Decrypting Crypto:
Tokens and Tokenization

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Key Insight

Tokenization brings the transparency, auditability, and programmability of blockchains and cryptocurrency tokens to traditional assets. However, there is significant legal and regulatory work needed for the tokenization of real world assets to be deployed on a mass scale.

Summary

Tokens are digital representations of rights to a unique item that may be an asset, service, or the receipt or marker of a completed action. Tokenization is the process of creating a digital representation of something that one wishes to reside on a blockchain for some function, such as to record and track transfers in ownership. Any party with internet access can create a token on a public blockchain.

Key Facts

- Because tokens operate on blockchains that typically are always accessible in real-time, auditable, and programmable, they can easily be used to indicate the transfer of value between parties.
- One of the most common types of real world asset tokenization currently being explored are investment funds. Tokenization enables investors to purchase shares of a fund through a blockchain platform whose programmability and 24/7 auditability make transactions and overall fund management more efficient.
- A very popular form of tokenization is with stablecoins, which are blockchain-based representations of fiat currencies held in a reserve. Stablecoin regulation has grown as a financial policy issue for the United States as policymakers consider how stablecoins can generate inflows into U.S. Treasuries and enable dollar-denominated payments in blockchain protocols.
- For a tokenized asset, the underlying asset itself is not legally transferred unless there is an accompanying legal framework and process in the real world (i.e., off chain). Typically, for the transaction to be legally binding, the real asset must be held in some form of neutral custody before issuing tokens to represent the value. For example, transferring ownership of an asset like a house into a special purpose vehicle legal entity would allow the holders of the real estate token to acquire the rights to the legal entity and be the legal owners of the underlying asset–the house.

Key Institutions

- Circle: U.S.-based financial technology company responsible for issuing USD Coin (USDC), the 2nd largest stablecoin by market size.
- Tether: British Virgin Islands-based company that issues USDT, the most

widely used stablecoin today.

- Ondo: Decentralized Finance (DeFi) network that issues a variety of token products backed by U.S. Treasuries primarily geared towards large institutional investors. It is backed by BlackRock's BUIDL fund.
- Securitize: The world's largest tokenization platform/provider. Provides the tokenization infrastructure for BlackRock BUIDL, Apollo Global's ACRED, and Hamilton Lane's SKOPE funds.
- Opensea: One of the world's leading NFT marketplaces.
- Ethereum Foundation: Non-profit that funds and supports the development of the Ethereum blockchain ecosystem.

Background

In 2015, the Ethereum Foundation created the ERC-20 token standard in order to establish common technical rules for smart contracts for tokens on the Ethereum blockchain. The various forms of the ERC technical standards are in reference to how tokens that represent a smart contract should behave in regards to another token. An ERC-20 is a standard in which a token is completely fungible with another that comes from the same contract (USDC, USDT). Through this standard for token issuance on a widely popular blockchain, a wave of Decentralized Finance (DeFi) applications were built with newly composable standardized tokens. In 2020, an additional standard called ERC-721 became popular that enabled a smart contract to mint/create an individual token that was completely unique, and could not be duplicated. Known as non-fungible tokens (NFTs), these tokens initially arose as digital art that could be traded on blockchains. However, the ERC-721 standard can be used for representing any sort of unique document. Over time, many other types of programmable blockchains besides Ethereum have developed, with different rules for designing and issuing both fungible and non-fungible tokens. However, the ERC standards remain the most popular for token issuance. Today, there are many projects that tokenize real world assets such as fiat currency, real estate ownership, securities, and intellectual property rights onto blockchains, although the legal and regulatory framework around many of these use-cases is nascent and unclear.

Policy and Regulation Issues

A current key policy issue surrounding tokens is whether they should fall under the regulatory framework of conventional financial assets such as securities or commodities. In the U.S., there is no regulatory clarity around how tokens should be legally classified, leading to apprehension and hesitancy by token project developers, entrepreneurs, and venture capital investors. Oftentimes token issuers are forced to block their protocols from U.S. persons for fear of being prosecuted for violating U.S. securities or commodities laws. The crypto industry has been calling for a regulatory framework to legally differentiate the types of tokens at the time of issuance, so companies can obtain the required licenses for their specific businesses. A comprehensive crypto regulatory framework in the United States would help bring clarity to project developers and regulators alike and allow for greater experimentation with tokenization, including enabling traditional financial institutions to use blockchains to execute transactions of real world assets they already manage.

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