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Research on the impact of digital financial inclusion on entrepreneurial activity in cities

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Abstract

Digital inclusive finance and digital innovation have become the key drivers of high-quality economic development. Using panel data from prefecture-level cities in China from 2011 to 2021, a fixed-effect model was constructed to investigate the impact of digital inclusive finance on urban entrepreneurial activity. The study shows that digital inclusive finance can significantly promote entrepreneurial activity in cities. After a series of robustness tests, the conclusion remains robust. Heterogeneity research found that there are differences in the degree of digital inclusive finance's effect on entrepreneurial activity in cities at different administrative levels. Digital inclusive finance has a stronger driving effect on entrepreneurial activity in non-provincial capitals, while it is not significant in provincial capital regions. Therefore, we should continue to promote the development of digital inclusive finance, promote the implementation of digital innovation strategies from multiple parties, form a pattern of coordinated and linked regional development, and promote continuous economic growth.

Keywords

Digital financial inclusion; urban entrepreneurial activity; regional heterogeneity

1.Introduction

In the wave of digital transformation of the global economy, digital inclusive finance, as an emerging financial service model, is profoundly changing the way the traditional financial system operates. With the help of information technology, mobile Internet, artificial intelligence and big data, digital inclusive finance has broken through the physical and institutional limitations of the traditional financial system, providing more convenient and efficient financial services for small and medium-sized enterprises, individual entrepreneurs and people who are difficult to be covered by the traditional financial system, thus enhancing financial inclusion and improving the accessibility of economic resources. With the support of digital inclusive finance, the accessibility of financial services such as financing, payment, and settlement has been greatly improved, lowering the threshold for entrepreneurship and injecting new vitality into urban economic development. At the same time, ur-

ban entrepreneurship activity, as an important indicator for measuring the level of urban economic development and innovation capabilities, is receiving widespread attention from the government and academia. Urban entrepreneurship activity not only reflects the vibrancy of the regional innovation and entrepreneurship environment, but also to a certain extent determines the economic competitiveness of the city. With the sustained growth of the Chinese economy and the acceleration of the urbanization process, how to enhance urban entrepreneurship activity and optimize the entrepreneurial ecological environment has become a core issue of concern for policymakers.

Although digital inclusive finance and urban entrepreneurial activity have been widely studied in the fields of financial technology and regional economic development, respectively, there has been a lack of systematic discussion on the relationship between the two. In particular, in an emerging economy such as China, there are still research gaps on whether and how digital inclusive finance affects urban entrepreneurial activity. Based on this, this paper uses panel data from prefecture-level cities in China from 2011 to 2021 to construct a fixed-effect model to examine the impact of digital inclusive finance on urban entrepreneurial activity and to explore regional heterogeneity characteristics, with a view to providing theoretical support and empirical evidence for promoting the development of digital finance and optimizing entrepreneurship policies.

2. Literature Review

Analyzing and defining the connotation of entrepreneurial activity, Schumpeter et al. (1934) believe that entrepreneurial activity is a process of reorganizing and innovating factor resources, aiming to improve production efficiency and meet market demand. Foreign scholars mainly discuss it from technological, social and economic perspectives. Song et al. (2020) focus on the role of social factors in the cultivation of technology-based enterprises. Using national-level data analysis of 45 countries and regions, the research results show that social security has a significant positive impact on the proportion of technology-based entrepreneurial activities. In identifying the mechanisms driving entrepreneurial activity, Ajide et al. (2020) found that strengthening transport infrastructure and information and communication technology can significantly increase entrepreneurial activity in African countries. Kim et al. (2014) believe that foreign direct investment can inject new products and services into the development of regional economic activities and promote entrepreneurial activity through demonstration and spillover effects. Kerr et al. (2009) used data from the US Census Bureau to empirically analyze and found that deregulation of banks can increase the availability of credit for potential entrepreneurial behavior, thereby enhancing entrepreneurial activity.

In recent years, with the rapid development of digital technology, emerging financial service models represented by digital inclusive finance have gradually come into the

public eye, and academia has developed a keen interest in studying their relationship with entrepreneurial activity. Existing literature shows that entrepreneurial activity is the result of the combined effects of multiple factors. Specifically, the internal driving force of entrepreneurship is not only significantly affected by individual-level characteristics such as entrepreneurial risk preference, gender differences, education level, and family wealth (De et al., 2014; Levine & Rubinstein, 2017), but is also deeply constrained by the external environment. Among these factors, the institutional environment, level of financial development, infrastructure and the degree of regulation are all important influencing factors (Fritsch, 2017; Audretsch et al., 2015). At the individual level, research shows that individuals with high risk sensitivity are more likely to choose stable employment, while individuals with low risk sensitivity are more willing to take entrepreneurial risks (Rigotti et al., 2011; Djankov et al., 2006). In addition, gender differences also affect entrepreneurial decisions. Women's entrepreneurial participation and success rate are lower than men's, especially in the field of opportunity entrepreneurship, where women face greater market barriers and financing constraints. Human capital is also a key factor affecting entrepreneurial success. High levels of cognitive ability, professional skills and industry experience help enhance the market competitiveness of entrepreneurs and reduce business risks in a stronger regulatory environment. However, there are different views in the academic community on the relationship between education level and entrepreneurship. Some studies have found that higher education can improve entrepreneurs' market awareness, management capabilities and risk control (Madanoglu et al., 2020); however, other studies have pointed out that an excessively high level of education may make individuals more inclined to choose high-paying employment rather than starting their own business, especially in highly skilled industries, where educational advantages are not a sufficient condition for entrepreneurial success. At the same time, family wealth, social capital and credit availability also have a significant impact on entrepreneurial behavior. Higher family wealth can alleviate the financial constraints of entrepreneurs, but for high-income families, the incentive effect of entrepreneurship may actually decrease (Buera, 2009).

In recent years, scholars have begun to focus on the role of digital financial inclusion in promoting entrepreneurial activity. The traditional financial system has high barriers to entry, and entrepreneurs, especially micro, small and medium-sized enterprises and individual entrepreneurs, often find it difficult to obtain loans from traditional financial institutions such as banks (Buera et al., 2012). Digital inclusive finance, on the other hand, with big data, artificial intelligence and blockchain technology, can provide more convenient financing channels for entrepreneurs who lack collateral and credit history (Klapper et al., 2007). Ozil (2018) points out that the development of digital inclusive finance not only enhances the accessibility of financial services, but also reduces the cost of financing and improves the accessibility of

credit thereby promoting entrepreneurial activities. In addition, innovative modes of digital finance, such as online credit, supply chain finance, and Internet crowdfunding, have to some extent enriched the financing options for entrepreneurs and reduced the threshold of entrepreneurship. On the other hand, digital inclusive finance is also able to enhance entrepreneurs' business capacity and market adaptability by optimising the payment and settlement system, providing big data risk control services, and upgrading the credit rating system. However, although existing studies have shown that digital financial inclusion has a certain positive impact on entrepreneurial activity, a refined analysis of its mechanism of action is still relatively lacking, especially the heterogeneous impact of different levels of regional economic development and city administrative levels on the role of digital financial inclusion is still under-researched. Therefore, on the basis of existing studies, this paper will systematically explore the role mechanism of digital inclusive finance empowering urban entrepreneurial activity from the empirical level by using the data of registered enterprises in China, and further analyse the differences in different levels of economic development and city grades, with a view to filling the research gaps in the related fields and providing theoretical basis for policy formulation.

3.1 Theoretical hypothesis

3.1 The impact of digital financial inclusion on urban entrepreneurial activity

China's urban entrepreneurial activity is an important strategy for current economic development, and digital inclusive finance, as an innovative financial model, is of great significance for promoting urban entrepreneurial activity. Compared with the traditional financial system, digital inclusive finance reduces the financing threshold and improves the accessibility of financial services with the help of technologies such as big data, artificial intelligence, cloud computing, and blockchain, enabling more potential entrepreneurs to obtain financial support, thus promoting the growth of entrepreneurial activities. On the one hand, digital inclusive finance lowers the entrepreneurial threshold by alleviating financing constraints. In the traditional financial system, bank loans require high levels of collateral and credit history, making MSMEs and individual entrepreneurs face many difficulties in the financing process . Digital inclusive finance, however, provides entrepreneurs who lack traditional financial resources with more flexible and convenient financing methods through innovative modes such as online credit, mobile payment, digital identity authentication and intelligent risk control, which greatly reduces the threshold of entrepreneurial capital. For example, Internet financial platforms use big data risk control technology for credit assessment, which makes it possible for individuals with less credit history but with entrepreneurial potential to obtain loans . On the other hand, digital inclusive finance optimises the entrepreneurial ecosystem and enhances entrepreneurial success. The development of digital finance has led to the

development of new business models such as e-commerce, online marketing, social e-commerce, etc., providing more market opportunities for entrepreneurs . Digital financial platforms can use big data analysis and artificial intelligence technology to provide entrepreneurs with accurate market information, industry trend analysis and intelligent investment and financing matching services, thus increasing the success rate of entrepreneurship. Based on this, this paper proposes the hypothesis:
Hypothesis H1: Digital financial inclusion positively contributes .to urban entrepreneurial activity.

3.2 Differences in the impact of digital financial inclusion on entrepreneurial activity in cities of different administrative levels.

The impact of digital financial inclusion on entrepreneurial activity in cities may vary significantly across city administrative levels. The administrative level of a city determines the level of economic development, policy support, financial market maturity, and infrastructural sophistication of the city, and all of these factors may affect the promotion of digital inclusive finance on entrepreneurial activity. Based on the theory of financing constraints, the financial limitations faced by entrepreneurs are one of the key factors determining their entrepreneurial decisions and success rates. Under the traditional financial system, bank loans often require collateral, long-term financial records and strict credit assessment processes, making it difficult for MSMEs and individual entrepreneurs to obtain financial support, especially in non-provincial capital cities with underdeveloped financial systems . Digital inclusive finance can effectively fill the gaps in the traditional financial system through innovative modes such as intelligent risk control, online credit assessment, and supply chain finance, so that more entrepreneurs have access to financing opportunities, thus promoting entrepreneurial activity in non-capital cities. Second, from the perspective of institutional environment theory, institutional factors such as government regulation, market access conditions, and tax policies affect the cost of entrepreneurship and entrepreneurs' market entry decisions (Puffer et al.,2010). In capital cities, the government usually provides more entrepreneurial support policies, such as tax breaks, start-up subsidies, and industrial guidance funds, while traditional financial institutions, such as banks and VCs, are more concentrated, and entrepreneurs have richer financing choices, resulting in a lower marginal effect of digital financial inclusion. In non-capital cities, on the other hand, entrepreneurs rely more on the financing services provided by digital inclusive finance due to less policy support, making it play a greater role in enhancing entrepreneurial activity (Bruhn & Miriam,2013). In addition, from the theory of market competition, market size, industry maturity and competitive pressure all affect entrepreneurial activity . The entrepreneurial environment in provincial capital cities is more mature and the market competition is fierce, entrepreneurial enterprises not only face higher capital demand, but also need to invest more resources in technological innovation, branding and marketing, etc., while the popularity of digital inclusive finance pro-

vides a certain degree of financial support, but can not fundamentally change the competitive pressures faced by entrepreneurs, so its promotion effect is not significant enough. In contrast, market competition in non-capital cities is relatively low, and it is easier for entrepreneurs to enter the market and achieve steady growth when they have sufficient capital, so the support effect of digital inclusive finance is more obvious (Glaeser et al.,2009). In summary, digital inclusive finance affects entrepreneurial activity by alleviating financing constraints, optimising the institutional environment and enhancing market accessibility, but its role varies across the administrative hierarchy of cities. In provincial capital cities, the marginal contribution of digital inclusive finance is lower due to a more complete traditional financial system, stronger government support and fierce market competition, while in non-capital cities, digital inclusive finance effectively fills in the shortcomings of the traditional financial system and significantly lowers the threshold of entrepreneurship, thus playing a stronger driving role in promoting entrepreneurial activity. Therefore, this paper proposes the hypothesis:

Hypothesis H2: There is the extent to which contributes city administrative level variability indigital financial inclusion to entrepreneurial activity in cities.

4.Research Design

4.1 Sample selection and data collection

In order to ensure the rationality of the data and the validity of the matching, this paper carries out the following data processing: (1) for the cities with less missing data, they are filled in by interpolation, while cities with more missing values of the main variables are deleted; (2) cities that were withdrawn and newly constructed prefectural city compilations during the period of 2011-2021 are deleted; and (3) in order to reduce the influence of extreme values, the This paper winsorises variables at the 1% level.the main

4.2 Variable definition and measurement

Entrepreneurial activity: using the Enterprise Search database to collect and collate microenterprise data during the inspection period, and obtaining panel data on the number of various types of emerging enterprises in each city in different years based on the information of the enterprises' years of establishment, addresses and industry types, etc., and measuring the level of entrepreneurial activity in the city by using the number of emerging enterprises per 100 people.

Digital Inclusive Finance Index: This paper uses the Digital Inclusive Finance Index published by the Digital Finance Research Centre of Peking University as a proxy variable for the level of digital inclusive finance development in prefecture-level cities. This set of indices portrays the level of digital inclusive finance development in China's provincial, municipal and county-level administrative regions by systematically constructing the evaluation index system from multiple dimensions, which can

objectively and comprehensively reflect the actual development level of digital inclusive finance in each region, and has been widely used by scholars in digital inclusive finance-related research.

Control variables: this study selects the level of economic development, population size, level of financial development, industrial structure, government financial expenditure and urbanisation level as control variables. Among them, the level of economic development is measured by the logarithm of GDP per capita, the population size is expressed by the logarithm of the total population of the region at the end of the year, the level of financial development is measured by the proportion of the balance of loans of financial institutions to GDP at the end of the year, the industrial structure is expressed by the proportion of the value added of the secondary industry to GDP, the government fiscal expenditure is measured by the proportion of the budgeted expenditure of the local government to GDP, and the level of urbanisation is measured by the proportion of the permanent resident population to the total permanent resident population of the towns. The level of urbanisation is measured by the proportion of urban residents to the total resident population.

Table 1. Description and definition of variables

Variable type	Variable identification	variable name	Variable Definition
Dependent Variable	Act	City Entrepreneurial Activity	Number of new businesses per 100 population
Independent Variable	Index	Digital Inclusive Finance	Digital Inclusive Finance Index published by Peking University's Digital Finance Research Centre
control variable	gdp	Level of economic development	Measured the logarithm of by per capita gross productregional
	peo	Size of population	Total population at the end of the year in the region in logarithmic terms
	fin	Level of financial development	Measured by year-end loan balances of financial institutions as a share of GDP
	ind	industrial structure	Secondary sector value added as a share of GDP
	gov	Government expenditure	Local government budgeted expenditures as a share of GDP was selected to measure
	urb	level of urbanization	Measured by the proportion of the urban permanent population to the total permanent population

4.3 Model Setting

In order to explore the overall impact of digital financial inclusion on entrepreneurial activity in cities, and taking into account the fact that the degree of development of digital financial inclusion varies from region to region, and thus the extent of the impact of digital financial inclusion on entrepreneurial activity in cities may vary geographically, the following panel fixed-effects model was constructed to avoid endogeneity problems arising from the omission of unobservable variables at the city level.

$$Act_{it} = \alpha + \beta Index_{it} + control_{it} + \delta_t + \lambda_i + \varepsilon_{it} \quad (1)$$

In Equation (1)，Act_{it} is the city entrepreneurship activity in the i year of the city.

$Index_{it}$ represents digital financial inclusion index in the i year of city. To control the impact of unobservable factors at the enterprise and year levels on the estimation results, Equation (1) controls for firm fixed effects and year effects. ε_{it} is the error term, and the standard errors are clustered at the enterprise level.

5.Empirical analyses

5.1 Descriptive statistics and analyses

Descriptive statistics of the main variables of the model are shown in Table 2. The mean value of urban entrepreneurial activity is approximately 1.305, the standard deviation is 1.244, and the difference between the maximum and minimum values is 20.08, indicating that there are significant differences in the entrepreneurial activity of the sample cities. The mean value of the core explanatory variable Index is 184.6, and the standard deviation is 72.89. The other variables are basically consistent with existing literature and will not be repeated here.

Table 2. Descriptive statistics

Variable	N	Mean	SD	Min	p50	Max
Act	3119	1.305	1.244	0.160	0.996	20.24
Index	3119	184.6	72.89	17.02	196	359.7
gdp	3119	10.75	0.569	8.773	10.72	13.06
peo	3119	5.904	0.685	2.970	5.945	8.136
fin	3119	2.519	1.221	0.588	2.207	21.30
indy	3119	0.425	0.101	0.144	0.420	0.839
gov	3119	0.203	0.102	0.0439	0.177	0.915
urb	3119	0.561	0.149	0.181	0.541	1.001

5.2 Benchmark regression analysis

According to Equation (1), the regression results of the impact of digital financial inclusion on urban entrepreneurial activity using least squares estimation are shown in Table 3. Column (1) of Table 3 shows the results without adding any control variables. Column (2) shows the regression results after adding all control variables. The regression results show that the impact coefficient of digital financial inclusion on urban entrepreneurial activity is 0.025, which passes the significance test at the 1% level, and Hypothesis H1 is verified. The possible reasons are, on the one hand, digital financial inclusion improves the availability and convenience of financial services, optimizes entrepreneurs' access to capital, and reduces financing constraints. It also helps improve business efficiency and management. On the other hand, the development of digital financial inclusion promotes the widespread use of digital technology, improves information asymmetry, enhances market competitiveness, and creates a better market environment for entrepreneurs. Therefore, digital financial inclusion has played a positive role in promoting urban entrepreneurship.

Table 3. Benchmark regression results

	(1) Act	(2) Act
Index	0.026 ***	0.025 ***
	(0.003)	(0.004)
gdp		-0.362**
		(0.170)
peo		1.013
		(0.858)
fin		-0.051
		(0.035)
indy		-1.079
		(0.657)
gov		-0.595
		(0.427)
urb		-0.440
		(0.334)
_cons	-3.556 ***	-4.360
	(0.644)	(4.348)
city	YES	YES
year	YES	YES
N	3119	3119
r2	0.722	0.726

Standard errors for clustering to cities in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01

5.3 Robustness tests

Explain the lagged treatment of variables. Considering the degree of development of digital inclusive finance, i.e., the policy lag between the completion of Internet infrastructure and the promotion of entrepreneurial activity in digital economy industries, the explanatory variables are lagged. In the regression model with one lag period (1), the regression coefficient of L.Index is 0.026, which is significant at the 1% level, indicating that there is a certain lag effect of digital inclusive finance on its promotion of entrepreneurial activity, i.e., the current development of digital inclusive finance still has a positive impact on entrepreneurial activity in the next period. In the regression model with a two-period lag (2), the regression coefficient of L2.Index is 0.022, which is still significant at the 1% level, which further verifies the continuous impact of digital financial inclusion on entrepreneurial activity, indicating that its effect is not a short-term fluctuation, but has a certain sustainability.

Change the sample period. Considering the possible interference of the pandemic on entrepreneurial activity, this paper conducts a robustness test by changing the sample period. Specifically, we use sample data from 2011 to 2019 (excluding data from 2020 and beyond) to conduct regressions to exclude the impact of external shocks caused by the new crown epidemic on the research results. The regression results show that during the sample period from 2011 to 2019, the impact of digital financial inclusion on urban entrepreneurial activity remained significant. The regression coefficient of the Index was 0.019, and it was significant at the 1% level. The results show that even after excluding the data during the pandemic, the contribution of digital financial inclusion to entrepreneurial activity remains robust, indicating that

its impact is not driven by special economic circumstances or short-term market fluctuations, but has long-term validity and broad applicability.

Table 4. Robustness test results

	(1) lag I phase Act	(2) Phase II lag Act	(3) 2011-2019 Act
L. Index	0.026*** (0.004)		
L2.Index		0.022*** (0.004)	
Index			0.019*** (0.003)
Control	YES	YES	YES
city	YES	YES	YES
year	YES	YES	YES
N	2835	2551	2555
r2	0.725	0.734	0.846

5.4 Heterogeneity analysis

As different regions of China are at different stages of industrialization, there are significant differences in their levels of economic development. Whether it is the condition of transportation infrastructure, the allocation of financial resources, or the level of development of the digital economy, different urban tiers all exhibit significantly different characteristics. Provincial capitals are usually the economic, political, technological and financial centers of the region, with relatively complete market systems, developed financial service networks and strong government support. Non-provincial capitals are relatively weak in terms of industrial structure, market environment and financing accessibility. Therefore, the role of digital inclusive finance in promoting entrepreneurial activity may differ significantly depending on the administrative level of the city. To further explore this difference, this paper conducts a regression analysis by grouping provincial capitals and non-provincial capitals.

Table 5. Heterogeneity regression results

	(1) Non-provincial capitals Act	(2) provincial capital Act
Index	0.024***	0.004
	(0.004)	(0.020)
gdp	-0.294	-0.010
	(0.178)	(0.788)
peo	0.260	4.880*
	(0.625)	(2.793)
fin	-0.027	-0.286 ***
	(0.022)	(0.085)
indy	-1.002	-1.103
	(0.690)	(2.125)
gov	-0.476	-0.606
	(0.421)	(5.644)
urban	-0.341	-1.266
	(0.323)	(1.060)
cons	-0.805	-26.468
	(3.104)	(20.370)

city	YES	YES
year	YES	YES
N	2835	284.000
r2	0.727	0.721

According to the results in Table 5, in non-provincial cities, the regression coefficient of digital financial inclusion on entrepreneurial activity is 0.024, which is significant at the 1% level, indicating that digital financial inclusion significantly promotes entrepreneurial activity in non-provincial cities. In provincial cities, the coefficient is only 0.004, and it fails the significance test, indicating that digital financial inclusion has no significant impact on entrepreneurial activity in provincial cities. The possible reason is that as regional economic centers, provincial capitals have relatively well-established traditional financial systems, with a high concentration of banks, venture capital, and venture capital institutions, and entrepreneurs can more easily obtain financial support. In contrast, financial resources are relatively scarce in non-provincial cities, and the traditional banking system provides weak support for small and medium-sized enterprises and individual entrepreneurs. Digital financial inclusion can compensate for this shortcoming and provide entrepreneurs with more convenient financing channels, thereby playing a more significant role in promoting entrepreneurship.

6.Conclusions and insights

This study systematically examines the impact of digital financial inclusion on urban entrepreneurial activity by constructing a fixed-effects model using panel data of prefecture-level cities in China from 2011 to 2021. The findings indicate that digital inclusive finance can significantly enhance urban entrepreneurial activity, which remains robust after controlling for variables such as the level of economic development, population size, level of financial development, industrial structure, government fiscal expenditure, and level of urbanisation. In addition, in order to further verify the reliability of the findings, this paper conducts a series of robustness tests, including methods such as replacing the dependent variable, lagging, shortening the research time window, and instrumental variable regression, all of which show that the promotion of urban entrepreneurial activeness by digital inclusive finance is robustly present. Further heterogeneity analyses show that the role of digital financial inclusion on urban entrepreneurial activity varies significantly across city administrative levels. It is found that digital inclusive finance has a stronger role in promoting entrepreneurial activity in non-capital cities, while in capital cities, its effect is not significant. This phenomenon may be due to the fact that the financial market in provincial capital cities is more complete, entrepreneurs' financing channels are relatively abundant, and the traditional financial system is able to satisfy entrepreneurs' financial needs better, so the marginal effect of digital inclusive finance is relatively low. In non-capital cities, the coverage of the traditional financial system is lower, and entrepreneurs rely more on digital financial tools to obtain en-

trepreneurial capital, thus the role of digital inclusive finance in promoting entrepreneurial activity is more significant. In summary, the empirical analysis of this study not only verifies the positive role of digital inclusive finance in promoting entrepreneurial activity in cities, but also reveals its differential impact in different city administrative levels, which provides empirical support for optimising the allocation of regional financial resources and promoting the implementation of digital financial policies.

Based on these findings, this paper offers the following policy implications:

First, the construction of digital inclusive financial infrastructure should be further strengthened to enhance the coverage and accessibility of financial services, especially in non-provincial capital cities and areas with relatively weak financial resources, and the Government should increase its support for digital financial platforms, encourage cooperation among banks, science and technology enterprises and Internet-based financial institutions, optimise the credit assessment mechanism, and enhance the financial support for micro-, small- and medium-sized enterprises and individual entrepreneurs. In addition, it should promote the popularity of services such as mobile payment, digital credit system, and financial technology innovation among the entrepreneurial community, so as to enhance the convenience of financing for entrepreneurs, reduce the cost of entrepreneurship, and increase the success rate of entrepreneurship. At the same time, attention should be paid to improving the digital financial environment and promoting cooperation between local governments and financial institutions to jointly establish a digital financial supervision and risk prevention and control system, so as to ensure that financial resources can accurately support the development of entrepreneurship without affecting economic stability due to over-credit or systemic financial risks.

Second, to address the heterogeneity of provincial capital cities and non-provincial capital cities, differentiated digital finance policies should be formulated to improve policy precision. In provincial capital cities, due to the abundance of traditional financial resources and more diversified financing channels for entrepreneurs, the government should promote the in-depth integration of digital finance and traditional finance, and encourage cooperation between banks, venture capital institutions and digital financial platforms to improve the flexibility and accessibility of entrepreneurial financing, such as the development of entrepreneurial support funds, digital credit-enhancing services, and financial science and technology incubators, so as to provide high-growth entrepreneurial enterprises with more precise financial services. As for non-capital cities, the government should increase policy support for digital inclusive finance, such as setting up special subsidies, encouraging financial institutions to increase loan investment in SMEs, and improving the credit rating mechanism to enhance financial institutions' trust in entrepreneurs and reduce financing discrimination. At the same time, it should promote interregional financial connectivity and encourage large-scale digital financial enterprises

to sink into small and medium-sized cities and less developed regions, so as to further enhance the inclusive nature of digital finance.

Third, the government should strengthen the role of digital inclusive finance in optimising the entrepreneurial ecosystem, and promote digital finance to empower entrepreneurship and innovation in combination with industrial policies. It should strengthen the linkage between digital finance and industrial development, encourage science and technology innovation enterprises and digital economy enterprises to rely on digital inclusive finance to enhance the entrepreneurial environment, for example, in e-commerce, smart manufacturing, artificial intelligence and other industries, increase financial support for startups, and promote digital finance to empower industrial chain innovation. At the same time, the government should increase investment in digital entrepreneurship education and financial literacy training, improve entrepreneurs' knowledge and ability to use digital financial tools, and enhance their financial management ability and risk prevention and control awareness. In addition, the government should also improve laws and regulations, strengthen the standardisation and management of the digital financial market, prevent market risks caused by the lack of financial regulation, and ensure that digital inclusive finance can promote the continuous enhancement of urban entrepreneurial activity on the basis of sound development.

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