A Study on the Application of Big Data Auditing in Commercial Banks

Xin Fu

Liaoning Rural Credit Cooperatives, Shenyang, Liaoning 110000

Abstract: The rapid development of network and information technology has brought the auditing work into the era of networkization. 5G, big data, cloud computing, blockchain, artificial intelligence and a series of new technologies have emerged, which have brought brand-new changes and enhancements for banks in China, and at the same time brought new demands for the auditing work of commercial banks. At the same time, we are required to carry out comprehensive optimization and upgrading of the audit work through the application of big data, and to promote the big data of the audit work. Therefore, this thesis focuses on an in-depth analysis of the meaning and technical characteristics of big data, and explores the specific use of big data in commercial banks.

Keywords: Big data auditing; Commercial banks; Application

Introduction

Some commercial banks have applied data query technology to their internal audit procedures, and the use of this method enables auditors to quickly identify various unusual transactions in a relatively short period of time and to block suspicious transactions in a timely manner. In today's rapidly changing transaction environment, the business environment of commercial banks is becoming more and more complex, and the risk of internal auditing has also increased. Commercial banks should set up a new working concept, use big data to carry out scientific auditing work, and carry out reforms in data storage, processing and analysis to improve the quality of auditing work.

1. Overview of commercial banks

China's commercial banks can be divided into four categories: state-owned commercial banks, joint-stock commercial banks, urban commercial banks, and rural commercial banks. Among them, six state-owned commercial banks are directly controlled by the government and occupy a major part of the entire banking market in China. There are a total of 12 joint-stock commercial banks in China, and compared to state-owned commercial banks, joint-stock banks have various forms of ownership, such as non-ownership and hybrid.

2. Connotation of big data technology

Big data is an abstract and not clearly defined concept. Currently, the definition of big data comes from International Data Center. Big data is diverse in type and large in volume, including the value of information extracted from the data, and the process of collecting, processing and analyzing the data at high speed, and finally determining the technical solution. When describing and documenting some things, data is essential, and the information value of data can be obtained by analyzing and organizing these data. The effective dissemination and utilization of these data can enhance the effectiveness of data information. Big data is an emerging technology spawned by network information technology, which not only accommodates huge amounts of data, but also establishes a platform for processing and manipulating various data and information, which can be efficiently managed and utilized. Big data is characterized by huge scale, variety, small value density and high computing rate, from which people usually find laws and use them to predict and control the future.

3. Big data auditing technology advantages

3.1 Mutual confirmation and identification of risk issues through multi-source data

Through big data analysis, the collection of internal and external multi-source data of commercial banks can be realized. On this basis, by classifying, extracting and comparing the associated commercial data within the enterprise system, it realizes the mutual verification of multi-source data and quickly and accurately identifies various risks in different types of economic activities.

3.2 Guiding auditing from after-the-fact discovery of problems to before-the-fact prevention

Utilizing big data auditing technology, the audit activities before, during and after are effectively linked in time and space. Early warn-

ing, mid-control and post-event monitoring measures can effectively play the audit function, detecting and solving problems in a timely manner before they arise, and reducing the likelihood of problems.

3.3 Reduce human interference in the audit process

Auditing is a kind of artificial supervision, a product of the unification of power and responsibility, which will inevitably leave artificial traces. Big data auditing has the characteristics of openness, fairness, transparency, traceability, etc. These characteristics facilitate manual auditing, thus reducing the blindness of subjective judgment. At the same time, with the computing and analyzing functions of big data, a large amount of data processing and repetitive work will be migrated to the computer, so that the auditors have more time to find out the problems and deal with them, which can improve the effectiveness of the audit.

4. Application of big data auditing in commercial banks

4.1 Build a big data statistical analysis platform

To give full play to the role of big data, it is necessary to establish a statistical analysis platform that can support the needs of big data application. When building a platform for statistical data of big data, it is necessary to organically combine the elements of bank efficiency and value, integrate the data information obtained from enterprise development and from external supervision efforts, and build a good platform. In the application and maintenance work, the supplementation and updating of data information should be strengthened according to the actual situation. The use of big data can be found in the financial industry and the Internet, and in the process of collecting information, the data information should be comprehensive and precise to ensure the internal audit of commercial banks. When constructing the statistical analysis platform, problems such as incomplete data and inefficient data processing should be avoided, and at the same time, it should be combined with its own development needs, moderately increase the embedded statistical analysis mode, and enhance the utilization value of data information.

4.2 Utilize big data technology to complete statistical analysis

The construction of a complete statistical analysis platform requires a large amount of data information, and when commercial banks carry out internal audits, they should carry out a specific analysis of the mission and purpose of the project, and use the internal audit as the basis for the development of the data information analysis index based on the statistical big data analysis platform, so as to realize the analysis of data and improve the effect of the utilization of data information. When using the statistical analysis platform of big data, it is also necessary to use the statistical analysis model, when the traditional statistical analysis model can not be fully adapted to the needs of off-site auditing, it is required to export and back up the data information in the analysis index, and then, use other statistical software such as STATS, MATLAB and other statistical software to verify the model. While analyzing the data, commercial banks should improve and process the data information, efficiently transform the output data, convert the data information into organized data, establish efficient statistical analysis model, and use it in the actual data processing work. By analyzing the data, the use value of these data can be improved well, providing strong data support for the business development of China's commercial banks and realizing the maximum value of the data.

4.3 Scientific and reasonable selection of statistical analysis means

In the application of big data statistical technology, it is necessary to analyze a variety of data, which requires a high intensity analysis of data. Therefore, there are a variety of statistical analysis methods in the analysis of big data. When carrying out the statistical analysis of big data, it is necessary to analyze the purpose of internal audit work, formulate effective internal audit assessment indexes, in order to obtain a clearer connotation of the data, and make a scientific and reasonable choice of statistical analysis methods. At present, China's banking internal audit work mainly uses correlation analysis, descriptive statistical analysis, effectiveness evaluation and other statistical analysis methods. In order to effectively improve the effectiveness of data analysis and utilization, it is necessary to conduct a comprehensive and in-depth study of the results of data analysis. When anomalies occur, they should be recognized in a timely manner in order to provide a scientific basis for on-site auditing. This can effectively prevent various potential financial risks of commercial banks, thus promoting the sound development of commercial banks in China. Descriptive statistics is a commonly used means of statistical analysis, with the mean value, great value, minimum value, default value and other basic features, which can accurately reflect the overall trend and distribution of big data. Through big data description, the essential characteristics of the current audit object can be more clearly recognized. Statistical analysis of correlation is a more basic method, using which the interrelationship between various data can be understood, so that abnormal indicator values can be more easily detected and the degree of correlation can be minimized. Efficiency assessment is to objectively and comprehensively assess the audit objectives in order to obtain more comprehensive assessment results. Effective value refers to the size of the utility expressed in terms of the relationship between parameters and non-parameters, which has been widely used.

4.4 Application of statistical analysis results

The conclusions of the statistical analysis obtained from the audit of commercial banks should be combined with the distribution of data,

causes and information on abnormal data, so that they can play a guiding role in the audit work, which in turn improves the efficiency and quality of the audit work.

5. Conclusion

In summary, today, economic and social development can not be separated from big data analysis. Based on the Internet of Things and cloud computing, the establishment of big data bank informationization system is a new trend in the development of China's internal audit. In the development of the big data era, commercial banks should first have a "big data" idea, make full use of the large amount of business data generated in the process of its operation, and through a variety of effective ways and technologies, continue to carry out in-depth analysis and mining of data information, better understand the value of data, and improve the efficiency of the bank's internal audit work. and improve the efficiency of the bank's internal audit.

References

[1]   Chen Cheng, Liu Jingxiao. Exploring the application of off-site auditing in commercial banks in the era of big data[J]. Journal of Beijing Petroleum Management Cadre College, 2021, 28(03): 76-78.

[2]   Lai Zhaoji. Application of big data technology in internal audit of commercial banks[J]. Investment and Entrepreneurship, 2021, 32(01): 74-76.

[3]   Bao Yangchun. Exploration of the application of big data in the internal audit of commercial banks[J]. Finance and economics, 2020, (06): 217-218.

[4]   Fang Z. The application of big data statistical analysis in the internal audit of commercial banks[J]. China Internal Audit, 2019, (11): 44

Author Introduction: Xin Fu (1989.8-), female, Han nationality, Liaoning, deputy business manager Internationally Registered Auditor Intermediate Economist, Master, Unit: Liaoning Agricultural and Commercial Bank, Research Direction: big data audit.