iJRASET
International Journal For Research in
Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 Issue: VII Month of publication: July 2022

DOI: https://doi.org/10.22214/ijraset.2022.45327

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VII July 2022- Available at www.ijraset.com

Study on Non-Fungible Tokens (NFT)

Rahul Dattaram Belose[1], Yogesh Ramesh Mhadgut[2]
[1, 2]Master of Computer ApplicationASM IMCOST, Thane

Abstract: This study examines the risk and return characteristics of the NFT-based startups listed on the cryptocurrency exchange. Our investigation is motivated by the recent surge in the NFT activity on the part of creators, investors, and traders. We begin by proposing novel classification ofthe existing NFTs that range from NFT blockchains through NFT metaverse to NFT DeFi. Next, we establishthat NFTs: 1) earn 130% on the first-listing-day; 2) yield an average investment multiple of 40 (roughly 4,000%) over long-term, which is four times higher than bitcoin during the same period; 3) deliver positive and significantalpha and exhibit above-average beta. We also show thatthe NFT segment of the cryptocurrency market leads market recovery following the mid-2021 crash and generate a return of close to 350%.

I. INTRODUCTION

A non-fungible token (NFT) is a a security consisting of digital data stored in a blockchain, a form of distributed ledger. The ownership of an NFT is recorded in the blockchain, and can be transferred by the owner, allowing NFTs to be sold and traded. NFTs can be created by anybody, and require few or no coding skills to create. NFTs typically contain references to digital files such as photos, videos, and audio. Because NFTs are uniquely identifiable, they differ from cryptocurrencies, which are fungible. The market value of an NFT is associated with the digital file it references.

Proponents of NFTs claim that NFTs provide a public certificate of authenticity or proof of ownership, butthe legal rights conveyed by an NFT can be uncertain. The ownership of an NFT as defined by the blockchain has no inherent legal meaning, and does not necessarily grant copyright, intellectual property rights, or other legal rights over its associated digital file. An NFT does not restrict the sharing or copying of its associated digital file, and does not prevent the creation of NFTs that reference identical files.

The NFT market grew dramatically from 2020–2021: the trading of NFTs in 2021 increased to more than $17 billion,up by 21,000% over 2020's total of $82 million.

II. EXISTING TECHNIQUE

In this section, we provide a brief overview of the NFT financialization processes as well as profit opportunities NFTs generate for institutions, retail investors, creators, and network end-users. The section concludes with a discussion of the proposed extensions to the existing NFTusability and theNFT wealth management.

Arguably, most of the investable assets available in privateand public markets are non-fungible. For instance, the estimated value of real-estate - which by nature is non- fungible - far exceeds the capitalizations of both the global bond and equity markets[5]. Perhaps more important, the derivatives, which are the largest asset class with the notional value of $580 trillion[6], are non-fungible as well[7]. They cannot be transferred between different exchanges andtrading systems. Obviously, art and collectibles are another group of non-fungible assets, albeit with significantly lower value (about $2trillion[8]). Interestingly, ADRs are not fungible either. Non-US investors cannot trade ADRs in their home markets on par with domestic stocks (Bacidore and Sofianos, 2002). The above discussion and advances in existing technologyimply that all non-fungible assets can be represented as NFTs. Exploring this possibility is critically important for anumber of reasons. First, NFTs improve market liquidity and price discovery. It is more efficient to trade assets, if the ownership can be instantaneously proven and transferred quickly and securely for a near-zero fee.

III. PROBLEM STATEMENT

Non-Fungible tokens are making huge money for digital creators. There are plenty of artworks sold online every single day. It is even possible for a creator to earn millions in just a few seconds when their NFT is sold in the digital space.

It is also visible that people are more enthusiastically buying,selling, and investing in the digital market rather than doing the same in the physical market. This gives a considerable rise to the possibility of cyberattacks and online fraud. There are high chances of damage to the digital assets and the investors buying and selling NFTs in the market. Even though there is a vast potential for the NFT market, there are certain risks that oneneeds to consider. If you are thinking about getting into the NFT market, then you should understand these risks and challenges with NFTsfor a better idea.

A. Smart Contract Risks and Maintenance of NFTs

The risk of smart contracts and NFT maintenance is a prominent one currently prevailing in the NFT market. There are several scenarios where hackers attack a DeFi (Decentralized Finance) network and steal a large amount of crypto. Recently, the most-renowned DeFi protocol named Poly Network was attacked by hackers, and $600 million were stolen in this NFT theft. The reason behind that theft was because smart contract security wasn't adequate.The hackers successfully exploited the flaws of smart contracts to perform such a large-scale attack on the Poly Network. The Poly network is very useful for swapping tokens on different blockchain networks. This tells us that if smart contracts haveeven a tiny flaw, you cannot expect complete security.

B. Evaluation Challenges

The main challenge faced in the NFT market is the uncertainty in determining the price of the NFT. Now, the price of any NFT will depend on the creativity, uniqueness, scarcity of the buyers and owners, and a lot more. There areconsiderable fluctuations in the prices of NFT because thereis no fixed standard for any particular type of NFT.

People can't determine the factors that might drive the price of NFT. Due to this, the fluctuations in prices remain constant, and evaluation of NFT becomes a big challenge.

C. Legal Challenges

There is no legal definition of NFT known in the entire world. Different countries such as UK, Japan, and the EU are moving ahead with different approaches for classifying NFT. This makes it necessary to come up with an international body of Non-fungible tokens for setting regulations and legalization inthe entire world.

There is a considerable rise seen in the NFT market, and this is why it's essential to have a regulatory body. There is a vastincrement visible in the use cases of NFTs. Now, this demands a regulatory body to adapt to the rules and regulations of NFTs.

The current laws related to NFT are still stuck with finding the correct definition for it. As the market and variety of NFT are constantly growing, it is becoming difficult to come to a solid ground for compliance in NFTs.

D. Cyber Threats and Online Fraud Risks

The popularity of NFT has also increased the chances of cyberthreats to the NFT market. Plenty of cases are visible where replicas of the original NFT stores are put up on the internet. These stores look authentic because of the original logo and content. These fake NFT stores are a massive risk because they might sell NFTs not even present in the digital world. On top of that, there are chances of counterfeit NFTs being sold on a fake NFT store.

IV. PROPOSED METHODOLOGY

NFTs exist on a blockchain, which is a distributed public ledgerthat records transactions. You're probably most familiar with blockchain as the underlying process that makes cryptocurrencies possible.

Specifically, NFTs are typically held on the Ethereum blockchain,although other blockchains support them as well.

An NFT is created, or "minted" from digital objects thatrepresent both tangible and intangible items, including:

1) Art
2) GIFs
3) Videos and sports highlights
4) Collectibles
5) Virtual avatars and video game skins
6) Designer sneakers
7) Music

Even tweets count. Twitter co-founder Jack Dorsey sold hisfirst ever tweet as an NFT for more than $2.9 million.

Essentially, NFTs are like physical collector's items, only digital.So instead of getting an actual oil painting to hang on the wall,the buyer gets a digital file instead.

They also get exclusive ownership rights. That's right: NFTs canhave only one owner at a time. NFTs' unique data makes it easyto verify their ownership and transfer tokens between owners.

The owner or creator can also store specific information insidethem. For instance, artists can sign their artwork by including their signature in an NFT's metadata.

A. What are NFTs Used For?

Blockchain technology and NFTs afford artists and content creators a unique opportunity to monetize their wares. For example, artists no longer have to rely on galleries or auction houses to sell their art. Instead, the artist can sell it directly to the consumer as an NFT, which also lets them keep more of the profits. In addition, artists can program in royalties so they'll receive a percentage of sales whenever their art is sold to a new owner. This is an attractive feature as artists generally do not receive future proceeds after their art is first sold.

Art isn't the only way to make money with NFTs. Brands like Charmin and Taco Bell have auctioned off themed NFT art to raise funds for charity. Charmin dubbed its offering "NFTP" (non- fungible toilet paper), and Taco Bell's NFT art sold out in minutes, with the highest bids coming in at 1.5 wrapped ether (WETH)—equal to $3,723.83 at time of writing. Nyan Cat, a 2011-era GIF of a cat with a pop-tart body, sold for nearly $600,000 in February. And NBA Top Shot generated more than $500 million in sales as of late March. A single LeBron James highlight NFT fetched more than $200,000. Even celebrities like Snoop Dogg, Lindsay Lohan, Amitabh Bachchan and Salman Khan are jumping on the NFT bandwagon, releasing unique memories, artwork and moments as securitized NFTs.

B. How to Buy NFTs?

If you're keen to start your own NFT collection, you'll need toacquire some key items: First, you'll need to get a digital wallet that allows you to store NFTs and cryptocurrencies. You'll likely need to purchase somecryptocurrency, like Ether, depending on what currencies your NFT provider accepts. You can buy crypto using a credit card onplatforms like Coinbase, Kraken, eToro and even PayPal and Robinhood now. You'll then be able to move it from the exchange to your wallet of choice. You'll want to keep fees in mind as you research options. Most exchanges charge at least a percentage of your transaction whenyou buy crypto.

C. Popular NFTs Marketplace

Once you've got your wallet set up and funded, there's noshortage of NFT sites to shop. Currently, the largest NFT marketplaces are:

OpenSea.io: This peer-to-peer platform bills itself a purveyorof "rare digital items and collectibles." To get started, all you need to do is create an account to browse NFT collections. You can also sort pieces by sales volume to discover new artists.

Rarible: Similar to OpenSea, Rarible is a democratic, open marketplace that allows artists and creators to issue and sellNFTs. RARI tokens issued on the platform enable holders to weigh in on features like fees and community rules.

Foundation: Here, artists must receive "upvotes" or aninvitation from fellow creators to post their art. The community's exclusivity and cost of entry—artists must alsopurchase "gas" to mint NFTs—means it may boast higher- caliber artwork. For instance, Nyan Cat creator Chris Torres sold the NFT on the Foundation platform. It may also mean higher prices — not necessarily a bad thing for artists and collectors seeking to capitalize, assuming the demand for NFTs remains at current levels, or even increases over time.

Although these platforms and others are host to thousands of NFT creators and collectors, be sure you do your research carefully before buying. Some artists have fallen victim to impersonators who have listed and sold their work without theirpermission.

In addition, the verification processes for creators and NFT listings aren't consistent across platforms — some are more stringent than others. OpenSea and Rarible, for example, do notrequire owner verification for NFT listings. Buyer protections appear to be sparse at best, so when shopping for NFTs, it may be best to keep the old adage "caveat emptor" (let the buyer beware) in mind.

V. RESULTS

In this section we report the results of our main analyses. We begin by presenting NFT initial- listing-day characteristics. Then, we move to estimating NFT volatilities, raw-returns, Sharpe ratios, and returns on themarket-adjusted basis. In the next step, we analyze NFT alphas and betas. Subsequently, we construct NFT price index that tracks NFT price movement over the long-run. We conclude by carrying out an event study to measureNFT-induced blockchain valuation effects.

VI. ADVANTAGES OF NFT

Some of the benefits collectors focus on when buying non-fungible digitized artwork include:

A. Value Growth

As with any other investment, there's always the potentialfor growth in the value of your investment when you buy these tokens.

For example, CryptoPunk #3100 first sold for $2,127 on July 6, 2017. The collector who owned the artwork refused to sell until March 2021, although whoever it was received plenty ofoffers. Nonetheless, that collector is probably doing backflips considering the more than $7.5 million return on investmentthey earned when they sold.

B. *Ownership of Something Unique*

These digital collectibles are non-fungible, which essentially means they're irreplaceable. There's a good feeling when youknow you own a one-of-a-kind piece, whether it be a painting, a piece of furniture, or a digital image, audio clip, orother digital asset.

C. *Excitement*

There's a ton of excitement centered around blockchain technology at the moment. Some believe the technology could lead to as significant a shift in consumer behavior asthe invention of the Internet did.

That's an exciting notion, and by purchasing an NFT, you'reactively taking part in that technological evolution.

D. *Data Record*

Records of authenticity and chain-of-ownership for valuableartwork is sometimes tough to maintain. This is where NFTsshine.

Existing on the blockchain allows clear ownership records ofall NFTs, meaning your digital artwork should theoretically never be subject to theft or having its authenticity questioned.

Some believe the technology will not only shine as a way to manage digital collectibles, but eventually could evolve as a better way to manage and control sensitive data and records.

VII. DISADVANTAGES OF NFT

NFTs are interesting, there's no doubt about it. But there aresome serious drawbacks to sinking your money into them.

Some of the most significant drawbacks include:

A. *Physical Art Can't Be Digitized*

The reasons to own physical art and the reasons to own digital art are often different. You can't digitize physical art.

There's an allure to seeing a one-of-a-kind painting with yourown eyes that these tokens simply can't provide.

1) *Uncertain Value*

Even for experts, NFTs are confusing assets. When you purchase one of these non-fungibles, you're not necessarilypurchasing the copyright to the art.

People are still able to find copies on the Internet of the artfor which you own the token, and there's nothing stopping them from copying and pasting these files on social media, essentially showing off and sharing what you may have paidmillions of dollars for.

Essentially, when you buy these assets, all you really own is arecord saying you own the token behind the original asset.

The real question here is, "How much value is there inowning an asset you don't actually control?"

Depending on how collectors answer this question in the future, those who invested all that scratch into these tokensmay be left holding a digital record that's not worth much.

B. *Environmental Cost*

The environment is a hot topic of debate as of late. Any record entered into the Ethereum blockchain takes significant computing, which requires the use of significantamounts of energy.

So, widespread trading in NFTs and other blockchain-basedassets isn't necessarily an environmentally friendly process.

In fact, a recent Cambridge University study suggests just about everything having to do with the blockchain is highly unsustainable from an environmental standpoint because ofthe amount of energy used.

VIII. CONCLUSION

This study examines the risk and return characteristics of the NFT-based startups whose valuations are determined on a cryptocurrency exchange. Recent months have seen a surge in the use of NFTs, including primary NFT offerings and feverish NFT trading on the secondary markets. The NFT industry represents another important use case for blockchains, in addition to fundraising, remittance, store ofvalue, borrowing, and lending.

A number of interesting results emerge from our datasetalong the NFT risk and return attributes. First, we find that NFTs earn large first-day returns of 130% on average.

This is an order of magnitude higher than returns on IPOs -startup firms going public on a traditional stock exchange.

A natural extension of our study would be to look into the on-chain activity of the NFT startups as potential predictorsof their market performance. We leave this challenging question forfuture research.