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NOTE FROM THE EDITOR-IN-CHIEF



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Welcome back to the 8th issue of the IJBL, which once again offers a variety of insightful crypto-related topics from various jurisdictions, plus a link to a recording of the December 2023 episode of the IJBL/GBBC webinar, “Emerging Topics in Blockchain Law”. I am proud that this issue also covers digital asset related regulatory issues in jurisdictions outside the United States: Brazil, Kenya, and Switzerland.

We start off with an article from Larissa Arruy and Flávia Theresa Vazzolla, from the office of Mattos Filho in Brasilia (Brazil), who shed light on the strategic and innovative agenda of the Central Bank of Brazil which recently launched the Brazilian CBDC, better known as DREX. They describe how, starting in 2020, the Central Bank of Brazil structured the journey of DREX into the current pilot project. It is worth noting that clients of financial and payment institutions do not directly own DREX. They can only capitalize on DREX through tokenized products linked to it which are offered and maintained in their virtual wallets held with these institutions.

Latham & Watkins lawyer Teresa Wong explores the legal issue whether NFTs constitute as commodities under the U.S. Commodity Exchange Act and CFTC Rules and, if so, the consequences thereof.

If an NFT or NFT project were deemed to constitute or involve a commodity, derivative transactions with respect to such NFTs would trigger CFTC regulatory licenses and requirements.

Further, Lee Schneider, General Counsel at Ava Labs, breaks down the various types of tokens in a principle-based taxonomy aimed at creating a better categorization and regulatory treatment for policymakers. His underlying idea is that most tokens represent things that already exist, and they can be regulated - or not regulated - in the exact same way: the same asset equals the same risk, which results in the same regulation. The legal and regulatory treatment should become readily apparent upon an analysis of the functions and features of a particular token to establish its nature. Lee makes a reference to the UK Law Commission’s work which makes clear that there is no need to abandon sound principles when a new technology for representing things comes along.

Lee’s article explores a perspective on how to bundle or determine token status for regulatory purposes. This is an important discussion, and we invite other perspectives on this challenge, including any views on Lee’s approach. We will consider any submissions for potential publication in the next edition.

Dr Reto Luthiger and Diana Lafita from MLL Legal AG in Zurich touch on the issue whether staking by the custodian of crypto assets allows for the staked tokens to be segregated in case of the custodian's bankruptcy. They scrutinize this question from the Swiss regulatory perspective. The Swiss Financial Market Supervisory Authority FINMA provided guidance in December 2023 to help clarify the regulatory uncertainties around staking.

Muthoni Njogu and Anette Njoki from Njogu Associates in Nairobi explore the benefits blockchain technology may provide in the carbon emissions trading market in Kenya. It helps reliably record and transmit information flow in that space and, not surprisingly, renders the creation of assets out of carbon credits.

Finally, I include a link to the webinar broadcasted on December 12, 2023. During this webinar, Kelly Chapman (Wave Digital Assets), Stephen Palley (Brown Rudnick), Preston Byrne (Brown Rudnick), Laura Douglas (Clifford Chance), and Eric Hess (Hess Legal Counsel) compared and contrasted crypto asset regulation in the United States and the United Kingdom, and delved deep into regulation from the perspective of bankruptcies and crypto-related crimes.

Happy reading and listening.

Matthias Artzt

Editor-in-Chief

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DREX: THE BRAZILIAN CBDC



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THE BRAZILIAN CONTEXT

According to the Bank for International Settlements (BIS), potential benefits associated with the introduction of Central Bank Digital Currencies (CBDCs) warrant Central Bank engagement with these novel financial instruments. Stated benefits include the potential to increase the competitiveness and efficiency in financial systems, the possibility of being used as a payment method (particularly for instant payments), the ability to prevent money laundering, and their programmability mechanisms, among other things.¹ This essay discusses the development of a CBDC in Brazil by the Brazilian Central Bank (BCB).

A distinctive characteristic of BCB is that it positions itself as a catalyst for the incorporation of innovation into the National Financial System and the Brazilian Payment System. **BCB has a strategic agenda that includes innovation as one of the pillars for promoting competition in the financial and payment markets, aiming to prepare these ecosystems for a technological and inclusive future.**²

In this sense, the development and implementation of Pix, a Brazilian instant payments system, was mostly conducted and promoted by BCB.

The launch of a Brazilian CBDC, which was named “DREX,” is also included in the BCB’s innovation agenda.³

Pix, which was launched in 2020, allows people to make instant digital payment transactions, 24 hours a day, every day of the week, between account holders of different institutions, through the Internet banking channels provided by their institutions.⁴ For various reasons, whether inherent to the characteristics of Pix, such as agility and ease, or related to the fact that it was launched during the pandemic, when virtual commercial relationships were rapidly increasing, Pix gained great importance and became the most used payment method in Brazil from 2022 onwards.⁵

As a result of this transformation, Brazilian population underwent an adaptation process to get used to a new digital payment solution that disrupted the way they used to make payment transactions and would potentially be more willing to use new digital solutions to make payments, including those involving CBDCs.

¹ BIS. BIS Papers No. 123, April 2022. CBDC in emerging market economies. Available at: <https://www.bis.org/publ/bppdf/bispap123.pdf>. Access on: November 12, 2023.

² BCB. BCB Agenda#. Available at: https://www.bcb.gov.br/acessoinformacao/bcmais_competitividade. Access on: November 12, 2023.

³ BCB. Drex: BCB clarifies the main questions regarding its new digital currency Available at: <https://www.bcb.gov.br/detailhenoticia/706/noticia>. Access on: November 12, 2023.

⁴ BCB Resolution No. 1, dated as of August 12, 2020.

⁵ FEBRABAN. Pix is the most used payment method in Brazil in 2022; TED leads in amounts transacted. Available at: <https://febrabantech.febraban.org.br/temas/meios-de-pagamento/pix-e-o-meio-de-pagamento-mais-usado-no-brasil-em-2022-ted-lidera-em-valores-transacionados>. Access on: November 12, 2023.

Another factor justifying BCB's initiatives to develop a Brazilian CBDC is related to concerns about the risks associated with the use of stablecoins. Brazil stands out in the crypto asset investment market, with approximately 4.1 million people investing in cryptoassets by July 2023, accumulating approximately US\$3.6 billion invested in assets of this nature.⁶

In this context, BCB has already stated that the lack of a centralized currency compatible with the trading environment of these assets may expose these transactions and Brazilian investors to several risks and threaten financial stability.⁷

In light of this recent experience in Brazil, BCB decided to take the first steps towards structuring a Brazilian CBDC.

FIRST STEPS IN STRUCTURING THE BRAZILIAN CBDC

From 2020 to early 2021, BCB established a working group to conduct studies on the potential issuance of a CBDC⁸ and announced preliminary guidelines for its potential development.⁹

In November 2021, BCB announced an initiative within the Financial Innovation and Technology Lab (*Laboratório de Inovações Financeiras e Tecnológicas* - LIFT) called the Digital Real Challenge (*Desafio Real Digital*), which was coordinated jointly with the National Federation of Associations of Central Bank Employees (*Federação Nacional de Associações dos Servidores do Banco Central* - FESNABAC).¹⁰

This initiative was important because one of the distinguishing features is that through LIFT, BCB allowed market participants to demonstrate and propose ways in which a Brazilian CBDC could be used if it was to be developed.

In this context, the project was launched to promote research projects by market participants to assess the technological feasibility of a CBDC in use cases of (i) delivery versus payment (DvP), involving the settlement of transactions with digital assets, (ii) payment versus payment (PvP), involving currency exchange, (iii) Internet of Things, involving algorithmic settlement or directly between machines, and (iv) decentralized finance, involving the definition of protocols with settlement based on a CBDC.¹¹

Within the scope of this initiative, nine projects developed by market participants were selected. They dealt with proposals for the use cases such as DvP of CBDC and virtual assets, tokenized vehicles and real estate, methods of PvP between Brazilian and Colombian currencies, as well as the use of programmability in financing rural activities. These projects were developed and executed during the year 2022 and concluded in February 2023.¹²

THE PILOT PROJECT

With the experience and learning gained from the LIFT projects, which provided examples of uses of the CBDC for the real economy and gave even more legitimacy to the efforts of BCB in this matter, BCB updated the guidelines for the development of the Brazilian CBDC in February 2023, and advanced in the development of a pilot platform using Distributed Ledger Technology (DLT) for DREX, the Brazilian CBDC (Pilot Project).¹³

⁶ Ministry of Economy. Special Secretariat for Federal Revenue. Open Data Report and general information on Cryptoassets. Available at: https://www.gov.br/receitaefederal/pt-br/assuntos/orientacao-tributaria/declaracoes-e-demonstrativos/criptoativos/arquivos/criptoativos_dados_abertos_25092023.pdf. Access on: November 12, 2023.

⁷ Paragraph 4 of Vote 31/2023-BCB, of February 14, 2023. Available at: https://www.bcb.gov.br/content/estabilidadefinanceira/real_digital_docs/voto_bcb_31_2023.pdf. Access on: November 12, 2023.

⁸ Ordinance No. 108,092, dated as of August 20, 2020.

⁹ BCB. BCB announces the general guidelines for a digital currency in Brazil. Available at: <https://www.bcb.gov.br/detalhenoticia/17398/nota>. Access on: November 12, 2023.

¹⁰ BCB. BCB launches LIFT Challenge to evaluate use cases of "Real Digital." Available at: <https://www.bcb.gov.br/detalhenoticia/593/noticia>. Access on: November 12, 2023.

¹¹ Section 9, first paragraph of the "Real Digital" Special Edition LIFT Challenge Regiment. Available at: https://liftchallenge.bcb.gov.br/content/config/liftchallenge/lift_challenge_docs/pt/LIFT_Challenge_RealDigital_Regulamento_vPUB1a.pdf. Access on: November 12, 2023.

¹² LIFT. LIFT Papers No. 5. April 2023. Available at: <https://revista.liftlab.com.br/lift/issue/view/20/31>. Access on: November 12, 2023.

¹³ Vote 31/2023-BCB, of February 14, 2023.

Since then, BCB has adopted nine general guidelines for the development of DREX and the Pilot Project.¹⁴ Among these guidelines, the following stand out: **(i)** the emphasis on models that incorporate smart contracts, programmable money, and that are compatible with settling operations through the “internet of things,” **(ii)** the issuance of the CBDC as payment method to support the offer of retail financial services settled through deposit tokens of the participants of the National Financial System and the Brazilian Payment System, and **(iii)** compliance with all provisions on privacy and bank secrecy in Brazilian legislation, especially the Bank Secrecy Law (Complementary Law No. 105, of January 10, 2001) and the General Data Protection Law (Law No. 13,709, of August 14, 2018).

In light of these guidelines, BCB has defined a structure for DREX to serve as the basis for the Pilot Project to test the Delivery versus Payment of assets registered on a platform using centralized ledger technology. **BCB’s proposed structure is based on the premise that DREX is issued by BCB, held by financial institutions and payment institutions, and maintained at BCB. This structure aims to ensure preservation of the integrity, stability, and intermediation of the financial and payment systems.**¹⁵

Clients of financial institutions and payment institutions do not directly own DREX, or the programming tools related to it– they are exposed to it only through tokenized products linked to DREX, offered and maintained in the virtual wallets with the financial institutions and payment institutions which held DREX.¹⁶

14 Paragraph 13 of Vote 31/2023-BCB, of February 14, 2023.

15 Paragraph 33 of the Vote 31/2023-BCB, of February 14, 2023.

16 Paragraph 33 of the Vote 31/2023-BCB, of February 14, 2023.

The pilot project is expected to simulate transactions of issuance and transfer between assets with conditional and simultaneous settlement up to the level of the end customer.¹⁷

BCB is relying on the expected participation of various market participants, including Bradesco, Santander, Itaú, Visa, Microsoft, XP, and Nubank. Tests should extend throughout 2024.¹⁸⁻¹⁹

LOOKING FORWARD

BCB expects that the results and lessons learned from the Pilot Project, which does not yet have a defined completion date, will provide further elements to define an agenda for the launch of DREX.

In addition to assessing DREX’s technological feasibility, the Pilot Project should also help BCB evaluate how to address issues of banking secrecy and privacy. These issues pose a significant challenge, especially since the data to be recorded on the DLT platform would be protected under the Brazilian Bank Secrecy Law, which imposes several restrictions regarding the maintenance of secrecy of transactional data by financial and payment institutions.²⁰

Despite these challenges, BCB seems to be strongly committed to the development of its CBDC, considering all the efforts to structure the Pilot Project, meetings with market participants, regulators, and third parties involved in the development of CBDCs from other jurisdictions, as well as financial education initiatives for the public about DREX and its potential uses.

17 Paragraph 29 of the Vote 31/2023-BCB, of February 14, 2023.

18 BCB. BC announces the entities selected to participate in the Pilot Project of “Real Digital.” Available at: <https://www.bcb.gov.br/detalhenoticia/17897/nota>. Access on: November 12, 2023.

19 BCB. FAQ: “What are the next steps for “Real Digital” to reach the Pilot Project stage?” Available at: https://www.bcb.gov.br/estabilidadefinanceira/real_digital_faqs. Access on: November 12, 2023.

20 Paragraph 25 of the Vote 31/2023-BCB, of February 14, 2023.

Although the BCB is a regulator that positions itself as a catalyst for the incorporation of innovations, it tends to design normative regulations that govern the principles, obligations, and technological procedures in specific cases. Therefore, similar to what occurred with Pix, it is possible that the regulation of DREX and the protocols for the generation of tokenized products linked to DREX will not deviate from this standard and will contemplate very described and detailed rules.

Although it is not possible to know exactly what the regulation will look like, the fact that various market participants are involved in the Pilot Project and in the discussions with BCB, may help mitigate potential burdens arising from excessively prescriptive regulations. In this way, it is hoped that it will be possible to define a regulatory landscape that allows DREX to be widely adopted by the market, in multiple cases of use.

CAN IT BE A COMMODITY IF IT'S NOT FUNGIBLE? EVALUATING NFTS UNDER THE COMMODITY EXCHANGE ACT



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Understanding NFTs as commodities calls for a more nuanced analysis than what their “non-fungible” label might suggest at first glance.

The appropriate regulatory characterization of cryptocurrencies and digital assets for US legal purposes has spawned many pages of analysis and occupied many hours of industry, law firm, and regulatory consideration. Significant amounts of commentary, and later government and judicial attention, have been devoted to determining whether fungible cryptocurrencies and digital assets constitute securities for purposes of US federal securities laws, and/or commodities for purposes of the US Commodity Exchange Act (CEA) and the regulations promulgated by the Commodity Futures Trading Commission (CFTC) thereunder (CFTC Rules). More recently, attention has turned to whether non-fungible tokens (NFTs), and particularly fractional NFTs, may constitute securities for purposes of the US federal securities laws.

Less attention has been given to determining whether NFTs constitute commodities under the CEA and CFTC Rules and, if so, the consequences thereof. While the answer will always depend on the facts and circumstances of the particular NFT or NFT project in question, we identify a range of important factors and considerations that will likely loom large in any such analysis.

As will become clear from the discussion below, **the “commodity” status of NFTs requires a more nuanced analysis than may initially be expected from their “non-fungible” moniker.**

WHAT ARE NFTS?

NFTs are unique, non-interchangeable digital tokens minted on a blockchain or distributed ledger network. In general, each NFT serves a specifically identifiable digital asset that can only be held by a single digital wallet address at any one time. Unlike fungible tokens, each NFT is indivisible (although through the advent of “fractionalization” there are ways for multiple people to collectively own a single indivisible NFT and have their fractional ownership represented by other digital assets). Through the use of metadata attributes and smart contract functionality, NFTs can be linked to or used to represent entitlements with respect to any number of digital or physical items or things. Transfers of NFTs are recorded on the relevant blockchain or distributed ledger network, providing an immutable and traceable transaction history.

A number of blockchains and distributed ledger networks now support minting and transacting in NFTs, with the Ethereum and Solana networks as notable examples.

On the Ethereum network, NFTs are minted using the ERC-721 or ERC-1155 token standards (as opposed to the ERC-20 token standard used for fungible tokens on the Ethereum network). Recent innovations have led to new standards that push the boundaries of what an NFT is and what it can do. For instance, the ERC-6551 token standard is designed to enable NFTs to be paired with their own token-bound wallets, thus enabling such NFTs to hold their own digital assets, such as other NFTs or even other fungible tokens.

For purposes of this Alert, we distinguish between (and focus on) two broad categories or use cases of NFTs:

- **Digital Native NFTs**, i.e., the most familiar use case of NFTs as representing ownership, rights, accreditation, or entitlements with respect to some form of digital asset or linked data, such as a digital collectible, unique piece of digital art, in-game item, avatar, or profile picture; and
- **Physically-Linked Representational NFTs**, i.e., the use case of NFTs as representing or evidencing ownership, rights, or entitlements with respect to some physical or off-chain asset, item, or thing (i.e., ownership of art pieces or real property).

However, we use these terms for convenience of reference, rather than as definitions that are necessarily exhaustive of the NFT space or mutually exclusive.

EVALUATING THE “COMMODITY” STATUS OF NFTS

The CFTC is primarily concerned with the regulation and oversight of commodity derivatives — as opposed to spot commodity markets. A threshold matter to the application of the CFTC’s regulatory perimeter and the application of the CEA and CFTC Rules is the identification of a relevant “commodity.” Section 1a(9) of the CEA defines a “commodity” as follows¹:

The term “commodity” means wheat, cotton, rice, corn, oats, barley, rye, flaxseed, grain sorghums, mill feeds, butter, eggs, *Solanum tuberosum* (Irish potatoes), wool, wool tops, fats and oils (including lard, tallow, cottonseed oil, peanut oil, soybean oil, and all other fats and oils), cottonseed meal, cottonseed, peanuts, soybeans, soybean meal, livestock, livestock products, and frozen concentrated orange juice, and all other goods and articles, except onions and motion picture box office receipts (or any index, measure, value, or data related to such receipts), and all services, rights, and interests (except motion picture box office receipts, or any index, measure, value or data related to such receipts) in which contracts for future delivery are presently or in the future dealt in.” (emphasis added)

We explore below how this definition applies to NFTs and identify certain factors and considerations that will likely predominate the analysis of any particular NFT or NFT project.

CFTC GUIDANCE ON VIRTUAL CURRENCIES AS “COMMODITIES”

The CFTC has stated on multiple occasions, and relevant judicial decisions have confirmed, that virtual currencies (including Bitcoin and Ether) are “commodities” for purposes of the CEA and the CFTC Rules.

The CFTC first asserted this view in an enforcement action in 2015,² and the position that virtual currencies are “commodities” has since been taken in a range of CFTC enforcement actions³ and related judicial decisions.⁴

In 2020, the CFTC adopted an interpretation of “actual delivery” of a digital asset for purposes of the CFTC’s authority with respect to retail commodity transactions offered on a leveraged, margined, or financed basis under Section 2(c)(2)(D) of the CEA (the Actual Delivery Interpretation).⁵

In the Actual Delivery Interpretation and citing its own prior enforcement actions, the CFTC observed that it “considers virtual currency to be a commodity as defined under Section 1a(9) of the Act, like many other intangible commodities that the Commission has previously recognized.”⁶ For these purposes, the CFTC adopted the following definition of a “virtual currency”:⁷

“[A] digital asset that encompasses any digital representation of value or unit of account that is or can be used as a form of currency (i.e., transferred from one party to another as a medium of exchange); may be manifested through units, tokens, or coins, among other things; and may be distributed by way of digital “smart contracts,” among other structures.”

As should be immediately apparent, NFTs do not fall neatly within this definition of “virtual currency.” In general, NFTs are not used as a form of currency, transferred from one party to another as a medium of exchange. Further, virtual currencies like Bitcoin or Ether are fungible. By their nature, however, NFTs are not supposed to be fungible. Accordingly, NFTs would not seem to constitute commodities squarely on the basis of the CFTC’s current interpretative position that virtual currencies are commodities.

APPLICATION OF COMMODITY DEFINITION AS A MATTER OF FIRST IMPRESSION

Even if NFTs do not fall within the four corners of the CFTC’s existing interpretation of virtual currencies as commodities outlined above, this does not preclude an analysis that an NFT or NFT project may constitute or involve a “commodity.” Indeed, the CFTC cautioned in the Actual Delivery Interpretation that it did “not intend to create a bright line definition given the evolving nature of the commodity and, in some instances, its underlying public distributed ledger technology.” Accordingly, it is important to consider whether NFTs may fall within the CEA definition of a “commodity” as a matter of first impression.

² *In re Coinflip, Inc.*, CFTC No. 15-29, at 3, 2015 WL 5535736 (Sept. 17, 2015).

³ See, e.g., *In re BFXNA Inc.*, CFTC No. 16-19, at 5-6, 2016 WL 3137612, at *5 (June 2, 2016) (“[V]irtual currencies are encompassed in the definition [of the CEA] and properly defined as commodities”); *Commodity Futures Trading Comm’n v. McDonnell v. HDR Global Trading Ltd. et al.*, No. 20-cv-8132 (S.D.N.Y. Oct. 1, 2020); *In re Coinbase, Inc.*, CFTC No. 21-03, at 4, 2020 WL 1101461 (Mar. 19, 2021) (“Bitcoin is encompassed within the broad definition of “commodity” under Section 1a(19) of the Act . . . and is therefore subject to applicable provisions of the Act and Regulations, which includes Section 6(c)(1) of the Act and Regulation 180.1(a)”); *In re Tether Holdings Limited, et al.*, CFTC No. 22-4, at 8, (Oct. 15, 2021) (“Digital assets such as bitcoin, ether, litecoin, and tether tokens are commodities”).

⁴ See, e.g., *Commodity Futures Trading Comm’n v. McDonnell*, 287 F.Supp.3d 213, 228 (E.D.N.Y. 2018) (“Virtual currencies can be regulated by CFTC as a commodity.”); *Commodity Futures Trading Comm’n v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492, 495 (D. Mass. 2018).

⁵ Retail Commodity Transactions Involving Certain Digital Assets, 85 Fed. Reg. 37734 (Jun. 24, 2020), available at <https://www.govinfo.gov/content/pkg/FR-2020-06-24/pdf/2020-11827.pdf> (Actual Delivery Interpretation).

⁶ Actual Delivery Interpretation, 85 Fed. Reg. at 37741.

⁷ Actual Delivery Interpretation, 85 Fed. Reg. at 37741.

The Relevance of (Non-)Fungibility

In the aftermath of the Dodd-Frank Wall Street Reform and Consumer Protection Act, the CFTC adopted a final rule defining the term “agricultural commodity” (the Agricultural Commodity Rule).⁸ Although at first blush NFTs seem far removed from the world of agriculture, the Agricultural Commodity Rule contains certain observations that are potentially instructive in evaluating the commodity status of NFTs.

By way of background, the Agricultural Commodity Rule adopted a multi-prong definition of an “agricultural commodity” for CFTC regulatory purposes.⁹ Under this definition, the term “agricultural commodity” includes certain expressly enumerated agricultural products (such as wheat, cotton, rice, and corn) but also:

“All other commodities that are, or once were, or are derived from, living organisms, including plant, animal and aquatic life, which are generally fungible, within their respective classes, and are used primarily for human food, shelter, animal feed or natural fiber” (emphasis added)

In the Agricultural Commodity Rule, the CFTC observed that “generally fungible” means “substitutable or interchangeable within general classes.”¹⁰ As an example, the CFTC noted that “apples, coffee beans, and cheese are generally fungible within general classes, even though there are various grades and types, and so they would be agricultural commodities.” On the other hand, the CFTC observed that:

“[C]ommodities that have been processed and have taken on a unique identity would not be generally fungible. Thus, while flax or mohair are generally fungible natural fibers, lace and linen garments made from flax, or sweaters made from mohair, are not generally fungible and would not be agricultural commodities.” (emphasis added)

On this line of reasoning, “unique identity,” as opposed to mere variations in grade or type, may indicate that a particular item or thing does not constitute a commodity for CFTC regulatory purposes.

For NFTs, it is tempting to conclude that the ostensibly non-fungible nature of such tokens precludes commodity status. On closer consideration, however, this is an over-simplification.

In terms of Digital Native NFTs, there are instances and use cases in which such NFTs may appropriately be viewed as having a “unique identity.” For example, consider an NFT relating to a custom and truly unique piece of digital art or a one-of-a-kind and truly unique in-game item. On the other hand, certain Digital Native NFTs and use cases thereof involve issuing a substantial number of distinct (and individually tokenized), but ultimately similar, digital items or pieces of digital art.

For example, there are a range of NFT art “collections” composed of a large number (e.g., 10,000) of procedurally generated NFT art pieces based on a template of character art (e.g., a cartoon character) that differ only in certain traits or parameters such as color, appearance characteristics, or apparel and accessories. Or, consider NFT collections in which 500 uniquely numbered NFTs are all linked to the same piece of content, but what distinguishes each NFT from others that link to the same content are programmed in characteristics, such as rendering differently when opened within an NFT-linked game or social media app.

In such contexts, depending on the nature and extent of the differences in variation and type, one may argue that the individual NFTs are not sufficiently unique to fall outside the definition of a “commodity” — notwithstanding that each NFT is represented by a cryptographically unique digital token or has different sub-qualities in integrated applications.

⁸ Agricultural Commodity Definition, 76 Fed. Reg. 41048 (Jul. 13, 2011), available at <https://www.govinfo.gov/content/pkg/FR-2011-07-13/pdf/2011-17626.pdf> (Agricultural Commodity Rule).

⁹ 17 C.F.R. § 1.3.

¹⁰ Agricultural Commodity Rule, 76 Fed. Reg. at 41053.

Considering this notion of “unique identity” in the context of Physically-Linked Representational NFTs further underscores the need for nuanced analysis. Consider, for example, the potential use of Physically-Linked Representational NFTs as a digital representation of ownership or entitlements with respect to real-world assets such as real property or physical art. In such contexts, both the underlying physical asset and the linked NFT would have a “unique identity,” supporting the argument that the “commodity” definition should not apply.

On the other hand, “unique identity” may be less apparent in other potential use cases of Physically-Linked Representational NFTs. For example, consider a potential use case in which NFTs are used to represent or track entitlements to individual barrels of oil or carbon offsets of a specific project. While each such entitlement or ownership interest may be distinct and represented by a cryptographically unique digital token, the underlying physical assets — barrels of the same type of oil or carbon offsets of a project — are arguably not. In this regard, the commoditized nature of the underlying physical asset may inform the commodity status of the linked NFT.

These cursory examples demonstrate that the nature and fungibility of the relevant linked digital or physical items or thing may be instrumental to the CFTC’s interpretation of the commodity status of both Digital Native NFTs and Physically-Linked Representational NFTs.

Notably, however, the relevance of fungibility to analyzing whether a particular NFT is a commodity is still undetermined. We underscore that the definition of “commodity” under Section 1a(9) of the Act is incredibly broad, and includes a catch-all which captures “all other goods and articles, except onions and...motion picture box office receipts” under the definition of commodity.

The CFTC thus does not necessarily have to satisfy or prove any particular indicia of fungibility in order to determine the existence of a commodity.

The Relevance of Futures Trading as a Determining Factor to Meeting the Commodity Definition

Further, in the enumerated list of what constitutes a “commodity” under Section 1a(9) of the CEA, the definition tacks on after the catch-all described above, “and all services, rights, and interests . . . *in which contracts for future delivery are presently or in the future dealt in*” (emphasis added) (referred to herein as the Futures Qualifier). That is, notwithstanding the enumerated list, the definition of commodity also arguably captures all asset underliers to futures contracts. By way of background, in the traditional US financial markets, futures are CFTC-regulated exchange-traded contracts to buy or sell a commodity for a specified price and at a specified future point in time. Unlike bilaterally negotiated over-the-counter forward contracts, futures contracts are highly standardized and trade based on precisely defined specifications and lot sizes.

The digital asset market has witnessed indications of the emergence of NFT futures and options trading. For example, NFT futures smart contracts are minted based on fractional values of Digital Native NFTs or Digital Native NFT collections which allow market participants to gain exposure to a particular NFT or collection without actually owning it. Furthermore, the use of metrics such as NFT collection floor prices to value Digital Native NFTs and the emergence of option transactions thereon may indicate that standardized futures and options trading could have more ample liquidity than first expected.

The mere existence of an NFT futures and options market, however, is not conclusive evidence that NFTs are commodities.

For example, single stock futures contracts are securities futures products regulated by both the Securities and Exchange Commission (SEC) and the CFTC. They constitute both a futures contract and a security. The fact that the single stock trades as the reference asset to a futures contract does not recharacterize the underlying asset into a commodity.

To further complicate the regulatory history, differing views exist on the appropriate interpretation of the Futures Qualifier to the definition of a commodity under Section 1a(9) of the CEA. On the strictest reading, the Futures Qualifier means that a particular item or thing cannot constitute a commodity unless futures are traded on that specific item or thing. However, this reading may be overly narrow. An alternative view is that the Futures Qualifier is satisfied so long as futures are traded on another item or thing that belongs to the same category as the item or thing in question, even if futures are not traded on that specific item or thing. This interpretation is implicit in the motion to dismiss decision of Judge Rya Zobel of the US District Court for the District of Massachusetts in *CFTC v. My Big Coin Pay, Inc.*¹¹

An even broader interpretation is that the Futures Qualifier requires only the potential for — but not the actuality of — trading in futures on the category of commodity. This view most closely aligns with that of the CFTC when it declared that Bitcoin and Ether constituted commodities prior to the development of Bitcoin and Ether futures in the US.

Accordingly, depending on the interpretation, the current NFT-based futures may or may not be dispositive. Moreover, any interpretive analysis cannot be viewed in a regulatory vacuum.

There are political interests at stake and while the CFTC undoubtedly has a keen interest in preserving market integrity and protecting customers within its jurisdictional ambit, the SEC has certainly planted its flag in the NFT market by asserting regulatory concerns and targeting NFT projects for enforcement.

¹¹ *My Big Coin Pay, Inc.*, 334 F. Supp. 3d at 498 (“Here, the amended complaint alleges that My Big Coin is a virtual currency and it is undisputed that there is futures trading in virtual currencies (specifically involving Bitcoin). That is sufficient, especially at the pleading stage, for plaintiff to allege that My Big Coin is a “commodity” under the Act”).

While the market demands clarity and the regulators generally remain silent, attention to the regulatory history may further support or negate the case for an NFT to be a commodity. The ultimate arbiter will be the regulator (or the legislature through statutory clarity).¹²

IMPLICATIONS OF NFTS BEING DEEMED COMMODITIES

If a particular NFT or NFT project is deemed a commodity for CFTC regulatory purposes, a number of potential implications result.

The CFTC has plenary regulatory and supervisory authority with respect to most commodity derivatives — i.e., futures, options, or swap contracts referencing a commodity underlier. The CEA and CFTC Rules impose a range of regulatory requirements with respect to such transactions, including various exchange and intermediary registration requirements.

Accordingly, if a particular NFT or NFT project were deemed to constitute or involve a commodity, derivative transactions with respect to such NFTs would trigger CFTC regulatory licenses and requirements.

NFT options protocols would need to be registered as designated contract markets or swap execution facilities in order to service, accommodate, and facilitate US customer trading. In such circumstances, however, consideration would also need to be given to whether an NFT-based derivative instrument that results in actual delivery of the relevant NFT can (or should, as a policy matter) qualify for the forward contract exclusion from swap status or the trade option exemption.

¹² Of note, no bills introduced to date at the time of this publication address the characterization of an NFT. Only one bill, the Digital Asset Market Structure Bill, would require that the Secretary of Commerce, the White House Office of Science and Technology, the SEC, and the CFTC conduct a study on NFTs, addressing market size, scope, role, nature, mechanics, and use; comparison and interaction with other digital assets; benefits of verifiable digital ownership; general risks including intellectual property, cybersecurity, and market risks, and the risks of NFT integration into traditional markets; and the levels and types of illicit activities in the NFT market.

Separately, we note that the CFTC regulates certain retail leveraged, margined, or financed purchases of commodities as if such transactions were futures contracts. Accordingly, if a particular NFT or NFT project were deemed to constitute or involve a commodity, leveraged, margined, or financed trading in such NFTs would trigger CFTC regulatory obligations. Finally, if a particular NFT or NFT project is deemed to constitute or involve a “commodity” for CFTC regulatory purposes, the CFTC would retain enforcement authority to police against fraud and manipulation in spot NFT markets — notwithstanding the lack of any relevant derivative instrument or leverage, margin, or financing.

In all cases, each of the commodity status and CFTC regulatory implications of a particular NFT or NFT project warrants careful consideration and analysis.

UNDERSTANDING AND CLASSIFYING BLOCKCHAIN TOKENS*



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We used to live in a paper-based world. For centuries, legal rights and obligations were represented on paper, often including stamps and seals and ribbons for good measure. These paper documents set forth the bundle of rights and their ownership, whether it was for real property, stock in a company, intellectual property, or any other type of thing.

The law around ownership and its transfer grew up in this paper-based system. We wrote out on paper a description of the thing and who owned it. Paper also facilitated the transfer of ownership. In certain situations, ownership interests (including liens), in order to be effective, needed to be recorded with a central repository by lodging paper there. Representing things and their ownership on paper dominated the legal world.

With the rise of computers and, more recently, the Internet, the law has sought to keep up with the new way in which things could be represented: digitally, in [databases](#). The Electronic Signatures in Global and National Commerce ([ESIGN Act](#)) from 2000 is one example of how the law in the United States sought to recognize the transition to a digital world by allowing parties to agree that an electronic version of a document and/or signature is the binding version.

Yet these digital records mostly replicated the paper-based systems that had been used for centuries as simply a digital formatting to appear just like the old paper documents, even to the point of an electronic physical signature, with signers often asked to draw it with their finger

Enter blockchain, a technology that allows humanity, including lawyers, to move beyond paper and paper-replica systems by solving the hard computer science problems of creating digital uniqueness and a means to establish and transfer ownership of digitally unique things.

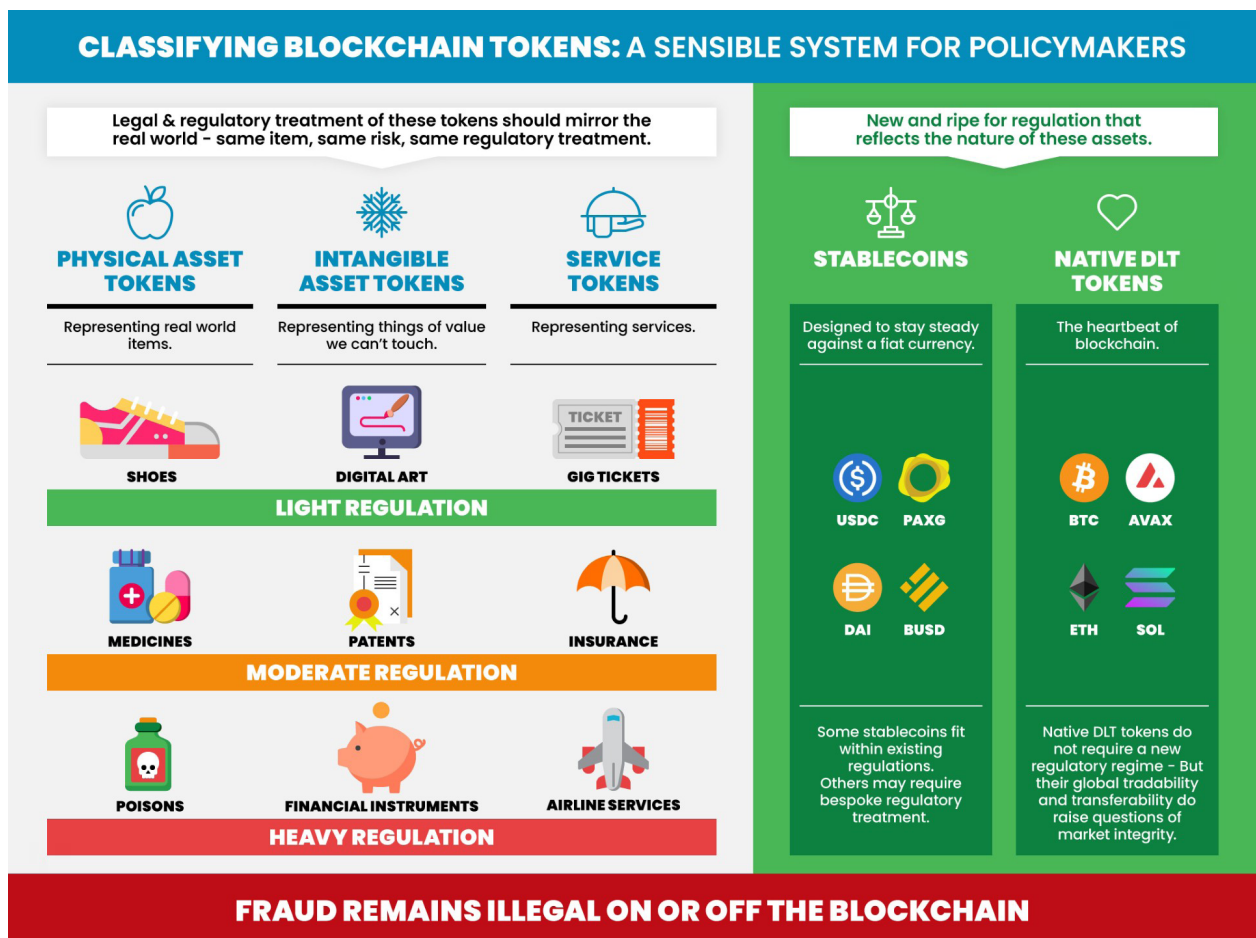
We call this process "[tokenization](#)" with the resulting tokens referred to by many names such as cryptoassets, digital assets, virtual currencies, etc. It is all about creating digital representations on a blockchain to make them more easily recognized and transferred. It can be used for anything tangible (real-world items) or intangible (ideas) – a piece of art, a cool pair of sneakers, stock in a company, rights to your favorite song, tickets to a concert, a pint of blueberries. Tokenization is the natural product of blockchain technology and an improvement that blockchains offer over traditional computer databases and paper-based systems.

From a legal standpoint, there are two primary implications of this move from paper to digital tokens. First, we cannot lump all tokens together as an asset class because they are not homogeneous. **Tokenization does not change the essential nature or character of whatever is represented, any more than setting it down on a piece of paper does.** All that has changed is the form of representation – paper is replaced by digital. Second, most tokens and their usage fall within one or another preexisting, well-developed legal and regulatory regime because only the form of representation has changed.

Many existing taxonomies and classification systems fail to recognize these two important points, resulting in confusion. Three category [systems](#) such as the UK Financial Conduct Authority's (FCA) "security tokens", "e-money tokens", and "unregulated tokens" are paradigmatic of the problem (Switzerland's FINMA utilizes similar [guidelines](#); cf. [Singapore](#)).

"Unregulated tokens" (sometimes called "utility tokens") is a category so vast as to give no hint about the myriad legal and regulatory regimes that may apply to the items within it, and yet somehow all of these widely varying asset types are covered by the FCA's financial promotions regime. This approach to "unregulated tokens" presumes that the only type of regulation that might apply to tokenized items is financial instrument regulation, which does not bear up under scrutiny.

The better answer is a taxonomy where the functions and features of the particular token determine its nature under law and therefore the particular regulatory regime that would apply. This insight led to the **sensible token classification system**, represented in Figure 1 below.



Sensible classification means that a taxonomy must be based on the following principles:

First, tokenization does not change the essential nature of the bundle of rights, item or thing that is digitally represented with a token.

Second, the functions and features of the token determine its essential nature; that is, how to evaluate its utilization, valuation, and legal classification. We can represent this idea with the following formula:

$$\Sigma F_n(n) + Fe(n) = TN$$

Where “Fn” is a function with which the token is imbued; “Fe” is a feature or usage the token has; “n” is a multiplier to account for the number of functions and/or features with which the token is imbued; and TN is the token’s nature. TN can then be used in a chosen formula for determining utilization or valuation or legal classification, among other things.

Third, once the legal classification is determined, the token’s legal and regulatory treatment should follow the traditional characterization whenever possible in order to maintain the principle of technology neutrality.

Fourth, the first three principles apply regardless of the technology used to tokenize the bundle of rights, item or thing, including whether the token is [classed as](#) “fungible” or “non-fungible” (NFT), or on an account-based or token-based system, or whether or not the network is [decentralized](#).

Here is a more detailed look at the categories set forth in [Figure 1](#). Note that the nature of the bundle of rights represented by the token may differ depending on the terms and conditions pursuant to which it has become tokenized because of the terms and conditions associated with it (including those set by a smart contract).

CATEGORY 1: PHYSICAL ASSET TOKENS - BRINGING TANGIBLES TO THE DIGITAL WORLD

Physical asset tokens represent real, tangible assets like gold coins, sneakers, or a cup of coffee. The legal and regulatory treatment is the same as the treatment today of the same physical item represented on an online shopping site and may depend on the specific physical item that is tokenized and the site’s terms and conditions. For example, if there are restrictions on the sale and transfer of firearms, those same restrictions would apply to the tokenized version of the firearm.

CATEGORY 2: SERVICES TOKENS - NEED A JOB DONE?

Services tokens stand for services like cleaning, attending musical performances, or even legal advice.

Tickets to a Beyoncé or Taylor Swift concert, a World Cup or World Series game, or the [Avalanche Summit](#) all fall within this category. Event ticketing platforms using blockchain seem to be gaining [popularity](#). When you buy a service token, you are reserving a service that someone will provide to you. If the activity was legal and unregulated before, like attending a musical performance, it should remain so when tokenized. Tokenized contracts of murder for hire, however, would of course remain unlawful.

CATEGORY 3: INTANGIBLE ASSET TOKENS - THINGS YOU VALUE BUT CANNOT TOUCH

Intangible asset tokens represent ideas and concepts we value but cannot touch, like loyalty points; bonds, stocks and other financial instruments; professional qualifications; and even identity.

An intangible item that is regulated a particular way in the paper-based or paper-replica systems is subject to the same regulation if it is tokenized: a tokenized security is still a security and continues to be regulated as such; tokenized intellectual property rights are still IP rights and continue to be regulated as such.

For this category, the assets are of the types traditionally recognized by the law and do not include the next category, called “native DLT tokens.”

CATEGORY 4: NATIVE DLT TOKENS - THE HEARTBEAT OF BLOCKCHAIN

Native DLT tokens are special tokens that are intrinsic to a blockchain.

Tokens in this category are native to a distributed ledger like a blockchain and, critically, do not fall into any of the above categories because they depend on the DLT for existence and purpose. They may have a variety of functions on the public blockchain they are entwined with, including resource allocation, means of payment, security incentive, voting rights. The inextricable link between the token and the protocol (they do not function without each other) is the hallmark that defines native DLT tokens.

CATEGORY 5: STABLECOINS - PROVIDING STABILITY WITH FIAT CURRENCIES

Stablecoins broadly defined are designed to maintain parity with a reference asset. While potentially a broad category that could encompass Categories 1-3, the classification system opts for a narrow definition that includes only those tokens that seek to maintain a peg to a fiat currency, making them handy for trading and payments. Some stablecoin structures might meet the definition of existing types of financial assets, such as money market mutual funds or bank deposits. When that is the case, those stablecoins should follow the traditional regulation. When the structure falls outside conventional forms, new regulation might be needed.

These sensible principles find further expression in the work of the Law Commission of England and Wales, an independent body with responsibility for the development of the law there. In the last few years, it has engaged in several [projects](#) related to digital assets (the Law Commission’s preferred terminology). Of most relevance to token classification is its [June 2023 report](#) on whether digital assets are a type of personal property, followed by its proposed [draft legislation](#) related to that point.

The June 2023 report concludes that digital assets might represent existing types of personal property, supporting the principles behind sensible token classification. Due to a quirk in English law, however, it is not always clear which of the denominated types of personal property a particular digital asset might represent, making determinations about ownership and transfer uncertain. The law of England and Wales recognizes “things in possession” and “things in action” as two types of personal property that can be represented by tokenization (“Things 1” and “Things 2”, with apologies to [Dr. Seuss](#)). But, according to the Law Commission, not all digital assets meet the definitions of Things 1 or Things 2, so the Law Commission recommended and proposed legislation to codify a third type of things (“Things 3”) as also personal property under law to resolve any ambiguity.

Things 3 cannot be physically possessed, like Things 1, and cannot be established through legal action as a matter of law, like Things 2. Because digital assets are wholly virtual, certain of them can fall within the Things 3 grouping, but it depends on the bundle of rights, item or thing that is represented, so they might also be either Things 1 or Things 2. The June 2023 report provides detailed discussions of the antecedents of its recommendation to explicitly recognize Things 3 as well as how Things 3 might be defined, all of which makes for a dense read into the personal property law of England and Wales.

The main takeaways for token classification are the recognition of tokenization as a process by which bundles of rights, items and things are digitally represented and that the functions and features of the digital asset determine its legal classification. This leap forward in digital technology requires clarification of the boundaries of Things 1, Things 2, and Things 3 under the law of England and Wales because of the different natures of different tokens. While not sensible token classification as outlined above, the parallels provide useful paradigms for understanding how the move from paper-based or paper-replica systems to tokenization can be approached on a technology neutral basis that nonetheless recognizes how the technology functions.

CONCLUSION

Most tokens represent things that already exist, and they can be regulated - or not regulated - in the exact same way: same asset equals same risk, which results in same regulation. The legal and regulatory treatment should become readily apparent upon an analysis of the functions and features of a particular token to establish its nature. There are many forms by which an asset can be represented. DLTs are just one of the newest. As the Law Commission's work shows us, there is no need to abandon sound principles when a new technology for representing things comes along.

STAKING SERVICES REGULATION IN SWITZERLAND



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INTRODUCTION

The Swiss financial centre has developed into an important fintech hub, including in the field of cryptoassets. One of the relevant factors has been the persevering attitude of the Swiss government to rapidly provide the necessary legal reforms for the creation of a fintech-friendly legal framework while maintaining a reputation as a stable and reliable jurisdiction.

During 2023, legal uncertainties arose in connection with the regulation of staking services provided by custodians with their customers' cryptoassets, the fundamental question being whether staking by the custodian of cryptoassets allows for the staked tokens to be segregated in case of the custodian's bankruptcy. This question is essentially relevant to assess whether a custodian and staking service provider is subject to a banking license. The question is equally important for licensed banks, given that the possibility of segregation of cryptoassets in custody is related to whether staked cryptoassets must be held on balance sheet by the bank and therefore have an impact on capital requirements.

The Swiss Financial Market Supervisory Authority FINMA ("FINMA") gathered regulatory specialists in the crypto space and launched in December 2023 FINMA Guidance 08/2023 Staking (the "Staking Guidance") to clarify the regulatory uncertainties around staking. It also addresses the risks of staking services and sets out risk-mitigating steps that supervised institutions must implement when staking with customers' cryptoassets. The Staking Guidance is not a new regulation but applies the general Swiss laws and regulations of the financial sector to the very specific staking situations by taking a technology-neutral approach.

DESCRIPTION OF LEGAL MATTER

Staking as method of blockchain validation

The Swiss financial centre has developed into an important fintech hub, including in the field of cryptoassets. One of the relevant factors has been the persevering attitude of the Swiss government to rapidly provide the necessary legal reforms for the creation of a fintech-friendly legal framework while maintaining a reputation as a stable and reliable jurisdiction.

The Swiss financial centre has developed into an important fintech hub, including in the field of cryptoassets. One of the relevant factors has been the persevering attitude of the Swiss government to rapidly provide the necessary legal reforms for the creation of a fintech-friendly legal framework while maintaining a reputation as a stable and reliable jurisdiction.

As it may be known to the reader, accuracy of registration of transactions in a blockchain requires the implementation of a consensus mechanism, for which participants act as validators.

While proof-of-work mechanisms require the validators (so-called “miners”) to solve cryptographic puzzles, making the selection of miners dependant on the computing capabilities of miners¹, proof-of-stake mechanisms chose validators based on the number of coins they provide as collateral in case they would fail to perform their work accurately (so called “staked coins”)². Proof-of-stake mechanisms are more secure and less energy-intensive (and therefore more sustainable) than proof-of-work mechanisms. Due to the high number of cryptoassets that custodians can offer as collateral, custodians are often the chosen validators.

Strictly interpreted, crypto staking entails providing collateral as a validator of a proof-of-stake consensus mechanism, which is an incentive to perform the validation services accurately.³ Slashing refers to the confiscation of staked coins in case of a misbehaviour of a validator⁴ or of a validator being offline for too long.

1 Which results in selecting miners with a higher computing capability and therefore with higher energy consumption. This is for instance how bitcoin consensus functions. Bitcoin miners receive bitcoins as a reward for their work (<https://www.investopedia.com/terms/p/proof-stake-pos.asp#citation-7>).

2 <https://www.ledger.com/academy/topics/blockchain/what-is-slashing>

3 For instance, Ethereum requires 32 ETH to be staked before a user can operate a node (<https://ethereum.org/en/developers/docs/consensus-mechanisms/pos>). Staking is regarded by FINMA as the process of blocking native cryptoassets at the staking address of the validator node in order to participate in a blockchain validation process based on a proof-of-stake consensus mechanism (FINMA Staking Guidance, cipher 2.1.).

4 <https://www.ledger.com/academy/topics/blockchain/what-is-slashing>. See also Staking Guidance, cipher 2.1.

Depending on the blockchain, freeing the blocked collateral (so-called “unstaking”) may be subject to a lock-up or exit period.

In return of their efforts, **validators in a proof-of-stake also receive rewards** from the network to positively incentivize their service.

What kind of legal and regulatory problems arise with staking?

a. Initial approach

FINMA initially took the position that custodians providing staking services with their clients’ cryptoassets were, due to the risk of bankruptcy of the custodian during the staking, subject to a banking license. This position was not well received by the industry, as it was not fully technology neutral and did not consider the different scenarios that may arise in connection with staking. Based on the reaction of the fast-growing Swiss crypto-community, later on, FINMA held roundtable discussions with and sent out questionnaires to market participants to clarify the different situations that can arise with staking, which resulted in the issuance of the Staking Guidance.

The main legal question in this set-up is, from a regulatory and civil-law perspective, whether there is a risk for customers that their cryptoassets in custody become part of the bankruptcy estate of the custodian. This may trigger the application of the banking license for the custodian acting as staking service provider, given that in Switzerland, the banking license generally applies to the activity of taking up deposits from the public, which means incurring liabilities (passive accounts) towards more than 20 clients.⁵ For licensed banks, the question arose whether staked cryptoassets must be held on balance sheet. And for clients, it finally had to be asked whether staked assets are protected anymore in the bank’s bankruptcy.

5 Art. 1a Banking Act.

b. Main principles applicable to the custody of securities and fiat currencies

According to current Swiss statutory provisions, in case of bankruptcy of a custodian:

- Securities in custody are segregated as they are legally owned by customers and not entered in the books of the bank or custodian, therefore not triggering the banking license⁶;
- Fiat currencies deposited in bank accounts are not segregated as fiat is, when deposited in a bank account, transferred to the bank that has then an obligation to return such funds to each relevant customer. In other words, customers have a claim against the bank and the bank creates passive accounts for the return of cash deposits or fiat to customers, which justifies the licensing duty as a bank.

In early 2020 and considering the above distinction, the question arose whether cryptoassets were to be treated as securities or as fiat currencies. Following a technology neutral approach, FINMA had classified tokens in asset tokens (including securities), payment tokens (in the foregoing referred to as “cryptocurrencies”) and utility tokens.⁷ Based on the above principles, only the custody of payment tokens⁸ (in the foregoing referred to as “cryptocurrencies”) could potentially trigger the application of the banking license to their custodian, given that asset tokens are segregated from the bankruptcy estate of the custodian and utility tokens⁹ do not entail a claim against the issuer that can qualify as deposits from the public under the banking legislation.

⁶ What is not ownership of the custodian can not become part of the bankruptcy estate of the custodian and is segregated (art. 197 DEBA). The same treatment applies to banks as custodians of securities accounts (art. 16 para. 1 BA).

⁷ FINMA ICO Guidelines of 16 February 2018, cipher 3.1.

⁸ Or hybrid tokens that fulfil the features of utility and payment tokens.

⁹ Utility tokens are tokens which are intended to provide access digitally to an application or service by means of a blockchain-based infrastructure (FINMA ICO Guidelines of 16 February 2018).

c. Treatment of the custody of cryptocurrencies

In case of bankruptcy of a cryptocurrency custodian, the cryptocurrency is to be segregated from the bankruptcy estate if the cryptocurrency is held in readiness for customers at all times and either (i) kept in individual custody or (ii) kept in collective custody but it is clearly viewable which part of the cryptoassets belong to which customer.¹⁰ The same principle was inserted in the special provisions that govern the bankruptcy estate of a bank, which equally leads to the segregation of the cryptocurrencies in question and therefore to its off-balance sheet-treatment.¹¹ However, in case of collective custody, a banking license applies with the possibility to opt for the so called *fintech license* with lower requirements.¹²

PROPOSED SOLUTION AND APPROACH UNDER THE STAKING GUIDANCE

A similar approach as for the custody of cryptocurrencies is applied by FINMA to staking of cryptocurrencies by custodians. **Where the cryptocurrencies can be segregated from the bankruptcy estate of the custodian during the staking and custody is individual, no banking license applies.** Equally, if the requirements for a segregation are fulfilled, the cryptocurrencies must not be taken by banks on the balance sheet and do accordingly not trigger any capital requirements.

¹⁰ Art. 242a para. 2 of the Debt Enforcement Bankruptcy Act, “DEBA”.

¹¹ Art. 16 para. 1bis Banking Act (“BA”) and art. 37d BA.

¹² Art. 1b para. 1 BA and art. 5a Banking Ordinance. The fintech license could not apply in case of interest payments (staking rewards) or on-lending of cryptocurrencies.

In the case of direct (custodial) staking, where the custodian is also the validator, no banking license applies if (i) cryptocurrencies are held individually in a blockchain address for each customer¹³ and the (ii) custodian holds the withdrawal keys itself. If a regulated institution conducts direct (custodial) staking, there is no requirement to take the staked cryptocurrencies on balance sheet if certain transparency and risk mitigation measures laid down by FINMA are taken.¹⁴

In the case of (custodial) staking with a staking chain, where the custodian delegates the validation operation to a third party and mainly transfers the power of disposition of assets (i.e. the withdrawal keys) to the third party, a banking license is mainly required by the custodian as cryptocurrencies are not always held ready for customers or are kept in collective custody. The Staking Guidance illustrates this scenario for custodians being licensed banks and requires accordingly that the cryptocurrencies are taken on balance sheet, providing therefore with sufficient regulatory capital.

According to FINMA, if the third-party acts as fiduciary for the custodian in accordance with the requirements of the fiduciary investment directive of the Swiss Banking Association, it is not required that the cryptocurrencies are taken on balance sheet as they can be segregated.¹⁵

For this exception to apply, FINMA requires the compliance with the following requirements: 1) that the third party service provider (i) is a prudentially supervised institution, (ii) is not conducting business on an unauthorised basis, (iii) holds the relevant withdrawal keys itself, (iv) records the validator's address where cryptocurrencies are held, (v) if it is a foreign service provider, offers equivalent requirements to (i)-(iv); and 2) that a Digital Assets Resolution Package (DARP) is issued including risk management actions to make sure that a segregation can be executed.

Staking by custodians, as well as other asset custody services, are mainly subject to the Anti-Money Laundering Act.

CONCLUSION

The Staking Guidance has positively impacted the Swiss fintech industry, even if, as pointed out by FINMA, it is not binding for the civil law courts. With this reservation, the following table on page 25 is helpful to understand the different staking situations that can arise and how they are treated compared to other custody services.

¹³ At the level of the original custody address, staking address and withdrawal address, Staking Guidance, cipher 4.2.

¹⁴ See table below and Staking Guidance, cipher 4.1.2 for more detail.

¹⁵ A prerequisite for the qualification as fiduciary claim is the compliance with the Swiss Banking Directives on fiduciary investments, adapted to the risks of cryptoassets. This includes, amongst others, the existence of a fiduciary agreement, including a comprehensive risk disclosure towards the customer in particular with regard to slashing and the lock-up period (FINMA Staking Guidance, cipher 4.1.1.). The legal background for this qualification lays in the civil law principle that claims acquired by the mandatee in his own name against third parties pass to the mandator and are segregated in case of the mandatee's bankruptcy (art. 401 Code of Obligations).

Service	Treatment in case of bankruptcy of the custodian	Banking license / for banks duty to take on balance sheet
Individual custody of securities	Segregation	No, however securities lending to third parties is subject to conditions such as the client's consent and the compensation of clients (art. 19 FinSA)
FIAT custody	No segregation (but subject to certain privileged claims in case of custodian banks)	Yes (with certain exceptions)
Cryptocurrency custody	Segregation if custodian holds cryptocurrencies ready for customers at all times and there is an individual allocation of cryptocurrencies to customers	No
	No segregation (if no readiness for customers at all times or no individual allocation to each customer) or Collective custody	Yes
Non-custodial staking	As there is no custodian, the question of segregation at the custodian does not apply. The validator acts with and risks its own cryptocurrencies	No
Custodial staking	Direct staking (the staking service provider is the validator and holds the withdrawal keys) with clear individual allocation of cryptocurrencies per customer It is however still uncertain whether the slashing or the lock-up period can result in a different treatment and be considered as if the custodian could not hold the cryptocurrencies always ready for customers	By licensed participants: No requirement to take on balance sheet if custodian providing staking is instructed by clients to stake, clearly allocate cryptoassets to customers, disclose the risks of slashing and lock-up periods, mitigate slashing risks and ensure adequate risk management By non-licensed participants: No licensing requirement if held in individual custody for each customer (separate blockchain address) ¹⁶
	Direct staking with collective allocation of cryptocurrencies or no possibility to hold cryptocurrencies ready for customers at all times	Yes
	Staking chain (the custodian delegates the validation to a third-party staking service provider losing the power to dispose over cryptocurrencies)	Yes
	Staking chain where the third-party validator acts as fiduciary of the custodian.	Yes banking license as custodian cannot hold cryptocurrencies ready for customers at all times For banks: not on balance sheet if Swiss Banking directives on fiduciary investments are followed.

LEVERAGING BLOCKCHAIN FOR THE CARBON CREDITS MARKET - THE KENYAN USE CASE



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ABSTRACT

This article examines the transformative potential of blockchain technology in revolutionizing carbon markets towards sustainability and environmental integrity. Carbon emissions pose a critical challenge to global climate stability, necessitating innovative solutions for effective mitigation. Leveraging blockchain's inherent features of transparency, immutability, and decentralization, this study explores its application in carbon trading mechanisms.

Through a meticulous analysis of existing literature, the article delineates how block chain facilitates secure, transparent, and efficient carbon trading processes, thereby enhancing market integrity and fostering trust among stakeholders. Moreover, it elucidates the role of smart contracts in automating compliance and verification procedures, streamlining transaction settlements, and reducing administrative overheads. This research underscores the imperative for policymakers, industry players, and environmental advocates to embrace blockchain technology as a catalyst for positive impact in carbon markets, ultimately advancing global efforts towards a sustainable future.

INTRODUCTION

Carbon Trading Overview

Carbon credits, also known as carbon offsets, are permits that allow the owner to emit a certain amount of carbon dioxide or other greenhouse gases. One credit permits the emission of one ton of carbon dioxide or the equivalent in other greenhouse gases.¹

Companies that pollute are awarded credits that allow them to continue to pollute up to a certain limit, which is reduced periodically. Meanwhile, the company may sell any unneeded credits to another company that needs them.² Private companies are thus doubly incentivized to reduce greenhouse emissions. First, they must spend money on extra credits if their emissions exceed the cap. Second, they can make money by reducing their emissions and selling their excess allowances.³

Companies or nations are allotted a certain number of credits and may trade them to help balance total worldwide emissions.

¹ Will Kenton, "Carbon Credits and How They Can Offset Your Carbon Footprint" (2023) < https://www.investopedia.com/terms/c/carbon_credit.asp > accessed 20th March 2024

² Ibid

³ Environmental Defense Fund, "How Cap and trade works" (2020) < <https://www.edf.org/climate/how-cap-and-trade-works> > accessed 20th March 2024

“Since carbon dioxide is the principal greenhouse gas,” the United Nations notes, “people speak simply of trading in carbon.”⁴

The separate Clean Development Mechanism for developing countries issued carbon credits called a Certified Emission Reduction (CER). A developing nation could receive these credits for supporting sustainable development initiatives. The trading of CERs took place in a separate market.⁵

The carbon markets are divided into compliance and voluntary markets. The major difference between the voluntary carbon market (VCM) and compliance markets is the ability to participate in VCM regardless of the participant’s geographical location or business factor.⁶ The compliance market is regulated by national and international authorities who determine a cap in the amount certain sectors can release into the environment in order to achieve their Nationally Determined Contributions (NDC) under Article 4 of the Paris Climate Agreement.⁷

The authorities track the carbon footprints for entities and determine if their emissions went beyond the allowable limit. Entities that go beyond the prescribed amount in carbon emissions have no option but to buy or use saved credits to stay below the emissions limit. In the voluntary market, carbon credits trade is on a voluntary basis meaning that the participants operate outside the compliance markets. This provides a flexible trading scheme for participants to voluntarily offset their emissions by purchasing carbon credits. Now that we have understood carbon trading and the two carbon trading markets, the question that we seek to answer is how can block chain technology help in the regulation of carbon trading?

4 United Nations Climate Change, “Emissions Trading” < <https://unfccc.int/process/the-kyoto-protocol/mechanisms/emissions-trading> > accessed on 20th March 2024

5 Ibid n1

6 Ibid

7 KPMG, “Carbon trading” (2022) < <https://assets.kpmg.com/content/dam/kpmg/ke/pdf/thought-leaderships/2022/Kenya%20farmers%20should%20take%20advantage%20of%20carbon.pdf> > accessed on 20th March 2024

Blockchain Technology

Blockchain is a distributed ledger or a decentralized database that permanently records transactions between users without requiring a third-party. In this ledger, transactions are cryptographically chained such that they cannot be tampered with and are shared with the linked users.⁸

The technology is known for trading securities and investment. However, it is worth noting that it can also be used in payment tracking system and also facilities utilities in various industries. Blockchain is characterized by decentralization, transparency, data security and system autonomy. It has been applied widely in areas such as finance, education and employment, culture and entertainment, public service, information security, healthcare, supply chain and internet of things.

Legal and Regulatory Framework

In Kenya, The Rural Electrification and Renewable Energy Corporation (REREC) established under Section 43 of the Energy Act (2019), is tasked with harnessing opportunities offered by Clean Development Mechanism and other mechanisms including carbon credit trading. Section 75 of the Act further authorizes the Cabinet Secretary to collaborate with the necessary stakeholders in harnessing carbon trading opportunities. This is a good starting point.

Part IVA of the Climate Change Act⁹ provides for the regulation of carbon markets. The Act requires trade of carbon markets to ensure that emission reductions are carefully recorded and documented for every offset scheme, utilizing appropriate accounting terms, corresponding adjustments, and location of offset as required by the United Nations Framework Convention on Climate Change and other standard bodies.

8 <https://www.ict.go.ke/blockchain.pdf>

9 Climate Change Act Cap 387A

It also requires the Cabinet Secretary to, in the national reporting mechanism to the United Nations Framework Convention on Climate Change, include any emission reduction resulting from agreements entered under this section.

The Act establishes a carbon registry which shall include registers of the amount of carbon credits issued or transferred by Kenya, the transfer of carbon credits and any other carbon credits issued or recognized by the Kenya from a national greenhouse gases registry account.

In the works, Kenya has proposed Carbon Credit Trading and Benefit Sharing Bill, 2023 which seeks to ensure fair and equitable sharing of benefits among stakeholders while promoting development of the carbon credit trading sector in Kenya. It provides for a person or company who intends to carry on carbon credit trading business in Kenya to apply for a carbon credit trading permit in the prescribed form and pay the prescribed fee. In addition, the holder of a carbon credit trading permit must keep at the registered office, a complete and accurate record of the carbon credit trading operations in the prescribed form.

They are regulation measures in place for the trade of carbon but the key question is how can Kenya as a country leverage the power of Blockchain to ensure equitable distribution and benefits among various stakeholders? Blockchain technology brings about efficiency in the storing of the data recorded by the carbon registry.

APPLICATION OF BLOCKCHAIN IN CARBON TRADING

It is appreciated that in the world, blockchain research and practical application are in full swing. Blockchain has become a new era of the vane.¹⁰ In June 2023, 16 companies from Saudi Arabia bought more than 2.2 million tons of carbon credits from the Kenyan Market. The credits auctioned were certified and came from projects that avoid emissions by using sustainable technologies or removing carbon from the atmosphere. Indeed, companies see the voluntary carbon market as essential in helping to meet environmental targets. **However, all is not rosy, as there has been some criticisms of the carbon market including a lack of transparency, a limited supply of credits, lack of accuracy as well as the mutability and security of the carbon offsets. These challenges can be effectively and efficiently dealt with by the incorporation of blockchain technology in the regulation of carbon trading.** Let's take a look at some of the advantages of the use of blockchain in carbon trading.

DECENTRALIZATION

As opposed to centralized databases where we have a central authority for example the bank which controls the distribution and regulates transactions with an oversight of the Central bank of Kenya, blockchain operates on a distributed ledger. One cannot reverse a transaction. The concept of a distributed ledger in blockchain theory requires that transactions between network participants be faithfully recorded in a shared ledger. Each record will have a timestamp and a unique cryptographic signature, which ensures that each transaction can be traced back to the historical record.

Any changes in the books will be truly reflected in all copies, usually within a few minutes or even seconds, which prevents anyone from making mistakes or altering them maliciously.

10 Ibid n4

Specific to the application of carbon trading, blockchain technology can truly and reliably record and transmit information flow in carbon emissions trading.¹¹ Decentralization omits the intermediary structure and enables point-to-point transactions between suppliers and demanders. The technology can independently determine transactions, which can constantly update the best trading route and schedule based on previous trading experiences. In this way, the carbon emission quota utilization rate will increase, and the efficiency will be greatly improved.

TRANSPARENCY AND TRACEABILITY

The registration system is mainly responsible for the generation and storage of carbon emission quotas and the management of quota accounts. The carbon emissions trading system completes the carbon emission quota transaction. The corporate carbon emissions management system completes the calculation of corporate carbon emissions and the accounting of third-party. Blockchain technology can load the management system, registration system and trading system into the shared account books in order of occurrence time, and the changes caused by the search, the call and even the modification between systems will occur in the same books, which will seamlessly connect the corporate platform with the public platform and greatly save the maintenance cost.¹²

By creating a consensus network, we can directly locate the problems in the transaction link and ensure the traceability of information, so as to avoid problems such as lost quotas and repeated transactions.

11 Yuting Pan, "Application of Block chain in Carbon Trading" (2018) < <https://www.sciencedirect.com/science/article/pii/S1876610219305338> > accessed 20th March 2024

12 Zhou Y, Wu J, Long C. "Evaluation of peer-to-peer energy sharing mechanisms based on a multivalent simulation framework" < <https://www.sciencedirect.com/science/article/pii/S0306261918302149> > accessed 20th March 2024

Even if an illegal trading activity or fraud occurs, it will be detected and the normative operation of the carbon market will be further strengthened.¹³

OPEN AND INCLUSIVE

Blockchain technology can make each company's emissions have the characteristics of assets. Regardless of the size of the company, as long as there is CER output, it belongs to commodities that can be traded in the carbon market. The technology will help reduce the entry threshold for carbon trading market and actively mobilize the subjective initiative of small and medium-sized enterprises in energy reform. For them, the flexible and sensitive features can also show an advantage in the tide of low-carbon economy and help them to grasp business opportunities.¹⁴

Kenya has proven its ability to generate a variety of financially viable carbon projects. However, these projects have been severely criticized for a myriad of issues, including allegations of exploitation of local communities by carbon project proponents, skewed benefit-sharing arrangements, false reporting or measurement of carbon emission reductions, forceful evictions, and overall cultural disruption. There have been unified calls for simplified, transparent carbon market systems that directly benefit communities and not just intermediaries. This is the impetus for recent legal developments in Kenya's carbon market space.

Moreover, there is significant complexity in running a successful carbon trading exchange. The principle of cap and trade where countries and corporations meet their greenhouse emissions targets by buying and selling carbon credits has arguably created more greenhouse emissions than it has curtailed.

13 Ibid

14 Ibid

Appreciating the various advantages of the use of blockchain technology in carbon trading, many of the highlighted challenges can be effectively handled and provide an edge.

CONCLUSION

Kenya is at the forefront of this next frontier and can leverage the use of blockchain in carbon trading where the technology provides a renewable energy trading and peer to peer energy markets and to harness the opportunities from carbon credits. Combined with the steps of carbon emissions trading, the characteristics of the blockchain are specifically demonstrated to show its own advantages in the carbon market. In addition, Kenya.

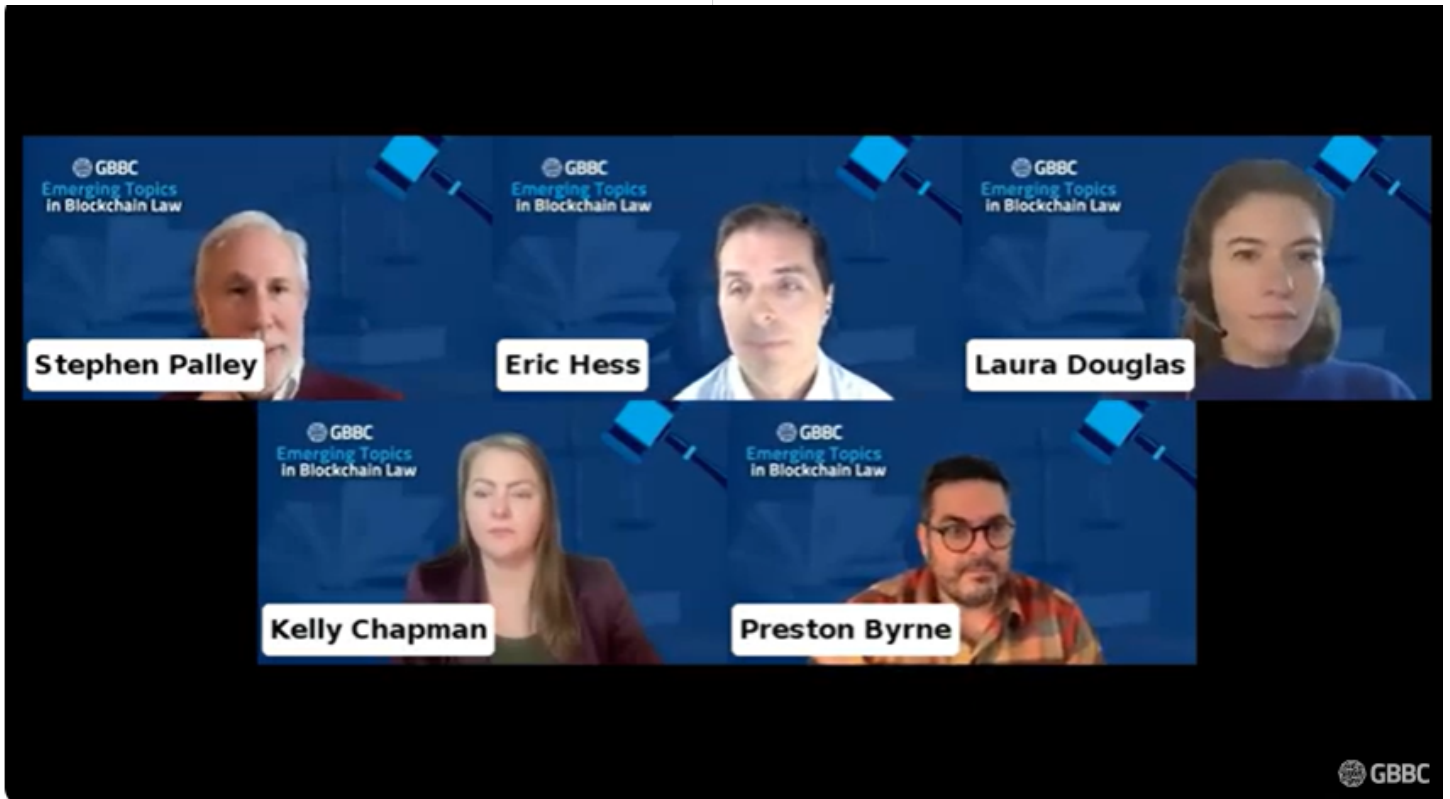
By leveraging blockchain-based platforms, individuals and organizations can engage in direct peer-to-peer energy trading, bypassing intermediaries and traditional energy markets. Further, block chain technologies enhance the reliability and quality of carbon credits. Blockchain offers significant advantages that can transform how we account for and reduce carbon emissions.

Lastly, to curb challenges such as corruption and mutability and security of transactions block chain technology promotes transparent process. Its decentralization empowers local energy markets, encourages the adoption of renewable energy sources and fosters community collaboration. On the personal front, it has been concluded that the carbon market has reached a point that will lay the foundation for blockchain promotion.

WEBINAR

“EMERGING TOPICS IN BLOCKCHAIN LAW”

DECEMBER 2023



“Emerging Topics in Blockchain Law,” a virtual roundtable presented by GBBC’s International Journal of Blockchain Law (IJBL), explores the pressing legal and regulatory issues related to blockchain and digital assets.

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Content	All legal areas related to blockchain technology and digital assets
Structure	Introduction - Description of legal matter - Proposed solution - Conclusion/key takeaways
Writing Style	Not too academic; lucid and clear-cut language
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