



# Research on the Promotional Effect of Commercial Banks' Digital Financial Innovation on Regional Economic Development and Path Exploration Taking ICBC in the Beijing-Tianjin-Hebei Region as an Example

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**Abstract.** As a key economic development strategy and regional reform direction in China, Beijing-Tianjin-Hebei integration, among which, promoting factor market integration and financial market integration is the top priority of its reform. As the core of China's financial system, commercial banks should become one of the core driving forces to promote the integration of Beijing, Tianjin and Hebei, and to promote the integrated financial development of Beijing, Tianjin and Hebei and the synergistic development of Beijing, Tianjin and Hebei economy and industry. Therefore, this paper takes commercial banks in Beijing, Tianjin and Hebei as the object of study, and takes the Industrial and Commercial Bank of China (ICBC) as an example. Based on the current situation of the digital development of commercial banks in the Beijing, Tianjin and Hebei region, it examines the promotion effect of several relevant cases of ICBC in the Beijing, Tianjin and Hebei region on the regional economic development at the level of innovation of technology finance and product services in recent years.

**Keywords:** Commercial banks · Beijing-Tianjin-Hebei integration · Financial integration · Regional economy · Financial services · Science and technology finance

## 1 Introduction

The Beijing-Tianjin-Hebei Cooperative Development Strategy is one of the three major regional economic development strategies in China, and is the largest economic development project in the northern region of China. 2014 saw the adoption of the Beijing-Tianjin-Hebei Cooperative Development Planning Outline by the Political Bureau of the Central Committee of the Communist Party of China, which means that policy interaction, resource sharing and market opening in the three regions will all be incorporated into the systemic construction. The outline clearly states that, in terms of financial services, emphasis should be placed on strengthening the management function of Beijing, the

innovation function of Tianjin and the service function of Hebei. Therefore, under such a strategic layout, it is particularly important to give play to the driving role of the financial sector in the Beijing-Tianjin-Hebei region and promote the synergistic development of the financial industry.

In recent years, the industrial waves of big data, artificial intelligence and blockchain have come and gone, and fintech is penetrating the whole process of commercial bank operations at a rapid pace, with digital transformation gradually becoming a strategic priority for commercial banks (Lin, 2020). Regional finance is a product of market-oriented economy and inter-regional finance and development, and its core content is inter-regional financial cooperation, which is a joint act of financial resource allocation and financial operation between regions in order to serve the scale of economic development between different regions in the region (Chen, 2021). And as the core part of the financial system and the main element of the regional economic structure, it is of great practical significance for commercial banks to give full play to its role of financial assistance in the process of Beijing-Tianjin-Hebei collaborative development in order to solve the existing financial dilemma, help the transformation of the financial industry, promote the integrated financial development of Beijing-Tianjin-Hebei.

## **2 Current Situation of the Development of Digital Services of Commercial Banks**

### **2.1 Overall Development Scale of the Banking Industry in Beijing, Tianjin and Hebei**

The growth of financial scale is the basic performance of financial development. In terms of the scale of development of the banking industry, by the end of 2021, the deposit balance of financial institutions in Beijing was RMB 1,974.15 billion, about 5.56 times and 2.25 times that of Tianjin and Hebei. And the annual growth of deposits in Beijing is RMB 1,165.99 billion, approximately 6.63 times that of Tianjin and 1.51 times that of Hebei [5–7]. It can be seen that Beijing, as the political and economic centre of the country, brings together a large number of financial institutions and financial talents, and the scale of its banking sector development is much higher than that of Tianjin and Hebei, and the growth rate is greater. Therefore, there is a huge gap in the scale of banking development between Beijing, Tianjin and Hebei, and the distribution of financial resources is uneven, even showing a polarised development situation.

### **2.2 Current Situation of Science and Technology Finance Development in Beijing, Tianjin and Hebei**

According to the China Regional Innovation Capacity Evaluation Report 2019, the comprehensive utility value of Beijing's regional innovation capacity is 53.22, ranking the second in China in terms of regional innovation capacity. Tianjin has a comprehensive utility value of 53.22 for regional innovation capability, ranking 9th in China, and Hebei Province scores 21.86, ranking 20th in China.

There is an imbalance in the level of regional science and technology innovation in Beijing, Tianjin and Hebei, with Beijing's leading development position coming to the

**Table 1.** Financial technology of ICBC in 2020

Financial technology investment (RMB billion)	YOY	Fintech investment as a percentage of revenue	Number of scientific researchers	Share of total headcount
238.19	45.47%	2.70%	35, 400	8.10%

fore. Due to the different economic structure and development speed of Beijing, Tianjin and Hebei, although the policies related to science and technology finance are increasing in each region and city, there is still a general concentration of financial capital to the highlands of science and technology innovation and an uneven allocation of financial capital.

### 2.3 Status of ICBC'S Digital Fintech Development

It can be seen that, relying on its capital and talent advantages, ICBC's financial technology and digital transformation process ranks among the industry leaders and has made great progress in science and technology and financial services in big data and artificial intelligence, blockchain 5G and the Internet of Things (Table 1).

## 3 Recent Cases of ICBC'S Digital Financial Services Innovation in Beijing, Tianjin and Hebei Region and Its Role in Helping

### 3.1 Innovation in Science and Technology Finance

The science and technology finance is a new engine to drive economic growth. The further development of science and technology finance in the Beijing-Tianjin-Hebei region will help stimulate the vitality of the synergistic development of science and technology innovation within the region, further strengthen the connection between the government, science and technology financial institutions and enterprises, optimise the integration of Beijing-Tianjin-Hebei science and technology [2].

In terms of concrete implementation links, ICBC, for example, has conducted continuous exploration for new types of science and technology finance, and has also actively invested a large amount of money in the process of building financial technology, attaching great importance to financial innovation projects in the hope of effectively innovating its own services and products based on financial technology, and achieving diversity, science and all-round development of its business model (Zhai, 2021). At present, a considerable number of large commercial banks have developed financial projects related to small and medium-sized technology institutions and carried out institutional cooperation and innovation work, hoping to improve their own financial technology while attracting and training financial professionals.

### 3.2 Innovations in Digital Services

#### 3.2.1 Regional Payment Services

As the third growth pole of China's development, with the rapid development of social and economic development in Beijing-Tianjin-Hebei region, the traditional payment

and settlement methods can no longer meet the requirements of the full flow of financial resources in the region. Against this background, the integration of payment and settlement in the Beijing-Tianjin-Hebei region can bring more convenience to more enterprises and merchants, and bring more financial innovation, thus promoting the economic development of the three regions, which has important practical significance in the process of regional integration.

Therefore, against the background of the policy to promote the development of collocation of payment and settlement business in the Beijing-Tianjin-Hebei region, ICBC has responded to the trend of regional integration and actively explored the innovation and transformation of the account service model to promote the integration and convenience of regional payment and settlement, accelerate regional financial integration and serve the collaborative development of Beijing, Tianjin and Hebei. ICBC has developed a model of "off-site witness account opening for unit settlement accounts", solving the problem of opening accounts off-site for group customers and upstream and downstream supply chain customers operating across geographical areas.

### **3.2.2 Green Finance Business**

ICBC further seized the opportunity to promote the comprehensive development of green financial business. ICBC set up an overall target for green finance business, using technological innovation to promote green finance product innovation and enhance the applicability of green enterprises and green projects. In-depth studies were conducted on green finance sub-sectors and a series of specialised products were introduced in a targeted manner.

With relevant government guidance and the efforts of various commercial banks, including ICBC, in 2020, the balance of green credit in Beijing accounted for 46.48% of the country, ranking first in China; the scale of green credit in Tianjin accounted for 1.01%, ranking 12th in China; while Hebei Province was affected by factors such as development base, along with the overall scale was low, but its green credit scale grew at a rate of 64.19%, ranking the second highest growth rate in China.

### **3.2.3 Inclusive Financial Services**

With the acceleration of the development of the Internet, the financial industry has also gradually moved from offline to online, and the development of Internet finance has been very rapid, creating new highs every year. Digital financial inclusion has facilitated the sharing of information, effectively lowered transaction costs and the threshold for financial services and provided formal financial services to those who have long been excluded from the modern financial services industry with the help of information processing by computers, big data analysis, cloud computing and a series of other relevant internet technologies in the financial sector. Using digital technologies such as big data and blockchain artificial intelligence technology, ICBC has launched a series of exclusive financial products such as "technology loans" by combining the transaction behaviour data of customers [1].

With the leadership of the regional development strategy and the promotion of commercial banks, the financing difficulties of small and medium-sized enterprises in the

Beijing-Tianjin-Hebei region have been effectively alleviated, the financing risk exposure has been gradually reduced, and the penetration of inclusive finance has increased. And by the end of 2021, the balance of loans to small and micro enterprises in Beijing's banking sector was RMB1.73 trillion, up 11.9% year-on-year.

### 3.2.4 Connected Digital Services

Commercial banks in the Beijing-Tianjin-Hebei region further promoted the implementation of digital transformation, utilised financial technology, attached importance to the transformation of technological achievements, optimised bank-wide operation and management processes, and improved work quality and efficiency.[3] On the one hand, grasp the opportunities of commercial applications of 5G and the booming development of big data and blockchain to quickly launch new online businesses and products that meet market demand and enhance the convenience and security of financial services for enterprises and residents in Beijing, Tianjin and Hebei; on the other hand, strengthen cooperation with Netflix, UnionPay and other institutions to seek breakthroughs in areas such as joint settlement of electronic cheques and cross-border electronic direct bill payment, and enhance commercial banks' payment service capability and efficiency.

ICBC has launched "Internet + " product systems and services in the Beijing-Tianjin-Hebei region, promoting the digitization of finance in the region, such as "Internet + payment", "Internet + finance", and "Internet + travel". A series of Internet financial products not only promote the wide coverage of financial inclusion and the development of local special industries, but also enhance the efficiency and quality of financial services available to residents in the region. This digital financial transformation has created more development potential and development possibilities for the diversified development of the regional economy.

### 3.2.5 Infrastructure-Related Business

The infrastructure sector, as a key area of national construction, can gradually be divided into two key directions with the development of modern society: a traditional infrastructure sector focusing on projects such as transportation, energy and water conservancy projects, and a new digital infrastructure sector with 5G, artificial intelligence and industrial internet as key directions. Commercial banks in the Beijing-Tianjin-Hebei region have increased their capital investment in the infrastructure sector, which helps to promote the interconnection of production and life in the region, as well as to help the industrial transformation and upgrading and the construction of a digital economy.

In the traditional infrastructure sector, ICBC, for example, has leveraged its technological advantages to develop credit business and launch an online service platform, which has greatly contributed to the integration of transportation in the Beijing-Tianjin-Hebei region [4]. In the field of new digital infrastructure, ICBC has formulated local marketing priorities and measures in accordance with the orientation of new digital infrastructure in different regions, and strengthened the market expansion and support for new digital infrastructure in accordance with local conditions. Through optimising the loan structure, expanding internal and external cooperation and innovative product development, the Bank has promoted the development of digital new infrastructure.

## 4 Conclusion

The practice of commercial banks to promote regional economic development model under the integration of Beijing, Tianjin and Hebei can be based on the current situation of regional financial industry development, realize the innovation of commercial banks' development model and improve the quality of comprehensive development of commercial banks, in order to play the role of the innovative activities of digital services of commercial banks to promote regional economic development. However, at the same time, based on the existing problems of financial services and the imperfections of financial products, commercial banks in the Beijing-Tianjin-Hebei region should further improve the innovative ways of commercial banks to help and play the role of commercial banks in the development of the regional economy by strengthening the three dimensions of risk control protection, innovative product supply and talent training. First, commercial banks should establish a risk coordination and handling mechanism, build a risk management platform and strengthen risk control of online business; Second, commercial banks should strengthen the protection of user information, prevent information leakage or theft and cause credit crises; Third, commercial banks should give full play to the regional advantages of the three regions, create special financial service product brands and improve their own financial services; Fourth, commercial banks should continue to optimize the training of talents to fully exploit the advantages of talents in Beijing and Tianjin, and deepen the innovation and reform of science and technology finance.

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