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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

PROBLEMS OF ORGANIZATIONAL ACCOUNTING OF CRYPTOCURRENCIES IN THE MODERN ECONOMY

Specialization:	5303.01 - “Accounting”
Field of science:	Economic sciences
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THE CHARACTERISTICS OF DISSERTATION

Relevance of the topic and degree of its development. Cryptocurrencies created in modern times are widely used by both global companies and individuals' day by day. The unique features of cryptocurrencies have attracted everyone's interest, and as a result, different types of cryptocurrencies have been created and started to be used in various fields. Every day new companies are using cryptocurrencies as investment purposes or as a means of payment. This, in turn, has created the need for guidelines and regulations of standards preparers in the application of international accounting standards. It is the current lack of such regulations and guidance that leads to the application of different accounting practices in practice, resulting in many problems for accountants preparing financial statements. Due to the lack of legislation and standards in the mentioned field, the dissertation served to organize practical accounting. Additionally, organizing the accounting of cryptocurrencies is a completely new concept in Azerbaijani literature. Businesses using cryptocurrencies are constantly growing. For this reason, the research will play an important role for businesses that directly use cryptocurrencies. According to the results obtained for the first time in our country on the organization of the accounting of cryptocurrencies, the relevance of the topic is quite high. Organizing their accounting is a new area that is not generally implemented. Inadequate existing legal framework, limitations of a unified international approach are the issues that make it necessary to organize the dissertation work according to current and local legislation. Based on the aforementioned problems, the dissertation researched the directions that would ensure the organization of cryptocurrency accounting based on practical accounting in Azerbaijan. Businesses that already use cryptocurrency can take the survey as a baseline and implement accounting with the solutions proposed here. As a result, a topic that has not been analyzed in Azerbaijan has been analyzed and various results have been achieved. This will serve as the main reference point and base for enterprises and organizations that cannot organize the accounting of cryptocurrencies. Scientific innovation is an initiative implemented for the first time in Azerbaijan. For this reason, the

dissertation is considered very relevant.

Currently, the lack of direction by the Financial Accounting Standards Board has led to the emergence of different accounting approaches. The approaches of the Big 4 companies to digital currencies are also noteworthy for their diversity. If we take into account the Azerbaijani literature, it can be observed that the concept of cryptocurrency has been brought up in recent years and the scientific literature is quite small. For this reason, researching approaches to the accounting of cryptocurrencies is an important issue for the scientific literature of Azerbaijan. Classification of cryptocurrencies as an asset, organization of accounting according to the local plan of accounts were reflected in the dissertation work. The proposals given in the dissertation on the accounting of cryptocurrencies according to the plan of local accounts is an undeveloped topic in the scientific literature of Azerbaijan. The organization of foreign countries' local accounting and accounting of cryptocurrencies according to "International Financial Reporting Standards" has been the subject of research in various countries. However, since the final accounting standards have not been adopted according to the "Financial Accounting Standards Board", unanimous accounting cannot be organized. Researches carried out in foreign literature played the role of the basis of the dissertation. Christian Partanen, David Biczok, Andrew Hartley, Piia Hyytiä and Ellinor Sundqvist, Tan Boon Seng and Low Kin Yew, Nikhita V Ramrakhiani, Price Waterhouse Cooper, Ernst and Young, Klynveld Peat Marwick Goerdeler, Deloitte, Research conducted by the Internal Revenue Service and their results were used in the dissertation.

Object and subject of the research. The object of the research is financial statements, enterprise economy, International Accounting standards and aspects of taxation. The subject of the research is the recognition of cryptocurrencies in accounting, the organization of accounting according to the local plan of accounts and the way to solve the problems that will arise.

Goals and objectives of the research. The main goal of the dissertation is to investigate the ways of classifying cryptocurrencies as assets, and to organize accounting according to the local plan of accounts. In order to achieve the aforementioned goals, the following

dissertation tasks were performed:

✓ Investigating the problems arising on the accounting of cryptocurrencies as assets;

✓ Ways to classify cryptocurrencies as long-term and short-term assets after accounting for them;

✓ Accounting methods according to the local chart of accounts when classifying cryptocurrencies as long-term and short-term assets;

✓ Ways to revalue cryptocurrencies as long-term and short-term assets;

✓ Treating cryptocurrencies as an object of taxation and examining the ways that can be used in the calculation of profits;

✓ Searching for solutions to the problems that will arise in the accounting of cryptocurrencies obtained from the crypto-mining process as income;

Research methods. In order to analyze the problems that will arise in the accounting of cryptocurrencies, the analysis and synthesis of international standards and scientific literature, comparative analysis, generalization, and inductive methods were used in the dissertation work. Survey, expert assessment, online interview methods also played a big role in writing a scientific paper. Analytical methods based on inductive and deductive methodology were mainly used in the 2nd and 3rd chapters of the dissertation. Methods of simple induction, comparative analysis, analysis and synthesis of scientific literature, generalization and systematization, etc. are widely used in research work. In chapter 3, the standard deviation statistical method was used to measure the volatility index of cryptocurrencies.

Main provisions for the defense. As a result of the dissertation work, the following propositions are defended:

✓ Cryptocurrencies are a resource that is accounted for as an asset. It is possible to record it as an intangible asset on initial acquisition. Its further evaluation should be organized and the increase and decrease of its value should be recorded using the fair value model method;

✓ Accounting for cryptocurrencies as a financial asset may be possible in special cases. A special case refers to the repurchase of assets between 2 economic subjects within a certain period.

✓ Accounting for cryptocurrencies as cash and cash equivalents,

which are short-term assets, is a departure from existing legislation and standards;

✓ Cryptocurrencies act as a tax object. A tax object is formed from the positive difference created during the exchange of crypto-assets;

✓ The mining process causes a deviation from the standard in revenue accounting. Income from the mining process should be considered as other income in the financial statements;

✓ through the eni accounting model, businesses can arrange accounting for cryptocurrency exchanges. The proposed model is such a novelty in the world experience.

The scientific novelty of the study. The scientific innovations proposed in the dissertation are organized directly according to the requirements of local legislation and international standards. In general, the application of the aforementioned accounting approaches is a new area for Azerbaijani literature and legislation. The research paper also noted the violation of the asset requirements when looking for which asset to account for cryptocurrencies. For this reason, a critical evaluation of the existing approaches was carried out in the dissertation work. The gaps in the organization of accounting of cryptocurrencies in Azerbaijan directly justify the scientific innovation of the subject. The following general concepts can be noted on the scientific innovation achieved by the dissertation:

✓ Accounting of cryptocurrencies as intangible assets, reserves, financial assets was organized and its further evaluation methods were proposed;

✓ Investigations on the accounting of cryptocurrencies as cash and cash equivalents have been revealed and deviations have been detected based on existing standards and legislation;

✓ The ways of organizing the accounting of cryptocurrencies according to the local plan of accounts were revealed and the prospects of use in practical accounting were investigated.

✓ At the end, a new accounting model for entering and final use of crypto-assets in the enterprise was proposed. According to the accounting model, the entry of the resource into the enterprise as an intangible asset, and the acquisition of other assets by exchange were investigated.

Theoretical and practical significance of the research. The theoretical and practical importance of the research is quite high. The accounting approaches investigated and presented in the 3rd chapter of the dissertation are considered the only local scientific literature that can be used in the field of practical accounting. The lack of scientific literature in the mentioned field directly increases the theoretical and indirectly practical importance of the dissertation work. Approaches to accounting for cryptocurrencies and ways of classifying assets are a research research of great practical importance. Businesses already operating in Azerbaijan, when they use crypto-currencies, can use the dissertation as a reference to organize accounting.

Approbation and Utilization. The main scientific provisions of the dissertation work were reflected in the author's reports and speeches in local scientific journals, international scientific conferences, as well as conferences and seminars organized in Estonia, Japan, the United States of America, and Germany. In addition, an article related to the results of the dissertation was published in the international journal "Web of Science".

The name of the institution where the dissertation work has been carried out. The dissertation work was performed at the "Finance and Audit" department of the Azerbaijan State University of Economics.

The dissertation consists of the following structural sections: The total number of marks for Chapter 1 of Dissertations excluding gaps is 72197, the total number of marks for Chapter 2 of Dissertations excluding gaps is 79880, the total number of marks for Chapter 3 of Dissertations is 88448 excluding gaps. In total, the research paper is a research consisting of 289866 characters, excluding spaces.

THE CONTENT OF THE DISSERTATION

In the **introduction** part of the dissertation, the relevance and degree of development of the topic, the object and purpose of the research, the goals and objectives, methods, the main propositions defended, the scientific innovation, theoretical and practical significance, approval and application of the research, etc. are given.

In the **first chapter** of the dissertation entitled **"Emergence of the concept of cryptocurrency, its role in the economy and approaches to international accounting"**, the history of the creation of cryptocurrencies and approaches to their international accounting were investigated. In the first chapter, the price volatility of crypto-currencies from the date of their initial creation to recent years was investigated, tables were drawn up on the growth of the market volume, and indicators were presented that they are an asset whose value is increasing day by day. Additionally, "SWOT" and "PESTLE" analyzes of cryptocurrencies were performed. After examining the legal and economic aspects of cryptocurrencies, international approaches to their accounting were analyzed in depth.

Cryptocurrencies are digital currencies whose market size has been expanding in recent years. In 2013, the total volume of cryptocurrency types was less than 50, but in 2023, this indicator has already exceeded 7,000. It is estimated that the value of cryptocurrencies in the market is more than 2 trillion dollars[1]. The market volume of cryptocurrencies for 2013 and 2023 was as follows:

Table 1: market size indicator for crypto-assets

2013		**2023**	
US Dollar		US Dollar	
1 200 000 000	**1**	**2 000 000 000 000**	**1667 times**

Note: *Prepared by the author with information obtained from the internet source www.coindesk.com/price/bitcoin/.*

In 2023, the total volume of cryptocurrencies was 2 trillion USD,

[1] *Edward, J. Bitcoin's Price History. 2023 – 6 february. – p.3-4. [Electronic resource] / URL: www.investopedia.com/articles/forex/121815/bitcoins-price-history.asp*

which in turn means an increase of 1667 times according to the indicator of 2013. PwC, one of the Big 4 audit firms, has conducted extensive research on cryptocurrencies and concluded that recognizing such currencies as intangible assets would be the most appropriate approach for companies. According to PwC, cryptocurrency is not cash, currency or financial instrument, but rather an intangible asset with an indefinite useful life[2]. Ernst & Young has a different approach to such currencies. Ernst & Young does not specifically offer any approach to cryptocurrency recognition. If PwC says that the intangible asset approach will be enough, Ernst & Young notes that cryptocurrencies are new in the economy and its recognition can be done in different ways in different situations. Ernst & Young notes that there is no standard for the recognition of crypto-assets and that accounting is the optimal option according to a given situation[3]. Deloitte has also conducted research on this and prefers to recognize cryptocurrencies as intangible assets, inventory and investment assets.

The Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) operating in the United States of America are the main bodies that develop laws, regulations and standards for financial accounting in general. In Azerbaijan, large companies are also transitioning to IFRS rules and regulating this with laws adopted by the State. "Accounting Rules according to International Standards of Financial Reporting and National Accounting Standards for Commercial Organizations" have been approved in the Republic of Azerbaijan[4]. During the organization of financial statements, the listed standards should act as the main guide, in which case it will be appropriate and necessary to apply those principles in the accounting of cryptocurrencies. However, according to the standards prepared by the aforementioned institutions, there is

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[2] PwC. Cryptographic assets and related transactions: accounting considerations under IFRS. 2019 december. - p.4.

[3] Ernst & Young. EY announces blockchain audit technology. London - 24 april 2018. - p.1-2

[4] Azərbaycan Respublikası Maliyyə Nazirliyinin Kollegiyasının qərarı. № Q-01. Maliyyə hesabatlarının beynəlxalq standartlarına əsasən mühasibat uçotunun aparılması qaydaları. Bakı – 30 january 2017.

no standard for keeping records of cryptocurrencies or any digital means. There are several implicit sets of standards for accounting for cryptocurrencies in financial statements, which do not allow for complete regulation and merely offer guidance. Although the existence of cryptocurrencies and digital assets was mentioned for the first time according to the report published by FASB in 2017, it was not possible to apply any standard in terms of accountability and accounting[5].

The American Institute of Certified Public Accountants (AICPA) has also not expressed a clear opinion on the recognition of cryptocurrencies in the financial statements of organizations engaged in commercial activities. Despite this, there are opinions of the non-commercial organizations of the mentioned institution on how to recognize the new technological tool. According to them, if a non-profit organization holds cryptocurrencies, those assets should be unambiguously recognized as part of investment instruments[6]. The International Accounting Standards Board and the International Financial Reporting Standards Foundation (IFRS Foundation) are organizations that set standards for countries and organizations around the world outside of the United States. The aforementioned IASB institution noted the possibility of recognizing cryptocurrencies as inventory and intangible assets.

In the **second chapter** of the research work entitled **"Directions of the organization of the accounting of cryptocurrencies and an overview of the problems that will arise"**, the approaches to the accounting of cryptocurrencies as an asset were examined according to international standards and local legislation. In the second chapter, initially, the aspects of accounting of cryptocurrencies as assets that are in accordance with and against the current legislation, compliance with the standards were considered. Issues of how to classify cryptocurrencies as a resource used by the enterprise after being recorded as an asset were analyzed. After confirmation of accounting as an asset, the issues of classifying cryptocurrencies into long-term

[5] *Financial Accounting Standarts Board. Report of the FASB Chairman. – 29 september 2017. - p.4*

[6] *Madray.R., Accounting for Bitcoin and Other Cryptocurrencies. – 2018. - p.5-6.*

and short-term assets were investigated. According to the requirements of the international standards, deviations were indicated and the ways of the corresponding approaches were analyzed. According to international standards and the Conceptual Framework, assets are defined as follows:

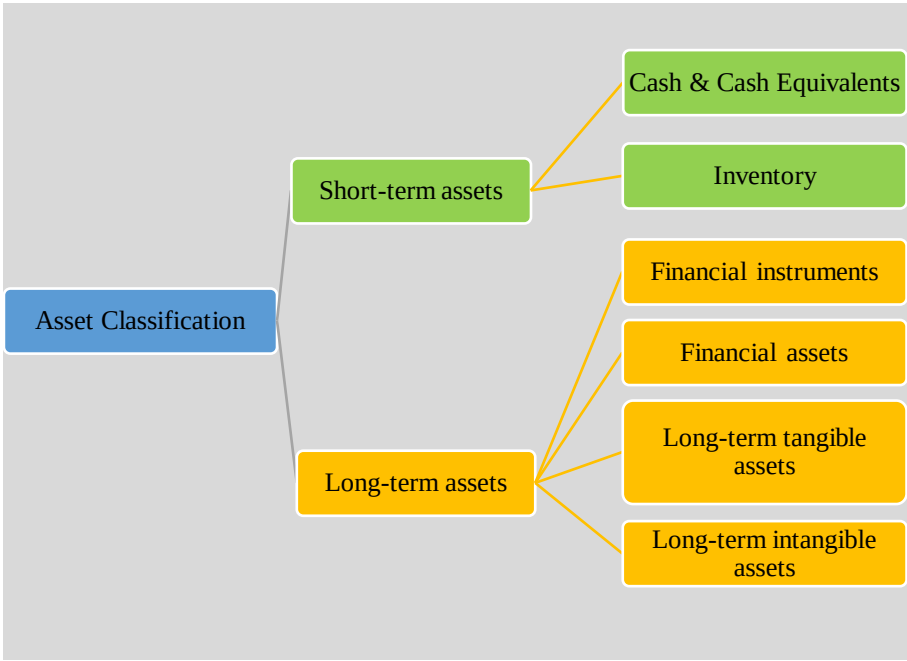
"Resources controlled by the enterprise as a result of past events, and benefits are expected to be obtained in future periods as a result of the use of these resources"[7].

Businesses using cryptocurrencies should check whether these digital currencies qualify for accounting as assets. The holding of cryptocurrencies by the enterprise means that they are obtained as a result of past transactions and can be sold or held as an investment during the next period, in which case future benefits will be realized from them. In addition, the purchase, sale or investment of cryptocurrency resources by the enterprise means that the control over them is carried out by the enterprise. As stated by IFRS and IASB, the essential conditions (control, future benefits, etc.) necessary to recognize a resource as an asset can be considered fully satisfied. "Buildings, buildings and facilities" are resources consisting mainly of long-term tangible assets and used in the enterprise's production process and its management[8]. The most important feature of cryptocurrencies is that they are intangible, that is, digital assets. Accounting for cryptocurrencies as part of the following assets was investigated in the study:

[7] *Kapsis.M., Brown.J., Conceptual Framework webinar. Elements of financial statements-definitions and recognition. - august 2015. - p.6*

[8] *The International Accounting Standards Board. IAS 16 Property, Plant and Equipment. – 2001. - p.3*

Skheme 1: On the classification of assets



Note: *Prepared by the Author based on information obtained from the website https://www.investopedia.com/terms/s/shortterm.asp*

In addition to long-term property assets, cryptocurrencies are considered by some financial analysts to be recognized as long-term investment assets or financial instruments. According to the international standard IAS 32, the aspect of financial instruments is as follows:

"A financial instrument is a legal contract that allows funds to be recognized as a financial asset of one entity and a liability of another entity" [9].

According to the initial definition of financial instruments mentioned above, the most basic requirement for accounting of an asset as part of financial instruments is the formation of a contract or contractual relationship. The use of blockchain technology or other similar technologies does not mean the creation of a contract between the parties

[9] *The International Accounting Standards Board. IAS 32 Financial Instruments: Disclosure and Presentation. - 2001 - p.12*

directly. According to another part of the definition of financial instruments, while these assets are formed in the asset of one organization or enterprise, on the other hand, they must be formed as a liability or capital instruments of a second enterprise or organization. In order for crypto-assets to be accounted for as financial instruments, they must meet the requirements for asset standards.

The situations where there is a contractual right between enterprises are different from other situations. So, it is likely that there is a legal agreement between two enterprises regarding the purchase of crypto-assets during a certain period. Taking these circumstances into account, cryptocurrencies should be accounted for as part of financial instruments in accordance with IFRS 7 Financial Instruments: Disclosures and IFRS 13 Fair value measurement.

According to IAS 38, intangible assets are resources obtained as a result of transactions that occurred in the past, controlled by the enterprise, and as a result of the use of these resources, economic benefits are expected to be obtained by the enterprise or organization[10]. Even if there is no legal agreement regarding the acquisition of economic benefits and efficiency by the organizations or enterprises that own crypto-assets, benefits and efficiency can be obtained by using them in subsequent sales transactions and exchanging them to 3rd parties.

Intangible assets should be initially recognized at cost according to IAS 38. When determining the value of crypto-assets, its initial purchase price should be determined, and any transaction or platform costs related to their purchase should also be taken into account in the initial value:

Formula 1

Cost of Crypto-assets= Cost of Purchase (less) Trade discounts and rebates (plus) other expenses to get crypto assets

According to the international standard IAS 38, after measuring the asset at its initial cost, two types of accounting policies can be applied to determine its subsequent value:

1. *Cost Model or Initial value model;*
2. *Revaluation model*

[10] *The International Accounting Standards Board. IAS 38 Intangible Assets. – 2001. - p.8*

When using the revaluation method, determining the fair market value of the asset is considered a prerequisite. Active market means a market in which operations on assets or liabilities are continuously carried out, and the process of receiving information from this market can be organized continuously[11].

There is no special mention of assets known as inventory being in the form of tangible assets. IAS 2 states that inventories are measured and accounted for at the lower of cost and realizable value. In general, when accounting for the initial value of said crypto-assets, their purchase price, non-refundable tax costs and other costs related to their direct purchase should be taken into account and then the accounting should be organized. According to IAS 2, when other costs are recorded, the costs incurred to bring the inventory or stocks to their current condition and condition are understood.

Accounting as cash or cash equivalents: The recognition of cryptocurrencies as current assets in addition to inventory as cash or cash equivalents is also a topic of discussion. According to IAS 7 Statements of cash flows, the term "cash" means refers to the cash available in the cash register and the deposit account[12]. And money means fiat money, which in turn means assets issued by central banks.

According to world practice and local legislation, assets such as cash recognition are required to be fiat money, that is, funds issued by certain government agencies. Despite the fact that crypto-assets have been used as a means of exchange in recent times and are recorded in financial statements, it is impossible to note that they have legal tender status.

"Cash equivalents account includes highly liquid investments intended for the fulfillment of short-term obligations rather than investment and other purposes, which have a short payment period, can be easily converted into a known amount of cash in advance, and

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[11] The International Accounting Standards Board. IFRS 15 Revenue from Contracts with Customers. – 2014. - p.27-28

[12] The International Accounting Standards Board. IAS 7 Cash Flow Statements. – 2001. - p.5

are subject to a slight risk such as a change in value[13]. As mentioned, the nature of crypto-assets, including local legislation, their high volatility indicator does not meet the standards of cash equivalents. As a result, it will not be possible to record cryptocurrencies as cash or cash equivalents for the current period.

In the **third chapter** of the thesis entitled **"Directions for improving the approaches to the accounting of digital currencies"**, a comprehensive survey was conducted by the author. Thus, questions about the classification of cryptocurrency accounting were discussed with 10 participants. In general, the majority of survey participants are accounting specialists working in Kapital Bank OJSC and EY companies. As a result of the conducted survey, crypto-assets should be accounted for in which assets, deviations from standards, compliance with legislation were discussed, and a model for organizing accounting according to the local plan of accounts was proposed.

Accounting as long-term tangible assets - dialogues took place regarding the initial accounting of cryptocurrencies as part of long-term tangible assets. The IRS gave a favorable opinion to the recognition of new digital assets in the account of buildings, structures and equipment, which are considered long-term assets with ownership rights. It was concluded that the most important feature of cryptocurrencies is an intangible asset. Accounting for cryptocurrencies as long-term tangible assets for tax purposes is not compliant with the standards, and using this approach may result in the neglect of current international standards. For this reason, the classification of cryptocurrencies as a tangible asset was not welcomed by the survey participants.

Accounting as long-term investment or financial assets- After long-term tangible assets, there was a discussion about whether to account for crypto-assets as long-term investment assets or financial instruments. Blockchain technology does not create contractual rights

[13] *Azərbaycan Respublikası Maliyyə Nazirliyinin Kollegiyasının qərarı. № Q-13. İctimai Sektor üçün Mühasibat Uçotunun Beynəlxalq Standartlarına əsasən mühasibat uçotunun aparılması qaydaları. – 25 december 2018. – article 10.74*

when businesses and organizations acquire crypto-assets from sales. When acquiring cryptocurrencies, the number and value of cryptocurrencies only increases in their accounts. Here, there can be no talk of any contractual situations. In these cases, the issues of accounting of cryptocurrencies as financial instruments were not evaluated as a positive approach.

It is possible that there is a legal agreement between the two entities regarding the purchase of crypto-assets for a specified period of time. That is, when the enterprise acquires cryptocurrencies, a contract can be signed and the cases of transferring or returning funds to the other party can be noted. In this particular case, the idea of accounting for cryptocurrencies as long-term held-to-maturity investments as part of long-term financial assets was welcomed. In conclusion, during the initial accounting of cryptocurrencies, it was positively approached to be accounted for by determining the market value in the following way:

Dr 181 "Long-term investments held to maturity"
Cr 538 "Other short-term trade payables"

It was noted that, taking into account the volatility indicator, the real value of cryptocurrencies will differ significantly from the initial recorded value. Based on the discussions, the authors and participants concluded that it was acceptable to revalue crypto-assets accounted for as long-term financial assets at fair market value according to IFRS 13 Fair value measurement. The measurement of fair value can be based on the availability of an existing market or the availability of alternative markets. Cryptocurrencies can be exchanged for cash and converted into cash at any time. Although the conversion costs of the Bitcoin cryptocurrency are relatively high, it is considered a fairly liquid asset. The market value of cryptocurrencies should be determined by subsequent measurements, and increases or decreases in their value should be taken into account. If at the end of the reporting year, as a result of revaluation, a decrease in the market value of crypto-assets is observed, then it will be necessary to record their impairmanet in the statement of profit or loss. In this case, in addition, their balance value should be reduced in the statement of financial

position. In the event of an increase in prices, the effect of the initially recorded loss should be removed. Later, if there is an increase more than the initially recorded amount, the amount in question may be reflected in the statement of profit or loss and other comprehensive income:

Dr 731-2 "İmpairment loss"
Cr 184 "Adjustment for impairment of other long-term financial assets"

If there is an increase in their value as a result of revaluation:

Dr 184 "Adjustment for impairment of other long-term financial assets"
Cr 611-2 "Revaluation income"

In the event that there will be an increase more than the initial recorded amount:

Dr 181 "Long-term investments held to maturity"
Cr 611-2 "Revaluation income"

Accounting as a long-term intangible asset- Based on the special circumstances of accounting as a financial asset, discussions were held with the participants about the approaches to classifying it as a long-term intangible asset. According to IAS 38, intangible assets are resources that have been acquired as a result of past transactions, are under the control of the enterprise, and as a result of the use of these resources, economic benefits are expected to be obtained by the enterprise or organization. The absence of any obstacles to the classification of cryptocurrencies as an intangible asset was welcomed. As a result, when entering a crypto-asset entity for the first time, accounting may occur as follows:

Dr 101-8 "Value of other intangible assets"
Cr 538 "Other short-term trade payables"

The initial cost model and revaluation methods can be used by the author to determine the subsequent value of the asset after the initial accounting according to the international accounting standard 38. During the cost model, the market value of crypto-assets should be determined and an impairment test should be applied. Existing exchange platforms should be used to determine their value. If a decline in value is observed by the impairment test, the entity or organization that owns the crypto-assets will have to reduce their original value recorded in the balance sheet. In this case, the profit or loss report should reflect the loss as much as the difference between the initial balance sheet value and the recovered value. In the event of a re-increase in value, the effect of accumulated losses on the decrease in price must be removed. Impairment can be accounted for as follows:

Dr 731-3 "Impairment loss"
Cr 102-2-8 "Impairment losses on other intangible assets"

In the event of a re-increase in value, the effect of initially accumulated losses should be removed and should be as follows:

Dr 102-2-8 "Impairment losses on other intangible assets"
Cr 611-2 "Revaluation income"

According to the cost method, if the increase is greater than the initial cost, accounting as a profit will not take place. As a result, during the reversal of the impairment loss, an increase in the value of the asset initially recorded in the balance sheet must occur and the loss recorded in the profit or loss statement must be reversed[14].

The revaluation method can also be used to determine the subsequent value of intangible assets after their initial recognition in the balance sheet. Impairments will be similar to their accounting under the cost method. Unlike the cost method, crypto-assets accounted for as intangible assets are measured at fair value after

[14] *The International Accounting Standards Board. IAS 36 Impairment of Assets. – 2001. - p.28-29*

deducting any amortization and impairment after the revaluation date. The main difference is that if the fair value is greater, it affects other comprehensive income in the statement of profit or loss and other comprehensive income. The increase should only be recorded as other income (Revaluation surplus) in the other comprehensive income statement. Profit can be transferred to equity when selling an intangible asset:

Dr 101-8 "Value of other intangible assets"
Cr 331 "Revaluation reserve"

If the fair market value of crypto-assets is less than the initial cost, the difference should be reflected in the profit or loss statement as a loss. If there is an increase in the fair value during periods after the periods in which the value is reduced, the effect of the initially recognized loss should be reversed and reflected in the statement of profit or loss and other comprehensive income. The amount recorded in the revaluation reserve can be transferred to the retained earnings account by selling the intangible assets to which it belongs. In general, the use of the revaluation method will be more appropriate due to volatility. At this time, the real value of the assets will be reflected. In the end, the author presented exemplary examples of the model of accounting for cryptocurrencies as an intangible asset, and then transferring them and using them to acquire other assets.

Accounting as cash or cash equivalents- Cash and cash equivalent accounting, characterized by the high liquidity of cryptocurrencies as a short-term asset, were initially analyzed. According to IAS 32 Financial instruments: Presentation, cash is an asset used as a medium of exchange and recorded. According to the standard, money refers to fiat money, which in turn is understood as assets issued by central banks.According to local accounting legislation, cash means are assets reflected in the cash register and in

bank accounts[15]. Cryptocurrencies are an asset that is not issued by any government body and whose legal basis is not internationally accepted unanimously. Although it has been reported that there are ideas of supporting cryptocurrencies by some countries, it has been found that they are not accepted by the general world states. As a result, accounting for cryptocurrencies as cash is a deviation from the standards.

The research further explored the treatment of cryptocurrencies as cash equivalents. According to the IAS 7, cash equivalents mean investments with high liquidity that can be converted into cash in the short term, and the significant risk factor for the value of these funds is assessed as low. According to the standard, their term of use is 3 months or less. When we say funds that are less exposed to risk, we understand their volatility and legal basis. The standard deviation of average monthly bitcoin prices prepared for the last 6 years was analyzed:

Table 2: standard deviation indicator based on the average of annual indicators

Years	Total price by years in US dollar	Average price in US dollar	Standard deviation by years	Expressing the standard deviation as a percentage
2018	2 774 372	7 601		
2019	2 695 605	7 385		
2020	4 046 784	11 087		
2021	17 301 772	47 402	**13 197**	**64%**
2022	10 321 941	28 279		
2023	2 272 225	23 425		
Total	**39 412 699**	**20 485**		

Source: *Prepared by the Author based on information obtained from the website https://www.investing.com/crypto/bitcoin/historical data.*

Daily bitcoin data from 2018 to 2023 is obtained. Annual averages were calculated using statistical formulas. The average

[15] *Azərbaycan Respublikası Maliyyə Nazirliyinin Kollegiyasının qərarı. № Q-13. İctimai Sektor üçün Mühasibat Uçotunun Beynəlxalq Standartlarına əsasən mühasibat uçotunun aparılması qaydaları. – 25 december 2018. – article 10.1*

indicator for the total years is 20485 US dollars. As a result, based on the average annual data of 6 years, the standard deviation indicator is 64%. The standard deviation indicator of the Azerbaijani manat against the US Dollar currency is zero. It is possible to say that this indicator does not exceed 10% between the Euro and the US dollar. The standard deviation indicator for the days of the last 6 years is as follows:

Table 3: Standard deviation based on daily price data 2018-2023

Initial price in US dollar	14 112
Last price in US dollar	27 921
Average daily price in US dollar	20 485
Max price in US dollar	67 550
Minimum price in US dollar	3 236
Standard deviation in US dollar	**16 577**
Standard deviation in percentage	**81%**

Source: *Prepared by the Author based on information obtained from the website https://www.investing.com/crypto/bitcoin/historical-data*

The data covers a total of 1924 days. The maximum price according to the obtained data was 67550 US dollars, and the minimum price was 3236 US dollars. The standard deviation indicator was 16577 US dollars. Since the average daily price is 20485 US dollars, the ratio of the standard deviation to this indicator was 81%, which means that the average price changes by 81%. The indicator in question is a rather high-risk and volatile indicator. The maximum value is 20.8 times greater than the minimum value. Additionally, it should be noted that the average daily price is 3.29 times smaller than the maximum price, and 6.32 times larger than the minimum price. The table in question shows that the price indicators on the cryptocurrency market are quite volatile. According to the obtained data, the differences between the daily initial and closing prices of cryptocurrencies for the last 6 years are as follows:

Table 4: Difference between daily opening and closing prices

Bitcoin cryptocurrency indicators	US dollar
The maximum **rising** price between the opening and closing prices during the day	7 309
The maximum **falling** price between the opening and closing prices during the day	-7 564
Average volatility	4,86
The maximum value that changes during the day	12 865

Source: *Prepared by the Author based on information obtained from the website https://www.investing.com/crypto/bitcoin/historical-data*

Price fluctuations are observed during the day. Even within 1 day, the maximum indicator of the changing price is 12865 USD. This is a clear indication of the high price range of the bitcoin cryptocurrency during the day. As a result, the accounting of cryptocurrencies as cash or their equivalent was not considered acceptable by the respondents and the author. It was concluded that such an approach violates the requirements of the existing standards. The status of the current approach may be revised if volatility stabilization is noted in the next periods.

Accounting as inventory - If the enterprise uses intangible assets for the purpose of selling them in the short term, the accounting of those assets can be carried out according to IAS 2 international standards. According to the said standard, there is no requirement that reserves should be in intangible or tangible form. An example of accounting for other intangible assets as inventory is digital software. According to the principle of "substance over form", if the assets will be used for a short period of time, then it will be correct to classify them as short-term assets. As a result of the survey, it was accepted that the initial accounting of cryptocurrencies as inventory is as follows:

Dr 207 "Other inventories"
Cr 538 "Other short-term trade payables"

If the net realizable value of crypto-assets has fallen below the

original cost recognized on the balance sheet, then their revaluation and reduction in value will be an important issue. According to the international standards of IAS 2, the reduction of value in the balance sheet will eventually affect the statement of "Financial position". If the realizable value will be less than the initial value, then it is important to show their value as a loss in the "Profit or Loss" report. When the initial value is less than the realizable value, some operation will not be performed:2

Dr 731-3 "Impairment loss"
Cr 208 "Adjustments for the decrease in the value of reserves"

CONCLUSION

The main purpose of the study is to propose directions for accounting of cryptocurrencies for enterprises. For this purpose, a new accounting model for crypto exchanges has been developed. The following results of the study were obtained:

1) Businesses acquiring cryptocurrencies from domestic companies no longer have any barriers to accounting for them as assets. The problems of how enterprises should organize their accounting were revealed. The available opportunities were analyzed and unanimous decisions were made. In conclusion, cryptocurrencies fully meet the definition of an asset and these resources should be classified in the financial statements of enterprises.

2) According to current standards, accounting for non-physical cryptocurrencies as long-term tangible assets was not viewed favorably. This direction, proposed to simplify tax purposes, was found to be contrary to both local legislation and international standards.

3) Except in special cases, it will not be possible to record cryptocurrencies as a financial asset. By special case, it is understood that there is a contractual obligation between 2 parties. At this point, it may be possible to record cryptocurrencies as a long-term financial asset as a contractual obligation arises. They can be classified by the accounting approaches proposed in Chapter 3.

4) Enterprises and organizations can record the crypto-assets they use in the long term as intangible assets. As a result of the research work, it was accepted that cryptocurrencies are completely intangible assets. According to the international standard IAS 38, no deviation was detected in the long-term classification of cryptocurrencies as an intangible asset. Intangible assets should be recorded at cost. With the model presented in chapter 3, accounting as an intangible asset can take place according to the local chart of accounts.

5) Valuation methods for cryptocurrencies accounted for as intangible assets were determined. The ways of their accounting with the cost method and revaluation methods were established in the research work. Other ways of acquiring assets using the transfer

method were suggested.

6) Standards related to accounting for cash and cash equivalents were examined and deviations were identified. The volatility indicator was analyzed and the standard deviation was found to be 64%. Accounting for cryptocurrencies as cash and cash equivalents will not be possible at this time.

7) Issues of accounting of cryptocurrencies as reserves or inventory, which are short-term assets, were reflected in the dissertation. Although the accounting of crypto-assets according to the "IAS 2" Inventories standard is considered an acceptable way, according to the new accounting model, it was proposed to establish the production process using the accounting and transfer method as an intangible asset.

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1. Regulation of cryptocurrencies in different countries // "İnnovasiyalı iqtisadiyyat və menecment" journal, - Baku: 2022. № 3, - p.247-252.

2. Kriptovalyutaların müasir dünya iqtisadiyyatında yeri, onların inkişaf yolu, volatilliyi və möhkəmlənməsi // Azerbaijan State Economic University "Enerji İqtisadiyyatı Mərkəzinin Xəbərləri", - Baku: 2022. № 09-01, - p.52-59.

3. Discussions on crypto accounting and its impact on financial reporting // "Geostrategiya" jurnalı, - Baku: - 2023. № 02(74), - p.118-120.

4. İmplementation of tax accounting for cryptocurrency transactions in Azerbaijan // "Tikintinin iqtisadiyyatı və menecmenti" journal, -Baku: 2023. № 2, - p.361-364

5. Kriptovalyutaların uçota alınarkən pul vəsaitləri və onların ekvivalentləri kimi təsnifləşdirilməsinə yanaşmalar // "İnnovasiyalı iqtisadiyyat və menecment" journal, - Baku: 2023. № 4, - p.210-215.

6. Problems arising in the accounting of Cryptocurrencies // "Financial and credit activity: problems of theory and practice", -Kiev: 2023. № 3, - p.76-86.

7. Advantages and disadvantages of using cryptocurrencies // 1st International Scientific Conference "Foundations and Trends in Modern Learning", Berlin: -2023, № 1, - p.163-165.

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9. Accounting for tokens as crypto assets // IV international scientific conference "Current questions of modern science", Estonia: -2023, № 20, - p.26-28.

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