

CRYPTOCURRENCY AND THE FUNCTIONS OF MONEY

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Kripto Para ve Paranın Fonksiyonları



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ABSTRACT

It goes without saying that cryptocurrency is a technologically advanced type of electronic currency that came into our lives in 2009, but still not up to scratch. When you take into account particularly the last two decades of the course, its place in money markets is subject to critical evaluations, while the awareness of cryptocurrency becomes ubiquitous. One of the main intriguing points to be dug out at this point is the extent to which cryptocurrency meet the functions of money.

In the study, how extent the cryptocurrency types meet the functions of money is sought to dig out. Besides, the operability of the functions of money in the cryptocurrency is pinpointed with a multifaceted evaluation. Cryptocurrency and blockchain technology, which are clearly summarized with the aforementioned approach, are considered within the scope of today's usage areas. Within the scope of study, which also includes the advantages of cryptocurrency and blockchain technology, the possible usage areas and possible developments of cryptocurrencies in the following period are also highlighted, and their relationship with the functions of money is established.

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ÖZ

Kripto paralar 2009 yılında hayatımıza giren elektronik paranın teknolojik olarak gelişmiş bir türü durumundadırlar. Özellikle son yirmi yıllık süreç dikkate alındığında kripto paraların bilinirliği artarken para piyasaları içindeki yeri de değerlendirmelere konu olmaktadır. Bu noktada sorgulanan temel noktalardan biri kripto paraların, paranın fonksiyonlarını ne ölçüde karşıladığıdır.

Bu çalışmanın amacı kripto para türlerinin paranın fonksiyonlarını yerine getirme durumunu analiz etmek ve kripto paralarda paranın fonksiyonlarının işlerliliğini çok yönlü bir değerlendirme ile ele almaktır. Söz konusu yaklaşım ile net bir şekilde özetlenen kripto para ve blokzincir teknolojisi günümüzdeki kullanım alanları kapsamında değerlendirilmektedir. Kripto para ve blokzincir teknolojisinin sunduğu avantajlara da yer verilen çalışmada kripto paraların izleyen dönem muhtemel kullanım alanları ile olası gelişmelere de dikkat çekilirken, bunların paranın fonksiyonları ile olan ilişkisi kurulmaktadır.

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1. Introduction

The invention of money, which is one of the greatest breakthroughs in human history, dates back to ancient times of history, while its evolution still continues, and will keep continuing as economies and technological levels flourish. The flourishing of money and money systems continues today in the direction of network-based electronic currencies. In fact, money comes in completely digital form at the point we arrived today which began with cryptocurrencies as Bitcoin in 2008.

Cryptocurrencies emerge as the product of an interdisciplinary collaboration. The system is a combination of economics, computer and cryptography sciences (Alpago, 2018: 420). However, it is a suspicious topic of discussion whether the cryptocurrencies in the field of digital currency will replace the money.

In order for cryptocurrencies to replace money, they must have basic characteristics of money and fulfill functions of money with priority. Money serves three functions as; being a medium of exchange, a unit of account, and a store of value. How well cryptocurrencies can serve those functions relative to existing money and payment systems likely will play a large part in determining cryptocurrencies' future value and importance (Perkins, 2020: 2). From the perspective of the individuals' usage, the working mechanism is similar to the one which is widespread and generally accepted. Even so, it is still unclear whether cryptocurrencies will gain general acceptance. Today, the operability of the functions of money in cryptocurrencies is still not up to scratch, but the subject needs to be analyzed in detail.

In the study, the characteristics and functions of money are explained with priority in getting used to it. Information about cryptocurrencies and blockchain technology are given in detail and issues that makes them different from traditional electronic currency are presented. In the following section, the ability of cryptocurrency to perform the characteristics and functions of money in theoretical and practical terms is examined. For this purpose, following the theoretical evaluation within the scope of current economic approach, the application is detailed with the examples encountered today. In the last part, the operability of the functions of money in cryptocurrencies is evaluated. In this context, possible situations that may be occurred in the process of performing the functions of money with cryptocurrencies are exemplified.

2. Definition and Functions of Money

There are many definitions of money in the literature. Mishkin defines the money as any generally accepted instrument used for payments made for goods and services or for repayment of debts (Mishkin, 2001: 7). If it is moneyless, it states that accepting money in debt payments is a result of its success (Parasız, 1999: 1). Based on the definition of moneyless, what is referred to as the 'success of money' are the characteristics that money should have and the functions it should carry out. Accordingly, the medium with the necessary characteristics and functions is considered money.

Money as a medium must be homogeneous, generally accepted, divisible, easy to carry and durable (Mishkin, 2001: 54). These are also the characteristics of money. However, not every medium with these characteristics is considered money. Because in order for a medium to be money, it must be a means of exchange, it must be an account unit and it must be a value storage tool (Curtis and Irvine, 2017: 18). In some sources, the

function of being an economic policy intermediary is added as a fourth function among these functions (Sekmen, 2017: 16).

The most important reason for the emergence of money is the necessity in the operations of buying as a means of exchange (İçellioğlu and Öztürk, 2018: 55). The fact that money is a medium of exchange means that it is accepted in the daily trade of goods and services. The fact that it is an account unit is the measurement of the values of the goods and services traded in the accepted currency. The provision of the second function is possible with the realization of the first function. In order for both functions to be fulfilled, money must be generally accepted (Evlimoğlu and Gümüş, 2018: 177).

The function of being a value accumulation tool is associated with its ability to maintain the purchasing power of money. By taking advantage of the liquidity provided by the money, the non-expenditure portion of the income is saved for possible future opportunities and risks. The function of money as an instrument of economic policy is based on discussions about the fact that money in mainstream economics is a 'veil' covering economic events (Sekmen, 2017: 17). Contrary to this approach, money is actively used today not only in the purchase of goods and services, but also in the policy practices of central banks (Evlimoğlu, Gümüş, 2018: 178).

2.1. Cryptocurrency

As a requirement of the age, we live in, money and money systems are developing in the direction of electronic money with the influence of financial innovations. There are two types of electronic money as network-based and card-based. The current development of electronic money is largely in the direction of network-based electronic currencies. It is known that digital currency also emerged with the development of network-based electronic money. Digital currency is divided into two groups: 'central' and 'decentralized'. Decentralized digital currency is called 'virtual currency'. Cryptocurrency is a type of virtual currency that is advanced and connected to the real economy.

Cryptocurrency is defined in the report published by the European Central Bank (ECB) in 2019 as a type of digital currency that is completely digital, has no physical presence, and has no representative or responsible. While the report states that cryptocurrencies are based on cryptography, it is emphasized that it cannot perform the functions of money (European Central Bank, 2019: 3). The report prepared by the World Bank (WB) in 2018 indicates that cryptocurrencies are 'money that can be produced without a central bank and transferred without financial institutions' (World Bank Group, 2018: 21). The main points that stand out in the definitions are that cryptocurrencies are not under the control of central banks, exist entirely digitally, do not have a physical presence, are issued by private individuals or groups, and are incapable of performing the functions of the money.

The main feature that distinguishes cryptocurrencies from other types of electronic currencies is its technology. Cryptocurrencies are based on blockchain technology. Blockchain technology is a type of distributed ledger technology and refers to the ledger structure maintained by a large number of networked units. In the blockchain system, transactions are kept in blocks and chains are formed by these connecting these blocks to each other. Blocks created within the framework of certain rules are written into the system. Then the block is added to all distributed registry (Ünal and Uluyol, 2020: 168).

Technically, each transaction to be performed by each cryptocurrency user adds a few hundred bytes to the blocks of the blockchain, which increases the number of transactions, makes it difficult to change, and increases file sizes. However, there is a risk of storage space and system slowdown due to this feature (Doğan, 2020: 864). So much so that every agreement, every process, every task and every payment in this world has a digital record and signature that can be verified, stored and shared (Congressional Research Service, 2020: 7). In other words, no third-party mediation or central authority approval is required for any action to be taken. The lack of authority and intermediary reduces costs and speeds up transactions (Kesebir and Günceler, 2019: 614). Every deal, every process, every task and every payment in the world has a digital record and signature that can be verified, stored and shared (Mohamed, 2017). In other words, there is no need for the mediation of third parties or the approval of the central authority for any transaction to be carried out. The absence of the need for an authority and intermediary reduces costs and speeds up transactions (Kuzuloğlu, 2016). The fact that there is no need for a central intermediary also allows transactions to be made at any time of the day.

Transaction security and reconciliation in the system is carried out by SHA-256 settlement mechanism. In its simplest form, it is the cryptographic functioning that ensures the security of the system's public and decentralized digital recording structure (Halunen, vd., 2018: 2-3). Merkle Tree structure is another technique that is effective in terms of system security. Merkle Tree is a technique that prevents manipulation of the distributed ledger structure of today's crypto money system. This technique is used to confirm whether the transaction content of the units in the distributed structure has been changed (Yücel, 2017). All these features and working structure also constitute the characteristics and working structure of cryptocurrencies (Fleming, 2021). Every transaction made in the cryptocurrency system is given a timestamp, and the timestamps are added to the historical ledger that is reproduced at each stage. Even if this notebook can be accessed by any unit, its content cannot be changed (Bilgi Teknolojileri ve İletişim Kurumu, 2020: 12). In other words, in blockchain technology for any transaction, each participant keeps a copy of all records from the start. Since changing one of these registers will cause the hash function of the previous transaction to change, the units connected to the network realize this (TUBİTAK BİLGEM UEKAE). Therefore, the need for a central database is eliminated. The facilities offered by the system ensure that transactions with cryptocurrency are anonymous, irrevocable and secure.

There are two types of cryptocurrencies that are asset-backed and non-asset backed. Cryptocurrencies that are not backed by assets are the first types of cryptocurrencies. The value of cryptocurrencies that are not backed by assets is volatile due to the lack of a fundamental value on which they are based (European Central Bank, 2019: 3). This has a debilitating effect on cryptocurrency demand. For this reason, it is seen that asset-backed cryptocurrencies are produced. Bitcoin is the first example of non-asset-based cryptocurrencies, which emerged in 2008 by a person or a group named Satoshi Nakamoto and is also the first cryptocurrency. According to the article published by Satoshi Nakamoto the greatest problem in the payment system is the absence of a mechanism, working without the presence of a trusted third party. The suggested solution in the article is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party. The transaction takes place when the third parties, who are in the position of approver, keep track of all transactions and at least 50% of them agree

about the accuracy of the transaction (Nakamoto, 2008: 1-2). This short introduction made by Nakamoto is the basic point of all cryptocurrencies' working mechanism and this is also the working logic of the approval process of all transactions. Although there have been many similar attempts before, the bullet that hit the target was the emergence of Bitcoin in 2008 and Nakamoto's statements. Today some similar versions of this approval mechanism are implemented for other cryptocurrency types but it's certain that the ancestor and the motivator of all other currencies has been the Bitcoin.

The other type of cryptocurrencies - aforementioned - are the asset-based cryptocurrencies which are emerged in the near future after non-asset-based ones. The Financial Stability Board (FSB) defines asset-backed cryptocurrencies as forms linked to one or more assets or sovereign national currencies in order to stabilize traditional cryptocurrencies with high volatility (Financial Stability Board, 2021). Asset-backed cryptocurrencies backed by a national currency are vulnerable to fluctuations in the value of the national currency or macroeconomic effects such as inflation. Gold, another asset on which asset-based cryptocurrencies are based, is a digital representation of a certain amount of gold (Kolodziejczyk and Jarno, 2020: 158). A basket of widely available national currencies, sometimes even commodities, can also be the collateral of asset-based cryptocurrencies (Dell'Erba, 2019: 13). According to the assets contained in the collateral, cryptocurrencies are divided into different types such as in-chain, out-chain, algorithmic and commodity-based (Criptopedia, 2021). Due to the guaranteed structure of asset-based cryptocurrencies, its supply is managed by a center. The center must be reliable. The reserve of the assets as relevant as the cryptocurrency supplied must be kept (Samman and Masanto, 2019: 48). In case of reduced exporter reserves, cryptocurrency supply should be reduced and harmonized with reserves.

As of the date of the study, there are 511 crypto money exchanges around the world that are actively, regularly and reliably traded (Coingecko, 2022). As of the same date, the number of cryptocurrencies bought and sold from these exchanges is over 10.000 and is constantly changing (Coinmarketcap, 2022). All of these cryptocurrencies can be transferred electronically from one user to another, stored in personal computers or digital wallets, and bought and sold electronically. But they cannot be physically used in any way (European Banking Authority, 2014: 12). In other words, cryptocurrencies as a whole are values that exist in digital environment. They do not have a physical asset, such as the electronic form of fiat money. Electronic forms of fiat currencies can be converted into cash through commercial banks at any time. However, cryptocurrencies can be converted into a physical entity only by converting them into fiat currency at the current exchange rate. The physical asset obtained is not the physical form of cryptocurrency, but its equivalent in fiat currency.

2.2. Functions of Money and Cryptocurrency in Theoretical Framework

One of the most discussed issues regarding cryptocurrencies is the security and reliability of blockchain technology. However, another issue that is discussed as much as security and reliability is the extent to which cryptocurrencies perform the functions of traditional money (World Bank Group, 2018: 30).

When the status of cryptocurrencies to fulfill the characteristics of money is evaluated, it is observed that they have its properties such as durability, easy portability and divisibility. The extent to which homogeneity is achieved is controversial. Because although each cryptocurrency is homogeneous in itself, having a large number of different

cryptocurrencies is considered a homogeneous effect. The degree to which a medium is accepted and adopted by the economic units in order to provide the functions of money is of strategic importance (Evlimoğlu and Gümüş, 2018: 181). It is possible to achieve general acceptance by using cryptocurrencies in the trading of goods and services and by expressing prices in cryptocurrency. In this respect, in order for cryptocurrencies to perform the functions of money, there is a requirement that it must be accepted by the general public with priority.

Under the assumption that cryptocurrencies are accepted by society as a whole, then the functions of being a means of exchange and a unit of accounts are functions that can be realized together. In order for these functions to be fulfilled, the value of the money is expected to be stable. It is the demand of people for that currency that determines the value of cryptocurrencies ((İçellioğlu and Öztürk, 2018: 56). In other words, the increasing and falling demand due to speculation makes the value of cryptocurrency volatile. This can be explained by the fact that no seller wants to express and sell their goods in a currency that will fall in value tomorrow, and similarly, no buyer wants to dispose of a money that will be very high in value tomorrow. The value of cryptocurrencies must be stable in order to perform exchange tool and account unit functions. Although technically, cryptocurrency transfer takes place between networks and the function of being a means of exchange is provided, there are economic obstacles. The volatility of cryptocurrencies cannot be prevented due to the fact that they are not under any authority control (Ammous, 2018: 51). In summary, the high value of cryptocurrencies and some types of cryptocurrencies demonstrate high time series volatility, preventing its use in daily payments. In addition, difficulties in the expression and perception of the value of goods and services in cryptocurrencies also negatively affect the ability to be a means of change (Yermach, 2013: 2).

The value of the money is expected to be stable in terms of its function as a value storage tool. The volatile value of cryptocurrency makes it difficult to use as a value accumulation tool (Congressional Research Service, 2020: 13). Within the scope of the value storage function, it is aimed to maintain the purchasing power and liquidity of the money. Sudden rises in the value of a coin may be risky but also be an opportunity. However, otherwise, it is inevitable that the savings stored for bad days or opportunities will melt away. In other words, cryptocurrencies can be a good option for increasing stored value and maintaining purchasing power, or they can lead to very negative situations in case of sudden devaluation.

The function of money as an economic policy intermediary is associated with the economic effects of the economic policy tools used by central banks. Because cryptocurrencies are special types of digital currencies, it may be expected that they may disrupt the effectiveness of economic policy tools used by central banks (Evlimoğlu and Gümüş, 2018: 181). In other words, the effectiveness of existing economic policy tools will be low or not at all, as the central bank will not control the money supply.

The value of asset-backed cryptocurrencies is clearly determined in the market within the scope of the asset on which it is based. In other words, it is not formed by market fluctuations like traditional cryptocurrencies (Sams, 2014: 4). However, similar features apply to asset-backed cryptocurrencies. The general acceptance of coins should be ensured and the homogeneity feature should not be controversial. If the general acceptance feature is realized, then the functions of being the unit of calculation and unit

of measure will be able to be fulfilled. The value retention function is carried out indirectly due to be the reserve asset, but purchasing power is maintained thanks to be the reserve asset.

2.3. Functions of Money and Cryptocurrency in Practice

There are one hundred and sixty-eight different fiat currencies used by approximately two hundred and fifty countries in the world. Most of these are the national currencies of the countries. In addition, some countries accept the currency of economically dominant countries as national currency, while there are currencies commonly used by money unions (IBAN, List of Currency Codes). The supply, reputation, and purchasing power of national currencies are under the control of central banks. Cryptocurrencies do not have a central bank. They are not in a mechanism controlled by mandatory reserve and interest rates (Ammous, 2016: 3). As of this period, there is over 10.000 different cryptocurrencies. While the supply of some of these cryptocurrencies is constant, the supply of some is determined by the exporter.

There is a debate that the constant supply of cryptocurrencies prevents it from being generally accepted and widely used by society. Limited supply causes some cryptocurrencies to be perceived as a gold-like precious metal (Koin Bülteni, 2019). Accordingly, the acceptance of cryptocurrencies as a digital value storage and revenue-raising tool is also becoming widespread. For this reason, about two hundred cryptocurrencies are bought and sold for profit on cryptocurrency exchanges with a high trading volume every day.

While other conditions are fixed, increasing demand for an economic commodity has an increasing effect on the price of that commodity (Ünsal, 2017: 73). The same is true for national currencies and cryptocurrencies. However, the limited supply of cryptocurrencies, which triggers the increase in value due to speculation, and the variability of demand cause the process to work differently. For example, the demand for a cryptocurrency is almost nonexistent in the t period, which is *the* initial period. However, during this period, supply is increased. This situation causes a mandatory demand for cryptocurrency. *During the $(t+1)$ period*, the demand for cryptocurrency increases with the effect of direct or indirect demand and herd psychology. In the $(t+2)$ period, the cryptocurrency supply, which is increased in a controlled manner with the motivation of increasing demand, increases the value of cryptocurrency. Careful management of the process will ensure that the value is maintained, but volatility due to demand fluctuations is inevitable. It is not possible to declare the prices of goods and services with cryptocurrencies with a volatile value. Because the value of some cryptocurrencies increases or decreases in excess of very large percentage rates on the same day (Samman and Masanto, 2019: 34). This will mean that the prices of goods and services increase or decrease by a very large percentage rate on the same day. Due to this situation, it is impossible for today's currency markets to perform the functions of exchange instruments and account units of measure. Another possible problem is which cryptocurrency will be generally accepted for the sale of goods and services. Today, cryptocurrencies are not used for the sale of general consumer goods. However, it is seen that popular cryptocurrencies are used in the trading of luxury consumer goods in various countries. In addition, some computer brands accept popular digital currencies in their sales. However, it is known that these companies quickly convert cryptocurrency, which

is the cost of their goods, into national currencies to avoid price fluctuations (Samman and Masanto, 2019: 37).

Cryptocurrencies are traded with very high transaction volume in our current times and are highly demanded for value storage purposes. However, high price movement during the day causes sudden ups and downs in savings. The prolonged waiting time of savers who do not want to lose money following the sudden decline creates a loss of liquidity. Despite this, a large number of savers are turning to popular cryptocurrencies to maintain purchasing power and grow their presence. Speculative value increases and decreases caused by the effect of fluctuating demand are causing losses to small investors. In addition, cryptocurrencies are not guaranteed and insured by many governments as in traditional savings deposits. In this respect, the savings made naturally lack the security offered by fiat currencies (Farrington, 2021). On the other hand, it is known that fiat currencies have no memory of transactions, but cryptocurrency transaction memory is kept in blockchain databases, which are the global ledger (Özkul and Baş, 2020: 60). The mentioned points are the differences and similarities of cryptocurrencies with fiat currencies in general.

Asset-backed cryptocurrencies bridge the gap between blockchain and the traditional world and have a relatively stable price structure (Samman and Masanto, 2019: 34). In this respect, it is thought that it performs the functions of money better than the cryptocurrencies that are not asset-backed (Criptopedia, 2021). However, it is likely that there are management and security problems due to its collateralized and indexed value to an asset. Popular asset-based cryptocurrencies traded on cryptocurrency exchanges are off-chain and indexed to a United States dollar. In other words, the value of cryptocurrency moves together with the United States dollar held in exchange for a unit of cryptocurrency (Criptopedia, 2021). It is imperative that the owner of the cryptocurrency maintains the value and security of the cryptocurrency by arranging collateral in the face of increasing and decreasing demand. It is seen that the issue has caused controversy and legal problems in various countries, especially in the United States. At the root of the problem is whether adequate collateral should be allocated. In addition, concerns about possible economic and monetary policy are among the reasons for the discussion. In terms of our subject, this situation brings out the concept of security and reliability from the characteristics of money (Suberg, 2019). Due to the specified security issues, asset-based cryptocurrencies do not fully meet the characteristics that money must carry, even if they are stable. However, it is preferred to use it in various areas in terms of low-price fluctuations.

Asset-based cryptocurrencies are used in cryptocurrency exchanges to trade non-asset backed cryptocurrencies. In terms of the fact that money transfer is fast and cost-effective with respect to SWIFT and similar methods, asset-based cryptocurrencies are preferred for international trade payments (Karaman, 2021). Although asset-based cryptocurrencies are not yet widely used in the trade of goods and services other than international trade, there are initiatives in this field. Some large companies that offer payment services give services for trading asset-based cryptocurrencies through Ethereum blockchain (Bambysheva, 2021). Recently, there have been efforts to create an ecosystem that aims to expand the use of cryptocurrencies in payment systems. The goal is to ensure the use of cryptocurrencies in daily transactions with global spread and acceptance (Partz, 2021). In addition, in some countries, salaried employees are offered the option to receive their wages in asset-based cryptocurrencies (Terenzi, 2019).

Initiatives related to the country and its areas of use are being replicated and new ones are being added every day. However, as of this period, these initiatives have not become widespread and not generally accepted.

The results of the surveys, which are carried out regularly by the World Economic Forum, also support the assumptions made. Accordingly, cryptocurrencies are most commonly used by developing countries. According to the survey results, the main reason for choosing cryptocurrencies is money transfer at low cost. On the other hand, cryptocurrency usage rates in developed countries are lower than a quarter of developing countries (Buchholz, 2021). At this point, it is noted that developing countries are willing to adopt cryptocurrencies.

3. Operability of the Functions of Money in Cryptocurrency

In the considerations, it is noted that cryptocurrencies, asset-based or not, are limited in performing the functions of the currency. It is imperative that there is a widespread sense of trust in a medium that is considered money. The source of the trust is possible by the central authority of the country by accepting that medium as money and making the necessary legal arrangements within this framework. Today, it is noted that legal regulations in many countries where the legal status of cryptocurrencies is not clear are limited in this respect. This is one of the barriers for the general acceptance of cryptocurrencies.

A large number of different products are supplied in the goods and services markets. In order for the consumption of these goods and services to occur, it is essential that the demand is supported by monetary power (effective demand) (Ünsal, 2017: 71). The widespread use of cryptocurrencies in the field of daily consumption can cause problems in terms of cryptocurrencies, whose supply is limited. It is inevitable that cryptocurrencies with limited supply will not work for the transactions in the economy (İçellioglu and Öztürk, 2018: 56). In other words, due to the limited supply of cryptocurrencies, it seems difficult for demand to turn into consumption. In such a case, recession and similar economic problems are also likely.

Under the assumption of general acceptance of cryptocurrencies, a seller is expected to agree on a certain price when selling their goods or services. However, as it is known, money transfers with cryptocurrency take time. It is likely that the money received in return for the goods will be valued or get value in the period up to the time the payment will take place (Adrian and Griffoli, 2019: 5). Therefore, cryptocurrencies are difficult to use as a unit of account.

Cryptocurrencies are expressed, bought and sold in United States dollars. This presents several challenges for nations whose national currency is not United States dollars. Those who request cryptocurrencies prioritize converting their national currency into United States dollars. It is then possible to buy cryptocurrency at the current exchange rate. Such a multi-stage procedure is quite laborious to perform. Moreover, the economic disadvantage is also likely for nations whose national currency is undervalued against the United States dollar. As it is known, different prices can be encountered in different cryptocurrency exchanges. Cryptocurrency claimants' desire to buy at a more affordable price may also cause monetary and temporal loss. In other words, the use of a generally accepted vehicle as money should not be so laborious.

The ever-increasing value of commonly used cryptocurrencies makes it difficult to express in national currencies. In other words, the expression of the prices of goods and services with a large number of zeros and expressions is not suitable for daily use. So much so that it is difficult for a lemon seller to express the weight of the lemon as 0.00075 X-coin, both in terms of expression and perception. Another negative about daily use is that the income from cryptocurrencies is immediately taxed or under taxation regulations in many countries. In this case, a person must pay tax on cryptocurrency earnings on a purchase using the cryptocurrencies he has already purchased, while at the same time paying his/her shopping-related tax (Rodeck and Schmidt, 2021). Both situations weaken the effectiveness of cryptocurrencies in daily use.

Cryptocurrencies are seen as a threat by the monetary authorities. The fact that cryptocurrencies disrupt the effectiveness and price stability of monetary policy is one of the main points of concern of central banks. Legal controls and restrictions particularly on asset-based cryptocurrencies are increasing. On the other hand, asset-based cryptocurrencies are indexed to fiat currencies as a whole. In practice, the value of asset-based cryptocurrencies fluctuates in a narrow band range. In the event of possible economic instability, interventions by central banks to manage the amount of money will cause fluctuations in the value of asset-based cryptocurrency. It is also possible that asset-based cryptocurrencies will remain unsecured in the event of narrowing policies (Adrian and Griffoli, 2019: 6).

Purchasing power and liquidity should not be compromised when providing the value storage function of the money. Cryptocurrency demandants, particularly the small savers, have to compromise on liquidity. Savers are long awaiting a new era of rises after sudden devaluations. In the absence of an increase in value or in case of taking a long time, purchasing power is lost. It is noted that some small investors even resort to consumer credit in order to trade on cryptocurrency exchanges. This is clear proof of the need for national currencies and the existing financial system to own cryptocurrencies.

Within the scope of the value retention function, holding asset-based cryptocurrencies for savings purposes and holding the asset behind them are close to each other. In other words, using the reserve asset itself or a basket of funds to be created from those assets for value retention may also be an option. The loss of liquidity to be encountered in this case will be similar to asset-based cryptocurrencies.

In addition to all the underlined considerations, attempts are underway by countries to launch their own digital currencies (CBDM). CBDMs, which gain their reputation from the state and central bank that issued them, are a safe alternative for all types of cryptocurrencies. Looking at the country's applications, the Bahamas actually uses its own digital currency. Sweden, China, Japan, and some other countries continue their pilot practices. The desire to meet the demand of the people and to be the first in terms of competition creates motivation for all countries.

4. Conclusion

Within the framework of the evaluations carried out, although cryptocurrencies have a great deal of what is expected to be owned by money, they fail to have general acceptance and homogeneity characteristics. The existence of a large number of cryptocurrency varieties with different features and different exchange rates has a depressing effect on homogeneity. At the point of general acceptance, it is not yet clear

which cryptocurrency is accepted or will be accepted with the priority of the money markets. The general acceptance of asset-based and non-asset-based types of cryptocurrencies also requires different assessments.

In the study, how the cryptocurrencies meet the functions of money was also evaluated on the basis of the assumption that they have the characteristics of money. Accordingly, no type of cryptocurrency fully performs the three basic functions of the currency. Cryptocurrencies that are not asset-backed are volatile because their values have high time series volatility. In this respect, cryptocurrencies that are not asset-backed are limited in performing the functions of the currency. Cryptocurrencies, which are not asset-backed, limited in quantity, and used only for the trading of luxury goods and services, are inadequate in terms of the functions of being a means of payment and unit of measure of money. On the other hand, due to its volatility, it is not a safe port in terms of value storage. Therefore, it is seen that the functions of money do not work in cryptocurrencies that are not based on assets. Behind this situation there are some reasons such as cryptocurrencies are not under the control of the central authority due to their nature, their value cannot be stabilized by any intervention, their value is determined by demand and supply, and also their demand shows changes due to speculation. All these factors show that the cryptocurrency markets have not yet been regulated.

Asset-based cryptocurrencies, on the other hand, are stable thanks to the reserve asset held behind them. It is not as volatile as cryptocurrencies whose value is not based on assets. However, the fact that the exporter is in control of the reserve asset held as collateral causes questioning of its trust and security. Shortcomings in trust and security, which are key features of money, are a major obstacle to the general acceptance of asset-based cryptocurrencies. In addition, due to the fact that it does not have competence in the functions of money, the functions of money do not work in asset-based cryptocurrencies.

On the basis of all evaluations and determinations carried out, it is possible to become operative for the cryptocurrencies in meeting the functions of money by gaining general acceptance and increasing their reliability. For general acceptance and reliability, there is also a requirement to regulate cryptocurrency markets with priority. This is the best possible way to fulfill the element of trust and gain general acceptance of societies. However, this case may lead to the implementation of obstructive policies by the monetary authority, because this can lead to a loss of power by the monetary authorities.

In general terms, cryptocurrencies are in demand for profit at this point. It is speculative in terms of its value, which shows sudden ups and downs due to demand changes. In this respect, none of the cryptocurrencies have the performance of the functions of the money. With the development of CBDM efforts in the future, the content and functioning of cryptocurrencies will literally gain the attribute of money for money markets.

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