Bitcoins the Future Currency: The Existing Accounting Practices and A Proposed Accounting Model

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Abstract:

This research aims to examine the current practices of accounting for bitcoins by reviewing some studies which related to this topic, and thus for achieving the main objective of the study, which is to develop a proposed model to account for bitcoins that unifies accounting practices of bitcoins. The main objective of the study is to develop a proposed model to account for bitcoins that unifies accounting practices of bitcoins. To achieve this objective, the researchers divided the research to include the following: "Introduction" which aimed to gain a holistic view for the research, and then " Literature Review." In this part the researchers clarify the nature, characteristics, pros and cons, and also how the bitcoin system works, through reviewing number of papers, accounting academic journals, professional publications. After that, the researchers reviewed the different current accounting practices for bitcoins, and the efforts of some formal organizations in accounting for bitcoins.

Finally, the researchers introduced A proposed framework for unifying the accounting practices for bitcoins; the proposed framework consisted of five main pillars, recognition and classification of bitcoins, measurement of bitcoins and disclosures for bitcoins. The researchers represented a case of financial statements to apply the proposed framework for accounting for bitcoins, and show the effect of the proposed accounting model on the financial statements.

Keywords: Cryptocurrencies, Bitcoins, Accounting for Bitcoins, Digital Currencies.

الملخص:

يهدف هذا البحث إلى دراسة الممارسات الحالية للمحاسبة عن عملات البيتكوين المشفرة من خلال عرض وتحليل بعض الدراسات الخاصة بموضوع الدراسة ، وذلك لتحقيق الهدف الرئيسي للدراسة وهو تطوير نموذج مقترح للمحاسبة عن عملات البيتكوين المشفرة بهدف توحيد الممارسات المحاسبية للبيتكوين. ويعد الهدف الرئيسي من الدراسة هو تطوير نموذج مقترح للمحاسبة عن عملات البيتكوين وتوحيد الممارسات المحاسبية الخاصة بها. ولتحقيق هذا الهدف قسم الباحثون البحث ليشمل ما يلي: "مقدمة" تهدف إلى تكوين نظرة شمولية للبحث ، ثم "الدراسات السابقة". ويوضح الباحثون في هذا الجزء طبيعة وخصائص وإيجابيات وسلبيات ، وكذلك كيفية عمل نظام البيتكوين ، وذلك من خلال عرض وتحليل عدد من الأبحاث ، والمجلات الأكاديمية المحاسبية ، والمنشورات المهنية. بعد ذلك ، قام الباحثون بتحليل الممارسات المحاسبية الحالية المختلفة لعملة البيتكوين ، وعرض جهود بعض المنظمات الدولية في المحاسبة عن عملات البيتكوين.

وقد انتهى الباحثون إلى تقديم إطاراً مقترحاً لتوحيد الممارسات المحاسبية لعملة البيتكوين ؛ يتكون الإطار المقترح من خمس ركائز أساسية ، وهي الاعتراف بعملات البيتكوين وتصنيفها ، وقياس عملات البيتكوين ثم الإفصاح عن عملات البيتكوين. وقد قدم الباحثون حالة من التقارير المالية لتطبيق الإطار المقترح للمحاسبة عن عملات البيتكوين ، وإظهار تأثير النموذج المحاسبي المقترح على التقارير المالية.

الكلمات الافتتاحية : العملات المشفرة ، البيتكوين ، المحاسبة عن البيتكوين ، العملات الرقمية ٠

1.Introduction

Regarding bitcoin's place in the economy, there are a variety of viewpoints. It is seen as an effective substitute for fiat money and even a part of an alternative economy. Due to its volatility and the speed at which transactions are completed, market analysts have questioned the value of bitcoin as a medium of exchange. [1], But as of April 2019, with a capital market share of almost $92 billion, Bitcoin is by far the most valued cryptocurrency. [2]

Several measures indicate that Bitcoin is no longer a financial curiosity. Over 17 million bitcoins have been issued since the genesis transaction of 50 coins in January 2009. Around the world, there are an estimated 35 million Bitcoin wallets, and 10,000 companies accept bitcoin payments, some using the recently released bitcoin debit card. [3]

Bitcoin is a decentralized payment system that runs independently of all governments and outside parties (such as a Central Bank). In order to guarantee transactional integrity and system stability, each participant in this system may examine the actions of other participants. To put it another way, a third party does not take on a legitimate responsibility. Additionally, everyone may view each other's transactions. [11] It's interesting to note that bitcoin was introduced around that time as a remedy for the frail global financial system, and scholarly literature highlights bitcoin's function as a safe haven for investments during testing times like the 2010 European debt crisis. [4]

bitcoin has recently been observed to function as a speculative asset rather than a medium of exchange. Bitcoin is considered an investible asset because of its low spreads and sufficient market depth. The literature on bitcoin price formation is growing, and the existing literature shows that bitcoin has relatively independent price behavior from other traditional financial assets such as stocks, bonds, and commodities, and thus may be beneficial for portfolio diversification. [5]

1.1. Statement of Problem

We have started to hear more inquiries regarding how businesses should account for the transactions or ownership of bitcoins now that more individuals are aware of them and utilizing them. As may be expected, there is no advice regarding the use of bitcoins, such as bitcoins on a business level. Therefore, anyone using bitcoins will need to start from scratch and use the hit-and-trial method to determine what is proper. [6]

So, the Research Problem Can be Clarified as Follows:

Existing IFRS Standards do not explicitly refer to cryptocurrencies. The primary accounting questions are whether cryptocurrencies are assets and, if so, what type of asset in terms of IFRS Standards? (Jennifer & Ronald, 2018, pp 112-116). As a result, there are different accounting practices issues for Cryptocurrencies as follows: [7]

Issue 1: Is bitcoin an asset?

In the Revised Conceptual Framework for Financial Reporting issued by the IASB in April 2018, paragraph 4.4 defines an asset as follows:

"A present economic resource controlled by the entity as a result of past events. An economic resource is a right that has the potential to produce economic benefits."

The Revised Conceptual Framework notes that an asset is an economic resource and that the potential economic benefits no longer need to be 'expected to flow to the entity – they do not need to be certain or even likely (but if this is the case, the recognition and measurement of the asset may be affected) the economic benefit embodied in an asset is the potential to contribute, directly or indirectly, to the flow of cash and cash equivalents to the entity.

Issue 2: Assuming a bitcoin is an asset, what is the appropriate asset to be classified as, and what is the accounting model to apply?

There are many classifications in the practical life for the bitcoins as there is no specific standard to treat these new currencies and classify them:

a) Cash: Bitcoins are not issued or baked by any government or state.
b) Cash equivalent: Volatile because there is a significant risk of change in its value.
c) Intangible asset: If bitcoins are acknowledged as intangible assets, measuring them at cost would likewise be the default position. There is a chance that, if bitcoins are treated as intangible assets, an entity will be able to demonstrate that there is an active market for them, allowing for the measurement of bitcoins at fair value. The gain would not be recycled through profit and loss when the bitcoins are realized, which is the issue here. Instead, changes in that fair value would be recognized through other comprehensive income. Does it have any other uses besides serving as a method of exchange or investment, in which case IAS 38 is likewise not applicable?
d) Financial asset: The accounting definition of a financial asset must be met by bitcoins. And that's when things start to break apart since, as was already mentioned, bitcoins are:
   1. Not legal tender (i.e., cash as defined);
   2. Not cash equivalents because their value is exposed to significant;
   3. changes in market value; and
   4. Not a contractual right to receive either cash or a cash equivalent.

e) Inventory:

Inventories must be kept for sale in the regular course of business, even if they are not physically present. Bitcoins might not be traded frequently enough to be considered part of an entity's normal course of business; in which case they would not qualify as inventory under the definition.

f) Investment Property:

It does not meet the criteria for an asset under IAS 16 because it has no physical form, including no land or buildings, and its use does not generate any commodities or services. Cryptocurrencies are easily recognized as assets because their holders can derive future economic benefits from them

and the amount is easily quantifiable. and can be money, possibly as "cash or cash equivalent," when they are analyzed as a medium of exchange, a unit of account, and a store of value. Cryptocurrencies can be categorized as financial assets utilized for investing due to their historically high potential returns and volatility [8].

Issue 3: Disclosure Activity: [9]

Investors, who at the very least have a rudimentary understanding of how businesses operate, about the organization's operations. Businesses must disclose any facts that could affect a knowledgeable user's decision-making in a clear and non-deceptive manner, in accordance with the full-disclosure principle. Considering the experimental and technically complicated nature of the bitcoin system.

The department of "the Treasury Financial Crimes Enforcement Network" released certain rules and guidelines to organize work in this environment and describe the various parties associated with cryptocurrency as follows due to the importance of this topic:

FIN-2015-R001 Issued: August 14, 2015

Subject: Application of FinCEN's Regulations to Persons Issuing Physical or Digital Negotiable Certificates of Ownership of Precious Metals.

FIN-2014-R001 Issued: January 30, 2014

Subject: Application of FinCEN's Regulations to Virtual Currency Mining Operations.

FIN-2013-G001 Issued: March 18, 2013

Subject: Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies.

Although tax accounting recommendations started to appear in 2014, standard setters haven't offered any official guidance on the financial reporting of cryptocurrency transactions despite their rising popularity. Cryptocurrencies were created as a decentralized form of money; they are not meant to replace fiat money but to supplement it.

So, the researchers can summarize the initial research questions as

follows:

1-value, a commodity, a payment method used online, a record of transactions, a currency, or a combination of these?

2. Do bitcoins maintain their value? And will the currency continue to exist?

3. Do bitcoins fit the concept of an asset as it is used today? If so, how should it be categorized?

5. Which model should be used to account for bitcoins?

6. Do new modifications to the existing standards make them appropriate to account for bitcoins, or is a new, unique standard required?

1.2. Research Objectives

The most helpful information for investors would be provided by accounting for bitcoins at fair value with changes reflected in profit or loss. However, it appears that this is not allowed by the accounting standards in place. Therefore, the primary goal of the research is to create a model that harmonizes bitcoin accounting procedures.

The following sub-objectives can be grouped under this main goal:

1. Identify the current methods of accounting for bitcoins.
2. Describe how to account for bitcoins in the financial statements.
3. Identify the appropriate accounting model to be applied to the initial and ongoing measurement of bitcoins.
4. Demonstrate the proper disclosure of bitcoins.
5. Calculate the likelihood that the suggested bitcoin accounting model will work.
6. Determine whether a new standard is required for accounting for bitcoins.

2. literature Review

2.1. History of Bitcoin

Today's market is flooded with innovative money payment systems, many of which are built on platforms such as mobile phones, the Internet, and digital storage cards. PayPal, Apple Pay, Google Wallet, Alipay, Tenpay, Venmo, M-Pesa, BitPay, Moven, BitPesa, PayLah, Dash, FAST,

Transferwise, and other alternative payment systems have seen encouraging or even continued growth.

A digital representation of value that serves as a medium of exchange, a unit of account, and/or a store of value is referred to as virtual currency. It operates in some environments like "real" currency, i.e., coin and paper money of the United States or any other country designated as legal tender circulates and is commonly used and accepted as a medium of exchange in the country of issuance, but it does not have legal tender status in any other jurisdiction.

"Convertible" virtual currency is defined as having an equivalent value in real currency or acting as a substitute for real currency. They can be traded digitally between users and purchased or exchanged for US dollars, Euros, and other real or virtual currencies. ***[40]***

Online gaming platforms like Bitcoin (BTC, or XBT according to the ISO 4217 standard), Magic the Gathering Online Exchange (MtGox), and the Linden Dollar in the virtual world of Second Life are where the phrase "virtual currency" first appeared. Among them are Litecoin (October 2011), Peercoin (August 2012), Primecoin (July 2013), Dogecoin (December 2013), Darkcoin (January 2014), Ethereum (2015), and many others. Primecoin was created by the same person who created Peercoin. ***[41]***

"A white paper was distributed on Halloween 2008 by Satoshi Nakamoto on metzdowd.com," [37] Since Satoshi Nakamoto's true identity is unknown, the term "entity" is used to refer to him. The block chain database, the system's underlying technology, and the system were both detailed in the article bitcoin: A Peer to Peer Electronic Cash System. The primary concern of the paper was the double spending issue with electronic currencies, which it was the first to examine and resolve.

The peer-to-peer transaction mechanism that does not require a third-party trust agent was also covered in the paper. According to the "About Us" section of bitcoin.org, Nakamoto subsequently set up a website using the domain "bitcoin.org," and he continued to collaborate with other programmers through this site until about mid-2010. At this point,

Nakamoto handed over ownership of the source code repository and the network alert key to Gavin Andresen. [9]

2.2. Bitcoin the Currency

Bitcoin is a special type of asset known as cryptocurrency. Satoshi Nakamoto (allegedly a pseudonym for one person or a group of people) created it to function as a medium of exchange. [1] It is therefore a virtual unit of currency and has no physical counterpart.

The lowest fraction of a bitcoin, called a "Satoshi," can be split up into 100 million units of bitcoin. Bitcoins, as opposed to fiat money, are the unit of currency utilized in Bitcoin network transactions. Bitcoins are therefore a digital currency in the sense that they are "digital" in existence and, for the most part, meet the criteria for what constitutes money according to economic theory: they are a medium of exchange, a unit of account, and a store of value. [35]

However, unlike "traditional" fiat currencies, bitcoin does not have a central authority and instead relies on cryptography to control its creation and management. [1]

Direct client-to-client transactions are documented in a centralized database known as a ledger. The owner of a transaction is unknown if a client decides to utilize an anonymous server to finish it, but it is always recorded in the open ledger. [10] Three methods exist for obtaining bitcoins: mining, selling goods and services, and exchanging money. Bitcoin behaves like a fiat currency when used for the first two transactions: money exchanges and online sales of goods and services. [11]

2.3. The System of Bitcoin

The transaction database known as a blockchain is the technology principle underlying Bitcoin. Because bitcoin is a mathematical currency, transactions necessitate an algorithmic process known as block building. Every bitcoin transaction is tracked by the blockchain, which also includes a hash of the most recent transaction in the following block. Thus, a numerical and sequential record exists that is difficult to alter without also impacting all other chains in the block. [10]

For those who don't know, bitcoin is an electronic digital currency that is created and stored. A smartphone app, piece of software, or service provider's bitcoin wallet is used to send and receive these bitcoins. The wallet generates an address, similar to a bank account number, but a Bitcoin address is a unique alphanumeric sequence of characters where the user can begin receiving payments. Bitcoins are typically obtained by purchasing them at a Bitcoin exchange or vending machine, or as payment for goods and services.

Anyone may use Bitcoin software to check the legitimacy of a transaction thanks to the blockchain, which is a publicly available authoritative record of every transaction ever made. In order to prevent the redeployment of spent bitcoins, transfers of bitcoins, or transactions, are broadcast to the whole network and added to the blockchain following successful verification. Double-spending is avoided by validating new transactions against the blockchain to make sure they haven't already been used for payment. [12]

2.3.1 Coins, wallets, and signatures:

Participants in a cryptocurrency system exchange cryptographic units known as "coins." A coin is made up of an extremely long code comprised of a series of digital signatures. Each coin transfer necessitates the digital signature of the person who previously held that coin in his cryptocurrency "wallet." This individual can only insert this signature using a unique, secret code: his highly confidential "private key," which is a secret, alphanumeric password/number used to spend/send your bitcoins to another Bitcoin address. It is a 256-bit long number that is generated at random when you create a wallet.

Cryptographic functions define the degree of randomness and uniqueness for security purposes. The Bitcoin private key looks like this; it always begins with:
(5:5Kb8kLf9zgWQnogidDA76MzPL6TsZZY36hWXMssSzNydYXYB9KF) All of this enables willing participants to send coins over the Internet. ***[42]***

2.3.2 Blockchain:

Blockchains are absolutely necessary for cryptocurrency systems to function. These chains form a shared public ledger that allows anyone to view all transfers involving any given coin. "Miners" provide command. These actors verify that all transfers are properly accompanied by a technically valid electronic signature and that the coins' blockchain is not disrupted. Miners require powerful computers to complete their monitoring tasks because this verification process necessitates extremely difficult calculations. As a result, the system compensates them with new coins in exchange for their verification efforts.

This incentive is intended to motivate them to make all necessary investments for future verifications. As long as the majority of miners perform this task honestly, blockchain technology ensures that a wallet holder cannot spend the same coin multiple times. ***[43]***

2.3.3 Challenges Faced by Blockchain Technology:

However, despite the fact that blockchain has given companies new chances, it is crucial to understand that there will be several difficulties and complications in the technical, governmental, and adoption-related fields. Everyone would concur that blockchain technology has the potential to fundamentally alter society in the near future, notably the financial sector. However, there are now a number of obstacles standing in the way of this cutting-edge technology's potential to become a significant ecosystem for the global financial network. Despite the impressive characteristics of cryptocurrencies, a number of obstacles now stand in the way of blockchain technology and currencies becoming widely used transfer mechanisms globally. [42]

Nonetheless, while blockchain has provided opportunities for organizations, it is critical to recognize that there will be a number of challenges. However, the introduction of any new innovative technology would present a number of opportunities as well as challenges that could have a significant impact on the adoption process [44]

blockchain technology. Although by definition, technology does not

oppose to regulation, the variety of uses of technology makes such restrictions necessary (including cryptocurrencies, blockchains, shared ledgers, and smart contracts) [45]

The absence of cryptocurrency rules worries users. Their legal standing must be established before they can be used as a payment mechanism. Regulations will also standardize market components and are anticipated to at least partially lessen volatility. The use of cryptocurrencies in financial crimes and money laundering, as well as their usage by the black market, is another important problem brought on by a lack of laws. Due to the architecture of the blockchain network, users can keep the maximum level of privacy. However, it has also made it possible for thieves and drug dealers to hide their identities while using cryptocurrency to access blockchain and perform crimes. Legislative measures are urgently required in response to such instances in order to tightly regulate such malicious operations. [42]

proper regulation mechanisms will need to be created (such as payments, lending, and investment). To prevent taxation and illegal activities, authorities and regulators have prioritized controlling the usage of cryptocurrencies in this context and around the globe.

Although blockchain is a well-liked alternative to current means of moving money and preserving information due to its innovative technology, it is still vulnerable to assault. [42]

Technology would be governed, regulatory uncertainty, multiple non-interoperable implementations and the resulting fragmentation, data security and privacy, data integrity, and secure encryption due to the technology's high energy consumption, a lack of clarity regarding terminology, the perception that the technology is still in its infancy, potential risks associated with early adoption, and the likelihood that it will disrupt current industry practices [46]

2.4. Parties Involve in Bitcoins Transactions:(13)

In several leading jurisdictions, including Singapore, a sizable and vibrant cryptocurrency ecosystem has developed over time, with a number of prominent venture capital firms investing in and continuing to invest in various cryptocurrency start-ups and businesses. This ecosystem includes many stakeholders, including miners, users, exchangers, transaction service providers, and software developers:

1. Miners: To solve difficult algorithms and validate transactions in the cryptocurrency network, miners are people or organizations who employ specialized software.
2. Users: are people or organizations who acquire cryptocurrencies and use them to make purchases, send money to others, or keep them as investments.
3. Exchangers are people or organizations that exchange cryptocurrencies for other cryptocurrencies or virtual currencies, or for real or fiat money like the US dollar or the Japanese yen.
4. Websites that offer transaction services are known as "transaction service providers," and they let users store and spend bitcoins without having to download the Bitcoin software to their PCs. Providers of wallets and vaults are covered.
5. Software developers are people or businesses who work on creating, manufacturing, or testing cryptocurrency-using computer software.
6. There are even more players in the cryptocurrency ecosystem, including as companies that offer market data and charts and trade bitcoins for actual goods and services.

2.5 Volatility of bitcoins:

There are two basic causes of instability in the Bitcoin system. Some economic studies claim that the inflexibility in bitcoin supply manufacturing is what leads to market price instability. The erratic price of bitcoin may be a result of the creator's erroneous belief that the value of money will steady owing to a limited amount of bitcoin. There isn't any other system in place

to maintain pricing stability. No matter why someone holds it, demand for bitcoin increases as its price decreases and vice versa. [47]

For bitcoin, there is no international regulatory structure. Individual nations may control, ignore, or outright forbid the usage of bitcoin, and exchanges may or may not be subject to regulation. Due to this, the price of bitcoin changes globally even though it is a global currency. According to Pieters and Vivanco (2017), local bitcoin P2P prices follow the same pattern as exchange prices but are more volatile. They also find that bitcoin prices vary depending on the country and exchange. [48]

Bitcoin prices are influenced by supply and demand, according to studies done, among others, by Glaser et al. (2014). The forces of supply and demand could, however, lead to bitcoin values that are neither economically justified nor tenable in the absence of regulatory authorities. At the same time, it is anticipated that a rise in the volume and participation in Bitcoin would result in a more stable price for bitcoin because blockchain technology operates within the constraints of consensus. However, in the short term, early-stage volatility could be problematic. The dilemma that fiat currency faces and that governments want to avoid is illuminated by this hypothesis. [49]

2.6 Future Acceptance of bitcoins: [50]

Examining the supply growth trajectory is essential for gauging bitcoin's potential use and acceptance in the future. The supply of bitcoins is entirely predictable; it will rise until 2040 in gradually decreasing stages before staying at that level permanently. The value of bitcoins and the possibility of deflation are significantly impacted by this. Forecasting the value and use of bitcoins in the future is challenging since demand, as opposed to supply, is uncertain both now and in the future. But if demand increased constantly, it would eventually surpass supply, driving up the price of bitcoin and having a deflationary impact. Due to these inherent deflationary consequences, investing in bitcoins as opposed to using them as a medium of trade is more common.

Fiat and virtual currencies will coexist under new dual or multiple

currency regimes if virtual currencies develop as a medium of exchange and prove to be a competitive alternative to fiat money. History is rife with instances of dual or multiple currency economies. Shells, cigarettes, cocoa beans, barley, and several other commodities have all been employed as a medium of exchange. Coins made of gold, silver, and copper were regularly in circulation during the Middle Ages at fixed exchange rates.

In the 1800s, both government-issued fiat currency and money backed by commodities were in use. In the 1930s, the United States frequently employed multiple currencies as means of trade, including privately printed banknotes, government-supported fiat currency, and currency backed by commodities. Many developing and rising economies, like Liberia, Cuba, and many Latin American governments, have recently demonstrated dual currency economies. Despite the Swiss franc's widespread acceptance, Switzerland is an example of a developed industrial nation where the euro is also frequently used.

2.7 Accounting Practices for Bitcoins According to the Standard Setters' Bodies

Investors, speculators, regulators, and researchers have all become interested in cryptocurrencies as their development has accelerated in recent years. Numerous studies have been done on the ways that cryptocurrency markets are priced, what causes volatility, and how diversifying cryptocurrencies may be. [51]

The use of cryptocurrencies is expanding all around the world. They have served a number of purposes, including payment, speculative trading, and, most significantly, investments as repositories of value. [15] Despite the lack of accounting guidance in existing financial reporting standards, cryptocurrency use must be addressed in the financial statements of organizations that use it. [6]

Bitcoin is the most well-known cryptocurrency, with the highest market capitalization, and is regarded as a model cryptocurrency. [52]

Bitcoin has emerged as the most popular virtual currency, with a larger

market share than its competitors, which include Ethereum, Ripple, Litecoin, and bitcoin cash. [53]

Because it is the most valuable cryptocurrency in terms of market capitalization, bitcoin is regarded as a representative example of a cryptocurrency and was selected for this study [16]. Over US$1.8 billion is the market capitalization of bitcoin as of this writing [16].

Because businesses use bitcoins in their everyday operations, they must be reported on and accounted for in financial statements. Like other new phenomena, accounting standard-setters are slow to give accounting guidelines. [6]

Despite assertions by central bankers that cryptocurrencies are not money, in some circumstances a transaction involving a cryptocurrency must be recorded as a transaction in a foreign currency. Similarly, despite having a digital (virtual) form and regulators urging for such a treatment, cryptocurrencies cannot be recognized and reported as intangible assets. Mining cryptocurrencies must therefore adhere to different accounting principles than receiving payments or investing in cryptocurrencies. [6]

With no authoritative guidance for accountants on bitcoins, the only option is to identify and adapt existing accounting standards. How should a bitcoin transaction be recorded in the sight of an accountant? So, let us present the various current practices in bitcoin accounting, with a focus on IFRS practice because it is the more widely used standard around the world.

2.7.1. Accounting Practices According to IASB

There is no mention of cryptocurrencies in IFRS as of January 1, 2018. In such cases, a general procedure for selecting an accounting policy is followedIAS8.10 states that management must use its best judgement when creating and implementing an accounting policy in the absence of IFRS that directly relate to a transaction, other occurrence, or circumstance. A chosen policy should generate reliable data that is relevant to users' needs for making economic decisions. Management is limited in its decision-making because it must refer to and consider the applicability of the following

sources in descending order. [17]

1) The IFRS requirements dealing with similar and related issues;

Definitions, recognition criteria, and measurement concepts for assets, liabilities, income, and expenses in the Framework. [6]

An entity must follow the fundamental principle of useful accounting information when determining an appropriate accounting treatment, which states that it is not important which item an entity acquired, but why it was acquired. The purpose of acquisition and the expected use of the item within the entity are the primary determinants of its presentation in financial statements. Theoretically, bitcoin transactions can be recorded in financial statements as:

1) Cash or cash equivalent;
2) A Financial asset (other than cash);
3) A non-financial investment;
4) Inventory;
5) Leases/right-to-use;
6) An intangible asset.
7) Property, Plant, and Equipment.

The section that follows analyses the conditions under which each treatment would be applicable, as well as a description of the impact of the respective policy on financial statements prepared in accordance with IFRS standards:

i. Cash or cash equivalent:

Cash is categorized as a financial asset under IFRS principles. A financial asset[18] is an asset that is:

a. Cash;
b. An equity instrument of another entity;
c. A contractual right to receive cash or another financial asset from another entity, or to exchange financial assets or financial liabilities with another entity under conditions that are potentially favorable to the entity;

d. A contract that will or may be settled in the entity's equity instruments, and is: anon derivative for which the entity is or may be obliged to receive a variable number of the entity's own equity instrument.

Bitcoins can be treated as cash in certain circumstances. Cash, according to IAS7.6, is made up of cash on hand and demand deposits. Unfortunately, this is just an enumerative list. There is no other attempt in IAS7 or any other standard to define cash positively. As a result, the term "cash" (money) will be used broadly. [19] took the approach that a definition of cash in terms of legal tender is not entirely appropriate for two reasons. To begin with, legal tender (or fiat money) only represents one stage in the evolution of payment systems. More efficient or secure systems may be able to overcome this. Second, treating cash as legal tender is a purely technical (legal) viewpoint that runs counter to the fundamental principle of economic substance trumps legal form. [20]

In economics, "money" is typically described as anything that is regularly accepted as payment for goods and services or as a means of repaying obligations. This definition can be met by bitcoins. Using this economic explanation in accounting, bitcoins must be presented in financial statements as currency if they are obtained as a form of payment for commodities or services that an entity sells and uses them as a means of exchange.

IAS 21 will be applied in such circumstances. Any payment received in bitcoins must be handled as a transaction in foreign currency and converted into functional currency using a spot exchange rate at the time of the transaction because bitcoins are currently not commonly used as a means of exchange. [21] Since bitcoins are considered monetary things, they must be converted into other currencies using a closing rate in order to prepare financial statements. [21]

In some areas, bitcoins are used for most transactions. In extremely uncommon circumstances, it is feasible that certain bitcoins will become a functional currency of a member of such a community if that member is an accounting business that files reports in accordance with IFRS.

The fundamental economic environment in which the company works is represented by the functional currency [21].

In that circumstance, transactions that are not processed in bitcoins but nevertheless fit the criteria for functional currency will be handled as foreign currency transactions. However, as we are not currently aware of any such company, it should be mentioned that this is a speculative issue. [6]

ii. Cash equivalent

A cash equivalent is defined as highly liquid investments, undeposited checks, savings accounts, and so on. The key point here is the extremely high level of liquidity. However, bitcoins are volatile because their value is subject to significant fluctuations.

iii. Financial Asset:

Bitcoins do not fit the criteria of a financial asset when they take the form of an equity instrument or a contractual right to money, according to the definition of a financial asset. Three measurement models specified by IFRS 9 were created as a result:

a. A financial asset at fair value through profit or loss;
b. A financial asset at fair value through other comprehensive income;
c. Amortized cost.

Are not immediately accessible. However, the primary justification for buying bitcoins is speculation about a potential future capital gain. Although a "buy and hold" transaction does not meet the definition of a financial asset, its economic circumstances are akin to trading in financial instruments. IAS8.11 allows an accounting policy for investment-like

cryptocurrencies to make reference to the IFRS 9 measurement models. Since bitcoins don't have a maturity date, the amortized expenses cannot be included in the appropriate models. Only the FVPL or FVOCI models may be used, and they must be used, as a pertinent source of helpful data for those who read financial accounts.

Under both models, financial assets must be remeasured at their fair value as of the reporting date. The primary difference between the two approaches is that the comprehensive income statement reports the gain or loss on re - measurement. In the profit and loss section, the first approach is usually employed for recognition. [22], the following reclassification adjustment from equity to profit and loss within other comprehensive income. . [22].

The entity's business model test and the contractual cash flow test must be carried out in order to choose a suitable model [22]. They cannot be applied to bitcoins; choosing an FVPL model is the only conceivable outcome. However, not every circumstance will call for the FVPL technique to be used exclusively. Therefore, selecting one's accounting policy allows for a new choice between FVPL and FVOCI. The provisions of IAS 39 can be used to support the choice. (IAS 39 the old standard on financial instruments replaced by IFRS 9).

When trading with financial instruments, the vocabulary of IFRS 9 and the new conceptual framework, which runs counter to a new fundamental principle of economic content over legal form, do a better job of explaining the distinctions between two major investment horizons.

[23] states that a financial asset is deemed to be retained for trading if it is bought or incurred principally for the intention of quickly selling or buying it again. Additionally, financial assets that are defined as being available for sale are non-derivative financial assets because they are bought with the intention of realizing capital gains later on as opposed to right away.

iv. Non-financial investment

Bitcoins can be handled similarly to non-financial investments since they do not exactly fit the definition of financial assets (e.g., art, gold coins,

investment gold, etc.). Once more, non-financial investments are not covered by any specific IFRS4 provision, and organizations are responsible for creating their own accounting policy. [6]. Generally speaking, two approaches are used.

An investment is first measured at its acquisition cost using a conservative historical cost (HC) model, and any holding gain is then realized and recorded in the income statement once the asset is sold. Second, unrealized gains and losses are continuously recognized using the FVOCI model under other comprehensive income. The HC model is preferred when it is impossible to accurately establish the investment's current market value.

Bitcoin investments only fall into this category if the acquisition is not prompted by short-term speculation. Non-financial assets are bought to invest money over the long term. Because it is simple to access the market value of bitcoins, FVOCI is a more useful measurement methodology. [6] In these circumstances, considering bitcoins as non-financial investments yields the same results as treating them as a financial product that can be bought and sold.

v. Inventory

There are two circumstances that could result in bitcoins being recognised as inventory:

First of all, a business may buy bitcoins and then resell them to clients. In this instance, bitcoins will be viewed similarly to goods or as a commodity owned by broker-traders. Broker traders are people who purchase or sell commodities for other people or on their behalf, and they typically acquire these inventories with the intention of selling them soon in order to benefit from price changes or their margin. [24]. Despite the lack of a precise definition for commodities under IAS2, their description is consistent with the economic model used by bitcoin brokers, which is more relevant and trustworthy than the products sold by bitcoin brokers.

Instead of using a conventional exchange, bitcoin brokers give investors an alternative OTC platform to purchase and sell bitcoins. [25] fulfilling an IAS 2 requirement for broker traders to purchase or sell commodities on

behalf of third parties. IAS 2 implies that when it comes to measurement, commodities are typically measured at fair value less costs to sell, and changes in fair value less costs to sell are recorded in profit or loss in the period in which they occur. [24]

The needed measurement model yields findings on the income statement that are comparable to those of the FVPL model. It may be challenging to tell in practice whether an entity operates as a broker to buy or sell bitcoins on its behalf, therefore the comparability of the two models is crucial. . [24] or whether a trade is made to quickly sell or buy it again. . [22]

The accounting treatment of bitcoins purchased for brokering purposes poses no significant challenges. Bitcoin mining is a more interesting and sophisticated case. IAS 2 guidance on the cost of conversion will be applied to the accounting treatment of bitcoins obtained through mining. All conversion expenses incurred to move the inventories to their current location and state must be included in the cost of inventory.

The costs of inventory conversion also involve a systematic distribution of fixed and variable production overheads spent during the transformation of raw materials into finished items. [24] The two main examples of direct costs are electricity and labor costs (if any), which are directly associated with mining. Depreciation of the mining "factory" (if any), additional mining equipment (such as fans to cool the areas), salary of programmers and service personnel, etc. will all contribute to indirect production overheads.

When calculating production costs, IAS2.13 mandates the allocation of fixed production overheads based on the typical capacity of the production facilities. Normal capacity, which accounts for capacity loss brought on by planned maintenance, is the average output across various time periods under normal conditions. However, because mining is a cutthroat competition, there is no typical capacity for bitcoin creation. A miner's precise output is governed by its processing power in relation to the computational power of other miners. The network as a whole is told that a miner has won when they are the first to achieve the hash for a particular

block. The remaining miners instantly cease their work on that block and begin looking for the encryption for the following one. [٢٦] How to account for expenses incurred during fruitless mining conquests is the problem. Such expenses are deemed wasteful and must be subtracted from the acquisition cost and charged right away. . [24].

vi. Lease/Right-to-use:

Leasing the necessary equipment, which is kept on the premises of a supplier, is an alternative to direct mining. Three categories of remote mining exist:

a. Hash mining, for example, requires that a person or organization submit their own hardware to a provider, who is then in charge of the software, electricity, cooling, and other factors. Hardware can also be leased as an alternative.

b. Virtual hosted mining: The installation of one's mining program on a virtual private server.

c. Leased hashing power: No real or virtual computers are required; a predetermined amount of hashing power is leased.

According to IAS 17, the bulk of third-type contracts would be categorized as operational leases. According to new IFRS 16, lease contracts shorter than a year are exempt from being recognized as "right-to-use" assets and lease liabilities and the lease payment is distributed linearly instead. Thus, the accounting treatment of leased machinery or hashing capacity for periods shorter than a year would have an identical effect under IAS 17 and IFRS 16. If a lease agreement lasts for more than a year, IFRS 16 mandates that a "right-to-use" asset and a lease liability be shown on the lessee's balance sheet. Whether the arrangement qualifies as an operating lease or a financing lease would determine how it should be treated financially under IAS 17. Regardless of the standard used, the cost of the lease will be included in the acquisition cost of the cryptocurrencies that were mined, and the gains from these leases will be handled in accordance with IAS 2.

vii. Intangible Asset:

The consensus among state authorities and regulators, including central banks, is that bitcoins should not be considered as currency and do not conform to the (legal) definition of money. [6] Some authors prefer to categorize bitcoins as intangible assets on the balance sheet because they are virtual currencies with no physical form, with the cost model as the default treatment and the revaluation model as an alternative. [19].

IAS 38.6 defines an identified non-financial asset without physical substance as an intangible asset. An entity must handle two issues in a subsequent treatment: amortization and measurement.

Firstly, Amortization necessitates determining whether an intangible asset's useful life is finite or indefinite. When there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity, the asset is identified as having an indefinite useful life. When bitcoins are viewed as intangibles, this is the case.

An intangible asset with an indefinite useful life is not amortized, according to. [27]. IAS 36.10 introduces the requirement that a company test such an intangible asset for impairment every year or whenever there is a plausible suspicion that the asset may be impaired.

Secondly, a choice between the cost model and the fair value model may be made by an entity for every subsequent measurement of intangible assets. IAS 38 provides stringent requirements that permit the implementation of a fair value model, in contrast to IAS 16's rules for tangible assets.

A revaluation model can only be utilized if fair value is established by looking to an active market. The criteria of being traded in active marketplaces is met by bitcoin.

However, there are only a few situations in which a company would utilize and be allowed to use bitcoins as intangible assets, according to a previous review of economic justifications for buying bitcoins. Without a doubt, bitcoins cannot be utilized in the same way as software, patents, or licenses, and they also cannot be used as a customer list, trademark, or any other type of property.. [7]

Additionally, if bitcoins are mined, their IAS 38 classification would imply that they cannot be considered an asset at all. Despite the fact that no business is able to show that all six requirements for the development phase of IAS38.57 have been met, IAS 38.51 mandates that an entity apply the rules and recommendations in paragraphs IAS38.52-67 to all internally developed intangible assets. For the aforementioned reasons, it is inappropriate to classify mined or externally purchased bitcoins as intangibles. Bitcoins "technically" fit the criteria for an intangible asset under IAS 38, however they don't have the economic properties that the IASB envisioned when establishing the standard. Because of this, the creation of bitcoins may need the future reinterpretation of an intangible asset in an IFRS context or the creation of a new standard that addresses bitcoin and all other forms of cryptocurrency.

viii. Plant, Property, and Equipment:

Bitcoins are not covered by IAS 16, 'Property, Plant, and Equipment,' because they are not tangible items. It has no physical form, least of all land and buildings, and the use of bitcoins does not result in the production of goods or services, as required of Assets under IAS 16. Bitcoins are easily recognized as assets because their holder can derive future economic benefit from them and the amount is easily measured. . [8]

ix. Disclosure for bitcoins:

When accounting for bitcoins, entities must adhere to the IFRS Standards' disclosure obligations (e.g., IAS 2, IAS 38, and IFRS 13). In spite of this, organizations should think about whether further disclosures regarding their bitcoin holdings are essential given the complexity and volatility connected with bitcoins. [13]

According to IAS 1.9, "the objective of financial statements is to provide information about the financial position, financial performance, and cash flows of an entity that is useful to a wide range of users in making economic decisions." It also states that the notes must "provide information that is not presented elsewhere in the financial statements, but is relevant to an

understanding of any of them."

IAS 1.17 states that a company is required to "provide additional disclosures when compliance with the specific requirements in IFRS is insufficient to enable users to understand the impact of specific transactions, other events, and conditions on the entity's financial position and financial performance." IAS 1.31 states, however, that if the information received as a result of the disclosure is not material, disclosure is not required. There are some extra standards set by CPA as guidelines for bitcoins, in addition to the disclosures mandated by an IFRS Standard, which will be covered later.

Table 1 summarizes the different possible classifications and their associated measurement considerations under different IFRS standards for accounting for bitcoins:

Table 1. *Different Classifications of bitcoins.*

Used Standard	Initial Measurement	Subsequent Measurement	Movements In Carrying Amounts
Inventory (IAS 2)	Cost	Lower Cost and Net Realizable Value (NRV)	Movements above cost: N/A. Movements below cost: Profit and loss
Inventory (IAS 2) Commodity broker or trader	Cost	Fair value Less Cost to Sell	Profit and loss
Intangible Assets (IAS 38) Choose revaluation model Accounting which Requires the existence of active market.	Cost	Fair Value Less any Accumulated Amortization and Impairment (noted that bitcoins not expected to has amortization)	Movements above cost: other Comprehensive Income. Movements below cost: Profit and Loss
Intangible Assets (IAS 38) Cost Model	Cost	Cost less any Accumulated Amortization and Impairment (noted that bitcoins not expected to have amortization)	Movements above cost: N/A Movements below cost: Profit and Loss

(Source: . [36] with Acting).

2.7.2. Accounting Practices According to FASB

After reviewing and analysis, two current alternatives appear to be promising according to FASB practices: Non-monetary Exchanges and Foreign Currency Transactions: . [26]

A. Non-Monetary Exchange:

Based on the notion that virtual money is comparable to barter credit, it is argued that transactions using virtual currencies should be considered non-monetary exchanges. [26]

This being the case, ASC 845 The phrase "exchange of products held for sale in the ordinary course of business (inventory) for other property as a means of selling the product to a client" generally refers to non-monetary exchanges. [28]. more especially to ASC-compliant barter transactions "An entity engages in a transaction to swap a non-monetary asset (for instance, goods) for barter credits in a barter transaction including barter credits. These exchanges may take place directly between the principals involved in the transaction or may also involve a third party whose business it is to enable exchanges of that nature (for example, a barter entity)." [28].

ASC 845-10-30-01 states that non-cash exchanges are based on the fair value of the goods (or services) being exchanged. The fair value of the delivered assets is often used to calculate the value of the transaction, with any discrepancy between fair value and carrying value being recorded as a gain or loss. The fair value of the asset received, on the other hand, is used to determine the worth of the transaction if it is thought to be more reliable.

The absence of a stable value for the virtual currency would be one of the supporting evidences for considering a transaction to be a non-monetary exchange (similar to a barter credit). Therefore, the fair value of the inventory would be the likely value to be applied in a typical transaction where inventory is sold to a client.

According to ASC 845-10-30-17, "In reporting the exchange of a non-financial asset for barter credits, it shall be presumed that the fair value of the non-financial asset exchanged is more clearly evident than the fair value

of the barter credits received and that the barter credits shall be reported at the fair value of the non-financial asset exchanged."

However, the availability of quoted market values for barter credits does not make a transaction ineligible for classification as a non-monetary exchange. Nevertheless, according to ASC 845-10-30-18, "that presumption might be overcome if an entity can convert the barter credits into cash in the near term, as demonstrated by a historical practice of converting barter credits into cash shortly after receipt, or if independent quoted market prices exist for items to be received upon the exchange of the barter credits. Additionally, unless there is strong evidence to the contrary, it will be assumed that the non-monetary asset's fair value does not exceed it carrying amount. The infrastructure for trading bitcoins for dollars through merchant services is already in place. There are also numerous exchanges that offer pricing from the current market.

Cash is defined as "not only currency on hand but demand deposits with banks or other financial organizations," according to ASC305-10-20 (Glossary). In addition to demand deposits, cash also refers to various types of accounts where the customer can effectively deposit additional funds at any time and withdraw existing monies at any time without penalty or prior notification. “Virtual currencies might not be considered cash under a strict reading of this term as the majority of their current forms are not connected to financial institutions and efficient withdrawal of funds might not always be available; However, as was already mentioned, the creation of virtual currencies aims to offer a form of electronic payment from one person to another without the need for a middleman that does not rely on the financial sector. Similarly, if individuals accept virtual cash as payment, it is a currency in the real world. Like government-issued coins and currency, virtual currencies are largely used for business transactions (and secondarily as an investment).

Since virtual currency is seen as a form of currency, it would need to pass yet another examination to establish if it is a domestic or foreign currency. A foreign currency is described as "a currency other than the functional

currency of the entity being referred to" in accordance with ASC 830-10-20 [29]. In this definition, the functional currency simply refers to the currency in which the corporation generally conducts business and discloses its financial statements. It "is the currency of the primary economic environment in which the entity operates; often the setting in which an entity makes and spends money most frequently. [29] Because financial statements are not now given in virtual currency and because virtual currency is not yet widely used, no corporation can currently claim that it is the currency in which it makes and spends cash principally. Therefore, virtual money is a type of foreign money. Using the foreign currency technique requires a known exchange rate between the functional and foreign currencies because virtual currency is a foreign currency. Each asset, liability, income, expense, gain, or loss originating from a foreign currency transaction must first be measured in the functional currency of the recording entity using the exchange rate in force at the time the transaction is recorded. [29]. These dollar-to-bitcoin exchange rates are well-known and available online.

The researchers subsequently learn the differences between the two approaches. This paper argues that it is necessary to determine whether bitcoins can be used as a means of exchange similar to fiat money supported by central banks. In other words, the other assets involved in the transaction must be utilized to estimate the value of the virtual currency used if its value is unknown. The basis for non-monetary transactions is this. The value of the business transaction can be calculated using the value of the virtual currency if it has a known, equivalent value. The cornerstone of foreign currency accounting is this. [٢٦]

2.7.3. Issues in the Current Accounting Practice for Bitcoins

Following their investigation of several accounting methods for bitcoins, the researchers can sum up their conclusion as follows:

Bitcoins must be handled as "foreign currencies" if they are used as payment methods. This means that all transactions must be translated at a

spot rate and that any closing balances must be recalculated at a closing rate. Gains or losses recognized at the end of the fiscal year must be included in the calculation of profit or loss.

Although implausible given current market and business conditions, Bitcoin as a functional currency is also conceivable.

The most exciting scenarios involve buying bitcoins in anticipation of future capital gains from a rise in the price of the currency. The historical cost model (including impairment testing), the fair value model through profit or loss, and the fair value model through other comprehensive income are the three models that are accessible in terms of IFRS guidance on comparable items.

Despite the fact that IAS 8 permits the use of a cost model, it falls short of accurately describing the economics of bitcoin investments (either by trade brokers or "normal" investors). The claim is substantiated by the fact that the historical cost model cannot give users valuable information due to the extreme volatility of the bitcoin market pricing. The possibility that users won't be able to pinpoint the source of profits consistently grows if gains in bitcoin price are overlooked over acquisition costs. [6] because the historical cost model reduces the volume of the accruals and the accrual and cash-flow components of performance differ significantly.

From the standpoint of decision-usefulness, all applications of the cost model to the measurement of bitcoin (either as inventory under IAS 2 or as an intangible asset under IAS 38) are impractical. Users of financial statements are prevented from making wise economic judgments when information about sharp price spikes and later huge adjustments is withheld. This claim is supported by the fair value metrics' inherent qualities, which hold true regardless of how the economy is doing, as well as their worth to investors in making decisions. When it comes to delivering relevant information on financial instruments, fair value accounting is essential. [6].

Similar to investing in financial or other non-financial investment instruments, buying and selling bitcoins follows a similar pattern. When

purchasing bitcoins for either long-term or short-term investment goals, the accounting treatment must make mention of fair value measurement. An argument for a fair value model may also be made using the accounting treatment of shorting bitcoin. Fair value must be applied to all transactions of an investing or speculative nature because, from the perspective of symmetry, it makes no sense to have a different accounting treatment when the speculator expects a price increase (traditional trading) or a price decrease (short-selling derivative).

There are two open issues when applying the fair value model:

1) The presentation of fair value gains/losses – within PL or OCI.
2) The reliability of the measurement.

A. The presentation of fair value gains/losses – within PL or OCI:

The first concern is the general question of whether users would find more value in total comprehensive income, which includes components of other comprehensive income, or net income (profit and loss). Empirical studies offer contradictory data about the value significance of OCI components, depending on the context in which accounting information is used and how the income concept is defined. [30] On the other hand, [6] demonstrates that whereas net income predominates over comprehensive income when explaining CEO remuneration, the reverse is true when explaining equity returns.

The choice between the FVPL and FVOCI models for displaying changes in the market value of bitcoins shall be the same as under the advice for financial instruments because the significance of various levels of income statements varies depending on the context. For short-term (speculative, trading) bitcoin investments, all changes in fair value must be disclosed as part of the company's net income (profit and loss). Fair value adjustments must be included in other comprehensive income if a longer investment horizon is chosen.

The proven high price volatility provides a major risk that the stated financial situation and performance will fluctuate significantly regardless of

whether the FVPL or FVOCI model is utilized. As a result, thorough disclosures concerning all risks must be made, together with an estimate of how they might affect probable future scenarios of economic development, comparable to the disclosures demanded by IFRS 7 on financial instruments and risk management. [6]

B. The Reliability of the Measurement;

The second concern with using fair value accounting for bitcoins is that the market pricing may not be very reliable due to:

First off, a lot of cryptocurrencies lack a functioning market. More than half of all cryptocurrencies have a monthly trading volume of less than $1,000,000, according to data from Coinmarketcap.com. Low trading volume and a dearth of interested sellers and purchasers can conflict with IFRS 13's requirements for Level 1 inputs in the fair value hierarchy, necessitating changes. However, even in low-activity markets, a deviation from quoted market prices may raise users' concerns about the accuracy of mark-to-market measurement.

Secondly, Low market activity raises the possibility of price manipulation. A single market participant managed to manipulate the Bitcoin/USD exchange rate from $150 to $1000 in two months, as documented by[31]. Evidence of Bitcoin price manipulation demonstrates that unregulated cryptocurrency markets are still susceptible to manipulation. Bitcoin is the most significant CC in terms of market capitalization and transaction volumes. [31]

The accuracy and precision of accounting metrics may suffer from the significant risk of manipulation leading to a "unfair" market value. The answer to this issue, though, is not found in financial reporting. Due to the enormous volume of daily transactions and the high capitalization of the entire cryptocurrency market, this is not a significant problem in the case of bitcoins, which already have an active market.

2.7.4. Efforts of Professional Organizations in Accounting for Bitcoins

1. The Efforts of The International Accounting Standard Board (IASB):

A prospective new project for the IASB on the subject of digital currencies was highlighted in 2015 during the Board's Agenda Consultation process. But instead of taking quick action, the Board chose to keep an eye on events.

As part of that process, the Accounting Standards Advisory Forum (ASAF), an advisory body for the IFRS Foundation made up of representatives from supranational and national accounting standard-setters, held a discussion on digital currencies in December 2016. The categorization of a cryptographic asset from the holder's perspective was the main topic of discussion. Various accounting standards boards have continued their discussions, although the IASB has not yet released formal guidance.

The IASB decided to ask the IFRS Interpretations Committee to take into consideration guidance for the accounting of cryptocurrency transactions at its board meeting in July 2018. This request could take the form of an agenda decision on how an entity might walk through the current IFRS requirements.

The Interpretations Committee considered two technical papers created by IASB personnel during its meeting in September 2018. Both the accounting of a cryptocurrency holding entity and the accounting of a cryptocurrency issuing entity in an initial coin offering were covered in these publications. Although the Committee was not asked to make any decisions, the explanations in the staff papers were widely accepted by the members. These justifications are in line with the values of the text. The Committee also reviewed a staff study from the IASB that examined different standard-setting approaches. The IASB will talk about the Committee's conclusions later.

The IFRS interpretations committee reviewed holdings of cryptocurrencies on March 15, 2019, as part of the committee's draught agenda. Later, in June 2019, the committee discussed how IFRS Standards apply to holdings of cryptocurrencies.

The Committee noted that a range of crypto-assets exists. For its discussion, the Committee considered a subset of crypto-assets with all the following characteristics that this agenda decision refers to as a 'cryptocurrency':

a. A digital or virtual currency is recorded on a distributed ledger that uses cryptography for security.
b. Not issued by a jurisdictional authority or other parties.
c. Does not give rise to a contract between the holder and another party.

The IASB members decide the nature of cryptocurrencies and Which IFRS Standard applies to holdings of cryptocurrencies, however there are numerous judgmental areas that will need more research as organizations decide the appropriate accounting treatment and as the markets and technologies advance. There are several subjects that don't yet have uniform or conclusive solutions.

2. The efforts of the Australian Accounting standard board (AASB): [13].

In December 2016, the AASB released the paper, "Digital currency: a case for standard-setting activities." In order to establish whether digital currencies should be categorized as cash or cash equivalents, financial assets (other than cash), intangible assets, or inventories, the AASB analyzed recent IFRS literature.

The paper argues that at present time, digital currencies should not be treated as cash or cash equivalents under [39] IAS 7's "statement of cash flows." It was expressly mentioned that a digital currency is not issued by a central bank and (at the present) lacks general recognition as a medium of trade.

A digital currency is also not a financial instrument as defined in IAS 32 "Financial Instruments: Presentation" because there is no contractual

relationship that results in a financial asset for one party and a financial liability for another. The research also found that because digital currency is an identified non-monetary asset without a physical existence, it satisfies the criteria of an intangible asset as stated in IAS 38 "intangible assets “Inventories and henc are accounted for the lower cost and net realizable value rather than using the cost or revaluation model under IAS 38 (except for inventories held by commodity broker traders, as discussed below). Paragraph 3 of IAS 38 includes a scope exception for held for sale in the ordinary course of business such intangibles are subject to IAS 2.

The study did point out that in the context of digital currencies generally, it is not always apparent how "held in the ordinary course of business" should be halted. For instance, it is not apparent if companies who take digital currencies as payment are holding such currencies for sale in the normal course of business.

Furthermore. IAS 2 does not apply to commodity broker traders who measure their inventories at fair value less costs to sell and recognize changes in fair value less costs to sell in profit or loss in the period of the change. Broker traders are individuals who buy and sell commodities on behalf of others or for their own accounts. However, it is not always clear whether digital currencies should be classified as commodities under IAS 2.

The AASB also notes the absence of accounting rules for commodities and intangible assets retained for investment. The AASB draws the conclusion that there is a lack of guidance on digital currencies and that the measurement guidance under IAS 2 and IAS 38 does not offer relevant and helpful information to readers of financial statements (except for instances where an entity is considered to be a commodity broker trader). It suggests valuing digital currencies at fair market value and accounting for changes in fair value in profit or loss. Therefore, norm-setting action is necessary.

The Accounting Standard Advisory Forum (ASAF), a consultative body of the IASB, discussed the AASB's paper there (The Board). It was advised in December 2016 that the IASB keep an eye on developments in this sector.

3. The Efforts of the Financial Accounting Standard Board (FASB):

For reliable accounting advice, accountants turn to the Financial Accounting Standards Board (FASB). Virtual currencies are still in their infancy, so any guidance should be found in the FASB Accounting Standards Codification (ASC) Updates or as a topic for discussion on the Emerging Issues Task Force's agenda (EITF).

The FASB reported that extensive study on digital currencies was done by the staff over the period from 1 July 2017 to 30 September 2017 in its chairman's report. But this research hasn't yet been discussed by the FASB. [13]

Only the following ASC Updates are now relevant to the topic of virtual currencies or virtual currency accounting:

1) Update No 2013-05—Foreign Currency Matters (Topic 830):

Parent's Accounting for the Cumulative Translation Adjustment upon Derecognition of Certain Subsidiaries or Groups of Assets within a Foreign Entity or of an Investment in a Foreign Entity (a consensus of the FASB Emerging Issues Task Force)

2) Update No. 2010-19—Foreign Currency (Topic 830): Foreign Currency Issues: Multiple Foreign Currency Exchange Rates (SEC Update) (Financial Standards Accounting Board 2014).

Neither of these updates is concerned with virtual currencies. According to the FASB Emerging Issues Task Force list of current issues as of the November 14, 2013, meeting (Financial Standards Accounting Board 2014), virtual currency is not on the FASB radar

4. The Efforts of the Internal Revenue Service (IRS): [7].

For better or worse, the Internal Revenue Service (did clarify how to manage bitcoin accounting in IRS Notice 2014-21). Because the IRS regards bitcoin as property, it must be treated as such for accounting purposes. As a result, company-owned bitcoin should be recorded in the general ledger to non-cash asset accounts.

Bitcoin account valuation changes, like other non-cash asset accounts, can be tracked as appreciation/depreciation. Bitcoins, on the other hand, do not necessitate the complex depreciation scheduling that fixed asset do.

Active bitcoin exchanges make determining fair market value easier. Tracking bitcoin accounts as foreign currency accounts appears to be another option. Aside from the IRS's declaration that bitcoin is not a currency (despite behaving in many ways like one), there's a more mundane reason why this isn't always possible. Virtual currency is considered property for federal tax purposes. General tax principles that apply to real estate transactions also apply to virtual currency transactions. Under current law, virtual currency is not treated as currency capable of generating foreign currency gain or loss for federal tax purposes in the United States.

5. **The Efforts of the Accounting Standard Board in Japan (ASBJ):** [13].

In December 2017, the ASBJ released an exposure document titled "practical solution on the accounting for virtual currencies under the payment service act" for public comment. Public comment will be accepted until the beginning of February 2018.

6. ***The Efforts of the CPA Canada*:** [13].

What CPA Canada has been as follows Bitcoin disclosure activities:
The IFRS Standards' disclosure requirements must be followed by entities when accounting for cryptocurrency (e.g., IAS 2, IAS 38, IFRS 13). Entities should assess whether further disclosures regarding their bitcoin holdings are necessary given the complexity and volatility of cryptocurrencies. So, among other disclosures, in addition to those called for by a particular IFRS Standard, the following disclosures may also be pertinent:

1) A summary of the cryptocurrency, its distinguishing characteristics, and the justification for holding it (e.g., investing, buying goods, and services).
2) The quantity of cryptocurrencies held at year's end.

3) The process used to determine the accounting policy.

4) The fair value of the cryptocurrency and the appropriate IFRS 13 disclosures, if the cost model is applied.

5) Information about the cryptocurrency market risk (e.g., historical volatility).

Furthermore, financial statements might not contain disclosures that are mandated by securities regulators. The disclosures that might be needed for management's discussion and analysis or other papers filed as continuous disclosure under securities regulations should be considered by entities.

2.8 Arguments about Accounting for bitcoins in Academic Research:

Concerns regarding how these transactions should be reflected in financial statements have unavoidably been sparked by the exponential expansion of bitcoin and other cryptocurrency transactions. Just keep in mind the values at risk. The entire market value of the 11 cryptocurrencies covered in this digest is approximately $262.22 billion, with bitcoin accounting for 72% of this figure if we assume that bitcoin's market capitalization in July 2019 will be around $188.25 billion. [54].

Therefore, it is still up for debate whether bitcoins could be considered a financial asset, currency equivalent, investment property, inventory, or intangible asset. According to the "Piia and Ellinor study," the researcher offers various classifications for bitcoins and cryptocurrencies in general while gathering information about problems, difficulties, and usage patterns for cryptocurrencies through professional interviews. The study is also restricted to big accounting firms in terms of the advised accounting treatment. It is assumed that these accounting companies provide a picture of what is done in reality because their opinions are highly trusted and they offer counsel to customers. The results of the investigation on the classification of bitcoins and other cryptocurrencies are as follows: The opinions of the respondents on the classification of cryptocurrencies as an asset type were diverse. Asset classifications that were suggested included financial assets, intangible assets, inventory, and cash. While some

respondents were positive of the sort of asset that could be classified, others expressed uncertainty and thought that several standards may be used.

All respondents agreed that conditions affect asset classification and that various classifications might be appropriate for certain organizations. The goal of storing bitcoins "affects asset classification," according to consultant 2. This was also underscored by IFRS-expert 1, who stressed how crucial it is to comprehend cryptocurrencies in order to categorize them inside one of the recognized asset classes.

Consultant 2 thought that while Bitcoin itself might be categorized as a financial instrument, cryptocurrencies in general could be. Cryptocurrencies can be categorized as financial assets, intangible assets, or something else, according to IFRS-expert 1. However, it was also mentioned that as long as they are not supported by a government or widely recognized, cryptocurrencies do not fulfil the definition of a financial asset under IFRS 9.

If it is widely used or supported by the government, it can be categorized as a currency equivalent. The IASB, according to IFRS-expert 1, believed it was too early to change the financial instrument standard to incorporate cryptocurrencies, thus the advice was provided through IFRIC. Consultant 3 on the other hand thought that since there are already established methods for dealing with foreign currencies, cryptocurrencies should be categorized as such because they are a form of foreign currency. The third consultant disputed which cryptocurrencies may be regarded as currencies and came to the conclusion that the biggest cryptocurrencies, like Bitcoin, Ethereum, and Ripple, should be. Contrarily, consultant 4 said, "I believe everyone argues as to how it should be classed, but everyone can agree that it is not cash." The document released by the accounting firm where IFRS-expert 2 works should be followed in order to arrive at the best accounting treatment, he suggested. IFRS-expert 2 must adhere to this document unless there are strong reasons not to. Inventory under IAS 2 or intangible assets under IAS 38 are the suggested accounting procedures, depending on the specifics. Consultant 4 was adamant that cryptocurrency should be treated like stock.

It was decided that "for sure it is the inventory" if a corporation issuing cryptocurrencies is also producing them. Although there can be issues if a corporation regularly transacts in cryptocurrencies, Consultant 4 thinks that since financial institutions are expected to treat their stock as inventory, the same standard should apply here as well. Consultant 4 hasn't noticed any other classification of bitcoins in the balance sheet besides inventory. However, Consultant 4 pointed out instances where cryptocurrencies might be categorized as financial assets, such as when a business has extra cash and invests it in cryptocurrencies or when it is an investment product from a financial organization. [54]

Some common themes are developing from these discussion papers, despite the fact that there is undoubtedly uncertainty. Intangible assets, financial instruments, and inventories are three asset categories that are generally acknowledged as being applicable.3. The Proposed Framework.

3.1 The Model Objectives

The objectives of this model can be presented as:

1. Creating and enhancing a bitcoin-specific accounting treatment.
2. Paying more attention to accounting for investments in bitcoins than to mining or using them as a medium of exchange.
3. Offering an accounting model that may be applied to different cryptocurrencies with properties similar to those of bitcoins.
4. Providing more helpful information on bitcoins while raising the standard of financial reporting.

3.2 Challenges to be handled in the model:

1. Establish the proper classification of bitcoins on the balance sheet.
2. Choose whether to subject the bitcoins to an impairment test and carry them at fair value rather than their historical cost.
3. Decide whether gains and losses resulting from fluctuations in the value of bitcoins should be recorded in profit or loss, other comprehensive income, or not at all until they are sold (if we use F.V).
4. Deciding which exchange or source of pricing data will be used to determine the value of bitcoins.

3.3 Evidence that support considering bitcoins as an intangible asset:

Several writers have argued that financial statement users are misled if bitcoins will be measured by cost model, which means that using fair value model will be more proper for measuring bitcoins and recognized it as intangible assets, in the following lines the researcher states evidence which supports her opinion:

A - Harvex one of the big companies which provides accounting services in accounting for bitcoins considers bitcoins as an intangible asset.

Since cryptocurrencies don't appear to have a physical form, according to a first analysis, they might be considered intangible assets. The definition of an intangible asset, according to International Accounting Standard 38, is "an identified non-financial asset without physical substance."

This term seems to apply to bitcoin. It can be distinguished because individual bitcoins (or pieces of them) can be bought, sold, or traded for goods and services. Furthermore, it has no physical form. (https://www.harvex.io/accounting/bitcoin-accounting-crypto-accountmanagement)

B-In June 2019, the IFRS Interpretations Committee (Committee) discussed how IFRS Standards apply to holdings of cryptocurrencies and the committee has provided its agenda decisions.

The Committee concluded that IAS 2 "Inventories" applies to cryptocurrencies when they are held for sale in the ordinary course of business. If IAS 2 is not applicable, an entity applies IAS 38 "Intangible Assets "to holdings of cryptocurrencies.

C- Numerous reports and studies argue that cryptocurrencies should be classified as intangible assets (AASB, 2016, p. 13; CPA, 2018, p. 8; Deloitte, 2018, p. 13; Grant Thornton, 2018, p. 6; KPMG, 2018, p. 2; Procházka, 2018, p. 175; PwC, 2018, p. 6).

3.4 Justifications for the proposed accounting model:

3.4.1 bitcoin is not a Cash:

The most obvious question is whether cryptocurrencies meet the definition of cash in IFRS [٥٥]. Currency is typically recorded as cash [13]. Although the phrase "cryptocurrency" suggests that it would be a form of money, it does not necessarily imply that it is money in the traditional sense of the word.

Since Bitcoin is not backed by a state, country, or central bank, it is not considered money. To convert a bitcoin into a fiat money, the owner would need to work with a cryptocurrency broker; there would be a fee for this process. Other factors could potentially influence the value.

IFRIC has not yet recognized cryptocurrencies that are used as a medium of exchange, as a unit of measurement in price fixing, and that could be used as a basis for quantifying transactions in financial statements [40].

Even while it is possible to exchange a cryptocurrency for cash through a cryptocurrency exchange, the owner of the coin does not have the right to receive money [55].

3.4.2 bitcoin is not a cash equivalent:

Savings accounts, extremely liquid investments, undeposited checks, and other financial instruments are regarded as cash equivalents. High levels of liquidity are crucial in this situation.

As we all know, there is a great degree of certainty regarding the purchasing power of fiat currencies (except for inflation). Bitcoin does not meet the concept of a cash equivalent because it is thought to be exceedingly volatile and so carries a high risk of value changes.

The only countries to have recognized cryptocurrencies as legal money to date are Japan, Venezuela, and the Marshall Islands. Cash equivalents, however, are anticipated to need backing from a central bank.

3.4.3 bitcoin is not a financial asset:

Most people would concur that fair value would be the best metric to use when evaluating bitcoins. Since it would reflect the actual value of bitcoins at any given time as well as the value that a business, investor, or

individual would realize.

Bitcoins must, however, fit within the IAS 32 "Financial Instrument" category of a financial asset in order to be valued at fair value, which is:

A- Bitcoin is not a legal tender.

B-contractual right to receive money or another financial asset from another entity: Bitcoin is created through a process of "mining" or similar independent and not legally binding.

C- contractual right to receive money or another financial asset from another entity: Bitcoin is created through a process of "mining" or similar independent and not legally binding. The issuance of bitcoin creates no legal obligation or binding agreement.

Bitcoins do not fit the definition of a financial instrument when using the fair value approach, which is the preferred way for valuing financial instruments. Cryptocurrencies cannot be seen as financial assets because they are neither currency nor do they grant any contractual right to receive cash or any type of financial asset.

[56] [40] [52]

However, there are other circumstances that could result in the classification of cryptocurrencies as a financial instrument, such as forward contracts, options, or other cash-settled contracts based on cryptocurrency price movements [13].

3.4.4 bitcoins are not an inventory:

There are two situations that will result in the acceptance of cryptocurrency as inventory. The classifications, recognition, and asset valuation in these two scenarios will be covered separately.

a- bitcoins held for sale

Intangible assets that are retained by an entity for sale in the regular course of business are excluded by IAS 38 [13][40]. According to IAS 2 [13] [40], these intangible assets should be treated as inventory. IAS 2 states that while physical forms of inventories are not necessary, inventory should comprise of items kept for sale in the normal course of business [36]. IAS 2 [40] should be used to account for bitcoins kept for sale normally in

business.

Commodity broker-traders

For commodity broker-traders, IAS 2 provides a scope exception where the accounting approach is different from that of standard inventories [13][55]. An organization buying or selling commodities for another party or its own account is known as a broker-trader [55]. Although there isn't a precise definition of a commodity under IAS 2, the description accords with the economic model for bitcoin, which is more relevant and trustworthy than the goods offered by bitcoin brokers. [6].

She supports classifying bitcoins as inventory, but this research only focuses on bitcoin investment. Miners, traders, or anyone who deals with bitcoins as an item to buy and sell for profit will typically classify bitcoins as inventory and apply IAS 2. Additionally, because different cryptocurrencies have different features, it is important to understand the characteristics of each cryptocurrency. [55],

Because of this, in order to properly deal cryptocurrencies, accountants need to be knowledgeable with both the technology and potential accounting methods. Therefore, the researcher only concentrates on bitcoins.

3.4.5 bitcoins are not a Property, Plant, and Equipment:

bitcoins do not fall into the scope of IAS 16, 'Property, Plant and Equipment', because they are not tangible items. It doesn't have a physical form, certainly not land and buildings and the use of bitcoins does not lead to the production of goods or services, which is required of assets for IAS 16.

So, the researchers found that the main problem in accounting for bitcoins is the investments in them which was cleared in the previous point. As there are no guidelines that determine how to recognize bitcoins in the financial statements, or what it should be classified as? or how it could be measured which is still debated between both professionals and academic all over the world. That thrust the researcher to propose a model for accounting for investments in bitcoins.

3.5 Elements of the Proposed Model

3.5.1 Recognition of Bitcoins

* Definition of an Asset in the Conceptual Framework:

Recognition is the process of capturing for inclusion in a statement of financial position, an item that meets the definition of one of the elements of financial statements—an asset, a liability, equity, income, or expenses. [20].

According to the Framework, an asset is a current economic resource that the entity controls as a result of earlier actions. A right that has the potential to result in financial gains is referred to as an economic resource. The definition covers these three topics in detail:

(a) Right

(b) Potential to produce economic benefits; and

(c) Control

A. Right**:** [20].

Rights that have the potential to produce economic benefits take many forms, including:

1) Rights to receive cash.
2) Rights to receive goods or services.
3) Rights to exchange economic resources with another party on favorable terms.
4) Rights to benefit from an obligation of another party.

B. Potential to produce economic benefits: [20].

It does not need to be certain, or even likely, that the right will produce economic benefits for that potential to exist. The only requirement is that the right already exists.

C.Control**:** [20].

Control is what connects an economic resource to an entity. An entity controls an economic resource if it currently has the ability to direct its use and obtain the economic benefits that may result from it.

Whether reading different papers, bitcoin can be defined as follows: "Bitcoin is a cryptocurrency. It is a decentralized digital currency that can

be sent from user to user on the peer-to-peer bitcoin network without the need for intermediaries."

The researchers cleared the definition of asset in accordance to the conceptual framework, and also define bitcoins in accordance to various studies which resulted in considering bitcoins as an asset, because it meets all the aspects of asset definition which can be clarified as follows:

(1) it's a present economic resource controlled by the entity as a result of past events.

(2) bitcoins have the potential to produce economic benefits as they can be:

a) sold for a certain amount of cash,
b) exchanged for a service or good,
c) used to buy another asset,
d) used to extinguish a liability,
e) can be held to verify gains from speculation in its price.

Additionally, the organization that had the bitcoins controls them. The following inquiries can be used to determine whether the entity can access bitcoins using its private key from a bitcoin wallet and so confirm the control conditions:

a) If the storage location is compromised or taken down, can the private key still be accessed there?

b) Does the business have direct access to the private key, and are there several people who are aware of its location?

c) If the private key is held by a third-party custodian, is there a mechanism in place for that custodian to transfer key access to a different party in the event that they are unable to carry out their duties?

After answering these questions, the entity will have the present ability to prevent other parties from directing the use of the bitcoins. So, from what was mentioned above the definition of the asset can be applied to bitcoins, and the researchers can consider bitcoins as an asset.

3.5.2 Recognition Criteria

1. Relevance:

The researchers consider that the information related to bitcoins is relevant as it can make a difference in the users' decisions because: [58].

a) It will be included in the profit & losses statement (Income Statement) of the entity.
b) Classifying them as an asset in the financial position statement will affect the financial position and the total value of assets.
c) The users will be able to predict future economic benefits (gains or losses from the change in bitcoins value).

2. Faithful representation:

Financial information must not only represent relevant phenomena, but it must also faithfully represent the substance of the phenomena in order to be useful. In many cases, the substance of an economic phenomenon and its legal form are identical. If they are not the same, providing only information about the legal form will not accurately represent the economic phenomenon. A depiction must have three characteristics in order to be a perfectly faithful representation. It would be complete, neutral, and error-free. [20].

The researchers see that information about bitcoins is:

a) Complete as it includes all information necessary to users to understand bitcoins as its value, classification, and other information.
b) Neutral and Free from error as it depends on the market price of bitcoins in the exchange market as most of the time the bitcoins have an active market without any estimation by management

3.5.3 Classification of Bitcoins

1. Type of Asset to be classified:

Before determining the Proper Accounting Model to measure bitcoins and after the coincidence of the definition of an asset on bitcoins the researcher must determine which type of asset to classify the bitcoins, So the researcher will clarify her opinion and justify it in the following lines.

The researchers will classify bitcoins as Intangible assets which is an

‘*identifiable non-monetary asset without physical substance*’. [27]. this can be justified by: [58].

a) bitcoin is separable and identifiable as it can be separated from the entity and sold, transferred, or exchanged individually**.**
b) it can be acquired or created through mining.
c) It is not cash or a non-monetary asset; and
d) It has no physical form.

So, it is considered as an intangible asset in accordance to IAS 38.

(* the most we can talk about that the proposed classification is similar to Goodwill which is: "Goodwill is an intangible asset with an indefinite life and therefore does not need to be depreciated," according to US GAAP and IFRS Standards. Although it must be periodically assessed for impairment, the fundamental distinction between bitcoin and goodwill is that goodwill denotes assets that are not individually identifiable. Identifiable assets that can be sold, transferred, licensed, rented, or exchanged, either separately or in conjunction with a connected contract, are not considered to be part of goodwill. Additionally, goodwill can only be obtained through an acquisition; it cannot be formed on its own.)

2. Classification of investments in bitcoins:

Understanding the nature and traits of bitcoins as well as the entity's business model and purpose for holding them is important, as seen by the range of potential classifications and the accompanying measurement. [38]. The researchers will use the business model test to classify investments in bitcoins (which is a new accounting concept in which the assessment of a business model is based on how key personnel

Actually, manage the business, rather than management’s intent for specific assets)، As the purpose of holding bitcoins is a key consideration in determining the subsequent accounting treatment, and this will appear in the disclosures section, not on the balance sheet. [58].

So, the researchers classified investments on bitcoins in 2 categories depending on the purpose management from holding bitcoins by the

management as follows: [58].

A. Buy and Hold bitcoins (long – term bitcoins):

Many people invest in bitcoin simply by buying and holding them. These are the people that believe in bitcoin's long-term prosperity, and see any volatility in the short term as little more than a blip on a long journey. So, they hold the bitcoins for a long term (which is more than 12-months or one accounting period the longer) to benefits from volatility in its price.

B. Hit and Run bitcoins (Short -Term bitcoins):

Some investors buy bitcoin then sell it at the conclusion of a price increase because they seek a quicker return. There are many ways to achieve this, one of which is to rely on bitcoin's volatility in order to achieve a high rate of return. In order to profit from the price differential, they retain bitcoins for a short period of time and sell them when their value rises.

3.5.4 Measurements of Bitcoins

Elements recognized in financial statements are monetary in nature. This necessitates the choice of a measurement basis. A measurement basis is a distinct feature of an item being measured, such as its historical cost, fair value, or fulfilment value. [20].

Fair value as a measurement base for bitcoins:

The researcher sees that fair value is the most applicable measure basis to be used for bitcoins, as it will provide more relevant information about bitcoins, with fair value accounting, valuations are more accurate, such that the valuations can follow when prices go up or down, also fair value accounting utilizes information specific for the time and current market conditions, it attempts to provide the most relevant estimates possible. [58].

"Fair value is the price that would be received to sell an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date". The asset is measured using the same assumptions that market participants would use when pricing the asset or liability if they acted in their own economic best interests. Fair value can be determined directly in some cases by observing prices in an active market. In other

cases, measurement techniques are used to determine it indirectly. [32].

3.5.5 Measurement Model for Bitcoins [58]:

1. Initial Measurement:

As bitcoins are classified as an intangible asset so the initial measurement of them will be the cost incurred initially to acquire it from the exchange market (including broker commission and any other expenses), in exchange for selling goods or providing services, or generating them through mining.

2. Subsequent Measurement:

An intangible asset's useful life is utilized to account for it. While intangible assets with an endless useful life are not amortized, those with a finite useful life are. [27], Therefore, given that there is no foreseeable time limit on the span over which it is anticipated to generate net cash inflows for the organization, bitcoins can be regarded as an intangible asset with an indefinite useful life.

The researchers will introduce the subsequent measurements for each category of bitcoins as follows:

A-Buy and Hold bitcoins (Long -Term bitcoins):

The researchers using the revaluation model as it will provide more relevant information about bitcoins.

*Revaluation model**:** Following initial recognition, bitcoins must be carried at a revalued amount equal to their fair value on the date of revaluation less any subsequent accumulated impairment losses. (There is no amortization for bitcoins to be deducted from its F. V as it is considered an indefinite intangible asset. [27].

For the purpose of revaluations under IAS 38, the fair value shall be measured by reference to an active market at the end of each reporting date. [27]

3.5.5.1 Active Markets For bitcoins:

There is an active market for bitcoins as it traded homogeneously between different parties at any time and its price is always available to everyone through many online markets such as: coindesk,

https://www.coindesk.com/price/bitcoin
Bitcoin.com https://markets.bitcoin.com/
MarketWatch
https://www.marketwatch.com/investing/cryptocurrency/btcusd
Statista https://www.statista.com/statistics/377382/bitcoin-market-
Coinmarket cap https://coinmarketcap.com/

3.5.5.2 Impairment Test For bitcoins:

The carrying amount of bitcoins is equal to their revalued amount as of the date of the most recent revaluation by reference to the active market, less any subsequent accumulated impairment losses. This is true if the fair value of revalued bitcoins can no longer be determined by reference to an active market. IAS 38, 2018, paragraph 82 It may be a sign that bitcoins are impaired and should be evaluated under IAS 36 if there is no active market for a revalued bitcoin. 2018 IAS 38, para. 83

In accordance with IAS 36, an entity is required to test an intangible asset with an indefinite useful life for impairment by comparing its recoverable amount with its carrying amount

(a) annually, and

(b) whenever there is an indication that the intangible asset may be impaired (IAS 38,2018, para 108).

Every reporting date, the corporation evaluates if there are any signs that an asset might be impaired. The recoverable amount of the asset, which is the fair value of the asset less costs to sell, is established and compared with the carrying amount of the asset if there are signs that the asset may be impaired.

* Carrying amount:

The amount at which bitcoin is recognized after deducting any accumulated impairment losses. [34]

* Various cases for Fair value less costs to sell: [34]

- Price in a binding sale agreement in an arm's length transaction, adjusted for incremental costs related to the sale of bitcoins.

- If there is no binding sale agreement but bitcoin is traded in an active market, fair value less costs to sell for bitcoin is the same as bitcoin's market price.
- If there is no binding sale agreement or active market for bitcoin, fair value less costs to sell is based on the best information available to reflect the value obtained by the entity at reporting date from the sale of bitcoins in an arm's length transaction between knowledgeable, willing parties, after deducting the cost of sale.

* Cos to sell:
- Expenses to determine the fair value of bitcoins (if any)
- broker's commissions - taxes on transactions (if any)

i. Revaluation results:

- If a revaluation results in a rise in the carrying value of bitcoin, the increase must be recorded in other comprehensive income and amassed in equity as a revaluation surplus. However, if the gain cancels out a previously recorded revaluation reduction of the same bitcoin, a profit or loss must be recorded. [27]
- Any drop in the carrying amount of bitcoins as a result of revaluation must be recorded as profit or loss. To the extent that there is a credit balance in the revaluation excess for that bitcoin, the decrease must be recorded in other comprehensive income. The quantity of equity accumulated under the heading of revaluation surplus decreases due to the decline in other comprehensive income. [27]

ii. Reversal of impairment loss:

Any information source may indicate that an impairment loss recognized for bitcoins no longer exists or has been reduced. As a result, the previously recognized impairment loss for bitcoins will be reversed, with the caveat that the adjusted carrying amount of bitcoins cannot exceed the carrying amount of bitcoins determined if no impairment loss was previously recognized.

iii. Indicators and predictors for testing the impairment for bitcoins which are: [57]

There are 124 available technical predictions and indicators. The only basis for any of the indicators is the price of bitcoin in the past. Among the 124 indicators are overlap study indicators, momentum indicators, cycle indicators, volatility indicators, and pattern identification indicators. The descriptions of each of these five indicator categories are provided below.

1- Overlap study indicators: In technical analysis, an overlap study indicator is used primarily to smooth out the price action's erratic volatility and objectively identify the direction of a trend. A multitude of trend indicators can be employed for technical analysis. These indicators, however, are frequently trailing indicators because they are dependent on historical pricing. In other words, these technical indicators follow price activity rather than leading it.

2- Cycle indicators: In technical analysis, oscillating indicators called cycle indicators are employed to study market cycles. Cycle theory states that there are regular rhythms in the stock market (moving from bull market periods to bearish market periods and back to bull market periods). Such cycles can help investors predict the market because they happen frequently. An illustration of a cycle indication is the Schaff Trend Cycle (STC) indicator. Foreign exchange rates are regularly predicted using the STC indicator, which combines the Slow Stochastics indicator and MACD.

3- Momentum indicators: These indicators can be used to gauge how quickly the price of the underlying security moves. These indicators, which are typically leading oscillators, plot the rate of price change as opposed to the actual change in price.

Some of these metrics, including the Stochastic Oscillator and the Relative Strength Index, were proposed by Wilder (RSI).

4- Volatility indicators: Volatility indicators, like Wilder's Average True Range, make an effort to quantify how volatile the price action of a security is. Day traders favor increased volatility since it allows for greater potential

gains (or losses) in a short amount of time. Some well-known volatility indicators are Bollinger Bands, Chaikin's Volatility, Dorsey's Relative Volatility Index (RVI), and Standard Deviation.

5- Pattern identification indicators: These are subroutines that can identify specific price chart patterns like two crows, three stars in the south, breakaway, dark cloud cover, and so forth.

These signs are merely meant to help management determine whether the value of bitcoins has been diminished. However, each management of entity can undoubtedly determine different indicators to monitor the value of bitcoins for any degradation.

iv. Hit and Run bitcoins (short – term bitcoins): [58]

The bitcoins are held for a short period of time, less than 12 months or one accounting period, so no impairment test is required; when sold, it will be measured at a fair value less than any cost to sell, compared to it carrying amount, which is the acquisition cost which is recognized at, and the difference between the two amounts will be recognized at profit and loss statement as we have two cases:

- Profit: If fair value of bitcoins greater than it's carrying value.
- Loss: if fair value of bitcoins less than it's carrying value.

3.5.6. Disclosures for Bitcoins: [58]

According to the presentation and disclosures objectives mentioned in both: the revised conceptual framework and the discussion paper 2018 "disclosure initiative – principles of disclosures" by IASB [٣٠&٢٠] The entity must communicate effectively by identifying useful information to present and disclose them in financial statements.

As a result, any entity that owns bitcoins must include them in its financial statements and disclose any information about them that will be useful to financial statement users and influence their decision-making.

The accounting treatment of bitcoins and associated transactions takes a great deal of judgement and a deep understanding of the underlying facts and circumstances because there is no accounting standard that particularly covers the accounting for those types of assets. Therefore, there are no

special disclosure requirements for bitcoins and associated transactions.

That is not to say that minimal or no disclosures should be made in transactions involving bitcoins and their related products. The fact that bitcoins and related transactions are of great interest to all parties, in addition to the fact that this is a judicial field, serves as the main justification for transparency about relevant facts and circumstances (especially shareholders, analysts, and regulators).

The researchers will determine some data that must be released by the management for bitcoins, and it is preferred to be in a separate statement, since the material below covers some of the more popular topics for disclosure. Although this list is not exhaustive and needs to be tailored to develop disclosures that are particular to the company and the pertinent facts and circumstances, management is required to disclose any information about bitcoins that would affect users' decision-making. the following information must be disclosed by the entity: [58]

1. information about bitcoins:
   a. Description of the bitcoins including their characteristics.
   b. The business model for holding bitcoins.
   c. The date and price of each bitcoin acquired.

2. Accounting policies and judgments made in applying them:
   a. Accounting model applied to bitcoins.
   b. Measurement basis:
      a) increases or decreases in the value of bitcoins during the period resulting from revaluations and from impairment losses recognized or reversed in other comprehensive income in accordance with [34] (if any).
      b) Impairment losses are recognized in profit or loss during the period in accordance with [34] (if any).
      c) Impairment losses reversed in profit or loss during the period in accordance with [34] (if any).
      d) Other changes in the carrying amount of bitcoins during the period.

e) The amount of the revaluation surplus that relates to bitcoins at the beginning and end of the period, indicating the changes during the period and any restrictions on the distribution of the balance to shareholders.
f) The policy used by the management to determine which bitcoins to sell and information about the reasons to choose this policy.
g) The reasons to change the policy of determining the value of bitcoins.
h) The time of impairment test.

3. Events after the reporting period:
Major change in the value of bitcoins.
4. Fair value of bitcoins:
a. Fair market value of held bitcoins.
b. The division within the fair value hierarchy that the fair value measures fall under.
c. An explanation of the valuation method and the inputs that go into calculating fair value measurement.
d. When determining fair value assessments, inputs are taken into account, particularly the dependability of the data source and the identification of the major or most favorable market.
e. An explanation of the sensitivity to invisible inputs.
f. The source that was used to value bitcoins.
5. Risks and how they are managed:
a. A volatility in the price of bitcoins.
b. Decrease on the demand for bitcoins and its reasons.
c. The rise of another currency has the same features as bitcoins so its value back off.

3.5.7 Derecognition for bitcoins:

When derecognition takes place is neither specified nor described by the conceptual Framework. Derecognition conversations frequently compare and contrast two methodologies: a control methodology and a risks-and-rewards approach [20].

3.6.7.1 Reasons for derecognition: [58]

bitcoins shall be derecognized in the following cases:

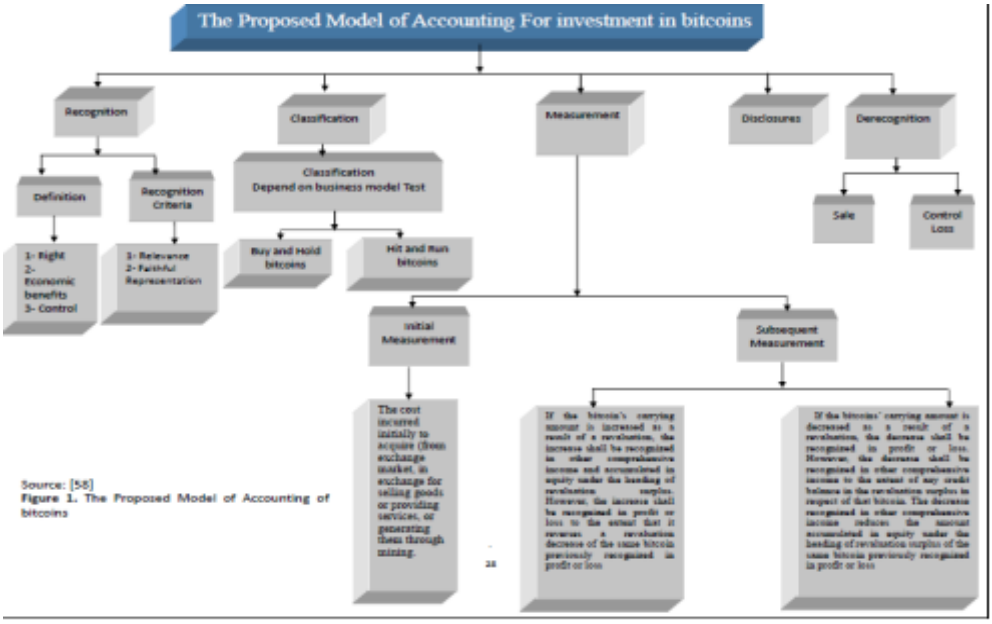
(a) on sale

(b) loss of control over bitcoins due to

- loss of private keys of bitcoin wallet
- hacking the Bitcoin system or any other reason.

The gain or loss resulting from bitcoin derecognition is calculated as the difference between the net sale proceeds (sale price less any sale cost, if any) and the bitcoin's carrying amount. It must be accounted for in profit or loss (unless IAS 17 requires otherwise on a sale and leaseback.) [27]

Finally, the following figure will summarize the proposed model of accounting of bitcoins.



Source: [58]
Figure 1. The Proposed Model of Accounting of bitcoins

.4. Research Methodology:

To achieve the objectives of the study ,the researchers depend on a simulation of the proposed model on the financial statement of a corporation which had normal type of activity and makes investment in bitcoins but, due to lack of information, the researcher depends on actual data for a listed multinational corporation in the Egyptian stock market (Orascom construction) for the year 2019[59] ,and assuming the data is related to the investment of bitcoins then showing the effects on the financial statements.

Conducting this part through getting :

Two years of audited sets of financial statements (including complete notes to the accounts) for Orascom construction corporation .

The value of bitcoins according to **CoinDesk** which is wallet provider, bitcoin exchange https://www.coindesk.com/price/bitcoin)

1.1 **Study procedures :**

4.1.1 Simulations: This procedure uses a mathematical, physical, or computer models to replicate a real-life process or situation. It is frequently used when the actual situation is too expensive, dangerous, or impractical to replicate in real life. (http/ www.formplus/blog/experimental -research)

Part one :

Assume that Orascom corporation made an additional investment in bitcoins by 8 millions $ on 3/4/2019 , value of bitcoin was $ 4818.77 , the management intends to divide these investments in bitcoins into : 3 millions as short term investments in bitcoins , 5 millions as long -term investments in bitcoins , on 17 / 6 / 2019 , the company sold 207 bitcoins , and also sold another 207 bitcoins on 22/ 12 / 2019 , The financial statements on 31/12/2019 will be showed after applying the proposed model of accounting for bitcoins according to these changes

Consolidated statement of financial position As at

$ millions	December 31, 2019	December 31, 2018
Assets Non-current asset		
Property, plant & equipment	181.3	159.3
Intangible asset -goodwill	13.8	13.8
Intangible asset : bitcoins (1)	8.946	-
Trade and other receivables	44.4	15.2
Equity accounted investees	430	419.5
Deferred tax assets	39.6	35.9
Total non-current assets	**718.046**	**643.7**
Current assets		
Inventories	293	283.3
Trade and other receivables	1258.5	1243.1
Contracts work in progress	869.8	526.7
Current income tax receivables	0.1	0.1
Cash and cash equivalents	374.8	402.5
Total current assets	**2796.2**	**2455.7**
Total Assets	3514.246	3099.4
Equity		
Share capital	116.8	116.8
Share premium	480.2	480.2
Reserves	(304.6)	(335.6)
Revaluation surplus (2)	2.946	-
Retained earning (3)	255.5	170.5
Equity attributable to owners of the Company	550.846	431.9
Non-controlling interest	43.8	39.6
Total equity	**594.646**	**471.5**
Liabilities Non- current liabilities		
Loans and borrowings	5.4	2.3
Trade and other payables	56.7	43
Deferred tax liabilities	3.6	3.3
Total non-current liabilities	**65.7**	**48.6**
Current liabilities		
Loans and borrowings	90.3	373
Trade and other payables	1,192	1025.7
Advanced payments from construction contracts	1096.1	606

$ millions	December 31, 2019	December 31, 2018
Billing in excess of construction contracts	375.3	410.8
Provisions	53.3	103.3
Income tax payables	46.9	60.5
Total current liabilities	**2853.9**	**2579.3**
Total liabilities	**2919.6**	**2627.9**
Total equity and liabilities	**3514.246**	**3099.4**

CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME for the year

$ millions	December 31, 2109	December 31, 2108
Revenues	3,184	3,013.5
Cost of sale	(2820.5)	(2673.4)
Gross profit	**363.5**	**340.1**
Other income	15	8.3
Selling , general and administrative expenses	(162.1)	(181.3)
Operating profit	216.4	167.1
Finance income	25.2	23
Finance cost	(98.5)	(28.1)
Net finance cost	(73.3)	(5.1)
Net Realized gain from bitcoin sale (4)	1.384	-
Income from equity accounted investees (net of tax)	27.1	56.3
Profit before income tax	170.2	218.3
Income tax	(39.1)	(63.3)
Net profit for the year	**131.1**	**154.7**
Other comprehensive income :		
Items that are or may be classified to profit or loss		
Foreign currency translation differences	34.6	(17)
Unrealized holding gain of bitcoins (5)	2.946	-
Other comprehensive income / loss (net of tax)	37.546	(17)
Total comprehensive income	**168.646**	**137.7**

Notes :

1- The fair value of bitcoins = $ 1,493,431.68 + $ 7,452,798.48 = $ 8,946,230.16 (From table No.4)

2-Revaluation surplus = $ 493,431.68+ $ 2,452,798.48 = $ 2,946,230.16 (From table No.4)

3- Retained earning increased by $ 6000,000 which is the cost of bitcoins at

purchase date to equalize the balance sheet , As it was before applying the proposed model equal $ 249,500,000 (Appendix No .)
4-Net realized gain from bitcoins sale = $ 875,73.78 + $ 508,272.38 = $ 1,384,000 (From table No. 2 & 3)
5- unrealized holding gain of bitcoins = $ 493,431.68+ $ 2,452,798.48 = $ 2,946,230.16 (From table No.4)

Disclosures of bitcoins:

1-Information about bitcoins:

A decentralized computer network that uses cryptographic protocols, the peer-to-peer Bitcoin Network, is used to create and transmit the digital asset known as bitcoin. The Bitcoin Network, whose infrastructure is jointly upheld by a decentralized user base, is neither owned nor run by a single entity. The Blockchain, a public transaction log, is used by the Bitcoin Network to enable the exchange of value tokens called Bitcoin. Bitcoin can be used as payment for goods and services on the Bitcoin Network, or it can be changed to fiat currencies, such the US dollar, at prices set by Bitcoin Exchanges that deal in Bitcoin, or in specific end-user-to-end-user transactions under a barter system.

a- Business model for bitcoins:

The reason for having cryptocurrencies affects how they are treated in accounting, and as this information may not be clear from financial statements, it can have an impact on the choices financial statement users make. [54]

Because it plays a significant role in deciding the following accounting treatment, the reason for keeping a cryptocurrency. Therefore, it is crucial that the reporting company shows that the bitcoins are held for sale in the regular course of business and are therefore categorized as short-term bitcoins if they are held for less than a year or one accounting period, whichever is shorter. And if bitcoins are kept for a longer period of time—more than a year or one accounting period, so it is not being held for sale in the ordinary course of business and classified as long – term bitcoins.

According to the management business model, the management purchase bitcoins for 8 $ millions and decide to hold bitcoins for 5 million $ as long – term bitcoins, and 3 $ millions of bitcoins as short- term.

b- The management purchase bitcoins at 3/4/2019 for 4818.77 $ each.

2-Accounting policies and judgments made in applying them:

Measurement basis: the value of long – term bitcoins increase by $ 1,452,798.48 and recognized in other comprehensive income and there is no accumulated impairment loss.

3-Events after the reporting period:

The increase of the effects of covid-19 pandemic on the economy, which cause the volatility and instability on the price of bitcoins in the market, so the company decided to make an impairment test at the end of the first quarter 31/3/2020 to show if there are any effects on bitcoin's value.

4-Fair value of bitcoins:

Statement of bitcoins Fair Value calculations:

Table (1) Purchase of bitcoins

Intangible asset – bitcoins	Cost on 3/ 4/ 2019	Fair value on 3/ 4 / 2019	Number of bitcoins	Total
Short-term bitcoins	$ 4818.77	$ 4818.77	622	3 millions
Long-term bitcoins	$ 4818.77	$ 4818.77	1038	5 millions

Table (2) Selling bitcoins: first sale of 207 bitcoins

Intangible asset – bitcoins	Cost on 3/ 4/ 2019	Fair value on 17/6 / 2019	Net realized gain / loss	Number of remaining bitcoins
Short-term bitcoins	$ 4818.77 x 207 = $ 1000,000	$ 9061.54x 207= $ 1,875,738.78	$ 875,738.78	415

Table (3) Selling bitcoins: second sale of 207

Intangible asset- bitcoins	Cost on 3/ 4/ 2019	Fair value on 22/ 12 / 2019	Net realized gain / loss	Number of remaining bitcoins
Short-term bitcoins	$ 4818.77 x 207= $ 1000,000	$ 7286.34x 207= $1,508,272.38	$ 508,272.38	208

Table (4) Revaluation Test At the end of the year

Intangible asset bitcoins	Cost on 3/ 4/ 2019	Fair value on 31/ 12 / 2019	unrealized gain / loss	Number of bitcoins
Short-term bitcoins	$ 4818.77 x 208 = $ 1000,000	7179.96 x 208= $ 1,493,431.68	$ 493,431.68	208
Long – term bitcoins	$ 4818.77 x 1038=$ 5000,000	7179.96x 1038= $ 7,452,798.48	$ 2,452,798.48	1038

- This fair value measurements depend on level 2 which are based on quoted prices in markets that are not active or for which significant inputs are observable, either directly or indirectly.
- The source of bitcoin's fair value : https://www.coindesk.com/price/bitcoin

Revaluation Test Results:

Carrying amount of bitcoins increased by $ 2,946,230.16 as the carrying value was $ 6000,000 and the fair value now is $ 8,946,230.16 , this increase is recognized in other comprehensive income and accumulated to equity under the heading of revaluation surplus .

5-Risks and how they are managed:

Covid-19 pandemic is a great risk that will affect the value of bitcoins, so the company decided to sell short- term bitcoins which is (208) at the first quarter whatever the price is, and to still holding the long – term bitcoins. 5. Conclusion

The formal institutions of accounting, such as FASB, IASB, and others, are attempting to create an authoritative practice for all cryptocurrencies, but

there is still no formal standard of accounting for cryptocurrencies. In addition, since all cryptocurrencies do not have the same nature to be dealt with as one structure with the same accounting practices, researchers believe that Bitcoin is the most widely used cryptocurrency. Professionals and academics have begun to pay more attention to bitcoins and other cryptocurrencies because of their significant economic impact, particularly in the wake of the COVID-19 outbreak. This study finds that the asset definition can be applied to bitcoins as the researchers cleared the definition of the asset in accordance to the conceptual framework and also define bitcoins in accordance to various studies, and found that bitcoins meet all the aspects of the asset definition. The researchers consider the information related to bitcoins is relevant and can make a difference in the users' decisions, it also complete, neutral and free of error so it's faithfully represented.

Due to their compliance with IAS 38's definition of an intangible asset, academics identify bitcoins as such. Next, we divide them into two categories. Buy-and-hold bitcoins and hit-and-run bitcoins are categorized according to the management goals for holding them. Additionally, it was discovered that the fair value, which accurately reflects pertinent data, is the best way to quantify bitcoins. The disclosure of bitcoin-related information will demonstrate the entity's true value, highlight its competitive edge, and assist readers of the financial statements in reaching wise economic judgments

And finally, we see that the proposed approach of accounting for bitcoins offers various anticipated advantages, including: Recognizing bitcoins in financial reports, enhancing their quality, and assisting consumers in using financial reports to make financial decisions

6. Research Recommendations

Based on the results obtained in this research, the researchers suggest the following recommendations:

1. Applying the proposed accounting model in the practical life, and take advantage of it in unifying accounting for bitcoins.

2. The necessity to issue a formal accounting standard for cryptocurrencies.
3. The central bank of Egypt should respond to this change in digital economy and allow people to deal with cryptocurrencies.
4. The necessity to make training for accountants and auditors to know how to deal with cryptocurrencies.
5. Academics should study nature of cryptocurrencies to be aware of the new economy tools.
6. The cooperation between Academics and the professionals, such as; inviting outside speakers' specialists to know more about digital economy tools.
7. The faculties of commerce boards should hold seminars and conferences to share information and experiences about cryptocurrencies.
8. Accounting departments in the faculties of commerce should encourage researchers to select topics related to digital economy generally and bitcoins or other cryptocurrencies in particular.
9. Researchers should consider the several factors affecting the application of one accounting model for bitcoins.

10. 7. Area for Future Research

11. The researchers suggest the following areas for future research in respect of this research:
12. 1. Conduct additional research on how accounting for bitcoins and other cryptocurrencies affects the auditor's role in examining financial reports.
13. 2. Conduct additional research on how investment decisions are impacted by the volatility of the bitcoin price.
14. 3. Conduct additional research on the impact of using the suggested bitcoin accounting model on the accuracy of financial reports.
15. 4. Conduct additional research on the tax implications of using the suggested bitcoin accounting technique.

16. 5. Conduct additional study on alternative cryptocurrencies that differ from bitcoins in terms of their qualities.

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