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## **Digital Assets: An Overview**

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### **Introduction**

Since the creation of the computer many aspects of life have changed. Computers and the Internet have led to a shift in how people live in and think about the world. This shift is ongoing and new technologies continue to redefine and rearticulate existing frameworks almost every year. The most recent technological “redefining” may be Disturbed Ledger Technology (DLT) which seeks to create a new conception of digital ownership. We already are familiar with digital assets -- electronic ownership of stocks, bonds, and money have been common for several decades, and other property, such as currency, exists primarily on computers. Software is another form of digital asset.

DLT enthusiasts see this technology as a new type of digital asset which will have significant disruptive impacts on other digital and physical assets. In order to assess the impact of DLT however it is necessary to understand the nature of digital assets more generally.

There is no agreed upon definition of Digital Assets. They are defined in several ways by many sources. Wikipedia gives a broad definition of digital assets.

“Digital assets include but are not limited to: digital documents, audible content, motion picture, images, videos, and other relevant digital data that are currently in circulation or are, or will be stored on digital appliances such as: personal computers, laptops, portable media players, tablets, data storage devices, telecommunication devices, mobile devices, and any and all apparatuses which are, or will be in existence once technology progresses to accommodate for the conception of new modalities which would be able to carry digital assets; notwithstanding the proprietorship of the physical device onto which the digital asset is located.”<sup>1</sup>

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<sup>1</sup> [https://en.wikipedia.org/wiki/Digital\\_asset](https://en.wikipedia.org/wiki/Digital_asset)

This definition is similar to some older definitions. It includes effectively everything that is rendered in binary code (i.e. in computer programming language). The Commodity Trading and Futures Commission (CTFC) of the USA gives a briefer definition that is more geared more toward financial and proprietary matters. “Anything that can be stored and transmitted electronically, and has associated ownership or use rights.”<sup>2</sup> Other terms which are roughly synonymous with “Digital Assets” include but are not limited to: virtual assets, and crypto assets.

## The Types of Digital Assets

Digital assets include:

- Cryptocurrencies (virtual currencies)
- Stable coins
  - Asset backed
  - Seigniorage (algorithmically backed)
  - Global Stable Coins
- Non-fungible tokens
- Governance Tokens
- Utility Tokens
- Security Tokens
- Central Bank Digital Currency
- Smart Contracts

## The classification of Crypto assets

There are many ways to classify crypto assets based on different perspectives. Several schemes exist to do so. The above list is in no way exhaustive nor is it entirely comprehensive. Generally, from a regulator perspective, crypto assets behave primarily in one of four ways: (1) as a medium of exchange where the value is in trading them for other things e.g. Bitcoin; (2) as a conveyance of a distinct right e.g. governance tokens; (3) as security token and (4) as a utility token. There are other types of crypto assets though they would likely be irrelevant from a regulatory perspective such as non-tokenizable crypto assets and recreational tokens.

Alternative methods could be built based on the underlying blockchain or the implementation standard. The most intractable problem with any classification scheme is that crypto assets are regularly made in an uncodified manner. There are some meaningful distinctions that can be drawn between crypto assets based on the technology, namely between tokens and non-tokens. Tokens include all the things people buy and sell, but some things in the chain do not easily break into tokens such as dApps, a portmanteau of distributed applications, and other similar smart contracts. Smart contracts are the source of many of the classification difficulties since they are written in a programming language and could encompass, in theory, anything.

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<sup>2</sup> <https://www.cftc.gov/media/5476/DigitalAssetsPrimer/download>

Therefore, classification should only serve as a guide as often times there are no bright lines that can be drawn between different types of digital assets.

## Cryptocurrency

Cryptocurrency is doubtless the most well-known type of crypto asset, and it makes up a supermajority of the market value for all digital assets. Cryptocurrencies are also the simplest to define: cryptographically secured assets which primarily or only can serve as a means of payment. Bitcoin was the first crypto asset and the first cryptocurrency. Bitcoin was designed by its enigmatic creator Satoshi Nakamoto ostensibly to democratize finance away from large multinational corporations and firms. The largest distinction between cryptocurrencies is between those cryptocurrencies that are tied to something else of value or property (eg. value is tied to the US Dollar) referred to as “stable” coins and those crypto currencies whose value “floats” in accordance with the supply and demand of the market which are referred to as non-stable coins.

## Stable Coins

Stable coins are relatively simple. They are a cryptocurrency that is tied to a secondary asset or asset basket. In a way, stable coins are similar to existing pegged currencies, like HKD or representative commodity money, but they share the technical attributes of a cryptocurrency. They are not legal tender. Stable coins can come in many flavors, but there are two key factors: 1) how they are issued and 2) how they are backed, that determine their value. The most commonly traded, and indeed the simplest stable coins, have a central party guaranteeing the value of the relevant cryptocurrency that it issues by holding real assets equivalent to the coins in circulation. Tether is an example of a stable coin. The other kind of stable coin involves no centralized guarantor. Instead of a coin backed by a trusted party, this type is a “decentralized” stable currency based on algorithmic seigniorage, that is, it is algorithmically backed by contracts embedded within the coin which encourage people to maintain its value. The best known example of algorithmic seigniorage is the Dai, an Ethereum based stable coin tied to USD. Dai roughly works by allowing technically proficient users to leverage certain assets and mint Dai based on current market prices at a one-to-one ratio to the U.S. Dollar. Therefore, if the price of Dai were to fall below 1 USD, these users could purchase Dai and use it to create money by paying off their “debt”, decollateralizing previously used assets while having excess Dai as profit. If, on the other hand, the price exceeds 1 dollar, these users would sell and then use the 1 USD to create another Dai with a profit being Dai equal to the difference between the selling price and 1 USD. Effectively this means Dai is pegged to USD because whenever it goes above 1 USD, users will be incentivized to sell and if it goes below many will be incentivized to buy. It can fluctuate, but any divergence from 1 USD creates an arbitrage opportunity which the invisible hand will close.

Algorithmic seigniorage is not perfect, the primary problem comes from how the coin “knows” its own market price and that of the assets used as collateral. At present, the coins “know” through oracles (third party observers that serve the blockchain) that are referenced in their smart contracts. The coin uses multiple oracles to try to insure validity, but it may be possible to trick the coins, which would allow an individual to create money from nothing. That being said, in theory, unlike asset backed coins if the free minting loophole is fixed and trust remains, it should not actually matter how many seigniorage backed

coins are in circulation since they back themselves. The other main risk for algorithmically backed coins stem from potential errors in a contract's code and, like all digital assets, their legal status. Errors are a rather obvious problem. Over time they are likely to decrease but it is always a risk since perfect code does not exist. The more intractable issue is the lack of a clear litigant if something were to go wrong with the code. With asset backed coins, an aggrieved party could sue an issuing company to redeem the value of the token, whereas with a seigniorage token there is no issuer. Backed stable coins are similar to commodity money or an ETF, but seigniorage tokens bear no similarities to either. Regardless if the technical issues that face cryptocurrencies are overcome, they will certainly have much potential.

In general, stable coins can exist based on more than just assets, they could also be based on inherent smart contracts. They can represent, in theory, any fungible asset, though in practice they tend to be tied to gold, fiat, or—funnily enough—other cryptocurrencies. In the future, if cryptocurrencies become more popular, it is likely that seigniorage coins will be more popular, since they offer a level of trustworthiness and technical sophistication that asset backed cryptocurrencies do not, especially after the problems encountered by Tether.<sup>3</sup>

### Non-stable coins

Non-stable cryptocurrency or unlinked cryptocurrency is a cryptocurrency that derives its value from its own scarcity. Most protocols that create cryptocurrency define how many coins can exist and define how they can be produced. In a way, this self-generated limited supply is the same as fiat money, where the money is backed by a governmental authority that in turn defines how money is created, how much is in circulation, and determines ownership. Unlike fiat money whose value is dependent upon governmental monetary and fiscal policy and law, the value of cryptocurrency is based solely on its own scarcity. The scarcity-based valuation means a cryptocurrencies value can fluctuate dramatically. Government fiat is usually insured by an implicit guarantee that the government will keep its money valuable for the good of its citizenry and economy, whereas cryptocurrency works only if people that hold it can convince others it has value due to its imposed scarcity.

### Global Stable coins

This category is very vague but generally includes a stable coin which has reached a wider audience of users, high transaction volumes, and low transaction costs. It is primarily relevant for financial regulatory bodies especially with regard to capital control. Global Stable coins currently do not exist but several bodies, including the IMF, have put out guidance concerning their usage and it is anticipated that they will be used in the future.

### Central Bank Digital Currency

At present there are no examples of these currencies properly existing, save for a failed attempt by Venezuela, a pilot program in China for the E-Yuan (or E-CNY) and an experiment for Chinese Digital

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<sup>3</sup> <https://www.coindesk.com/markets/2021/08/01/crypto-long-short-whats-going-on-with-tether/>

Yuan in some cities in Mainland China. Central Bank Digital Currency will be classified the same way as normal currency, since they would serve as legal tender and only differ in the methods for payment.

## Non-fungible Tokens

Non-fungible tokens (NFTs) are a new type of crypto asset which exist as a counter to traditional fungible ones. These tokens are meant to be unique tokens stored on a blockchain which have their uniqueness guaranteed by the chain. At present, they are mostly used for the sale of digital artworks, virtual collectibles, and in-game items, but they may do more in the future. The greatest risk posed by a NFT to buyers relates to what interest the purchased NFT holds. Many assume that NFT confer many traits, possessory or legal interests that they may not. The only guarantee the blockchain makes on an NFT is a unique identifier; and it makes no claims as to the NFT's contents.

## Governance and related Tokens

Governance tokens are a type of token that grants an owner voting rights in a Decentralized Autonomous Organization. These tokens may also grant certain rights such as a right to dividends or other interest in the Decentralized Autonomous Organization. At present, it is unclear if Governance tokens will behave similar to corporate shares (conferring voting rights, rights to residual assets after insolvency and limited liability) or if holders will have unlimited liability. Dividend tokens are analogous to certain types of preferred shares, in that they only confer the right to dividends.

## Security/Utility Token

A Security token is a token which is deemed to be a security under the laws regulating the sale and transfer of securities. The designation of a security for regulatory purposes is not based on the underlying technology. It is instead based on the substance of how the crypto asset actually behaves.<sup>4</sup> One implication is that tokens must be marketed according to the relevant regulatory rules. The USA SEC released a detailed framework for determining the status of a digital asset<sup>5</sup> though the approach has not been without internal<sup>6 7</sup> and external<sup>8</sup> criticism.

Utility tokens can be contrasted with security tokens whose purpose is investment as per the Wyoming Utility Token Act (Wyo. Stat. § 34-29-106) as their purpose is consumptive.

“(b) An open blockchain token with the following characteristics constitutes intangible personal property:

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<sup>4</sup> <http://cdn.ca9.uscourts.gov/datastore/opinions/2018/09/26/16-55167.pdf>

<sup>5</sup> <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets>

<sup>6</sup> <https://www.sec.gov/news/speech/peirce-how-we-howey-050919>

<sup>7</sup> <https://www.sec.gov/news/public-statement/peirce-roisman-coinschedule>

<sup>8</sup> <https://doi.org/10.7916/cblr.v2018i2.1702>

- (i) The predominant purpose of the token is consumptive, as defined in paragraph (g)(ii) of this section;
- (ii) The developer or seller did not market the token to the initial buyer as a financial investment, as defined in paragraph (g)(v) of this section; and
- (iii) At least one (1) of the following subparagraphs is satisfied:

(A) The developer or seller reasonably believed that it sold the token to the initial buyer for a consumptive purpose;

(B) The token has a consumptive purpose that is available at or near the time of sale and can be used at or near the time of sale for a consumptive purpose;

(C) The initial buyer of the token is prohibited by the developer or seller of the token from reselling the token until the token is available to be used for a consumptive purpose;

(D) The developer or seller takes other reasonable precautions to prevent an initial buyer from purchasing the token as a financial investment.

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**(g) (ii)** “Consumptive” means a circumstance when a token is exchangeable for, or provided for the receipt of, services, software, content or real or tangible personal property, including rights of access to services, content or real or tangible personal property;”

The determination of utility tokens is often difficult to establish and frequently contested due to the comparative absence regulation concerning their usage as seen in *SEC v. Blockvest*<sup>9</sup>. The timing of the actualization of consumptive usage is of great importance to being a utility token. The last two Security and Exchange Commission Chairs have stated that they view every Initial Coin Offering (ICO) as a security offering.<sup>10</sup> This view stems from the fact that most coins that are said to have consumptive use are sold far before the potential to utilize them for said usage is realized.<sup>11</sup> This does mean that a coin’s utility and security classification can change overtime based on the development of the token. A notable example of this would be Ethereum which was initially created with an ICO but the Commodity and Futures Trading currently considers it a commodity.<sup>12</sup>

<sup>9</sup> *SEC v. Blockvest, LLC*, 2018 U.S. Dist. LEXIS 200773, Fed. Sec. L. Rep. (CCH) P100,309, 2018 WL 6181408

<sup>10</sup> <https://www.sec.gov/news/public-statement/gensler-aspen-security-forum-2021-08-03>

<sup>11</sup> <https://www.sec.gov/ICO>

<sup>12</sup> <https://www.cftc.gov/PressRoom/PressReleases/8051-19>

In general, the classification of a digital asset as a security token or a utility token is of significant importance both with challenges from regulators with cases such as *SEC v. Ripple Labs, Inc.*<sup>13</sup>, and *Cftc v. Jali*<sup>14</sup> and also from other parties as in *Crypto Asset Fund v. Opskins Group*<sup>15</sup>, and *Hunichen v. Atonomi LLC*<sup>16</sup>. Determining where a token falls will be a difficult matter that will need to be done on a case-by-case basis and this may change over time.

## Smart Contracts

These are contracts that are self-executing; that is, they are written in code rather than a natural language. The code which is also the contract automatically executes the contract terms, e.g. payment of money upon delivery, when a contract term is verified without third party involvement. Generally, smart contracts exist inside of objects that exist on a blockchain, but they do not have to be, hence the classification. The legal status of smart contracts is questionable in most countries. They have partial recognition in several countries, but these have not been tested by courts.

## Conclusion

Digital assets have many forms and many examples may fit into multiple categories. The law does not yet have any comprehensive means for the treatment of digital assets of any kind. There is no globally (or nationally) accepted standard for treatment of crypto assets so caveat emptor is the rule when purchasing and using these types of assets. The name of a digital asset or even a written description may have little to do with the operation of the asset. The classification given here is focused on the substantive nature of a digital asset but that can be difficult to verify in some instances. The only way to be certain of the functions of a digital asset is to examine the source code—which can be verified by compiling—but few individuals have this ability and not even experts can ensure their reading is correct. The arrival of digital assets signals a new frontier but like all frontiers they are chaotic, often unregulated places where the law appears only sporadically.

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<sup>13</sup> SEC v. Ripple Labs, Inc., 2021 U.S. Dist. LEXIS 69563, 2021 WL 1335918

<sup>14</sup> Cftc v. Jali, 2021 U.S. Dist. LEXIS 102943, 2021 WL 2226174

<sup>15</sup> Crypto Asset Fund v. Opskins Group, 478 F. Supp. 3d 919, 2020 U.S. Dist. LEXIS 160671, 2020 WL 5104038

<sup>16</sup> Hunichen v. Atonomi LLC, 2020 U.S. Dist. LEXIS 243085, 2020 WL 7705944