How Does Digital Finance Promote Regional Economic Growth?

Mao Qinyuan[1,a,*]

[1]*Hong Kong Polytechnic University*
a. 13875990882@163.com
corresponding author

Abstract: The development of digital finance has important practical significance for regional economic growth. This article is based on the Digital Inclusive Finance Index developed by Peking University to study the impact of digital finance on economic growth in various regions of China, and uses the internet penetration rate at each provincial level as a tool variable to alleviate endogeneity issues in the model. Research has found that digital finance has a significant promoting effect on regional economic growth, and all three dimensions of digital finance have a positive impact on economic growth; Digital finance has shown some differences in the eastern, central, and western regions of China, with overall positive impacts, but its impact on economic growth in the eastern region is greater. This article provides an empirical basis for the development of digital finance in China, and provides a robustness analysis of digital finance promoting regional economic growth. Based on the current situation of digital finance development in China and the conclusions drawn in this article, it is believed that the construction of regional financial infrastructure should be accelerated, and the government should provide more financial resources for the central and western regions of China to narrow regional disparities, In order to better achieve the driving effect of digital finance on economic growth and regional coordinated development.

Keywords: digital finance, economic growth, regional differences

1. Introduction

China's reform and opening up has been a catalyst for remarkable economic growth, resulting in a succession of Chinese miracles. However, looking at China's economic development trajectory, the "extensive" economic model urgently needs improvement. The construction of a moderately prosperous society in China necessitates the implementation of inclusive finance as a key factor, which has a substantial impact on expanding financial coverage, enhancing the efficacy of financial services, and making financial services and products more accessible in various areas.

The G20 Advanced Principles for Digital Inclusive Finance, released in 2016, encourage various countries and regions to carry out inclusive finance action plans based on their own advantages. China should leverage the potential of digital finance, capitalize on the advantages of the Internet, blockchain, big data, and other elements, to foster high-quality economic growth and bolster its economic strength in this era. This article will explore the effect of digital finance on China's economic growth, primarily by exploring its expansion of financial services and products in various

regions. Computer technology's swift advancement has enabled this, so will digital finance's ascendancy be a boon to economic expansion in multiple fields? Secondly, drawing on the research results of Guo Feng et al. [1], digital finance includes three dimensions. Constructing an analytical framework to explore the influence of various aspects of digital finance on regional economic expansion could be advantageous in further uncovering the part digital finance plays in regional economic growth. Given the vastness of China's territory and the uneven development of resources in its various regions, does the evolution of digital finance have distinct functions among distinct regions, considering the disparities in regional economic progress?

The Digital Inclusive Finance Index, compiled by the Digital Finance Research Center of Peking University from 2011 to 2018, is used to empirically evaluate the influence of digital finance and its three components on regional economic growth, as well as economic growth in the eastern, central, and western regions. Research has demonstrated that digital finance has a considerable impact on regional economic growth, with all three aspects having a beneficial effect. Moreover, digital finance has shown some distinctions in the eastern, central, and western regions of China, with overall beneficial effects, yet its effect on economic growth is particularly pronounced in the eastern region. This article's research conclusions have practical and significant implications for advancing China's economic development through digital finance in the future.

2.   Literature Review and Research Hypothesis

The advent of computers and the growth of communication technology have enabled digital finance to rapidly expand in China, with its expansion gradually intensifying. The convenience of financial services obtained by various regions has greatly improved, providing a practical path for economic growth in various regions. Digital finance specifically refers to the implementation of various financial services such as payment and settlement through internet platforms and digital technology between financial institutions [2]. The potential of finance to stimulate economic expansion in a range of nations [3][4] has been demonstrated by King and Levine and Rajan and Zingales . In recent times, the swift growth of digital financial firms such as Ant Financial and JD has been a notable development.com has provided convenience for the formation of inclusive finance in China, which is also the trend of future development in China.

A move from "high speed" to "high quality" can be seen in our nation's current economic growth trajectory. From the early growth model of our country, it is still in a "extensive" growth mode [5]. Under this economic development model, China has encountered problems such as low total factor growth rate, unreasonable industrial structure, and improper urban-rural development, which have affected the growth of China's economy [6]. From existing research, it can be seen that the development of digital finance can promote economic growth while promoting inclusive finance, especially in China. The Internet's growth in China has been found by Jiao Jinpu [7] to have brought financial services to underdeveloped areas, made it easier for people to access them, and digital currency has had a major impact on reducing the cost of such services and increasing coverage [8], thereby helping China achieve inclusive growth [9].

The rapid development of digital finance has alleviated the financing constraints obtained by various regions, which helps reduce the cost of obtaining funds for small and micro enterprises in various regions, thereby promoting regional economic growth. Guo Feng et al [1] believe that digital finance is gradually integrating into traditional financial institutions, and utilizing cloud computing and big data to continuously expand the scope and target audience of digital finance services. Its development in various regions is gradually increasing, reducing financial discrimination. Alipay's representation of internet finance has lowered the barrier to financial services, increased their efficiency, allowed disadvantaged groups to use them, and encouraged the high-quality growth of local economies.

The influence of digital finance on regional economic expansion is not uniform, but rather varies between structural and regional areas [10]. On the one hand, digital finance in China is mainly measured from three aspects, namely coverage breadth, depth of use, and digital level. The first two are mainly considered from the perspective of traditional finance and have practical experience in economic growth. Qian Haizhang et al. The development of digital finance and its three dimensions has been found to have a positive influence on the economic growth of China, which is currently in a transitional phase with its infrastructure yet to be developed or improved. [11] There is still room for further development of the digital level. Wang Yongcang and Wen Tao [12] found through empirical research that digital finance significantly affects economic growth and exhibits heterogeneity differences. Therefore, the actual impact of the three dimensions of digital finance on regional economic growth needs to be empirically tested; On the other hand, due to China's vast territory and differences in basic economic levels, there is a situation where the East is strong, the West is weak, and financial resources are concentrated in different regions. Despite the abundance of resources in Beijing, Shanghai, the Pearl River Delta, and other areas, a dearth of financial resources remains in the central and western regions. Furthermore, the development disparities in these regions also have an effect on how digital finance influences regional economic growth. In summary, the following hypotheses are proposed:

Research hypothesis 1: Digital finance has a promoting effect on economic growth in various regions;

Evident are structural and regional disparities in the economic growth effects of digital finance on the region, as Hypothesis 2 suggests.

3. Research Design

3.1. The Regional Economic Growth of Digital Finance Is Modeled

Based on the above theoretical analysis and drawing on the model used by Tang Song et al. [13] A model was created in 2020 to empirically assess the link between digital finance and regional economic growth. This benchmark model is as follows:

$$lnpgdp_{it} = r_0 + r_1 ifi_{it} + r_2 lnk_{it} + r_3 fdi_{it} + r_4 structure_{it} + r_5 urb_{it}$$

$$+ r_6 infrastructure_{it} + v_t + u_i + \varepsilon_{it} \tag{1}$$

Rendering each province, tre representing time, lnpgd representing regional economic growth by per capita GDP, ifire representing digital finance development, lnk, fdi, structure, urb, infrastructure representing control variables of capital investment, foreign direct investment, industrial structure, urbanization rate, and infrastructure, uire representing regional fixed effects, vt representing year fixed effects, and εit representing random disturbance terms, these are the variables.

3.2. Variable Description and Data Source 3.2.1 Variable Description

3.2.1. Variable Description

(1) The logarithmic value of per capita GDP in each province (lnpgdp) is used to gauge regional economic growth. In the robustness test, replace the numerical value (lnpgdp) with actual GDP for testing.

(2) Regional entrepreneurship and resident consumption. To gauge regional entrepreneurship, this article employs the ratio of the amount of individual and private enterprise personnel in both urban and rural areas to the total number of employed individuals (entrepre). Additionally, per

capita consumption expenditure per province (pconsumption) is used to measure household consumption.

(3) Digital finance. The Peking University Digital Finance Research Center's Provincial Digital Finance Inclusion Index is employed in this article to quantify by dividing it by 100(ifi). The three dimensions of digital finance coverage, depth of use, and level of digitization are measured by ifi1, ifi2, ifi3respectively.

(4) Control variables.

Widely employed as a fundamental element in economic growth research, capital investment is the focus of this article, which employs the logarithm of the total fixed assets of the entire population as a proxy variable (lnk).

The ratio of total foreign direct investment to regional GDP (fdi) is employed as a proxy variable in this article, as foreign investment is a key factor in the growth of a country's economy and its effect on regional economic development.

Industrial structure. The ratio of tertiary industry output to secondary industry output (structure) is used as a proxy variable in this article, taking industrial structure as a control variable, as prior research has shown that industrial structure has an influence on regional economic growth.

This article examines the role of urbanization in the growth of regional economies, as well as the human capital it can bring to economic progress, using the ratio of urban to total population in each province (urb) as a proxy variable.

At the infrastructure level. Infrastructure has a significant impact on regional economic development, and the convenience of transportation has a positive impact on product entry and exit, as well as attracting funds. This article uses the highway mileage per 10000 people in each province (infrastructure)as a proxy variable.

3.2.2. Data Source

Drawing primarily from two sources, this article utilizes the Digital Finance Research Center of Peking University's digital finance index of 31 provinces in China from 2011 to 2018, and the China Internet Network Information Center (CNNIC)'s Internet provincial development report from the same period to obtain the Internet penetration rate of 31 provinces in the Chinese Mainland. The other macro variables are derived from the Guotai An database and statistical yearbooks.

Table 1: Variable Definition Table.

Variable	Meaning of variables	Measurement method
$lnpgdp$	economic growth	The logarithm of per capita real GDP
ifi	development of digital finance	Digital Inclusive Finance Index/100
$pconsumption$	resident consumption	per capita consumption expenditure
$entrepre$	regional entrepreneurship	Number of urban individual and private enterprise employees/total employment
$internet$	internet penetration rate	Number of Internet users/total number of people in each province
$structure$	industrial structure	Output value of the tertiary industry/output value of the secondary industry
lnk	capital	Fixed assets investment logarithm of the whole society
fdi	foreign direct investment	Foreign direct investment/GDP
urb	urbanization rate	Urban population/total population

Table 1: (continued).

infrastructure	infrastructure level	Highway mileage per 10000 people
supervision	financial regulation	Regional financial regulatory expenditure/added value of the financial industry

4. Benchmark Empirical Regression and Economic Interpretation

4.1. Benchmark Regression of Digital Finance and Economic Growth

Table 2: Descriptive Statistics.

variable	mean value	standard error	minimum value	Maximum value	sample size
lnpgdp	10.76	0.43	9.71	11.85	248
ifi	1.87	0.85	0.16	3.78	248
pconsumption	1.9	0.98	0.47	6.42	248
entrepre	0.19	0.1	0.06	0.61	248
internet	0.49	0.12	0.24	0.78	248
structure	0.04	0.04	0.005	0.21	248
lnk	9.4	0.88	6.25	10.96	248
fdi	0.34	0.35	0.05	1.86	248
urb	0.56	0.13	0.22	0.9	248
infrastructure	44.11	42.63	5.14	284.25	248
supervision	0.05	0.048	0.011	0.28	248

A Hausman test was conducted on the model in question to verify the precision of the regression results and to strengthen the research outcome of this article. The chi square statistic of the test was 21.95, with a P-value of 0.0012, which was less than 0.01, signifying that the original hypothesis was rejected at a 1% significance level. As a result, Table 3 in this article displays the test findings using a fixed effects model.

Table 3: Hausman test results.

Hausman test	
Chi2(6)	21.95
P	0.0012

Table 4: The Impact of Digital Finance on Regional Economic Growth: Benchmark Regression.

explanatory variable	(1)	(2)	(3)	(4)	(5)
ifi	0.1996902*** (0.000)	0.0859535*** (0.000)			
*ifi*1			0.0978387*** (0.000)		
*ifi*2				0.0675488*** (0.000)	
*ifi*3					0.0247153*** (0.000)

Table 4: (continued).

lnk		0.1614912***	0.1706248***	0.1885813***	0.1581469***
		(0.000)	(0.000)	(0.000)	(0.000)
structure		-5.065934**	-4.812887**	-4.600543*	-7.521008***
		(0.031)	(0.041)	(0.059)	(0.000)
fdi		0.6709343***	0.6336178**	.6423069**	1.026843***
		(0.009)	(0.014)	(0.016)	(0.000)
urb		1.587582***	1.295821***	1.968734***	2.823373***
		(0.000)	(0.000)	(0.000)	(0.000)
infrastructure		0.0009625	0.0008013	0.0007706	0.0014956*
		(0.190)	(0.277)	(0.310)	(0.065)
Constant term	10.39082***	8.109772***	8.196206***	7.680032***	7.488416***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R^2	0.3298	0.8016	0.7558	0.7994	0.8705
Time/region effect	control	control	control	control	control

Significant values at the 1%, 5%, and 10% levels are denoted by ***,**,* respectively, with P values in parentheses.

The benchmark regression model employed a fixed effects model to evaluate the effect of digital finance on regional economic growth. To begin with, the model was evaluated without taking into account the endogeneity. Table 4.(1) reveals a positive regression coefficient of 0.20 for digital finance on economic growth, which was significant at the 1% level, when accounting for the "time province" fixed effect. This implies that for every 1% rise in digital finance, economic growth would increase by 0.2%. The results of the regional economic growth, even after taking into account the variables in Table 4(2) that are pertinent, remain significant due to the expansion of digital finance.

For other control variables, although there are differences in the magnitude of coefficient values among different models, the significance difference is not significant. Evident is the positive influence of capital investment, foreign direct investment, and urbanization rate on economic growth; capital investment has brought capital to various provinces, optimized regional resource allocation, and supplied the necessary funds for economic growth. Additionally, foreign direct investment is noteworthy at the 1% level, and has a positive effect on economic growth. Evident is the stimulating effect foreign investment has on the local economy, taking advantage of local advantages for growth. The urbanization rate can bring human capital to labor mobility in various regions, which is conducive to economic growth. The detrimental effect on economic growth of China's service-oriented industrial structure, which is reflected in the ratio of the tertiary industry's output value to that of the secondary industry, could be the cause. With the development of China's economy, excessive service-oriented nature is particularly evident, which has an impact on the real economy and is therefore detrimental to economic growth. The possible reason why infrastructure is not significant in the regression is that the infrastructure construction in each region has a long-term nature and needs to bring changes to the regional economic development over a long period of time. The local economy can be advanced through the enhancement of regional infrastructure, as evidenced by pertinent facts.

The Digital Finance Research Center of Peking University has released the Digital Finance Inclusive Finance Index, a three-part measure of coverage breadth, use depth, and digitization level. Consequently, this article will continue to investigate the influence of digital finance on regional economic development from a multifaceted perspective. To gauge the breadth of coverage, use depth, and digitization level, the fixed effects model was utilized for estimation. The estimation

results, shown in Tables 4(3),(4), and (5), demonstrate that digital finance's three dimensions have a beneficial effect on regional economic growth, especially at the 1% level.

The initial dimension is the broadness of digital finance coverage. The coverage of digital finance is mainly composed of account coverage, emphasizing the breadth of digital financial services. The expansion of regional financial services can significantly foster regional economic growth, necessitating regions to vigorously back the building of financial infrastructure to broaden digital finance's reach and propel economic growth. The second factor to consider is the extent to which digital finance is being utilized. The utilization of digital finance is largely comprised of payment, credit, monetary fund, insurance, investment, credit and other activities, which is indicative of the effective demand for financial services. The utilization of digital finance, as suggested by the results, has a considerable influence on regional economic growth, suggesting that efficient financial products and tools can be employed to stimulate regional economic growth after meeting regional demand. This necessitates local governments to popularize financial knowledge, enhance financial literacy, guarantee the precise creation of financial products and tools, and more effectively advance regional economic development. The degree of digital support services, gauged from four facets - mobility, affordability, creditability, and convenience - is the third dimension of digital development. This level stands as a measure of its own. The level of digital development can reduce the cost of residents accessing financial services and improve efficiency, making it more convenient for them to enjoy financial services, thereby effectively stimulating regional economic growth. Provinces must strive to promote digital aid, utilize cutting-edge technologies such as big data, 5G, and blockchain, and bolster digitalization to bolster the real economy, thus promoting regional economic growth.

4.2. The Impact of Digital Finance on Economic Growth in the Eastern, Central, and Western Regions

Table 5: The Impact of Digital Finance on Regional Economic Growth: A Regional Test.

explanatory variable	Overall effect		
	eastern	central	west
ifi	0.0957959***	0.0657532***	0.0389553***
	(0.000)	(0.000)	(0.001)
Control variable	Yes	Yes	Yes
Constant term	7.928821***	8.163553***	7.54288***
	(0.000)	(0.000)	(0.000)
R^2	0.7256	0.9150	0.8125
Time/region effect	control	control	control
explanatory variable	Structural effect: coverage breadth		
	eastern	central	west
$ifi1$	0.1124767***	0.0745981***	0.0397345***
	(0.000)	(0.000)	(0.003)
Control variable	Yes	Yes	Yes
Constant term	8.087266***	8.207724***	7.519275***
	(0.000)	(0.000)	(0.000)
R^2	0.6462	0.9089	0.8045
Time/region effect	control	control	control
explanatory variable	Structural effects: using depth		
	eastern	central	west

Table 5: (continued).

$ifi2$	0.0747192[***] (0.000)	0.0470459[***] (0.000)	0.0217741[***] (0.026)
Control variable	Yes	Yes	Yes
Constant term	7.485113[***] (0.000)	7.739391[***] (0.000)	7.290368[***] (0.000)
R^2	0.7819	0.8948	0.8039
Time/region effect	Yes	Yes	Yes
explanatory variable	Structural effects: digital level		
	eastern	central	west
$ifi3$	0.0327374[***] (0.000)	0.0189313[***] (0.001)	0.0136726[***] (0.003)
Control variable	Yes	Yes	Yes
Constant term	7.307441[***] (0.000)	7.713706[***] (0.000)	7.370292[***] (0.000)
R^2	0.8690	0.9004	0.8303
Time/region effect	control	control	control

Significant values of 1%, 5%, and 10% are denoted by ***,**,* respectively, with P values in parentheses.

This paper divides 31 provinces in the Chinese Mainland into three distinct regions: eastern, central, and western. Investigate if disparities exist in the consequences of the aggregate digital finance index and its three components on economic expansion in distinct areas. In the eastern region, eleven provinces are present, such as Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Hainan, and Liaoning; the central region, with 8 provinces, is Shanxi, Heilongjiang, Jilin, Anhui, Jiangxi, Henan, Hubei, and Hunan; and the western region, with 12 provinces, encompasses Inner Mongolia, Guangxi, Sichuan, Chongqing, Guizhou, Yunnan, Shaanxi, Gansu, Qinghai, Ningxia, Xinjiang, and Tibet.

Table 5 reveals the regression results, which take into consideration the overall index of digital finance, its coverage breadth, depth of use, and digitalization level, in relation to the eastern, central, and western regions. It is evident that digital finance has a considerable effect on regional economic growth, and from a coefficient perspective, the eastern region is particularly affected. Regression results of various dimensions of digital finance on various regions demonstrate the same performance as that of the entire sample; that is, all aspects of digital finance have a substantial effect on economic growth, particularly in the eastern region, at the 1% level. For the developed eastern region, traditional finance is more mature and financial infrastructure is more complete. The development of digital finance in the eastern region provides richer channels for residents' consumption and regional entrepreneurship, and has a more significant impact on economic stimulus. Regression coefficients have revealed a widening digital divide between East, West, and Central regions, despite the fact that digital finance has enabled local economic growth in comparison to the underdeveloped central and western regions. To sum up, the regression results are in agreement with our expectations, as opposed to the basic regression. The regression outcomes of the control variables are in harmony with the fundamental regression results, thus rendering the specific outcomes visible.

4.3. Endogeneity

This article endeavors to empirically assess the influence of digital finance on regional economic development. Although relevant variables were controlled on this basis, endogeneity issues still

inevitably exist. Firstly, the development of digital finance has the characteristics of traditional finance, which has a reverse causal relationship with economic growth; Secondly, in the model, we have controlled for relevant variables that affect economic growth, but it is still inevitable to omit variables. For endogeneity issues, this article attempts to alleviate them through the following methods:

Drawing upon Xie Huali's (2018) [14] methodology, the internet penetration rate is a key element of digital finance, which is closely linked to digital finance. Therefore, the internet penetration rate meets the correlation requirements of digital finance development tool variables. In addition, after controlling for relevant variables, there is no direct relationship between internet penetration rate and regional economic growth, which meets the requirement of exclusivity. Based on the above analysis, this paper chooses the Internet penetration rate of 31 Chinese Mainland provinces that year and the lag time of digital finance as the instrumental variables of the development of digital finance in order to alleviate the endogenous problem.

Results of the instrumental variable demonstrate that no feeble instrumental variables or recognition issues exist, and the instrumental variable is efficacious. From the regression results in Tables 6a and 6b, it can be seen that both the internet penetration rate and digital finance lag for a period, and the results are very significant, with little difference from the benchmark regression results, indicating that digital finance has a significant effect on improving regional economic growth.From the viewpoint of digital finance's dimensions, the development outcomes of digitalization are of no consequence. The efficiency of residents' access to financial services and the convenience of costs are two factors that could account for this, but both of these factors have a lagged effect, and the evident promoting effect has not yet been demonstrated.

Table 6a: The impact of digital finance on regional economic growth: endogeneity issues.

explanatory variable	Tool variable: Internet penetration rate			
	Model1	Model2	Model3	Model4
ifi	0.0805614*** (0.002)			
$ifi1$		0.0798857***(0.002)		
$ifi2$			0.1030093*** (0.003)	
$ifi3$				0.0588847*** (0.003)
lnk	0.0802305** (0.020)	0.1046421*** (0.000)	0.0802305** (0.020)	0.1008411*** (0.000)
$structure$	-8.369868** (0.032)	-7.318172** (0.048)	-8.208149** (0.037)	-8.208149** (0.037)
fdi	0.9425326** (0.028)	0.8807498** (0.034)	0.9425326** (0.028)	1.002304** (0.023)
urb	3.02852*** (0.000)	2.996672*** (0.000)	3.095223*** (0.000)	3.095223*** (0.000)
$infrastructure$	0.0032748*** (0.000)	0.0035373*** (0.000)	0.0034716*** (0.000)	0.0034716*** (0.000)
Constant term	7.810562*** (0.000)	7.778139*** (0.000)	7.963669*** (0.000)	7.730443*** (0.000)
R^2	0.9219	0.9233	0.9165	0.9153
Time/region effect	control	control	control	control

Significant values at the 1%, 5%, and 10% levels are denoted by ***,**,* respectively, with P values in parentheses.

Table 6b: The impact of digital finance on regional economic growth: endogeneity issues.

explanatory variable	Instrumental variable: digital finance lags for one period			
	Model 1	Model 2	Model 3	Model 4
ifi	0.0388898** (0.032)			
$ifi1$		0.0412894**(0.017)		
$ifi2$			0.0518699** (0.018)	
$ifi3$				0.0158419 (0.298)
lnk	0.1317002*** (0.000)	0.132114*** (0.000)	0.1223107*** (0.000)	0.143904 (0.000)
$structure$	-5.556656 (0.145)	-5.527105 (0.144)	-5.899196 (0.123)	-4.958631 (0.196)
fdi	0.7160084* (0.092)	0.7139137* (0.093)	0.7300581* (0.085)	0.6718149 (0.116)
urb	3.144901*** (0.000)	3.122788*** (0.000)	3.137971*** (0.000)	3.201194 (0.000)
$infrastructure$	0.0040083*** (0.000)	0.004*** (0.000)	0.0039093*** (0.000)	0.0041929*** (0.000)
Constant term	7.472328*** (0.000)	7.485344*** (0.000)	7.553665*** (0.000)	7.34404*** (0.000)
R^2	0.9210	0.9215	0.9197	0.9193
Time/region effect	control	control	control	control

Significant values at the 1%, 5%, and 10% levels, denoted by ***,**,* respectively, are indicated by parentheses with P values.

5. Research Conclusions and Recommendations

Digital finance has rapidly advanced in recent years, and this new category of financial services has had a big impact on China's economic expansion. Does digital finance, as an emerging model of financial industry, have a promoting effect on the regional economy? Examining panel data from 31 provinces of the Chinese Mainland from 2011 to 2018 this paper empirically tests the impact of digital finance on economic growth in all parts of China, based on theoretical analysis. Additionally, it examines the solutions to endogenous issues. The primary conclusions are: Digital finance has a considerable stimulating effect on regional economic growth, and all three facets of digital finance are beneficial to economic growth. To reduce the endogeneity issue of the model, the internet penetration rate and digital finance lag of each province were employed as instrumental variables, and the outcomes were uniform. Moreover, digital finance has exhibited some disparities in the eastern, central, and western parts of China, with general positive effects, yet has a more significant effect on economic growth in the eastern region. This study offers an empirical foundation for the emergence of digital finance in China and conducts a robustness analysis of how well digital finance promotes regional economic growth.

Recommendations for the advancement of digital finance in China, as seen in this article, are to hasten the building of regional financial infrastructure and foster a unified development of digital finance in different regions. The Chinese government should provide greater financial support to the central and western regions, bridging the divide between their progress and that of the eastern region, broadening the reach and breadth of digital finance in these regions, and augmenting the support services of digital finance, due to the economic growth taking place in various parts of

China.In the central and western areas, where financial access is both inefficient and costly, it is possible to construct extra service outlets and use computer technology to enhance the efficiency and reduce the cost of financial services; conversely, in the eastern region, with its wide-reaching coverage, digital financial innovation products can be supplied to meet the financial needs of different groups.Our goal is to bring about a unified growth of digital finance across China's regions, taking into account both supply and demand.

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