ASIAN BOND MARKETS INITIATIVE BRIEF No. 7

AN INTRODUCTION TO DIGITAL ASSETS

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Introduction

The Cross-Border Settlement Infrastructure Forum (CSIF) is a program under the Asian Bond Markets Initiative (ABMI) that aims to enhance financial market infrastructure in the region of the Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea—a grouping collectively known as ASEAN+3. CSIF regularly collaborates with the ASEAN+3 Bond Market Forum (ABMF), another ABMI initiative.[1]

CSIF promotes safe and efficient cross-border financial transactions, including using local currency bonds as collateral and addressing payment and settlement systems issues. It serves as a platform for dialogue among policymakers and operators of bond and cash settlement infrastructure to facilitate cross-border bond and cash settlement, and to develop common principles and models for regional financial market infrastructures.

The ABMI Medium-Term Road Map 2023–2026 emphasizes "digital transformation" as a key strategy for integrating and standardizing ASEAN+3 bond markets. ABMI members, including CSIF members, are incentivized to introduce new technologies and business models, such as distributed ledger technology, that can impact the functioning of financial market infrastructures and the digital assets they enable.

Most ASEAN+3 economies have just begun to discuss national legal definitions for digital assets. However, because of the varying functions and properties of newly

HIGHLIGHTS

- There appears to be no universal definition of digital assets; instead, national and international standard-setting bodies offer diverse definitions. Digital assets' unique characteristics, inherently different features and risks, and the varying perspectives of stakeholders create different approaches and preferences to newly emerging digital assets such as Bitcoin.
- Definitions provided by international standard-setting bodies appear to reflect their regulatory purview, purpose, and needs, focusing on cross-border transactions, owing to the fact that digital assets may not be bound to a particular place of business.
- However, business operations related to newly emerging digital assets are still evolving. Besides, there may be policy considerations to define them differently from the existing legal framework in order to promote them. As such, it would be difficult to expect a uniform definition or explanation for digital assets anytime soon.
- The International Institute for the Unification of Private Law's Principles on Digital Assets and Private Law offer a comprehensive legal understanding of digital assets, including not only newly emerging crypto-assets but also electronic records such as e-payments and dematerialized securities, and they introduce the concept of linked assets to allow tying digital assets to existing legal frameworks. These principles also focus on the legal certainty and predictability of digital asset transaction.

[1] The ABMF was established under the ABMI in May 2010 by the finance ministers of ASEAN+3. The ABMF is the only regional platform in which actions and recommendations are reported for ASEAN+3 policy discussions. It functions to integrate ASEAN+3 markets through the standardization and harmonization of regulations and market practices, as well as market infrastructures relating to cross-border bond transactions. ABMF members comprise national officials and experts, as well as international experts, and are drawn from public and private sector organizations.

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emerging digital assets and the complexity involved in the technologies needed to realize them, financial regulators are struggling with how to capture and recognize ownership, and how to transfer and properly regulate digital assets. This presents a challenge in international markets and across regions where digital assets may be defined in a different manner, depending on legal tradition (e.g., civil law or common law) and practices, or the purposes and viewpoints of the institutions and authorities regulating these assets.

Therefore, it is worth conducting a comparative analysis of digital asset definitions by different authorities and regions as a first step, which will be followed by the analysis of specific aspects of digital assets in subsequent ABMI briefs. This brief aims to review the different definitions of digital assets, show their variance and influencing factors, and highlight some of the basic characteristics of digital assets. While the information and explanations will try to cover digital assets in many forms and functions, the emphasis will continue to be on digital assets related to payments, bonds, or the capital market at large, and with relevance to ABMF and CSIF subjects.

The Asian Development Bank (ADB), ABMF, and the CSIF Secretariat would like to express their gratitude to the ABMF and CSIF members and observers, as well as subject matter experts, for their information, support, review, and advice in compiling this series of briefs.[2]

Diverse Use of Terminology Related to Digital Assets

Digital assets are referred to by many terms—including crypto-asset, cryptocurrency, digital currency, virtual asset, virtual currency, or virtual money—with these terms often being challenging to understand or classify. Although words such as virtual currency and cryptocurrency are commonly used worldwide, they do not necessarily have clear, common definitions that comply with or are applicable to a jurisdiction's laws and regulations. Different spelling varieties—for example, crypto-assets can also be referred to as "cryptoassets" or "crypto assets"—also add to the long list of terms used to describe digital assets. The distinctions are often marginal and may depend on the context, nature, and focus of the definer.[3]

Cross-Border Settlement Infrastructure Forum

The Asian Bond Markets Initiative (ABMI) was launched in 2003 by the finance ministers of the Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea—a grouping collectively known as ASEAN+3—to boost the development of local currency bond markets. The Asian Development Bank has been acting as the ABMI Secretariat since its inception.

The Cross-Border Settlement Infrastructure Forum, which has central banks and central securities depositories (CSDs) as members and ASEAN+3 government officials as observers, is a subforum under ABMI that promotes more active intraregional portfolio investments by creating an efficient regional settlement intermediary.

Cross-border transactions in bonds and other securities are currently processed through custodians and a correspondent banking network (depending on currency), generating an inevitable time lag between the time of trade and the delivery of securities and money, thus increasing credit and settlement risks. To address this problem, the Cross-Border Settlement Infrastructure Forum member organizations agreed to establish a CSD–real-time gross settlement linkage, which directly links the settlement systems of central banks and CSDs. The linkages among national CSDs and central banks' real-time gross settlement systems in different regional markets are expected to facilitate intraregional portfolio investments and the use of local currency bonds as collateral, which otherwise have been locked in onshore markets, by enabling cross-currency delivery-versus-payment of cross-border securities transactions, as well as payment-versus-payment of local currencies in the region, without a time lag.

[2] This ABMI Brief was written and compiled by Satoru Yamadera, advisor to the Economic Research and Development Impact Department of ADB, and Shigehito Inukai and Matthias Schmidt, ADB consultants; with support from Jiwoong Choi, ADB financial sector specialist; and valuable input and expertise from ABMF and CSIF members, and other subject matter experts, including Hideki Kanda, professor emeritus of the University of Tokyo. The CSIF secretariat team bears sole responsibility for the contents of this brief.

[3] For consistency in this brief series, ADB has chosen to follow the Financial Stability Board in using the following spelling: "crypto-asset" and "crypto-assets."

In a similar manner, the link of digital assets to new or specific technologies provides an additional dimension to the definitions of digital assets and their characteristics. Newly emerging digital assets, such as Bitcoin, are referred to as digital assets without clearly defining them or differentiating them from existing e-money or dematerialized securities, which are also represented in digital form. It is necessary to know that the technology behind digital assets may create differences in how to recognize them legally.

For example, distributed ledger technology (DLT) and blockchain are often used interchangeably but are not completely the same. DLT is a general term for technologies and mechanisms for managing data in a decentralized manner; blockchain is one representative example of DLT, being a technology for managing data consisting of a series of blocks whose order and consistency is cryptographically verifiable.[4] Cryptography plays an important role in the process of creating blockchain, but digital assets are not necessarily "crypto," depending on the technology used.

This multitude of terms and viewpoints may impact policymakers' ability to understand the characteristics of digital assets, their inherent requirements, and the risks of underlying technologies in order to define and effectively regulate them.

Different Definitions of Digital Assets and Crypto-Assets

Nothing highlights the complexity of digital assets more effectively than the fact that multiple terms and definitions for digital assets (and their various iterations and categories) exist.

For example, the use of "crypto-asset" is thought to refer back to a meeting at the G20 Summit in 2018 in which it was noted that so-called virtual currency (e.g., cryptocurrency or digital currency) lacked the characteristics of sovereign currency. To prevent money laundering and the financing of terrorism, the direction for regulating crypto-assets was set out in that summit's leaders' declaration.[5]

While the term crypto-asset has, hence, come to clearly distinguish it from existing currency, a number of different definitions have since emerged, as detailed below. Often, by using crypto-assets, a link between the digital asset and a type of technology is established; hence, the technology becomes part of the definition. Yet, such connection is not necessary by default and, notably, DLT is not confined to just blockchain solutions.

General Definition

In a straightforward general description in a finance glossary—that is, a definition that is not aimed specifically at the bond or capital market, or any particular stakeholders or community—

> "a digital asset is anything that is stored digitally and is uniquely identifiable that organizations can use to realize value [...]."[6]

The core premise of a digital asset in this case is, hence, the existence of an asset in digital form.

Definitions by International Standard-Setting Bodies

International standard-setting bodies for financial markets have established definitions for digital assets, virtual assets, and crypto-assets.

The Financial Stability Board (FSB), in its 2022 *Assessment of Risks to Financial Stability from Crypto-Assets*, links a digital asset to new technologies from the outset:

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[4] If the process of the verification is shared by many (i.e., distributed), recorded data will be immutable with high transparency, traceability, and resilience. Therefore, blockchain is normally designed to be a distributed peer-to-peer system that broadcasts information to a set of participants who work to validate it and keep it in a ledger of activities as connected blocks.

[5] "Technological innovations, including those underlying crypto-assets, can deliver significant benefits to the financial system and the broader economy. Crypto-assets do, however, raise issues with respect to consumer and investor protection, market integrity, tax evasion, money laundering, and terrorist financing. Crypto-assets lack the key attributes of sovereign currencies." Excerpt from the G20 Finance Ministers and Central Bank Governors Meeting. 2018. Communiqué Item 10 from Buenos Aires, 21–22 July. https://g20.utoronto.ca/2018/2018-07-22-finance.html.

[6] Gartner. Digital Assets. https://www.gartner.com/en/finance/glossary/digital-assets.

> "Digital asset: a digital instrument that is issued or represented through the use of distributed ledger or similar technology. This does not include digital representations of fiat currencies."[7]

In an earlier publication in 2018, the FSB referred to crypto-assets as follows:

> "Crypto-asset: a type of private asset that depends primarily on cryptography and distributed ledger or similar technology as part of their perceived or inherent value."[8]

The FSB's focus on crypto-assets as a subset of digital assets reflects the increase in the interconnectedness between the crypto-asset market and the traditional financial system in recent years, and that these assets could significantly impact traditional financial transactions.

Similarly, the Basel Committee on Banking Supervision (BCBS), the primary global standard setter for the prudential regulation of banks, defines crypto-assets as follows:

> "Cryptoassets are defined as private digital assets that depend on cryptography and distributed ledger technologies or similar technologies."[9]

The BCBS definition goes further in its regulatory guidance by classifying crypto-assets into two groups. The allocation of a particular crypto-asset to a group determines the capital requirement banks have to maintain pursuant to the risk-weighted exposure concept in the Basel Framework. Group 1 crypto-assets consist of tokenized traditional assets and crypto-assets with effective stabilization mechanisms. Group 2 crypto-assets are the ones that fail to meet any of the classification conditions (e.g., unbacked crypto-assets). They are deemed to pose additional and higher risks compared to Group 1 crypto-assets. The BCBS set an implementation date of 1 January 2025 for this treatment by banks.

The International Organization of Securities Commissions, an international body that brings together the world's securities regulators, is recognized as the global standard-setter for financial market regulation. It provides definitions and frameworks to help regulate various financial instruments, including digital assets and crypto-assets. In its publications, the International Organization of Securities Commissions provides a comprehensive definition of digital assets or crypto-assets, including the well-established view that both terms are synonymous:

> "Crypto-asset: An asset, sometimes called a "digital asset," that is issued and/or transferred using distributed ledger or blockchain technology. Crypto-assets include, but are not limited to, so-called "virtual currencies," "coins," and "tokens." To the extent digital assets rely on cryptographic protocols, these types of assets are commonly referred to as "crypto-assets.""[10]

The Financial Action Task Force (FATF), the intergovernmental policymaking body acting as the global money laundering and terrorism-financing watchdog, applies the following definition:

> "Virtual assets (crypto assets) refer to any digital representation of value that can be digitally traded, transferred, or used for payment. It does not include digital representation of fiat currencies."[11]

In 2023, the FATF clarified the definition further through Recommendation No. 15 (New Technologies):

> "A virtual asset is a digital representation of value that can be digitally traded, or transferred, and can be used for payment or investment purposes. Virtual assets do not include digital representations of fiat currencies, securities and other financial assets that are already covered elsewhere in the FATF Recommendations."[12]

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[7] FSB. 2022. *FSB Assessment of Risks to Financial Stability from Crypto-Assets (*Annex 2—Glossary). p. 25. https://www.fsb.org/wp-content/uploads/P160222.pdf.

[8] FSB. 2018. *Crypto-Asset Markets Potential Channels for Future Financial Stability Implications (*Annex 2—Glossary). p. 17. https://www.fsb.org/wp-content/uploads/P101018.pdf.

[9] Bank of International Settlements. 2022. *Prudential Treatment of Cryptoasset Exposures*. p. 5. https://www.bis.org/bcbs/publ/d545.pdf.

[10] International Organization of Securities Commissions. 2023. *Policy Recommendations for Crypto and Digital Asset Markets, Final Report.* (Annex A—Glossary of Relevant Terms and Definitions FR11/2023). p. 44. www.iosco.org/library/pubdocs/pdf/IOSCOPD747.pdf.

[11] FATF. Virtual Assets. https://www.fatf-gafi.org/en/topics/virtual-assets.html (accessed 28 July 2024).

[12] FATF. 2023. *International Standards on Combating Money Laundering and the Financing of Terrorism and Proliferation.* Update to the Recommendations Adopted by the FATF Plenary in February 2012. https://www.fatf-gafi.org/content/dam/fatf-gafi/recommendations/FATF%20Recommendations%202012.pdf.coredownload.inline.pdf.

In its interpretive notes to FATF Recommendation 15 (New Technologies), the FATF proposed that each economy should consider virtual assets as "property," "proceeds," "funds," "funds or other assets," or other "corresponding value." In addition to virtual assets, the FATF stated that the definitions of the referenced terms are often very much dependent on each jurisdiction's legal and regulatory framework.

Definitions from National Legal and Regulatory Perspectives

The definitions of digital assets set by the international standard-setting bodies are intended to involve multiple markets, but they cannot encompass the definitions of all markets as they set them along with their policy intentions, as we see above. As such, looking at the definition of digital assets from each economy's legal and regulatory perspectives is beneficial. While national definitions reflect the recognition of digital assets in a given jurisdiction and how they fit into the domestic legal framework, the International Institute for the Unification of Private Law (UNIDROIT), an independent intergovernmental organization formulating international private and commercial law practices, issued the Principles on Digital Assets and Private Law (the UNIDROIT Principles) in June 2023.[13]

According to the UNIDROIT Principles,

> "digital asset means an electronic record which is capable of being subject to control;" here, "electronic record means information which is (i) stored in an electronic medium and (ii) capable of being retrieved;"[14]

The UNIDROIT Principles are intended to be technology agnostic. Currently, blockchain is popular for tokenization, but it can be replaced by new technology in the future. From a legal perspective, ensuring legal certainty for the use of any type of technology is critically important because this will help develop the new business of digital assets regardless of the future development of new technologies.

The key concept in the UNIDROIT Principles' definition is "control." Such controllability needs to be exclusive, though how to ensure this controllability may differ across technologies, such as blockchain-based distributed ledger data management or account-based centralized ledger management (see also Characteristics of Digital Assets).

In addition, the UNIDROIT Principles perceive the concept of linked assets. Digital assets can be linked to other tangible and intangible assets for which concrete legal practices are already established. Therefore, business related to digital assets can be promoted openly with foreseeable legal limitations, as well as flexibility in the case of linked assets.

The members of the UNIDROIT Principles working group initially intended to develop a taxonomy for digital assets but quickly realized that the characteristics of these assets differed based on the intent of and application by stakeholders, and that there were differences in the use of technology. Consequently, UNIDROIT focused on the purely legal aspects of digital assets.

The UNIDROIT Principles' approach is not unique. In 2015, the Government of the United States (US) introduced a similar definition of digital assets based on the existing legal framework:

> "Digital asset" means an "electronic record in which an individual has a right or interest," but does not include the "underlying asset or liability unless the asset or liability is itself an electronic record."[15]

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[13] UNIDROIT undertook a 31-month official review of digital asset considerations, bringing together legal and information technology experts in several related fields from around the world.

[14] UNIDROIT. 2023. "Submission of the Draft Principles on Digital Assets and Private Law to the Governing Council for Consideration and Final Adoption: Adoption of Draft UNIDROIT Instruments (c) Principles on Digital Assets and Private Law." Governing Council 102nd Session, Rome. 10–12 May. https://www.unidroit.org/wp-content/uploads/2023/04/C.D.-102-6-Principles-on-Digital-Assets-and-Private-Law.pdf.

[15] The Revised Uniform Fiduciary Access to Digital Assets Act, 2015 was developed by the Uniform Law Commission to provide legal guidance for fiduciaries managing digital assets of deceased or incapacitated individuals. Uniform Law Commission. 2015. Revised Uniform Fiduciary Access to Digital Assets Act. https://www.uniformlaws.org/viewdocument/enactment-kit-68?CommunityKey=f7237fc4-74c2-4728-81c6-b39a91ecdf22&tab=librarydocuments.

In 2019, the American Bar Association added a clarification to the same definition, stating:

> "Digital assets are distinguished from physical assets because the digital asset itself does not exist in physical form. For example, a bitcoin is a digital asset because it is an electronic record that is created and stored exclusively on the Bitcoin blockchain."[16]

In 2022, US policymakers included the new class of digital assets into amendments to the Uniform Commercial Code (UCC), a legislative guidance concept on which federal and state laws may be modeled. The UCC references the term "controllable electronic records" (CERs) to address the legal aspects of digital assets, particularly in secured transactions, and offers the following definition:

> "CERs are defined as records stored in an electronic medium that can be subjected to control. This definition is intended to encompass cryptocurrencies, stablecoins, [nonfungible tokens], and other crypto-assets, but it explicitly excludes electronic money, electronic chattel paper, electronic documents of title, and investment property."[17]

In its approach to the 2022 amendments and definition of CERs, the UCC largely adopts the key arguments promoted in the UNIDROIT Principles (further detailed in ABMI Brief No. 8)—specifically, the significance of control and technological neutrality. The UCC amendments created a new Article 12 governing the transfer of property rights in CERs and modified Article 9 to clarify the procedures for attachment and perfection of security interests in CERs. These amendments aim to provide a uniform framework for dealing with security interests in crypto-assets such as CERs.

However, the UCC definition has not yet been established as a common notion by all stakeholders in the US. Different authorities set different definitions for digital assets, depending on their supervisory remit and responsibility over different markets and products.

For example, the US Financial Industry Regulatory Authority, which regulates broker–dealers operating in the US, stated in a regulatory notice to the market:

> "The term "digital asset" refers to cryptocurrencies and other virtual coins and tokens (including virtual coins and tokens offered in an initial coin offering [...], and any other asset that consists of, or is represented by, records in a blockchain or distributed ledger (including any securities, commodities, software, contracts, accounts, rights, intangible property, personal property, real estate or other assets that are "tokenized," "virtualized," or otherwise represented by records in a blockchain or distributed ledger)."[18]

This is largely in line with the UCC definition, although it still references technology. However, the Securities and Exchange Commission tends to focus more on activities related to the offer, sale, and trading of securities; thus, digital assets involving these activities are recognized as digital asset securities.[19] Similarly, the Commodity Futures Trading Commission recognizes them as commodities, the Comptroller of the Currency recognizes them as cash equivalent where applicable, the Bureau of the Treasury recognizes them as monetary interpretation, and the Internal Revenue Service (US tax office) recognizes them as property.

These differences may stem from the complex nature of digital assets, which can be used as a means of payment, store of value, or investment, as well as representations of value and information. Until we see a concrete court decision, it is likely that this uncertainty will remain in the US market.

In the United Kingdom (UK), the Law Commission concluded—in its consultation for draft legislation of the Property (Digital Assets) Act, 2024—that the common law system in England and Wales was well placed to provide a coherent and globally relevant regime for existing and new types of digital assets. The draft act is to introduce a new, third category of property named "thing that is digital in nature," in addition to "real property," which refers to real estate, and "personal

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[16] American Bar Association, Derivatives and Futures Law Committee, Innovative Digital Products and Processes Subcommittee, Jurisdiction Working Group. 2019. *Digital and Digitized Assets: Federal and State Jurisdictional Issues*. https://www.davispolk.com/sites/default/files/aba_digital_and_digitized_assets_white_paper.pdf.

[17] Uniform Law Commission and the American Law Institute. 2022. Uniform Commercial Code Amendments to Articles 9–12. https://www.uniformlaws.org/viewdocument/final-act-164?CommunityKey=1457c422-ddb7-40b0-8c76-39a1991651ac.

[18] Financial Industry Regulatory Authority. 2021. Regulatory Notice 21–25. https://www.finra.org/rules-guidance/notices/21-25.

[19] Securities and Exchange Commission. 2021. The Division of Examinations' Continued Focus on Digital Asset Securities. *Digital Assets Risk Alert*. https://www.sec.gov/files/digital-assets-risk-alert.pdf.

property," which refers to movable assets and debt claims. The new category will cover digital assets and their iterations such as a "crypto-token."[20] In this context, the term "crypto-token" refers to a type of digital asset that can be used for various purposes, such as payment or representing other rights or assets. Notably in this case, the definitions are stated in relation to property and are not specific to financial markets.

While the new legislation in the UK aims to confirm the existence of a third category of personal property to better recognize and protect the unique features of certain digital assets, the commission also recommended that the Government of the UK create a panel of industry experts to provide guidance on technical and legal issues relating to digital assets. The recommendations also included providing market participants with new ways to take security over crypto-tokens and tokenized securities, which do not yet exist in England and Wales.

In the European Union, the European Commission describes crypto-assets as a subset of digital assets and provides a comprehensive definition of crypto-assets in its Markets in Crypto-Assets Regulation, promulgated in 2023:[21]

> "Crypto-assets are digital representations of values or rights, which can be transferred and stored electronically, using specific technology (known as distributed ledger technology or similar technology).
>
> Crypto-assets are inextricably linked to blockchains, as they are the blocks that make up the chains themselves. Crypto-assets come in many forms and with varying rights and functions. A crypto-asset can serve as an access key to a service (often referred to as "utility tokens"), can be designed to facilitate payments (often referred to as "payments tokens") but can also be designed as financial instruments, such as transferable securities under the Markets in Financial Instruments Directive."[22]

In Asia, the Japanese Financial Services Agency is the first regulator in the ASEAN+3 region to attempt to effectively include digital assets (crypto-assets) in its regulatory framework. Yet, Japanese law—which follows the civil law tradition—does not define digital assets comprehensively; however, crypto-assets used as a means of payment are regulated under the Payment Services Act, and security tokens are covered by amendments made to the Financial Instruments and Exchange Act in 2017 and 2020.

Under the Payment Services Act, a crypto-asset is defined as a property value that satisfies the following four criteria: (i) used for payment and sold to or purchased by unspecified persons, (ii) electronically recorded and transferred, (iii) not a fiat currency or a currency-denominated asset, and (iv) not a security token. On the other hand, the following two types of security tokens are defined in the Financial Instruments and Exchange Act as electronic forms of securities based on existing regulations, and they are subject to existing legal conventions for securities including book-entry (dematerialized) securities. The token types are (i) tokenized securities (e.g., tokenized stocks, bonds, and funds) and (ii) electronically recorded transferable rights (i.e., tokenized interests such as in collective investment schemes).

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[20] UK Law Commission. Digital Assets. https://lawcom.gov.uk/project/digital-assets/; Digital Assets as Personal Property. https://lawcom.gov.uk/document/digital-assets-as-personal-property-draft-clauses/; Digital Assets as Personal Property: Short Consultation on Draft Clauses. https://cloud-platform-e218f50a4812967ba1215eaecede923f.s3.amazonaws.com/uploads/sites/30/2024/02/Feb-2024-digital-assets-and-personal-property-CP.pdf; Digital Assets: Final Report June 2023. https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2023/06/Final-digital-assets-report-FOR-WEBSITE-2.pdf; Digital Assets Summary of Final Report June 2023. https://s3-eu-west-2.amazonaws.com/cloud-platform-e218f50a4812967ba1215eaecede923f/uploads/sites/30/2023/06/14.294_LC_Digital-assets-summary_v5_WEB.pdf.

[21] European Union (EU). 2023. EU Regulation 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets, and Amending EU Regulations 1093/2010 and 1095/2010, and EU Directives 2013/36 and 2019/1937. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1114; https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/markets-crypto-assets-regulation-mica.

[22] European Commission. 2020. Questions and Answers on Digital Finance Strategy: Legislative Proposals on Crypto-Assets and Digital Operational Resilience, and Retail Payments Strategy. https://ec.europa.eu/commission/presscorner/api/files/document/print/en/qanda_20_1685/QANDA_20_1685_EN.pdf.

These definitions are part of the regulatory framework established to oversee the crypto-asset market, focusing on financial stability, user protection, anti-money laundering, and countering the financing of terrorism. In Japan, the terms DLT and blockchain are not used in related laws and regulations because technologies that do not fall under DLT and blockchain may emerge through future technological innovation.[23]

Singapore, which is a common law jurisdiction, has taken the approach that digital assets shall be regulated according to their underlying nature and the corresponding legislation for such asset classification. For example, a payment token would be subject to provisions in the Payment Services Act, 2019 (as amended), while digital assets that have characteristics of securities would fall under the Securities and Futures Act, 2001 (as amended). In addition, market participants and their activities may be subject to the licensing and supervision provisions of the respective act. The concepts of "token" and "coin" (see definitions and characteristics later in this brief) were included in legislation at the time of promulgation of the Payment Services Act, 2019.

In Australia, the Australian Taxation Office, responsible for the categorization of digital or crypto-assets in the Australian market from a tax perspective, offers a straightforward definition:

> "Crypto assets are a subset of digital assets that use cryptography to protect digital data and DLT to record transactions."[24]

These jurisdictions appear to confine newly emerging digital assets—within existing regulatory frameworks—along the lines of the concept of linked assets found in the UNIDROIT Principles.

Definitions from International Industry Groups

Regarding their use in relation to securities markets and payments, the International Capital Market Association (ICMA) defines crypto-assets, digital assets, and virtual assets separately, while also relying on the underlying definitions of official bodies for input into said definitions.[25] Its overall definitions of digital assets and crypto-assets are based on the definitions originating from the FSB and mentioned earlier.

However, ICMA also offers a definition of native digital assets adopted from representations by the European Central Bank and adapted for the securities markets:

> "Native digital asset: a security that is originally issued, recorded and kept in a DLT-based system."[26]

ICMA's definition of virtual assets largely follows that of the FATF, with the addition of investment as a purpose and specificity around securities, being the major focus of ICMA stakeholders.

> "Virtual asset: a digital representation of value that can be digitally traded, or transferred, and can be used for payment or investment purposes. Virtual assets do not include digital representations of fiat currencies, securities and other financial assets that are already covered elsewhere in the FATF Recommendations" (footnotes 11 and 12).

Characteristics of Digital Assets

As shown above, it seems difficult to set a uniformly acceptable definition of digital assets at this stage. The existing definitions are linked with the characteristics of digital assets and regulatory purviews of different regulators. Digital assets may be categorized based on some characteristics, but these are neither definitive nor exhaustive enough to be utilized for definition. Having

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[23] S. Saito and J. Schmidt. 2020. Digital Assets in Japan. Digital Assets, Crypto Derivatives, Primary Markets, Secondary Markets, and Key Market Infrastructure. https://innovationlaw.jp/wp-content/uploads/2020/05/digital_assets_JP_final.pdf; Crypto Council for Innovation. 2023. Japan's FSA Crypto Asset and Stablecoin Framework. Policy Brief. 18 September. https://cryptoforinnovation.org/policy-brief-summary-of-japanese-fsa-crypto-asset-and-stablecoins-framework/.

[24] Adapted from Australian Taxation Office. 2023. What are Crypto Assets? https://www.ato.gov.au/individuals-and-families/investments-and-assets/crypto-asset-investments/what-are-crypto-assets (accessed 28 July 2024).

[25] ICMA. 2024. What are Virtual Assets, Crypto Assets and (Native) Digital Assets? https://www.icmagroup.org/market-practice-and-regulatory-policy/fintech-and-digitalisation/distributed-ledger-technology-dlt/faqs-on-dlt-and-blockchain-in-bond-markets/2-what-are-virtual-assets-crypto-assets-and-native-digital-assets/ (accessed 28 July 2024).

[26] European Central Bank Advisory Groups on Market Infrastructures for Securities and Collateral and for Payments. 2021. The Use of DLT in Post-Trade Processes: Glossary of Definitions. https://www.ecb.europa.eu/pub/pdf/other/ecb.20210412_useofdltposttradeprocesses~958e3af1c8.en.pdf.

Table 1: Characteristics of Digital Assets

Characteristic	Factor(s)
Account type or token type	Recorded in accounts or as individual tokens
Creation process of the digital asset	Native (without an issuer) or non-native (with an issuer)
Purpose or intended use of the digital asset	Asset token, payment token, utility token (as examples)

Source: Cross-Border Settlement Infrastructure Forum Secretariat compilation based on public domain sources, including material authored by Hideki Kanda, professor emeritus of the University of Tokyo.

said that, it is worth categorizing digital assets based on certain characteristics commonly referenced or used. These characteristics include the manner in which the (electronic) records of the digital assets are kept and the purpose for which these digital assets are created.

This affects their legal status and usage in different circumstances and, thus, their legal notion and definition, as shown in **Table 1**.

Account Type versus Token Type

One of the fundamental characteristics of digital assets lies in the manner in which they are recorded. **Table 2** illustrates the two separate types of records.

Traditional assets, such as cash and securities, as well as e-money and electronic securities, have always been recorded in an account: The entitlement of an asset owner is electronically recorded in an account with a value. While the relationship between the account holder and asset owner must be fixed through a know-your-customer process, the value in the account may change; only the current balance in an account is recorded and transaction records are kept separately if needed. The validity of an entitlement is based on the trust in the account-keeping institution (securities depository) that manages the accounts securely, even without detailed transaction information. The size of the database depends on the number of accounts, not the

Table 2: Account Type versus Token Type

Account Type

Name	Account Number	Type of Asset	Amount
Person A	A1000	JPY	10

Token Type

	Type of Asset	Amount	Holder
1	JPY	1	Person A
2	JPY	1	Person A
3	JPY	1	Person A
4	JPY	1	Person A
5	JPY	1	Person A
6	JPY	1	Person A
7	JPY	1	Person A
8	JPY	1	Person A
9	JPY	1	Person A
10	JPY	1	Person A

JPY = Japanese yen.
Source: Cross-Border Settlement Infrastructure Forum Secretariat.

value of assets to be recorded. The legal status of the entitlement of assets as well as the supervisory control over an account-keeping institution is linked with the jurisdiction where the account-keeping institution is established. Therefore, transactions under account-based data management can conform with an existing jurisdiction-based legal and regulatory framework; thus, regulators may exercise their supervisory power on the account-keeping institution, although digital assets themselves are not physically recognizable.

On the other hand, entitlement records for tokenized digital assets are kept in a different manner. The value of assets is often fractionalized (i.e., divided into small units or "tokens"), and the value of each unit remains the same. Each unit of an entitlement can be linked with an asset owner via an owner-specific address, such as an e-wallet; there is no concept of a balance. However, an asset owner can know the total value of their entitlement if the owner checks the e-wallet to which tokenized information is linked. In this system, transaction records are kept in a ledger for each token. Especially in a blockchain system, previous records are used to ensure the validity of transactions; hence, the validity of an entitlement is ensured without trust because any discrepancy in a record can be detected through the process of validating a transaction. The size of the database depends on the number of tokens, not the number of asset owners. The legal status of entitlement of assets and supervisory control over a registration agency may not be linked with the territoriality where a registration agency is established, especially in the case of distributed ledger technology, because there are many registration agencies or nodes potentially not domiciled in the same territory.

This creates difficulties in how to determine the legal status of such digital assets and how to regulate them. Besides, tokens in an e-wallet may not ensure the entitlement of an asset owner if the owner does not have a private key to enable transactions. Normally, ownership means exclusive control to dispose of an item—here, a token. However, in blockchain by design, a person who controls the private key can effect a transfer of the token, regardless of its location in an e-wallet. In other words, a person who possesses the private key might be considered as the owner. However, it is very difficult to know who actually possesses the private key. Because of this characteristic, regulators may want to define these newly emerging digital assets separately from existing digital assets. In other words, this may be one reason that a definition of digital assets often refers to technology rather than being neutral to technology.

Creation Process of the Digital Asset (Existence of an Issuer)

In classifications of digital assets, they are often referred to as either native or non-native. This categorization mainly depends on the process of value creation—that is, whether there is an issuer or not.

Native digital assets. These originate through a process referred to as "mining." Mining takes place through a process called "proof of work," a consensus algorithm to achieve an agreement on a single data value among distributed processes. The value (or electronic record) of the native digital asset is created automatically as the outcome of the mining; there is no issuer of a token, compared with traditional securities. Typical examples of native digital assets are Bitcoin and Ether.

Non-native digital assets. These are based on the value of (an)other (underlying) asset(s), such as a monetary claim, a corporate bond, gold, or real estate. Usually, non-native digital assets have the concept of an "issuer," represent real-world assets, and are issued with specific purposes. In the context of the UNIDROIT Principles, non-native digital assets may be described as "linked assets." Common examples of non-native digital assets are security tokens (i.e., a device that tokenizes assets such as debt securities) and so-called pegged tokens (the peg is to an underlying asset).

Purpose or Intended Use of the Digital Asset

The purpose or intended use of digital assets may carry additional characteristics and include additional functionality to be programmed into such digital assets. While digital assets may be used for payments or the storing and transfer of values of different types, for investments, or as collateral for other business transactions, some digital assets may have very specific uses. For example, they can be charity tokens or tokens for particular communities. The most common types of purpose or intended use of a digital asset are broadly described below.

Asset token. An asset token is linked to assets that generate cash flows such as dividends, interest, rental income, and capital gains. These linked assets may be based on real estate, stocks and bonds or other securities, precious metals, and even movable assets such as airplanes and ships. Depending on a jurisdiction,

nonfungible tokens, such as one-of-a-kind digital art or a specific online game character item, can be recognized as assets with financial value in one jurisdiction, while another jurisdiction differentiates them from financial assets but recognizes them as utility tokens.

Payment token. A payment token is a digitized version of cash that can be used for payments, remittances, and settlements. They can also be digital assets that are used for payments and recognized as payment tokens. For example, Bitcoin is not suitable to be used as money since its value fluctuates so widely. But it may be considered as a payment token. Stable tokens are designed to be utilized for payments. It is important to note that stable coins include many different types of tokens with different degrees of risk. Such tokens are typically issued by regulated institutions such as banks, funds transfer service providers, and trust companies. Consequently, these tokens are also referred to as "regulated stablecoins" or simply "stablecoins." Stable tokens are often pegged to fiat currencies by depositing equivalent cash in a trust or by controlling supply to meet the parity through programming. Deposit tokens can be issued by banks, as with negotiable certificates of deposit, and utilized for payments. Tokens used for payments are often referred to as "coins" and "currencies." These expressions confuse the conceptualization of digital assets because coins and currencies are attached to the legacy notion of payments, but their usage is not limited to payments. Therefore, it is advisable not to refer to digital assets as coins and currencies unless they are clearly defined—such as in the case of a central bank digital currency.

Utility token. A utility token represents rights or assets that do not generate cash flow such as points, gifts, voting rights, or tickets. So-called "functional nonfungible tokens" provide specific functions and utilities such as those representing voting rights; they also cannot be duplicated. Utility tokens can provide additional benefits and services to asset token owners, including access to events, special in-game abilities, and real-world perks.[27]

Categorization based on the purpose and intent of tokens may be subjective and not easy to define because they may use the same technology. The original intent of the token may change in the future based on the intention of users. Actually, Bitcoin was invented for the use of so-called geeks, not for the general public. The purpose and intention also may vary depending on jurisdiction. The same token can be considered an asset token in one jurisdiction, but it can also be recognized as a payment token in another. It would be neither possible nor desirable to unify and harmonize the understanding of the purpose and intent of different tokens across various jurisdictions.

Conclusion

Digital assets have many definitions that are influenced by the party offering the definition, their industry or business view, or a particular regulatory focus. Digital assets may be categorized based on some characteristics, but these are neither definitive nor exhaustive enough to be utilized for definition.

Based on our comparative analysis, crypto-assets are often deemed a subset of digital assets. In addition, referring to digital assets as coins and currencies can impede a clear conceptualization of digital assets because their usage may go beyond payments. Unless they are clearly defined legally as such in a particular jurisdiction, it is advisable not to call them coins and currencies.

The definition of digital assets in the UNIDROIT Principles published in June 2023 is the most comprehensive to date. It includes not only newly emerging crypto-assets but also electronic records such as e-payments and dematerialized securities. In addition, the UNIDROIT Principles offer a possible link for digital assets to existing legal frameworks with the concept of linked assets. Their approach is more focused on how to ensure legal certainty and predictability by bridging a gap between existing digital assets and newly emerging assets.

However, the business related to newly emerging digital assets is still evolving. Besides, there may be policy considerations for defining them differently from the existing legal framework in order to promote them. Regulators are asked to find the right balance, but the multitude of terms and viewpoints related to digital assets can impact policymakers' ability to understand the characteristics of digital assets, their inherent requirements, and the risks of underlying technologies and their application; hence, the tasks facing

[27] Adapted from Coin 360. Crypto Glossary. https://coin360.com/glossary/utility-token; https://coinmarketcap.com/academy/glossary; https://coinmarketcap.com/academy/glossary/utility-token.

policymakers are inevitably complicated. One possible avenue is not to relax regulations under the existing framework but to confine the field of this new business to only professional or wholesale participants. This will strike a balance between investor protection and the promotion of new business. However, it is not clear such an approach would be accepted; this is still subject to the policy considerations of each jurisdiction.

As detailed above, some markets are defining digital assets through national laws. But the definition of digital assets in one jurisdiction may not be applicable in other jurisdictions because it would have to include local legal contexts as well as policy considerations. Besides, even in the same jurisdiction, different national regulators may set different regulatory definitions based on their purview. It is probable that, for example, Bitcoin may be recognized as a security in one jurisdiction but recognized as a means of payment or commodity in other jurisdictions. It can also be defined as a new asset class.

A practical approach to digital assets may be unavoidable as we see different definitions from the international standard-setting bodies as well as different national authorities, with emphasis on their policy objectives and the interests of constituents; this does not appear to be likely to change anytime soon. Unfortunately, complications arising from such different approaches can create difficulties in the cross-border business of digital assets. Financial service providers handling digital assets must cope with such complications when conducting cross-border business and complying with local regulations. They may need to acquire necessary licenses where applicable. Regulators may consider ringfencing their market by enacting local regulations, but the transboundary nature of newly emerging digital assets remains a challenge as long as regulation remains linked with territorial jurisdiction.

In such circumstances, conflicts of laws are inevitable; hence, it is necessary to accumulate use cases and develop a common understanding as part of the process of building international commercial practices for digital assets. In this regard, it is valuable to look into the UNIDROIT Principles more closely as they may offer a possible approach to manage controllability in cross-border transactions and secure ownership in different jurisdictions. These points will be further explored in ABMI Brief No. 8.

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