

The Impact of Digital Currency on Accounting and Management under the Blockchain Architecture

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Abstract: In recent years, the digital economy has developed vigorously relying on Internet technology, and blockchain technology has played an important role in promoting high-quality information processing. The closely connected digital currency system is still in the rising stage, with defects in all aspects and hidden risks in the market that cannot be ignored. In order to ensure the legitimate rights and interests of investors, this paper deeply analyzes the current global economic development trend, from the development of blockchain technology to digital currency, analyzes the accounting measurement and relevant accounting standards, and puts forward suggestions on improving the overall regulatory efficiency of the government, strengthening the accounting treatment of enterprise entities, strengthening the construction of blockchain networks, etc. It is expected to promote the construction of domestic information technology and better coordinate the development of digital economy and society with digital currency.

Keywords: Digital economy, Blockchain, Digital currency, Accounting, Accounting treatment.

1. Introduction

With the arrival of the big data era, information technology has become increasingly mature, driving the rapid development of digital transactions. As the international financial market continues to evolve and promote innovation, digital currency stands out from the huge financial market. This kind of currency has the performance of currency trading, and has realized the function of digital transfer and trading relying on big data and artificial intelligence technology. Based on the architecture of blockchain technology, the circulation of this currency in the market is more stable and secure. Compared with the traditional form of transaction currency, digital currency has emerged late and its functions are not yet sound. However, with its unique innovative advantages, it has been widely traded and disseminated in the market, and has begun to dominate the trend of enterprise value and actual operating interests [1]. In this context, it is necessary to study the attributes of digital currency and its accounting treatment in order to standardize accounting practice and build a good economic environment.

2. Characteristics of Blockchain Technology and Development of Digital Currency

2.1. Structure of blockchain technology

Blockchain technology is a new computer application model derived from the rapid development of information technology. It mainly uses the combination of multiple computers and integrates five parts: distributed ledger, consensus mechanism, password algorithm, network routing and script program. The five modules complement each other, are closely connected, perform their own duties, and are completed in coordination. Through the operation and calculation of network data, the technology has formed a continuous stream of nodes on the data platform, and these nodes are reasonably connected to build a large and complete

network system. All regions are equal in status, interact with each other, and are indispensable, achieving the goal of decentralization, point to point links form a peer-to-peer network structure. In the development of digital economy, it has subverted the traditional production concept and created conditions for the rise of many neighborhoods [2].

2.2. Advantages of blockchain technology

The first is decentralization. Blockchain technology breaks through the defects of traditional network centralization, and uses network routing technology to combine all nodes in the network, ensuring the stability of data. The second is the data can not be tampered with. The data information produced by the cryptographic algorithm is unique and traceable. Even if the data is tampered with, the timestamp function can accurately locate the problem timeline and find out the vulnerability. The third is transparency. The blockchain adopts a distributed accounting system to make the data open and transparent, and make the data traceable. The fourth is intermediary free. The network nodes of the blockchain can improve the information operation based on the consensus mechanism, and no longer need to achieve a trust mechanism through public authentication. Everyone can participate in it. The fifth is anonymity. Individuals or organizations in the blockchain are represented by a string of irrelevant numbers or codes. When users conduct online transactions on the platform, they only need to use this code without revealing their relevant information.

By virtue of the five major structures and its unique advantages, blockchain closely combines big data technology with artificial intelligence, complements cloud computing, the Internet of Things and other technologies, enriches the connotation of the digital era, jointly drives economic development, and creates the possibility of change in many fields.

2.3. Analysis on the development of digital currency

The change of commodity economy and social demand has driven the continuous evolution of the monetary form in the market. There have been three forms of commodity currency, metal currency and paper currency. In recent years, with the rapid development of information technology, blockchain, big data, cloud computing, artificial intelligence and other new technologies have become increasingly mature. With the main characteristics of big data driven and artificial intelligence, traditional currency and big data technology have been closely integrated, vigorously promoting the process of digital currency development, while also injecting fresh blood into the global digital economy. The economic market is ushering in the big wave of currency digitization.

Digital currency is mainly based on traditional currency forms, integrated with sophisticated mathematical models, with the help of a variety of computer technologies and specific algorithm forms. Its essence is a cryptocurrency after the processing of big data. It is comprehensively improved by relying on the blockchain network to make up for technical defects and risk loopholes, mainly including the information of both parties to the transaction, the amount of transaction and the amount of issuance. Comprehensive information on currency circulation requirements and time supervision requirements. The development of digital currency has provided innovative conditions for the market development of many industries, and also created rare opportunities for the development of digital economy and society [3].

3. Impact of Digital Currency on Accounting Recognition

The unique nature of digital currency leads to different accounting methods for digital currency in different countries. At present, digital currency has been recognized as an asset in the economic markets of various countries, but there are still disputes about the asset type of this currency, mainly including the following four views:

3.1. Recognized as cash equivalents

At the same time, the International Accounting Standards No. 7 document and the Financial Accounting Standards Committee define cash equivalents as "currency and short-term, highly liquid investment currency and short-term, highly liquid investment, and the investment can be converted into a certain amount of cash at any time, and the risk of changes in value due to changes in interest rates on the near maturity date is small". Digital currency is greatly affected by macro market changes, and its price fluctuates frequently. There are large transaction risks and it is difficult to maintain basic stability. Therefore, many countries include digital currency as a virtual commodity rather than legal cash equivalents in the market.

3.2. Recognition as financial instruments

In the international market, due to the large price volatility of digital currency, some countries make public quotations in the market. These two points meet the definition of financial instruments to some extent, and then the currency is recognized as a financial asset for processing in accounting. However, based on China's existing accounting standards and international financial reporting standards, it can be seen that determining financial instruments requires participating in the

formation of financial assets of one party by users of financial assets, and at the same time causing financial liabilities or related contracts of equity instruments of other parties, and will not form liabilities of the other party. As digital currency uses distributed account books in accounting, it cannot automatically form a contractual relationship between the two parties, nor can it form a liability or equity between them. Therefore, digital currency cannot be recognized as a financial instrument [4].

3.3. Recognized as intangible assets

Intangible assets refer to identifiable non monetary assets without physical form that an entity owns or can control. In a broad sense, intangible assets include intangible economic resources that can directly bring benefits to economic entities. Therefore, based on accounting standards, digital currency is in line with relevant definitions. But the problem is that it is difficult to measure the historical cost of digital currency in accounting, which corresponds to the asset risk hidden in the transaction process and the existing value of digital currency. The correlation between the market price of money and economic market information is also low. It is difficult to reflect the economic essence behind it through accounting treatment. It does not have the characteristics of net realizable value, cannot be classified as intangible assets, and cannot provide financial information useful for enterprise management decisions to users of accounting report information.

3.4. Recognized as an inventory asset

International accounting standards define inventory assets as finished products or commodities held or to be sold in the daily activities of enterprises. Digital currency meets the definition of inventory assets to a certain extent. However, based on the existing accounting standards, enterprises generally adopt the net realizable cost method when accounting for inventories in their daily business. If digital currency is recognized as inventory assets, accounting treatment can only reflect the decline of its value, it cannot reflect the increase of its value, which is contrary to the characteristics of digital currency and is not conducive to subsequent measurement, so it is difficult to recognize digital currency as inventory assets.

4. The Impact of Digital Currency on Accounting Measurement

In the digital economy society, the accounting measurement of the transaction process is a particularly important accounting tool. The price of digital currency fluctuates greatly with the market. The traditional monetary measurement method, based on historical cost, and the traditional input values, is far from meeting the requirements of the current information age for monetary measurement and accounting processing mode.

Both the Australian Accounting Standards Board (2016) and the Canadian Institute of Chartered Professional Accountants (2018) proposed that the most appropriate way of measurement is to measure at fair value and include its changes in current profits and losses. The choice of measurement method for digital currency is mainly determined by the accounting entity and transaction purpose. At present, it is measured for digital currency. The scope of accounting treatment has expanded the measurement object.

If the accounting practitioners still follow the traditional input value concept to measure digital currency, because of its characteristics different from traditional currency, the final measurement result will be biased from the actual value. It is not conducive to the development of digital economy. It can be inferred that the introduction of digital currency into the economic market will certainly promote the improvement of accounting standards and the development of values. On this basis, the shortcomings of the cost method and the revaluation method will also be reasonably resolved, thus reducing the uncertainty of risks brought about by the measurement of digital currency, and its cost value can be effectively reflected [5].

5. The Impact of Digital Currency on Accounting Records

5.1. Improve the authenticity of accounting information

The advantages of blockchain, such as sharing mechanism, traceability and non tampering, can help accountants obtain more comprehensive and reliable data. Based on the distributed ledger financial work system in the blockchain technology structure, currency digitalization encrypts, sorts, classifies and stores the user's transaction information data on the network, and establishes a complete database. At the same time, due to the maturity of the consensus mechanism in the blockchain technology, the data that has been put in storage will no longer be modified, and the possibility of risk is also avoided. The entered transaction information is sorted by time sequence, This will enable historical information to be based on, thus improving the authenticity of accounting information, the integrity and accuracy of accounting personnel, and the efficiency of financial sharing information, facilitating the supervision of financial information by national financial institutions, and forming an open and transparent macro accounting environment.

5.2. Accelerating the transformation of accounting and bookkeeping methods

At present, large enterprises in China still use the traditional accounting mode when conducting accounting treatment. The bookkeeping method of pre audit, in-process recording and post verification has many disadvantages. For example, accounting bookkeeping can only record the amount and balance of funds according to the account, and accounting information cannot be efficiently shared and disseminated. However, with the help of blockchain technology, digital currency has completely overcome the shortcomings of traditional accounting. It has turned the accounting information into a comprehensive one. The traditional independent A/C set of enterprises has been converted into a decentralized accounting system. Transaction information records can be freely accessed, and the efficiency of information backtracking and sharing has been improved. In different regional network nodes, industry information can also be collected to facilitate enterprises to make reasonable decisions [6].

6. The Impact of Digital Currency on Accounting Information Management

6.1. Promote the electronic process of financial accounting information

The society has entered the era of digital economy. In order to adapt to the development needs of currency digitalization and accelerate the process of digital informatization, enterprises should further improve the management of accounting business in the process of market transactions, establish a complete accounting system, actively participate in market information exchange, integrate multi type technologies such as blockchain technology into enterprise management, and strengthen the file management of related accounting information between departments, Promote the reform of enterprise accounting and accounting information file processing.

At the same time, we should strengthen the management system of information archives and the construction of the accounting system of digital currency, highlight the advantages of information processing under the blockchain architecture, actively take measures to reduce the risks in accounting and related accounting processing, establish complete and high security protection measures, and focus on improving the authenticity, accuracy and integrity of the contents of the accounting information archive database, To ensure the quality of information in the digital currency accounting management, so that the enterprise management can better use the accounting information, put forward improvement suggestions for the current deficiencies, better realize the accounting and management of digital currency, and improve the overall management efficiency and quality of the enterprise.

6.2. Rebuild the management process of accounting data

At present, China's accounting materials are still mainly paper-based accounting files. However, based on the rapid development of information technology, currency digitalization has become a trend of social development. Under this background, paper-based accounting information files will have an impact on different links such as data collection, classification and induction in the transaction process. Enterprise entities should actively reform the accounting system, and archive management departments need to further realize the development of electronic and data-based information. The electronic accounting archives will replace the traditional paper archives management step by step with the digital currency processing business. Therefore, the birth of digital currency will further stimulate the financial accounting neighborhood to speed up the reform process of accounting information processing. The traditional archive information collection and archiving, query and utilization, management and other processes will be informationized. Based on the advantages of the blockchain, the decentralized advantage will be brought into full play to ensure that accounting data archives can be more authentic, timely accurately archive information and comprehensively improve the efficiency and quality of enterprise accounting [7].

7. Suggestions on Accounting Treatment of Digital Currency

7.1. Improve the formulation of digital currency related laws and improve the government's ability to rule by law

From the perspective of protecting the rights and interests of digital currency investors, standardizing China's Accounting Standards for Business Enterprises can set up an accounting subject specifically for accounting and measuring digital currency according to the special nature of digital currency, determine the reasonable asset types of digital currency in the economic market, and then the accounting practitioners in related industries can handle the accounting work related to digital currency more normatively. The final accounting report and financial information of the enterprise will be more value oriented and thorough, so as to avoid the existing risk loopholes in the market. The scope of supervision work of the government and relevant departments will also be more comprehensive, reducing the possibility of money laundering, financial fraud and other acts, leading to the healthy and orderly development of the domestic financial market, and also protecting the legitimate rights and interests of investors.

7.2. Strengthen the comprehensive supervision of the market on digital currency and improve the supervision efficiency

At present, blockchain technology and digital currency in the market have large technical risks and legal loopholes. Even though digital currency is relatively active in the domestic and international markets, due to the imperfect regulatory work and laws and regulations of relevant departments, it has brought great risks to investors and enterprises. For this, we can consider:

First, the government can refer to international experience, focus on blockchain technology management, build a top-level design of blockchain management, try to build a separate digital currency exchange in China, and establish it in the form of registration system, reduce the threshold for the listing of financial products related to digital currency, strengthen domestic supervision, and protect the legitimate rights and interests of users.

Second, some countries in the world have brought digital currency into the market, leading the way from legislative supervision to technical support. China's regulatory authorities should fully consider the particularity of digital currency circulation at home and abroad, give full play to the transnational operation of currency, attach importance to establishing cooperative relations with international markets, and strengthen market supervision and reasonable regulation.

Third, we should attach importance to the quality training of accounting practitioners, and emphasize that accounting professionals are proficient in comprehensive development in multiple fields, which is no longer limited to basic financial knowledge. It is more necessary for accounting practitioners to master information technology, strengthen industry self-discipline, and promote smooth market supervision.

7.3. Strengthen market information technology support and improve blockchain network architecture

Blockchain network itself has the characteristics of sharing

mechanism, traceability, tamper resistance, etc. With the continuous development of big data technology, the market will be more flexible in the application of blockchain technology. With the blockchain network as the infrastructure, it will integrate a variety of computer computing programs, embed the legal compliance mechanism into the system, and reduce the cost of enterprise accounting information processing, improve work efficiency and reduce transaction risk with the help of artificial intelligence technology and consensus mechanism. At present, traditional accounting measurement and accounting methods are still used in China, which makes it difficult to supervise transaction behavior and conduct accounting measurement reasonably. At the same time, we learned that blockchain technology has the characteristics of traceability, and data generated in the transaction process can be retained and stored, so that information can be fully processed, accounting information database can be improved, and an effective digital currency asset evaluation system can be established.

8. Conclusion

The development of blockchain technology and the progress of the digital economy era can not be separated from the guidance of norms. Digital currency is the product of the development of the times. However, the current domestic accounting standards and regulatory system have defects, which are difficult to assist the healthy development of digital currency. With the continuous progress of information technology and the growing development of blockchain technology and traditional real economy, digital currency will be fully invested in the economic market. Relevant departments in China need to timely insight into the changes in the international market, summarize experience and laws, strengthen the construction of the regulatory system, achieve all-round supervision of trading behavior, and establish a leading position in the world where blockchain and digital currency jointly contribute to the development of traditional economy.

Acknowledgment

This work is supported by 2022 Anhui University of Finance and Economics Undergraduate Scientific Research Innovation Fund Project (No. XSKY22178).

References

- [1] Wang Biyu, Zhong Bing, Lu Jianqiao. Discussion on Accounting Treatment of Digital Currency [J]. Finance and Accounting, 2017 (22).
- [2] Liang Shan, Wang Shihao. Discussion on Accounting Treatment of Digital Encrypted Assets Based on Blockchain Technology [J]. Finance and Accounting Communication, 2020 (11).
- [3] Yao Qian, Tang Yingwei. Some Thoughts on the Central Bank's Legal Digital Currency [J]. Financial Research, 2017 (07).
- [4] Ge Shaoyu. Research on the Development Trend of Industry Finance Integration under the Background of Blockchain Technology [J]. Green Finance and Accounting, 2021 (10).
- [5] Cao Qun, Lin Kan, Xu Qian. Analysis of the Whole Process Accounting Treatment of Digital Communication Based on the Complete Accounting Period [J]. Finance and Accounting, 2019 (02).

- [6] Yang Yan. Research on the Impact of the Central Bank's Issuing Statutory Digital Currency on Accounting [J]. Economic Research Guide, 2019 (34).
- [7] Lu Yu. Exploration of Accounting Measurement Mode of Digital Currency under Blockchain Technology [J]. Financial Supervision, 2020 (12).