

# Analysis of the Development Status and Response Strategies of Digital Inclusive Finance in Anhui Province, China

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**Abstract:** Based on the financial data of Anhui Province from 2012 to 2022, and drawing on the analysis of the digital inclusive finance index of Peking University on the development of digital inclusive finance in Anhui Province and 16 cities from 2012 to 2022, it is shown that the development level of digital inclusive finance in Anhui Province and 16 cities has significantly improved during the inspection period, but the regional gap in inclusive finance development is widening. This article is mainly based on the actual situation in Anhui Province, elaborating on the current development status of digital inclusive finance in Anhui Province, exploring Anhui Province's support for it, as well as various problems encountered in the development of digital inclusive finance in Anhui Province. At the same time, corresponding solutions are proposed, hoping to provide some ideas and references for the development of inclusive finance in Anhui Province.

**Keywords:** Inclusive Finance, Anhui Province, Digitization.

## 1. Introduction

In 2005, the United Nations explicitly proposed the concept of inclusive finance, which mainly serves small and micro enterprises, farmers, low-income urban groups, and other vulnerable groups, providing them with appropriate and effective financial services. Inclusive finance is an effective financial system that can comprehensively serve all sectors of society, especially the poor and low-income groups, with the aim of eliminating financial exclusion. Financial exclusion refers to the inability of certain groups to enter the financial market and obtain necessary financial services in an appropriate form due to various reasons such as income, social status, and policy restrictions.

At the Third Plenum of the 18th Central Committee of the Communist Party of China in 2013, the Decision on Several Major Issues Concerning Comprehensively Deepening Reform proposed the strategy of developing inclusive finance, thus ushering in a new era of inclusive finance development in China. Subsequently, in 2021, the Office of the Central Cybersecurity and Information Technology Commission proposed the priority action of "Digital Inclusive Financial Services" in the "14th Five Year Plan for National Informatization", thus opening a new chapter in the development of digital inclusive finance in China. The development of digital inclusive finance in Anhui Province started relatively late. With the implementation of the "Implementation Opinions of the Anhui Provincial People's Government on Promoting the Development of Inclusive Finance" (hereinafter referred to as the "Opinions") in 2016, digital inclusive finance officially began in Anhui Province.

## 2. Analysis of the Current Situation of Digital Inclusive Finance in Anhui Province

(1) Anhui Province's support policies for inclusive finance

In the "Opinions" issued by Anhui Province in 2016, three specific goals were proposed to improve the coverage of financial services, enhance the accessibility of financial services, and improve the satisfaction of financial services. Afterwards, in 2017, the Anhui Provincial Department of Finance issued the "Implementation Rules for the Management of Special Funds for the Development of Inclusive Finance in Anhui Province", which provided specific and detailed explanations for the use of special transfer payment funds used by the central and local governments to support the development of inclusive finance, namely the incremental rewards for agricultural loans of county-level financial institutions, targeted fee subsidies for rural financial institutions, interest subsidies and rewards for entrepreneurial guarantee loans, and the use of rewards instead of subsidies for central government and social capital cooperation (PPP) projects.

(2) The level of digital inclusive finance in Anhui Province is gradually improving

From Tables 1 and 2, it can be seen that the digital inclusive finance index of Anhui Province in 2012 was 96.63, ranking 15th among 31 provinces, autonomous regions, and municipalities directly under the central government in China (excluding Hong Kong, Macao, and Taiwan), 54.14 lower than the first place Shanghai's 150.77. In 2022, the digital finance index of Anhui Province was 393.32, an increase of 296.69 compared to 2012, ranking 9th among 31 regions, an increase of 6 places compared to 2012, and lagging behind Shanghai, which ranked first at 460.69, with a gap of 67.37. In addition, upon careful observation of the data in Table 1, it can be seen that, except for the top 7 provinces with a total index of over 120 and a significant gap from the last provinces, the provinces and regions ranked 8th to 27th have a total index between 104 and 82, and the gap is not very significant. The starting point of digital inclusive finance in most provinces is similar.

**Table 1.** Digital inclusive finance index and ranking by province in 2012

Province	2012 Index	Sort	Province	2012 Index	Sort
Shanghai	150.77	1	Shanxi	92.98	17
Beijing	150.65	2	Jiangxi	91.93	18
Zhejiang	146.35	3	Inner Mongolia	91.68	19
Guangdong	127.06	4	Guangxi Zhuang	89.35	20
Fujian	123.21	5	Hebei	89.32	21
Tianjin	122.96	6	Heilongjiang	87.91	22
Jiangsu	122.03	7	Jilin	87.23	23
Liaoning	103.53	8	Ningxia Hui	87.13	24
Hainan	102.94	9	Yunnan	84.43	25
Hubei	101.42	10	Henan	83.68	26
Shandong	100.35	11	Xinjiang Uyghur	82.45	27
Sichuan	100.13	12	Gansu	76.29	28
Chongqing	100.02	13	Guizhou	75.87	29
Shanxi	98.24	14	Xizang	68.53	30
Anhui	96.63	15	Qinghai	61.47	31
Hunan	93.71	16			

(Data source: Compiled based on data from the Digital Finance Research Center of Peking University.)

After 11 years of development, by 2022, except for Shanghai, Beijing, Zhejiang Province, Jiangsu Province, Fujian Province, Guangdong Province, and Tianjin City with a total index above 400, all other regions will be between 300 and 399 points, and the gap has narrowed significantly.

**Table 2.** Digital inclusive finance index and ranking by province in 2022

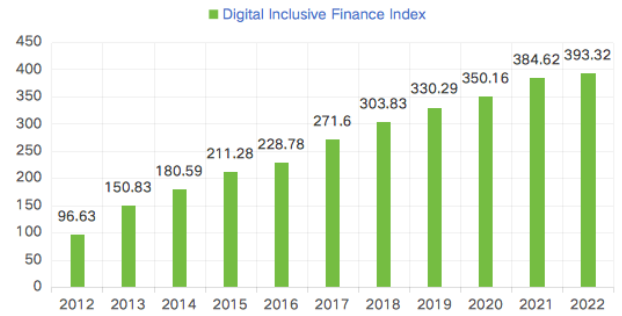
Province	2022 Index	Sort	Province	2022 Index	Sort
Shanghai	460.69	1	Sichuan	371.61	17
Beijing	452.83	2	Shanxi	366.07	18
Zhejiang	440.04	3	Liaoning	365.25	19
Jiangsu	424.06	4	Guangxi Zhuang	362.02	20
Fujian	420.75	5	Hebei	360.65	21
Guangdong	416.36	6	Ningxia Hui	356.63	22
Tianjin	407.30	7	Yunnan	354.71	23
Hubei	398.81	8	Inner Mongolia	353.90	24
Anhui	393.32	9	Heilongjiang	347.59	25
Shandong	390.38	10	Gansu	345.22	26
Henan	382.39	11	Guizhou	344.68	27
Hainan	382.28	12	Jilin	343.67	28
Chongqing	382.23	13	Xinjiang Uyghur	342.66	29
Shanxi	381.29	14	Xizang	334.69	30
Jiangxi	378.83	15	Qinghai	329.75	31
Hunan	371.95	16			

(Data source: Compiled based on data from the Digital Finance Research Center of Peking University.)

From Figure 1 and Table 3, it can be seen that the total index of digital inclusive finance in Anhui Province has been steadily improving from 2012 to 2020, indicating that the development level of Anhui Province in this field is steadily improving. From the specific indicators of the index, such as coverage breadth, depth of use, and degree of digitization, Anhui Province's digital inclusive finance has also undergone significant changes from 2012 to 2020: the coverage has increased from 66.06 to 389.06, an increase of 4.9 times, the depth of use has increased from 138.06 to 368.60, an increase of 1.7 times, and the degree of digitization has increased from 122.31 to 452.32, an increase of 2.7 times.

Taking a deeper look, the coverage breadth of digital inclusive finance in Anhui Province increased by 323 points from 2012 to 2022, 40.45 points from 2012 to 2013, and only 23.24 points from 2015 to 2016, and 22.6 points from 2019 to 2020. The room for improvement is gradually narrowing,

indicating that the coverage breadth of digital inclusive finance in Anhui Province is becoming smaller and smaller. In terms of usage depth, it increased by 52.8 points from 2012 to 2013, 79.67 points from 2016 to 2017, and only 0.07 points from 2017 to 2018. From 2019 to 2020, it increased by 24.62 points, indicating a shrinking trend in the room for improvement. The degree of digitization increased by 102.14 points between 2012-2013, 12.32 points between 2018-2019, only 2.27 points between 2019-2020, and even decreased by 14.06 points between 2016-2017. In 2017-2018, it increased by 69.31 points. The room for improvement in digitalization is not only narrowing, but may even experience repeated occurrences.



**Figure 1.** Anhui province digital inclusive finance index from 2012 to 2022 (data source: compiled based on data from the digital finance research center of peking university)

**Table 3.** Anhui province digital inclusive finance index and classification indicators from 2012 to 2022

Year	Index	Coverage Breadth	Using Depth	Digitization level
2012	96.63	66.06	138.06	122.31
2013	150.83	106.51	190.86	224.45
2014	180.59	156.56	173.84	272.22
2015	211.28	171.65	189.78	381.23
2016	228.78	194.89	229.95	338.54
2017	271.6	234.7	309.55	324.48
2018	303.83	273.41	309.62	393.79
2019	330.29	301.15	341.53	406.11
2020	350.16	323.75	366.15	408.38
2021	384.62	364.43	399.88	423.62
2022	393.32	389.06	368.60	452.32

(Data source: Compiled based on data from the Digital Finance Research Center of Peking University.)

### (3) The Development of Digital Inclusive Finance among Cities in Anhui Province

From the data in Table 4, we can see the development of digital inclusive finance in 16 cities in Anhui Province. In both 2012 and 2020, the provincial capital city Hefei ranked first in the province, while Bozhou ranked last in both years. In addition, there are certain differences in the digital inclusive finance index among cities across the province. In 2012, the total index difference between Hefei and Bozhou was 65.39, while in 2022, the difference between the two was 75.37, and there has not been a significant change. The overall index ranking of various cities has a certain inertia, and from 2012 to 2022, the ranking positions of various cities have undergone some adjustments. This also reflects to some extent the correlation between economic development and digital inclusive finance. From an economic perspective, according to the statistical yearbook released by the Anhui Provincial Bureau of Statistics, the GDP of Hefei City in 2012 was 416.798 billion yuan, with an average of 55182 yuan per person. The GDP of Bozhou City in 2012 was 81.112 billion yuan, with an average of 14642 yuan per person; The GDP of Hefei City in 2022 is 1.201308 trillion yuan, with an average

of 125798 yuan per person. The GDP of Bozhou City in 2022 is 210.15 billion yuan, with an average of 42258 yuan per person. Therefore, whether from the perspective of economic aggregate or per capita, there is a significant gap in the economic development level between the two cities.

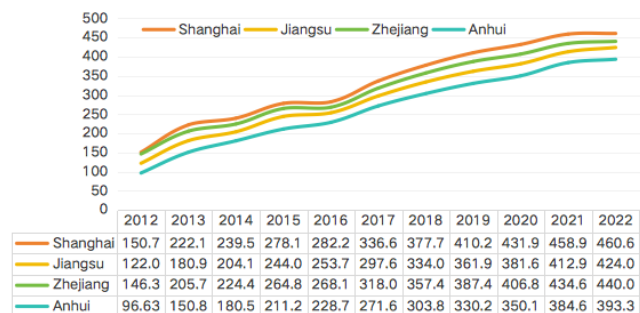
**Table 4.** Digital inclusive finance index of various cities in Anhui province

Year	Region	Index	Sort	Year	Region	Index	Sort
2012	Hefei	118.75	1	2022	Hefei	366.38	1
2012	Tongling	107.61	2	2022	Tongling	339.44	2
2012	Wuhu	98.55	3	2022	Wuhu	338.15	3
2012	Ma'anshan	96.24	4	2022	Ma'anshan	324.80	4
2012	Huangshan	93.14	5	2022	Huangshan	320.65	5
2012	Huainan	88.40	6	2022	Huainan	319.17	6
2012	Xuancheng	85.81	7	2022	Xuancheng	314.56	7
2012	Bengbu	80.80	8	2022	Bengbu	313.05	8
2012	Chizhou	79.18	9	2022	Chizhou	312.72	9
2012	Chuzhou	79.03	10	2022	Chuzhou	312.44	10
2012	Huaipei	78.13	11	2022	Huaipei	309.60	11
2012	Anqing	70.84	12	2022	Anqing	307.24	12
2012	Lu'an	60.14	13	2022	Lu'an	303.65	13
2012	Suzhou	58.83	14	2022	Suzhou	300.98	14
2012	Fuyang	57.27	15	2022	Fuyang	293.09	15
2012	Bozhou	53.36	16	2022	Bozhou	291.01	16

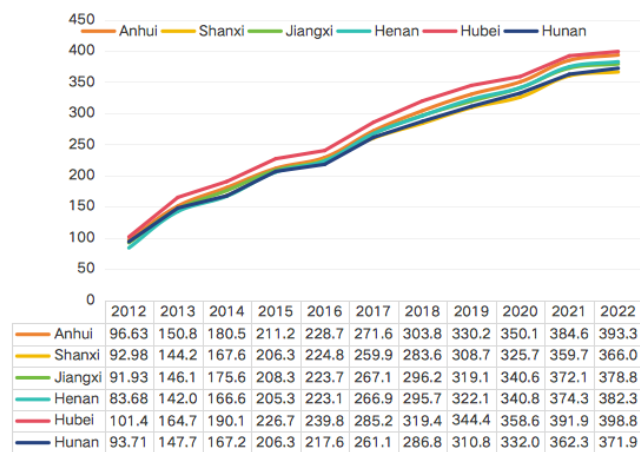
(Data source: Compiled based on data from the Digital Finance Research Center of Peking University.)

(4) The position of the development of digital inclusive finance in the surrounding areas of Anhui Province

From Figures 2 and 3, it can be seen that the overall index of digital inclusive finance in Anhui Province belongs to the lower ranking regions within the Yangtze River Delta. The Yangtze River Delta ranks Shanghai, Zhejiang Province, Jiangsu Province, and Anhui Province in that order; In the total index of the six central provinces, the difference between Anhui Province and other provinces is not significant, and even ranks relatively high. In 2012, Anhui Province ranked second in the digital inclusive finance index among the six central provinces, and in 2022, Anhui Province still ranked second in the digital inclusive finance index among the six central provinces, with a difference of 5.5 from the first place Hubei Province.



**Figure 2.** Line chart of the total index of digital inclusive finance in various regions of the Yangtze River delta (Data source: Compiled based on data from the digital finance research center of peking university)



**Figure 3.** Line chart of the total index of digital inclusive finance in six central provinces (Data source: Compiled based on data from the digital finance research center of peking university)

### 3. Analysis of Problems Encountered in the Development of Digital Inclusive Finance in Anhui Province

(1) Inclusive finance does not align with the development goals of financial institutions

The main task of inclusive finance is to provide financial services to low-income populations and small and micro enterprises who may be excluded from the traditional or formal financial institution system. The implementation of inclusive finance in China is a top-down approach, which involves top-level design by superiors, especially by incorporating assessment weights for financial institutions, and implementing it layer by layer. From the perspective of financial institutions, inclusive finance does not meet their development goals. On the one hand, these target groups have poor financial attributes and cannot provide good profitability goals for financial institutions; On the other hand, these target groups have a higher level of risk, which increases the operational risk of financial institutions and makes it more difficult to make profits. Moreover, the development of financial institutions, especially listed financial institutions, largely takes into account the rights and interests of shareholders, and the development of inclusive finance does not align with the interests of shareholders.

(2) Risk issues of digital inclusive finance itself

In recent years, the domestic public has been deeply affected by online fraud and telecommunications fraud. According to the latest data released by the Ministry of Public Security, in 2023, a total of 437000 telecommunications fraud cases were solved nationwide, and 328.8 billion yuan of funds involved were urgently intercepted. The development of digital inclusive finance relies on big data, cloud computing, etc., but from the perspective of big data itself, there is a possibility of information distortion in various aspects such as collection, storage, and use; Cloud computing itself also has data security issues. The security of the Internet itself also needs to be considered. According to the 2023 China Network Security Report released by Rising, the Rising Star "Star Core" platform intercepted 65900 ransomware samples during the reporting period, an increase of 13.24% over 2022. In 2023, Industrial and Commercial Bank of China's wholly-owned subsidiary in the United States, Industrial and Commercial Bank of China Financial Services Co., Ltd., also suffered from a "ransomware" attack. In fact, financial

institutions, enterprises, government agencies, and individuals may all become targets of ransomware, which also brings certain risks to the development of digital inclusive finance.

### (3) The Digital Divide in Digital Inclusive Finance

According to the "Yangtze River Delta Inclusive Finance Indicator Analysis Report 2022", in 2022, the proportion of adults using digital payments in the Yangtze River Delta region was 91.02%, the proportion of adults using digital payments in rural areas was 80.12%, and the proportion of elderly people was only 73.06%. This shows that in terms of digital inclusive finance, the digital divide between elderly people and rural and urban areas in remote areas still exists. The issue of digital divide has resulted in the exclusion of those who need financial services the most, and the lack of credit data for this group has also increased the risk of financial institution services. Finally, the issue of digital divide will also widen the gap in financial services within Anhui Province and between Anhui Province and other regions, leading to increasing disparities between individuals and regions. The issue of digital divide is not only detrimental to the realization of inclusive finance, but also deviates from the national development goal of achieving common prosperity.

(4) Rural financial institutions in Anhui are still relatively single, and financial products lack diversity

As a major agricultural province, Anhui has significant differences in economic development and diverse demands for financial services. However, for a long time, for the vast rural areas, agricultural financial institutions such as rural credit cooperatives or rural township banks have high loan thresholds and insufficient product diversity, which cannot provide good services for inclusive finance in rural areas. There are many characteristic agricultural industries in Anhui, such as the yellow beef industry in the north, the white goose industry in the west, and the tea industry in the south. Targeted design of financial, insurance, and guarantee products will more effectively enhance the popularity and development of digital inclusive finance in Anhui.

## 4. Suggestions for the Development of Digital Inclusive Finance in Anhui Province

At present, China is in a critical period of building beautiful rural areas. The construction and development of digital inclusive finance will inevitably help narrow the income gap between urban and rural areas and have a positive impact on the goal of common prosperity in the province. For the construction of digital inclusive finance in Anhui Province, the following suggestions are proposed in this article.

### (1) Provide multi-level inclusive financial products

One is to continue to leverage the leading role of commercial banks in inclusive finance. Commercial banks at all levels, as well as village and community banks, with their strong financial strength and wide network coverage, will continue to play the most important leading role in inclusive finance. Taking Huishang Bank as an example, the online banking of Huishang Bank has launched the "Inclusive Finance" channel, with a total of 21 inclusive finance loan projects in five categories: "Online Featured Products," "Basic Financing Products," "Technology Finance," "Trade Financing," and "High end Customers," effectively promoting the various loan needs of small and micro enterprises.

The second is to leverage the inclusive role of insurance. Traditional insurance often emphasizes product sales and neglects customer follow-up services; There are also obvious challenges such as homogeneous competition in insurance products. Benefiting from the development of information technologies such as cloud computing, big data, and artificial intelligence, insurance products will bring significant improvements in product design and service provision. It is necessary and possible to develop more order based characteristic products suitable for characteristic agriculture, characteristic agricultural products, and characteristic small and medium-sized enterprises in combination with the actual situation of Anhui Province, in order to meet the diverse needs of small and medium-sized customers. For example, characteristic insurances such as greenhouse vegetable natural disaster insurance, crayfish price index insurance, and rice high-temperature heat damage weather index insurance in Wuhu City effectively reduce the operational risks of farmers and increase new income channels for insurance companies.

The third is to further develop the normal development of small credit companies and other guarantee, factoring, and pawn enterprises. In recent years, there have been some illegal cases of online loans targeting college students, which indirectly reflects the urgent demand of college students for financial products. Therefore, the development of normal small credit companies can effectively avoid the harm of illegal loan companies to groups with weak financial awareness.

### (2) Enhance the security factor of digital finance

One is to strengthen the popularization of network security knowledge among the people and enhance their awareness of security. Schools at all levels and types are important tools for promoting knowledge of cybersecurity. Early deployment through various forms of activities such as lectures, seminars, blackboards, and knowledge exhibitions can help ordinary people recognize the importance of cybersecurity and learn to protect personal privacy and national security on the internet. All types of enterprises should also be maintainers and practitioners of network security, and be conscientious enterprises that understand, respect, and abide by the law. They should regularly provide training and guidance on network security knowledge to their employees, so that they become practitioners of the law and guardians of network security. In addition, everyone in society is responsible for their own network security. As law-abiding citizens, it is the responsibility of a citizen to actively learn network security knowledge, improve network security operation skills, safeguard personal information security, and safeguard national information security.

The second is to cultivate new types of financial security talents that are suitable for the development of the times. The development of digital inclusive finance combines knowledge from finance, accounting, economics, networks, and other fields. Therefore, traditional talent cultivation solely based on computer skills or financial skills is insufficient to meet the needs of the times. This requires our educational institutions to have a long-term forward-looking vision in subject setting or talent cultivation, and to cultivate qualified talents in combination with the needs of the market economy. In addition, all types of talents should also be aware of the importance of skill integration with the development of the times. The era of "one talent, one meal" is outdated. Only change is the main theme of the times. Learning, mastering,

and applying integrated skills can have its own foothold in the development of the times.

### (3) Strengthen the construction of online credit

The market economy is also a credit economy, and the development of digital inclusive finance cannot be separated from the support of online credit data. Establishing a secure and reliable online credit platform is one of the responsibilities that the government should fulfill. In relevant documents in China, there are also requirements to establish a national financial information database. It is believed that with the support of governments at all levels, such a database will inevitably provide impetus for the development of digital inclusive finance. In addition, small and medium-sized enterprises, small and micro enterprises and individual profit organizations should also actively participate in the construction of network information, and leave their own credit data through official channels or credit channels built by large enterprises, such as Alipay, WeChat and other credit channels, leaving data support for subsequent development.

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## References

- [1] Anhui Provincial People's Government Implementation Opinions of Anhui Provincial People's Government on Promoting the Development of Inclusive Finance [A/OL] (2016-09-01) [2023-04-15]. <https://www.ah.gov.cn/szf/zfgb/8117681.html>
- [2] Anhui Provincial Department of Finance Notice from the Department of Finance of Anhui Province on Issuing the Implementation Rules for the Management of Special Funds for Inclusive Finance Development in Anhui Province [A/OL] (2017-08-23) [2023-04-15]. <https://rsj.huainan.gov.cn/zcfg/zh/34408313.html>.
- [3] Research Group of Internet Finance Research Center, Peking University Compilation and Analysis of Internet Finance Development Index [J] *New Financial Review*, 2016 (1): 101-129
- [4] Liang Bang, Zhang Jianhua Can the development of digital inclusive finance stimulate innovation— Evidence from Chinese cities and small and medium-sized enterprises [J] *Contemporary Economics Learning*, 2019, (5): 74-86
- [5] Liu Jinyi, Liu Chunyang The Rural Poverty Reduction Effect of Digital Inclusive Finance: Effects and Mechanisms [J] *Journal of Finance and Economics*, 2020, (1): 43-53
- [6] Ren Xiaoyi Can the development of digital inclusive finance alleviate the financing constraints of enterprises Exploration of Modern Economy, 2020, (10): 65-75
- [7] Wang Yizhong, Lin Xi, Li Zhenhua, etc Digital inclusive finance supports common prosperity: from the perspective of liquidity constraints *Economic Research*, 2024, (6): 49-68
- [8] Wang Hongming, Sun Pengbo, Guo Huifang How can digital finance empower enterprises' digital transformation-Empirical evidence from Chinese listed companies [J] *Finance and Economics Essays*, 2022, (10): 3-13
- [9] Wang Xun, Wang Xue Digital inclusive finance and consumer risk smoothing: micro evidence from Chinese households [J] *Economics (Quarterly)*, 2022, (5): 1679-1698
- [10] Zhao Shaoyang, Li Mengxue, She Kaiwen Digital finance and the availability of financing for small and medium-sized enterprises: micro evidence from bank loans [J] *Economic Movement State*, 2022, (8): 98-116