Analysis on the Innovation Hierarchy of Commercial Bank's Financial based on the Big Data

Jie Zhou\textsuperscript{1,*}

\textsuperscript{1}Guangdong Nanhua Vocational College of Industry and Commerce, Guangdong, China

*Corresponding author e-mail: zhoujie@163.com

Abstract. Financial products are derivative products of economic and social development in a certain period. Compared with state-owned enterprise banks, commercial banks have a greater dependence on the demand for financial products. Therefore, the innovation of financial products not only caters to the market and adapts to the times, but also has important significance for the development and survival of commercial banks. Based on the above background, this paper analyzes the impact of big data on financial services by combining computer big data technology, and puts forward suggestions for small and micro-enterprise financial product innovation of commercial banks based on computer big data in view of the current difficulties in financial product innovation of commercial banks.

Keywords: Big Data, Commercial Banks, Financial Products, Innovation

1. Introduction

In fact, Internet financial products can easily achieve differentiated marketing programs, that is, the use of big data analysis to achieve consumer portrait. For the customer's consumption habits, income level analysis and formulate a more targeted financial plan. This not only helps to improve the success rate of financial products sales, but also can inject new vitality into the development of financial products\textsuperscript{[1]}. The deep cooperation between Internet financial products issuing enterprises and big data analysis enterprises has pointed out the direction for commercial banks to sell financial products. Domestic financial products in the market, the competition is very fierce. Commercial banks also need to adopt more proactive development strategies to achieve an increase in market share on the basis of ensuring the retention of existing customers. Using big data technology, we can subdivide the consumption level of customers through various information mining, and develop financial products that are more suitable for the needs of consumer groups, and then ensure the efficient development of subsequent sales work.
2. What is the big data ages

From the concept of the big data financial age to a certain enterprise, this gust of wind is constantly evolving to more violent. The financial industry has also increased its use \(^2\). All in all, big data makes all walks of life, including our lives, incredible, who can think of how large-scale reproduction a product can bring once it is handed over to big data. The use of big data makes us no longer need to spend a lot of human, material, financial resources to do traditional market research, more crucial to finance is to save time. At the same time, the development of computer technology has made data processing less cumbersome and more accurate.

3. Impact on financial products in the financial services industry under the big data age

3.1. Innovative data resources for financial products of commercial banks

With the help of big data, the development of various industries, enterprises in the same industry, a little carelessness or decision-making backwardness or mistakes, may lead to competitors to seize the opportunity, for their own incalculable losses \(^3\). In the age of big data technology, we should abandon the traditional methods of commercial bank data and customer analysis, connect with new technology and inherit advantages with which innovate ideas and means as soon as possible. So that the old and new technologies can be promoted, and play a more powerful role than the simple superposition of the two.

3.2. The utilization of big data by commercial bank financial product innovation

If human beings face the massive data in the big data era, then the data is useless, because with human energy and brain computing ability, it is impossible to reasonably identify, classify and call the data, so too much data is the same as nothing. But under the action of the Internet and computer computing power beyond imagination, big data is like a continuous stream of resources, which is processed into finished products, which greatly enhances the ability and grasp of commercial banks to innovate financial products. And the operational risk of financial products is greatly reduced, the cost is reduced accordingly. The success of innovative financial products not only brings greater profits to commercial banks, but also brings continuous customers, forms a huge virtuous circle network, and greatly broadens the survival ability and development space of commercial banks. In the context of big data, it is possible to customize financial products for small and micro customers and put risk prevention and control measures into the products. In the aspect of industry selection, macroeconomic downturn and industry cycle problems will have a significant impact on the operation of small and micro enterprises, resulting in the situation of batch default of small and micro credit business. In order to avoid this kind of collective default, through mining the historical data of commercial bank stock, we find the industry risk prompt factor, and provide technical support for avoiding high risk industry actively. Because the macro environment of the industry, the financial credit environment, the competition environment change cycle is relatively long, the evaluation timeliness requirement of the industry is relatively low, and the whole industry can be evaluated every six months or every year according to the scale shown, screening the key development, prohibiting the development of the industry, and making corresponding policy changes.
4. Difficulties in innovation of financial products in commercial banks

4.1. The characteristics of commercial banks influence financial services innovation
Small and micro enterprises have poor ability to resist risk, short survival time, the average survival period is only 3.7 years, and its demand for funds has the characteristics of "short, frequency, fast and urgent" \(^4\). According to the 2018 commercial banks demand survey of 1831 small and micro enterprises, 55.1% of small and micro customers hope to complete the financing behavior within 2 weeks.

For commercial banks, it is necessary to grasp the actual operating conditions of small and micro enterprises and judge their development prospects in a short period of time, which has great challenges in risk and credit cost control. At the same time, small and micro enterprises usually lack professional financial personnel, the financial system of enterprises is not standardized, and their financial statements lack credibility. According to the survey of commercial banks, more than 70% of small and micro enterprises have no professional financial personnel \(^5\). Commercial banks are also more cautious about lending in terms of security. Figure 1 shows the enterprise financing limitation demand.

![Figure 1. Statistical data on the demand of enterprise financing limitation](image)

4.2. The risk assessment mechanism of banks restrict product development in new normal
As economic development entered the new normal, China's economic growth slowed further, and non-performing loans of commercial banks were high. In this context, many commercial banks regard low bad rate as the primary assessment target of credit business, weakening the consideration of profit maximization under high risk and high income of small and micro loans. The new normal economy promotes industrial upgrading and structural adjustment, and the low level of industry generally leads to the difficulty of transformation and upgrading of some small and micro enterprises, and the lack of stamina and vitality of enterprise development \(^6\). As of the end of 2018, the balance of small and micro loans accounted for 30.3% of the total enterprise loan balance, down 3.2% from the end of 2016. Under the new normal, commercial banks mainly push low risk small business, and formulate a series of strict risk assessment measures. On the one hand, small and micro enterprises light assets,
usually lack of sufficient value to meet the requirements of collateral; on the other hand, excessive worship of collateral also limits the innovation of small WeChat loan services and products, and fails to give full play to the characteristics of high risk and high returns of small and micro financial products. Figure 2 shows the proportion of commercial bank loan balances to small and micro enterprises as a proportion of all enterprise loan balances.

![Figure 2. Statistics on the balance of loans from commercial banks to small and micro enterprises as a proportion of the total enterprise loan balance](image)

4.3. Small and micro enterprise credit system

Small and micro enterprises usually lack the consciousness of accumulating credit history and the ability to show their actual operating conditions, and urgently need a good credit system to help commercial banks actively explore the credit behavior and operating status of enterprises, so as to design the corresponding financial products and credit service efficiency. However, because the data in the basic database cannot effectively collect the information of small and micro enterprises that have credit relations with banks, the information collected on industrial and commercial, court, tax, public security and other data is even less.

5. Innovation in small and micro-enterprise financial products of commercial banks

5.1. Application of big data

At present, the main application of banks is the application of a certain aspect of big data, and then combined with artificial recombination to carry out the sale of financial products. With which we are able to upload relevant network proof can know what model they belong to, how much money can be loaned through commercial banks, which also labor costs, avoid all by manual book through data and auxiliary data audit. In the bank's huge database, only through big data analysis, we can easily understand the credit level of each customer in the past, but also can more accurately analyze the industry, income level, expenditure they are engaged in, in order to enable banks to develop personalized financial services products.

5.2. Build a special system to reduce risk

The big data environment provides great convenience for commercial banking services, such as: commercial banks can understand the credit records of prospective loan customers through big data, and comprehensively evaluate their credit degree through these records [7]. Then decide whether the customer loan needs guarantee or mortgage and loan amount. As long as we play to create new, actively use all the convenience brought by big data, we can certainly develop more customers, realize the development and expansion of business, but also provide financial support for high-quality
customers, and realize the social value of commercial banks.

6. Conclusion
In summary, it is necessary to explore the innovation of financial products of commercial banks under the background of big data. By defining the concepts of big data technology and financial product innovation, we laid a solid foundation for the follow-up work. For the discussion on the innovation of financial management products of commercial banks, a more targeted marketing strategy is formulated by combining the actual situation of commercial banks. At the same time, commercial banks can also use innovative financial products to explore and provide more practical experience for their development.

References
[1] Han Yi. Institutional Constraints and Policy Reflections on Financing for Small and Micro Enterprises [J].Financial Regulatory Research ,2012,(12).

[2] Huckway. Financial Innovation of Commercial Banks in the Background of Big Data [D].

[3] Research group. A Study on the Innovation of Small Micro-Financial Products in Commercial Banks under the Background of Big Data [J].North China Finance ,2016(5):68-71.

[4] Qian Yuchun. Research on Innovation of Financial Product of S Commercial Bank Based on Big Data [D].

[5] Chen Sihang. Micro-financial services and product innovation under big data technology [J].Chi Fu Times ,2019,000(002): P.7-7.

[6] Wang Zhenhua. How to mine, use and manage big data of bank [J].China Financial Computer ,2018(7).

[7] Guo Guangwei. Big Data Drives Financial Innovation Transformation in Commercial Banks [J].New Business Week ,2018,000(019):84-85.