**Forum:** Economic and Social Council

**Issue:** The question of regulating the global market for NFTs

**Student Officer:** Lina Hoef

**Position:** Deputy chair at the Economic and Social Council

---

## Introduction

NFTs are nowadays a common term that is used when talking about digital assets. NFTs or non-fungible tokens are cryptographic assets that are located on a blockchain with unique identification codes and metadata that distinguish them from each other. In simpler words, NFTs are digital assets that represent different real-world objects, such as art, music, videos, and in-game items that cannot be replicated with the same worth. "Tokenizing" these real-world tangible assets makes buying, selling, and trading them more efficient while reducing the probability of fraud although it brings forth controversial issues. Much of the current market for NFTs is centered around collectibles, such as digital artwork, sports cards, and rarities. NFTs are able to shift the crypto paradigm by making each token unique and irreplaceable, thereby making it impossible for one non-fungible token to be equal to another. They are also extensible, meaning you can combine one NFT with another to "breed" a third, unique NFT.

## Definition of Key Terms

### Asset Classes

An asset class is a grouping of investments that exhibit similar characteristics and are subject to the same laws and regulations.

### Bitcoin

Bitcoin is a digital currency that operates free of any central control or the oversight of banks or governments. Instead, it relies on peer-to-peer software and cryptography.

## Blockchains

Blockchain is a system of recording information in a way that makes it difficult or impossible to change, hack, or cheat the system. A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger. The decentralized database managed by multiple participants is known as Distributed Ledger Technology (DLT).

## Carbon Footprints

A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions. The average carbon footprint for a person in the United States is 16 tons, one of the highest rates in the world.

## Consensus mechanism

A consensus mechanism is a method for validating entries into a distributed database and keeping the database secure.

## Cryptographic assets

Crypto assets are a digital representation of value that you can transfer, store, or trade electronically. This also includes non-fungible tokens (NFTs). Crypto assets are a subset of digital assets that use cryptography to protect digital data and distributed ledger technology to record transactions. They may run on their own blockchain or use an existing platform such as Ethereum. A blockchain is a form of secure digital ledger used to store a record of crypto transactions.

## Crypto paradigm

a framework containing the basic assumptions, ways of thinking, and methodology that are commonly accepted by members of the scientific community in crypto.

## Ether and Ethereum

Ether (ETH) is the world's second-largest cryptocurrency by market cap at over $160 billion. Ether is used to pay for on-chain Ethereum transactions but can be used as an investment, payment method, or for trading on exchanges. Ethereum is a decentralized blockchain platform that establishes a peer-to-peer network that securely executes and verifies application code, called smart contracts. Smart contracts allow participants to transact with each other without a trusted central authority.

## Fiat Money

Fiat money (from Latin: fiat, "let it be done") is a type of currency that is not backed by any commodity such as gold or silver. It is typically declared by a decree from the government to be legal tender. Throughout history, fiat money was sometimes issued by local banks and other institutions. In modern times, fiat money is generally established by government regulation.

## Hash function

A hash function that meets the encrypted demands needed to solve a blockchain computation. Hashes are of a fixed length since it makes it nearly impossible to guess the length of the hash if someone was trying to crack the blockchain.

## Hashing

Hashing is the process of transforming any given key or a string of characters into another value.

### Intermediaries

a person who acts as a link between people in order to try and bring about an agreement; a mediator.

### Metadata

Metadata is defined as the data providing information about one or more aspects of the data; it is used to summarize basic information about data that can make tracking and working with specific data easier.

### Minting

Minting an NFT, or non-fungible token is publishing a unique digital asset on a blockchain so that it can be bought, sold, and traded.

### NFTs

Nonfungible tokens or NFTs are cryptographic assets on a blockchain with unique identification codes and metadata that distinguish them from each other.

### Proof of Stake Process/ Work

Proof-of-stake is a cryptocurrency consensus mechanism for processing transactions and creating new blocks in a blockchain.

### Tokenizing

Tokenization is the process of replacing sensitive data with unique identification symbols that retain all the essential information about the data without compromising its security.

## Key Issues

### Many NFTs can only be purchased with Ether

Many of the NFTs require the person to purchase Ether from Ethereum, so owning some of this cryptocurrency- and storing it in a digital wallet would usually be the first step. It is only then possible to purchase NFTs via any of the online NFT marketplaces, including OpenSea, Raible, and SuperRare (mentioned in the Appendix for more info).

Investors who wish to buy NFTs with fiat money like the U.S. dollar may have limited options in this field.

### Security Risks

One security risk for NFTs is that you could lose access to your non-fungible token if the platform hosting the NFT goes down or out of business while in use. Different platforms such as Open sea, and Nifty Gateway, which are centralized, own the private keys of all assets on their platforms. This means that if their platform is compromised, several accounts can get hacked into in a short amount of time.

### NFTs are not an asset class

NFTs are commonly—and erroneously—regarded as an asset class rather than a technological way to indicate ownership. General misinformation and the hype surrounding NFTs can cause the values of tokenized assets to be inflated and volatile.

### Process of Proof of Work

The high energy requirement exists because the vast proof of work network works on one block at a time, with all miners attempting to generate a lower number

Process of Proof of work Explanation

- The transaction is queued and broadcast to the network.
- Once it is picked up for work, the network begins mining.
- Mining is the process of sending a long hexadecimal number through a hash function, like SHA-256, to generate another hexadecimal number that is less than

the block header hash assigned to the NFT. A miner's first attempt has a random number added to the original hexadecimal number, and each attempt after that adds a value of one to the random number. For instance, the first random number could be 21. The next attempt would use 22, then 23, and so on.

- The mining process becomes a grind to generate a number, completed by a computer. The odds of guessing the right hexadecimal number is 1 in 115 quattuorvigintillion (115 followed by 75 zeros). It can take trillions of attempts to be the first to generate a number less than that of the block header, the original hexadecimal number.
- Once the number is generated, the block is confirmed, the transaction is closed, and the network moves to the next unimaginable number of attempts to solve a hash. Sending a number through the hash function and the act of doing so is called hashing. A miner "hashes" or can "hash" at a certain speed. One attempt is one hash, and one miner can perform millions of hashes per second. For perspective, the entire Bitcoin network hashes at about 228 exahashes per second (228 followed by 18 zeros), works on one block at a time and averages about 10 minutes per block.

## Impact on The Environment

Even though NFTs themselves do not cause any environmental impact, their impact on our climate can be linked to how they are produced. Minting a single NFT using a proof-of-work blockchain uses the same amount of electricity an average American household uses in about 47 days which wastes a lot of electricity and increases the carbon footprint just to create a single NFT that can largely impact the world and its environment.

## Countries Involved

### China & NFTs

In China, NFT are referred to as 'digital collectibles' rather than 'tokens' since the Chinese government is opposed to cryptocurrency. A cryptocurrency is a digital or virtual currency that is protected by cryptography, making counterfeiting and double-spending practically impossible. However, cryptocurrencies are notorious for their unpredictable values, which encourages speculation, and may create new avenues for money laundering and capital outflows. As a result, China has cracked down on cryptocurrencies since 2020. Nevertheless, Alibaba and Tencent, two of China's leading technology corporations, are investing heavily in the NFTs market, despite its close links to crypto in Western markets. This shows that Chinese public interest in the NFT market is growing, and the Chinese government does not intend to hinder this – so long as NFT technology does not facilitate cryptocurrency transactions.

### USA & NFTs

It's younger Americans driving this increase in understanding, with 37% of Americans under 30 reporting that they understand the meaning of non-fungible tokens along with 28% of those aged 30-44. Data shows 16% of Americans between the ages of 45-64, and 15% of those 65 and over, reported an understanding. Sales for NFTs topped $25 billion in 2021 as speculation grew for the crypto assets. Meanwhile, YouGov data reveals only about 7% of Americans overall view NFTs as good investments. Because basic understanding of how they work isn't widespread, 62% say they aren't sure, while 30% say they are a bad investment. Major brands, across nearly all major consumer sectors, are issuing NFTs as an experimental portion of their marketing mix, including big players in fast food, fashion, sports, and children's collectable toys.

### Russia & NFTs

Under Russian law an NFT is not, in and of itself, an IP asset. It is a digital certificate of ownership of the digital asset linked to it. An NFT contains data about its

owner (or the chain of owners, if the NFT has already been resold), and information about rights to a digital asset linked to it, which its buyer acquires. This means that the purchase of an NFT does not give a seller the right to publicly display, perform, distribute or otherwise reproduce the NFT or its related digital art for any commercial purpose, unless otherwise specified by the seller of an NFT in the sale agreement. Creators and sellers of NFTs should be mindful of these issues, so as to avoid facing unexpected infringement claims from third parties purporting to be the lawful copyright owners of the depicted art objects. Often, the terms of use associated with the most active NFT marketplaces allow interested parties to submit notification of copyright infringement related to the sale of NFTs to the legal department of the marketplace. If the marketplace concludes that there has been copyright infringement, they can disable or terminate the accounts of users who repeatedly infringe copyrights or the IP rights of others.

## Major Companies/ Firms Involved

### Adidas

The first popular brand which emerges in discussions about the biggest NFT companies would refer to Adidas. The sportswear giant introduced the first NFT drop with digital and physical products alongside linking up with top names in the world of NFTs, such as Bored Ape Yacht Club. NFTs by Adidas served access to virtual wearables in the metaverse platform, The Sandbox. In addition, buyers also received a hoodie, tracksuit, and iconic beanie. Interestingly, the brand itself has purchased a BAYC NFT, Indigo Herz. Furthermore, Adidas has also recently entered into a collaboration with Prada in January 2022 for an NFT project.

### Samsung

The list of top tech firms investing in NFT would also include Samsung. The electronics manufacturer announced its plans to introduce NFT support in its 2022 TV lineup. Samsung emphasized the growth of NFTs and the need for solutions to adapt to new decentralized viewing and purchasing behaviors. The company has planned on

introducing the first ever NFT explorer on TV screens, which would also serve as a marketplace aggregator.

In addition, Samsung has also planned on enabling creators to share their art with the whole world. It would also offer a preview of NFTs before purchasing them to learn their history better and the blockchain metadata. On top of it, Samsung has also acquired a virtual world 837X in the Decentraland metaverse, which establishes the future possibilities for the company to interact with NFTs.

### Nike

Nike counts as one of the early pioneers among top companies investing in NFT with the acquisition of RTFKT Studios, an NFT creator studio. Recently, Nike launched the first virtual sneaker collection, Cryptokicks, featuring around 20,000 unique NFTs. The Nike Cryptokicks NFT collection capitalized on the element of personalization and curiosity for garnering considerable hype.

### Formula 1

The field of Formula 1 or F1 cannot ignore the possibilities with NFTs, at a time when brands are jumping on the NFT bandwagon. You can look for NFT stocks to invest in across many alternatives within the F1 industry. Ferrari has recently announced that it is actively exploring opportunities for entering the NFT marketplace. Many other F1 teams such as Alfa Romeo have also made a significant mark in the field of NFTs. Alfa Romeo introduced a limited edition NFT collectible in collaboration with Socios alongside NFTs for signed souvenirs from the Brazilian Grand Prix in 2021.

Another F1 team to join the race for NFTs is Red Bull, which launched a variety of NFTs in collaboration with Sweet, an American NFT platform. Red Bull offers NFTs representing three-dimensional models of cars, helmets, cards, and overalls. Furthermore, McLaren has also used Sweet for launching their McLaren Racing Collective, which allows fans to purchase individual digital components for building a complete car.

### Prada

Many luxury brands have evolved as the top NFT investment companies in recent times with interesting NFT projects. Just like Gucci and Balenciaga, Prada has also joined the trend of luxury fashion brands launching their personal NFT collections. Prada launched around 100 Ethereum-based NFTs in June 2022, which would accompany the Timecapsule collection introduced by the luxury brand in December 2019.

The Timecapsule buyers would receive the free NFT airdrop for the items they purchased from Prada's latest collection. The NFTs are basically a GIF of the black or white pill capsule and refer to the serial number of the drop.

### Coca Cola

Coca-Cola is one of the biggest entries among NFT investment companies that have tapped into the NFT market recently. The beverage company introduced its first NFT collection in 2021 and has come up with new NFT collectibles in 2022. The company has released 136 NFTs for celebrating Pride Month in July 2022 and a set of new NFTs in August 2022 for commemorating International Friendship Day. With the help of these NFTs, Coca-Cola can explore new opportunities for expanding its footprint in the rapidly evolving metaverse. The soft drink company set up its first NFT collection as a single "loot box" for auction on the OpenSea NFT marketplace. Proceeds from the auction of Coca-Cola NFTs went to Special Olympics International. The most interesting highlight of the Coca-Cola NFTs is the creative incorporation of some of the iconic assets of the brand within the metaverse.

### McDonald's

The popular entry among answers to "What companies are investing in NFT?" in the food and beverages sector points to McDonald's. The fast food giant has marked its arrival in the domain of NFTs by launching its first NFT in November 2021. McDonald's

launched a limited edition of McRib NFTs to celebrate the 40th anniversary of the McRib. The company planned the move to commemorate the return of the limited collection McRib back on its menu. The fast food restaurant chain issued around 10 MCNFTs with a virtual collectible art collection.

## Development of Issue/Timeline

| Date | Event | Outcome |
|---|---|---|
| May 2014 | The first ever NFT was created and it was called Quantum, which was minted by Kevin McCoy on Namecoin. | This lead to several other NFTs to launch on pre-Ethereum blockchains over the following years |
| June 2015 | Another example of an NFT is the Spells of Genesis that stands as the first-ever blockchain- based game. | Lead to inspiration to other NFT creators. However, they remained mostly unknown to all but those who were well-versed in cryptocurrency and blockchain technologies. |
| June 2017 | The first NFT collections were launched on the Ethereum blockchain. | Since previous blockchains made trading and transferring ownership impressively difficult. The Ethereum network and its smart contracts functionality enables token creation, programming, storage, and trading built |

| | | |
|---|---|---|
| | | directly into the blockchain itself. |
| November 2017 | One of the first NFT games built on Ethereum called CryptoKitties. | It is the first to receive a widespread media attention. |
| November 2019 | The start of the Covid-19 Pandemic | It forced many people to be more digitally native and connect with each other on platforms like Twitter and Clubhouse, where the NFT community has built a strong presence. |
| November 2021 | The UK Advertising Standards Authority (ASA) stated that ads for NFTs were a “red alert priority issue”. | They were concerned about the lack of appropriate warnings in ads, the trivialisation of investments in cryptocurrency, that ads were taking advantage of consumers’ inexperience or incredulity and were more generally irresponsible. |
| March 2022 | Executive Order on Ensuring Responsible Development of Digital Assets | This major government initiative is designed to produce numerous reports and assessments by government regulators about what digital |

| | | |
|---|---|---|
| | | assets are and how they should be regulated. Draft legislation is also in the works so that effort could result in more definition and clarity about what NFTs are as a means to manage intellectual property rights (IPR) and other purposes. |
| July 2022 | A spike in interest on NFTs | Companies like Coca-Cola and Taco Bell have created NFTs around popular food and beverage products. Other brands, like Hot Wheels and Adidas, have begun selling NFTs connected to their physical products. There are even reports of NFT collections by brands like Gucci selling for far more than the price of their flagship product! |
| 2022 | The continuation or popularity of NFT usage. | It's been widely speculated that NFTs could play some role in the metaverse of the future, mainly by acting as a |

| | | |
|---|---|---|
| | | digital representation of the physical objects you possess. |
| 2022 | The European Environmental Agency has written about the environmental issues and called for "careful monitoring" and "more reliable data on current and future blockchain energy consumption". | New blockchain regulation may proliferate in order to minimise its environmental impact. This may cause further adoption of "proof of stake" validation, where a randomly selected miner will validate transactions. |

## Previous & Possible Attempts to Solve the Issue

### Market Efficiency

The most obvious benefit of NFTs is market efficiency. The conversion of a physical asset into a digital one streamlines processes and removes intermediaries (a person who acts as a link between people in order to try and bring about an agreement; a mediator.)

### Improve business processes

They can also improve business processes. For example, an NFT for a wine bottle will make it easier for different actors in a supply chain to interact with it and help track its provenance, production, and sale throughout the entire process.

### The creation of new markets and forms of investments based on the creation of new NFTS

### Easy identification, transfers, and transparency

Just like Bitcoin, NFTs also contain ownership details for easy identification and transfer between token holders. Owners can also add metadata or attributes pertaining to the asset in NFTs. Today consumers want to have visibility on how the product was created and where it came from and if sustainable practices were employed in the overall process. NFTs will be the key to providing that transparency to consumers and making it easier for them to make the best decision when making a purchase.

For example, Coca-Cola released a set of NFTs for auction on International Friendship Day, July 30, to engage with its customers. The highest bidder not only gets access to those rare collectibles but also an in-real-life Coca-Cola refrigerator which would be released in the market later in the year.

### Blockchain developers and communities are working to find ways to lessen or eliminate the environmental impact NFTs have

Use renewable energy Miners using proof-of-work blockchains (explained above in key issues) can use renewable energy sources to power their machines. While proof-of-work mining is energy-intensive, the source of the required energy can be free of emissions.

Invest in renewable energy With some NFTs selling for impressive prices, it is possible to devote a portion of those proceeds to renewable energy investments. A large-scale shift to renewable energy could curb or eliminate the environmental impact of producing NFTs.

Incest in experimental technologies NFT sales proceeds can also be invested in experimental technologies designed to mitigate or reverse the effects of climate change. Carbon capture and storage, which collects and pumps carbon dioxide emissions into the ground, is an example of an experimental technology that some belief can solve the climate change problem.

Choose NFTs minted on proof of stake blockchains. The most obvious choices are to only purchase NFTs minted on proof-of-stake blockchains, and only mint them on one.

## Process Proof of Stake Explanation

- The transaction is queued in the network
- A validator who has staked 32 ETH is randomly assigned to validate the transaction.
- Only one validator is doing the work, so the energy consumption is much less. In fact, Ethereum claims it now uses 99.95% less energy than it did under proof-of-work consensus.
- Minting an NFT on the Ethereum platform uses less than 0.03 kilowatt-hours of electricity—about three hours of watching YouTube.
- The validator verifies the transaction and broadcasts the information to other validators, who vote to confirm the block and transaction.
- This process does not use competitive number generation, so the transaction uses less than 0.03 kWh of energy, or 30 Watt hours (the equivalent of around six 9v batteries).

## Bibliography

Becker, Samuel. “What Does Minting an NFT Mean? How Does It Work?” SoFi, https://www.sofi.com/learn/content/what-is-nft-minting/. Accessed 19 October 2022.

“Blockchain Explained: What is blockchain?” Euromoney, https://www.euromoney.com/learning/blockchain-explained/what-is-blockchain. Accessed 19 October 2022.

Clarine, Skylar. “What Is a Hash? Hash Functions and Cryptocurrency Mining.” Investopedia, https://www.investopedia.com/terms/h/hash.asp. Accessed 19 October 2022.

“intermediary_2 adjective - Definition, pictures, pronunciation and usage notes | Oxford Advanced Learner's Dictionary at OxfordLearnersDictionaries.com.” Oxford Learner's Dictionaries, https://www.oxfordlearnersdictionaries.com/definition/english/intermediary_2. Accessed 19 October 2022.

Lutkevich, Ben. “What is Tokenization?” TechTarget, https://www.techtarget.com/searchsecurity/definition/tokenization. Accessed 19 October 2022.

“NFTs and the Environment.” Investopedia, https://www.investopedia.com/nfts-and-the-environment-5220221. Accessed 19 October 2022.

“Paradigm Definition & Meaning.” Dictionary.com, https://www.dictionary.com/browse/paradigm. Accessed 19 October 2022.

Reiff, Nathan. “What Is Ether? Is It the Same as Ethereum?” Investopedia, https://www.investopedia.com/tech/what-ether-it-same-ethereum/. Accessed 19 October 2022.

Sharma, Rakesh. “Non-Fungible Token (NFT): What It Means and How It Works.” Investopedia, https://www.investopedia.com/non-fungible-tokens-nft-5115211. Accessed 19 October 2022.

Sparkes, Matthew. “What is bitcoin and how does it work?” New Scientist, https://www.newscientist.com/definition/bitcoin/. Accessed 19 October 2022.

“What are crypto assets?” Australian Taxation Office, 19 August 2022, https://www.ato.gov.au/individuals/Investments-and-assets/crypto-asset-investments/what-are-crypto-assets-/. Accessed 19 October 2022.

“What Is An NFT? How Do NFTs Work?” Forbes, 16 September 2022, https://www.forbes.com/advisor/in/investing/cryptocurrency/what-is-an-nft-how-do-nfts-work/. Accessed 19 October 2022.

“What Is Ethereum?” AWS, https://aws.amazon.com/blockchain/what-is-ethereum/. Accessed 19 October 2022.

## Appendix

### Sites for Buying NFTs

- **Ethereum**
  - The blockchain is used for everything from simple token exchanges to NFTs, smart contracts, dApps, and more. Market OpenSea uses Ethereum.
- **Solana**
  - The Solana blockchain supports a broad range of NFT marketplaces, including Magic Eden, Solanart, and Rabbit Hole.
- **Algorand**
  - The Algorand blockchain supports Aorist, a climate-focused NFT blockchain for artists, in addition to several NFT marketplaces. The Algorand blockchain is well suited to support NFTs because the blockchain is designed to never fork- or split- into duplicate versions.
- **Cardano**
  - Cardano is a blockchain known for being environmentally friendly. NFT marketplaces hosted on Cardano include CNFT and Galaxy of Art.
- **Tezos**
  - The Tezos blockchain hosts several NFT marketplaces, including Rarible, which both operates an NFT marketplace and supports artist's creation of NFTs.

Investors who prioritize environmental, social, and governance (ESG) issues can consider NFTs minted on a proof-of-stake blockchain because their environmental impact has been significantly reduced.