Retraction

Retracted: Application Analysis of Block Technology Based on Block Chain Computer Model in the False Identification of the Catalog List of the Financial Department of Multinational Companies

Advances in Multimedia

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope

(2) Discrepancies in the description of the research reported

(3) Discrepancies between the availability of data and the research described

(4) Inappropriate citations

(5) Incoherent, meaningless and/or irrelevant content included in the article

(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] Z. Hu, "Application Analysis of Block Technology Based on Block Chain Computer Model in the False Identification of the Catalog List of the Financial Department of Multinational Companies," *Advances in Multimedia*, vol. 2022, Article ID 8193204, 12 pages, 2022.

Hindawi

Research Article

Application Analysis of Block Technology Based on Block Chain Computer Model in the False Identification of the Catalog List of the Financial Department of Multinational Companies

Zhihua Hu [iD]

Jiangxi University of Technology, Nanchang, Jiangxi 330098, China

Correspondence should be addressed to Zhihua Hu; huzhihua@jxut.edu.cn

The financial data of some listed companies is not transparent enough, especially in financial-related management and program planning. In addition to legal and ethical constraints, with the continuous upgrading of blockchain technology, it is possible to explore the use of blockchain technology to lower the threshold for a certain number of investors to participate in corporate financial governance. Jointly supervising the capital flow of listed companies can ensure the safety of funds and improve the efficiency of capital use, thereby solving the problem of financial fraud of listed companies to a certain extent. The four core features of blockchain technology include decentralized distributed ledgers, consensus mechanisms, asymmetric encryption, and smart contracts. Exploring the feasibility and embedding path of chain technology in the capital supervision of listed companies will help to solve this problem. The integrated application of blockchain technology plays an important role in new technology innovation and industrial transformation. According to the unique technical characteristics of blockchain technology such as decentralization, nontampering, and traceability, combined with its application scenarios in the accounting field, it is hoped to use blockchain technology to solve problems such as information asymmetry and easy tampering of financial amounts from the source. Therefore, effective analysis can reduce the occurrence of financial fraud and fraud in listed companies, and blockchain technology has become a new way to prevent financial fraud in listed companies. This paper analyzes the classification and basic characteristics of blockchain, and studies the access mechanism and voting rules of candidate nodes based on the private chain architecture of the Raft distributed protocol to ensure the authenticity and real-time of financial information of listed companies and financial decisions. Improving the difficulty of financial fraud can provide good social and economic benefits.

1. Introduction

A necessary condition to ensure the healthy and stable development of securities units is that the financial information of publicly listed companies must meet the requirements of timeliness, reliability, anticipation, and effectiveness [1]. In recent years, internal financial fraud incidents of listed companies have been common [2]. The main reasons for these financial fraud scandals are information asymmetry between investors and management, poor corporate governance within the company, and the lack of independence of accountants. How to effectively solve these problems is an urgent problem for Chinese listed companies [3]. At present, there is no doubt that blockchain technology stands out with the characteristics of "decentralization", decentralized social ledgers, cryptographic algorithms, and high information transparency in my country [4].

The hot topic of blockchain technology has attracted attention from all walks of life in recent years, and scholars at home and abroad have also conducted a lot of related research on the application and development of blockchain technology in various industries [5]. However, when it comes to the application of blockchain technology in the accounting industry, the current research is on the prospect

of the disruptive impact of this technology on the entire accounting industry at the macro level, and chain technology can solve certain problems. There is less research on its role in the accounting profession and its reality [6].

The quality of accounting information disclosed in financial reports directly affects investors' investment decisions [7]. Due to the lack of internal strength of enterprises, driven by huge economic benefits, the phenomenon of distortion of accounting information in enterprises in my country has become more and more serious in recent years. It seriously affects the image [8]. It attacked China's listed companies, harming the economic interests of small and medium-sized investors. According to P. Report, from 2015 to 2017, 80 A-share listed companies and 143 companies in China revealed financial fraud [9]. There are 108 companies, and in 2019 there was Pharmaceutical's financial fraud case, which ballooned to $ 20.644 billion from 2016 to 2018, operating profit of RMB 3, and operating profit of RMB 2.072 billion [10]. In the environment of information asymmetry between investors and managers and incomplete external supervision system of listed companies, how to deal with and prevent financial fraud of listed companies is a hot issue of public concern [11].

With the rapid development of computer and internet technology, big data, cloud computing and artificial intelligence have been successively applied in accounting, auditing, and supervision [12]. Blockchain is a new type of distributed ledger technology proposed by Xue et al. in 2008. With the introduction of shared ledgers, transaction events can be effectively recorded, and related data can be recorded immutable [13]. The introduction of blockchain technology will bring significant changes to existing business and accounting applications [14].

In 2008, American physicist Satoshi Nakamoto published the paper "Bitcoin: A Peer-to-Peer Electronic Cash System" which was the first to propose an explanation of the blockchain concept [15]. From a narrower perspective, blockchain technology is now commonly perceived as a distributed ledger database. Simply put, blockchain is an open record system who owns what, who has traded with whom, and records of transactions are securely sealed in blocks of data and are connected using a hash function, forming a chain of data connected in the form of the previous block and the final block. This is also called blockchain [16]. This trusted chain data structure, resembling a "global network ledger", is not a technology but an organic integration of mature technologies such as decentralized technology, timestamps, cryptography, and consensus mechanisms [17].

The basic features of blockchain include decentralization immutability, republican privacy protection. "Decentralization" means that the blockchain does not have a special application system center, and each system in the system is highly autonomous, enhancing the effectiveness of data security against hackers [18]. Blockchain requires the consent of her 51% or more of approved nodes to change stored data. This makes data tampering difficult and makes data tampering and fraud nearly impossible [19]. "Consensus mechanism" means that all authorized members participate in viewing, updating, and maintaining the system without unlimited power. "Privacy protection" means that the authorization can only view information, but not transaction information, and can effectively protect corporate business secrets under supervision [20]. Based on the above blockchain capabilities, a highly transparent, real-time, and nearly tamper-proof reconstruction of the financial system of publicly traded companies can be implemented, increasing the difficulty of data fraud. When leaving the external interface, the supervisory authority can effectively supervise it and effectively prevent financial fraud of listed companies [21].

This article analyzes the financial fraud status quo of listed companies in my country by studying the companies that have committed financial fraud violations and have been punished by relevant departments such as the China Securities Regulatory Commission, and through comparison its occurrence [22]. Further research into the main reasons for research, the unique characteristics analyze the positive impact on solving the financial fraud problem of listed companies and explore the rationality and feasibility of applying blockchain technology to solving the financial fraud problem of listed companies [23]. In particular, to ensure the timeliness, reliability, accuracy, and validity of financial information, it is expected to provide a theoretical basis for applying blockchain technology in the accounting field and contribute to solving the problem of financial fraud. I have here a listed company in my country.

2. Region Block Technology and Meshing

Blockchain usually refers to decentralized and decentralized accounting methods that can be recorded and maintained by all members. The blockchain records relevant information of the above participants, such as assets and transaction information [24]. When financial participants update the above block information, the updated data-related results will be sent directly or indirectly to all financial participants. Compared with the traditional digital text bookkeeping method, the discrete distributed ledger based on the electronic computer blockchain technology makes the records more transparent, and the data is more immutable and stable.

Blockchain grid division is generally divided into three categories: public chain, syndicated chain, and private chain. Open mode and application scenario planning and nonpublic chain give everyone the right to participate in the creation, transaction, update system, and maintain vision of a certain blockchain. The famous Bitcoin calculation ratios, Ethereum ratios, etc. fall into this category. The consortium chain belongs to the group and can only be operated and maintained by authorized members. Hyperledger is a typical application worth learning. Private chains are private and can only be operated in the grid by authorized individuals or companies, and Eris Industries is a typical computer application. As the underlying "ledger technology" of Bitcoin, blockchain was first disclosed in 2009 by an unknown person or organization in a certain country in the name of Satoshi Nakamoto. Figure 1 shows the research process of blockchain grid technology, the calculation of fraud prevention in this paper. According to Satoshi Nakamoto, the establishment of trust is only beneficial, and it cannot be
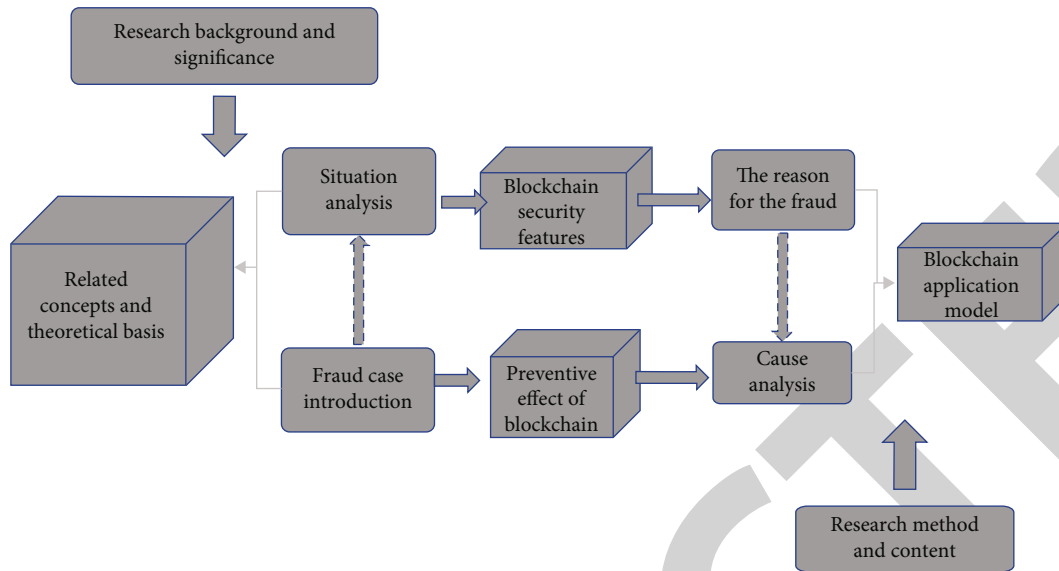
Figure 1: The process of blockchain technology to prevent financial fraud research.

linked with a specific center. Because too much centralization and partial decentralization will lead to information asymmetry, there is a computing center exercising power to destroy its situation in which the interests of mobile participants and other parties are divided. Blockchain is a technology solution based on network decentralization, trustworthiness, and development. It maintains a trusted database on subcomputing nodes. In general, Blockchain technology has four typical irreplaceable main technical characteristics.

2.1. Decentralization and Distributed Ledgers. Because blockchain technology uses distributed accounting and storage, there is no central management agency or hardware to monitor transactions, relying on participants to maintain the system together to ensure the security of the system and the rights and obligations of everyone Nodes in each block are the same. Figure 2 shows the changing course of the share of parameters and discrete features with decentralization [25]. Distributed ledger means that in the process of blockchain transaction bookkeeping, multiple network nodes distributed in locations are responsible for recording the complete ledger, and each computer can participate in the legitimacy of the bookkeeping transaction through competition. That is to say, the blockchain is a decentralized distributed ledger system that does not need to rely on credit endorsements and is distributed on a computer network. This technology can ensure the publicity of the account and make the data highly transparent and fully shared.

2.2. Openness and Consensus Mechanism. The system is open, only the private information of the transaction is encrypted, and the blockchain data is open to all participants. Anyone can query the blockchain and develop applications through the public interface, so the information of the entire system is highly clear. Consensus machine refers to a mechanism that prevents computing nodes from tampering with data and verifies the validity of records, mainly including proof of work and proof of benefit. The most famous of these is the proof-of-work mechanism. The variation characteristics of the central factor and the discrete characteristics of the open consensus medium are shown in Figure 3. For example, in the Bitcoin chain, "miners" distributed all over the world use computer power to compete for account rights. Every time a consensus is reached, the whole network must broadcast. Currently, each node has math, cogovernor and database. This technology prevents data corruption due to central system failures that are lost or intentionally intentional by intermediaries. Every node security and stability plays an important role.

2.3. Asymmetric Encryption and Immutability. The combination of blockchain and password determines the variability of blockchain technology to a certain extent. After the number of transactions is verified by the consensus mechanism and loaded into the data, no one can tamper with the data. Asymmetric encryption is an asymmetric encryption algorithm that involves two keys in a cipher, a public key, and a private key, paired together. When two communications exchange information, when using the public key to encrypt the data, it must be decrypted with the private key, and vice versa. Each data in a block contains transaction information, and the technology used to generate the relevant data is asymmetric encryption. Figure 4 shows the varying characteristics of the pivot parameters and the contribution of discrete elements for the asymmetrically refined mesh. This technical function can verify the validity of the transaction letter after the user approves it. Since the user's key is unique, it is impossible to copy or create an identity on the blockchain, ensuring data security and personal information protection.

2.4. Smart Contracts and Traceability. The smart contract of the blockchain refers to the preset, inoperable rules, and
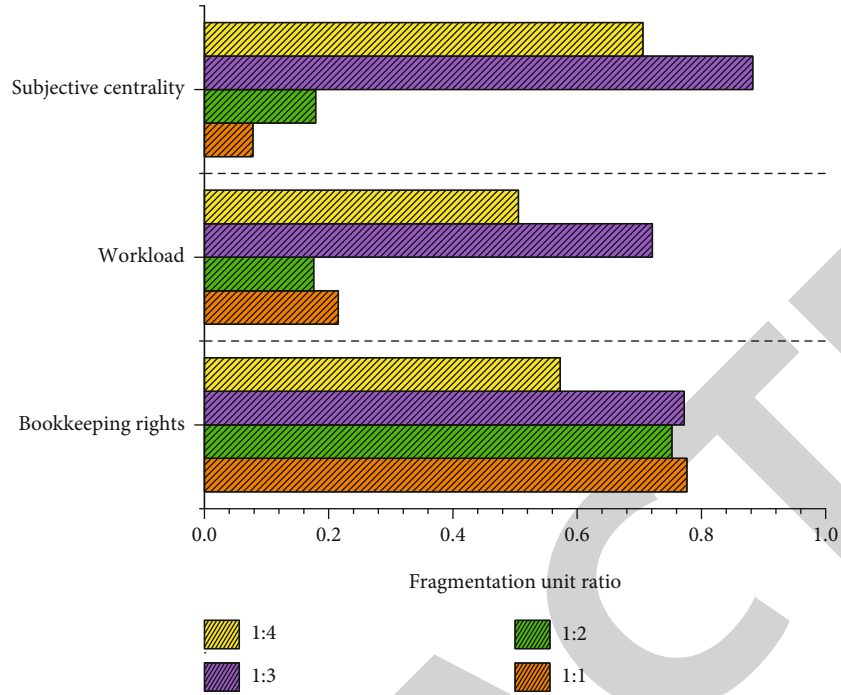
FIGURE 2: Variation of parameters and discrete feature shares under centralization.
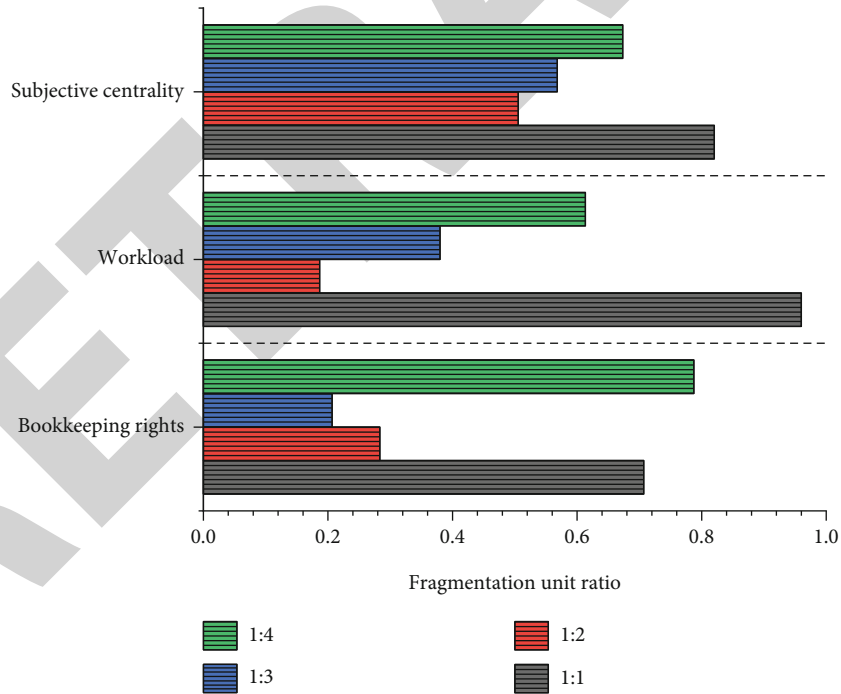

FIGURE 3: Variation characteristics of central factor and discrete characteristics of open consensus medium.

pieces, which are written in the "digital form" of the code and can be executed manually by the computer. The difference between smart contracts and traditional contracts is that two parties and multiple parties do or do not do something without trust. The rights and obligations stipulated in smart contracts are not only defined by code but also

completely executed by code definition without human intervention. This feature of blockchain solves the trust problem. Many financial institutions such as exchanges are researching the function of blockchain smart contract technology to record and trade physical digital assets. Figure 5 shows the variation characteristics and discrete
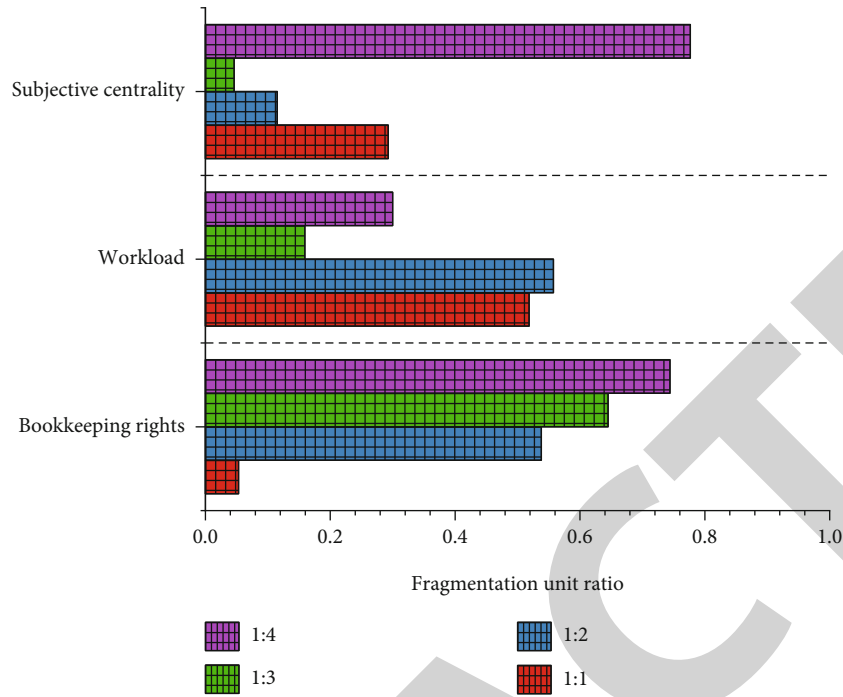
FIGURE 4: Variation characteristics of pivot parameters for asymmetrically refined meshes.
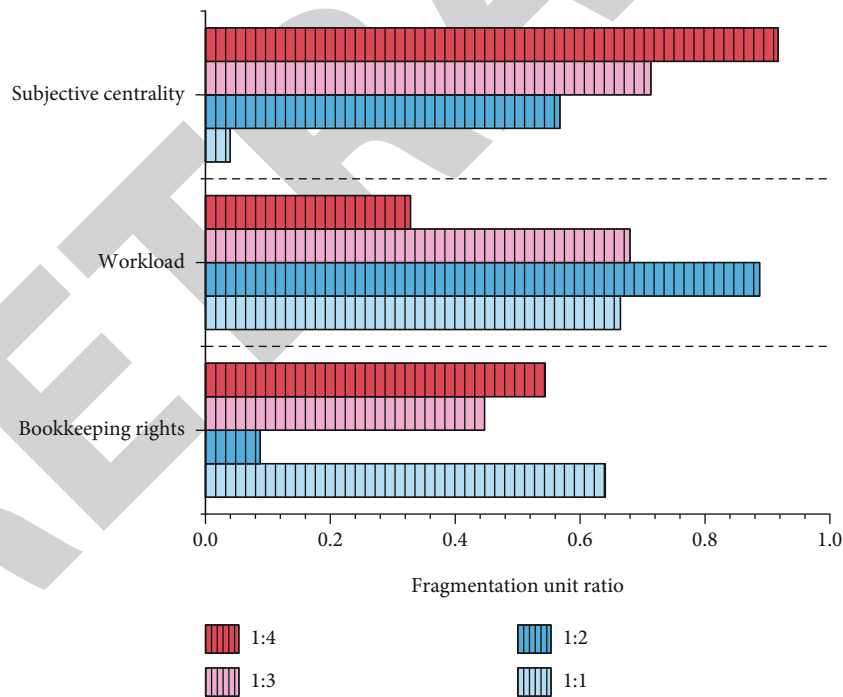

FIGURE 5: Variation characteristics of discrete element parameters of smart contracts766.

traceability characteristics of discrete element parameters of smart contracts. Traceability means that every change of the pair is recorded in the data in chronological order, and linked before and after. Users can inquire about the entire change process from the origin to the latest transaction.

3. Company Financial Fraud Analysis

3.1. Status Quo of Financial Fraud in Traditional Accounting Model Companies. Although experts and digital scholars in the relevant blockchain field at home and abroad do not have a unified grid definition for the specific listing terms

of the company's financial fraud, it can be basically concluded by reading a large number of relevant materials and documents in the literature that listed financial fraud refers to the sale of companies deliberately, accumulation of inauthentic acts of falsified financial data, falsely reporting or deliberately concealing interest relationships, thereby creating false financial reports, and then financially falsifying and damaging the legitimate sales interests of stakeholders, and obtaining fundamentally illegal or not very legal interests. Financial fraud generally has the characteristics of intention, purpose, concealment, etc. The proportion of each characteristic in domestic enterprises is shown in Figure 6.
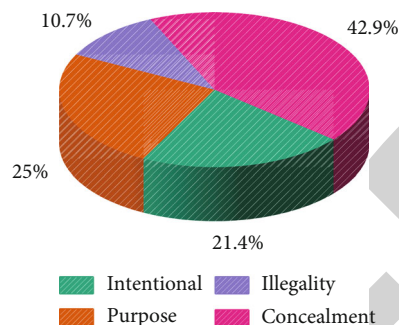
3.2. Current Situation of Financial Fraud in Listed Companies. According to the similarities and differences of decryption keys, the existing encryption can be divided into two types: nonpair encryption and so-called encryption. Symmetrical additions are everywhere. It ensures that no information is leaked during secure transmission. However, in a real-world environment, symmetric encryption cannot guarantee absolute security once the key is transmitted. Asymmetric encryption can achieve a higher level of confidentiality in the environment, including one-to-one private and public keys. If a public key is used, it can be decrypted with the corresponding key. As long as the private key is not disclosed, the security of the letter can be guaranteed. Similarly, when encrypting with a private key, decrypt with the corresponding public key. Successful decryption indicates that the information is stable. Its owner, the encryptor of the private key, issues this operation to allow verification of the authenticity of the information.

At present, the proportion of listed companies in the development is greater. Many companies in my country choose to go public because of financing, construction, and other factors. They are mature companies with huge capital and long-term profits. Many companies that do not meet the listing conditions, meet the conditions, and falsify. The proportion of each feature of financial fraud in listed companies is shown in Figure 7. The short-term benefits brought about by financial fraud have created a temptation for listed companies. Incomplete supervision, imperfect relevant laws and regulations, and low damage costs have also forced many listed companies to take risks. However, financial fraud of listed companies is not uncommon.

3.3. Analysis on the Reasons of Financial Fraud of Listed Companies. Financial fraud usually refers to organized and planned fraud that violates the principle of financial authenticity and adversely affects the operation of securities. As can be seen from the definition, the main body of financial fraud is the company that implements it. For the company's "collective interest", managers at all levels of the company will guide the fraud scheme, while the listed company's accountants will be responsible for the specific implementation of the scheme. At the same time, entities related to listed companies, such as accounting firms, will also actively and passively cooperate with audit work.

In the sales process of listed companies, issuing stocks and lifting the ban on financing will bring great benefits to

FIGURE 6: The proportion of various characteristics of domestic enterprises.

companies with relatively concentrated equity. Because the interests of owners and operators are aligned, the size and independence of the board of directors is sufficient, the external supervision mechanism, and the relevant information is not transparent, accounting information and financial fraud are prone to occur.

The chaotic governance mechanism of listed companies is the internal cause of financial fraud. The demonstration effect of stock market wealth will affect the decision-making of corporate management. However, the listing of Chinese companies has clear requirements for financial indicators such as operating performance and profitability. Since some companies regard Shanghai as an end rather than a means of raising funds, it is easy to package performance to achieve their goals, raise investor expectations, or even "embezzle funds". After going public, the company can easily refinance and protect its brand to beautify its operational efficiency and financial health. Additionally, business leaders delay, embellish, and falsify financial information for personal reasons, such as option interests. If the listed company does not establish and improve the company management mechanism in accordance with the national requirements, the board of directors and the board of directors will stay away from the financial fraud supervision process. When fraud occurs, interest chains are formed within the company, and these interest chains are covered up.

The synergistic effect of accountants' and banks' inaction is the second reason for exacerbating the phenomenon of fraud. Disclosures of company financials must be audited. However, some accounting firms did not perform their auditing responsibilities out of their own interests, and did not conduct strict inspections on the relevant financial information, and the audit reports were distorted or even falsified. In addition, out of their own interests, intermediaries fail to verify the authenticity of the stock refinancing process, or even give in, leading to adverse consequences. What is more serious is that if the bank cooperates with the scam, it will increase the difficulty of exposing relevant false information, and will face the serious consequences of extremely dishonest.

Lack of oversight and inadequate investigations and penalties are the third reasons behind financial fraud. My country has strict management of companies, but the punishment for dishonesty is too light. In this case, the cost of corporate
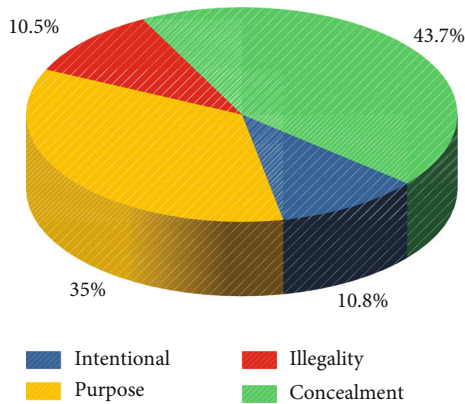
Figure 7: The proportion of various characteristics of listed companies.

fraud is not high, which encourages corporate fraud. Due to weak supervision, some companies were unable to break through the wall during the listing process, and suddenly changed their faces in the report. Under weak supervision, the mismatch between the benefits and risks of fraud puts companies at risk.

4. Analysis of Fund Supervision Based on Blockchain Technology

4.1. The Feasibility of Applying Blockchain Technology to Capital Supervision of Listed Companies. From the above four core block technologies, the blockchain can use the blockchain data structure to verify and store data, use distributed node coalgorithm to generate grid and update data, use cryptographic asymmetric encryption to ensure data transmission, and access security a new fractional infrastructure and a meter paradigm for programming and manipulating data using smart contracts composed of self-scripting generations. Based on the important technical characteristics of blockchain, it can improve the transparency of company capital supervision and prevent company fraud to a certain extent. Due to information asymmetry and the interests of some major shareholders, it is difficult for investors to judge whether the financial information disclosed by the company is completely true, whether the assets are true or false, and whether the capital situation is true, it is hard to feel right and let alone take a test. The sharding progress of different blockchain operation methods is shown in Figure 8. Therefore, the use of blockchain technology in which permanent data storage cannot be hidden and can be publicly traced will ensure that the major shareholders of listed companies do not participate in funds, because the traceability of information is difficult to achieve. If the management of listed companies violates laws and regulations, they will be investigated for criminal responsibility according to law. In addition, the traceability of information on the blockchain also makes regulatory inquiries more convenient, and the transfer of foreign exchange funds of listed companies is clear at a glance.

4.2. The Path to Embedding Blockchain in Fund Supervision. To embed the block system framework into the supervision of listed companies, it is first necessary to clarify which blockchain is more suitable. There are four types of blockchains: public chain, private chain, joint chain, and hybrid chain. Public ownership is completely decentralized, and any organization or individual can join, retrieve data, and trade the blockchain. A private chain refers to a blockchain that has permissions in the hands of the participants; the read limit is selectively opened, and does not require inducement. A consortium chain refers to a block that is open to the nodes that join the consortium. Hybrid chains are complex, and each node has different permissions. In contrast, private chain mesh nodes are more reasonable choices.

After determining the type of blockchain to choose, the next step is to identify the key nodes that generate financial data. When the capital of a listed company changes, the main public shareholders whose number of shares meets certain standards, the creditors of the listed company, accountants and fund custodians, and regulatory agencies, record the key points. The discretization of bond ratio records is shown in Figure 9. Participating nodes can record the changes of funds in the distributed ledger of the blockchain through a consensus mechanism, but a single node cannot manipulate the information reached to preserve real financial data and leave traces.

It is also crucial to carry out contracts on the framework of the blockchain system. It is the obligation to ensure the automatic operation of the network of all parties involved in the supervision of Shanghai Gold, and it is a procedural contract. The smart contract should preset the code that conforms to the information disclosure of the boss, and follow the logic and specification of the listed company's transaction, entry, and exit. The code system will run, and the data book will be executed. This provides strong support for financial accounting, so that every transaction of the company is recorded efficiently, and the dynamic information of listed companies can be disclosed in real time. When building a private chain, you need to participate in node access. Participating nodes view, update and maintain information so there must be a certain threshold access mechanism. Of course, the supervisor of the accounting is the node of the private chain, but in its symmetric information, some public shareholders (the shareholding ratio and shareholding ratio can be set) and creditors (the number and time of bonds) are also included in the nodes and listed companies May be screened by third parties to ensure the credibility of their submissions and to ensure the company's privacy. Companies can classify five categories in the private chain, enabling them to monitor and maintain company-related information, financial information transparency, and public company reputation protection.

4.3. Private Key Supervision of the Data Chain. The unique timestamp feature of the blockchain is as follows: as long as the information is in the chain, it will be permanently traced without the right to change it. The blockchain operates autonomously in the process. When the company adopts blockchain technology, the information of each transaction will be automatically synchronized with the accounting information data, which effectively prevents
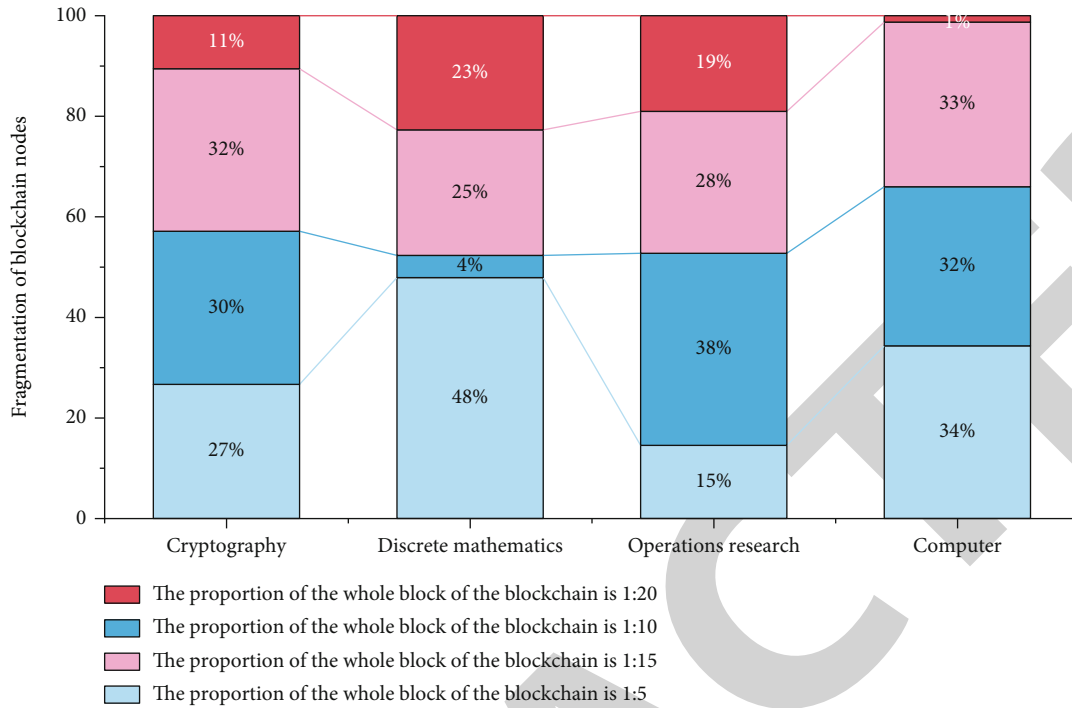
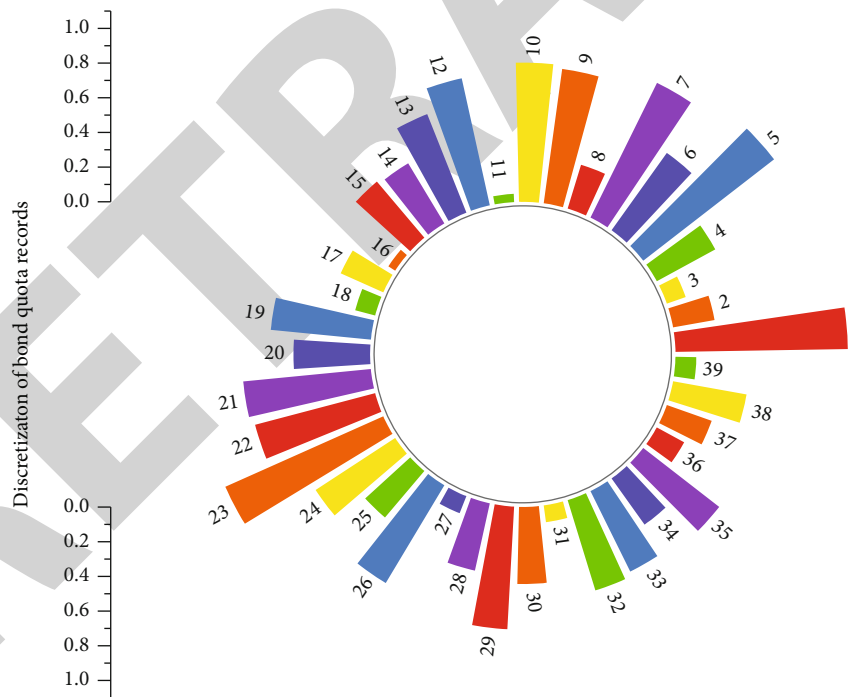FIGURE 8: Sharding progress of different blockchain operations.

FIGURE 9: Discretization of bond quota records.

fundamentally guarantees authenticity and reliability. At the same time, through the application of the block, the system automatically connects the company management information system with the external communication system, which truly achieves the consistency of internal and external information, solves the problem of letter asymmetry, and reduces

the authority of the company authorized by the ministry. Fraud is stopped and accounting is contained.

The benefits of blockchain technology are immutability and trust decentralization. Today, in our country's accounting information system, due to the asymmetry of corporate governance, high-level personnel can manipulate financial
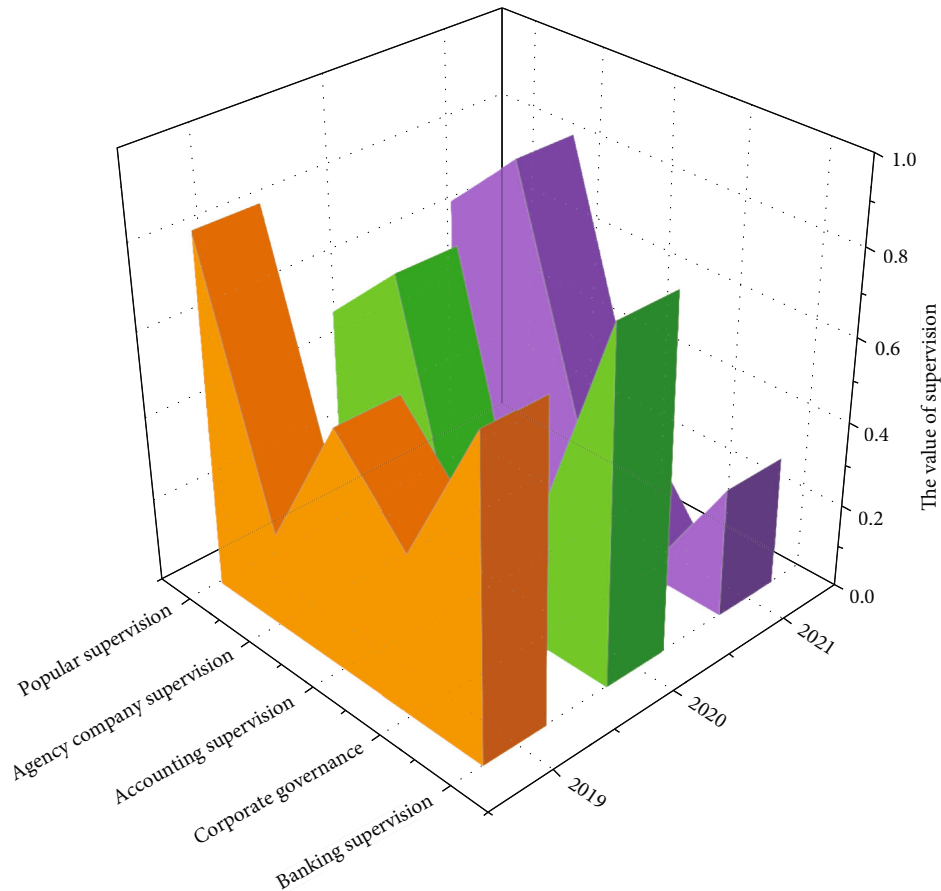
FIGURE 10: Unit monitoring status in different years.

information arbitrarily. Executive power undoubtedly provides the advantage of fraud. The consequences of horizontal fraud are severe. At the same time, the management's intervention also brought difficulties to the official audit work and had to correct their own information, which violated professional ethics and job requirements. Companies that combine blockchain technology with financial work can effectively avoid the risk of management intervention. With the help of blockchain, salaries and social welfare consumption flow to employees at all levels of the company to ensure fairness and openness.

In the listing supervision system embedded in the blockchain, it is necessary to introduce a third party to participate in those with too much power. Every distributed fund that meets certain conditions is open to the public, the transaction hash algorithm is verified, and a new block is added to the block that records the transaction data. The unit monitoring situation in different years is shown in Figure 10. As long as the public and private keys are available, it is possible to backtrack or find related transactions from the block. Incentive nodes that can contain some keys can contain financial data, so that investors can monitor the financial information asymmetry of each interest phase of the listed company. It can be seen from the above that the private chain is suitable for internal use, and its rules are more suitable for flexible scenarios. However, the read and write per-

missions of the private chain are restricted by the administrator, and the super administrator can operate it. Therefore, in the process of using the private chain, it is not only necessary to open the interface to the supervision to collect relevant information on data modification but also to issue verification authority to the upstream and downstream cooperatives. This allows relevant parties to view relevant information while ensuring that financial information is not leaked, preventing relevant data from being tampered with.

4.4. Raft Distributed Protocol. The traditional testing process requires a lot of manpower and financial resources, and sometimes even if a lot of manpower and financial resources are invested, the false detection effect is not satisfactory. Errors are inevitable as the inherent risks of false financial monitoring cannot be eliminated. By using blockchain technology, all transaction records are entered on the chain and all information is linked. The openness and traceability of blockchain technology make transactions well-documented. In the field of innovative technologies, the review process has been simplified and a review mode has been developed. Today, major audit firms are exploring the blockchain space. The root hash parameter allocation process used in this analysis is shown in Figure 11. Using block model analysis can help to carry out audit work and improve audit
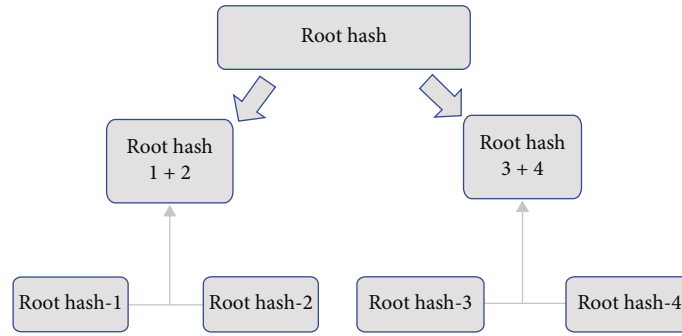
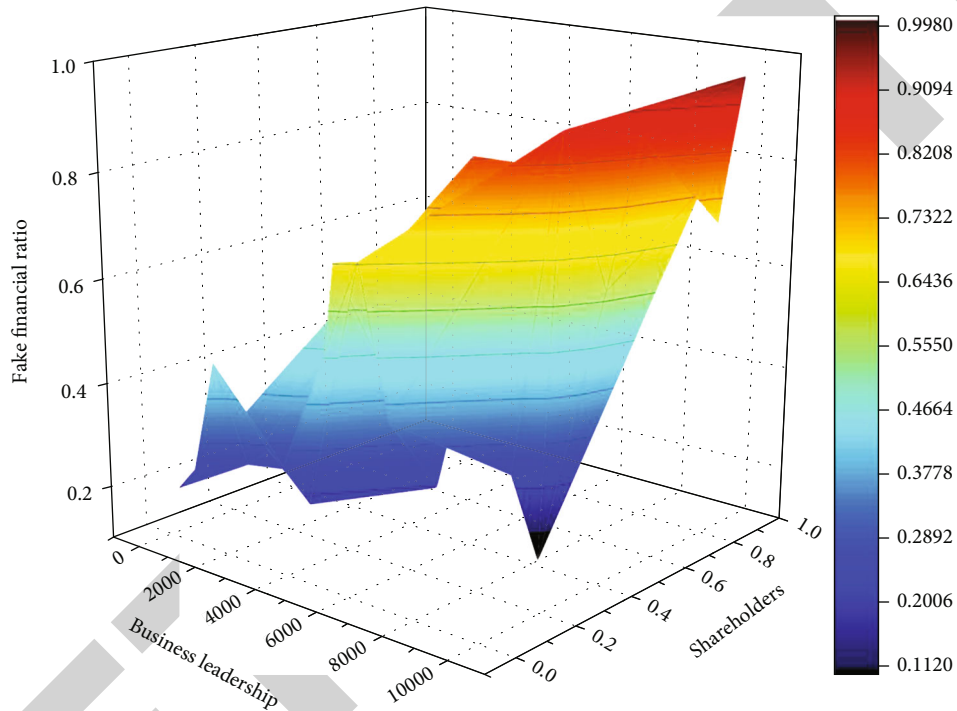Figure 11: Root hash parameter assignment process.

Figure 12: Distribution trend of financial participants and the development of false financial values.

efficiency. The addition of the blockchain objectively reduces the audit risk and subjectively limits the improper behavior of auditors. With the help of the audit behavior supported by the blockchain, the audit quality has been greatly improved, and the occurrence of accounting and financial fraud has been curbed.

During the construction and maintenance of the private chain, the participating nodes and their access mechanisms must be clearly defined. Participating meshing nodes have permissions to view, update, and maintain relevant information, so specific realistic threshold access mechanisms must be established for them. Accounting firms and regulators can be set as participating nodes of the private chain, of course, but in order to ensure the unconventional symmetry of information, some public shareholders and creditors also select participating nodes within the scope. Figure 12 shows the evolution of the distribution of financial actors and the evolution of fake finance. Listed companies can rank the

above-mentioned five types of financial personnel in the private chain, so that they can view, monitor, and maintain relevant information of listed companies at any time, improve the transparency of financial information, and protect the standard and external reputation of listed companies.

After constructing the access mechanism of blockchain nodes participating in grid division, the private blockchain consensus mechanism must also be considered, and the data trade-off between real-time and specified authority at all levels must be carried out to realize the effective update nature and maintenance of divided data convenience. At present, some consensus mechanisms of blockchain include workload division proof, rights protection proof, Byzantine fault-tolerant algorithm, and Raft algorithm. Bitcoin uses a memory partitioned proof-of-work consensus mechanism. Based on the characteristics of private blockchains, considering the timeliness of data monitoring, it is not possible to simply use the proof of workload dissolution like the public

chain block exhibition, nor simply to use a large number of divided proofs of equity or proof of stock; the latter is easy to be used by large Shareholders and senior management control, can effectively achieve information transparency and countermeasures. In this case, it can be implemented using the heaped distributed Raft protocol. Based on the distributed contractual agreement, it can not only limit the unlimited rights of the major shareholders of high-level listed companies but also increase the transparency and supervision of relevant financial omissions, and can effectively prevent the asymmetric fraud of false financial information of listed companies.

5. Conclusion

It is foreseeable that in the future, blockchain technology will affect the entire world like the Internet. Although blockchain technology is still in its infancy, with the increasing investment in blockchain technology research and development, blockchain technology has now attracted the attention of financial institutions. Institutions, technology companies, and capital markets have all paid great attention and extensive attention. Blockchain technology has shown unique advantages in preventing corporate financial fraud. Experts and scholars at home and abroad are also actively overcoming the difficulties of blockchain technology to ensure that regional blockchain technology is more secure and effective in various fields. In the billing scenario currently used by blockchain technology, blockchain technology can solve its unique technical characteristics, information asymmetry, opaque sources, and other problems, opening up a new way to prevent financial fraud of listed companies. Based on the analysis, this paper draws the following conclusions.

(1) In order to embed the blockchain system framework in the capital supervision of listed companies, it must first be clarified which type of blockchain is more suitable. There are four types of blockchain: public chain, private chain, syndicated link, and hybrid chain. Among them, the public chain is fully decentralized, and any organization or individual can join, read data, and participate in the transaction blockchain. A private chain refers to a blockchain that has written permission in the hands of a specific participant and read permission is selectively open and does not require an inducement mechanism. A consortium chain refers to a blockchain who's read and write permissions are only open to nodes that join the consortium. The hybrid chain is more complex and each node has different permissions and responsibilities. In contrast, a private chain is a more reasonable choice

(2) Not only do we need to see the potential of blockchain technology in the financial and business spheres but we also need to confront its shortcomings. Currently, there are more theoretical studies on blockchain technology than practical applications in all walks of life. Templates are missing in the

application process and the connection between technology and business is difficult. We still have to explore the integration of blockchain and cloud computing, big data, artificial intelligence, and other information technologies. Second, new risk problems may arise. The purpose of blockchain technology-based fund supervision is to solve the problem that the current status of listed companies is generally not transparent, but it is necessary to do a good job of risk assessment and testing, including systems, technology, information, financial data, and fund security, and have reliable risk management measures. Third, the application of blockchain technology in the oversight of listed company funds requires the interaction and follow-up of regulators and legislatures to adequately regulate the use of blockchain technology in the information disclosure system of listed companies. In this way, the application and research of blockchain in related fields can make a great contribution

Data Availability

The experimental data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The author declares that there are conflicts of interest to report regarding the present study.

Acknowledgments

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