaction (including the inability to settle or effectively hedge a transaction), a broad set of consequences would need to be considered – from terminating the transaction to allowing for an alternative settlement mechanism.

Untethering

Where an asset-referenced digital asset becomes untethered from the underlying asset which it tracks or against which it is 'pegged' or 'stabilised', a significant fall in value may occur which would need to be addressed.

Valuation

The ISDA Paper identifies issues with regard to both appropriate valuation methodology and valuation sources for digital assets and digital asset derivatives, specifically noting that "Given the pace of development within digital asset markets, new issues are expected to emerge (such as novel valuation source(s))". It is essential that valuation and settlement methodologies are reliable.

Valuation Sources

For digital asset derivatives valued using price observation at trading venues, problems may arise insofar as there may be "no primary venue for the trading of a specific digital asset, with trading occurring across many (often unregulated) venues". Varying trading volumes between venues will affect liquidity and may cause pricing differences between venues. The rules of the venues may be unclear or not fully transparent, and market manipulation may also be a risk factor. How and when prices are published may be unclear or subject to change. Consequently, avoiding single venue pricing observations (and imposing minimum trading volume criteria) may be appropriate. Valuations using index price sources may suffer from similar issues and appropriate index disruption events would need to be specified.

The timing of valuations for settlement purposes requires special consideration, as digital asset markets are generally open continuously. Either an 'official closing price' may not exist, or the timing of publication of a daily reference rate may be inherently arbitrary.

Valuation Methodologies

The ISDA Paper acknowledges the tension between drafting "standardised, deterministic methodologies" and permitting broader calculation agent discretion in determining valuations – a compromise between too little discretion making it impossible to establish an appropriate valuation and too much discretion leading to large variations in potential pricing. It may be advisable to include (for example) averaging mechanisms as a safety precaution.

Compatibility with existing ISDA documentation architecture

ISDA notes that the integration of terms for digital asset derivatives into the existing ISDA documentation architecture will be crucial. However, the very nature of digital asset derivatives means that there may be "potential interpretative issues" in doing so. Very broadly, compatibility issues could include (i) existing mechanics relating to default/close-out valuations, (ii) determining the location of performance (which may be relevant for business day and local business day definitions) and (iii) matters relating to physical settlement. The concept of physical settlement of digital assets throws up some novel concerns. Although cash settlement would appear to be the obvious settlement mechanism to choose (at least currently), the market will need to develop established procedures for physical settlement of digital assets if this is to become a more accepted settlement method. One issue to be resolved will be whether delivery of digital assets could or should be treated as a 'payment' under an ISDA Master Agreement and whether it can constitute a 'currency' or 'funds' thereunder[12].

Collateral

The ISDA Paper tackles the issue of how digital asset derivatives could be collateralised. Whilst using non-digital assets as collateral is unlikely to give rise to any significant issues (although some concepts will need to be clarified), almost all forms of digital assets would likely be ineligible as collateral for the purposes of applicable mandatory margining rules. In addition, ISDA credit support documentation is drafted to apply to cash and securities – digital assets would not fit into the existing credit support architecture. However, if digital assets could be characterised as cash (such as CBDCs), then it may be possible to collateralise transactions using such assets.

Documentation timetable

The ISDA Paper states that ISDA is prioritising cash-settled transactional templates (i.e., long-form confirmations) for common transaction types covering native digital assets (focusing on Bitcoin and Ether) for the year ahead (i.e., 2022).

After that, ISDA plans to look at documentation for other digital assets and additional transaction types (such as perpetual swaps) as well as commencing work on one or more full definitional booklets (i.e., sets of definitions).

Moving target

As the range and nature of digital assets and the underlying technology underpinning such assets are evolving at such a rapid pace, any digital assets standards (i.e., in particular, definitions) which ISDA may look to produce may run the risk of becoming outdated and inadequate.

One of the greatest challenges facing a full definitional booklet is likely to be balancing the drafting of the definitions between (i) supporting automation and being deterministic to the greatest extent possible and (ii) at the same time, being flexible enough to cater for future developments in the space and giving one or both parties or the calculation agent appropriate and sufficient discretion (in terms of determinations and adjustments) – but not too much discretion.

Any "Digital Asset Derivatives" definitions will be published digitally (as the 2021 ISDA Interest Rate Definitions were) and can therefore be

amended with ease (a likely necessity given the pace of ongoing developments in the space). There may also be a case for use of Market Practice notices to be issued from time to time to guide the market.

Given that contractual standardisation will be subject to continuing development, it is important that a solid foundation is laid to be developed upon. The ISDA Paper makes headway in identifying appropriate issues to be tackled and prepares the groundwork for an initial set of documentation which can be built upon in the future as new issues arise and new products are developed.

[1] Available at: https://www.isda.org/2021/12/14/contractual-standards-for-digital-asset-derivatives/. It also incorporates an "*Analysis of Existing ISDA Definitional Booklets*" in a separate document.

[2] See the 3rd Annual Global Crypto Hedge Fund Report 2021, published by PricewaterhouseCoopers Limited, the Alternative Investment Management Association and Elwood Asset Management; available at: https://www.pwc.com/gx/en/financial-services/pdf/3rd-annual-pwc-elwood-aima-crypto-hedge-fund-report-(may-2021).pdf

[3] See "*derivatiViews – Developing Contractual Standards for Crypto Derivatives*" (18 January 2022); available at: https://www.isda.org/2022/01/18/developing-contractual-standards-for-crypto-derivatives/

[4] Available at: https://www.isda.org/2021/12/14/contractual-standards-for-digital-asset-derivatives/. It also incorporates an "*Analysis of Existing ISDA Definitional Booklets*" in a separate document.

[5] See the CFTC's "*Digital Assets Primer*" dated December 2020; available at: https://www.cftc.gov/digitalassets/index.htm

[6] See the FSB report entitled "*Assessment of Risks to Financial Stability from Crypto-assets*" published on 16 February 2022 and available at: https://www.fsb.org/wp-content/uploads/P160222.pdf

[7] See *AA v Persons Unknown [2019] EWHC 3556 (Comm),* paragraph 61. In *Fetch.ai Ltd & Anor v Persons Unknown Category A & Ors [2021] EWHC 2254 (Comm)* at paragraph 9, Pelling J. stated that assets credited to an account on the Binance Exchange "are to be regarded as property for the purposes of English law".

[8] For example, see CryptoCompare's January 2022 Exchange Review (available at: https://www.cryptocompare.com/media/39501098/cryptocompare_exchange_review_2022_01-1.pdf) showing overall derivatives market volumes at US$2.86 trillion in January 2022.

[9] See "*derivatiViews – First Steps to Crypto Derivatives Standards*" (30 September 2021); available at: https://www.isda.org/2021/09/30/first-steps-to-crypto-derivatives-standards/

[10] This is mentioned by ISDA CEO Scott O'Malia in Episode 15: "Crypto and Derivatives", of the ISDA "*The Swap*" podcast of 27 October 2021.

[11] See *fn. 6* above.

[12] We note in passing that the UK Financial Conduct Authority has previously stated that they do not consider cryptocurrencies to be currencies or commodities for regulatory purposes under MiFID II (see: https://www.fca.org.uk/news/statements/cryptocurrency-

derivatives).