International Journal of Financial Accountability, Economics, Management, and Auditing
ISSN (2788-7189)
Int. J. Fin. Acc. Eco. Man. Aud. 6, No.4 (September-2024)
https://doi.org/10.5281/zenodo.13826684

Critical Investigation on the IFRS Reporting Requirements of Cryptocurrencies

Dr. Zaheda Daruwala
Assistant Professor, Department of Finance & Accounting,
College of Business, City University Ajman, United Arab Emirates

Abstract: In this paper, the author investigates the accounting treatment for cryptocurrencies under the current International Financial Reporting Standards (IFRS) guidelines. The cryptocurrency market is rapidly growing in types and numbers, along with the different avenues of application due to technological advancements. A growing number of companies are using cryptocurrencies to accept payments and other operational transactions and for investment purposes. It becomes even more critical to have appropriate accounting guidelines for recognizing and valuing these unique and risky crypto assets, as they may mislead users when assessing the company's asset values, profitability, and liquidity aspects. This study is a two-stage exploratory study that adds to the literature on accounting for cryptocurrencies. The first stage is an exploratory study of the current accounting standards under the IFRS framework and its application to the accounting of cryptocurrencies by entities holding them. The second stage of the study performs a critical investigation of the IFRS accounting models through secondary data sources, including academic literature, reports and analyses by professional accounting organizations, criticisms by high-stakes corporations, and comment letters to the IFRS agenda decision 2019 for evaluating the existing IFRS reporting guidelines. The study examines the problems with each reporting model to identify the challenges to the fundamental quality of faithful representation of financial reporting. The need to account for and report these cryptocurrencies appropriately is increasing by the day. Currently, no specific accounting standard pertaining to the accounting treatment of cryptocurrencies exists, allowing businesses to apply various existing standards using their judgment in each case. The study recommends a unified approach to accounting for this technological and financial innovation quickly grasping global markets. This study is timely and relevant as it examines the implications of the reporting of cryptocurrencies under the current accounting framework and argues in favor of the need to establish accounting standards pertinent to the unique characteristics of cryptocurrencies for effective reporting outcomes, thereby providing confidence to businesses, investors and the capital markets.

Keywords: Cryptocurrency accounting, IFRS for crypto assets, Crypto recognition, crypto asset valuation, intangible asset

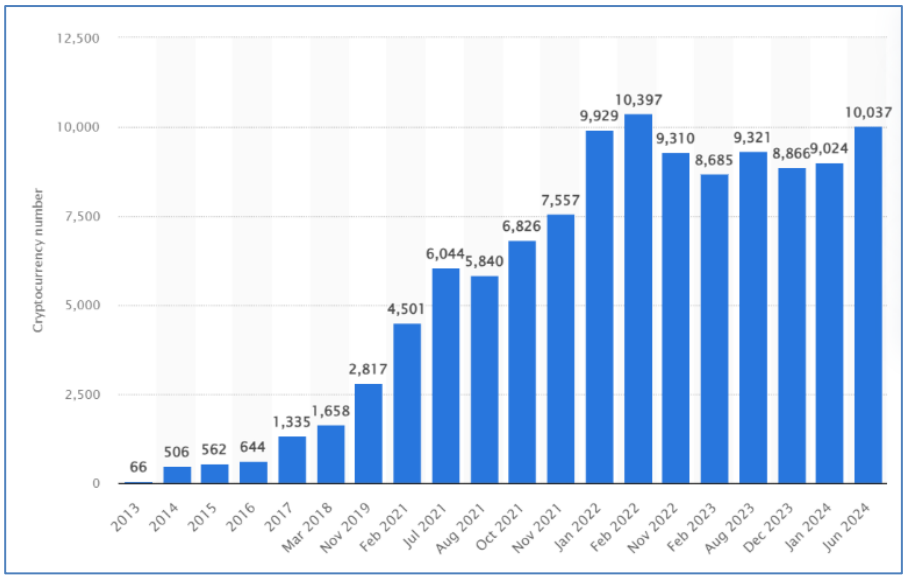
1. Introduction

1.1 The Cryptocurrency Market

The evolution of the cryptocurrency market has been nothing less than revolutionary in the financial markets since the inception of its first type, the Bitcoin, introduced in 2009 by Satoshi Nakamoto (Nakamoto, 2008). The range of available cryptocurrencies is far from limited to Bitcoin at the time of

writing this paper, with around 10,000 different cryptocurrencies existing as of June 2024 where the surge in their number has been seen since the last few years. [1] as seen in Figure 1 below.

Figure 1: Number of cryptocurrencies worldwide from 2013 to June 2024 (Statista, 2024)



The advancements in blockchain have enabled the adoption of cryptocurrencies as a medium of exchange and an investment vehicle. These are not equal from a technical and monetary point of view. Many studies have tried classifying cryptocurrencies into various types, including altcoins, stablecoins, and meme coins. Cavallaro & Mathieu (2024) classified them from an economic perspective into the four categories of reform, revolutionary, monetary, and blockchain. Grasic & Vidnjevic (2024) have grouped them based on their use as utility, security, or exchange tokens, NFTs, DEFIs, and stablecoins. New crypto assets continue to be created with differing characteristics and uses. Deloitte reported in 2022 that more and more businesses are making digital currency a viable payment option for their consumer to gain a competitive advantage (Tanco, 2022), and Modderman (2022), in his report for Cointelegraph[2] provides a list of some of the big companies that accept Bitcoin as a means of payment which include companies like Microsoft, Tesla, HomeDepot, Virgin Airlines, WholeFoods, Gyft, Benfica and Twitch among others. A report by Fundera[3] (Sheperd, 2022) stated that 15,174 businesses worldwide accept Bitcoin as of the last quarter of 2022. As companies begin utilizing them, the need to account for them appropriately in the financial reports becomes even more pertinent. Very few studies have been conducted that focus on the accounting complexities of cryptocurrencies. As these currencies trade on markets, their prices are very volatile (Liu & Serletis, 2019; Akyildirim et al., 2020; Gupta & Chaudhary, 2022; Hansen et al., 2024), and they do not have any

[1] As per Statista 2024, there are other estimates of roughly 20,000 cryptocurrencies existing, but most of these are either inactive or discontinued.

[2] Founded in 2013, Cointelegraph is the leading independent digital media resource covering a wide range of news on blockchain technology, crypto assets, and emerging fintech trends. https://cointelegraph.com.

[3] Fundera is a US based financial solutions company for small and medium businesses in the US. https://www.fundera.com

backing or government regulation. Studies about cryptocurrencies appear in academia in various aspects, such as legal, tax, and accounting, and this paper focuses on the challenges faced in the accounting aspect of cryptocurrencies.

1.2 Accounting for Cryptocurrencies

Cryptocurrency accounting refers to the financial reporting requirements for recognizing and valuing cryptocurrencies for both investors and businesses. Despite its fast-spreading use and application, financial reporting for cryptocurrencies has not developed simultaneously under U S Generally Accepted Accounting Principles (US GAAP) or the International Financial Reporting Standards (IFRS). On December 13, 2023, the Financial Accounting Standards Board (FASB) of the United States issued an update addressing accounting and disclosure requirements for certain crypto assets. It only pertains to fungible digital assets[4] that meet the definition of intangible assets, and many other types remain outside the scope this guidance. The IFRS issued a report by its committee on the 'Holdings of cryptocurrencies' in June 2019 (IFRS, 2019) where cryptocurrencies were identified to be of varied types and together known as crypto assets, specifying their characteristics as (1) a digital or virtual currency recorded on a distributed ledger that uses cryptography for security. (2) not issued by a jurisdictional authority or other party, and (c) does not give rise to a contract between the holder and another party.[5] This report explains the application of accounting standards based on the nature of a business's holdings. A firm may record a cryptocurrency as cash or cash equivalent, a financial asset, an intangible asset, an inventory item, or an investment vehicle. Different accounting standards apply to each of these categories. Accounting for cryptocurrencies includes their initial recognition and measurement, subsequent measurement or derecognition, presentation, and disclosure in financial statements.

Companies and businesses worldwide are incorporating cryptocurrencies in their operational transactions. Big brands accept customer payments in digital assets, from groceries and airline tickets to real estate (Kolkova, 2018). In a survey conducted by Deloitte in 2022 of 2,000 US-based businesses and merchants where, 85% of them believed that crypto payments were a way to reach new customers, and 77% said that they accepted crypto payments due to their low transaction fees. (Deloitte, 2023). Many questions arise regarding the accounting and reporting of cryptocurrencies, and some include: *how should companies record the cryptocurrencies in their balance sheets? Should it be recorded as cash? However, it does not*

[4] The Crypto Encyclopaedia define 'fungible' as a quality of an asset denoting that the asset can be exchanged for another asset of a similar or identical type without any significant loss occurring to the holder; to be fungible, tokens must not bear any unique information. (Schueffel et. al., 2019)

[5] Available at: https://www.ifrs.org/projects/completed-projects/2019/holdings-of-cryptocurrencies/#published-documents

abide by the definition of cash, although it is a medium of exchange. Is it a financial instrument? What about the companies that mine them? Are they considered inventory items in their financial statements? Inventory must be tangible, and crypto assets are intangible, so should they be recorded as intangibles? If yes? Given that their prices are highly volatile, are they subject to impairment annually or more frequently? How will an increase in values be captured if they follow the impairment method of accounting? Furthermore, how would all these challenges affect the firm's current and future financial results, and how would they impact investor decisions? What are the risks that the firm faces in terms of financial results?

1.3 Objectives of this Study

The diversity and pace at which the cryptocurrency market is growing, backed by the blockchain technological applications, confirms that the crypto assets are here to stay and will be a part of our lives in the future to come (Beerbaum, 2023; Korobtsova et al., 2023). Rushita et al. (2023) suggest that due to the digital era and the need for sustainability and a cashless economy, the growth of cryptocurrency is inevitable. On the other hand, we observe that the efforts put in by the global professional accounting bodies and standard setters are far from supplementing the growth of these markets (Dragomir & Dumitru, 2023; Jackson & Luu, 2023). This exploratory study aims to examine current accounting standards under the IFRS framework and its application to the accounting of cryptocurrencies by entities holding them. Further, in the second stage, an analytical approach is employed, and this paper performs a critical investigation of each of the existing IFRS accounting models to unveil the challenges of fulfilling the primary responsibility of faithful representation for businesses holding cryptocurrencies while applying these accounting models. The author utilizes various secondary data sources in this examination, such as the existing academic literature, IFRS guidelines, and non-authoritative guidelines by professional accounting organizations like the big four auditing firms, including Price Waterhouse Coopers (PwC), Ernst and Young (EY) and Deloitte. The author explicitly references criticisms by high-stakes corporations in the comment letters to the IFRS Agenda Decision 2019. Given the unique characteristics of crypto assets, the author explores the difficulty in plugging the existing accounting standards available within the IFRS framework to account for and report cryptocurrency holdings by entities (Ramassa & Leoni, 2022). Interviews conducted among accounting practitioners have found inconsistencies in their reporting of cryptocurrencies (Akanbi, 2024), and auditors have revealed that these inconsistencies presented challenges in providing reasonable assurance of the financial statements (Jakovljevic, 2022). The study suggests that applying a universal approach to the accounting treatment for this novel technological and financial innovation is essential, as the current accounting approaches may mislead

users in assessing the profitability, asset values, and cash flows. It would also distort reporting entities' critical performance metrics and financial results.

The remaining paper is organized as follows. Section 2 is the literature review, which employs an exploratory study to investigate the current accounting models in the IFRS framework. Section 3 critically evaluates the financial reporting practices for cryptocurrencies under the various accounting models existing under the IFRS framework with an analytical approach. The author identifies the complexities and challenges of the faithful representation of financial reporting in each model. The following section summarizes the conclusions and makes recommendations for the future. As of this paper's writing, relatively few public companies hold cryptocurrencies; nevertheless, crypto-related transactions are on the rise. In the future, more companies will be exposed to newer crypto assets. This paper offers a comprehensive analysis of the current cryptocurrency accounting practices and the limitations, challenges, and risks associated with the same, hence advocating for the development of fresh accounting standards globally that address the complex characteristics of crypto assets, thereby providing a more transparent disclosure to financial reporting.

2. Literature Review

2.1 Development of Accounting Criteria for Crypto Assets

This section investigates the development of accounting standards for cryptocurrencies by major accounting standard setters worldwide. The world has seen growth in the cryptocurrency markets only in less than a decade (Statista, 2024), with exponential growth only in the years after the COVID-19 pandemic (Corbet et al., 2020). Investors perceived crypto investments as safe havens during the pandemic (Marobhe, 2022). As companies started using cryptocurrencies for operational and investment purposes supported by blockchain security, the need to appropriately report them increased. Accounting bodies have issued no specific accounting standards for recognizing and measuring crypto assets in financial reporting. The academic literature has also seen very few studies on the complexities and challenges of accounting for the highly risky and technologically backed crypto assets (Holub & Johnson, 2018). Ram et al. (2016) have investigated the unique features of Bitcoin and offered a perspective on their accounting backed by the theories of neoliberalism and stewardship. In comparison, others like Tan & Low (2017) argue that the accounting principle of faithful representation requires a connection with the economic substance of Bitcoin that may vary from one reporting entity to another. The IFRS set up an Interpretations Committee in 2019, and in their agenda decision, they provided guidance through the June

2019 Agenda Decision in applying IFRS Standards to 'Holdings of cryptocurrencies'. This simplified explanation does not suffice for the complex nature of crypto assets. Literature has highlighted various challenges, and this study is part of this initiative. In July 2020, the European Financial Reporting Advisory Group (EFRAG) issued a discussion paper on 'Accounting for crypto assets (liabilities)' from a holder and issuer perspective (EFRAG, 2020). This discussion paper identified the gaps in the accounting treatment of crypto assets where the IAS 38 Intangible Assets or IAS 2 Inventories do not allow Fair Value through profit or loss. It highlighted the accounting treatment for issuers in areas that need clarification, including IFRS 9 Financial Instruments; IAS 32 Financial Instruments: Presentation; IFRS 15 Revenue from Contracts with Customers; and IAS 37 Provisions, Contingent Liabilities and Contingent Assets. In 2020, the American Institute of CPAs (AICPA) formed a Digital Assets Working Group (DAWG) and released guidelines for CPA practitioners, nonauthoritative guidance for accounting treatment for digital assets under US GAAP that was prepared based on professional literature and experience from its members. It addressed ten questions related to classifying and measuring crypto assets, accounting for crypto assets that fall under indefinitely lived intangible assets, and when an entity used third-party hosted wallet services for cryptocurrencies (Drew, 2019). It highlighted that crypto assets lack physical substance and fall under FASB ASC 350 *Intangibles – Goodwill and Other* as indefinite-lived intangible assets. Initial recognition would be at cost and tested for impairment loss if the carrying value is less than the fair value and such and impairment loss could not be reversed. Stablecoins that either have a right to be redeemed for cash or carry a contractual right to receive cash or another financial instrument would be recorded as a financial asset. Additionally, big four auditing firms started releasing their own guides where PwC issued their *'Crypto Assets Guide'* in 2021, and they keep providing newer updates online.[6] EY also has its own guideline document updated in 2021, *'Applying IFRS Accounting by holders of crypto assets.'*[7] The FASB recently updated their standard ASU 2023-08 with an additional subtopic 350-60 addressing crypto assets. (FASB, 2023) in December 2023, with the same to be implemented in fiscal years after December 15, 2024. The new update requires entities to recognize crypto assets at cost initially and subsequently at fair value, where the changes in the fair value are to be recorded in net income in each reporting period. However, such treatment will not apply to all crypto assets; it will only apply to those that fall under the scope of the standard, which are fungible and secured

[6] PwC provides latest updates to their document 'Crypto Assets Guide' available at: https://viewpoint.pwc.com/dt/us/en/pwc/accounting_guides/crypto-assets-guide/crypto_assets_guide/aboutthecryptoassets.html#pwc-topic.dita_d6ac05bf-ea3d-41c7-a1e7-d1544ccaee71

[7] EY's guide to Cryptocurrency Accounting titled ''Applying IFRS Accounting by holders of crypto assets' available at: file:///C:/Users/Zai/Desktop/ey-apply-ifrs-crypto-assets-update-october2021.pdf.

by cryptography. It does not include the non-fungible cryptos like the non-fungible tokens (NFTs)[8] and wrapped tokens[9]. This standard has limited applicability, leaving a gap for accounting for crypto assets that are not within their scope.

2.2 Overview of Current Cryptocurrency Recognition Models under IFRS

IFRS are the international accounting standards integrated within 168 jurisdictions across the world in some form or another. Hence, the focus of this study is within the IFRS framework for the accounting treatment of crypto assets. In the first stage, exploratory research is conducted to examine and elucidate the current accounting standards under the IFRS accounting framework and their application to the accounting and reporting of cryptocurrencies. It is important to note that crypto assets are held by entities serving varying purposes. Therefore, before determining their accounting treatment, it is essential to identify the reason for acquiring it (Procházka, 2018). The cryptocurrencies could be considered (a) cash or cash equivalent in accordance with IAS 7 *Statement of Cash Flows;* (b) IAS 32 *Financial instruments: Presentation* and IFRS 9 *Financial Instrument;* (c) IAS 2 *Inventory;* (d) IAS 38 *Intangible Asset* (Ventor, H., 2016). Other standards that may be applicable also include IFRS 13 *Fair Value Measurement*, IAS 1 *Presentation of Financial Statements*, and IAS 10 *Events after the Reporting Period* requiring an entity to disclose any material non-adjusting events. In June 2019, the IFRS Interpretations Committee (IFRSIC) discussed the matter of accounting treatment for cryptocurrencies and tentatively decided not to add it to its standard-setting agenda. It provided a guideline for accounting for cryptocurrencies under the existing accounting standards. The IFRSIC described cryptocurrencies as having the following features:

- *A cryptocurrency is a digital or virtual currency that is recorded on a distributed ledger and uses cryptography for security.*
- *A cryptocurrency is not issued by a jurisdictional authority or other party.*
- *A holding of a cryptocurrency does not give rise to a contract between the holder and another party.*[10]

2.2.1 Cash or cash equivalent

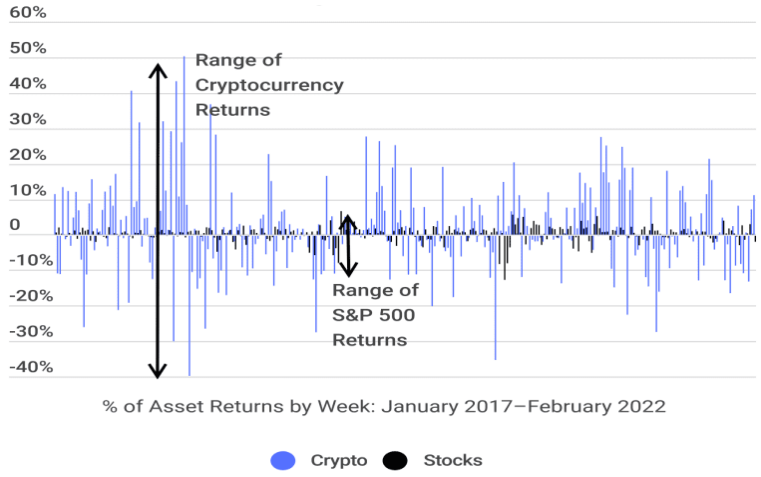
As cryptocurrencies are usually used as digital currency (CPA Canada, 2019), at first, it appears that they should be accounted for as cash or cash equivalent under its description in the IAS 7 *Statement of Cash*

[8] NFTs (non-fungible tokens) are unique cryptographic tokens that exist on a blockchain and cannot be replicated. Two NFTs from the same blockchain can look identical, but they are not interchangeable.
[9] Wrapped tokens are backed by another equivalent assets, typically another crypto asset on another blockchain. Example is of Wrapped Bitcoin (wBTC), that mirrors Bitcoin, but on the Ethereum blockchain.

[10] Available at https://www.ifrs.org/projects/completed-projects/2019/holdings-of-cryptocurrencies/tad-holdings-of-cryptocurrencies/

Flows. The IFRSIC stated that as per IAS 32 *Financial Instruments: Presentation* cash is a financial asset expected to be used as a medium of exchange and as the monetary unit in pricing goods or services. Although some cryptocurrencies are observed to be used as a medium of exchange, they cannot readily be exchanged for any good or service, and none are found to exhibit both the characteristics of a medium of exchange and a unit of measure; hence, IFRSIC concluded that cryptocurrencies could not be classified as cash (IFRS, 2019). Leopold & Vollmann (2019), in their report on behalf of PwC, mirrored the perspective of IFRS, adding that cryptocurrencies are not legal tender and mostly are not issued or backed by any government or state. It also does not have the characteristics of cash equivalent as it is highly risky and subject to high levels of price volatility. In contrast, cash equivalents are highly liquid short-term assets that can be quickly converted into cash without any risk of change in value. In literature, many studies emphasize the high volatility of returns in the crypto markets as compared to other financial instruments (Liu & Serletis, 2019; Akyildirim et al., 2020; Gupta & Chaudhary, 2022; Hansen et al., 2024). A study by moneygeek.com reveals that the variability in weekly returns of cryptocurrencies is four times that of stock markets. Figure 2 is the graphical representation of this comparative volatility.

Figure 2: Comparison of Variability of Weekly Returns (between Jan 2017 to Feb 2022)

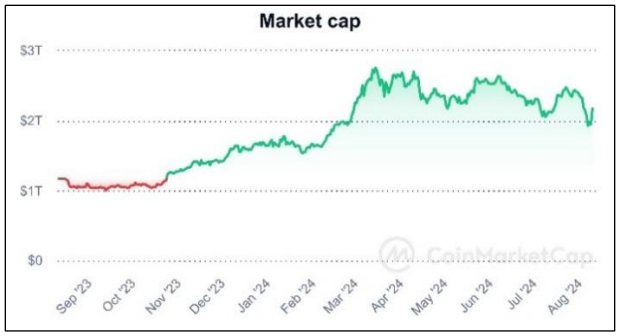


Source: www.moneygeek.com[11]

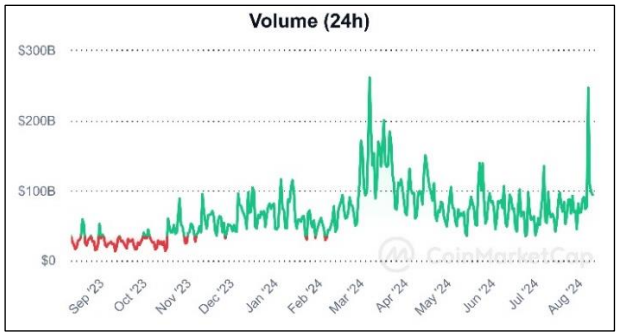
Figure 3: Market Capitalization of All Cryptocurrencies in the Spot Market for 1 year.

Figure 4: Changes in Volumes of All Cryptocurrencies since Sept 2023.

[11] Available at: https://www.moneygeek.com/investing/crypto/cryptocurrency-or-stocks/



Source: Coinmarketcap.com



Source: Coinmarketcap.com

Figure 3 shows the change in market capitalization of the cryptocurrencies in the last one, fluctuating from USD 1 trillion to USD 3 trillion. Figure 4 shows the volatility in 24-hour volumes traded during the previous year. It supports the IFRSIC suggestion that cryptocurrencies cannot be considered cash equivalents as they may not retain their value due to their highly volatile nature.

2.2.2 Financial instruments (financial assets)

IAS 32 *Financial Instruments: Presentation*, para 11 defines a financial asset as (a) cash, (b) equity instrument of another entity, (c) a contractual right to receive cash or another financial asset from another entity, (d) a contractual right to exchange financial assets or financial liabilities with another entity under particular conditions or (e) a particular contract that will or may be settled in the entity's own equity instruments. The IFRSIC concluded that cryptocurrency is not a financial asset as, firstly, it is not cash nor an equity instrument of another entity. Secondly, it does not give rise to a contractual right for the holder (IFRS, 2019). It also does not provide its holder with a residual interest in the net assets of an entity (after deducting liabilities), and some studies in literature echo the same perspective (Milutinovic & Dimitrijevic, 2023). The measurement models described under IFRS *9 Financial Instruments*, which are measured at fair value through profit and loss or other comprehensive income (OCI) or at amortized cost, are not applicable.

2.2.3 Inventories

IAS 2 *Inventories* describes inventories as assets held for sale in the ordinary course of business, and IFRS does not require inventories to be in a physical form. IFRSIC agenda decision concluded that IAS 2 applies to cryptocurrencies when they are held for sale in the ordinary course of business (IFRS, 2019). It would apply to entities actively trading and purchasing with a view to resell in the near future with an aim to profit from price fluctuations or act as an intermediary for cryptocurrencies. According to IAS 2, inventories are short-term assets used to produce goods or services for future sale where the entity has control of that asset and whose acquisition results in an expense. When cryptocurrencies meet these

criteria, they can be classified as inventories if they form the entity's primary business activity (Milutinović & Dimitrijević, 2020). They are measured at cost for initial recognition and subsequently at lower of cost and net realizable value (NRV). Here, the NRV is the fair value minus the costs incurred for selling them. This accounting treatment applies to brokers and traders that hold crypto assets for resale with the aim to make a profit. Where IAS 2 is not applicable, the entity shall apply IAS 38 *Intangible Assets* to the holdings of crypto assets. Where the entity is mining cryptos, they generate and sell them; hence, they will also apply IAS 2. The costs incurred for mining will be the conversion costs of bringing the cryptos into existence. It would include the typical costs of labour, electricity and other utilities, depreciation, and other expenses related to the mining process (Procházka, 2018).

2.2.4 Intangible assets

IAS 38 *Intangible Assets* defines intangible assets as *'non-monetary assets without physical substance and identifiable (separable or arising from contractual or legal rights)'*. The IFRSIC emphasizes that cryptocurrency meets the criteria described in IAS 38 as being an *'identifiable non-monetary asset without physical substance'*. A crypto asset is identifiable and separate from the entity and can be sold or transferred individually. As it is a non-monetary asset, according to IAS 21 *The Effects of Changes in Foreign Exchange Rates* is the absence of a right to receive (or deliver) a fixed or determinable number of units of currency, the IFRSIC concluded that cryptocurrencies do not give the holder a right to receive a fixed or determinable number of units of currency (IFRS, 2019). They are initially measured at cost and subsequently measured at either cost or using the revaluation model. Cryptocurrencies are intangible assets with no definite life, as the period for which it can generate cash cannot be determined. If there are no indicators for a definite useful life (Lapitkaia & Leahovcenco, 2020), they cannot be amortized, and the revaluation model applies. Fair value accounting for the revaluation model is only possible if an active market exists, where the provisions of IFRS 13 *Fair Value Measurement* require the crypto asset to be checked annually for impairment or whenever there is an indication that it may be impaired. The agenda also suggested disclosure requirements relating to cryptocurrencies in financial statements, including IAS 10 *Events after the Reporting Period*, which requires disclosure of any material non-adjusting event, with full disclosure about the nature of the event and an estimate of its financial effect. This standard would be important to those cryptocurrencies whose fair value significantly changes, and non-disclosure could influence the economic decisions of the users of financial statements (IFRS, 2019). According to the disclosure requirements of IAS 38, the same measurement model should be used for all assets in a particular class. There can be an exception here if a crypto in a specific class does not have an active market; then, it should be measured using the cost model.

2.2.5 Disclosures of Cryptocurrencies in Financial Reporting

The June 2019 agenda decision of the IFRSIC stated the disclosure requirements for cryptocurrencies. There are no standards specific to the disclosure requirements of crypto assets. The disclosure requirements were related to the accounting criteria applied by the entity according to existing IFRS, from those described above in sections 2.2.1 to 2.2.4. If the entity applies IAS 2 *Inventories*, the disclosure requirements in 2.36 to 2.39 should be applicable. If the entity accounts for cryptos per IAS 38 *Intangible Assets*, the disclosures must be adhered to as per 38.118 to 38.128. If the entity applies IFRS 13 *Fair Value Measurement* for subsequent measuring and valuing of cryptos, disclosures 13.91 to 13.99 should be used. Disclosures related to IAS 10 *Events after the Reporting Period* would be required if any material non-adjusting events arise, such as changes in the fair value of the cryptocurrency holdings, after the reporting period that could influence the decision-uselessness characteristic of financial statements that is the fundamental requirement of the conceptual framework, thereby impacting the economic decisions users make based on the financial statements.

2.2.6 Summary of Application IFRS Standards

This section provides a snapshot of the exploratory study conducted on the IFRS-focused accounting standards relevant to the recognition and measurement of cryptocurrencies currently in existence. Table 1 below details the accounting models available for cryptocurrencies according to the existing standards under IFRS.

Table 1: IFRS Accounting Models for Cryptocurrencies

Purpose of Cryptocurrencies reported by an entity	**IFRS Applied**		
	Initial Recognition	**Measurement**	**Others**
Operational transactions such as purchases for use in business or receipts from customers	IAS 21 *The Effects of Changes in Foreign Exchange Rates* (treated as foreign currency)		
For miners and brokers or dealers of cryptocurrencies	IAS 2 *Inventories* (if owned)	IAS 36 *Impairment of Assets*	IFRS 16 *Leases* (If leased assets) IFRS 11 *Joint Arrangements*
Long-term investment	IAS 38 *Intangible Assets*	IFRS 13 *Fair Value Measurement* (through OCI) IAS 36 *Impairment of Assets*	IAS 21 *The Effects of Changes in Foreign Exchange Rates*
Short-term investment for trading purposes	IAS 38 *Intangible Assets*	IFRS 13 *Fair Value Measurement*	IAS 21 *The Effects of Changes in Foreign*

		(through PL) IAS 36 *Impairment of Assets*	*Exchange Rates*

Currently, the IFRS has stalled the need to consider having separate and specific standards catering to the reporting requirements of crypto assets. The effort of this study is to build support toward specific and more transparent accounting models for an item as unique as cryptocurrencies. This study shares similar concerns demonstrated by the other accounting standard setters around the world, regulators, professional accounting bodies, and corporations having a high stake in cryptocurrencies, as evidenced by the comment letters to IFRSIC Agenda Decision June 2019. Academics have also exhibited similar apprehensions, and this study will critically investigate these in Section 3 below.

3. Critical Evaluation of IFRS Accounting Models for Cryptocurrencies

The study further performs a critical investigation and examination of the accounting models described by IFRS. Secondary sources are employed with an analytical approach with evidence from academic literature, websites of the Big Four auditing firms, websites of other professional accounting bodies, and the Comment Letters to the IFRSIC Agenda Decision June 2019 to evaluate the application of the IFRS accounting standards to cryptocurrencies.

3.1 Evaluating Cryptocurrency Reporting as Cash or Cash Equivalent.

IFRS does not consider cryptocurrencies as either cash or cash equivalents, as described in section 2.2.1 above. However, many studies have argued that cryptocurrencies are a form of advanced cash (Islam et al., 2018; Zaveri & Lalwani, 2019; Darbyshire, 2020). A study by Mattke et al. (2020) argues that some cryptocurrencies like Bitcoin, Ethereum, and Ripple perform all three functions of money, including unit of measure and store and value and cannot be denied the classification as cash or currency. IFRSIC described a cryptocurrency as '*not issued by a jurisdictional authority or other party'.* The International Air Transport Association's (IATA) Industry Accounting Working Group (IAWG) commented on the IFRSIC Agenda decision, objecting to their description of a cryptocurrency and stating that a cryptocurrency could be issued by a sovereign body or be linked to a sovereign currency and used as a means of payment. They emphasized the need for a currency to be a medium of exchange and not a unit of measure. They argued that '*many sovereign currencies are not convertible and therefore are* not widely *used as a medium of exchange in commercial transactions*' (IFRS Comment Letters, 2019) and sufficient to be classified as cash. In their comments, Deloitte suggested that IFRSIC reconsider its

definition of cash (IFRS Comment Letters, 2019). The Accounting Standards Committee of Germany (DRSC) very graciously criticized the approach of IFRSIC, where all cryptocurrencies are considered to be under one bracket, and the DRSC highlighted the importance of having differing classifications as some of them are considered highly liquid and used as a medium of exchange. The Office of the Chief Accountant of the Securities and Exchange Commission of Brazil (CVM) stated in their comments to the IFRSIC agenda decision on the emphasis that some currencies do explicitly perform the function of a medium of exchange and are used as a monetary unit to price goods or services and by not taking that into consideration would result in infringing the fundamental quality of faithful representation of the financial reporting function. One of the major stakeholders of cryptocurrencies, Brane Capital, a Canadian fintech company, pointed out in their comment letter that cryptos like Bitcoin and Ethereum, among others, are created explicitly for use as electronic cash, and their recommendation to IFRS was to update the definition of cash. Some studies also confirm this perspective that IFRS has not attempted to update the definition of cash given the technological developments (Prochazka, 2018). Greco (2001) argues that money as a legal tender and a means of payment system need not be the only criteria. The IFRS proposes the fundamental principle of economic substance over legal form (Ball, 2016); hence, the economic substance of cryptocurrencies should be more relevant in defining them. Mishkin & Serletis (2011) confirm that electronic payment is a substitute for cash. Operational transactions conducted in cryptocurrencies apply the IAS 21, The Effects of Changes in Foreign Exchange Rates, when converting crypto values into cash at the spot exchange rate on the transaction date. This method can be challenging for entities whose most transactions are through cryptocurrencies, which could also be considered their functional currency (Prochazka, 2018). Hence, this study supports the argument of proponents who emphasize that IFRS needs to consider the future implications of not allowing cryptocurrencies to be reported as cash or cash equivalents, where it could considerably inhibit the ability of true and fair financial reporting and faithful representation and decision usefulness to their stakeholders.

3.2 Evaluating Cryptocurrency Reporting as Financial Instruments

IFRS does not consider cryptocurrencies to be classified as financial instruments. However, in the letter of comment to the agenda decision of IFRSIC, the Korean Accounting Standards Board highlighted that companies have been reporting certain cryptocurrencies as financial instruments and applying fair value accounting before this decision. The same was also reiterated by the Institute of Indonesia Chartered Accountants, which specifically stated that 69% of companies that report cryptocurrencies globally classify it under financial instruments (IFRS Comment Letters, 2019). Some studies support these perspectives (Luo & Yu, 2024; Akanbi, 2024; Hubbard, 2023; Morozova et al., 2020). Darbyshire (2020) states that as these assets trade at a premium or discount, they can be classified as securities. Prochazka

(2018) first elucidates that the primary purpose for holding crypto assets is for capital gains. Second, the economic factors pertaining to the 'buy and hold' transaction are similar to trading with financial instruments. The measurement models described in IFRS 9 *Financial Instruments* of fair value through profit and loss can be applied if held for trading or fair value through other comprehensive income if the economic substance of the transaction justifies its application according to the accounting policies. Only the value by amortized cost cannot be applied as cryptos have no maturity date. Not having relevant cryptocurrencies to be reported as financial instruments could affect an entity's asset valuation, hence distorting various key metrics dependent on the value of assets.

3.3 Evaluating Cryptocurrency Reporting as Inventories

Applying IAS 2 *Inventories* is suggested for two types of entities that have their core business in cryptocurrencies. One is the brokers or traders who buy cryptos for the purpose of reselling them for a margin in the ordinary course of business, and there does not seem to be much contradiction to this criterion. The measurement method applied is at fair value minus the costs to sell, where changes in fair value are through profit and loss. This approach is similar to the financial instruments measured at fair value applied by IFRS 9 and produces similar profitability results (Prochazka (2018). It can be observed here that due to the high price volatility of cryptocurrencies (Liu & Serletis, 2019; Akyildirim et al., 2020; Gupta & Chaudhary, 2022; Hansen et al., 2024), the cost model would not be the true economic representation of the asset values and blur the clear identification of the source of earnings persistency (Dechow et al., 2008). The other types of entities are those involved in mining the cryptos, and this is where the challenge lies. Crypto assets are produced digitally through a process called mining using blockchain technology following cryptographic rules (Hanl, 2018). Computerized calculations are required to verify and record every new Bitcoin transaction, known as a hash. Miners compete with their peers to decode the hash, and the winner gets rewarded with new coins. IAS 2 requires the cost of inventories to be applied, and the challenge here is that not all mining efforts result in success, and the losers have to stop their task and move on to finding another hash, which results in a waste of costs incurred. Another difficulty arises in accounting when mining is done through a joint operation by multiple entities with joint rights to assets and obligations toward liabilities. The challenge is determining the interests in a joint operation that remains unanswered. In the comment letters to the IFRSIC agenda decision, the accounting standard-setting body of Mexico CINIF commented on the measurement of cryptos as inventories required to value at net realizable value (NRV), which they deem to be inappropriate as NRV is generally determined by an entity based on internal factors which may not be an accurate representation of the recoverable value of a cryptocurrency. The result would be the inappropriate valuation of inventories, impacting the liquidity metrics of the entity.

3.4 Evaluating Cryptocurrency Reporting as Intangible Assets

IFRS suggests that classifying cryptocurrency as an intangible asset would be suitable in most cases. Among the Big Four accounting firms, Deloitte (2018) and KPMG (2018) make the same assertion and include it for tax purposes as well. However, some studies argue that not having a physical form does not automatically qualify cryptocurrency to be recognized as an intangible asset, and whether other criteria for intangible assets should also apply to cryptocurrencies remains unclear (Büyükkurt, 2021). It is important to note that IAS 38 describes intangible assets for IAS 38 as *'an identifiable non-monetary asset without physical substance.'* The aspect of identifiability is easily related to crypto assets, which has been clarified in the IFRSIC guideline as it can be separated from the holder and sold or transferred individually, and it does not provide the holder with the entitlement to receive a fixed or determinable number of currency units. However, academics have argued whether considering them non-monetary would be suitable (Islam et al., 2018; Zaveri & Lalwani, 2019; Darbyshire, 2020). The IFRSIC Agenda decision also clarifies that entities should record relevant cryptocurrencies as intangible assets at historical cost and review them annually for impairment. Due to the highly volatile nature of cryptocurrency prices, this method of measurement may not accurately reflect the true economic value (Alslami et al., 2023), and measuring cryptocurrencies at cost may not provide relevant information to users of financial statements (Lapitkaia & Leahovcenco, 2020). Another concern raised pertaining to the fair value measurement of cryptocurrencies when applying IFRS 13 is that there should be an active market for those cryptos. Although mostly traded cryptos may meet this criterion, many other small-cap cryptos lack trading activity. Gandel et al. (2021) studied cryptocurrency data for four years and found that 44% of publicly traded coins are abandoned, at least temporarily, and 71% of these are later resurrected, leaving 18% of coins to fail permanently, which indicates the risk of inactive cryptos is much higher than expected. Studies also highlight that cryptocurrencies cannot be used in ways that are similar to other intangible assets like software, patents, licenses, trademarks, or even customer lists (Tan & Low, 2017). Although IFRS and US GAAP both emphasize the characteristics of cryptocurrencies similar to that of intangible assets, their economic features do not match that of intangible assets underpinned by IFRS when developing the standard IAS 38.

3.5 Other Recognition Criteria

Studies in literature have argued in favor of categorizing cryptocurrencies as 'Investment Property'. Fox (2018) suggested that many features of a common law system of 'property' would apply to cryptocurrencies while leaving aside the quality of intangibility alone. Low & Teo (2017) further suggest

that as common law adopts a more expansive view of 'property' that could include Bitcoins and some others within its law of property. IAS 40 *Investment Property* applies to the accounting for property that is held to earn rentals or for capital appreciation (or both), which suggests that it refers to real estate. However, entities holding crypto assets to earn an income and capital gains can also be considered to meet this definition criteria. Other studies argue that IAS 40 relates to real estate and that having the characteristic of earning power and capital gains does not make them real estate (Niftaliyev, 2023). As IFRS within the standard IAS 40 explicitly describes 'property' as land, building, part of a building, or both, IFRS has concluded that IAS 40 does not apply to cryptocurrencies.

3.6 Evaluating Disclosure Requirements for Cryptocurrencies

The IFRSIC agenda decision utilizes the existing disclosure requirements described in IAS 2, IAS 38, and IFRS 13 based on the accounting model(s) for cryptocurrency accounting applied by the entity. It is essential to note that cryptocurrencies have complex characteristics, and entities may hold different types of crypto assets simultaneously. The disclosures of additional details would benefit users, including the purpose of holdings, the number of holdings for each kind of cryptocurrency, and the market risk or volatility of each type of crypto held. Additional disclosures of appropriate segregation of cryptos would be advisable if an entity holds cryptos on behalf of other entities, for example, dealers, brokers, or wallet owners. Many cryptos may not have active markets, and disclosures related to market activity would add value. A review of the literature suggests that better disclosures lead to efficient traditional capital markets (Barton & Waymire, 2004), and better disclosure requirements by regulators enhance liquidity and lower the likelihood of stock market crashes (Brüggemann et al., 2013). The importance of voluntary disclosure by entities cannot be underestimated, as there is a lack of regulations governing transparency, which could include financial and non-financial disclosures related to cryptocurrencies (Krapels & Leibau, 2020).

4. Conclusion and Recommendations

4.1 Summary Conclusion

This study contributes to the literature of accounting for cryptocurrencies, a rapidly growing technology-based digital instrument used for various purposes ranging from acting as a medium of exchange to an investment vehicle and ever-evolving with time. Firstly, the exploratory approach is employed to identify the different accounting models according to the guidelines provided by the IFRS for entities that hold cryptocurrencies within their businesses (IFRS, 2019). In the second stage, this study highlights that the

area of accounting for cryptocurrencies is at its nascent stage, with immense criticisms from academics, professional accounting bodies, regulators, and high-stakes corporations. This paper has individually evaluated each accounting model suggested by IFRS to critique the applicability of the existing framework supported by the literature review. The study highlights that IFRS needs to consider the future implications of not allowing cryptocurrencies to be reported as cash or cash equivalents or financial instruments, which could considerably inhibit the faithful representation of reporting and asset valuations. For entities that classify cryptocurrencies as inventories, their ineffective valuation could affect liquidity metrics. Classifying cryptos as intangible assets ignores their economic features that do not match that of intangible assets underpinned by IFRS when developing the standard IAS 38. Luo & Yu (2024) analyzed the financial statements of forty publicly listed companies that applied either IFRS or US GAAP and found inconsistencies in the accounting treatment of cryptocurrencies. Due to these inconsistencies, auditors find it challenging to assess the audit risks of entities that hold cryptocurrencies without specific global accounting standards (Jakovljevic, 2022) and their subsequent measurement principles due to the highly volatile prices (Vincent and Wilkins, 2020). Companies are beginning to utilize and report cryptocurrencies as their applications are increasing for operational, transactional, and investment purposes (Kolkova, 2018; Tanco, 2022; Modderman, 2022; Sheperd, 2022; Deloitte, 2023). Opportunities exist for newer types of crypto assets to evolve (Akbarovna, 2024) that did not exist before in traditional business environments, such as utility tokens, Defi tokens, and gaming coins. Cryptocurrencies are unique items that do not fit into conventional accounting models (Cavallaro & Mathieu, 2024). The reporting of cryptocurrencies is essential for investors and stakeholders as it may affect the financial reporting outcomes of the company by impacting multiple performance indicators like profitability, liquidity, cash flows, and valuation of assets, among others. Companies face difficulties in recording transactions related to cryptocurrencies, such as their initial recognition values, subsequent measurement values, and the approaches to valuation, such as fair value or cost method, whether to be classified as inventory, cash, or asset. It is of even greater importance for businesses dealing with crypto assets, either through the activity of mining, wallet service providers, or dealers and brokers.

4.2 Recommendations

Ambiguity in the accounting treatment of crypto assets, where entities have to use their judgment in accounting, can be an opportunity for reporting entities to ‘cook the books’, thereby providing an illusion of increased profitability or asset values. Companies could engage in earnings management to attract investors and other interested parties to make flawed decisions affecting their long-term stability and growth. Reporting entities need to be watchful of the new developments in this field as they evolve to ensure that their disclosures to stakeholders are true and fair. The study supports other studies and

comments by professional accounting bodies and corporations for the need to issue authoritative and definitive accounting standards specifically for cryptocurrencies internationally (Procházka, 2018; Holub & Johnson, 2018; Mattke et al., 2020; Ramassa & Leoni, 2022; Jakovljevic, 2022; Alslami et al., 2023; Akanbi, 2024). It recommends that international accounting standard setters undertake projects to develop authoritative and transparent standards for cryptocurrencies. It would lead to consistency, fairness, and transparency in disclosures made by corporations to capital markets around the world and enhance the decision usefulness and quality of financial reporting. With their decentralized structure, these digital currencies could radically change how we handle financial transactions. The lack of regulation has presented numerous challenges from an accounting standpoint, and this study draws attention to the need to tackle these challenges sooner than later.

This study offers a firm foundation for future studies to explore further the accounting and reporting challenges faced by entities holding cryptocurrencies. Researchers could use this study as a starting point to extend accounting research to impact the design and development of accounting standards specifically for cryptocurrencies. Comparative studies of accounting treatment across countries and jurisdictions could be investigated under local accounting standards. Others could explore companies' use of earnings management, information asymmetry, and their impact on decision usefulness. Further research is much needed in this swiftly developing area enveloped in its highly unpredictable nature.

List of References

[1] Akanbi, A. (2024). Financial Reporting and Accounting Treatment of Crypto Assets: Professional Accountants Perspectives, International Journal of Accounting, Finance and Risk Management, 12(2), 1-11.

[2] Akbarovna, N. N. (2024). Opportunities for the Development of Cryptocurrencies in the Digital Economy. Gospodarka Innowacje., (45), 320-326.

[3] Akyildirim, E., Corbet, S., Lucey, B., Sensoy, A., & Yarovaya, L. (2020). The relationship between implied volatility and cryptocurrency returns. Finance Research Letters, 33, 101212.

[4] Alsalmi, N., Ullah, S., & Rafique, M. (2023). Accounting for digital currencies. Research in International Business and Finance, 64, 101897.

[5] Ball, R. (2016). IFRS–10 years later. Accounting and business research, 46(5), 545-571.

[6] Barton, J., & Waymire, G. (2004). Investor protection under unregulated financial reporting. Journal of Accounting and Economics, 38, 65-116.

[7] Beerbaum, D. (2023). Cryptocurrency–the future of currency? (March 26, 2023). Available at SSRN: https://ssrn.com/abstract=4400519 or http://dx.doi.org/10.2139/ssrn.4400519.

[8] Brüggemann, U., Hitz, J. M., & Sellhorn, T. (2013). Intended and unintended consequences of mandatory IFRS adoption: A review of extant evidence and suggestions for future research. European accounting review, 22(1), 1-37.

[9] Büyükkurt, Ö. F. (2021). Reflection of The Cryptocurrencies in The Financial Statements. Journal of International Management Educational and Economics Perspectives, 9(1), 49-63.

[10] Cavallaro, M., & Mathieu, A. (2024). Beyond the veil: Mapping cryptocurrencies' ecosystem. International Review of Financial Analysis, 94, 103297.

[11] Corbet, Shaen, Yang Greg Hou, Yang Hu, Charles Larkin, and Les Oxley. (2020). "Any port in a storm: Cryptocurrency safe-havens during the COVID-19 pandemic." Economics letters 194 (2020): 109377.

[12] CPA Canada, 2019. An Introduction to Accounting for Cryptocurrencies Under Accounting Standards for Private Enterprises, January 2019. Available at: https://www.cpacanada.ca/business-and-accounting-resources/financial-and-non-financial-reporting/accounting-standards-for-private-enterprises-aspe/publications/accounting-for-cryptocurrencies-under-aspe. Last accessed August 9, 2024.

[13] Darbyshire, R., 2020. Accounting Issues For Central Bank Digital Currencies. Available at: https://www.longfinance.net/news/pamphleteers/accounting-issues-central-bank-digital-currencies. Last accessed on August 9, 2024.

[14] Dechow, P. M., Richardson, S. A., & Sloan, R. G. (2008). The persistence and pricing of the cash component of earnings. Journal of Accounting Research, 46(3), 537-566.

[15] Deloitte (2018). Cryptocurrency: Financial reporting implications. Available at: https://www.iasplus.com/en/publications/global/thinking-allowed/2018/thinking-allowed-cryptocurrency-financial-reporting-implications. Last accessed on August, 2024.

[16] Deloitte (2023). The use of cryptocurrency in business: Why companies should consider using cryptocurrency. Available at: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/audit/us-corporates-using-crypto-pov.pdf, June 2023. Last accessed on August 3, 2024.

[17] Dragomir, V. D., & Dumitru, V. F. (2023). Recognition and Measurement of Crypto-Assets from the Perspective of Retail Holders. FinTech, 2(3), 543-559.

[18] Drew, J. (2019). AICPA & CIMA issue new nonauthoritative guidance for auditing digital assets. Journal of Accountancy, AICPA & CIMA. Available at: https://www.journalofaccountancy.com/news/2019/dec/aicpa-practice-aid-accounting-for-digital-assets.html. Last accessed on August 8, 2024.

[19] European Financial Reporting Advisory Group (2020). Discussion paper: accounting for crypto assets (liabilities): holder and issuer perspective, July 2020, available at: https://www.efrag.org/sites/default/files/sites/webpublishing/SiteAssets/EFRAG%20Discussion%20Paper-Accounting%20for%20Crypto-Assets%20(Liabilities)-%20July%202020.pdf Last accessed on August 3, 2024.

[20] FASB (2023). FASB Accounting Standards Update, No. 2023-08, Intangibles—Goodwill and Other—Crypto Assets (Subtopic 350-60), Accounting for and Disclosure of Crypto Assets, An Amendment of the FASB Accounting Standards Codification®. Available at: https://www.fasb.org/page/ShowPdf. Last accessed on August 9, 2024.

[21] Fox, D. (2018). Cryptocurrencies in the common law of property. Available at SSRN 3232501.

[22] Gandal, N., Hamrick, J. T., Moore, T., & Vasek, M. (2021). The rise and fall of cryptocurrency coins and tokens. Decisions in Economics and Finance, 44(2), 981-1014.

[23] Grasic, A., & Vidnjevic, M. (2024). Evolution of Cryptocurrencies and their Utilization in the Digital Economy, MEST Journal, Vol. 12, No. 2, pp. 36-42. DOI 10.12709/mest.12.12.02.05

[24] Greco, T. H. (2001): Money: Understanding and Creating Alternatives to Legal Tender. White River Junction: Chelsea Green Publishing. ISBN 978-1-890132-37-8.

[25] Gupta, H., & Chaudhary, R. (2022). An empirical study of volatility in cryptocurrency market. Journal of Risk and Financial Management, 15(11), 513.

[26] Hanl, A. (2018). Some insights into the development of cryptocurrencies (No. 04-2018). MAGKS Joint Discussion Paper Series in Economics.

[27] Hansen, P. R., Kim, C., & Kimbrough, W. (2024). Periodicity in cryptocurrency volatility and liquidity. Journal of Financial Econometrics, 22(1), 224-251.

[28] Holub, M. and Johnson, J. (2018). Bitcoin research across disciplines, The Information Society, Vol. 34 No. 2, pp. 114-126.

[29] Hubbard, B. (2023). Decrypting crypto: implications of potential financial accounting treatments of cryptocurrency. Accounting Research Journal, 36(4/5), 369-383.

[30] IFRS, (2019). Holdings of Cryptocurrencies. Available at: https://www.ifrs.org/projects/completed-projects/2019/holdings-of-cryptocurrencies/#published-documents. Last accessed on August 5, 2024.

[31] IFRS Comment Letters, (2019). AP12A Comment Letters. Available at: https://www.ifrs.org/content/dam/ifrs/meetings/2019/june/ifric/ap12a-comment-letters.pdf

[32] Islam, M. R., Nor, R. M., Al-Shaikhli, I. F., & Mohammad, K. S. (2018). Cryptocurrency vs. fiat currency: architecture, algorithm, cashflow & ledger technology on emerging economy: the influential facts of cryptocurrency and fiat currency. In 2018 International Conference on Information and Communication Technology for the Muslim World (ICT4M) (pp. 69-73). July 2018, IEEE.

[33] Jackson, A. B., & Luu, S. (2023). Accounting for digital assets. Australian Accounting Review, 33(3), 302-312.

[34] Jakovljevic, N. I. (2022). Challenges for cryptocurrency audit, attitudes of practitioners in the audit in the republic of Serbia. In International Conference of Social and Technological Development (pp. 361-367).

[35] Kolková, A. (2018). The use of cryptocurrency in enterprises in Czech Republic. In Innovation Management, Entrepreneurship and Sustainability (IMES 2018) (pp. 541-552). Vysoká škola ekonomická v Praze.

[36] Korobtsova, D., Fursa, V., & Dobrovinskyi, A. (2023). Cryptocurrencies as a new form of money: prospects for use and impact on the financial system in the future. Futurity Economics & Law, 3(3), 49–66. https://doi.org/10.57125/FEL.2023.09.25.03

[37] KPMG, 2018 Blockchain and digital currencies challenge traditional accounting and reporting models. Available at: https://assets.kpmg/content/dam/kpmg/bm/pdf/2018/10/defining-issues-18–13-blockchain.pdf. Last Accessed on August, 2024.

[38] Krapels, N. J., & Liebau, D. (2020). An essay on minimum disclosure requirements for cryptocurrency & utility token issuers. Available at SSRN 3607821.

[39] Lapitkaia, L. & Leahovcenco, A. (2020). Applying IFRS for Accounting of cryptocurrencies. Eastern European Journal of Regional Studies, 6(2), 108-116.

[40] Leopold, R., & Vollmann, P. (2019). In depth. A look at current financial reporting issues. Cryptographic assets and related transactions: accounting considerations under IFRS. Release date: December 2019 No. 2019-05. PwC. Available at:https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf. Last Accessed on August 9, 2024.

[41] Liu, J., & Serletis, A. (2019). Volatility in the cryptocurrency market. Open Economies Review, 30(4), 779-811.

[42] Low, K. F., & Teo, E. G. (2017). Bitcoins and other cryptocurrencies as property? Law, Innovation and Technology, 9(2), 235-268.

[43] Luo, M., & Yu, S. (2024). Financial reporting for cryptocurrency. Review of Accounting Studies, 29(2), 1707-1740.

[44] Marobhe, M. I. (2022). Cryptocurrency as a safe haven for investment portfolios amid COVID-19 panic cases of Bitcoin, Ethereum and Litecoin. China Finance Review International, 12(1), 51-68.

[45] Mattke, J., Maier, C., & Reis, L. (2020). Is cryptocurrency money? Three empirical studies analyzing medium of exchange, store of value and unit of account. In Proceedings of the 2020 on Computers and People Research Conference (June 2020, pp. 26-35).

[46] Milutinović, S., & Dimitrijević, D. (2023). Trends and Perspectives in Recognizing Cryptocurrencies According to International Accounting Regulation. Facta Universitatis, Series: Economics and Organization, 235-242.

[47] Mishkin, F. S., & Serletis, A. (2011). The economics of money, banking and financial markets. 4th Canadian ed. Toronto, ON, Canada: Pearson. ISBN 978-0-321-58471-7.

[48] Modderman, G. (2022). Who accepts bitcoin as payment? Cointelegraph, June 5, 2022. Available at: https://cointelegraph.com/explained/who-accepts-bitcoin-as-payment. Last accessed on August 15, 2024.

[49] Morozova, T., Akhmadeev, R., Lehoux, L., Yumashev, A. V., Meshkova, G. V., & Lukiyanova, M. (2020). Crypto asset assessment models in financial reporting content typologies. Entrepreneurship and Sustainability Issues, 7(3), 2196.

[50] Nakamoto, S., & Bitcoin, A. (2008). A peer-to-peer electronic cash system. Bitcoin–URL: https://bitcoin. org/bitcoin. pdf, 4(2), 15.

[51] Niftaliyev, S. G. (2023). Problems Arising in the Accounting of Cryptocurrencies. Financial & Credit Activity: Problems of Theory & Practice, 3(50).

[52] Procházka, D. (2018). Accounting for bitcoin and other cryptocurrencies under IFRS: A comparison and assessment of competing models. The International Journal of Digital Accounting Research, 18(24), 161-188.

[53] Ram, A., Maroun, W., & Garnett, R. (2016). Accounting for the Bitcoin: accountability, neoliberalism and a correspondence analysis. Meditari Accountancy Research, 24(1), 2-35.

[54] Ramassa, P., & Leoni, G. (2022). Standard setting in times of technological change: accounting for cryptocurrency holdings. Accounting, Auditing & Accountability Journal, 35(7), 1598-1624.

[55] Rushita, D., Sood, K. and Yadav, U.S. (2023). Cryptocurrency and Digital Money in the New Era, (Ed.) Digital Transformation, Strategic Resilience, Cyber Security and Risk Management (Contemporary Studies in Economic and Financial Analysis, Vol. 111B), Emerald Publishing Limited, Leeds, pp. 179-190. https://doi.org/10.1108/S1569-37592023000111B013

[56] Schueffel, P., Groeneweg, N., & Baldegger, R. (2019). The Crypto Encyclopedia: Coins, tokens and digital assets from A to Z.

[57] Sheperd, M (2022). How many businesses accept bitcoin? Full list, Fundera, Available at: https://www.fundera.com/resources/how-many-businesses-accept-bitcoin. Last accessed on August 16, 2024.

[58] Statista (2024). Number of cryptocurrencies worldwide from 2013 to June 2024. Available at: https://www.statista.com/statistics/863917/number-crypto-coins-tokens/. Last accessed on August 6, 2024.

[59] Tan, B.S. and Low, K.Y. (2017). Bitcoin–its economics for financial reporting, Australian Accounting Review, Vol. 27 No. 2, pp. 220-227.

[60] Tanco, C. C. (2022). Merchants getting ready for crypto: Merchant Adoption of Digital Currency Payments Survey, Deloitte, 2022. Available at: https://www2.deloitte.com/us/en/pages/consulting/articles/

[61] digital-currency-payments-merchant-adoption-survey.html?icid=bda_thinking-merchant-crypto-adoption. Last accessed August 15, 2024.

[62] Venter, H. (2016). Digital currency–A case for standard setting activity. A perspective by the Australian Accounting Standards Board (AASB).

[63] Vincent, N. E., & Wilkins, A. M. (2020). Challenges when auditing cryptocurrencies. Current Issues in Auditing, 14(1), A46-A58.

[64] Zaveri, K., & Lalwani, H. (2019). What Is Cryptocurrency: 21st-century Unicorn-Or The Money Of The Future? Sankalpa, 9(2/1), 56-64.