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A CASE EXAMPLE FOR ACCOUNTING TRANSACTIONS OF CRYPTOCURRENCIES IN TÜRKİYE

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ABSTRACT

This study examines the accounting treatment of cryptocurrencies through a comprehensive case study approach, focusing on Bitcoin's distinctive characteristics compared to traditional monetary systems. This study; explores fundamental differences between centralized, decentralized, and distributed network structures, emphasizing how cryptocurrencies operate without central authority through blockchain technology and peer-to-peer mechanisms.

The study investigates various Bitcoin acquisition methods including exchange purchases, altcoin trading, and mining processes, analyzing their respective accounting implications. Through detailed examination of cryptocurrency accounting practices, the research addresses four primary treatment methods: marketable securities accounting, cash equivalents treatment, foreign currency accounting, and mining-specific procedures. The study demonstrates that under Turkish accounting standards, cryptocurrencies should be treated as foreign currency, recorded in auxiliary Bitcoin accounts under the 100 Cash classification. Key findings reveal practical implementation through comprehensive examples showing Bitcoin transactions recorded with foreign exchange profit/loss recognition using accounts 646/656, commodity trading entries through account 153, and mining-related accounting procedures. The research shows how central banks' non-recognition of cryptocurrencies as foreign currency leads to alternative treatments as precious metals, liquid assets, or trade goods, with detailed journal entries for each approach including domestic sales transactions and cost recordings. The study contributes significantly to cryptocurrency accounting literature by providing concrete guidance for practitioners dealing with digital asset recognition, measurement, and reporting challenges in contemporary financial systems, offering multiple accounting frameworks for different regulatory environments.

KEYWORDS: *Cryptocurrency Accounting, Bitcoin Valuation, Blockchain Technology, Foreign Currency Treatment, Digital Assets.*

1. INTRODUCTİON

The concept of money is actually one of the most important inventions that has had a positive impact on the quality and standards of life of people throughout history. It has facilitated fast trade and the determination of value. Money has not only been a medium of exchange, but also a standard of value. In addition to all these, it has also been counted as a reserve and storage tool in the loans managed by banks. Once again, the use of money has accelerated trade and the international market structure, reducing factors such as labor and time. Undoubtedly, the most important feature of money is that it clarifies the concept of value and enables price comparison. For money to have value as money, it must be divisible, portable and accepted by everyone. At the same time, money should be limited in number, not infinite (Clayton, 2001). This application example; the use of this asset, which is valid as a currency today, also requires accounting. Therefore, it is aimed to make it understandable with sample applications how to account according to the uniform chart of accounts.

Bitcoin is a cryptocurrency that was launched in 2008 by a person or a group of people who came up with the name Satoshi Nakamoto. Its first striking feature compared to paper money and banknotes is that it is a decentralized currency that can be transferred directly from one user to another user without any central banks or a single administrator, again without using any intermediary. El Salvador has chosen Bitcoin as its official currency, approved by its Senate in 2021.

Bitcoin pioneers or bitcoin pioneers also have articles they have actually cited. Nick Szabo Bitgold, David Chaum Digicash, Wei Dai-Cash are actually the least developed and the first versions blocked by governments. The first article about the Satoshi Nakamoto Bitcoin network was written in 2009. There is still debate about whether the name Satoshi Nakamoto is the name of a person or a group. There is a limit to the supply of Bitcoin, with genesis capped at 21 million in a block.

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2. CRYPTOCURRENCY AND BLOCKCHAIN

Cryptocurrency, derived from the words cypto and currency, means encrypted money. Cryptocurrency is virtual money that has been around since 2009. It is a form of digital money that has a mathematical algorithm, has no specific center, the sender cannot be determined, and a kind of digital signature and key are needed for its distribution. Cryptocurrency security is also protected by mathematical passwords (Kaplanhan,2018).

The first article written by the person or group named Satoshi Nakamoto in 2008 stated that global crisis environments lead to financial instability by reducing trust in governments and central banks. The first article published by the person or group named Satoshi Nakamoto was titled "Bitcoin: A Peer-to-Peer Electronic Cash System.''

2.1 Blockchain

Blockchain is a recording technology that distributes data and stores it on a network without the need for an authority or a center. The records are an ever-growing distributed database with nodes in an encrypted form. The Blockchain is a ledger. Records made in this ledger cannot be deleted or changed. Because it is distributed, each block of data is approved and recorded by everyone involved in the chain. It is a ledger that allows transactions to be recorded and tracked. This ledger can track anything of material value. In fact, the contents of this ledger can, in a sense, become the subject of trade. This method reduces commercial risks (Gupta, 2017).

The concept of blockchain actually predates the concept of cryptocurrency. In 1990, there is actually a very old development area.

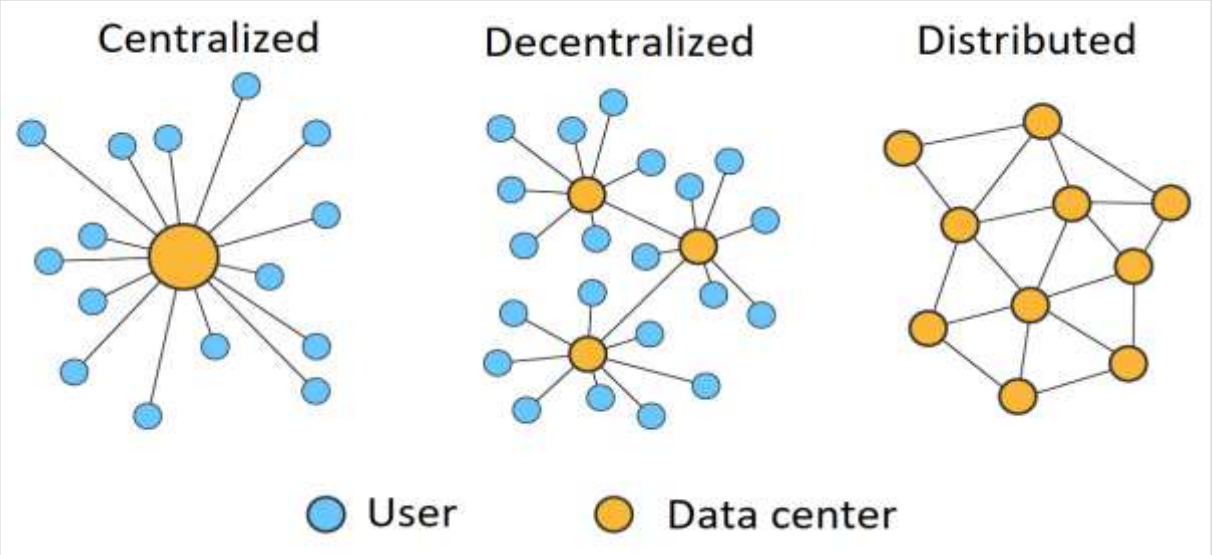


Figure 1. Blockchain and Cryptocurrency Network Topologies

2.2. Types of Cryptocurrency

Bitcoin (₿, BTC) is a cryptocurrency that is not issued by an institution or organization (Sönmez, 2014). It is the digital form of currencies that form the basis of data mining. It is a virtual currency first issued in the 7th month of 2009. It is a virtual currency that is not accepted by a central authority (Decentralized), is based on a peer-to-peer data sharing network (peer-to-peer), has a public account keeping feature (Public Lenger), and is produced and operated using cryptography methods (Gül, 2020).

2.2.1. Decentralized

Bitcoin is not a currency controlled by an authority. Since it is not controlled by any country or any central bank, it is in a sense independent of monetary and fiscal policies. Its supply is known by the public and produced collectively (Gültekin 2017).
At the same time, the amount of supply of cryptocurrencies and the amount of supply so far are transparently shared with the public.

2.2.2. Peer To Peer (Peer to Peer data sharing)

It is a system that allows data to be shared without the need for a main server. In fact, it allows independent computers on a network to share data. In this way, different money transfers can be made between peers. No separate server is needed for this. This transaction is a collective transaction and cannot be audited.

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2.2.3. Public Ledger

With an infrastructure called blockchain, technologically synchronized data is stored on the network. The block chain is a system that ensures that the records of transactions within the bitcoin network are kept instantaneously, at the same time, these records are distributed to every point of the system, and that there are records at the same time at every point.

Records are kept in a system called a public ledger. The term "open ledger" actually refers to making it publicly accessible. The key point here is that all transactions made on the Bitcoin network are visible, but the identities of those conducting the transactions remain hidden.

2.2.4. Cryptographic system

All processes such as the production, transfer, and storage of cryptocurrencies can be performed using cryptographic systems. Cryptography is actually a method used to prevent information from being known by unwanted people.

It is a system that helps to ensure confidentiality, integrity, authentication, non-repudiation, non-repudiation and at the same time to make information reliable with the cryptographic method (Tok, 2011).

3. METHODS OF OBTAINING BITCOIN

Bitcoin is the purchase of Bitcoin in exchange for a currency in circulation, which is initially accepted by brokerage firms through barter transactions. Again, cryptocurrencies can be traded within themselves. In a crypto market, one can buy bitcoins with altcoins and buy another altcoin with altcoins.

Another method is the bitcoin mining method called BTC mining. Bitcoin mining is the process of approving the financial structure on the network, realizing the transfer, keeping the ledger, and is quite complex. In this system, new block chains are added to block chains. The production of bitcoin with btc mining ensures that the system is secure and synchronized.

Table 1. Comparison of Traditional Money and Cryptocurrency

	Traditional Money	Cryptocurrency
Control	Governments and central banks	No central authority
Production	State institutions	Computer software
Structure	Coins and paper money	Computer code
Transfer	It takes a long time	Instantly
Security	Weak in online transactions	Secure online transactions

4. CRYPTOCURRENCY ACCOUNTİNG

In accordance with the conceptual framework, it is responsible for providing complete and unbiased information to users in cryptocurrencies as in every transaction. The fact that there is still no legal regulation on bitcoins and altcoins has led to uncertainties about how bitcoins will be accounted for. The fact that virtual currencies differ from other assets is the biggest factor in this. The lack of a clear statement on cryptocurrencies has left accountants with no solution but to adapt to existing standards (Harrison & Mano, 2015).

In the literature, four different methods are used in the accounting records of Bitcoin and altcoins. The first one is the method of valuing them as Marketable securities. The second is the method of valuing it as cash and cash equivalents. The third is the method of valuation as a commodity. The fourth is the method considered as mining.

4.1 Tracking Cryptocurrencies in the Marketable Securities Account Group

The first method used in the accounting records of cryptocurrencies is to monitor the assets in the Marketable securities group. Marketable Securities group is the accounts where assets such as stocks, treasury bills, government bonds, financing bonds, profit and loss sharing certificates are monitored. Marketable Securities are not money. Marketable Securities can be represented by money. Marketable Securities are valuable documents that give the right to ownership and receivables.

Marketable Securities consist of 3 parts in the Turkish Commercial Code. The first one is share certificates, the second one is usufruct certificates, and the third one consists of Marketable securities that include the right to purchase and exchange debt securities. A Marketable security is seen as a share certificate that grants the right of partnership and a usufruct certificate that grants the right to receive. It is actually quite difficult to think of cryptocurrencies as securities in this sense... However, if cryptocurrencies are brought together and based on an asset, the assets can turn into Marketable securities (Yalçın, 2019: 108).

The purchase or sale of cryptocurrencies is recorded in the "118 Other Marketable Securities" account at the purchase price. If the difference between the purchase and sale is a positive difference, it is followed in the "645 Marketable Securities Sales Profit"

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account. If the difference between the purchase and sale is a negative difference, it is followed in the "655 Marketable Securities Sales Losses" account.

4.2. Examples Of Cryptocurrency Accounting Applications According to The Uniform Chart of Accounts

Example 4.2.1. Orbay A.Ş. purchased 4 BTC in order to benefit from the price effect due to speculation. At the time of purchase, 1 BTC is 450.000,00 TL. 4 BTC was sold when its value was 580.000,00.

118 OTHER MARKETABLE SECURITIES 118.01 Bitcoin 102 BANKS Buying Bitcoin	1.800.000,00	1.800.000,00

100.CASH 100.01 TL Cash 118 OTHER SECURITIES 118.01. Bitcoin 645MARKETABLE SECURITIES SALES PROFITS Profitable sale of Bitcoin	2.320.000,00	 1.800.000,00 520.000,00

4.2.1. Valuation of Cryptocurrencies as Money

Money is a medium of exchange. In addition to being a medium of exchange, money is also a store of value and a unit of account. Effective money is anything that enables payment in foreign currency. In order to be effective money and foreign currency, it must actually be tied to a country. Cryptocurrency, on the other hand, is not tied to a country. Therefore, it is not very possible to count it as money in terms of Turkish legislation. But despite all this, cryptocurrencies have the characteristics of exchange, store of value and unit of account.

Since Bitcoin is also used as a means of payment, it is considered to be cash for accounting purposes (Ateş, 2016).
In this sense, Bitcoin should be considered as foreign currency and should be recorded in an auxiliary account (bitcoin account) under the 100 Cash account, as with other currencies.

In the purchase transaction of cryptocurrency, it is recorded in the "100 Cash" account at the purchase rate. If the sale transaction of the crypto currency will occur at the end of the period, if it is positive, it will be recorded in "646 Foreign Exchange Profits".

If it is negative, it is monitored in the "656 Foreign Exchange Losses" account (Ateş, 2016).
If the central banks do not recognize cryptocurrencies as foreign currency, if they are accepted as precious and valuable metals, they are monitored in the "108 Liquid Assets" account. There are those who think that cryptocurrencies should be monitored in "104 Cryptocurrencies account" or "108.01 Cryptocurrencies" accounts (Dizkırıcı and Gökgöz, 2018).

Example 4.2.1.1. Orbay A.Ş. purchased 5 BTC through Gedik Yatırım on 27.07.2021. Orbay A.Ş. converted 2 BTC into Turkish Lira on 29.09.2021. Orbay A.Ş. made a valuation for the remaining 3 BTC at the end of the period. On 27.07.2021, the value of 1 BTC is 333,655.00 TL. On 20.09.2021, the value of 1 BTC is 371.801,00 TL. On 31.12.2021, the value of 1 BTC is 662,000.00 TL.

100 CAH 100.02 Bitcoin Cash 102 BANKS Purchase of 5 BTC	1.668.235,00	 1.668.235,00

100 CASH 100.02 TL Cash 100 Cash 100.02 Bitcoin Cash 646 FOREIGN EXCHANGE PROFIT 2 BTC (371.801,00-333.665,00)	743.602	 667.310 76.292

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100 CASH 100.01 TL Cash	985.035,00	
646 FOREIGN EXCHANGE PROFIT End of period 3 BTC*(662.000,00-333.655,00)		985.035,00

4.2.2. Evaluation of Cryptocurrencies as Commodities

All goods that are subject to trade, such as gold, silver, oil, natural gas, copper, corn, cotton, wheat, coffee, sugar, and cocoa, are referred to as commodities. The markets where these goods are bought and sold are called commodity exchanges. There are 133 commodity exchanges affiliated to the Union of Chambers and Commodity Exchanges in Türkiye (www.qnbfi.com; a.d.:06.05.2025).

The purchase and sale of virtual currencies by real persons and their evaluation as commodities is considered as commercial gain. Accounting of cryptocurrency transactions considered as commodities, purchases are tracked in the "153 Trade Goods" account at cost. Earnings from sales are recognized as main operating income and monitored in the "600 Domestic Sales/601 Export Sales" account. The cost record is followed in the " Cost of Merchandise Sold" account (Doğan, 2018).

Example 4.2.2.1. Orbay A.Ş. sells the commercial goods purchased for 72.000 TL to Arya Ltd. Şti. on 21.07.2021 for 93.000 TL excluding VAT. Arya Ltd. Şti makes the payment via BTC. VAT is neglected.

100 CASH 100.05 Bitcoin Cash 600 DOMESTIC SALES Sale of goods with Bitcoin	93.000,00	 93.000,00

621 COST OF TRADE GOODS SOLD 153 TRADE GOODS Cost record	93.000,00	 93.000,00

4.2.3. Obtaining Cryptocurrency by Mining

With the use of technology and equipped computers, cryptocurrencies can be produced by miners running software programs. The protection of the distributed network and the development of the distributed network are provided by certain services. With these services, miners can earn certain amounts of cryptocurrency.

The earnings obtained as a result of mining are paid in bitcoin money. In accounting, bitcoin money must be converted into national currency. Bitcoin is valued at the stock exchange price on the date it changes hands.

Example 4.2.3.1.: Mr. Orbay is engaged in bitcoin mining. He buys the equipment he needs for this purpose, such as a computer and monitor, by paying 30.000,00 TL. Mr. Orbay also incurs expenses such as electricity and internet costs of 10.000,00 TL while mining bitcoins. He obtains 1 BTC as a result of mining. He sells the 1 BTC he obtains at 470.000,00 TL. VAT is neglected.

710 DIRECT RAW MATERIALS AND SUPPLIES EXPENSES	30.000,00	
730 GENERAL PRODUCTION EXPENSES ACCOUNTS	10.000,00	
100 CASH Cost Accounting		40.000,00

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157 OTHER INVENTORIES	40.000,00	
711 REFLECTION ACCOUNT FOR DIRECT RAW MATERIALS AND SUPPLIES		30.000,00
731 REFLECTION ACCOUNT FOR GENERAL PRODUCTION EXPENSES		10.000,00
Transferring costs to inventories		

102 BANKS		
600 DOMESTIC SALES	470.000,00	
Sales record		470.000,00

623 COST OF OTHER SALES	470.000,00	
57 OTHER INVENTORIES		470.000,00
Sales record		

5. CONCLUSION

Interest in cryptocurrencies is increasing day by day. Looking at Bitcoin transaction volumes, it is seen that there is an increase in every passing time period. It is becoming more important for both investment and payment purposes. Despite all this, there are no legal regulations regarding cryptocurrencies both globally and in Türkiye. A legal regulation on cryptocurrencies becomes important in order to prevent misconduct in terms of accounting and to prevent investors from being negatively affected. States do not ban cryptocurrencies, nor can it be said that they support the use of cryptocurrencies. Due to the fact that states do not recognize cryptocurrencies, it may lead to the emergence of illegal situations. This is why it paves the way for bribery and tax evasion.

The biggest source of income for states is undoubtedly taxes. It is inevitable for states to make tax regulations, especially regarding cryptocurrency. The inability to define cryptocurrencies conceptually is the biggest obstacle we face.

States have actually put forward different interpretations in explaining cryptocurrencies conceptually. Although some states consider it as a commodity, some states have characterized it as money. Some countries have defined it as a marketable security.

It is believed that 96% of cryptocurrencies are in the hands of large investors. The fact that cryptocurrencies have no central authority, are not issued by state central banks, and are independent of public authorities and decentralized raises questions in the minds of cryptocurrency users. The accumulation of 96 percent in one direction increases speculative movements and stands out as the markets with the highest volatility.

Although cryptocurrencies are not taxed, this does not mean that they cannot be accounted for. In the study, examples of accounting records were examined, even though they are actually related to non-taxation.

In Türkiye, the Central Bank of the Republic of Türkiye and the CMB put cryptocurrencies on the agenda in December 2021. Studies are being carried out on issues such as legal regulations on domestic cryptocurrencies, the release and form of domestic cryptocurrencies, and the taxation of cryptocurrencies. With the implementation of regulations, it will be possible to ensure taxation and prevent illegal activities through improved monitoring and supervision.

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