Analyzing the Value, Function, and Regulation of Cryptocurrency

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Abstract

Cryptocurrency is an emerging asset in the financial field designed to act as an alternative medium of exchange to fiat currency. The researcher explores the value, function, and regulation of cryptocurrency to explain the complex system and provide insight into the asset's prospects. The conclusion indicates that cryptocurrency has a wide variety of uses beyond traditional currency transactions. It also indicates that the recent downturn in the cryptocurrency market is correlated to the drop in the stock market that began in 2021 and is prolonged by economists' fears of a recession in 2023. Future research should monitor whether the cryptocurrency market can recover and how upcoming government legislation will affect the adoption of cryptocurrency worldwide.

Analyzing the Value, Function, and Regulation of Cryptocurrency

Cryptocurrency is a popular, generally misunderstood asset in the financial market. It is a digital currency built on blockchain technology with the purpose of securely transferring funds from one party to another. The cryptocurrency market is one of the fastest-growing financial markets in the world. In 2021, the total market value reached a high close to $3 trillion (Best, 2022). By the end of 2022, that number had crashed to about $1.5 trillion (Ponciano, 2022). The tax implications of a market this large warrant significant consideration from investors and financial institutions.

Cryptocurrency was first created in 2008 by an individual or group of individuals operating under the pseudonym Satoshi Nakamoto (Todorov, 2008). They created the underlying mathematical processes that produced the blockchain and Bitcoin. While their identity is unknown, their influence on the financial market has been profound. Bitcoin has spawned the creation of numerous altcoins that run on similar technology and contribute to the growth of the cryptocurrency market. The price of one Bitcoin is represented in USD. On March 30, 2023, Yahoo! Finance listed the token price for Bitcoin (BTC-USD) at $28,204.

Purpose and Overview

The purpose of this thesis is to examine how the emerging industry of cryptocurrency is being regulated and what the potential tax consequences are. The research presented is organized into four main sections: Value, perception, regulation, and tax treatment of cryptocurrency. The research method employed is secondary source analysis used to examine scholarly research

papers in the field. This subject warrants research because cryptocurrency is a relatively new technology, and the conversations about how it should be regulated are ongoing.

Terms

For a subject as complex as cryptocurrencies, understanding the terms common to the industry is imperative for individuals and researchers who desire a deeper understanding of the field. The following terms are among the most often used in conversation about cryptocurrencies. Understanding the definition and regular uses of these terms is integral to understanding the cryptocurrency market.

Blockchain

Perhaps the most complicated concept on the subject of cryptocurrency is the blockchain. At its essence, blockchain is comprised of several computers, called miners, running software that validates cryptocurrency transactions. While transactions themselves are not encrypted, the identity of the sender and recipient are (Creed & Northard, 2021). When a transaction is validated, it is stored in a *block*. As more transactions occur, the blocks they are stored in are linked together to form a *chain*. The chain is organized chronologically, and according to Creed & Northard (2021), no amount of tampering could overwrite a previous transaction since that would require going backward in the chain. Multiple miners validate every cryptocurrency transaction, whether that be the purchase, sale, or transfer of a coin. The number of miners validating a specific transaction varies based on the blockchain network and the two consensus mechanisms, Proof of Work and Proof of Stake. The blockchain that composes cryptocurrency

transactions is referred to as a ledger. All transactions are stored in the ledger and are accessible to the public, however, the identity of the sender and recipient are hidden (Creed & Northard, 2021). A comprehensive list of all the ledgers for different cryptocurrencies can be found at Blockchain.com.

Altcoins

Altcoin is the general term for any cryptocurrency other than Bitcoin. It is named so because Bitcoin was the first cryptocurrency, and every other cryptocurrency is an "alternate" to Bitcoin. Some of the largest Altcoins are Ethereum, Tether, and USDC. The market capitalizations (total coins in circulation multiplied by the current price) for these three cryptocurrencies are $216 billion, $66 billion, and $54 billion, respectively (Loo, 2022). Bitcoin has a market capitalization of over $458 billion.

Proof of Work and Proof of Stake

Currently, cryptocurrency transactions are validated in two ways: Proof of Work (PoW) and Proof of Stake (PoS). PoW is computationally expensive and energy inefficient (Milunovich, 2022). It requires computers to solve complex math problems in order to validate transactions. According to Cambridge University's Bitcoin Electricity Consumption Index as of 2023, the electricity expenditure of the bitcoin network is 118.3 TWh per year, which is of similar magnitude to the annual electricity consumption of the Netherlands or Argentina (Rauchs, 2023). PoS, on the other hand, uses much less energy because the problems the computer must solve are

much less complicated and can be done quicker (Milunovich, 2022). Ethereum, the most popular Altcoin, successfully transitioned to a PoS system in October of 2022.

Bitcoin, however, still uses PoW, and there are no plans for it to be upgraded to PoS (Binance Academy, 2022). Bitcoins underlying technology and consensus mechanisms have been operated consistently for over a decade. While the lure to upgrade stems from the fact that the PoS is more energy efficient, an upgrade to Bitcoin would necessitate significant change in the Bitcoin protocol, possibly resulting in a hard fork (Coinbase, 2023). According to Coinbase (2023), a fork occurs when there is a change to a cryptocurrency's protocols, essentially their set of rules, and this creates a second blockchain. A hard fork occurs when the code changes so much that the previous coins are no longer backward compatible with the coins before the fork (Coinbase, 2023). If Bitcoin upgraded to PoS, an entirely new cryptocurrency would be created, and all of the Bitcoins that existed before the upgrade could not be exchanged for this coin.

The Value of Cryptocurrency

Since its inception, financial managers have debated the trustworthiness and underlying value of cryptocurrency, criticizing it as a currency with no backing (Fadilpašić, 2021). The idea of a backed currency is a guarantee that the currency can always be exchanged for a predetermined amount of another asset. When the US officially abandoned the gold standard in 1971, the dollar shifted to fiat currency status. Today, the US dollar is backed by faith in the US economy and trust in its government (Amadeo, 2022). Cryptocurrency, however, is not backed by an economy and instead derives value from its demand. When more cryptocurrency is demanded, the price will naturally increase. The finite nature of individual cryptocurrencies can

be compared to precious metals like gold in that the demand derives from cryptocurrency's function: its ability to perform a cheap and secure transfer of funds. In this respect, cryptocurrency affords advantages that fiat currencies do not.

The supply side of cryptocurrency is a worthwhile consideration as well. According to Coin Telegraph (2022), there are currently 19 million Bitcoin in circulation, and Bitcoin will continue to be mined until that number increases to 21 million, an amount it is projected to reach in 2140. Since only 10% of Bitcoin will be mined over the next 100 years, that rules out any significant inflationary pressures from the demand side (Coin Telegraph, 2022).

According to Calcaterra et al., (2020), a category of cryptocurrencies called stablecoins attempts to overcome volatility by allowing users to trade cryptocurrency with the assurance that the value will not change. This is done by pegging the price of the coin to a less volatile asset, typically the US dollar. By keeping the price of stablecoins constant, users are able to take advantage of cryptocurrencies quick transactions speeds and secure payments without having to worry about constant fluctuations in price (Calcaterra et al., 2020). Like other cryptocurrencies, stablecoins are still traded on an exchange, but their price does not fluctuate based on buying and selling.

Government Regulation

Understanding how cryptocurrencies work is the first and most important step for governments before they begin to impose regulation. Governments around the world face the problem of legislating on this new technology that poses a potential threat to the structure of the financial system. Until recently, many major governments like the United States have taken a

hands-off approach to regulating the currencies (Nabilou, 2019). A potential problem for the Federal Reserve is setting monetary policy without being able to control the flow of cryptocurrency transactions. Cryptocurrency cuts out financial intermediaries, allowing direct peer to peer transactions. For this reason, many banks are uncomfortable with the adoption of cryptocurrency by the public. Nabilou (2019) proposed that in order to prevent disintermediation, banks could begin opening exchanges and brokerage accounts for cryptocurrency users. This would allow for banks to stay involved in the process and would not be much different for users than investing on cryptocurrency exchanges like Coinbase and Binance (Nabilou, 2019). Since this report was published, major banks like Goldman Sachs have begun allowing cryptocurrency trading on their platforms (Harshman, 2022).

According to Werbach (2018), the founders of a project called Rootstock attempted to create a smart contracts layer on top of Bitcoin, with a built-in process that gives both miners and users the power to make binding votes on network changes. Smart contracts, which are used by Rootstock to accelerate Bitcoin transaction speeds, function like apps that automatically perform a function when certain conditions are met (IBM, 2023). The connection to the financial system is that with Rootstock, users do not have to worry about the bank playing an administrative role for voting (Werbach, 2018). Rootstock is still operating today, although it is not a coin itself; it runs alongside the Bitcoin blockchain by converting normal Bitcoin into smart-contract-enabled Bitcoin (RSK, 2022).

Security Threats

Saiedi et al (2021) found that that public support for cryptocurrency adoption is partially attributed to its usefulness in illicit trade. Cryptocurrencies also pose additional risk to the consumer not found in regulated banks, such as closure or compromise of their exchange system (Choo, 2015). However, the Financial Crisis of 2008 showed that the banking system is not infallible either. Major banks like Washington Mutual were forced to declare bankruptcy or be bought by another bank (FDIC, 2023). There may even be more security in the online world for cryptocurrencies, as they themselves cannot be digitally stolen. The thief must obtain either the password to a consumer's exchange account or the physical hard drive on which their coins are stored (Zaytoun, 2019). This added layer of security is one of the most attractive features to investors.

Current Government Regulation

In March of 2022, President Biden signed an executive order authorizing the formation of a committee to begin researching cryptocurrency. The committee will engage departments across the government to collaborate in the creation of a regulatory framework for digital assets. It also outlines a "whole of government approach to addressing the risks and harnessing the potential benefits of digital assets and their underlying technology" (Goel, et al., 2022, para. 2). In the United States, the Securities and Exchange Commission (SEC) classifies cryptocurrencies as securities and applies security laws to digital wallets and exchanges. Other countries, such as Japan and Australia, treat cryptocurrencies as property and tax them as such. Switzerland is one

of the most progressive countries in adopting cryptocurrency, going so far as to allow coins to be accepted as formal payment in some contexts (Cryptocurrency Regulations Around the World, 2022).

The Future of Regulation

Governments can move in two directions as they impose regulation on cryptocurrency. While some will likely crack down on the unfettered use of the coins, others may adopt a softer stance towards financial integration. Werbach (2018) argued that blockchain systems are more vulnerable than perceived. Regulation from the government is imperative in preventing cryptocurrency use on illegal drugs, human trafficking, and other contraband activities behind the anonymity of the blockchain.

Conversely, proponents of cryptocurrency are often against any form of government regulation on the coins. In many ways, cryptocurrency was created to break free from government control allowing users to conduct financial transactions without the government breathing down their neck. Regulation, many argue, is antithetical to the very nature of the coins (Lansky, 2018). However, the dilemma faced by cryptocurrency enthusiasts is that there is little public trust in the technology because it is new and complicated. Allowing the government to take an indirect approach to regulation could serve both parties by strengthening public trust in cryptocurrency. One such approach involves allowing the banking system to act as the second-layer solutions of the bitcoin network. While the first layer of the network secures and encrypts transactions, banks could act as the second layer and would be responsible for sending the

cryptocurrency (Nabilou, 2019). If banks were to become an integral part of the network, governments could regulate cryptocurrency through financial institutions. Furthermore, banks can benefit from joining the cryptocurrency industry by taken advantage of the speed of the blockchain network to accelerate their payment processes (Scicchitano, 2020).

Maintaining Value and Market Consistency

Maintaining demand, as discussed earlier, is integral to the value of cryptocurrency. Yoo (2021) proposed two ways to keep cryptocurrency permanently stable: Maintaining scarcity by controlling absolute quantity of coins and generating demand by allowing continuous use in the market. These two events must occur simultaneously in order to control long term value of cryptocurrency (Yoo, 2021). The quantity of Bitcoin is already capped at 21 million coins and is expected to reach that cap in 120 years (Coin Telegraph, 2022). The cap was developed by Bitcoin developer(s) Satoshi Nakamoto in the programming that supports Bitcoin.

Another criticism of cryptocurrency is its instability in the marketplace. It is difficult to use cryptocurrency to transfer specific sums of money when the price of a coin is constantly fluctuating. One of the short-term solutions for this is through stablecoins that fix the coins price to another less volatile asset. Stablecoins combine the instant processing and security of payments of cryptocurrencies, and the volatility-free stable valuations of fiat currencies (Calcaterra et al., 2020). USDC, which stands for United States Dollar Coin, is a cryptocurrency that is pegged to the US dollar. Despite its name, USDC is not associated with the US government or the official money supply. USDC is always redeemable for $1 USD. Because of

this, holders never need to worry about price fluctuations of their coins. According to Light & Hajric (2021), Circle, the company that produces USDC, used to hold one US dollar in the bank for every one USDC they produced. In 2020, they switched from only cash reserves to a combination of cash and treasury notes in order to accommodate increased demand for the coin (Light & Hajric, 2021).

Failed Stablecoins. Unfortunately, not all stablecoins have been successful. In May of 2022, stablecoin Terra experienced a drop in value from $1 to $0.985 due to a withdrawal of 6% of the coin (Wong, 2022). The withdrawal occurred after users noticed an unusual amount of liquidity withdrawing of Terra from liquidity pools. A liquidity pool is a type of asset sharing on decentralized finance exchanges in which individuals deposit equal amounts of two different cryptocurrencies so that trading is more liquid. In exchange for their deposits, individuals receive a portion of the fee charged to traders of those assets. However, individuals are allowed to withdraw their deposited assets at any point, and if many do so at the same time, the result is a liquidity withdrawal (Wong, 2022). Investors noticed this substantial liquidity withdrawal, and that is what lead to a 6% withdrawal of Terra. This shook investor confidence in the market, leading to many pulling out of the coin and creating a 17% drop in value overnight. The price of Terra continued to fall and currently sits well below one cent, with major exchanges refusing to list the coin anymore. Terra has a major difference from other stablecoins like USDC, which is backed by physical dollars held in reserve. Terra was backed by an algorithm, rather than assets (Wong, 2022).

Terra is separated into two coins, Terra (UST) and Luna (LUNA), whose prices were pegged to each other:

> To see how the peg works, suppose UST is trading at $0.98 instead of at $1. An individual can buy one UST at $0.98, burn it at the Terra Station for $1 worth of LUNA, sell the LUNA immediately and make $0.02 profit. As long as UST is below $1, these profitable transactions result in continuing to burn UST in the market until the price of UST is pushed back to $1. Similarly, if UST is trading above $1 (say, $1.03), a trader could purchase $1 worth of LUNA, burn the LUNA to mint one UST and sell it in the market for a profit of $0.03. (Wong, 2022, para. 6)

This process is similar to arbitrage, which is when an investor purchases an asset in one market that is trading at a price lower than another market; the difference between the two prices is the investors profit on the deal (Jackson, 2022). According to Wong (2022), when the price of UST began to fall, the market was flooded with additional LUNA coins which further diluted the value.

The reason Bitcoin and other cryptocurrency are so unstable is because they have a much smaller market cap and less liquidity than fiat currencies (Fadilpašić, 2022). Like a sumo wrestler would displace a lot of water when jumping into a swimming pool, any investor making a large market transaction has the potential to cause significant price volatility for Bitcoin. Bitcoins market cap of $821 billion is like a dollar store kiddie pool compared to the swimming pool sized US monetary base of $40 trillion dollars (Best, 2022). Until Bitcoin's market

capitalization increases to the range of fiat currencies, its price is not likely to settle enough to be reliably used for transactions. Because Bitcoin has nearly reached its total supply cap of 21 million coins, volatility and liquidity risk will prevent it from attaining the stability of fiat currency.

Tax Considerations

The IRS classifies cryptocurrency as "property" and not currency (Spilker, 2022). This classification is particularly important when cryptocurrency is spent. Cryptocurrency investors have a taxable event every time they transact with virtual currency. According to Spilker (2022), every transaction investors engage in requires the investor to calculate the gain or loss on the disposition of the asset. This makes day trading cryptocurrency very complicated for tax purposes. These gains or losses must then be reported on Form 8949 and Schedule D, where the appropriate tax rate is then applied. Form 8949 is for sales and other dispositions of capital assets, and Schedule D is for capital gains and losses.

Currently, gains on the sale of cryptocurrency are taxed at capital gains rates. Short-term capital gains/losses include the sale of an asset held for less than one year. For 2022, the gains/losses are taxed as ordinary income. If the asset is held for more than one year, it is classified as a long-term capital gain/loss and is taxed at preferential capital gains rates. For 2022, a 0% long term capital gains tax applies to single taxpayers with ordinary income less than $41,675, or $83,350 for married filing jointly. That means that a single taxpayer with ordinary

income of less than $41,675 will not have to pay any tax on the sale of cryptocurrency or other capital gain investments, provided the assets are held for at least one year. A 15% tax bracket applies for single taxpayers with ordinary income from $41,676 to $459,750 and for married filing jointly ordinary income from $83,351 to $517,200. The final tax rate of 20% applies to single taxpayers making over $459,751 or married filing jointly of $517,201 (IRS, 2022). These preferential rates encourage owners of cryptocurrency to hold their assets for more than one year.

For instance, if a taxpayer buys 1 Bitcoin in March for $20,000 and then sells it in November for $26,000, they will be taxed on the $6,000 gain at the short-term capital gains tax rate. This tax rate is determined by the ordinary income tax bracket they fall into.

Taxpayers completing a 1040 will be asked an updated question for 2022 about their interaction with cryptocurrency. The revised question reads, “At any time during 2022, did you: (a) receive crypto as a reward, award, or compensation; or (b) sell, exchange, gift, or otherwise dispose of a digital asset?” (IRS, 2022, p. 1). The question will appear on the first page of the 1040 and will require an answer of “yes” or “no”. Taxpayers who indicate “yes” will be required to fill out the aforementioned Form 8949 and Schedule D.

Tax Basis

When it comes to determining what the taxable income is on cryptocurrency transactions, investors must determine their taxable basis in the asset. The basis in virtual currency is the

amount paid for it plus any transaction fees incurred in the purchase (Erdmann, 2021). The Florida Bar Journal provides an example for determining the basis in cryptocurrency:

> For example, let us say more than one year ago, Frank paid $15,000 to purchase 1 bitcoin. It cost $14,998 for the bitcoin and $2 for the transaction fee. He bought the bitcoin for investment purposes. His basis in the 1 bitcoin is $15,000. Let us assume that the 1 bitcoin currently trades for $20,000. Using the bitcoin, Frank purchases a slice of pizza for lunch worth $5. He also pays Joe, an independent contractor, $2,000 to build him a fancy new website. For the pizza purchase, all of the following occurs as part of the transaction: Frank uses 0.00025 of the bitcoin to make the pizza purchase leaving him with 0.99975 bitcoin. The amount of bitcoin used to purchase the pizza has $3.75 of allocated basis (0.00025 x $15,000). Since the pizza was worth $5, Frank recognized $1.25 of long-term capital gain that is reportable on his return and is taxable ($5 - $3.75). After the pizza transaction, Frank has 0.99975 bitcoin remaining with a basis of $14,996.25. (Erdman, 2021, p. 59)

This complex process of determining basis in virtual currency is further impeded by the many cryptocurrencies that exist and the high volume of transactions that occur daily. Because this is a new process, it is possible that taxpayers may make errors when determining their basis.

Proposed Regulation

While the IRS has chosen to group cryptocurrency assets into the capital assets group, specific regulation pertaining exclusively to cryptocurrency is likely coming. Since April, Congress has introduced three bills that address regulation on cryptocurrency and digital assets. However, hopes of passing any form of regulation by the end of the year have fizzled (Versprille,

2022). Therefore, 2023 tax returns will likely treat cryptocurrency in a similar manner as previous years. It is possible that the 2024 tax laws will feature more specific and concise information relating to digital assets.

Tax Evasion

One of the most concerning threats to governments imposed by cryptocurrency is tax evasion (King & Peart, 2019). Tax evasion occurs when an individual or corporation misrepresents income in order to avoid paying taxes (Cornell Law, 2020). Lawmakers have been hard at work since the inception of cryptocurrencies to limit the possibility of tax evasion. The main problem lies in the failure of individuals or cryptocurrency exchanges to report their full activity. For example, the FDIC requires that all bank transactions in currency (deposit, withdrawal, exchange of currency, or other payment or transfer) of more than $10,000 must file a Currency Transaction Report (CTR). This notifies the IRS to check for reporting on tax returns and helps to prevent money laundering (FDIC, 2022). Until 2023 however, these same standards will not apply to cryptocurrency. A business that receives $20,000 in bitcoin for the purchase of a car does not have to file a CTR. If the business does not report that income on its tax return, it could go untaxed.

This loophole will close on January 1, 2023, as the IRS will now require reporting for any virtual currency transaction over $10,000. This example shows just how new cryptocurrency regulation is and how it is constantly being updated. Lawmakers simply have not had the time to

understand the asset enough to regulate it. This will change over time, but until then, individuals and businesses will continue to try and exploit cryptocurrency for its use in tax evasion.

Tax Avoidance

While tax evasion is illegal, tax avoidance, the practice of lessening tax liability in order to maximize after-tax wealth, is not. When it comes to cryptocurrency, investors can employ strategies to limit their total tax liability. From the October issue of the Kiplinger Letter (2022), one strategy is to buy cryptocurrency through a Self-Directed IRA. A Self-Directed IRA is similar to a Traditional IRA in that it allows saving for retirement and has the same contribution limits. The difference is that a Self-Directed IRA allows the owner to choose where the money is invested. By investing in cryptocurrency through a Self-Directed Roth IRA, an individual would be able to avoid paying taxes on withdrawals, which come after the portfolio has increased in value (Kiplinger, 2022).

Other tax avoidance strategies for cryptocurrency relate to tax timing. An individual could wait to sell cryptocurrency until a low-income year. This may allow them to file in a lower tax bracket than they would if they sold in a normal year. Another strategy is to offset cryptocurrency gains with capital losses. An individual may choose to close their position in a stock for a loss if they have a cryptocurrency gain that year. They could also offset capital gains with a cryptocurrency loss. Offsetting capital gains with losses is limited to $3,000 for 2022, but the remainder can be carried forward to a future tax year (Spilker, 2022). Lastly, an investor in

cryptocurrency could choose to donate their cryptocurrency. This would allow them to deduct the fair value of the cryptocurrency while also avoiding the capital gains tax.

Other Tax Issues

An amendment to the Commodity Exchange Act (2022) ruled that cryptocurrency is a commodity subject to the Commodity Futures Trading Commission. However, the SEC maintains the position that cryptocurrency should be regulated as a security because many investors hold cryptocurrency as a store of value in anticipation for future growth (Goel & White, 2021). Since these two governing bodies disagree, there is no clear consensus on what type of asset cryptocurrency is.

Another tax consideration has to do with stablecoins. Stablecoins are a type of Altcoin that are pegged to the price of another, typically less volatile, asset. Many of them are pegged to the US dollar. Regulators are concerned that issuers of stablecoins do not keep a sufficient supply of US dollars to back up the number of coins they issue (Kiplinger, 2022). If issuers of stablecoins were regulated as depository institutions, the FDIC would have strict control over whether a stablecoin could be issued without a physical asset backing it up (Light & Hajric, 2021).

Cryptocurrency Criticisms

Cryptocurrency has faced intense scrutiny from investors, regulators, and financial institutions throughout its existence. There are currently 238 major cryptocurrency exchanges thanks to dramatic increases over the last decade, making it easier for new investors to own and

trade tokens (Coin Market Cap, 2023). According to Handagama (2022), this has allowed uneducated investors to saturate the market and artificially inflate the prices of digital assets. Cryptocurrency exchanges have also faced legal action for encouraging investors to risk their funds in an asset class that is so new and volatile (Handagama, 2022). Three specific criticisms of cryptocurrency are the FTX collapse, the NFT buzz, and the current crypto winter.

FTX Scandal

In November of 2022, the collapse of cryptocurrency exchange giant FTX sent shockwaves through the investment community. FTX, which means "Futures Exchange", was listed by Forbes (2022) as one of the largest exchanges for digital assets at the time, handling 11% of the $2.4 trillion in derivatives traded each month. Shortly after the collapse, FTX founder Sam Bankman-Fried was charged by the SEC with defrauding investors. According to the U.S. Securities and Exchange Commission [SEC] (2022), Bankman-Fried knowingly diverted investments to his own personal hedge fund in which he purchased cryptocurrencies created by FTX to artificially increase their value (SEC, 2022). SEC Chair Gary Gensler said the following about Bankman-Fried's fraudulent operation:

> We allege that Sam Bankman-Fried built a house of cards on a foundation of deception while telling investors that it was one of the safest buildings in crypto. The alleged fraud committed by Mr. Bankman-Fried is a clarion call to crypto platforms that they need to come into compliance with our laws. Compliance protects both those who invest on and those who invest in crypto platforms with time-tested safeguards, such as properly

> protecting customer funds and separating conflicting lines of business. It also shines a light into trading platform conduct for both investors through disclosure and regulators through examination authority. To those platforms that don't comply with our securities laws, the SEC's Enforcement Division is ready to take action. (U.S. Securities and Exchange Commission, 2022, para. 3)

Gensler's remarks call for stricter adherence to compliance regulation by cryptocurrency exchanges. He threatens legal action to any exchange that refuses to comply with existing securities laws.

FTX had several major celebrity ambassadors including athletes Tom Brady and David Ortiz, as well as billionaire Kevin O'Leary, all three of whom had significant financial investments in the firm (Peterson-Withorn, 2022). These prominent spokesmen added to FTX's credibility in the mainstream and among potential investors. When Congress began its investigation into FTX, they interviewed Mr. O'Leary, who spoke about why the collapse of FTX should not negatively impact investor's view of the long-term value of cryptocurrency. In his remarks, O'Leary stated that the silver lining of the situation is that the collapse will, "put renewed focus on implementing domestic regulation that has been stalled for years" reminding Congress that lack of action exposes the US to "falling behind and losing [its] leadership position" in the global exchange market (Testimony of Mr. Kevin O'Leary, 2022). O'Leary's call for specific cryptocurrency regulation further illustrates the need for the cryptocurrency committee created by President Biden in March of 2022 (Goel, et al., 2022).

NFT

NFT, short for non-fungible token, is a unit of data stored on the blockchain that certifies a digital asset as unique (Anand, 2022). An NFT digitally represents an image or artwork. According to Anand (2022), NFTs and cryptocurrencies are both tokens, however, two cryptocurrencies from the same blockchain are said to be fungible, meaning any one Bitcoin can be exchanged for another Bitcoin. Cryptocurrencies are interchangeable with another, but NFTs are not interchangeable; they are non-fungible (Anand, 2022). Most NFT's operate on the Ethereum blockchain, which means NFT's are bought and sold with the Ether coin. As stated by Anand (2022), since the USD price for one Ether token is changing, the purchase value of an NFT changes as well. This has motivated investors to purchase NFTs as a means of profiting off an increase in price of Ethereum. While the first NFT was minted in 2014, the increase in popularity of cryptocurrency in 2020 caused an NFT explosion in 2021, resulting in $23 billion in sales in 2021 (Anand, 2022).

According to Anand (2022), NFTs are traded on a digital marketplace where they are bid upon until only one investor remains, similar to an auction house. In December of 2021, an NFT titled, "Everydays: The First 5000 days" was sold for $69.3 million (Shewale, 2023). As of April 2023, this remains the most expensive NFT bought by a single person.

According to Anand (2022), Criticisms of NFTs echo criticisms of cryptocurrency in general, namely, where the value of NFTs are derived from. An NFT is valued based on what investors are willing to pay for it. As such, an investor cannot expect an NFT to retain its value

forever. Once no one is willing to pay for it, the value drops to 0 (Anand, 2022). The adoption of NFTs continued to spread in the mainstream in December of 2022 when former President Donald Trump released his own set of NFTs (Liang, 2022).

Crypto Winter

Since reaching its peak of $3 trillion in late 2021, the cryptocurrency market cap has fallen to $1.12 trillion as of February 2023 (Crypto.com, 2023). This nearly 66% decrease has investors speculating that the value of cryptocurrency may never recover. However, cryptocurrency enthusiasts believe that this drop is nothing more than a *crypto winter*. "A crypto winter is caused by a decline in the value of cryptocurrency assets and trading volume over a period. There are many different causes for why the value of cryptocurrencies decline leading to a crypto winter" (Kerner, 2023). Crypto winters have happened before, most recently in 2018 when the price of Bitcoin dropped 50% (Woock, 2022). However, that drop occurred during a bull market in the traditional finance world.

So, what caused the crypto winter of 2022? The answer may be the same answer as to what caused the stock market to drop so drastically over that same period. The crypto winter is occurring alongside a nearly 33% drop in the NASDAQ and 20% drop in the S&P 500 index from 2021 to 2023 (MarketWatch, 2023). When a bear market occurs, tech stocks are typically the first sector to take a hit while investors move their money to safer commodity and blue-chip stocks (Forbes Contributors, 2023). Investors may be grouping cryptocurrency in their portfolios as small-cap growth investments, which would explain why cryptocurrency declined when it did.

Market Recovery. Given the precipitous 50% drop in market value for cryptocurrency, the road to market recovery for is long (Ponciano, 2022). To return to the market cap of 2021, many coins will need to see over 100% gains. While that is possible, investors are not confident in a recovery as drastic as that. Many economists, including Boston Federal Reserve President Eric Rosengren believe the US economy is headed toward a recession in 2023 (Gilchrist, 2022). This impacts investments in all securities, not just cryptocurrency. Since the Federal Reserve began hiking interest rates to combat inflation in 2022, investors have flocked to bonds that now offer high yields not promised by stock investments (Chaudhuri, 2023). While possible, a return to the former glory for cryptocurrency is by no means a guarantee.

Summary of Research

In this thesis, the researcher reviewed scholarly journals and current business articles to evaluate the value, function, and regulation of cryptocurrency. According to Amadeo (2022), the value of cryptocurrency is derived from demand as well as the scarcity of its supply (Yoo, 2021). When more cryptocurrency is demanded, the price naturally increases. The finite nature of individual cryptocurrencies can be compared to precious metals like gold in that the demand derives from cryptocurrency's function: its ability to perform a cheap and secure transfer of funds. This is different from fiat money that can be continuously printed and inflated in the US by the Treasury Department. Nabilou (2019) demonstrated that government regulation of cryptocurrency is vitally important to improving consumer trust and increasing adoption in the financial industry. The US government is still in the process of regulating the cryptocurrency

market, and market collapses like FTX and Terra Coin provide support for swift intervention (Erdmann, 2022). Additionally, the tax implications on consumers are similar to the taxes on capital gains, although this may change in future tax years (Spilker, 2022).

Future Research

In a market as new and unstable as cryptocurrency, there is a need for future research and forecasts on the basis of the latest available data. Monitoring upcoming legislation from world governments is key in predicting the economic future of this asset. Additionally, future researchers may produce original predictions based on updated raw market data. While quantitative studies can investigate the technical use of cryptocurrency, they may also be supplemented by qualitative research on public perception of cryptocurrency. Public trust is key in adoption of any new form of currency; monitoring the progress of that is equally important as reporting the technological advances of the industry (Lansky, 2018). Lastly, future research should be done on the forthcoming Central Bank Digital Currency (CBDC) and the effect it has on cryptocurrency (Nelson, 2022).

Conclusions

The cryptocurrency market is unpredictable, and while its volatility may scare some investors away, its potential for gains should be closely monitored by the finance world. According to Conrad et al. (2018), the volatility of the S&P500 has a negative and significantly effect on long-term Bitcoin volatility. This implies the degree of risk on cryptocurrency is greater than the stock market. Secure and anonymous transactions allow large sums of money to be transferred quickly and cheaply (Calcaterra et al., 2020). According to Rachs (2023), the electricity usage for mining new coins and validating transactions is considerable and reflects

poorly on the market's sustainability, particularly as society becomes more conscious of green energy and sustainable resources. Transitioning more coins to the proof of stake system will help to decrease the electricity usage and improve public perception (Rauchs, 2023).

As the US government seeks to regulate the market, it should consider an integration of cryptocurrency with the banking industry (Nabilou, 2019). This gives the government greater control over the technology while simultaneously increasing consumer trust in widespread use of cryptocurrency. Government regulation should be swift and purposeful to keep the US from lagging behind other nations in technological development (Versprille, 2022). According to Spilker (2022), the tax code currently forces investors to calculate their gains and losses any time a cryptocurrency is dispossessed, and this can make using coins in virtual transactions complicated from a tax perspective to. If all coins could achieve a stable value, such as stablecoins like USDC, tax treatment for cryptocurrency could be simplified, and the IRS might be able to classify cryptocurrency as currency, not property (Commodity Exchange Act, 2022). Additionally, government intervention could help to prevent another cryptocurrency collapse, like the FTX scandal, by regulating cryptocurrency exchanges like regular depository institutions (Light & Hajric, 2021).

Centralized regulation of a decentralized currency is nearly impossible (Nabilou, 2019). It is imperative for governments to thoroughly understand the technology underlying cryptocurrency to be able to legislate on it. Too much legislation might crush the purpose of cryptocurrency, and as stated by Zaytoun (2019), too little may encourage more black-market transactions. By allowing banks to take part in the second layer transfers of the network, world

governments can regulate illegal uses while allowing for quick and legal transactions (Zaytoun, 2019). Additionally, government regulation may increase public trust in cryptocurrency; this would be expected to accelerate the adoption process in the economy.

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