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REFLECTION OF THE CRYPTOCURRENCIES IN THE FINANCIAL STATEMENTS

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ABSTRACT

This study critically investigates the relevant opinions on how cryptocurrencies should be reflected in the financial statements, together with the challenges that stem from the existing international financial reporting standards that are not fully eligible to be implemented for cryptocurrencies. But earlier than that, the blockchain system, the working mechanism of cryptocurrency transactions and a short history of the cryptocurrency phenomenon are given. Following them, the issue of the reflection of cryptocurrencies on the financial statements is addressed under the light of relevant reporting standards and the opinions of the prominent firms from the finance sector. It is found that the attempts for the implementation of the existing financial reporting standards for the recognition of cryptocurrencies on the financial statements would be not only deficient but also problematic. Thus, it is suggested that an individual, comprehensive and detailed financial reporting standard must be published specifically for cryptocurrencies.

Keywords: *Cryptocurrency, Accounting, Financial Reporting Standards*

Jel Codes: *M41-M48-M49*

KRİPTO PARALARIN FİNANSAL TABLOLARDA YANSITILMASI

ÖZ

Bu çalışma, kripto para birimleri için uygulanmaya tam olarak elverişli olmayan mevcut uluslararası finansal raporlama standartlarından kaynaklanan zorlukları göz önünde bulundurarak, kripto para birimlerinin finansal tablolara nasıl yansıtılması gerektiğine dair ilgili görüşleri eleştirel bir şekilde ele almaktadır. Ancak bundan önce, blok-zincir sistemi, kripto para birimi işlemlerinin çalışma mekanizması ve kripto para olgusunun kısa bir geçmişi anlatılmaktadır. Bunların ardından kripto para birimlerinin finansal tablolara yansıması konusu, ilgili raporlama standartları ve finans sektörünün önde gelen firmalarının görüşleri ışığında değerlendirilmektedir. Finansal tablolarda kripto para birimlerinin yer alması için mevcut finansal raporlama standartlarının uygulanmasına yönelik girişimlerin sadece eksik değil, aynı zamanda sorunlu olacağı sonucuna varılmıştır. Bu nedenle, kripto para birimlerine özel olarak kapsamlı ve ayrıntılı bir finansal raporlama standardı yayınlanması önerilmektedir.

Anahtar Kelimeler*: Kriptopara, Muhasebe, Finansal Raporlama Standartları*

Jel Kodu*: M41-M48-M49*

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1. INTRODUCTION:

Cryptocurrency is a relatively new and emerging phenomenon in the financial markets. Interestingly this new instrument in the market owes its existence to another phenomenon, which is blockchain technology. These two new technologies have been becoming increasingly common in our lives. However, regulations and legislations lag far behind the developments in the cryptocurrency field. Although cryptocurrency has been used, traded and employed as a mean of payment for a decade, the regulations about the usage of this phenomenon have not been able to catch the velocity in the cryptocurrency industry. These situations might not be problematic when the individuals' transactions with each other are considered. However, the lack of regulations is the hinder to the reflection of cryptocurrency transactions of firms on their financial statements. Over the last decade, there have been noteworthy and heated debates on the media and academic circles as to whether or not cryptocurrencies should be reflected in financial statements. Moreover, even if one of the mainstream opinions supports the recognition of cryptocurrencies in the financial statements, the way of their reflection and the level of the credibility of the accounting treatment are another matters of debate. In additions to these, whether cryptocurrencies meet the existing classification criteria of financial statement items stated in the various reporting standards or not is a further active discussion topic. The number of above-mentioned actively discussed questions on the likelihood of recognition of cryptocurrencies on the financial statements can be increased with ease. However, listing all these questions here can only shed a light upon the fact that the status of cryptocurrencies in accounting & financial reporting is still extremely ambiguous. Under these circumstances and atmosphere of uncertainty, a comprehensive critical review of various opinions regarding financial reporting of cryptocurrencies offers a significant opportunity to advance the comprehension of whether and how cryptocurrencies can be reflected on the financial statements.

The purpose of this current paper is to review the existing arguments over the accounting treatment of cryptocurrencies. Moreover, this paper aims to list different opinions on how to reflect cryptocurrencies on the financial statements. While providing this information, this paper also handles the issue by considering related financial reporting standards.

This study specifically critically reviewed various opinions on whether -or how- cryptocurrencies can be recorded on the financial statements. The basics of cryptocurrencies and the mechanism of the blockchain are also explained at the beginning of the study. Moreover, examples of different applications of blockchain technology are also conveyed in this current study.

The review of the literature reveals that there is a consensus that cryptocurrencies can be treated as assets. Yet, there is no uniformed opinion over which type of assets they should be recorded as. According to the existing opinions the financial status of the cryptocurrencies on financial statements must be considered case by case. It is claimed that although the concept contains "currency" or "coin" in its name, there is almost a consensus that the recognition of cryptocurrencies as cash and cash equivalents is not possible. Besides that, according to some other opinions it is claimed that the cryptocurrencies' should be recorded as inventories by a firm as long as the core business of the firm is trading cryptocurrencies or acting as a financial intermediary in cryptocurrency trading activities. In addition to these, the intangibility of cryptocurrencies is also subject to debates. There is no doubt that cryptocurrencies are not tangible beings. However, having no physical substance is just one condition for being recorded as intangible assets. Besides that, whether cryptocurrencies are met other criteria of being recorded as intangible assets is ambiguous. Thus intangibility of cryptocurrencies in terms of financial reporting is also subject to debates.

To sum up, this study clearly unfolds the confusion that regulatory bodies and firms from the industry are in regarding the reflection of cryptocurrencies on the financial statements. As a conclusion, it is put forward in this study that the confusion over the accounting treatment of cryptocurrencies will last long until comprehensive, detailed and generally accepted financial reporting standards are published by regulatory bodies that have a binding status.

There are various contribution of this paper to the literature. Despite of the fact that it is relatively new item on the financial markets, the literature on cryptocurrencies has been growing with a significant pace. However, literature over the recognition of cryptocurrencies on financial statements is not advanced. Moreover, arguably, the number of papers on this topic has not been increasing as fast as the

number of paper on various other topics on cryptocurrencies. Thus, this paper shed a new light upon the topic by critically reviewed the existing scarce literature. Moreover this paper reviewed not only currently maturing opinions of regulatory bodies, but also ideas of prominent firms of auditing industry. Thus, contribution of this paper to the existing literature is significant because the developments on this area addressed bilaterally. From this perspective, this paper helps both researchers and policy makers by providing opinions from industry and regulatory bodies at once.

The remainder of the paper is organized as follows. In part two, the mechanisms of blockchain and cryptocurrency are explained. Moreover various application areas of blockchain technology are also given in part two. In part three, -relatively- short history of cryptocurrencies -most of the are indispensably based on Bitcoin- are given through cornerstone events in the area. Following part three, in part four, related literature is critically reviewed. In this section asset side of cryptocurrencies are investigated based on their cash & cash equivalents, inventory and intangibility characteristics. Moreover, revenue side of cryptocurrencies are also examined in this section. A critical comment is added at the end of each sub-sections. Lastly, a broad conclusion is given in part five.

2. THE MECHANISM:

2.1. What is Cryptocurrency? But Before That, What is Blockchain?

Cryptocurrencies operate based upon a relatively new and complex mechanism which is called blockchain technology. From this point forth, to be able to understand the cryptocurrency phenomenon, it is essential to comprehend the breakthrough innovation of blockchain technology and what it introduces into the concept of "money".

Blockchain technology can be simply defined as "a publicly shared immutable ledger" (Open University, n.d.). Another definition for blockchain is "… a shared, immutable ledger for recording transactions, tracking assets and building trust" (IBM, n.d.). A more technical definition of blockchain is that "blockchain is a distributed database system that records transactional data or other information, secured by cryptography, and governed by a consensus mechanism" (Cole et al., 2019, p. 471). So, as it can be seen from these three definitions -and from other online resources- that there are some characteristics and essential features that make a system be able to described as "blockchain". First and foremost, there is no central recording system in the blockchain mechanism. All participants of the blockchain network share the information through a distributed ledger system. In other words, there cannot be any central trusted recording hub in the blockchain. The second essential feature of the blockchain is that each recording unit (so-called nodes) of the network has to have an equal right to access the system. In other words, there is no hierarchy amongst the members of the mechanism. The third essential feature of the blockchain is that there must be a sophisticated security system. The transactions which are to be recorded in the system should have been encrypted and hashed. Thanks to this feature the transactions can be recorded and stored securely. However, it should be stated that despite all security measures, keeping cryptocurrencies on personal computers contains to some extent the risk of losing your savings/investments in case of facing a cyber-attack (Akkaynak, 2020, p. 78). The fourth feature of the blockchain system is that the mechanism is almost impossible to corrupt. There are different reasons for this, such as the usage of an advanced cryptography system and keeping identical records on every single ledger in the network in an irrevocable way. The fifth essential feature of the blockchain mechanism is that the system can work based on a "consensus" which is a sort of agreement on the algorithm about how to record the transactions.

Table-1 shows how the blockchain mechanism works (Seibold & Samman, 2016, p.2). As it is presented in the table, in Step-1 multiple parties initiates a transaction in the system. This transaction includes must have some indispensable information regarding the parties, date, time and content of the transaction. In Step-2, this information is recorded by the nodes in the system. After this stage, the recorded information cannot be deleted or changed by any parties of the network. In Step-3 and Step-4 the information recorded by the nodes in Step-2 is broadcasted to the other nodes of the system. Each node verifies and validates the transaction. At this stage, each node in the system has the same verified information about the transaction. This collective recording, verification and encrypting mechanism working based upon an algorithm is called as "Consensus". In Step-5 immutable encrypted information

is added to the existing "chain" as the last block. In the last step, which is Step-6, the transaction is completed, and the chain becomes available to be added for the next block.

In today's world, blockchain technology is mostly pronounced together with cryptocurrencies. However, apart from cryptocurrencies, there are some other implementation fields of blockchain technology. These areas can be divided into two sub-categories as financial applications and non-financial applications. Table-2 provides the classifications of blockchain technology regarding their application areas together with some implementation examples (Nofer et al., 2017, p.185). As it can be seen in the below table, there are, both financial and non-financial, various application areas of blockchain technology. While, cryptocurrencies, securities and insurance trading and settlement, insurance are the examples of financial applications, notary public, music industry, decentralized proof of the existence of documents, decentralized storage, decentralized internet of things, anti-counterfeit solutions and internet applications are the examples of non-financial applications of blockchain.

Table-1: Working Mechanism of a Blockchain

1-INITIATE THE TRANSACTION	**2-POST AND RECORD THE TRANSACTION TO THE NETWORK**	**3-BROADCAST**	**4-VALIDATE VIA CONSENSUS AND CONFIRM**	**5-IMMUTABLE ENCRYPTED BLOCK**	**6-TRANSACTION COMPLETED**
-Multiple parties transact	-The transaction is added in order into a network's "block" and presented	-The "block" is broadcast to every party and their nodes in the network.	-The network verifies, validates, and approves the confirmation is broadcast to the other nodes.	-The confirmed block is added in a linear and chronological order to the chain.	-Nodes have access to a shared single source of truth.
-All transactions are recorded, including the transaction's date, time, parties, and the content of the transaction	-Entries can be added but not deleted. -Each node in the network owns a full copy of the ledger	-The network of computer nodes verify and, validate by running a software that continuously replicate the ledger.	-Consensus (agreed mathematical mechanism) is recorded and provides the basis for the trust mechanism	-This provides a transparent record of transaction, audit trail, and traceable digital fingerprint. -Data is pervasive and persistent and creates a reliable transaction record.	-A completed block gives way to the next block in the blockchain.
		C O N S E N S U S			

Source: The whole table is adapted from the document: "Consensus: Immutable Agreement for the Internet of Value" written by Seibold, S. & Samman, G., (2016), *KPMG LLP*

I assume that the basic technical information regarding blockchain technology given above is enough to comprehend full definitions of the cryptocurrency concept. Yet, before giving the different definitions of cryptocurrency, it must be emphasized that there is no consensus on how the concept should be defined. Moreover, there is even not a generally accepted or prominent definition of this phenomenon. In other words, there are various definitions of cryptocurrencies made by various dictionaries, researchers, regulatory bodies and cryptocurrency platforms. I think that this might be because; first, cryptocurrency is a significantly -and relatively- new phenomenon in the finance industry and it has still been evolving, and second, the concept of cryptocurrency and its technical background might have not been understood enough to generate a generally accepted definition. Thus, in this section there will not

be an "official" or "ultimate" definition of cryptocurrency, on the contrary, different definitions of the concept will be provided.

Cambridge Dictionary defines cryptocurrency as "a digital currency produced by a public network, rather than any government, that uses cryptography to make sure payments are sent and received safely" (Cambridge Dictionary, n.d.). Oxford Learner's Dictionary describes cryptocurrency in a way that "any system of electronic money, used for buying and selling online and without the need for a central bank" (Oxford Learner's Dictionary, n.d.).

Table-2: Various Usage Fields of Blockchain Technology

Type	**Application**	**Description**	**Examples**
Financial applications	Crypto-currencies	Networks and mediums of exchange using cryptography to secure transactions	Bitcoin Litecoin Ripple Monero
	Securities issuance, trading and settlement	Companies going public issue shares directly and without a bank syndicate. Private, less liquid shares can be traded in a blockchain-based secondary market. First projects try to tackle securities settlement	NASDAQ private equity Medici Blockstream Coinsetter
	Insurance	Properties (e.g., real estate, automobiles, etc.) might be registered using the blockchain technology. Insurers can check the transaction history	Everledger
Non-financial applications	Notary public	Central authorization by notary is not necessary anymore	Stampery Viacoin Ascribe
	Music industry	Determining music royalties and managing music rights ownership	Imogen heap
	Decentralized proof of existence of documents	Storing and validating the signature and timestamp of a document using blockchain	www.proofofexistence.com
	Decentralized storage	Sharing documents without the need of a third party by using a peer-to- peer distributed cloud storage platform	Storj
	Decentralized internet of things	The blockchain reliably stores the communication of smart devices within the internet of things	Filament ADEPT (developed by IBM and Samsung)
	Anti-counterfeit solutions	Authenticity of products is verified by the blockchain network consisting of all market participants in electronic commerce (producers, merchants, marketplaces)	Blockverify
	Internet applications	Instead of governments and corporations, Domain Name Servers (DNS) are controlled by every user in a decentralized way	Namecoin

Source: The whole table is adapted from the article "*Blockchain*" written by Nofer, M., Gomber, P., Hinz, O & Schiereck, D., (2017), Business & Information Systems Engineering, 59(3), 183–187. doi:10.1007/s12599-017-0467-3

A further definition says "A cryptocurrency is a digital or virtual currency that is secured by cryptography, which makes it nearly impossible to counterfeit or double-spend. Many cryptocurrencies

are decentralized networks based on blockchain technology—a distributed ledger enforced by a disparate network of computers. A defining feature of cryptocurrencies is that they are generally not issued by any central authority, rendering them theoretically immune to government interference or manipulation" (Frankenfield & Sonnenshein, 2021). To sum up, cryptocurrencies are non-governmental virtual currencies that work based on blockchain technology, which makes them able to be spent, sent, transferred online, without any need of trusted-third-party financial intermediaries.

2.2 How Does the Cryptocurrency System Work?

The way the cryptocurrency system works can be simply explained with the following example. Assume that a person (let's call the payer X) wants to send cryptocurrency to another (let's call the payee Y). X may send the money for an exchange of traditional currencies, for purchase of a product or a service by using his/her cryptocurrency wallet. The send order is a type of data that is conveyed by a so-called "block". Each block stores some typical information. In cryptocurrency case, each block contains the information of time & date of the transaction, payer, payee and the amount of the cryptocurrency sent. Apart from that, each block has a unique code that distinct each block from others. Moreover, there is another hash in the block which represents the hash of the previous block. The hash that belongs to the current transaction is created when the transaction is initiated, and the hash belongs to the previous block that had already been generated before. The order of cryptocurrency payment is broadcasted to the network with the above-listed information; payer, payee, amount of crypto coin sent, the hash belongs to the current block and the hash of the previous block. After this, the consensus mechanism of the blockchain system works and the network verifies the validity of the transaction, and the block is added to the existing chain as the latest block. Ultimately, the amount transferred from the payer-X to payee-Y.

3. SHORT HISTORY OF CRYPTOCURRENCY:

Over the last decade economic, finance and business world found themselves in an unprecedented level of arguments over a newly invented phenomenon. It can be said that the early history of cryptocurrency is also the early history of Bitcoin. This is because the Bitcoin is most popular and dominant cryptocurrency in the market (Özdemir, 2020, p. 129-130). Satoshi Nakamoto (according to some it is a pseudonymous character) published the technical documentation of Bitcoin on 31st October 2008 (Nakamoto, 2008), and on 3rd of January 2009, he (or she) mined the first -so-called genesis- block of BTC with block number 0. The creation of the genesis block of a blockchain (which is BTC here) is the starting point of an extraordinary scale of revolution in the finance industry. Just after this, on the 12th of January 2009, Hal Finney bought the first BTC (Peterson, 2014). Following this transaction usage of BTC has been continuing incessantly. On the 5th of October 2009, the first exchange rate between USD and BTC was announced by New Liberty Standard Exchange and the rate was 1 USD = 1,309 BTC. Arguably, this is one of the most significant signs that BTC was spreading to the market. On the 17th of July 2010, the first BTC exchange market, Mt. Gox, established (Reuters, 2018). On the 9th of February 2011, the value of 1 BTC became equal to 1 USD. This means 1,309 folds increase in BTC value against USD within 16 months. Litecoin was launched as one of the earliest altcoins in 2011 (Litecoin, 2020). Another altcoin Ripple was launched in 2012 (XRPL, 2020). Governmental pressure on cryptocurrencies intensified. The 70,000 BTCs that were used in trading on the black market website "Silk Road" was seized by the US Department of Justice in October 2013 (BBC, 2020). Two other altcoins, Tether (Tether, 2014) and Monero were launched in 2014 (Monero, 2014). The company "Coinbase", established in 2012, started its operations for the traders as the first regulated cryptocurrency exchange, in January 2015 (Bensinger, 2015). One of the most popular altcoins, Etherium, went on sale for 42 days (Etherium, 2014). The initial release of Ethereum a.k.a. Frontier was started in 2015 (Marr, 2018). In 2016 the Japanese government submitted a bill regarding the amendment of the Payment Service Act in order to accept cryptocurrencies as an official way of payment. The bill passed in 2016 and became effective 1st of April 2017. As a result, the Japanese government recognized cryptocurrencies as an official way of payment (LOC, 2020). After following ICOs (Initial Coin Offering) (Wenhao, 2018), in October 2017, the Government of China announced

that the platforms that allow trading of cryptocurrencies will be prevented (LOC, 2020). 2017 was also the year of launching of popular altcoin Bitcoin Cash, which is a fork of BTC (2017). One of the most popular cryptocurrency exchange platforms, Binance, was launched its operations (Raza, 2020; Lee, Nakamura & Robertson, 2018). In 2018, Facebook, Google and Twitter respectively announced that the advertisements of cryptocurrencies would no longer take place on their social media platforms (Russo, 2018). A new fork BTC, Bitcoin SV, was launched in 2018, (Bitcoin SV, 2018). On the 21st of October 2020, PayPal announced that it would give service of cryptocurrencies' trading (BBC, 2020). In February 2021, it is announced that Tesla bought $1.5 bn. worth BTC (Ostroff & Elliott, 2021). The impact of this transaction on the market is bigger than its monetary value since this action is one of the first investment in cryptocurrencies made by one of the top S&P firms. This transaction is considered by a belief in crypto-currencies by the investors and the value of BTC against USD rocketed by 17% and reached $44,220 (BBC, 2021). First time in its history, 1 BTC equals $50,000 (Vigna & Ostroff, 2021). The market capitalization of BTC hits the 1 trillion USD threshold first time in its history in February 2021 (Lam, 2021).

The above-mentioned events can be counted as the milestones of the short history of cryptocurrencies.

Although BTC is the pioneer cryptocurrency in the field, numerous other new cryptocurrencies, which are also known as altcoins, exist in the markets. In total, there are currently 8,884 cryptocurrencies are traded in the system (CoinMarket, 2021). This number makes them unable to be named one by one in the above "short-history" chronicle. Put all the above-mentioned information aside, just the fact that the capitalization of the BTC within a slightly longer period than a decade reached to a trillion US dollars is an individual indicator that the regulatory bodies cannot ignore the existence of this new phenomenon.

4. ACCOUNTING TREATMENT OF CRYPTOCURRENCIES:

Cryptocurrencies can be bought and sold by individuals as well as by firms. The purchase of cryptocurrencies by an individual is not a problem regarding financial reporting since individuals are not responsible for publishing financial statements. However, the monetary transactions of firms have to be reflected in financial statements. Nevertheless, a reflection of the monetary transaction on financial statements is subject to strict rules and legislations set by various regulatory bodies & institutions. From this perspective, it can be said that the reflection of transactions involving cryptocurrencies on financial statements arises as a new and unprecedented challenge for preparers, academicians, researchers and regulatory institutions. The following sections address the issue from different perspectives.

4.1. The Asset Side of a Cryptocurrency:

As it is known, the definition of an "asset" was updated by IASB via an amendment in the conceptual framework. Based on the updated version of a conceptual framework, an asset is defined as: "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" (IFRS, 2018). We think that it is quite certain that a cryptocurrency can be recorded as an asset because of following reasons: First, the purchase transaction of a cryptocurrency can be entitled as "past event" once the transaction is completed. Secondly, although cryptocurrencies are not a widespread payment method, they can be monetized and to be used to purchase other assets or to reduce liabilities. Thus, it can be said that there is a valid "economic resource" and there also is a "potential economic benefit". Thirdly, being the owner of the so-called "cryptocurrency wallet" and having full control over the crypto-coin via such "wallet" makes the firm the owner of the crypto-coins with full control over them. Thus, we think that these reasons make the cryptocurrencies eligible to be recorded as assets. Moreover, it was found that cryptocurrencies perform as a unique, new asset class based on the three asset classification criteria: mutual exclusivity, exhaustiveness and differing returns. The individual cryptocurrencies are highly correlated with each other, while they are uncorrelated with traditional asset classes regarding the above-mentioned criteria (Krückeberg & Scholz, 2019, p.25).

The above-mentioned criteria and reasons theoretically prove that the concept of cryptocurrency is a distinct asset class. However, in accounting and in the process of financial reporting there are templates for the asset classification. Unless the concept of cryptocurrency has its own financial reporting standards, existing financial reporting standards have to be used in the probable reflection of cryptocurrencies on the financial statements.

However, calling a cryptocurrency as an asset do not simply enough to record it since this judgement brings up a new question: "Which asset class do cryptocurrencies belong to?". The following sub-sections seek answers to this question.

4.2. Can Cryptocurrency be Treated as Cash & Cash Equivalents?

Arguably the first opinion that comes to the minds about the recording of a cryptocurrency is to recognize it as cash. Thus, before judging this opinion, it is necessary to scrutinize what criteria must be met to recognize an asset as an item of cash. IAS 7 – Statement of Cash Flows is about the presentation of the statement of cash flows, yet it gives which assets should be recognized as "cash" and "cash equivalents". It states: "Cash comprises cash on hand and demand deposits. Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and that are subject to an insignificant risk of changes in value" (IFRS IAS 7, 1992). The first thing to say is that IAS 7 does not stipulate that to be able to record an item as cash it has to be in physical form. Thus, one might think that cryptocurrencies meet the definition of cash. However, it is clearly stated in IAS 7 that, cash must be "subject to an insignificant risk of changes in value", which is arguably impossible to claim that cryptocurrencies meet this criterion. So, from this perspective, it can be said that cryptocurrencies fail to meet the criteria of being recognized as cash and cash equivalents. Moreover, according to another opinion, cryptocurrencies cannot be recorded as cash because they are not "readily be exchanged for … goods or services" (ACCA, n.d.). In additions to this, it is stated on the American Institute of Certified Public Accountants (AICPA) documents that a cryptocurrency cannot be recognized as a "cash or cash equivalents item" because of two reasons. First, cryptocurrencies are not issued/backed by a government and thus they cannot be assumed as legal tenders, which makes cryptocurrencies impossible to record as cash. Second, they do not have any maturity date and also their values are highly fluctuating, which makes cryptocurrencies not eligible to record as cash equivalents (AICPA, 2019).

To sum up, apart from some counter-arguments (IATA), the prominent comments on the recognition of cryptocurrencies is in the direction of not to record them as cash and cash equivalents items, as cryptocurrencies fail to meet the related criteria (IFRS, 2019).

4.3. Are Cryptocurrencies "Intangible" Enough to be Recorded as Intangible Asset?

Arguably, it can be said that the most evident fact about the concept of cryptocurrency is that it is not a tangible being. Thus, as a matter of course, when the classification of cryptocurrencies regarding their physical existence is assessed, the only remaining option is to consider them as intangible assets as they lack physical form. However, in terms of accounting and financial reporting standards, being not tangible is not enough condition to be recorded as an intangible asset. In other words, being not tangible does not make the "being" automatically eligible to be recognized as an intangible asset. IAS 38 defines and lists the strict conditions of being able to be recorded as an intangible asset:

"An intangible asset is an identifiable non-monetary asset without physical substance." (IFRS IAS 38.9, 2004)

As can be seen, the above definition of intangible assets contains the following technical terms: identifiable, non-monetary, without physical substance. Thus, to be able to investigate whether cryptocurrencies are able to be recognized as intangible assets or not, these terms must be comprehended deeply. The term "identifiable" is defined as: "An asset is identifiable if it either: (a) is separable, i.e. is capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable asset or liability, regardless of whether the entity intends to do so; or

(b) arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations." (IFRS IAS 38.12, 2004). A cryptocurrency is separable as it can be "divided from the entity and sold", thus it meets the criterion of being "identifiable". Another criterion recognition of intangible asset is to have no physical substance (IFRS IAS 38.8, 2004). This criterion is, arguably, the most evident one. Thus, without further discussion, it can be clearly stated that a cryptocurrency is not a physical being, thus it meets the criterion of being without a physical substance. The last criterion of the definition of an intangible asset is "being non-monetary" (IFRS IAS 38.8, 2004). Instead of defining being "non-monetary", IAS 38 gives the definition of "monetary assets". "Monetary assets are money held and assets to be received in fixed or determinable amounts of money" (IFRS IAS 38.8, 2004). Moreover, the definition of "non-monetary asset" is given in IAS 21.16 as: "…non-monetary item is the absence of a right to receive (or an obligation to deliver) a fixed or determinable number of units of currency.". These definitions clearly state that the difference between monetary and non-monetary asset stems from whether there is a lack of "fixed or determinable amounts of money to be received" or not. From this perspective, the fluctuation in the value of cryptocurrencies, and the risk that the value of cryptocurrencies can be dropped significantly, make them be classified as "non-monetary" assets (ACCA, n.d.). To sum up, cryptocurrencies meets the three major criteria (namely, identifiable, without physical substance, and non-monetary) of being an intangible asset. Thus, I think that cryptocurrencies are fit in the definition of intangible assets. In fact, in the IFRIC meeting, it was suggested that cryptocurrencies fit in the definition of intangible assets as they meet the required criteria stated in IAS 38 (IFRS, 2019). Moreover, according to some counter-arguments, cryptocurrencies cannot be recorded as internally generated intangible assets if they are obtained via "mining" activities since the "reliable measurement of the cost" of adding the last block at the end of the blockchain cannot be made precisely (Grantthorton, 2018). However, there is an example of recognition of cryptocurrencies as intangible assets in real life. Elon Musk, the CEO of Tesla Plc., announced that 1.5bn. USD worth BTC was bought by Tesla Inc. (BBC, 2021). After this transaction the 10K report filled by Tesla Plc. shows that the BTC bought by the company is recorded as "intangible assets" (Tesla Inc., 2020). It can be said that the risk of impairment in this highly speculative asset in case of a drop-in its value may lead to an extremely unwanted situation in the future, especially for the firms that prefer to keep their assets on a large scale as cryptocurrencies.

If the recognition of cryptocurrencies are made as intangible assets become a commonly accepted regulation in the future, then the initial recognition and subsequent measurements of cryptocurrencies will be subject to IAS 38. It is stated in IAS 38 that: "An intangible asset shall be measured initially at cost." (IFRS IAS 38.24, 2004). In additions to this, there are two options, cost model or revaluation model, for the subsequent measures of cryptocurrencies (IFRS IAS 38.74-75, 2004).

4.4. Can Cryptocurrencies be Treated as an Inventory?

Before going deep into this section, it is crucial to mention the features of inventories. First and foremost, inventories are not single monotype items. Whether an item can be recorded as an inventory or not depends on the core business of the firm and the purpose of usage of the item. Items that must be recorded as inventories should have the following characteristics based on the IAS 2: "Inventories are assets:

(a) held for sale in the ordinary course of business;

(b) in the process of production for such sale; or

(c) in the form of materials or supplies to be consumed in the production process or in the rendering of services." (IFRS IAS 2, 2001).

When the above definition is analysed, it is clear that a cryptocurrency cannot meet the criteria of (b) and (c) since a cryptocurrency cannot "…be used in the production of an item for sale", or cannot "…be consumed in the production process or in the rendering of services". Moreover, IAS 2 do not dictates that inventories have to be in physical form. In other words, an asset can be intangible and also can be recorded as an item of inventory. So, it is suggested that cryptocurrencies may be recorded as inventory by a financial institution that involves in buying & selling cryptocurrencies as its core business activity.

In this situation, it is also proposed that cryptocurrencies should be valued at a lower cost or net realisable value. However, according to various opinions from the industry, if the financial institution operates as a broker-trader, then, in this case, cryptocurrencies should be recorded at fair value less cost to sell (PWC, 2019; EY, 2019). In the case of recording cryptocurrencies as inventory, then the initial measurement of the value must be cost value, and the subsequent measurement must be made based on the lower of cost and net realizable value.

To sum up, it can be, arguably, said that there is a common ground in the industry on the recognition of cryptocurrencies. It is proposed that the cryptocurrencies can be recorded as inventories by broker/trader financial institutions only if the purpose of holding cryptocurrencies is to trade them or to act as financial intermediaries.

4.5. Income/Revenue Side of a Cryptocurrency:

The various suggested accounting treatments of cryptocurrencies as assets are already explained above. However, similar confusions valid for the recognition of cryptocurrencies as revenues. Cryptocurrencies can be obtained in three different methods. They can be purchased, received for a rendered service or a sold product, and they can also be generated through mining. Amongst these three methods, the latter two can be considered as subject to income recognition. In fact, some regulators advice that the cryptocurrencies that obtained through rendering a service or a sale of a product and generated through mining to be recognized as income and thus they are subject to tax payment (IRS, 2014). The following two sections are about the income-side of cryptocurrencies. But, since there has still not been individual financial reporting standards on how the cryptocurrencies are treated in accounting, the opinions on the recognition of income obtained via receiving cryptocurrencies cannot go further than being nothing but advice.

4.5.1. Collecting Cryptocurrencies through Rendering a Service or a Sale of a Product:

Before investigating cryptocurrencies' function on revenue recognition, the criteria of revenue recognition must be recalled. In IFRS-15, Paragraph.9, Revenue from Contracts with Customers lists the following criteria:

"An entity shall account for a contract with a customer that is within the scope of this Standard only when all of the following criteria are met:

(a) the parties to the contract have approved the contract (in writing, orally or in accordance with other customary business practices) and are committed to perform their respective obligations;

(b) the entity can identify each party's rights regarding the goods or services to be transferred;

(c) the entity can identify the payment terms for the goods or services to be transferred;

(d) the contract has commercial substance (ie the risk, timing or amount of the entity's future cash flows is expected to change as a result of the contract); and

(e) it is probable that the entity will collect the consideration to which it will be entitled in exchange for the goods or services that will be transferred to the customer. In evaluating whether collectability of an amount of consideration is probable, an entity shall consider only the customer's ability and intention to pay that amount of consideration when it is due. The amount of consideration to which the entity will be entitled may be less than the price stated in the contract if the consideration is variable because the entity may offer the customer a price concession." (IFRS 15, 2014, Paragh. 9).

When the above-listed criteria are scrutinized the following points are needed to be crystalized for any transaction: the existence of a valid contract, determining the obligations of both sides, determining the price, determining the contract's details such as risk and timing, revenue recognition. If the transactions are completed with traditional currencies through a traditional trading system, the determination of these points are relatively easier. However, if the transaction is done via cryptocurrencies the specification of some of these points becomes ambiguous.

The first issue to be considered is the existence of the contract. To be able to recognize the considered cryptocurrencies as revenue, there must be a valid contract between the customer and the entity. The entity that provides service and/or goods for the exchange of crypto-assets needs to evaluate if the "whitepaper" or other external purchase documents establishes legally enforceable "enforceable rights or obligations" (PWC, 2019, p.10). Yet the existence of "enforceable rights or obligations" should have been handled carefully since the term is to some extent amorphous (PWC, 2019, p.7).

Moreover, determining the price is another issue to be addressed. This is because, despite the fact that the name of the payment method contains "-currency" in itself, cryptocurrencies do not fit in the definition of cash & cash equivalents. So, the 66th paragraph of IFRS 15 states that if the payment is not in form of cash than the price of the transaction should be assumed as "non-cash consideration" and should be valued at its fair value (IFRS 15, 2014 Paragh. 66). However, the attempt of estimation of the fair value of cryptocurrencies may arise another issue if there is no active market of the cryptocurrency that is used for the payment. When it is thought that there are currently thousands of cryptocurrencies and their number is soaring, lack of active market for all cryptocurrencies is not a remote possibility.

To sum up, without the specific accounting arrangement for cryptocurrencies or specific regulations for the payment of cryptocurrencies in exchange for goods & services, implementation of existing revenue recognition standard may be problematic as IFRS 15 was generated long before cryptocurrencies have been used in trading.

4.5.2. Mining of Cryptocurrencies and Opinions on Its Accounting Treatment:

Mining activity is one of the ways that entities obtain cryptocurrencies. In the cryptocurrency mechanism, when the nodes in the distributed ledger network add new blocks to the chain, they are rewarded with cryptocurrencies. Besides that, it is a matter of concern that cryptocurrency mining activity causes a significant amount of electricity consumption (CBCI, 2021; Criddle, 2021). So, the accounting treatments of such costs & rewards are another and new challenging issue regarding cryptocurrencies. However, just like other issues about the accounting of cryptocurrencies, mining is another area where there is no consensus or binding guideline about how to treat it in accounting. This is, arguably, the most controversial topic in the accountancy of cryptocurrencies since the suggestions on the accounting treatment of mining varies from recognizing the coins as income to recording the reward coins as internally generated intangible assets, which requires the cost of the mining process to be capitalized (KPMG, 2019, p.2).

It can be said that each scenario has its own problematics. If the reward coins generated through mining activities are indented to be recorded as internally generated intangible assets, then they have to meet the following strict capitalization criteria:

"An intangible asset arising from development (or from the development phase of an internal project) shall be recognised if, and only if, an entity can demonstrate all of the following:

(a) the technical feasibility of completing the intangible asset so that it will be available for use or sale.

(b) its intention to complete the intangible asset and use or sell it.

(c) its ability to use or sell the intangible asset.

(d) how the intangible asset will generate probable future economic benefits. Among other things, the entity can demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset.

(e) the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset.

(f) its ability to measure reliably the expenditure attributable to the intangible asset during its development." (IFRS IAS 38, 2004 Paragh. 57)

When we break down the above criteria, even if it is assumed that the conditions from (a) to (e) are met, whether condition (f) is met or not is difficult to measure. This is because expenditures can be attributable to the mining activity is uncertain (KPMG, 2019, p.2). Depreciation or rent of the technical

equipment, energy consumption of the mining activity, electricity expense incurred to cool-down the electronic equipment, depreciation or rent of the plant (if the mining activity is done in a warehouse where the electronic equipment is run) are the typical expenditure items for mining activity. Yet, how to attribute all these expenses to the individual cryptocurrencies that are generated through mining activities are matter of debates (PWC, 2018, p.3). However, there is no guideline on how to allocate these expenditures to the crypto-coins that are generated through the mining activity. In an atmosphere that there is no guideline for the accounting of cryptocurrencies, existing regulations offer no solution for the recognition of award coins generated via mining activities.

The second suggested option in the recording of mined crypto-coins is to recognize them as income (KPMG, 2019, p.2). Similar to the internally generated intangible asset option, to be able to calculate the cost of sales (COS) the allocation of mining costs must be specified clearly. Otherwise, it would not be possible to calculate profit figures. Apart from the allocation problem of the cost of mining activities, the second issue regarding recording the mined crypto-coins as income is about the existence of constituting a valid enforceable contract. However, as long as the questions of "Who is the customer?" and "Is there a contract between the miner and the customer for the sale of cryptocurrencies generated through mining activities?" remain unanswered, it would not be possible to meet the certain criteria stated in IFRS 15.

To sum up, there is no clear guideline on how the "mined" cryptocurrencies can be recorded. A proper guideline must address the questions of how to calculate the cost of mined currencies, how to calculate the fair value of some cryptocurrencies without the existence of an active market for them. Once these questions will be answered then the recognition of the cryptocurrencies generated via mining activities can be safely done.

5. CONCLUSION:

Comparing with existing mechanisms and instruments of the finance world, cryptocurrencies are significantly new phenomenons. Thus over a decade, together with blockchain mechanism -which is the underlying technology behind the working of cryptocurrencies- cryptocurrencies have been discussed on the media and academic circles. In addition to these discussions, the usage of the cryptocurrencies by companies brings another matters to table: How are the transactions that involve in payment & collection and creating & mining of the cryptocurrencies reflected on the financial statements? From this question forth, this study critically addresses the challenges of the reflection of the cryptocurrencies in the financial statements. Although it has been slightly over a decade that cryptocurrencies are actively in our lives, comparing with the traditional instruments in the business and finance world, it can be stated that they are remarkably new. Thus, cryptocurrencies accounting treatments are still subject to debates and there are no legally bounding regulations for the firms that involve in cryptocurrency transactions. It has been seen from the various opinions delivered by various institutions and firms from the sector that, although there are some prominent approaches, there is still no consensus on how to reflect cryptocurrencies on financial statements. First of all, there is a common ground that cryptocurrencies can be recorded as an asset as they meet the criteria of being recorded as an asset. However, the existence of a consensus that cryptocurrencies can be recorded as an asset is not enough to simply record them since the question of "Which type of asset can a cryptocurrency be recorded?" still remains unanswered. Because its fluctuating nature and being a non-governmental characteristics makes cryptocurrencies unable to recorded as cash and cash equivalents. Moreover, there is, to some extent, a common ground on the question of "whether cryptocurrencies can be recorded as inventories". The general opinion is that a cryptocurrencies should have been recorded as inventories only if the main business of the firm is to buy & sell of cryptocurrencies. In other words, the recording of cryptocurrencies as inventory depends on the core activity of the firms. Besides that, although there are some important ambiguous points that must be crystallized, the question of "if a cryptocurrency can be recorded as an intangible asset" has recently found its answer. The latest purchase of 1.5bn. USD worth of BTC by Tesla Plc. is recorded as intangible assets and it has no rejection by the regulatory bodies of the USA. This can be a solution for how to reflect purchased cryptocurrencies on the financial statements by the time cryptocurrencies will have their own financial standards. However, purchasing is not the sole method to obtain

cryptocurrencies by firms since they can also be generated by "mining" activities. There are two dominant views on the recognition of mined cryptocurrencies: recording them as income, or internally generated intangible assets. Recognition of income that is generated through crypto-mining activities comes forward as another matter of question since the revenue recognition criteria of financial reporting standards are not likely to be met. Recording cryptocurrencies created through mining activities as internally generated intangible assets is another opinion to recognizing them. However, this option has also its own challenges since it is ambiguous whether strict criteria of capitalization of internally generated intangible assets are met or not.

To sum up, under the light of current settings and reporting standards reflection of cryptocurrencies on financial statements requires its own individual financial reporting standard since this new phenomenon does not fit in the current regulations. Without a specific reporting standard for the accounting treatments of cryptocurrencies, trying to implement existing regulation for the reflection of cryptocurrencies on the financial statements would be nothing but a palliative solution for an ingraining problem.

The issue of the reflection of cryptocurrencies on the financial statements is an academically fruitful area. First and foremost, this area needs abundant of suggestions from researchers on how to recognise cryptocurrencies as assets, liabilities, expenses and revenue. Moreover, academicians can contribute to the process of the creation of a specific financial reporting standarda that solely on the financial reporting of the cryptocurrencies. For sure, this is going to be a painstaking process in which cryptocurrencies are handled as intangible assets, liabilities, revenue and expense. So, the process will touch to number of different existing financial reporting standards. This situation creates another academic study area where the contradictions and compatibleness between the projected & existing standards should be detected. Moreover, the differences between the local/domestic financial reporting standards and international financial reporting standards regarding the reflection of cryptocurrencies on the financial statements are going to be another area to be studied and investigated by the researchers.

Not mentioning how to reflect the cryptocurrencies on the financial statements as liabilities and expenses can be mentioned as one of the two limitations of this study. Moreover, lack of the examples of how to record cryptocurrency transactions on the financial statements based on the various scenarios can be given as the second limitation of this study.

BIBLIOGRAPHY

ACCA- Association of Chartered Certified Accountants (n.d.). Accounting for cryptocurrencies, [Available at]: https://www.accaglobal.com/pk/en/student/exam-support-resources/professional-exams-study-resources/strategic-business-reporting/technical-articles/cryptocurrencies.html (Access Date: 23 February 2021)

AICPA- American Institute of Certified Public Accountants (2019). Accounting For And Auditing Of Digital Assets, [Available at]:

https://www.aicpa.org/content/dam/aicpa/interestareas/informationtechnology/downloadabledocuments/accounting-for-and-auditing-of-digital-assets.pdf (Access Date: 20 January 2021)

Akkaynak, B. (2020). E-Finansal Ürün ve Hizmetler. Özdemir, M. (Ed.), Muhasebe Finans Perspektifinde E-Dönüşüm Süreci (73-95). Ankara: Nobel Bilimsel Eserler.

BBC, (2020). Bitcoin: $1bn seized from Silk Road account by US government, [Available at]: https://www.bbc.com/news/technology-54833130 (Access Date: 15 March 2021)

BBC, (2021). Elon Musk's Tesla buys $1.5bn of Bitcoin causing currency to spike, [Available at]: https://www.bbc.com/news/business-55939972 (Access Date: 18 March 2021)

BBC, (2020). PayPal allows Bitcoin and crypto spending, [Available at]: https://www.bbc.com/news/technology-54630283 (Access Date: 15 January 2021)

Bensinger, G., (2015). First U.S. Bitcoin Exchange Set to Open Coinbase Has Backing From the NYSE, Banks and Venture Capitalists., The Wall Street Journal Post, [Available at]: https://www.wsj.com/articles/first-u-s-bitcoin-exchange-set-to-open-1422221641 (Access Date: 18 January 2021)

Bitcoin SV, (2018). History of Bitcoin, [Available at]: https://bitcoinsv.com/en/learn/history-of-bitcoin (Access Date: 23 February 2021)

Cambridge Dictionary, (n.d.). Cryptocurrency, Cambridge University Press, [Available at]: https://dictionary.cambridge.org/dictionary/english/cryptocurrency (Access Date: 05 January 2021)

CBCI- Cambridge University Bitcoin Electricity Consumption Index (2021). Cambridge Bitcoin Electricity Consumption Index, [Available at]: https://cbeci.org/ (Access Date: 10 March 2021)

CoinMarket, (n.d.). [Available at]: https://coinmarketcap.com/ (Access Date: 19 March 2021)

Cole R., Stevenson, M. & Aitken, J. (2019). Blockchain technology: Implications for Operations and Supply Chain Management, Supply Chain Management, 24, 469-483.

Criddle, C. (2021). Bitcoin consumes 'more electricity than Argentina', BBC, [Available at]: https://www.bbc.com/news/technology-56012952 (Access Date: 12 February 2021)

Ethereum, (2014). History of Etherium, [Available at]: https://ethereum.org/en/history/#ether-sale (Access Date: 12 February 2021)

EY – Ernst and Young, (2019). Holdings of cryptocurrencies, [Available at]:

https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/ifrs/ey-devel150-cryptocurrency-holdings-august-2019.pdf

(Access Date: 15 February 2021)

Frankenfield, J. & Sonnenshein, M. (2021). Cryptocurrency: What is Cryptocurrency? Investopedia, [Available at]: https://www.investopedia.com/terms/c/cryptocurrency.asp (Access Date: 10 March 2021)

Grantthorton, (2018). IFRS Viewpoint Accounting for Cryptocurrencies – The Basics, [Available at] https://www.grantthornton.global/globalassets/1.-member-firms/global/insights/article-pdfs/ifrs/ifrs-viewpoint-9---accounting-for-cryptocurrencies--the-basics.pdf (Access Date: 15 February 2021)

IBM– International Business Machines, (n.d.). What is blockchain technology? [Available at]: https://www.ibm.com/blockchain/what-is-blockchain (Access Date: 27 January 2021)

IRS– Internal Revenue Service, (2014). Notice 2014-21- Internal Revenue Service, [Available at]: https://www.irs.gov/pub/irs-drop/n-14-21.pdf (Access Date: 08 March 2021)

IFRS- International Financial Reporting Standards (2001). IAS 2 Inventories, [Available at]: http://eifrs.ifrs.org/eifrs/bnstandards/en/IAS2.pdf (Access Date: 11 February 2021)

IFRS- International Financial Reporting Standards (1992). IAS 7 Statement of Cash Flows, [Available at]: https://www.ifrs.org/issued-standards/list-of-standards/ias-7-statement-of-cash-flows/ (Access Date: 03 February 2021)

IFRS- International Financial Reporting Standards (2014). IFRS 15 Revenue from Contracts with Customers, [Available at]: http://old.efrag.org/files/EFRAG%20public%20letters/Revenue%20Recognition/IFRS_15.pdf (Access Date: 15 February 2021)

IFRS- International Financial Reporting Standards (1992). IAS 21 The Effects of Changes in Foreign Exchange Rates, [Available at]: https://www.ifrs.org/issued-standards/list-of-standards/ias-21-the-effects-of-changes-in-foreign-exchange-rates/ (Access Date: 12 February 2021)

IFRS- International Financial Reporting Standards (2004). IAS 38 Intangible Assets, [Available at]: http://eifrs.ifrs.org/eifrs/bnstandards/en/IAS38.pdf (Access Date: 16 February 2021)

IFRS- International Financial Reporting Standards, (2018). Conceptual Framework, [Available at]: https://www.ifrs.org/-/media/project/conceptual-framework/fact-sheet-project-summary-and-feedback-statement/conceptual-framework-project-summary.pdf (Access Date: 16 February 2021)

IFRS- International Financial Reporting Standards (2019). Holding of Cryptocurrencies, [Available at]:

https://cdn.ifrs.org/-/media/feature/meetings/2019/june/ifric/ap12-holdings-of-cryptocurrencies.pdf (Access Date: 16 February 2021)

KPMG, (2019). Cryptoassets – Accounting and Tax: What's the Impact on your Financial Statements? [Available at]: https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/04/cryptoassets-accounting-tax.pdf (Access Date: 03 March 2021)

Krückeberg, S. & Scholz, P. (2019) Cryptocurrencies as an Asset Class. Goutte, S., Guesmi, K., & Saadi, S. (Eds.). Cryptofinance and Mechanisms of Exchange. Contributions to Management Science, 1-28, doi:10.1007/978-3-030-30738-7

Lam. E., (2021). Bitcoin Hits $1 Trillion Value as Crypto Leads Other Assets, Bloomberg, [Available at]: https://www.bloomberg.com/news/articles/2021-02-19/bitcoin-nears-1-trillion-value-as-crypto-jump-tops-other-assets (Access Date: 22 February 2021)

Lee, J., Nakamura, Y. & Robertson, B. (2018). How a Billionaire Crypto King Built the No. 1 Exchange in Just 8 Months, Bloomberg, [Available at]: https://www.bloomberg.com/news/articles/2018-03-28/crypto-s-billionaire-trading-king-has-suddenly-run-into-problems (Access Date: 09 January 2021)

LOC- Library of Congress, (2020). Regulation of Cryptocurrency: Japan, [Available at]: https://www.loc.gov/law/help/cryptocurrency/japan.php (Access Date: 10 January 2021)

LOC- Library of Congress, (2020). Regulation of Cryptocurrency: China, [Available at]: https://www.loc.gov/law/help/cryptocurrency/china.php (Access Date: 10 January 2021)

Litecoin, (2020). About Litecoin, [Available at]: https://litecoin.com/en/about (Access Date: 22 February 2021)

Marr, B., (2018). Blockchain: A Very Short History Of Ethereum Everyone Should Read., Forbes, [Available at]: https://www.forbes.com/sites/bernardmarr/2018/02/02/blockchain-a-very-short-history-of-ethereum-everyone-should-read/?sh=1f24336b1e89 (Access Date: 21 February 2021)

Monero, (2014). About Monero, [Available at]: https://www.getmonero.org/resources/about/ (Access Date: 04 February 2021)

Nakamoto, S., (2008). Bitcoin: A Peer-to-Peer Electronic Cash System, Bitcoin, [Available at]: https://bitcoin.org/bitcoin.pdf (Access Date: 29 January 2021)

Nofer, M., Gomber, P., Hinz, O., & Schiereck, D. (2017). Blockchain. Business & Information Systems Engineering, 59(3), 183–187. doi:10.1007/s12599-017-0467-3

Oxford Learner's Dictionary, (n.d.). Cryptocurrency, Oxford University Press, [Available at]: https://www.oxfordlearnersdictionaries.com/definition/english/cryptocurrency (Access Date: 31 January 2021)

Open University, (n.d.). Researching The Potential of Blockchains, [Available at]: https://blockchain.open.ac.uk/about/ (Access Date: 03 Febraury 2021)

Ostroff, C. & Elliott, R. (2021). Tesla Buys $1.5 Billion in Bitcoin, The Wall Street Journal, [Available at]: https://www.wsj.com/articles/tesla-buys-1-5-billion-in-bitcoin-11612791688 (Access Date: 27 February 2021)

Özdemir, M. (2020). Kripto Paraların Muhasebesi Üzerine Öneriler. Özdemir, M. (Ed.), Muhasebe Finans Perspektifinde E-Dönüşüm Süreci (125-141). Ankara: Nobel Bilimsel Eserler.

Peterson, A., (2014). Hal Finney received the first Bitcoin transaction. Here's how he describes it., The Washington Post, [Available at]: https://www.washingtonpost.com/news/the-switch/wp/2014/01/03/hal-finney-received-the-first-bitcoin-transaction-heres-how-he-describes-it/ (Access Date: 23 February 2021)

PWC – Price Waterhouse Coopers, (2019). In depth: A look at current financial reporting issues, [Available at]: https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf (Access Date: 16 January 2021)

PWC – Price Waterhouse Coopers, (2018). Point of View: Cryptocurrencies Time to Consider Plan ₿, [Available at]: https://www.pwc.com/us/en/cfodirect/assets/pdf/point-of-view/cryptocurrency-bitcoin-accounting.pdf (Access Date: 17 February 2021)

Raza, A., (2020). Bitcoin Cash Price Prediction 2021 and Beyond: Where is the BCH Price Going From Here?, Capital.com, [Available at]: https://capital.com/bch-bitcoin-cash-price-prediction-2021 (Access Date: 31 January 2021)

Reuters, (2018). Factbox: Ten years of bitcoin, [Available at]: https://www.reuters.com/article/us-crypto-currencies-bitcoin-factbox-idUSKCN1N50GE (Access Date: 30 January 2021)

Russo, C. (2018). Twitter Joins Facebook, Google in Banning Crypto Coin Sale Ads, Bloomberg, [Available at]: https://www.bloomberg.com/news/articles/2018-03-26/twitter-joins-facebook-google-in-banning-crypto-coin-sale-ads (Access Date: 05 February 2021)

Seibold, S. & Samman, G. (2016). Consensus: Immutable Agreement for the Internet of Value, KPMG LLP. [Available at]: https://assets.kpmg/content/dam/kpmg/pdf/2016/06/kpmg-blockchain-consensus-mechanism.pdf?aid=fndrabg_p?aid=fndrabg_p (Access Date: 01 March 2021)

Tesla Incorporation. (2020). 2020 10-K form. [Available at]: https://www.sec.gov/Archives/edgar/data/1318605/000156459021004599/tsla-10k_20201231.htm (Access Date: 10 March 2021)

Tether, (2014). About Tether, [Available at]: https://tether.to/faqs/ (Access Date: 02 March 2021)

Vigna, P. & Ostroff, C. (2021). Bitcoin Trades Above $50,000 for First Time, [Available at]: https://www.wsj.com/articles/bitcoin-trades-above-50-000-for-first-time-11613479752 (Access Date: 01 March 2021)

Wenhao, S. (2018). Cryptocurrency laws and regulations in China, [Available at]: https://law.asia/cryptocurrency-law-china/ (Access Date: 29 January 2021)

XRP Ledger, (2020). Build a Better Bitcoin- In 2011, three engineers—David Schwartz, Jed McCaleb and Arthur Britto—began developing the XRP Ledger., [Available at]: https://xrpl.org/history.html (Access Date: 03 March 2021)