

Accounting Transactions for Cryptocurrencies within the Scope of International Accounting Standards

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Abstract

The rapid development of technology has significantly changed the structure and functioning of financial markets. As a result, different and new investment instruments have emerged. A virtual environment facilitates the creation and trading of cryptocurrencies. Thanks to blockchain technology, which transparently records transactions, cryptocurrencies have emerged as a more secure alternative.

Cryptocurrencies, whose use has increased with technological developments, are digital data with financial characteristics but no physical presence, using a unique encryption system. Due to the economic characteristics of cryptocurrencies, there are different approaches to accounting transactions, such as cash and cash equivalents, inventory, or intangible fixed assets. This study aims to provide information about blockchain technology and cryptocurrencies, explain different approaches to accounting transactions, and contribute to the literature by evaluating cryptocurrencies within the scope of International Accounting Standards (IAS).

Keywords: Cryptocurrency, Accounting, Blockchain, Financial Reporting

Introduction

Cryptocurrencies, whose use has increased with technological developments, are digital data with financial characteristics but no physical presence, using a unique encryption system. Due to the economic characteristics of cryptocurrencies, there are different approaches to accounting transactions, such as cash and cash equivalents, inventory, or intangible fixed assets. This study aims to provide information about blockchain technology and cryptocurrencies, explain different approaches to accounting transactions, and contribute to the literature by evaluating cryptocurrencies within the scope of International Accounting Standards (IAS).

Blockchain, which has begun to play an important role in today's world, is a transparent, distributed accounting system accessible to everyone. All transactions carried out on the network can be tracked with blockchain. Every transaction and transfer made receives approval from the miners on the network. A transaction timestamp is added to the chain for each transaction. Blockchain technology does not allow parties to agree to record and modify transactions on multiple computers. This makes it possible to ensure that records are error-free. (Güney & Şavlı, 2023).

Cryptocurrencies are digital currencies that use cryptographic encryption and are recorded using a decentralized and distributed ledger system (Gandal & Halaburda, 2014). Cryptocurrencies make extensive use of cryptography. Cryptography provides a mechanism for securely encrypting the rules of the cryptocurrency system (Narayanan et al., 2016). Cryptocurrencies are not centrally located assets, are not dependent on any national status, contribute positively to digital economy, and come in various forms and models (Sabuncu, 2022).

Cryptocurrencies can be used for everyday purchases, and people can use them as a means of payment for goods or services. In addition, they can be converted into other traditional currencies because they are internationally recognized. Cryptocurrencies can also be used as an investment vehicle.

The various economic functions of cryptocurrencies create uncertainty in accounting practices, necessitating a reassessment of existing accounting, measurement, and reporting methods. The accounting treatment of these currencies is both a technological innovation and a factor that brings about significant changes in financial reporting.

The fact that cryptocurrencies are not legally defined in most countries causes users uncertainty about how they should classify and record these assets in their accounting systems. This situation creates significant challenges in financial reporting and accounting processes and highlights the importance of developing accounting standards and reporting guidelines for cryptocurrencies.

This study makes recommendations on how cryptocurrencies should be accounted for. The study explains cryptocurrency concepts, reviews the literature on these currencies, and discusses their advantages and disadvantages, addressing different approaches to financial reporting for cryptocurrencies. The final section presents the results and makes recommendations for future studies.

Literature Review

Literature studies guide researchers on how cryptocurrencies should be accounted for and included in financial statements. Examining users' application methods aims to establish a basis for developing accounting and financial reporting standards for this new asset class. Some of the studies conducted on cryptocurrencies are as follows.

Al-Dulaimi and Özkan (2021) examined the accounting of cryptocurrencies under the International Financial Reporting Standard (IFRS) in their study. According to IFRS, cryptocurrencies cannot be considered cash, and issuers do not have the authority to grant them legal tender status. Additionally, the classification and accounting treatment of cryptocurrencies depend on the type and nature of the asset. If the company's primary activity is buying and selling cryptocurrencies, it should be accounted for as inventory under IAS 2; otherwise, it should be an intangible asset under IAS 38.

In their study, Alici and Yanik (2022) reviewed global practices and analyzed how cryptocurrencies should be recorded within the framework of IAS and IFRS. The study emphasized that it is critical to establish an appropriate classification system for accounting purposes for cryptocurrencies, which are becoming increasingly important in economic life. They also suggested accounting for these assets as cryptocurrencies and recording period-end valuation differences as foreign exchange gains/losses.

In his study, Aslan (2020) examined the views of international accounting organizations and regulatory bodies on the accounting treatment of cryptocurrencies and the impact of these

views on financial reports. The study found that most institutions agree that cryptocurrencies should be classified as intangible fixed assets and that their accounting treatment may vary depending on their intended use.

In his study examining the accounting records of cryptocurrencies, Aslantaş Ateş (2016) stated that cryptocurrencies acquired for investment purposes should be considered foreign currency and subject to foreign currency accounting practices.

In his study, Gröblacher (2018) addressed the issues of how cryptocurrencies should be classified in financial reporting and IFRS. The study concluded that cryptocurrencies cannot be classified as cash, cash equivalents, financial instruments, or inventories but as intangible fixed assets.

In his study, Güdelci (2020) examined the classification and accounting of cryptocurrencies as assets within the framework of IFRS. The study states that evaluating cryptocurrencies as intangible fixed assets and accounting in this manner is frequently preferred in the literature.

In their study, Kılıç and Alataş (2023) examined how cryptocurrencies should be accounted for and in which account class these assets should be placed. It was found that cryptocurrencies are generally accounted for as cash and cash equivalents, financial instruments, inventories, and intangible fixed assets. In particular, the classification and accounting of cryptocurrencies as intangible fixed assets emerged as the most preferred method, despite the shortcomings encountered in the existing literature.

In their study, Lapiřkaia and Leahovcenco (2020) addressed the accounting, recognition, measurement, and recording of cryptocurrencies within the framework of IFRS. The study noted that digital payment instruments have developed rapidly with the digital economy's expansion, but no specific IFRS standard has yet been prepared for cryptocurrency transactions.

In his study, Prochazka (2018) aimed to compare and evaluate competing models by applying different methods in accounting for cryptocurrencies within the scope of IFRS. Considering the volatile nature of cryptocurrencies, he concluded that accounting at fair value effectively provides accurate information to financial information providers.

In their study, Ram et al. (2016) emphasized the need for accounting for cryptocurrencies from a neoliberal perspective by interviewing professionals.

The study conducted by Raiborn and Sivitanides (2015) addressed the classification of cryptocurrencies, cryptocurrency mining, the buying and selling of cryptocurrencies as investment instruments, their use as a medium of exchange, mergers or acquisitions, and how they should be evaluated in footnote disclosures.

Serçemeli (2018) examined the accounting and taxation of cryptocurrencies in his study. He provided information on why cryptocurrencies and blockchain technology are needed, examined their accounting and taxation with numerical examples, and recommended establishing international cryptocurrency standards.

In their study, Six & Himmer (2019) stated that there is insufficient information regarding cryptocurrencies not only in terms of accounting practices but also in terms of taxation. They examined how cryptocurrency transactions should be accounted for in terms of IFRS, European Commercial Law, and tax regulations.

Tan and Zhang (2021) examined the accounting processes for cryptocurrencies in their study. As a result of their research, they stated that there is no specific standard for cryptocurrencies, that they are not classified as financial assets, and that they should be evaluated as intangible fixed assets or inventories if they are held for sale.

The main reasons for the differing views on cryptocurrencies in the literature are their complex structure, lack of a clear definition, their purposes of use by businesses, and the absence of standards for accounting transactions. These factors complicate the implementation of legal regulations and hinder the establishment of uniform practices across countries (Alataş, 2024).

Blockchain Technology and Cryptocurrencies

The concept of blockchain first appeared in a paper titled “Bitcoin: A Peer-to-Peer Electronic Cash System” written by Satoshi Nakamoto in 2008 (Durbilmez, 2019). Within the scope of the World Economic Forum, blockchain is defined as a technology that enables direct data exchange between two parties without an intermediary. Users on the network can perform transactions anonymously with encrypted identities; each transaction is added to an immutable chain and can be communicated to all users on the network (Wang et al, 2023).

Blockchain is changing physical document storage methods thanks to its reliable technology, which is accessible to the whole world and allows everyone on the network to see every

transaction. Thanks to blockchain technology, transactions are recorded instantly and continuously monitored and controlled. This ensures that data is stored reliably.

Blockchain is a protected digital ledger with no central storage area and no central authority (Yaga et al, 2018). At a basic level, it allows a community of users to record transactions in a shared ledger within that community, and no transaction can be altered once it has been published.

The reliability, accessibility, transparency, immutability, irreversibility, and digital nature of blockchain technology have eliminated the need for third parties in transactions, reducing transaction costs and increasing popularity. Blockchain technology has proven itself by successfully establishing a secure and efficient international system at different levels for individuals and institutions without any identity verification and without being tied to a centralized control system.

The cryptocurrency market can be defined as a financial platform where transactions are conducted using both traditional currencies and cryptocurrencies. This market is relatively young; although cryptocurrency emerged in 2008, active trading only began in 2013, indicating that the market is still largely unexplored (Caporale & Plastun, 2019). However, the growth of the cryptocurrency market has attracted increasing attention in recent years (Wątorrek et al., 2021; Mikhaylov, 2020).

There are two primary methods of generating income from cryptocurrencies. The first is speculative trading, and the second is data mining. Cryptocurrency mining, in its most basic definition, involves devices (computers) equipped with specialized software and hardware solving complex problems to validate cryptocurrency transfer transactions and, as a result, being rewarded with newly generated cryptocurrency (Ağ & Gülhan, 2022). In theory, anyone with a computer and internet access can engage in mining. Transfers between wallets are transferred to a transaction pool before being approved on most blockchains. These transactions are then combined to form a block. These blocks are verified and approved by devices connected to the network and then written to the blockchain. Cryptocurrency miners verify and approve transfer transactions and are rewarded with cryptocurrency by the system for providing a copy of the blockchain.

The most distinguishing feature of cryptocurrencies from traditional currencies is that they exist entirely in a virtual environment without any physical presence. This feature has made cryptocurrencies an attractive alternative for investors (Yao et al, 2024).

Advantages and Disadvantages of Cryptocurrencies

The use of virtual currencies, which significantly affects human life worldwide, is increasing daily. People buy and sell cryptocurrencies to earn income and for investment purposes.

Cryptocurrencies have emerged as an important component of digital financial systems and have strengths and weaknesses compared to other traditional forms of currency. The advantages of cryptocurrencies can be listed as follows (Gümüş & Erkuş, 2019; Rushita et al, 2023):

- It is not controlled by any government or affiliated with any central authority. Therefore, economic interventions and situations such as inflation do not negatively affect it.
- It is possible to save money by verifying blockchain transactions. It allows transactions to be carried out at a lower price.
- There is no time limit for money transfers. Transfers can be made at any time of the day.
- Cryptocurrencies are produced according to rules known to everyone and at rates determined during the establishment of the system, and a central bank does not monopolize the money supply.
- It is easy to access, and accounts can be accessed anywhere with an internet connection.
- The system ensures that identity information is kept confidential.
- The disadvantages of cryptocurrencies can be listed as follows (Zakarneh et al, 2022; Korobtsova et al, 2023):
- The absence of a central authority and a counterpart leads to a lack of oversight and control.
- Cryptocurrency prices can reach high levels in a very short time, but they can also decline sharply.
- The irreversibility of transactions can lead to losses for parties involved in the event of an erroneous transaction.
- Cryptocurrency transfers cannot be tracked and, as a result, can be used for illegal activities.
- They are not sustainable because not everyone accepts them.

As a result, technological advances and transformations in financial systems have accelerated the transition from paper money to digital currencies. Cryptocurrencies have emerged as both trading and investment tools and a factor that enhances transparency and security in financial systems. It is anticipated that cryptocurrencies will occupy a more significant role in financial systems and become one of the cornerstones of economic operations.

Accounting for Cryptocurrency

When conducting their activities, businesses must record their transactions in an appropriate accounting system for all areas. Cryptocurrencies used in various types of transactions may be relevant to different areas of activity.

The number and variety of cryptocurrencies not tied to any central authority are increasing daily, and their use is becoming more widespread. With this widespread use, the accounting processes and procedures of cryptocurrency transactions have become more critical (Raiborn & Sivitanides, 2015).

The lack of legal regulation regarding cryptocurrencies and their differences from other asset items in accounting literature has led to different opinions on their accounting treatment. Since there is no precise regulation regarding virtual currencies, accountants can perform their transactions according to accounting standards. There is no global consensus on the legal status of cryptocurrencies and transactions (Dilek & Doğan, 2023).

There are different approaches to accounting and reporting cryptocurrencies in financial statements for different reasons, such as the different areas of use and purposes of holding by businesses. The absence of a standard prepared by the International Accounting Standards Board (IASB) and the American Financial Accounting Standards Board (FASB) regarding cryptocurrencies has led to cryptocurrencies being accounted for in different ways (FASB, 2023).

According to both the IASB and the FASB, cryptocurrencies are considered assets. According to the conceptual frameworks published by the IASB and the FASB, an asset is a present economic resource or right controlled by the entity as a result of past events that has the potential to generate economic benefits (IFRS, 2018). Based on the above explanations, cryptocurrencies meet the definition of an asset. This is because cryptocurrencies are the result of past events and are controlled by businesses because they can be sold and generate income or increase income in the future (Tan & Low, 2017; Smith et al, 2019). However, there is no consensus on which asset class these held assets should be reported under. The fundamental problem in accounting for cryptocurrencies or reporting them in financial statements is related to which asset class they should be included in (Sarioğlu & Özveren, 2024).

In the literature and international accounting standards, cryptocurrencies can be classified as follows:

Cash and Cash Equivalents

In IAS 7, cash refers to cash on hand and demand deposits. In contrast, cash equivalents refer to short-term investments with high liquidity that can be easily converted into cash and whose value is not subject to a significant risk of change. Cryptocurrencies are used as a medium of exchange today, but they were created to reduce transfer costs. The market value of cryptocurrencies is determined by supply and demand in the market, without the influence of any regulatory body or government.

For cryptocurrencies to be accepted as cash, they must first be accepted as a medium of exchange and as a basis for measuring all transactions in financial statements.

According to the IASB, cryptocurrencies should not be recorded as cash and cash equivalents under IAS 7 Cash Flow Statement. This is because cryptocurrencies are not accepted as a means of exchange and are not issued by a central bank (Özkul & Baş, 2020).

Stocks

According to IAS 2, inventories are defined as assets held for sale in the ordinary course of business, produced for sale in the ordinary course of business, or in the form of raw materials and supplies to be used in the production process or the provision of services (IAS 2 Inventories).

Any asset's nature and intended use are considered in its classification and accounting treatment as inventory. Cryptocurrencies produced within the scope of cryptocurrency mining or held for trading purposes within the ordinary course of business may be accounted for as inventory.

Cryptocurrencies cannot be recognized as inventory due to insufficient trading volumes, irregular trading activities, and not being part of companies' ordinary course of business (Güdelci, 2020).

Intangible Fixed Assets

In IAS 38, non-monetary assets that do not have a physical structure but are identifiable are called intangible assets. In IAS 38, an intangible asset's characteristics are specified as ownership, control, and the ability to generate future economic benefits (IAS 38 Intangible Assets).

It is understood that no single accounting treatment applies to all standards for cryptocurrencies.

The FASB has prepared a draft accounting standard that states that cryptocurrencies should be reported as intangible assets. According to the draft standard published by the FASB on March 23, 2023, the following approaches have been adopted for the reporting of cryptocurrencies (FASB, 2023):

- Cryptocurrencies are intangible assets with an indefinite useful life. These assets are subject to an impairment test every year.
- Cryptocurrencies must meet all six conditions in the standard to be included in the scope of the standard. These are:
 - i- Cryptocurrencies must meet the definition of an intangible asset,
 - ii- Cryptocurrencies must not provide their owners with legal rights to other goods, services, or other assets.
 - iii- They must be created on distributed ledgers using blockchain technology,
 - iv- Their security must be ensured through cryptography,
 - v- They must be exchangeable,
 - vi- They must not be cryptocurrencies produced or issued by the reporting entity or its related parties.
- Cryptocurrencies acquired are initially recorded at their cost value.
- In subsequent measurements, cryptocurrencies are reported in the financial statements at their fair value.
- The company must disclose the name of the cryptocurrency it owns, its cost, its fair value, and the number of cryptocurrency units it holds in the footnotes.
- Cryptocurrencies received from customers in exchange for goods or services will be reported in the cash flow section of the cash flow statement when converted to cash within a very short period, such as a few hours or a few days.

Discussion and Conclusion

Developments in the world of technology have prompted people to come up with different alternatives in terms of systems. Cryptocurrency, which marks the beginning of a new era with its entry into people's lives, is not physical money but virtual, or digital, money generated by

miners. The most significant advantage of cryptocurrencies is that they eliminate intermediaries and give control over money directly to the individual.

Cryptocurrencies have rapidly gained attention in recent years, and their use has become widespread. Some countries have banned cryptocurrencies, some have regulated them, and some have not accepted them as currency.

These currencies are created and processed through distributed ledger technologies such as blockchain, with digital and non-material characteristics. Cryptocurrencies are generally designed to be used within a specific network or platform, and their value is determined by users and the rules accepted by the network. With these characteristics, cryptocurrencies offer indirect rights and benefits but do not function as a direct medium of exchange like physical assets. Therefore, they require special regulations and definitions within accounting and legal frameworks.

The objectives of those involved with cryptocurrencies vary widely. This creates significant uncertainty in the accounting processes for cryptocurrencies. The most significant challenge in accounting for cryptocurrencies is the lack of clear definitions and classifications due to their various economic functions. To evaluate cryptocurrencies by accounting standards, record them in accounting records, and accurately reflect them in financial reports, it is essential to clearly define the nature and purpose of acquiring these assets.

The generally accepted approach to accounting for cryptocurrencies is categorized as follows: "Evaluating Cryptocurrencies as Cash and Cash Equivalents," "Evaluating Cryptocurrencies as Inventory," and "Evaluating Cryptocurrencies as Intangible Fixed Assets." Businesses choose one of these approaches based on their purpose for holding cryptocurrencies.

The accounting of cryptocurrencies is necessary to prevent the informal economy. Making cryptocurrencies traceable in accounting records will also enable establishing an audit mechanism and taxation.

It is necessary to eliminate uncertainties by establishing a standard definition of cryptocurrencies and creating globally accepted international cryptocurrency standards, such as international accounting and financial reporting standards.

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