



Precision Demand of Financial Data and Enterprise Financing Mode Based on Big Data Analysis

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Abstract—According to the characteristics of financial data, following the principle of system design with big data as the center, this paper divides the financial data into different levels according to the way of data processing, and builds the precise demand of financial data based on big data analysis. Using big data management tools and analysis methods, potential financial risks in Internet finance can be found in advance, thus providing a basis for risk management for enterprises, which is conducive to ensuring the healthy and sustainable development of Internet financial enterprises.

Keywords—big data; precision demand; financial data; enterprise financing mode

I. INTRODUCTION

The forecasting problem of financial data processing is mainly the forecasting of financial time series. Financial time series can be regarded as a special kind of time series, which has the following three characteristics: the generation process of financial time series is more complex, and there are many influencing factors; most financial time series contain a lot of unpredictable influencing factors; the composition of the data of financial time series. It is more complex and usually presents non-linearity. Neural network, chaos theory, genetic algorithm and other artificial intelligence information processing methods can well adapt to these three characteristics, which has become an advanced method to solve financial data processing problems. However, when dealing with the prediction of stock index, the traditional time series model usually uses very little data, that is to say, the prediction range of the traditional time series model can only be divided into a short period of time, and can not process a large number of stock market data, even if it can be processed, the prediction time will be shorter or declining predictive accuracy.

The prediction of stock market is essentially the prediction of stock index. The usual forecasting method is to take the closing price of each trading day as the forecasting target, and regard the closing price of each trading day as a continuous time series. At present, there are many mature stock market prediction models, such as Autoregressive Conditional Heteroskedasticity Model (ARCH), Auto-Regressive and Moving Average Model (ARMA) and genetic algorithm.

Small and micro enterprises have a significant impact on promoting economic growth, expanding employment and increasing residents' income, but they have not been able to break through the financing difficulties and restrict the sustainable development of small and micro enterprises. With the advent of the Internet era, the rapid development of Internet finance has brought new vitality to the financing of small and micro enterprises, broadened the financing mode of small and micro enterprises, derived the Internet financing mode outside the traditional financing mode of small and micro enterprises, helped small and micro enterprises get rid of financing difficulties, and promoted the development and growth of small and micro enterprises.

II. THE CHARACTERISTICS OF FINANCIAL DATA BASED ON BIG DATA

The financial data has three characteristics: Volume, Variety and Velocity. The three characteristics interweave, forming a new situation of Internet finance in China today.

(1) Scale. The so-called scale refers to that the amount of financial data on the Internet has reached a certain level and can not be processed in time through the current mainstream analysis tools. The scale of Internet financial data is reflected in two aspects: the increase of users' scale and the increase of transaction scale. On the one hand, because of the low threshold and high efficiency of Internet finance, the participants of Internet finance are more extensive and large-scale, and the popularity of Internet Finance leads to a larger scale of Internet financial users. On the other hand, combined with the characteristics of the Internet and the platform, users and big data advantages of Internet enterprises, the scale of users and transactions of Internet finance can easily be rapidly improved.

(2) Diversity. The so-called diversity refers to the data type of Internet financial data, in addition to structured data, there are semi-structured and unstructured data, such as text data. In addition, it also reflects the diversity of Internet financial activities. Internet finance provides online payment, loan repayment, financial management, insurance and other services, enriching the form of Internet finance. Common Internet financial activities include: B2B e-commerce finance, B2C e-commerce finance, online marketing fund (network financing), online marketing insurance, bank e-commerce, P2P e-lending, online payment, crowdsourcing financing, virtual currency, etc.

(3) High speed. The so-called high-speed means that the arrival and processing of Internet financial data must be timely and efficient, and no longer delay is allowed, which will cause unnecessary losses. At the same time, with the help of the propaganda of the Internet platform, the response speed of Internet users has increased, and the scale of users is larger, the growth rate of data has increased exponentially.

III. PRECISION DEMAND OF FINANCIAL DATA

3.1. Data-centric system design principles.

(1) Systematic principle. Internet financial risk early warning system is a monitoring, forecasting and early warning system for Internet financial risk. It is a large system and must cover the whole process of Internet financial activities. Every participant in Internet financial activities must be considered, including financial services, providers of financial products, intermediaries, users, as well as the government, regulatory agencies, etc. All kinds of transactions and even public opinion trends should also be considered. At the same time, we need to take into account the state's macroeconomic operation, economic indicators, industry development and so on.

(2) The principle of timeliness. Because of the high-speed and changeable characteristics of Internet financial data, the importance of real-time processing and analysis is illustrated. The purpose is to prevent and reduce financial risks in real time, identify and judge financial risks in time, predict and respond to risks in time, and to be continuous in time and consistent and comparable in content.

(3) Principle of operability. In the process of data collection and management, it is necessary to facilitate risk identification, judgment and prediction; in the construction of the system, it is simple, reliable and easy to combine with the actual situation of the company. In the process of data analysis, the selected indicators, statistical methods and relevant discriminant criteria should be easy to analyze and operate, and not only can they be fast It can identify, judge and predict risks, make early warning, and also identify the source of risks.

(4) Scientific nature. Quantitative indicators should be considered as much as possible in the design process, and certain qualitative indicators should be set to further systematically reflect the financial risks that quantitative indicators can not represent. For qualitative indicators, we should

also give accurate criteria to avoid misleading human factors as far as possible, and ensure the scientific, rational and accurate evaluation results.

(5) The principle of flexibility. The design of the system should be compatible with the existing financial risk early warning system, ensure the normal operation of enterprises, and improve the system with the passage of time. The functions and modules in the system can run independently with different functions, complement each other and avoid redundancy.

3.2. Hierarchy of data-centric systems.

(1) Data management layer. As the core part of the system, data is the key link in the whole system. In the process of establishing data-centric Internet financial early warning system, enterprises must improve the data management mechanism serving enterprises and establish data centers matching the size of enterprises. The responsibilities of the data center include: data collection, collation, processing and storage, providing convenient and reliable data manipulation interface for the use of other levels of users. When data center manages data, it should ensure the integrity, accuracy and security of data, and give consideration to reliability, ensure the normal operation of data center, and provide data support platform for risk early warning.

(2) Data integration layer. In order to realize the early warning of financial risks from the big data ocean of Internet finance, we must have a thorough definition and understanding of financial risks. Starting from the definition of financial risk, this paper identifies the analysis needs, re-integrates the data and extracts the corresponding analysis data. Data integration is an indispensable link to ensure the reliability and accuracy of analysis results. If data is the basis of early warning system, then demand is the soul of early warning system. The tasks of data extraction layer include: definition of risk, determination of analysis requirements, integration and extraction of data.

(3) Data analysis layer. Data analysis is the implementation means of Internet financial risk management and control. A comprehensive data analysis system should include the current index system, statistical model and artificial intelligence method, and take into account the relevant index system and statistical model which are suitable for enterprises. The functions of data analysis layer should include: risk identification, judgment, risk early warning, risk monitoring, automatic reporting, signal system, risk prediction, risk rating and other functions.

(4) Data interpretation layer. Every early warning and report from the data analysis layer should be interpreted in the light of the business management situation of the enterprise, the external economic operation environment of the enterprise and the industry background. The purpose is to evaluate the risk more systematically, to evaluate the reliability of the risk, the harm degree of the risk, the source of the risk, the control measures that can be adopted to make up for the deficiencies of the data analysis layer, and to provide more complete decision-making basis for the decision-making managers of enterprises, so as to reduce the profits and losses of enterprises in order to avoid risks. The data interpretation layer should improve the risk response mechanism and establish a risk emergency team to provide the basis for dealing with risks in a timely manner.

IV. MEASURES TO IMPROVE THE FINANCING MODEL OF INTERNET FINANCE

Strengthen financial mechanism and industry self-discipline. Internet finance and financing mode should be supervised by relevant departments, which is indispensable to the development of Internet finance in China. Government departments should strengthen the supervision of Internet financial access, forcibly close some internet financial enterprises that do not meet the credit qualification, purify the Internet financial industry, and make it develop more healthily [1]. Firstly, the access threshold of Internet finance should be set, supervised by the CBRC, and financial licenses should be issued to eligible Internet enterprises. Define the organizational form and business scope of the current crowdsourcing and P2P financing mode, clarify the scope of illegal financing, change the crowdsourcing and P2P financing mode and other business under the situation of no

access threshold and no supervision, and establish a system for the financing of small and micro enterprises. Secondly, strengthen the self-discipline of Internet finance industry. At present, the Internet Finance and financing mode is a new thing. At present, the supervision system has not completely covered the Internet Finance mode. It can not regulate the Internet Finance according to the supervision of traditional financial institutions. It will take a long time to introduce relevant laws and policies. Therefore, the Internet financial industry should let the regulatory authorities sort out and standardize the Internet financial financing mode, limit the Internet financial financing mode with serious loopholes and more risks, strengthen industry self-discipline, and establish "orderly, healthy and sustainable development" industry self-regulation standards. In the absence of regulation, industry self-discipline is particularly important for Internet finance.

Strengthen risk control and risk management. In terms of technology, the Internet financial financing model should properly enhance the threshold standards for enterprises to enter the market. By combining offline and online ways, the credit accumulated by e-commerce platform and traditional financial information such as banks should be combined to achieve a more authentic access to the users of the network platform. Effective credit evaluation can prevent bad enterprises from entering and make good reputation enterprises get favorable resource utilization. In terms of the fund platform, we should strengthen the management of the platform, supervise the flow of funds, decentralize the control of the platform, prevent illegal persons from gathering and using funds illegally, protect the interests of the public, and make the fund platform run better.

Improving the construction of credit reporting system. Improve the construction of the credit information system of the Internet financial financing mode, link the Internet financial platform with the credit information system of the People's Bank of China, ensure the security of credit information, and avoid the opportunity for platform enterprises to steal and sell information. The Internet platform should strengthen the popularization of the knowledge of Internet financial financing of small and micro enterprises and the education of honesty and credit financing of small and micro enterprises, and publicize the illegal phenomena in the mode of Internet financial financing to the public, so as to raise the awareness of its prevention. At the same time, the central bank should take the lead in establishing an internet financial credit reporting system, and expose small and micro enterprises that violate the norms to repay on the Internet platform, so as to reduce the credit rating of enterprises. Establish the image of honesty and legal financing of small and micro enterprises, enhance the public's risk awareness and self-protection ability of Internet finance, and make the market of financiers develop healthily.

Establish a unified large data network platform. Establishing a unified data network platform to ensure data security of Internet finance and avoid business problems caused by low data reliability, poor data quality, weak data accuracy and poor data consistency will help break through the restrictions between enterprises and enterprises in the Internet finance industry and promote Internet funds. The development of financial industry. However, Internet financial enterprises have a strong sense of competition among themselves, and the relevant data belong to their own business secrets. Therefore, a unified data network platform should be managed by specialized agencies independent of all Internet financial enterprises to avoid data information leakage.

Promote enterprise qualification recognition and innovate financial products. Firstly, we should examine the qualifications of Internet financial enterprises, practice the licensing system of Internet financial enterprises, and punish those enterprises without qualifications and licences according to law. Ensuring the authenticity of enterprise products and preventing potential risks in propaganda; avoiding enterprises abandoning products in essence for their own interests; conducive to consumers' understanding of products and correct consumption. Secondly, Internet finance is at the initial stage of development, and there is a serious homogeneity between products and service objects of Internet financial enterprises. The main reason is that the current laws of our country are too strict on financial innovation..

V. CONCLUSION

The government should amend relevant laws and regulations, encourage the innovation of financial products, and encourage better financing services for small and micro enterprises. In the premise of not affecting the whole financial security, we can relax the clause of illegally absorbing public deposits appropriately, so as to make the development of Internet finance more healthy. Innovative financial products put forward higher requirements for the credit market as a capital provider. On the one hand, they need to control the credit risk of loans more strictly. On the other hand, they need to actively innovate credit products that are suitable for the characteristics of small and micro enterprises' capital demand.

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