Discussion of the Risks and Supervision of Financial Big Data Applications

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Abstract: With the innovation of big data finance, the existing financial industry and financial institution structure have been affected to a certain extent, and the risk of financial market has undergone a profound change. In the development of Internet finance, big data technology has been recognized and widely used in various industries, financial big data and Internet finance are two important players to transform the competitiveness of the financial industry for Chinese financial ecology. In order to identify the risks in financial markets in the application of financial big data, we need to make clear the characteristics of financial big data. The essence of big data finance is financial innovation. In the process of financial innovation, it not only increases the volatility of the financial system, but also causes the homogenization of financial market. The purpose of this paper is to analyze the risks of big data in finance, to clarify the important matters of financial big data supervision, and to improve the relevant laws and regulations, strengthen the information sharing mechanism and other big data financial supervision measures in view of the existing data monopoly, personal privacy leakage and many other issues, and to provide theoretical reference for the development of big data finance and the ecological stability of financial market in China.

1. Introduction
Big data financial risk is a kind of resource, optimise allocation of risk can effectively constrain potential big data risk crises through big data financial regulation, good risk allocation promotes maximizing the benefits of financial innovation, therefore, the research of big data financial risk and the optimization of big data financial risk supervision are mainly aimed at promoting the further development of the financial advantages of big data. At present, the literature research boom in big data finance aspect is aimed at financial innovation and financial supervision two aspects in China. Therefore, this paper takes big data as the main research background, and it will ensure the stability of the financial market industry as the research significance. This paper begins with an analysis from two angles: the first is a brief explanation of the development trend of big data and the characteristics of big data, and the second is a brief analysis of Internet finance. Then the domestic financial industry is the main research object in order to analyse the impact of big data on Chinese financial industry field. Finally, this paper expands a comprehensive discussion on the risks and regulatory measures faced by financial big data applications.

2. the Trend and Characteristics of Big Data

2.1. the Trend of Big Data
Related findings show that global big data is rising at a geometric rate, IBM predicts that the total
amount of data and information in the world will reach 35ZB by 2020 under the application and development of the Internet. If analyse the relations of ZB and GB in detail, we can know that a trillion GB is equal to a unit of ZB, so we can know the condition of the global data information quantity by 2020. The total amount of global data by 2020 is 8 times that of the current global data through summing the amount of data in the world today, but the total amount of global data by 2020 will be 50 times that of the sum of data generated over all years before the global twentieth century. The trend of big data is a sharp increase in data volume through survey and comparison of data, which is reaching a trend that people could not have imagined before.

2.2. Analysis of the Characteristics of Big Data

2.2.1. Online
The generation, invocation, and delivery of big data need to be done online. In fact, a lot of big data in the process of collection has been handled through the subjective consciousness of the human brain. Applications of big data in various industry sectors store and transfer the data generated by market research in order to achieve the corresponding objectives. People don’t "deliberately" deal with big data in the process of data storage, production, or invocation. New data information processing methods such as cloud computing can realize real-time online, real-time storage, real-time calls and real-time analysis of big data.

2.2.2. Mix
Traditional data age sampling and interception are the most common ways to obtain data, the way of obtaining the data has direct effect on the results of data analysis. The data analyzed by the limited data analysis means are generally refined and quantified. But in the age of big data, because of the all-in-one and online characteristics of big data, if sum up the above three significant characteristics, the characteristics of big data are mixed.

3. the Summarize of Big Data Finance

3.1. the Development of Big Data Finance
The first stage: the intelligent stage of service systems and the industrial phase of traditional financial institutions from the 1990s to 2005. Traditional financial institutions use the Internet economy platform to realize the construction of online service system based on the internet, big data technology, such as online investment, online insurance, etc.

The second stage: the stage of increasing the trend of big data finance and economic earnings is from 2005 to 2011. Third-party payments in this phase gradually reached into the hearts of the public, but did not get the full public approval.

The third stage: it is a stage of rapid development and innovation in the financial content of big data from 2011 to 2015, it can also be considered that this stage is the peak period of the development of big data finance.

The fourth stage: since 2015, big data finance undergoes regulation, change and regulation. In 2015, China updated the related regulations on financial supervision of big data, what is mapped is that big data financial industry states and service systems will be fully regulated and regulated.

3.2. The Main Body of Big Data Finance
In the process of transitioning to big data finance, Internet enterprises are mainly targeting the needs and service systems in the financial industry and develop the corresponding Internet economy platform. On the one hand, it can meet the needs of social financial market small and small enterprises, individual financing, on the other hand, it can expand and extend the Internet industry field.
4. Risk Analysis of Financial Big Data Applications

4.1. Fintech Giants Could Create Data Monopolies
Fintech giants can access and master large amounts of data by taking advantage of the inherent advantages of Internet platforms, computer technology, and big data technology and analyse the phenomenon objectively. There is a probability of data oligarchy, which leads to the problem of data monopoly in the financial industry. For example, some financial institutions have mastered the core credit data information, e-commerce transaction data information, offline transaction data information and so on. In essence, data monopoly is that the sharing mechanism has not been fully implemented, the sharing incentive mechanism is not in place, the concept of knowledge data information sharing conflicts with credit.

4.2. Data Silos and Data Fusion Issues
The government and enterprises are facing the danger and dilemma of data silos under the development of big data finance and the application of big data. In the era of big data, there is bound to be some confidential types of data information in various industry and government-generated data. So data information has become an important resource. Companies are reluctant to share data information in order to protect trade secrets, In the process of big data application, the government pays attention to application light disclosure, which leads to the existence and malignant development of data island phenomenon.

4.3. Data Security and Personal Privacy Issues
Various financial institutions can realize the access to user data information through various means such as accumulation and cooperative transactions on their own platforms in the applications of big data financial. Although the access to customer information data has brought convenience to the corresponding financial industry institutions, but from the customer's point of view, it involves the invasion problems of customer privacy. If from the point of view of data information security, once there is illegal data transaction or data information theft, then the development of the domestic financial big data industry will be more seriously affected.

The figure below shows the impact of the asymmetry of big data financial information on financial enterprises, as shown in figure 1:

![Figure 1: Big Data Financial Information Chart](image)

5. Supervision of Big Data in Finance

5.1. Strengthen the Improvement of Laws and Regulations on the Protection of Personal Information
The perfection of policies and regulations should also conform to the development of society, In the
context of the development of big data finance, in order to ensure information security, data security and do not infringe on the privacy of users, the most important measure is to improve the corresponding laws and regulations and make the regulatory system as the main guide to regulate the financial big data industry in all regions of China. The following points are specified, first, the current laws and regulations can be broadened to a certain extent through combining the development of the domestic overall big data finance; Second, strict and clear definition of the scope of responsibility of big data financial regulators and ensure that regulatory authority held by regulators can adapt to the benign control of process of current big data financial development; Third, protect the body of big data, that is, the rights of the corresponding users and customers, such as the right to privacy, the right to know, etc.

5.2. Strengthening the Construction of Information Sharing Mechanism

The construction of information sharing mechanism is the most important means to solve the problem of data silos. First of all, the corresponding government should carry out information data disclosure activities and break up the data bastion drives information sharing across industry, realize the full play of big data and drive rapid transformation and upgrading across industries in regional cities.

6. Conclusion

Combined with the development trend of computer technology in our country, we know that the Internet has become an important mode of social and economic development in our country. Under the background of the application of computer technology, people can achieve the corresponding goals through network consumption, network profitmaking and so on. At present, China has continuously optimized the economic operation organization. Internet finance has been listed as an important member of the current organization to optimize the operation of the economy. So for big data finance and Internet finance, in the process of specific optimization, the main aspect is focusing on the activation of idle social resources, and realizes the double-sided interaction between demand and supply, which can enhance the creativity of individual domestic economies and help further optimize the allocation of market resources.

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