

# Research on Economic Forecasting and Financial Statistics of Banks in the Context of Big Data

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**Abstract:** There are a lot of data derived in the big data era. A perfect data model is established by collecting, sorting out, and analyzing various data information, which is beneficial for banks to use the data model to analyze the market development, economic changes, and other laws, and on this basis, predict the economic development situation and provide support for the smooth implementation of financial data statistics. In the new phase of bank development, the importance of economic forecasting and financial statistics has emerged increasingly, and banks should develop corresponding strategies according to the actual situation to promote the sustainable development of financial industry. This paper mainly analyzes the economic forecasting and financial statistics of banks in the context of big data.

**Keywords:** context of big data; economic forecasting of banks; financial statistics

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## 1. Introduction

In the information era, the importance of data has increasingly emerged in the development of financial industry. The statistics and research of various data are beneficial for banks to establish data models and carry out effective analysis for various data, so that they can learn about the laws of market economy, make forecasts according to the economic situation, perform statistical work according to financial data, and improve their overall level of economic forecasting and financial statistics. Based on this, this paper introduces the content of big data in banks, explains the importance of economic forecasting in banks in the context of big data, an-

alyzes the influencing factors of economic forecasting and financial statistics in banks, and summarizes the corresponding strategies and development directions.

## 2. Overview of big data in banks

The magnanimous data has been derived in the rapid development process of Internet technology, showing the characteristics of large amount, high speed, diversity, value, etc. The main sources of these huge and diversified big data are social networks, e-commerce websites, etc. The big data information processing technology, mainly cloud computing, can store and analyze the magnanimous data<sup>[1]</sup>. Therefore, big data technology incorporates various economic behaviors into the da-

ta scope, improving the traditional simplification, random data sampling and analysis. With the support of big data technology, different algorithms and models can be implemented to deeply mine and analyze big data and obtain more representative data of economic activities, so as to analyze the inner laws of each economic activity. Figure 1 introduces the application areas of big data in banks.



Figure 1 Application Areas of Big Data in Banks

### 3. Importance of economic forecasting of banks in the context of big data

#### 3.1 Scientifically forecast economic risks

Big data in banks summarizes the past data, and scientifically forecasts the economic activities in future market during a short period. By screening, extracting, and mining big data, banks can reasonably forecast the competition risks in future market, and propose corresponding solutions on this basis, which can help give full play to their advantages.

#### 3.2 Realize the intelligent management of financial statistics

In the big data era, banks collect and sort out various data information by Internet technology and computer equipment, and perform and constantly improve and innovate the centralized management of data by computer technology, so as to give full play to the role of modern information technology and provide guarantee for the smooth implementation of financial data statistics. The application of computer technology improved the overall efficiency and information construction level to a certain extent, realized the expected goal of intelligent management, and ensured the standardization of the tasks related to financial data statistics.

#### 3.3 Improve the risk avoidance capabilities

There are many risks in the development process of banks, and without the ability to predict and assess against these risks, a series of unexpected problems can occur, which will seriously hinder the economic development of banks. In order to improve this situation, banks comprehensively analyze the various problems of bank development, and propose the specific solutions by big data technology. Furthermore, the big data technology can help banks to reasonably adjust their business patterns and economic development structures, so as to smoothly implement the risk management and reduce the impact of market financial problems on banks.

### 4. Factors affecting the economic forecasting and financial statistics of banks

Many bank data resources have been derived in the context of the increasing promotion of information-based bank construction, which have potential asset value and provide support for bank decision-making and risk control through big data analysis. However, there are still many difficulties in the fields of big data management and building analysis and mining platforms, which affect the smooth implementation of economic forecasting and financial statistics in banks. The following mainly analyzes the factors affecting the economic forecasting and financial statistics of banks.

#### 4.1 The technological level still needs to be improved

It is analyzed from a technical point of view that the technological level of banks still needs to be further improved, especially compared with many excellent e-commerce enterprises, there is still a big gap in data mining, collection, and other related technologies. Moreover, banks have been in a stable development state for a long time and lack of attention to the aspects such as system data applications, and many banks can collect a large amount of data information, but those data information cannot be fully utilized<sup>[2]</sup>. At this stage, many emerging Internet and e-commerce enterprises are more experienced in dealing with prod-

ucts, markets, users and other related data, and big data utilization plays an important role, but banks are relatively lack of related technology, resulting in their internal data and information cannot be fully developed, which seriously hinders the economic development of banks.

#### **4.2 Data collation is lack of standardized design**

In the process of bank data collation, banks haven't established the standardized and perfect data model in many data exchange processes due to the limitations of their own experience and technologies, resulting in data sources and semantics cannot be unified, and the relevant standards for the design of business and management systems still need to be optimized, bringing great difficulties for the development of big data in banks.

#### **4.3 Unstructured data utilization is inadequate**

The bank files mainly include accounting books, statements, vouchers, relevant information, etc. The management department needs to manage these files comprehensively to ensure the perfection and security. In the development of the new era, banks generally implement the traditional structured data model for data utilization, and rarely utilize unstructured data such as pictures and audio—visual files, especially the intelligent data analysis is not in place, which cannot meet the development needs in the big data era.

#### **4.4 Legality issues in personal information collection**

The relevant management regulations clearly stipulate that the collection of personal information can only be carried out with the consent of relevant person, and no more information can be collected without the consent of relevant person, except for public information. However, because the banks belong to a special industry, there are many information data in the call messages, ATM machine video, business branch video and other various information to be developed and utilized, but the infringement of personal privacy caused by the development and utilization has not been clarified, seriously affecting the development of banks.

#### **4.5 Big data governance management system needs to**

#### **be improved**

In the big data era, people are more concerned about data security issues, especially in the rapid development of information technology and network technology, various industries have derived a lot of data accompanied by the emerging Internet concept and continuously developing Internet technology, and information security construction has become critical to the development of the big data era. At present, in order to maintain data security, relevant departments have strengthened the efforts to the research and development of security technology, established a dynamic data supervision system that can meet the operating development of banks, and increasingly improved the construction of security technology facilities. The banks' big data intelligence management system has been not perfect enough in the development of the new era, which is specially reflected in the enterprise—level data standard management system, metadata management system, data quality management system, data life cycle management system, etc. It is difficult to give full play to the role of the banks' big data, and the virtuous cycle of data development, sharing, use and management cannot be ensured, which hinders the smooth development of economic forecasting and financial statistics in banks.

### **5. Strategies for economic forecasting and financial statistics of banks in the context of big data**

#### **5.1 Smoothly implement the data statistics**

China's banks encountered many problems in financial data statistics and economic forecasting analysis in the development of the new era, for example, there are a few of data collection and mining channels in the ever—changing data technology and market, thus the banks cannot carry out the real—time, accurate and dynamic data analysis. Moreover, the data processing ability needs to be further improved, and the data processing algorithm model still has a lot of room for optimization, which require the improvement of the sys-

tematic judgment and analysis of data sources, the use of big data for perfecting the bank accounting statements, bills, etc. to give full play to the role of big data technology in unstructured data, and the constant improvement of statistical ability for pictures, audio and video materials and other hidden information. While using the big data in the economic forecasting and financial statistics, banks need to focus on the communication and exchange among financial enterprises in the market, promote data sharing and cooperation, and improve big data processing and sharing ability. In addition, it is also necessary to focus on the economical efficiency and security of all work, reduce the occurrence of customer information outflow problems, and realize the integration of Internet security and big data technology in the process of banks' economic forecasting and financial statistics.

### **5.2 Execute the data analysis top—level design**

Banks should make full use of big data technology in the development of the new era to make good forecasting and financial statistics for the modern economic situation, and provide support for the smooth implementation of bank design work. For example, the banks should establish professional data processing and management department in the economic forecasting and financial statistics work, which will conduct the big data maintenance, development and other various work, and be fully responsible for developing the corresponding schedules according to the actual work situation, and discussing the development prospects and direction of big data technology and modern financial industry by means of plenary meeting attended by all bank senior management to provide institutional safeguards for the banks to use big data technology in the economic forecasting and financial statistics. In addition, banks also should perfectly carry out the big data hardware and software updating, development and other work in the process of applying big data technology to ensure that economic forecasting and financial statistics and other work can be carried out by the most professional and

modern algorithm structure, each branch also needs to integrate the results of big data calculations with that of head office, and the head office can also establish a perfect database for the storage and management of branch's economic forecasting and financial statistics results to ensure that the big data system can be scientifically arranged in bank department at all levels.

### **5.3 Optimize and upgrade data processing**

In order to meet the market development needs in the new era, banks should optimize and update the existing data processing mode according to their actual situation, improve the overall quality and efficiency of data processing work, and provide a guarantee for the smooth implementation of the economic forecasting and financial statistics work, as well as standardize the processing of data information to realize the full use of data information. Meanwhile, the relevant staff should continuously improve their business ability and technical level, not only to master sufficient professional knowledge, but also to distinguish various data and analysis, optimize the existing data processing software, improve the bank's economic forecasting ability and financial data statistics level, provide the basis for the effective implementation of various economic work, and avoid the risks in a timely manner. At present, data information play a very important role in the development environment, and various industries need to extract more valuable information and fully understand the actual development and development trend of the industry, especially in the development of financial industry, banks need to optimize the existing operating mode and work concept to ensure the continuous transformation and upgrading of the industrial structure. In addition, in order to ensure the integration of various information and data, banks should give full play to the role of big data technology in the process of bank development, optimize the existing processing algorithms, actively carry out data statistics, clarify the laws of industry development, and expand the development space according

to the market development opportunities.

### 5.4 Establish the data sharing mechanism

In the economic development during the big data era, banks should establish a perfect data sharing system, strengthen the cooperation, exchange and communication with data, e-commerce, Internet platform, insurance and security and other companies, and combine the mobile network, e-commerce, social network and financial macro-con-

trol, as shown in Figure 2, which introduces the data sharing of household finance. In the big data era, banks should further improve the information construction, establish a big data management platform that can meets the development needs, improve the standard data system for economic development of banks, and promote the continuous development of economy and finance.



Figure 2 Data Sharing of Household Finance

### 5.5 Perfect the bank data management system

In the process of data management, banks should establish a corresponding system, reasonably allocate and dispatch various resources, set up a professional data management system and cultural system, and ensure the availability and accessibility of big data and improve the overall quality of data according to the data management process and mode. At the same time, banks should integrate the construction of data management system into the strategic planning work, store, distribute, exchange and integrate the big data, and establish a perfect quality management system to ensure the comprehensiveness and high quality of bank data management.

## 6. Development direction of economic forecasting and financial statistics of banks in the context of big data

### 6.1 Build big data strategy

In the current development of financial industry, a series of new financial business is derivatively processed, banking system with the focus on the realization of Internet finance results in the continuous ambiguity of the boundaries of traditional financial institutions, the provision of support for financial innovation in order to ensure the complexity and relevance of the financial systems results in that the boundary of traditional assets and liabilities is relatively ambiguous, although the monetary policy transmission channels and operating environ-

ment are optimized, the traditional monetary statistics system and analysis framework cannot effectively prevent cross—industry, cross—institutional, and cross—market financial risks. In addition, the financial statistics system will provide support for traditional business operations, analyze each data to meet the laws of financial development, support the business mode innovation, and reasonably build the financial big data strategy by making full use of and analyzing each data and information in the future social development.

### 6.2 Improve the financial data application

The operation and decision—making departments should timely change their working concept, establish the awareness of big data, collect and use financial data and information, provide support for the sharing and opening of financial data and information, and achieve the expected goal of data collection, use and opening. In the development of the new era, data sharing and opening have become important trends in the social development. In the future financial reform, it is necessary to collect more comprehensive information, use and open financial data, maintain the security of national finance, ensure the sharing of all financial information, and promote the continuous development of social economy.

### 6.3 Optimize the financial statistics system

First of all, the formulation of financial statistics system should be based on the national conditions in China and foreign statistical methods, and also be combined with the data statistics methods to improve the reliability and authenticity of data statistics, and fully implement the national macroeconomic policies. Financial statistics involve various aspects, such as statistics of monetary policy and analysis of banking business. The methods and norms of financial data statistics directly affect the analysis of banking business situation, and banks

must formulate financial statistics system according to the national development situation. Secondly, banks should summarize the statistical methods of each department to ensure the validity and comparability of all data and provide unified training for staff, and must follow the unified principle in the process of data statistics, and carry out the financial statistics and analysis after ensuring that all data meet the unified standards, and reasonably formulate all policies <sup>[3]</sup>. Finally, banks should deepen the reform of financial statistics, effectively solve the system issues in the financial statistics, and appoint professional economists for the in—depth research to reduce the emergence of various risk problems.

## 7. Conclusions

In summary, a series of data have been derived under the background of increasingly fierce competition in the financial market, which can be analyzed for the economic, financial and market situations during a certain period to provide support for the reform and innovation of banks. Therefore, banking financial institutions should introduce big data technology, do a good job of innovation, absorb and cultivate more professional data statistics and analysis talents, and provide guarantee for the smooth implementation of banks' economic forecasting and financial statistics.

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