



ACCOUNTING FOR BITCOIN AND OTHER CRYPTO CURRENCIES ACCORDING TO INTERNATIONAL ACCOUNTING AND FINANCIAL REPORTING STANDARDS

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Abstract

Cryptocurrencies, which are still a very new concept today and are rapidly developing and affecting the world financially, have begun to take existence in many fields from financial markets to daily business life. It can be said that with the introduction of cryptocurrencies, a new financial era has begun. Cryptocurrencies, whose popularity is increasing day by day, is expected to have a wider place in the future and to become a part of daily life. In most countries, cryptocurrencies in the form of virtual currency and Bitcoin, have been found to reach high levels of transaction volumes. Today, many firms pay their workers with cryptocurrencies. However, these coins have a number of disadvantages along with advantages. Although cryptocurrencies are not legally accepted, they have transformed them into an investment tool that impresses businesses because of their high profit return rate, easy transfer, and very few transaction requirements. At this point, the manifesto was written by Satoshi Nakamoto on 31 October 2008 under the title "Bitcoin: An electronic cash payment system from person to person". It is stated that what is needed here is an e-payment system based on encryption proof instead of trust, and the two parties are directly connected to each other without the need for a third party. This gave birth to the cryptographic (encrypted) currency, Bitcoin. The aim of the study is to provide information about virtual currencies and how all cryptocurrencies in Bitcoin work and the features of these currencies, and to make evaluations about the accounting of their commercial transactions with Bitcoin according to international accounting standards.

Keywords: Cryptocurrency, Blockchain, Bitcoin, Accounting Standards, Financial Reporting Standards

INTRODUCTION

Today, the unavoidable rapid development in technology affects the whole world, as well as diversifying and changing the instruments used in these markets. In line with this advancement in technology, the money in the traditional sense has begun to be replaced by virtual money. Especially with the introduction of Bitcoin in 2009, the interest in cryptocurrencies has increased considerably, and a significant rise has been observed in the transaction volumes and market values of virtual currencies, especially in Bitcoin. Considering the definition of money in the classical economy, it should have three basic features. These are; being a medium of exchange, a medium of value retention and a unit of account (Wandhöfer, 2017). While Bitcoin, whose feature is to be an investment and store of value from the functions of traditional money, is considered as money, some segments are still discussing this issue. Bitcoin is not subject to legal regulations and is not controlled by a central authority. This is one of the features that distinguish it from traditional means like metal or banknote.

Article titled “Bitcoin: A Peer-to Peer Electronic Cash System” published in 2009 by Satoshi Nakamoto became a groundbreaking idea in the money systems we have used from past to present. According to the article in which electronic money transfer was defined from person to person, the system infrastructure of interpersonal money transfer was defined in a system where the financial institutions were not used as the third party. This new electronic currency, which is called as Bitcoin, is based on open source software and uses a digital blockchain called blockchain technology. The chain, in which the first block was created on January 3, 2009, reached 630,000 blocks on May 11, 2020 exactly 11 years after this date. Afterward, new crypto coins with different features have been created by changing or developing this software. More than 3,000 cryptocurrencies have emerged: Ethereum, Ripple, Litecoin, Scoin, Monero, are the most known of them. Every money transfer from the first block to the present is recorded in a digital book, different computers simultaneously verify and account for these transactions. Record of data by different computers at the same time makes it impossible to deregister the transactions. Bitcoin is an extremely new currency, but there are also uncertainties about its future. In addition to the security provided by the cryptographic infrastructure, attacks of malicious software hackers on cryptocurrency accounts pose a security threat (MacDonell, 2014).

Cryptocurrencies are used in more and more fields in financial and business life. Considering Bitcoin, which is a cryptocurrency today, is accepted by more than 100,000 worldwide trading corporations including Microsoft, GAP, Subway, LOT Polish Airlines, and Expedia. It can be mentioned that it will take a significant place in business life in the future.

Financial markets and financial instruments are developing in parallel with the dizzying speed of our era called the information age. Investment instruments, transactions and the number of investors have increased using the transfer of investment platforms to virtual environments with internet technology. In this context, it is seen that crypto money is also used as an investment instrument. However, it cannot be said that cryptocurrency users fully understand cryptocurrencies.

ALTERNATIVE, VIRTUAL AND DIGITAL MONEY DEVELOPMENT AND TYPES

The most common mediums used for exchanging are money, goods and services. A medium like money has become a need because human needs have not been met exactly in terms of time and space (Andrew, 2016). Money was also born as a medium that fulfills the function of change, value measurement and calculation so that users who do not need to swap goods and services in the same space, the same amount and value can meet their needs at any time, place or amount. It has been used as a means of accumulation, that is, value storage for very advanced needs. It has been also used for speculative, investment or policy-making purposes in the process. In the historical process, parallel to the development processes of humanity, the shape of money has also changed and money, which was made of stone, metal and precious metals, started to be used in the late 17th century.

Banknotes are accepted in all countries according to certain exchange rates and are used as official payment, exchange and store of value. As an alternative to nominal money (paper money and coins) regional coins have emerged regionally in different periods. Alternative coins, except for the control and assurance of the central authority, have emerged as paper money issued by a certain group of people and accepted as an instrument of payment and remained mostly regional.

As the historical process, science and technology developments have shifted economic activities to the digital environment; traditional paper money has been replaced by payments made in the digital environment. Digital (electronic) payments have firstly started with debit cards and credit cards.

Alternative Money

Alternative currencies are special currencies that are used as an alternative to traditional currency systems. In other words, these coins are against traditional and common money systems. If we consider broadly, it can be called an alternative monetary system, which can be realized without using banking systems. Alternative currencies are formed by individuals, institutions or organizations due to some kind of need in order to increase the production in the

region where it usually emerges, to improve trade and to stimulate the economy of the region. When the special currency created is accepted by the people of the region, it naturally becomes widespread and its usage increases. Alternative funds play a balancing role in local economies. As the local economy slows down, alternative money mobility increases, while the local economy goes up, their mobility decreases (Stodder, 2020).

Digital Money

In today's world where transactions made with physical money are decreasing, it can be argued that traditional money is also digitalized. Storage and transfer of digital money can be central or distributed. Centralized power, authority or program controls and carries out central digital money transactions. Digital money is coins that can be stored electronically and transferred (Wagner, 2019). Digital money in our bank account is the representation of paper money. Because the banks are about to be ready and overlooked anywhere, anytime, the prevalence of electronic money, physical money is almost out of use; the difference between the digital money and real physical money is about to eliminate. The transition from gold to paper money based on gold, from paper money based on gold to fiat money, and digital money is possible with the development of information technologies. The isolation and conceptualization of money has been going on since the history of humanity.

Digicash is the first centrally managed cryptographic electronic payment system developed by American encryption software expert David Chaum. The main advantage of Digicash was to provide anonymity for users. Digicash was not literally a currency, but it was a medium to make transfers between parties confidentially and reliably. The company went bankrupt in 1998 as the result of the wrong decisions (Griffith, 2019). After the crash of Digicash, First Visual and PayPal filled the gap as the electronic payment system, even though they are not cryptocurrencies. PayPal is used as a real currency, digital currency that is limited and complies with the legal obligations of governments. Web money continues to exist in Russia as a cryptocurrency in isolation.

Virtual Money

Virtual currencies are digital currencies, but there is no physical reality that virtual currencies represent. As to digital currencies other than virtual currencies, they represent nominal paper currencies. The definition of virtual money is not clear in the literature. According to the definition of the European Central Bank in 2012 (European Central Bank,2012). Virtual money "is generally controlled by its developers, although it is not issued by any central bank, credit institution or e-money institution, in some cases it can be used instead of money, is the digital

representation of a value". Again, according to the definition of the European Banking Authority in 2014, virtual money, "Although it is not issued by a central bank or public authority, it is naturally accepted by legal persons for payment, transfer, storage and electronic transfer. It is the non-essential digital representation of value"

CRYPTO CURRENCIES, BLOCKCHAIN TECHNOLOGY AND BITCOIN

Crypto Currencies

Cryptocurrencies can be defined as the virtual currencies that are created using a structure called the cryptography-based block chain, which does not have physical assets, does not have any centers, cannot be controlled by any authority, and are transacted in electronic environments that provide fast, low-cost and secure money transfer between parties. In 1983, David Chaum defined and proposed cryptography-based digital currency to be managed by the central authority. In 1999, the economist Nobel laureate, Milton Friedman stated in an interview that the internet was one of the major factors reducing the role of the governments and that it was not a reliable lack of e-money at the time of the interview. However, he said that one day it would be improved, that the transfer of funds from person A to person B would be possible without knowing each other. The theoretical basis of cryptocurrencies was put forward by Wei Dai in 1998 in Bmoney paper. In 2008, Satoshi Nakamoto pioneered the birth of today's cryptocurrencies with an article titled "Bitcoin: A Cash-to-Peer Cash Payment System" that Bitcoin was mentioned comprehensively.

Cryptocurrencies are a type of electronic currency used for electronic transactions worldwide, and cryptocurrencies and electronic currencies have different features. Electronic currencies are currencies that are stored electronically, accepted as an instrument of payment, and they have a legal basis, as in the traditional currency definition, and they are named by names such as the Dollar or Euro account. In cryptocurrencies, these account names become a virtual name and get names like Bitcoin or Linden Dollars. (European Central Bank, 2012).

Cryptocurrencies based on the principles of the use of open source and an end-to-end network system have a disruptive feature in the traditional financial sector with their features such as not being managed from any center, increasing social solidarity and eliminating financial intermediaries (Scott, Loonam, Kumar, 2017). As it is known, a financial system consists of those who supply and demand funds, financial instruments, brokerage houses, legal and institutional arrangements. Each of these elements ensures a healthy functioning of the financial system and financial markets. Failure of one or more of these elements or the absence of any of them will negatively affect the operation of the system. At

this point, some features of cryptocurrencies conflict with the financial system in the classical sense. Features such as not being managed by a central authority, not being subject to supervision and eliminating intermediary institutions are the features that will prevent the financial system from functioning effectively. The cryptocurrency processing process is shown in the figure below.

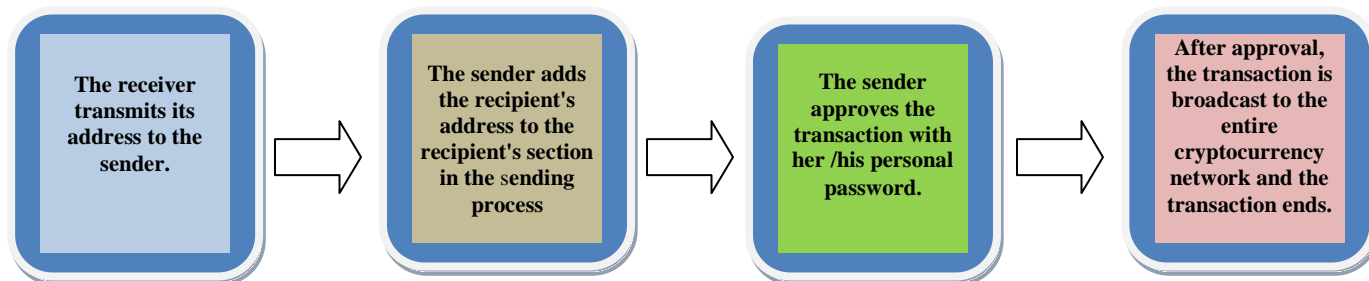












Figure 1. Transaction Process in Cryptocurrency

Source: <https://www.dailymail.co.uk/sciencetech/article-5000260>

Cryptocurrencies, which are virtual currencies, are decentralized digital assets that offer their users the opportunity to pay with minimum transaction fees at any time and place without going to a bank or a central authority. Cryptocurrencies, which cannot be controlled by a political mechanism and can be used for commercial purposes, will be traded for a limited amount as long as they are in use.

Despite having a scarce resource structure, these currencies, which have the feature of being used as a medium of exchange, have started to be perceived by people as very valuable assets. The high liquidity of cryptocurrencies due to their high trading volumes is perceived as an opportunity by investors and they have started to get into the independent asset class (Sontakke, Ghaisas, 2017). While the most popular cryptocurrencies are known as Bitcoin and Ethereum, other popular cryptocurrencies are; Ripple, Stellar, Litecoin, Bitcoin Cash, Synereo, EOS, TheDAO, Monero, Augur, Ethereum-Classic, Storjcoin-X, Dash, Steem, NEM, Litecoin, Stealler, NEO, Cardano, MaidSafeCoin, DigixDAO, Factom, Lisk, DogeCoin, IOTA, Bitcrystals, Waves, Tron, Nxt Are Emercoin and Counterparty (www.kriptopara.org).

Table 1. Top 10 Cryptocurrencies in the Crypto Money Market

| No | Logo | Name | Symbol |
|----|---|--------------|--------|
| 1 |  | Bitcoin | BTC |
| 2 |  | Ethereum | ETH |
| 3 |  | Ripple | XRP |
| 4 |  | Bitcoin Cash | BCH |
| 5 |  | EOS | EOS |
| 6 |  | Litecoin | LTC |
| 7 |  | Stellar | XML |
| 8 |  | Cardano | ADA |
| 9 |  | IOTA | MIOTA |
| 10 |  | TRON | TRX |

Source: (<https://www.pcworld.idg.com.au/article/628151>)

Blockchain

The word Blockchain is referred to as "block chain or register chain". Blockchain was originally written by Satoshi Nakamoto or people in 2008; It came up with an article called "Bitcoin: Peer to Peer Electronic Cash System ("Bitcoin: Person to Person Electronic Money System)" (Nakamoto, 2009). It is a technology that enables the exchange of values between people without the approval of an intermediary institution such as blockchain, government or bank, and these values recorded in a decentralized can be virtual ledger; currencies, titles, credentials, resumes, contracts and personal data (Bridgers, 2017).Such system is possible today as accounting standard setting bodies such as the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) have made a shift from the prudent nature of accounting to a more fair and flexible structure (Kaya, 2013). Blockchain is also the technology that Bitcoin and other virtual currencies are based on, which is open source and

records transactions between the two parties in a permanent, continuous and verifiable manner (Iansiti, Lakhani, 2017).

It is a digital global ledger that is a matter of public record, transparent, distributed, and sequential and includes time-stamped Bitcoin transfers; it is a flat data file and a simple database. It is the digital storage of all transactions since 2009 when Bitcoin showed up firstly. Current transactions are performed in Blockchain and future transactions will be performed in Blockchain. The Blockchain method, which comes with Bitcoin and has different usage areas, is resistant to problems that may arise from any central error as it is stored independently in three computers in a decentralized network.

Blockchain technology has gotten into the world agenda with Bitcoin, which is the first decentralized currency in history. There is no person, government or institution behind Bitcoin. There is no center, owner, and controllers; there are only and only open source codes, established and unchangeable rules and cryptography (encryption). The working principle driven by the idea of decentralization is an autonomous structure that is based on consensus and everyone can contribute to collaboration. Thus, it eliminates the problem of having to rely on any institution or person by removing third parties. It decreases the high transfer fees and provides efficiency in a shorter time (within minutes) (Nebulas Non-Technical, 2018). Bitcoin blockchain works as the following:

Every wallet has an address called "public key".

An example public key: "1Kfivi1fAzwqvfaVAVDEUKZ3EncaDq3".

This address can be thought as an IBAN number that gains anonymity to the person. Each address also has a password called "private key" derived from that address. An example private key: "E3843D74C6D87DC0FB3A5778739382F4453214303DA6F20BD67FC233AD33259"

This is the only way to access the wallet and make a transaction. Having a password is necessary and sufficient. It is almost impossible to crack the password or guess the password (Berentsen, Schär, 2018).

All Bitcoin transfers made since the first appearance of Bitcoin has been recorded on thousands of computers (nodes) distributed around the world and can be seen by anyone who wants. Miners running these computers (nodes) are required to take place the transfers. Miners who combine every transfer and save in the blocks and thus, earn Bitcoin as a reward are scattered all over the world and most of them are unaware of each other. Each transfer is transacted into blocks in a way that will never, ever return, after its accuracy is confirmed by the majority of miners. Very powerful computers are required to replace blocks that have been created in the past, yet there is no capable computer to do this in the world, so it is impossible to tamper with past recordings and gain interest (Berentsen, Schär, 2018).

It was stated that miners were the ones who determined the validity of the transactions and transacted them into the blocks. Miners who want to gain self-interest by approving an invalid transaction will always remain in the minority because all of the miners know that the system is required to earn Bitcoin and reliability is the most important issue for continuity. Therefore, miners will not want to jeopardize their revenues (it should be noted that the developments in mining in recent years pose a “51% attack” for Bitcoin). Besides, because all miners have an up-to-date copy of all transmissions recorded and these records can be viewed by everyone whether or not they are miners, increase the reliability (Berentsen, Schär, 2018). Bitcoin seems to open up a major innovation in terms of privacy, reliability and convenience:

Confidentiality: Being able to have the public key without giving credentials and being able to make the transfer by using only this gives privacy to individuals (Karasavvas, 2016).

Reliability: The fact that the private key and system cannot be "hacked" indicates that Bitcoin is more reliable than the banks managed by a center. Because the center where a bank's data is kept can be hacked or documents including records can be stolen and changed. Thanks to blockchain technology, the need to rely on any person, bank or institution to be sent money from one place to another removes; because the transfer is directly from person to person, there is no third person. Besides, it does not need to have a central authority like the states behind it. Consequently, Bitcoin solves the problem of states losing the value of money that people hold by printing the money. Because no one including the states cannot print Bitcoin on his own accord (Karasavvas, 2016).

Convenience: Transactions are required to be made within the working hours of the banks. The transfer may take hours or even days depending on the distance of the place to be sent. Again, it is necessary to pay high commission fees depending on the distance. However, as long as there is an Internet connection, it is possible to send Bitcoin to any place in the world in a very short time. Transactions can be made without complying with the restrictions imposed by the states (Karasavvas, 2016).

In addition to Bitcoin and blockchain; The Holocaine formation which claims to be independent of the problems in the block chain and to be able to go beyond the revolution made by Bitcoin and which creates a block less system with a completely different technology, seems also to be worth examining. We can see the features of the blockchain architecture in below table.

Table 2: Features of the blockchain architecture

| | |
|-------------------|---|
| Errorless Phrases | The clusters are independent; They are close to a single record sequence and integrity that is ultimately correct without affecting situations like data disruption, poor quality and unreliable connectivity, anonymity of phrase operators despite temporary errors. |
| The Right Answer | A phrase with any reliable connection responds correctly to whether this record is in the database with a high sufficient certainty when any record is asked. |
| Verification | Any block can verify if a new record, which is requested by other blocks, exists in the system or not and can take steps to validate it at a certain time cost. This is a very important feature for Bitcoin as it means that any user cannot spend the same money twice. |
| Irreversibility | Retrospectively at any point, the cost of being able to override some of the blocks that have been considered correct so far is too high and economically extremely difficult to achieve. (This can be done directly by starting a mining transaction again in Bitcoin as a competitor and by calculating clusters until calculations are obtained until valid results are obtained). |
| Misfit | Phrases can never save overlapping records as a whole, which means that at most one of the two overlapping candidate records may be valid at a later time. |

Source: www.Bitcoin.org, wikipedia.org ve <https://steemit.com/tr/@bitacer/blokchain>

BITCOIN

The first cryptocurrency is Bitcoin. Today, a lot of cryptocurrencies are used and these coins are often referred to as “alternative in cipher coins”. In order to clarify the operation of the cryptocurrency systems, it is necessary to focus on the functioning of the Bitcoin system.

Blockchain can be explained as an instant, unchangeable and secure system. The block chain is specified as an electronic ledger where all Bitcoin transactions are kept. This system is based on distributed ledger technology and everyone in the system keeps all transactions. New Bitcoins are produced by the users of the free Bitcoin miner application, which is called mining, by operating certain algorithms in the Bitcoin network. Anyone with the necessary equipment can make mining. Offered by the mining software, the problems, which are too complex and difficult to solve, are been worked on and whoever finds the solution first is rewarded with a certain amount of Bitcoin. The Bitcoin ecosystem is shown in the figure below.

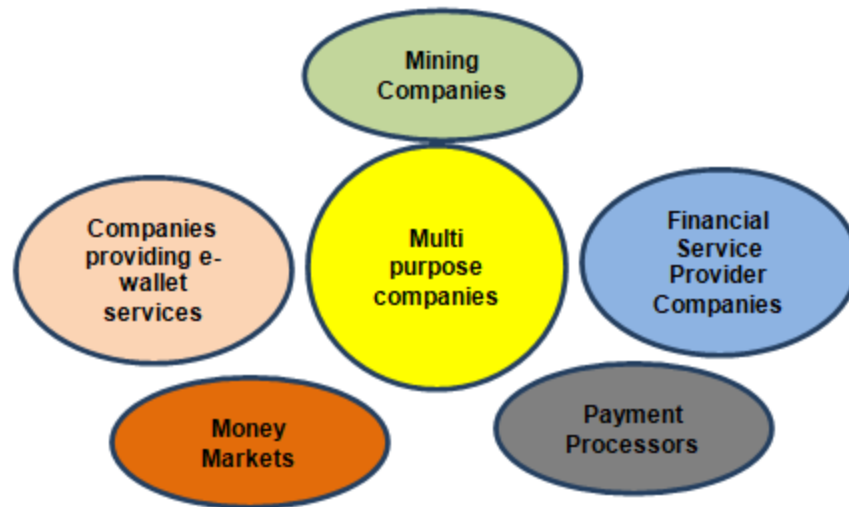


Figure 2: Bitcoin Ecosystem

Source: Kessler, G. C. 2014. An Overview of Cryptography, <http://www.garykessler.net/library/crypto.html>

System of Bitcoin Mechanism

The Bitcoin system consists of open source software. The software mentioned works on a wide variety of processors such as laptop, mobile phone and enables the person to have owned a "Bitcoin wallet" when they are installed. Bitcoin transactions take place between Bitcoin wallet addresses. Transaction means transfer of Bitcoin from one Bitcoin address to another Bitcoin address. Bitcoin wallet addresses are similar to IBAN numbers in the banking system. Performed Bitcoin transactions are kept in digital and global ledgers called "block-chain". Blockchain is a simple database. These transactions into the block-chain are made by "Bitcoin miners". Bitcoin mining consists of tasks such as introducing new Bitcoins into the system, approving transactions, and saving them in the block-chain. Anyone can be a Bitcoin miner. However, the high cost of mining machines and the high consumption of electricity are giving the place of individual mining to "mining pools" which are gradually created by integrating mining machines into pools. Bitcoin supply is expected to end in 2140. Because Bitcoin system is designed to be able to produce 21,000,000 Bitcoins. As of May 11, 2020, the number of Bitcoin circulation is 18,375,000. Until 2140, it is predicted that miners will supply 4,753,800 Bitcoins.

As mentioned before, as the Bitcoin system consists of open source software, it forms the basis of the cryptocurrencies developed later. Therefore, cryptocurrencies developed by Bitcoin technologies are called "alternative coin". Cryptocurrencies provide time and cost savings to the parties and a safer environment compared to traditional methods in money transfers between parties. Cryptocurrencies like Bitcoin disable traditional intermediaries such

as banks in money transfers, makes possible to transfer money directly between the parties. The features that distinguish Bitcoin from traditional currencies,

- I. It is completely digital; it does not have a physical presence, so it is virtually transacted.
- II. Bitcoin does not depend on a central authority.
- III. As 21 million Bitcoins can be issued, the number is certain and limited.
- IV. The receiver and transmitter sides may be confidential.
- V. Usage areas are limited due to reasons such as insufficient technological infrastructure, insufficient security, and being not at the desired level of access to the internet still.
- VI. It is not guaranteed by law.

The functions of money can be listed as being a medium of exchange, store of value and a unit of account. In some sources, the payment of deferred debts is also considered among these functions (Boyes, Melvin, 2013). Cryptocurrencies are considered as a type of currency since they have similar features with money in terms of their functions of being a medium of exchange and store of value. As seen in Figure 4 prepared within the framework of the European Union Central Bank's categorization for virtual currencies, it can be mentioned that cryptocurrencies are virtual currencies with two-way flows and therefore there is no difference from other convertible currencies. The values of cryptocurrencies are determined during shopping due to the lack of fixed equivalents. Cryptocurrencies are kept in the so-called virtual wallet in technological instruments such as computers, cloud environments, smart phones, which occupy a large place in the daily life of individuals with today's technology. Cryptocurrencies;

- It can be purchased and exchanged by other assets, items or services, as well as other currencies or cryptocurrencies
- Can be a commitment or collateral instrument
- Can be produced virtually (suitable for the production called mining)

Weak and Strong Aspects of Bitcoin

Strengths;

- Bitcoin is the best payment mechanism the world has ever seen in many ways.
- It is independent as it is decentralized and does not depend on any state or central bank,
 - It is not affected by manipulation or inflation,
- There is no central bank that adjusts the value of Bitcoin against inflation,
- It does not need any intermediary institution since it directly transfers the money to the account of the person or institution,

- The transaction cost is either absent or almost nonexistent since it eliminates financial intermediaries such as banks,
- It saves time with fast and direct transfer system,
- Accounts are completely confidential,
- It has the opportunity to trade freely, without being under the rules written or set by third parties and / or institutions,
- Since it is based on a special encryption method, this method is considered to be secure compared to its peers even though theft has occurred,
- Having a total supply limit of 21 million reduces the risk of inflation,
- Due to the rapid increase in value, apart from those who buy and sell, they can create their curious audience.

Weaknesses;

- It is not a physical subject but just a software or code,
- The absence of an institution or authority to audit brings inadequate control and the risks that may arise from this,
- It is not possible to show the functions of money, since the amount of Bitcoin supplied cannot exceed 21 million,
- When the Bitcoin supply is subject to credit after completion; since there is no new Bitcoin to pay interest, it is not possible to be a loan agent,
- The “mining” system, which increased the supply of Bitcoin and provided money integrity, led to an unsustainable arms race,
- The use of "distributed ledger system” cryptocurrencies, which means that the transaction records are kept in all units on the network, becomes difficult,
- Daily volatility in Bitcoin price cannot give a complete idea of the real value of money.
- It carries serious price risk for its investors,
- Bitcoin in the digital form is vulnerable to sudden losses,
- It is open to robberies in virtual wallets and attacks of hackers.
- It is also open to risks arising from operational errors or abuse of malicious sellers due to the irreversible actions carried out,
- Although the system is defined as safer than its counterparts, it is not as safe and anonymous as it seems,
- The feature of anonymous facilitates uncontrolled and unlimited transactions, especially on illegal sites such as tax evaders, arms traders, gambling, and drugs.

CRYPTOCURRENCY ACCOUNTING PRACTICES ACCORDING TO INTERNATIONAL ACCOUNTING AND FINANCIAL REPORTING STANDARDS

Scientific studies on cryptocurrencies are increasing in today's world. In terms of accounting science and discipline, it has been necessary to answer various questions such as;

- How should cryptocurrencies be recognized for in terms of operating assets or liabilities?
- How should profit / loss arising from transactions using cryptocurrencies be recognized?
- Legal regulations in countries for cryptocurrencies are in infancy.

Legal and official regulations explaining the status of crypto money transactions in terms of accounting are still not available in many countries. However, countries present their opinions on cryptocurrencies through their legal institutions and try to help people who expect to need their minor legal regulations. It is observed that states are slow regarding necessary regulations in the face of cryptocurrencies that have come to life so rapidly. It was mentioned that cryptocurrencies are kept in cryptography-based databases called block chains. Cryptography is defined as the transmission of the data by changing so that only the relevant recipient can read it from the accounting perspective; blockchain can be called as a kind of digital notebook. In terms of accounting, blockchain records can be called tripartite records as an alternative to double-sided recording, which is a traditional recording system. Because these transactions are registered in the block chain network in addition to the buyer and seller books. Thus, control of the document is also possible (<https://www.forbes.com/sites/forbes-finance-council>)

One of the most important questions to the accounting of cryptocurrencies is to determine the cryptocurrency value. This can be explained by the accounting of the crypto money based on the day it was received and recorded according to the difference when it spends or sells. In other words, the recognition of cryptocurrencies with their real values seems the most reasonable method. In order to be calculated the real value of Bitcoin, it must meet the financial asset criteria. However, Bitcoin cannot be considered as a financial asset for the reasons such as being illegal, not having foreign currency equivalence and not providing a contractual, cash and cash-like right and obligation. A report in Morgan Stanley studies mentioned that Bitcoin's value may be zero (Faucette, 2017). Faucette also answered questions from the following in his work;

- Is Bitcoin currency? Because the matter of interest rate cannot be in Bitcoin, it is not correct to consider it as a currency.
- Is Bitcoin like digital gold? Digital gold, gold and other precious mines are an electronic gold unit with a physical equivalent. Bitcoin looks like a bit of digital gold, but gold considering that the gold is used physically in different sectors, this differs from the digital gold.

- Is Bitcoin payment network? There is no transaction fee in Bitcoin and it is difficult to scale. Therefore, the limits of the network, fees for the network, etc. are known and cannot be accepted as a payment network.

Although cryptocurrencies like Bitcoin are original instruments of payments, they can be used for different purposes today. Therefore, the increase in money is considered as gain at the time of sale. The 5 options considered in the literature for the recognition of cryptocurrencies are as the following.

As cash and cash equivalents

As the inventories

As a financial instrument

As a fixed asset held for sale

As an intangible asset

It is important to recognition of cryptocurrencies within the framework of accounting principles and standards. Cryptocurrencies should be handled and recognized under International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS). In this context, the accounting options listed above should be evaluated together with the provisions of the relevant IAS and / or IFRS. These options are discussed below with the titles.

Cash and Cash Equivalents

The first of these options is to recognize cryptocurrencies as cash and a similar payment instrument. Nakamoto emphasizes that Bitcoin is an instrument of payment. As an instrument of payment, cryptocurrencies can be recognized in the same way as other instruments of payments used in accounting such as cash, checks and credit cards. The difference that can occur in the sale of Bitcoin in the auxiliary accounts in the form of Bitcoin deposit under the cash account in the currency equivalent of Bitcoin can be recognized as the foreign exchange profit or loss and, if any, as the commission expense of the commission. It is said that the exchange rate at which it was bought can be used for the valuation. However, the lack of a central authority prevents it from being evaluated as cash. Although Bitcoin has one of the conditions of being a currency because of the function of means of exchange, it does not meet the conditions of being a unit of accounted store of value (Yearmack 2015). Although there are opinions that cryptocurrencies are a kind of electronic money, Bitcoin and other cryptocurrencies cannot be seen as the electronic money. Because electronic money is a kind of reflection of official money in electronic media. Therefore, central authorities can control them since they have connections

with real-life money. Bitcoin has five different features such as decentralized, non-inflationary, anonymous, transparent and irreversible (Rotman, 2014).

Considering the IAS-7 Cash Flow Statement standard, cryptocurrencies cannot fully meet the definition of cash and cash equivalents made under the standard. The term "risk of change in the value of insignificant investment" in the definition made in the definition of cash-like in the standard removes the cryptocurrencies from its cash-like definition due to the excessive fluctuation in cryptocurrencies that are used mostly for investment purposes. On the other hand, it was stated that the standard should not be held for investment purposes. This again shows that cryptocurrencies cannot be cash-like. The problem here is that it is made as "business cash", which is a very superficial expression in defining the concept of cash in the standard. Because the need to express the concept of cash in more detail with the crypto coins has emerged. In this respect, it will not be correct to recognize cryptocurrencies as cash and cash equivalents.

Inventories

One of the accounting options of cryptocurrencies is to be recognized as an inventory. In this case, IAS-2 Stocks standard should be checked. In the definition of stock in the standard, three expressions are mentioned in the form of assets held for sale, assets produced for sale and the first substance and materials to be used in the production process or service delivery. The second one of these statements is that the expression produced for sale is that the cryptocurrencies cannot be the first item material of any product or service, considering that the cryptocurrencies cannot be the first item material of any product or service since some of the cryptocurrencies cannot be produced and some can be produced in a limited number. It is very insufficient to define it as stock. From these three statements, the statement most used for sale within the framework of the ordinary activities of the business is close to cryptocurrencies. However, this definition cannot exactly explain cryptocurrencies, either. Because today it is seen that most of the businesses that use cryptocurrencies do not have cryptocurrency trading.

Financial Instrument

In order to determine whether cryptocurrencies can be recognized as the financial instruments, IAS-32 Financial Instruments standard should be examined. In this standard, the financial instrument is defined as any contract that causes an increase in the financial asset of one enterprise and the financial debt of another enterprise or the equity instrument. It does not include cryptocurrencies due to the expression "based on the equity of another enterprise" in the definition of financial instrument concept. Because cryptocurrencies are not under the

contractual right or obligation, they do not change hand as the equity of any business, and after moving from one business to another, their connections with the previous business are completely broken. There are studies in the literature in which Bitcoin is evaluated within this scope, and for this reason, it will not be correct to recognize cryptocurrencies as the financial instruments due to the reasons listed under the standard.

Fixed Assets Held For Sale

This option is not included in the scope of the standards (IFRS). Because the IFRS-5 Assets Held for Sale Purposes and Discontinued Operations standard and used for the production or presentation of goods or services in the IAS-16 Property, Plant and Equipment standard are used for more than one period. Cryptocurrencies are not included in the definition of fixed assets, which are defined as physical items, because they do not have a physical asset. Therefore, cryptocurrencies cannot be recognized as the fixed assets held for sale.

Tangible Assets

The final option in the recognition of cryptocurrencies is to recognize as an intangible asset. From this point, whether it can be recognized or not can be decided by looking at the Non-Fixed Assets standard in IAS 38. The definitions mentioned in this standard are compatible with cryptocurrencies. The entity in the standard has been indicated as a resource that is under the control and expected to be beneficial for business as the result of past events. The monetary asset in the standard has been identified as an asset to be gained in terms of fixed or determinable monetary amounts. The most important definition concept of intangible assets in terms of the subject of this study is the non-monetary assets that can be defined without physical quality. Because individuals or institutions that hold cryptocurrencies have full control over cryptocurrencies, they can be considered as an asset. This situation indicates that the first statement in the definition of assets in the intangible asset standard also includes cryptocurrencies. The second statement in the definition, which is expected to provide benefits in the future, is also valid for cryptocurrencies. Persons or institutions holding cryptocurrencies can obtain benefits in the future by converting cryptocurrencies into cash or using them to buy goods or services. This benefit is independent of the value of crypto money. It can be mentioned that cryptocurrencies also meet the determinability criterion since they comply with this standard. In the context of these statements, the most suitable option for the accounting of cryptocurrencies in terms of accounting options is to be recognized as the intangible assets.

In accounting for intangible assets in the standard, it is mentioned to use the cost value. When Crypto coins are recognized as intangible assets, as mentioned in the standard, it will be

correct to take as the cost value basis for the value calculation. Although the exact value becomes certain during the trading, it is possible to determine the real value of the crypto money within a certain period time due to the presence of active markets in which crypto transactions are realized in terms of end-of-period reporting. Therefore, the cryptocurrencies obtained in year-end reports should be re-evaluated within the framework of market data and any increase or decrease due to revaluation is recognized in other comprehensive income by IAS 38 and is accumulated in the excess or missing equity.

The standard also mentions the amortization of intangible assets unless they have an infinite life. Cryptocurrencies will not be amortized within the framework of the standard since a specified life cycle cannot be mentioned. In this context, when making the recognition, it must be recognized at cost value and by being subjected to revaluation at the end of the period, the increase or decrease in the value that may occur due to re-evaluation should also be recognized in other comprehensive income. Cryptocurrencies should not be amortized as they lack “useful life”.

CONCLUSIONS

Cryptocurrencies are cryptographic-based digital currencies traded on the network called block chains. The first and most popular of these coins is Bitcoin. The use of crypto money is rapidly spreading in financial and commercial life. In this framework, legal regulations are essential. However, since countries are approaching cryptocurrencies at a distance, there is a lack of legal regulations. After Bitcoin started to be traded in the markets in 2010, many different cryptocurrencies took their place in these markets. The number of these markets, which attract investors who are looking for different investment alternatives, is increasing day by day, and the cryptocurrencies traded increase in parallel. In addition, the trading volumes and market values of cryptocurrencies continue to increase very rapidly.

In addition, the underlying advanced technology and creative business idea signals that it has the power to deeply affect and change the world economic system in the future. Cryptocurrencies, which were put up for sale in different exchanges after Bitcoin, started to be used in financing new business ideas, and previously untested financing techniques began to emerge. On the other hand; independent of central banks, behind a state or cryptocurrencies for cryptocurrencies still exist, in which there is no community of states, no supervisory and regulatory agencies, high price volatility, serious criticisms of black money laundering, and theft can easily be made from digital accounts in an attack by hackers.

Accounting of cryptocurrencies, tax size and position for auditing are among the primary issues for cryptocurrencies in the field of accounting. In this context, the first question to be

answered is what the cryptocurrency is in terms of accounting. For the answer to this question, it is necessary to look at the accounting standards together with the statements of the official institutions of the countries. As a result of the evaluations made in this context, it has been concluded that it is the most appropriate method to treat and account for crypto money as an intangible asset. It was concluded that the crypto money held should be revalued at the end of the period and the differences arising from the increases or decreases should be subject to tax. In addition, it is emphasized that the control of the crypto money held by the companies and the transactions made with these money is important and the necessity of the studies for this is emphasized. Although the accounting method as an intangible asset is considered the most suitable method in the current situation, it is inevitable to create a new account class / group for cryptocurrencies within the framework of developments. In this framework, IASB should make arrangements regarding cryptocurrencies on the basis of relevant standards in both IFRS and IAS and it will be useful to discuss the issue in more detail in the future studies within the framework of the legal regulations and current developments of the countries.

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