

Research Article

Impact of Digital Inclusive Finance on Rural High-Quality Development: Evidence from China

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Digital inclusive finance not only reduces the threshold of rural financial services but also plays an important role in promoting the rural economy. Under the background of the digital economy in China, we studied how digital inclusive finance affects the high-quality development of the rural economy. For this purpose, we assembled the provincial panel data from 2009 to 2018 and constructed an index system of rural high-quality development and then calculated its index using the entropy weight method. FE regression model and RE regression model were employed for empirical analysis, and we constructed a nonlinear regression model to investigate the nonlinear relationship as well. Furthermore, systematic GMM and iterative GMM were used to solve the endogenous problem. We found that digital inclusive finance plays a significant and positive role in promoting rural high-quality development, mainly through the channel of economic efficiency, urban and rural structure, green ecological development, harmony of people's livelihood, and innovative development potential. Each subdimension of digital inclusive finance has a positive impact on rural high-quality development to different degrees. There is also a direct nonlinear relationship between the core variables, which act as a disincentive in the initial stage and boost after reaching a certain inflection point. Therefore, it is recommended to increase the construction of rural digital infrastructure, improve the digitalization of inclusive finance with the help of digital technologies such as cloud computing, and expand the breadth and depth of digital inclusive finance services in rural areas, especially in economically underdeveloped provinces and cities, to effectively promote the comprehensive and high-quality development of rural areas.

1. Introduction

The 19th CPC National Congress clearly judged that China's economy has shifted from high-speed growth stage to high-quality development stage. High-quality development (HQD) means that the traditional economic model should gradually transition to an innovation-driven economic growth model dominated by smart economy and industrial upgrading. HQD is not only a requirement for economic development but also a general requirement for all aspects of society, culture, and ecology [1]. A series of national policies and measures emphasize not only the comprehensive HQD but also urban-rural integration. Among them, the rural

high-quality development (RHQD) is the key point, because China made a major policy of giving priority to the development of industry and cities based on the domestic and international situation in the early stage of reform and opening-up. After 40 years of development, although industrialization and urbanization have been developed, it has objectively led to the widening gap between agriculture and industry and rural areas and cities, which are inconsistent with the concept of achieving common prosperity for all people at this stage. RHQD is also the development goal of "agriculture, rural areas, and farmers" as clearly stated in No. 1 central document. It is an important factor for the high-quality implementation of the rural revitalization strategy

and the improvement of the urban-rural integration development mechanism. Therefore, more attention should be paid to the high-quality development of rural areas under the new situation.

How to promote the RHQD has become the focus of academic circles. Digital inclusive finance (DIF) has become a “lubricant” to promote economic efficiency. Supported by information technology and big data, the digital transformation has driven innovation in traditional financial institutions and sectors, introducing new financial services such as online credit, mobile payment, and e-commerce supply chain finance, reshaping the business model and format, and greatly improving economic efficiency and productivity [2]. DIF, a new financial model, has increasingly become an indispensable part. On the one hand, with the help of Internet technology, DIF can promote economies of scale, reduce cross-regional supply-demand mismatch, and make the economy develop continuously. On the other hand, it can promote the balanced development of financial services in remote areas. It can also reduce the financing threshold of vulnerable groups [3]. DIF received national attention at the G20 Summit in 2016, and then, the Digital Industry Research Institute of Peking University released China’s provincial DIF index. At the same time, many other developing countries also attach great importance to relevant research. For example, some studies have proved that DIF enables people to expand access to financial services and advances economic progress in rural areas [4]; Myovella et al. have proved that digitalization positively contributes to economic growth in sub-Saharan Africa (SSA) as well [5]. DIF plays an important role in economic growth and promotes economic development in developing countries and emerging economies. DIF can help to improve the social welfare of loan groups, provide a wide range of employment opportunities for society, and promote sustainable economic growth [6, 7].

Most of the studies focus on the impact of DIF on macroeconomic growth. People distributed in vast rural areas lack access to digital financial services. Hence, the key direction of DIF should be in rural areas. Serving rural long-tail people who really need financial services should become the due meaning of academic research, which is also a relatively neglected research field at present. Therefore, we attempt to study these questions.

2. Literature Review

The literature review is mainly carried out from three aspects: digital inclusive finance, high-quality development, and the impact of DIF on HQD.

2.1. Digital Inclusive Finance. (1) Development and Reform of DIF. In recent years, breakthroughs in computer, cryptography, big data, and other technologies have promoted the rapid development of DIF [8]. DIF means that a series of advanced information technologies are used in the financial area to improve the original way of information exchange, so

that all social groups can enjoy financial products and services equally and efficiently, to achieve the purpose of inclusive finance. Breakthroughs in disruptive technologies such as computers and cryptography have promoted the rapid development of DIF [9]. DIF has changed the business processing of traditional finance, reduced the threshold and transaction cost of financial services, expanded the scope of financial services, improved the profits of financial institutions, and made refinancing market more active [10]. With the innovation of financial products, services, and systems, DIF solves the mismatch of fields, stages, and attributes of traditional finance and improves the efficiency of the financial industry [11]. (2) Influencing Factors of DIF. The study found that rural financial infrastructure, development of digital technology, social environment, personal characteristics, and financial literacy of farmers will have an impact on DIF [12]; the level of financial education, trust, and preference transparency of farmers will affect their use of DIF [13]; social media software and applications have promoted farmers’ participation, depth, and breadth of use of DIF [14].

2.2. High-Quality Development

2.2.1. Connotation of HQD. New agricultural production factors such as technology and labour capital should be introduced to make modern agriculture the driving force of economic growth. Resource-based areas should reflect the requirements of “quality” in the process of realizing the growth of “quantity.” High-quality growth should consider factors such as residents’ income and health in addition to economic efficiency. Modern agricultural diversity system can help HQD. In the period of economic transformation, attention should be paid to the economic quality growth. High-quality development should consider the dimensions of supply-demand, efficiency, and openness. After the proposal of China’s rural revitalization strategy, several scholars shift their research perspectives to rural areas. Most of them believe that we should deeply understand the strategic connotation of rural revitalization and strengthen rural industry, infrastructure, ecological environment, civilization, and government governance from the internal relationship of central policy and major goals [15–20].

2.2.2. Level Measurement of HQD. In terms of research methods and index construction, Mlachila et al. construct the economic growth quality index of developing countries, which included the internal and social aspects of growth. Zou Yinan and Zhao Junhao use Delphi and entropy method to measure China’s level of ED from the five aspects of “innovation, coordination, green, openness, and sharing” based on the connotation of changing the mode of economic development. Liu Huajun measures total factor productivity and empirically explored its impact on the HQD of regional economy using the secondary assignment procedure. Tang

Juan et al. analyse the difference in economic development quality among provinces using the DG coefficient model. Sun Yan and others construct the index of HQD of agriculture using the multi-objective comprehensive evaluation model from the perspective of agricultural industry innovation, coordination, green development, and openness. Zhang Hong et al. use micro-survey data to measure the HQD level of rural areas in Shaanxi Province from the aspects of employment quality, education environment, pension security, food safety, health care, and ecological environment [21–25].

2.3. Impact of DIF on HQD

2.3.1. IF Affects Economic Development. In terms of specific research, Kassi uses PCA to measure China's inclusive finance index; Ana et al. measure the level of IF in 30 provinces and cities. The results show that China's provincial inclusive finance level was generally low. Some scholars hold the opposite view. For example, Evans and Alexis measure the level of IF in various regions of China using subdivision indicators and found that the level is different [26–28].

2.3.2. DIF Affects Economic High-Quality Development. In terms of DIF, Ozili believes that DIF promotes the economic development of developing countries and emerging economies. DIF has a positive role in improving technological innovation and broadening employment channels; Yu Chaoyi et al. empirically verify that DIF can ultimately improve QED by reducing the income gap and improving the efficiency of capital allocation; Hu, Liu, and Peng believe that DIF can help to improve the living standards and social welfare of loan groups, provide a wide range of employment opportunities for society, and promote sustainable economic growth. Technological innovation has promoted traditional financial services and the launch of emerging digital financial services such as online loans, which makes the target customers directly point to the socially vulnerable groups, improves the transaction frequency and convenience in remote areas, increases the possibility of saving, and increases the bank credit of small- and medium-sized enterprises [29–33].

Previous literature has achieved fruitful results, which has important reference significance. However, there are still some problems not involved, which is also the direction of our further research. Therefore, we will proceed from the following aspects: (1) starting from the latest national development concept, based on the connotation of common prosperity, we will comprehensively define the “comprehensive and high-quality rural development” and build a comprehensive index system covering five dimensions from the theoretical level. All index data are drawn from various yearbooks, making the data highly available and easy to measure and compare. It is also convenient to depict regional differences; (2) using the provincial macro-panel data, the entropy weight method is used to calculate the overall RHQD index of 31 provinces and cities in China to compare the provincial development trend and regional differences; (3)

building panel econometric model (FE and RE model) is used to analyse the impact and mechanism of DIF on RHQD; (4) further instrumental variables are introduced, and systematic GMM estimation is used to solve the endogenous problem; and (5) from the perspective of innovative rural DIF development, we propose recommendations to promote the development of rural areas.

3. Theoretical Framework and Hypothesis

3.1. Impact of DIF on RHQD. Impact of DIF on RHQD comes from five aspects. First, DIF simplifies the cumbersome business process of traditional finance, enhances the mobilization of savings in rural areas, speeds up the formation and accumulation of rural capital, provides financial support for rural enterprises, reduces the financing constraints of farmers and enterprises, improves the efficiency of financial institutions serving the rural economy, stimulates rural consumption and investment, and thus promotes the quality and efficiency of rural economic development. Second, DIF has optimized the allocation of resources in rural areas and alleviated the imbalance of urban and rural development. DIF reduces threshold and cost of financial services by alleviating the information asymmetry in financial transactions, covering rural areas and low-income people. By meeting the needs of long-tail people, namely remote rural customers, it effectively improves the imbalance between supply-demand and resource mismatch in the financial market and realizes the flow and full utilization of financial resources. Third, DIF has improved rural ecological capital and rural environmental quality through the path of technological progress and income increase effect. The “IPAT” model verified the three influencing factors of capita environment: population size, technical level, and affluence. On this basis, DIF has achieved remarkable results in governing the environment through financial technology [34]. At the same time, DIF has increased farmers' income, reduced the negative impact on per capita environment, and then improved environmental quality; therefore, DIF promotes the green ecological development. Fourth, the improvement of rural medical care, health care, minimum living security, and pension cannot be separated from the support of funds. Although financial funds have made transfer payments in these fields to a certain extent, they have only achieved basic security. If we want to further improve the rural situation, we must have the support of external funds. Based on its inclusive characteristics, DIF has widened the financing channels of township governments, so that the funds can be used to improve rural people's livelihood in time and then promote harmony. Fifth, through the introduction of advanced digital technology, DIF has changed the traditional types of financial products and service modes, promoted the transformation and upgrade of rural enterprises, provided financial support for enterprise innovation and R&D, and improved the innovation of rural areas.

Based on the above analysis, we will develop the following hypotheses:

- (1) H1: DIF plays a positive role in promoting RHQD
- (2) H11: DIF can promote the quality and efficiency of rural economic development
- (3) H12: DIF optimizes the urban-rural structure
- (4) H13: DIF can promote the green ecological development of rural areas
- (5) H14: DIF has improved the rural style and the harmony of people's livelihood
- (6) H15: DIF has improved the innovative development potential of rural areas

3.2. Analysis on the Impact of Different Dimensions of DIF on RHQD. The development of DIF is multidimensional, which can be reflected not only in the coverage, depth, and digitization of finance but also in payment, insurance, and credit services [35]. Different dimensions of DIF play different roles in RHQD. Unlike traditional finance, DIF has cross-regional restrictions. With the help of the Internet, rural users can get financial services by binding electronic accounts of bank cards; after the guarantee of hardware facilities, the types, total amount, and activity of rural users using financial services are gradually increasing; the enrichment of third-party payment functions has broadened the financial management and financing channels of rural users; the degree of credit has better reflected the value of DIF and improved the efficiency of financial services in rural areas; insurance business not only makes the economic losses caused by accidents compensated but also enables the applicant's idle funds to obtain the payment of expected insurance benefits, increases investment channels, promotes the stable development of rural areas, and maintains friendly social order. The above factors have promoted the RHQD in their respective fields.

Based on the above analysis, we will develop the following hypotheses:

- (1) H21: coverage of DIF has a positive impact on RHQD
- (2) H22: depth of the use of DIF has a positive impact on RHQD
- (3) H23: digitization degree of DIF has a positive impact on RHQD
- (4) H24: payment business of DIF has a positive impact on RHQD
- (5) H25: credit business of DIF has a positive impact on RHQD
- (6) H26: insurance business of DIF has a positive impact on RHQD

3.3. Nonlinear Effect of DIF on RHQD. Financial theory research shows that role of financial development on economic growth is not invariable. Developing countries often have the phenomenon of "financial repression" of interest rate regulation, which makes funds unable to effectively support economic growth. The path of deregulation of interest rates and financial liberalization is

conducive to increasing the savings rate and investment, so as to promote economic growth. However, developing countries do not have the conditions of complete information and complete market [36]. Financial liberalization cannot achieve the effect of optimal allocation of resources, but increase financial risks. Combined with the theory of "scale effect" and "diminishing marginal utility," we believe that the effect of DIF on RHQD at different stages is also nonlinear. In the early stage of DIF, the infrastructure of digital finance was imperfect, the intermediary function was underdeveloped, the social idle funds absorbed by financial institutions were limited, the capital cost was high, and the small-scale funds leads to the slow accumulation of material capital, human capital, and technological progress, which has a limited role. In the process of development, due to the existence of "diminishing marginal utility," role of financial development in promoting high-quality growth first increases and then decreases. When digital financial capital reaches a certain scale, the marginal utility of input capital is the largest, which has the effect of less input and more output.

Based on the above analysis, we develop the following hypotheses.

H3: there is a nonlinear relationship between the impacts of DIF on RHQD.

4. Methods and Models

4.1. Entropy Weight Method. We use the entropy weight method to measure the overall high-quality development level of rural areas. The specific calculation steps are as follows.

- (1) Standardized Treatment of Indicators. The extreme value method is used to deal with the indicators of the RHQD level in a dimensionless way.

$$\left\{ \begin{array}{l} \frac{X_{ij} - \min(X_{ij})}{\max(X_{ij}) - \min(X_{ij})}, X_{ij} \text{ is a positive indicator,} \\ \frac{\max(X_{ij}) - X_{ij}}{\max(X_{ij}) - \min(X_{ij})}, X_{ij} \text{ is a negative indicator,} \end{array} \right. \quad (1)$$

where i and j denote the province and year, respectively, X_{ij} denotes the original index data, Y_{ij} denotes the standardized data, $\max(X_{ij})$ denotes the maximum value of X_{ij} , and $\min(X_{ij})$ denotes the minimum value of X_{ij} .

- (2) The information entropy (E_{ij}) of Y_{ij} is calculated as follows:

$$E_{ij} = \ln(n) \sum_{i=1}^n \left[\left(\frac{Y_{ij}}{\sum_{i=1}^n Y_{ij}} \right) \ln \left(\frac{Y_{ij}}{\sum_{i=1}^n Y_{ij}} \right) \right]. \quad (2)$$

- (3) The weight W_j of Y_{ij} is calculated as follows:

$$W_j = (1 - E_j) / \sum_{j=1}^m (1 - E_j). \quad (3)$$

- (4) Dimension layer index is calculated. The target weighting method is used to calculate the indexes of different dimensions.

$$Z_{is} = \sum_{i=1}^q W_j Y_{ij}, \quad (4)$$

where Z_{is} denotes the index of s criterion layer in the i th province and city, and q is the indicators contained in the criterion layer.

- (5) The comprehensive RHQD index F_i of each province is calculated.

$$F_i = \sum_{s=1}^s Z_{is}, \quad (5)$$

where F_i denotes the RHQD level in different provinces and cities, and the larger the F_i , the higher the RHQD.

4.2. Models. Fixed-effects regression model (FE model) and random-effect regression model (RE model) are employed for empirical analysis, and we also construct a nonlinear regression model to investigate the nonlinear relationship between DIF and RHQD. Furthermore, the system GMM is used to solve the endogenous problem [37].

4.2.1. Regression Model Selection. We take RHQD as explanatory variable, DIF as core explanatory variable, labour resources, natural disasters, openness, and financial support as control variables, build panel model, and use robust standard error method for modelling. The panel model involves three models: mixed pool model, FE model, and RE model. First, the model test is carried out to find out the optimal model. It can be seen from Table 1 that F test shows a significance of 5% level, $f(30208) = 38.303$, and $P < 0.05$, which means that the FE model is better than the pool model. The BP test shows a significant level of 5%, $\chi^2(1) = 218.441$, and $P < 0.05$, which means that the RE model is better than the pool model. The Hausman test shows a significant level of 5%, $\chi^2(5) = 77.487$, and $P < 0.05$, which means that the FE model is better than the RE model (see Table 2).

Based on the above analysis, we adopt FE model, and model is set as follows:

$$Rhq_{i,t} = \alpha_0 + \beta_1 Di f_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t}, \quad (6)$$

where i refers to the individual, i.e., all provinces and cities; t denotes time; α_0 is a constant term; μ_i indicates individual fixed effect and time effect; and $\varepsilon_{i,t}$ is the error term.

4.2.2. Subindex Regression Model Selection. DIF covers three secondary dimensions: financial coverage breadth (BRE), financial use depth (DEP), and digital degree (DIG). The secondary dimension also includes different forms such as payment (PAY), insurance (INS), and credit (CRE). To deeply investigate the heterogeneous role of different subindexes, we empirically verified the effects of financial coverage breadth, financial use depth, digitization, payment, insurance, and credit on the RHQD. Taking 6 subindexes as explanatory variables, the panel model was constructed using robust standard error. Specific model settings are as follows:

$$\begin{aligned} Rhq_{i,t} &= \alpha_0 + \beta_1 Bre_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Rhq_{i,t} &= \alpha_0 + \beta_1 Dep_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Rhq_{i,t} &= \alpha_0 + \beta_1 Dig_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Rhq_{i,t} &= \alpha_0 + \beta_1 Pay_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Rhq_{i,t} &= \alpha_0 + \beta_1 Ins_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Rhq_{i,t} &= \alpha_0 + \beta_1 Cre_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t}. \end{aligned} \quad (7)$$

4.2.3. Regression Model Selection of Different Channels. RHQD index was constructed from five dimensions. Considering differences in different dimensions affected by DIF and to investigate different action channels and provide targeted differentiated policies for decision-makers, we took economic development (ECO), urban-rural structure optimization (STR), green ecological development (GRE), people's livelihood harmony (CIV), and innovative development potential (INO) as the explanatory variables. Specific model settings were as follows:

$$\begin{aligned} Eco_{i,t} &= \alpha_0 + \beta_1 Di f_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Str_{i,t} &= \alpha_0 + \beta_1 Di f_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Gre_{i,t} &= \alpha_0 + \beta_1 Di f_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Civ_{i,t} &= \alpha_0 + \beta_1 Di f_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t} \\ Ino_{i,t} &= \alpha_0 + \beta_1 Di f_{i,t} + \beta_2 Lab_{i,t} + \beta_3 Gov_{i,t} + \beta_4 Ope_{i,t} \\ &\quad + \beta_5 Nat_{i,t} + \mu_i + \varepsilon_{i,t}. \end{aligned} \quad (8)$$

TABLE 1: Variable definition and sample descriptive statistics.

Variable category	Variable name	Definition and assignment
Explained variable	Digital inclusive finance (DIF)	Coverage, depth, and digitalization of finance
Explanatory variable	High-quality rural development (RHQD)	ECO, STR, GRE, CIV, and INO
Control variables	Labour resources (LAB)	Employment of township enterprises
	Government support (GOV)	Proportion of investment in agricultural comprehensive development projects in GDP expenditure
	Open program (OPE)	Proportion of foreign investment in GDP
	Natural disaster (NAT)	Number of natural disasters in the region

TABLE 2: Model test.

Test type	Test purpose	Test value	Test results
<i>F</i> Test	Comparison between FE model and pool model	$F(30, 208) = 38.303, p = 0.001$	FE model
BP test	Comparison between RE model and pool model	$\chi^2(1) = 218.441, p = 0.001$	RE model
Hausman test	Comparison between FE model and RE model	$\chi^2(5) = 77.487, p = 0.001$	FE model

4.2.4. *Selection of Nonlinear Regression Model.* We add the quadratic term variable of DIF on the basis of the linear model, i.e., model (6), and constructed the following nonlinear model:

$$Rhq_{i,t} = \alpha_0 + \beta_1 Di f_{i,t} + \beta_2 Di f_{i,t}^2 + \beta_3 Lab_{i,t} + \beta_4 Gov_{i,t} + \beta_5 Ope_{i,t} + \beta_6 Nat_{i,t} + \mu_i + \varepsilon_{i,t}. \quad (9)$$

4.2.5. *Model Estimation of Endogenous Problems.* Considering the limitations of short panel and the endogenous problems caused by the correlation between explanatory variables and disturbance terms, we constructed the instrumental variable Lag_Dif as shown in formula (10). Instrumental variables were strongly correlated with endogenous variable, DIF, and weakly correlated with the explained variable, RHQD.

$$Lag_Dif = Di f_{t-1} \times Di f_{t-n}, \quad (10)$$

where $Di f_{t-1}$ denotes the digital inclusive financial index lagging by one order, $Di f_{t-1}$ represents the first-order difference in time of the digital inclusive financial index. Systematic GMM and iterative GMM in the panel model were used for regression estimation. The specific model is shown in the following formula:

$$Rhq_{i,t} = \alpha_0 + \beta_1 Di f_{i,t-1} + \beta_2 Di f_{i,t} + \beta_3 Lab_{i,t} + \beta_4 Gov_{i,t} + \beta_5 Ope_{i,t} + \beta_6 Nat_{i,t} + \varepsilon_{i,t}. \quad (11)$$

4.3. *Data.* We selected macro-panel data of 31 provinces and cities in China from 2009 to 2018 for our research. The DIF data were adopted from the second issue of ‘‘Peking University Digital finance index’’; most data of RHQD came from China Statistical Yearbook, Regional Economic Statistical Yearbook, Local Statistical Yearbook, and China

Rural Statistical Yearbook, and some data were obtained from the State Food Administration, Wind database, and EPS database. The empirical part adopts Stata 16.0 and SPSS for data and graphics processing.

5. Index System, Variables, and Results

5.1. *Index System of DIF.* Due to the availability of relevant economic data, Chinese scholars mostly use DIF index jointly prepared by Peking University Digital Financial Centre and Ant Financial Services Institution. The index has been published in two issues. To ensure the scientific of index selection, we adopt the second phase of the index for the construction of DIF index system, which is prepared by Guo Feng and other (2020) scholars. This index system is more comprehensive and objective, including the dimensions of finance coverage, use depth, and digitization, with a total of 33 three-level indicators. See Table 3 for details.

In terms of index calculation, firstly, the logarithmic efficacy function was used to deal with the initial index value dimensionless, secondly, the weight of each index was determined by the analytic hierarchy process, and then, the final digital inclusive financial index was calculated by layer-by-layer arithmetic weighted average synthesis model.

5.2. *The Overall Development Trend of DIF in China.* China’s digital inclusive financial index and primary dimension index from 2011 to 2018 are shown in Figure 1. It can be seen that related business of China’s digital inclusive fund has achieved rapid development in 8 years. The composite index increased from 40 in 2011 to 300.21 in 2018, an increase of 86.7%.

As to the subindex, from 2011 to 2015, the digital degree index increased the fastest, but decreased in 2016 and then increased again; the growth rate of digital finance coverage index is moderate; the growth rate of digital finance use depth index was the slowest, but it increased rapidly from 2014 to 2017, which became an important driving force for

TABLE 3: DIF index system.

First-level dimension	Secondary dimension	Specific indicators
Coverage breadth (54.0%)	Account coverage	The number of Alipay accounts, the percentage of Alipay card users, and the average bank account of each Alipay account
	Payment (4.3%)	The number of payments per capita, amount paid per capita, and the number of active users with high frequency account for one or more times of activity
	Monetary fund (6.4%)	The number of Yu Ebao purchases per capita, the amount of Yu Ebao purchased per capita, and the number of Yu Ebao purchases per 10000 Alipay users
	Credit (38.3%)	The number of Internet consumer loans per person, the number of loans per person per capita, and the amount of loans per person per 10000 Alipay adult users
Use depth (29.7%)	Insurance business (16%)	The number of Internet small and micro-business loans of every ten thousand Alipay adult users, the average number of loans for small and micro-operators, and the average loan amount of small and micro-operators
	Investment	The number of insured users, the number of per capita insurance pen, and the insured amount per 10000 Alipay users
	Business (25%)	The number of Internet users who invest in the Internet, the number of investment pens, and the amount of investment per person per 10000 Alipay users
	Credit business (10%)	The number of credit calls per natural person, the number of users using credit-based services per 10000 Alipay users
Digitization (16.3%)	Mobility (49.7%)	Proportion of mobile payment transactions and mobile payment amount
	Affordable (24.8%)	Average loan interest rate of small and micro-operators, average individual loan interest rate
	Credit (9.5%)	The proportion of Ant Credit Pay, the proportion of Ant Credit Pay amount, proportion of sesame credit-free deposit, transactions, proportion of credit-free amount
	Facilitation (16%)	Proportion of user QR code payments, proportion of user QR code payment amount

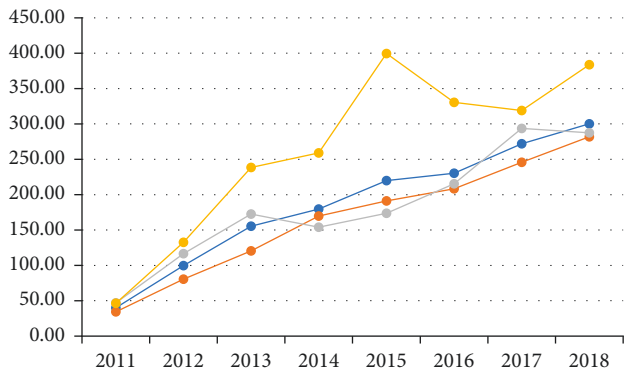


FIGURE 1: DIF index and subindex from 2011 to 2018. (Data source: Peking University DIF index).

the growth of DIF. It decreased in 2018 due to the decline of Monetary Fund Index and investment index caused by policy factors. Overall, the DIF index and subindex have maintained a high growth trend.

5.3. Construction of Comprehensive Rural High-Quality Development Index System. “Comprehensive” means that we should pay attention not only to the economic fields that we used to focus on but also in the comprehensive fields such as political, economic, cultural, and social innovation fields. Combining with the connotation of rural revitalization strategy and common prosperity, taking into account the hierarchy of indicators and the availability of rural data, we selected RHQD index as the explanatory variable. The index system specifically includes five dimensions: rural economic development quality and

efficiency (ECO), urban-rural structure optimization (STR), green ecological development (GRE), rural style and people’s livelihood harmony (CIV), and innovative development potential (INO), with a total of 34 three-level indicators. See Table 4 for details.

5.3.1. Quality and Efficiency of Economic Development. The foundation of common prosperity is economic development. We use “rural residents’ per capita income,” “rural per capita GDP growth,” “rural primary industry growth,” “rural residents’ consumption level,” and “rural residents’ living standard” to measure the quality and efficiency of economic development. Among them, “per capita income of rural residents” is measured by “actual per capita net income of rural residents”; “rural per capita GDP growth rate” is measured by “the ratio of GDP added value of primary industry to rural population”; “growth rate of primary industry” is measured by “the proportion of added value of primary industry in regional GDP”; “consumption level of rural residents” is measured by “consumption price index of rural residents (last year = 100)”; and the “living standard of rural residents” is measured by “Engel coefficient of rural residents’ families,” specifically by “the proportion of total rural food expenditure in total personal consumption expenditure”. “Living standard of rural residents” is a negative indicator, and the rest are positive indicators.

5.3.2. Optimization of Urban-Rural Structure. Goal of common prosperity proposes that in view of the current situation of unbalanced urban-rural development in China, indicators representing optimization of urban-rural

TABLE 4: Rural comprehensive and high-quality development index system.

Dimension	Measure index	Data sources
ECO	Per capita income of rural residents (yuan/person)	Agricultural Statistical Yearbook
	Rural per capita GDP growth (100 million yuan)	China Statistical Yearbook
	Growth rate of primary industry (%)	Regional Statistical Yearbook
	Consumption level of rural residents	EPS database
	Living standard of rural residents (%)	
STR	Per capita disposable income ratio of urban and rural residents	Agricultural Statistical Yearbook
	Industrial and agricultural output rate	National Statistical Yearbook
	Population urbanization rate	Regional Statistical Yearbook
	Urban-rural consumption level rate	
GRE	Forest coverage (%)	State Administration of Grain
	Water-saving irrigation area (1000 HA)	China Statistical Yearbook
	Area of nature reserve (10000 hectares)	Wind database
	Sown area of crops (1000 HA)	Agricultural Statistical Yearbook
	Afforestation area (HA)	
	Agricultural fertilizer input (10000 tons)	
	Total gas production of biogas digester (10000 m ³)	
Solar water heater (10000 m ²)		
Rural carbon emissions (thousand tons of carbon dioxide)		
CIV	Rural population (10000)	Agricultural Statistical Yearbook
	Township (town) health centres	China Rural Statistical Yearbook
	Village doctors and health workers (person)	China Statistical Yearbook
	Township cultural stations (nos.)	
	Sanitary toilet penetration rate (%)	
	Number of elderly care institutions	
	Minimum living security expenditure (100 million yuan)	
	Per capita road area (M ²)	
INO	Investment in fixed assets (100 million yuan)	China Statistical Yearbook
	Number of village committees	Regional Economic Statistical Yearbook
	Education years per capita (years)	Local Statistical Yearbook
	R&D expenditure intensity (%)	China Rural Statistical Yearbook
	Per capita turnover of technology contracts (10000 yuan)	
	Number of patent applications accepted per capita (PCs)	
	Number of employed persons (10000)	

structure must be incorporated into the RHQD system. We mainly measure the optimization level of urban and rural structure through “ratio of per capita disposable income of urban-rural residents”, “ratio of industrial and agricultural output value”, “rate of population urbanization,” and “the ratio of urban and rural consumption level”. Among them, “ratio of per capita disposable income of urban and rural residents” is measured by “ratio of per capita disposable income of urban residents to per capita disposable income of rural residents”; ratio of industrial and agricultural output value “is measured by “ratio of output value of secondary industry to that of primary industry “; “population urbanization rate” is measured by “ratio of urban resident population to rural resident population”; and “urban-rural consumption level ratio” is measured by “ratio of the consumption level of urban residents to that of rural residents,” and consumption level of rural residents = 1. All indicators are positive indicators.

5.3.3. Green Ecological Development. The following indicators are adopted for consideration: total sown area of crops, area of nature reserves, afforestation area, water-saving irrigation area, forest coverage, total gas production

of biogas digesters, and solar water heaters; negative indicators are as follows: chemical fertilizer input and carbon emission. Among them, “forest coverage” refers to the percentage of regional forest area in land area, which reflects the richness of regional ecological environment resources; “chemical fertilizer input” is measured by “amount of agricultural chemical fertilizer (converted into pure amount),” which refers to the amount of chemical fertilizer actually used for agricultural production in a year; and “carbon emission” refers to the carbon emission of each province counted by “rural” as the subdepartment.

5.3.4. Harmonious of Rural and People’s Livelihood. We use “rural population, health centres in town, rural doctors and health workers, township cultural stations, sanitation toilet penetration rate, number of elderly care institutions, minimum living security expenditure, per capita road area, and water penetration rate” to measure the harmony of rural style and people’s livelihood. Among them, “rural doctors and health workers” refers to “the average village health room personnel per 1000 rural population”; “road area per capita” and “water penetration rate” use county-level data. All indicators are positive indicators.

5.3.5. Innovation and Development Potential. We use “the completed amount of fixed assets investment, the number of village committees, the number of years of education per capita, the investment intensity of R&D funds, the turnover of technology contracts per capita, the number of patent applications accepted per capita, and the number of employed persons” to measure the innovation and development potential. Among them, “fixed asset investment completion” is measured by “rural household fixed asset investment completion”; “R&D expenditure intensity” is measured by “the ratio of R&D expenditure of industrial enterprises above designated size to GDP of primary industry”; “per capita technology contract turnover” is measured by “the ratio of technology contract turnover to the GDP of the primary industry”; “number of patent applications accepted per capita” is measured by “ratio of number of patent applications accepted to rural population”; and “number of employed persons” refers to “number of employed persons in rural private enterprises.” All indicators are positive indicators.

5.4. RHQD Index and Growth Rate. To further investigate the specific indexes and growth rates of RHQD, Table 5 lists the indexes and growth rates of 31 provinces and cities and the whole country in 2011 and 2018, respectively (due to limited space, the specific indexes in other years are not listed). It can be seen that the average value of RHQD index increased from 0.972 in 2011 to 1.255 in 2018, with a growth rate of 29.2% and an average annual growth rate of 4.2%. Shanghai and Beijing had a high level of RHQD in the initial 2011, with indexes reaching 1.647 and 1.257, respectively, indicating that Shanghai and Beijing played a leading role in RHQD; Hainan, Liaoning, and Xinjiang are more prominent in other provinces, with the index reaching 1.215, 1.125, and 1.122, respectively; the provinces with poor performance are Tibet and Qinghai, with indexes of 0.630 and 0.736, respectively; the performance of Guangdong is more unusual, with an index of only 0.985. As an economically strong province, its RHQD level ranks only 15 in the country, indicating that RHQD is ignored in the process of pursuing high-speed economic development. By 2018, only Shanghai’s development index is greater than 2, significantly higher than other provinces and cities, indicating its rapid and high-quality rural development. The development index of 17 provinces and cities in China is below the average of the national index.

In terms of growth rate, from 2011 to 2018, the growth rate of RHQD index was faster, including Heilongjiang, Jiangsu, and Shanghai, which were 49.7%, 47.4%, and 43.2%, respectively; Jilin, Gansu, and Liaoning have a slower growth rate. Among them, Jilin and Liaoning have formed a sharp contrast with Heilongjiang, the same three northeastern provinces. Heilongjiang ranks first in growth rate, while Jilin and Liaoning rank last; the growth rate of 16 provinces and cities is lower than the national average, indicating that there is still a long way to go for the comprehensive and high-quality development of rural areas in many provinces and cities.

5.5. Control Variables. In addition to core explanatory variables, there are other variables that will affect the RHQD. Based on the existing literature, we set the following variables as the control variables: labour resources (LAB), government support (GOV), degree of external development (OPE), and natural disasters (NAT). See Table 1 for specific variables and descriptive statistics.

6. Empirical Results

6.1. Basic Regression Results. In our study, the FE model was used for basic estimation. To facilitate comparative analysis, the estimation results of time fixed effect and two-way fixed effect were given at the same time (see Table 6).

From the above table, the core explanatory variable DIF shows the significance of 0.01 level ($t = 3.547$, $P = 0.001$), and the regression coefficient value is $0.113 > 0$, indicating that DIF has a significant positive impact on RHQD. From control variables, labour resources show a significant level of 0.05 ($t = 2.272$, $P = 0.024 < 0.05$), and coefficient is $0.189 > 0$, indicating that labour resources have a significant positive impact on RHQD. Natural disasters show a significant level of 0.05 ($t = -2.170$, $P = 0.031 < 0.05$), and coefficient is $-0.036 < 0$, indicating that natural disasters have a significant negative impact on RHQD. The opening-up process shows a significant level of 0.01 ($t = -7.017$, $P = 0.001$), and coefficient is $-0.388 < 0$, indicating that it has a significant negative impact on RHQD. In terms of government support, it does not show significance ($t = -0.559$, $P = 0.577 > 0.05$), which shows that government support will not affect RHQD.

6.2. Regression Results of DIF Subindex. From Table 7, the regression coefficients of the six subindexes of DIF on the impact of rural comprehensive and high-quality development are significantly positive, with coefficients of 0.109, 0.107, 0.053, 0.160, 0.056, and 0.169, respectively. Credit has the strongest driving force on rural comprehensive and high-quality development, followed by payment, coverage, and use depth, and the weakest is insurance and digitization, and it shows that these subdimensions play different roles.

6.3. Results of Different Channels of DIF Affecting RHQD. From Table 8, the regression coefficients of DIF on quality and efficiency of rural economic development, green ecological development, rural style, people’s livelihood harmony, and innovative development potential are significantly positive, with coefficients of 0.222, 0.051, 0.102, and 0.167, respectively, indicating that driving force of DIF on the quality and efficiency of economic development is the strongest, followed by innovative development potential, rural style, people’s livelihood harmony, and green ecological development that are the weakest. Through these channels, DIF has effectively promoted the all-round and high-quality development of rural areas. Meanwhile, the impact of DIF on optimization of urban and rural structures is not significant, and the coefficient is very small, only 0.007, indicating that DIF needs to be further developed.

TABLE 5: RHQD index and growth rate of 31 provinces and cities in 2011 and 2018.

Province	2011	2018	Growth rate	Province	2011	2018	Growth rate
Beijing	1.257	1.790	0.424	Hubei	1.025	1.357	0.324
Tianjin	1.180	1.545	0.310	Hunan	0.923	1.146	0.242
Hebei	0.965	1.188	0.231	Guangdong	0.985	1.269	0.288
Shanxi	0.767	1.015	0.324	Guangxi	1.013	1.255	0.240
Inner Mongolia	1.087	1.372	0.262	Hainan	1.215	1.542	0.269
Liaoning	1.125	1.322	0.176	Chongqing	0.926	1.141	0.232
Jilin	0.942	1.043	0.108	Sichuan	0.980	1.195	0.219
Heilongjiang	1.027	1.538	0.497	Guizhou	0.820	1.175	0.432
Shanghai	1.647	2.358	0.432	Yunnan	0.885	1.152	0.303
Jiangsu	1.050	1.548	0.474	Tibet	0.630	0.866	0.375
Zhejiang	1.058	1.416	0.339	Shanxi	0.974	1.164	0.194
Anhui	0.952	1.121	0.178	Gansu	0.846	0.994	0.175
Fujian	0.943	1.374	0.456	Qinghai	0.736	0.996	0.354
Jiangxi	0.864	1.092	0.263	Ningxia	0.803	1.143	0.423
Shandong	1.095	1.380	0.261	Xinjiang	1.122	1.318	0.174
Henan	0.989	1.177	0.190	China	0.972	1.255	0.292

TABLE 6: Basic regression results.

	FE model		Time FE model		Two-way FE model		
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	
Explained variable	DIF	0.113** (3.547)	0.032	0.893* (2.062)	0.433	0.400 (1.710)	0.234
	LAB	0.189* (2.272)	0.083	0.269** (4.122)	0.065	0.212* (2.519)	0.084
	GOV	-0.096 (-0.559)	0.172	-0.026 (-0.351)	0.073	-0.034 (-0.178)	0.193
	OPE	-0.388** (-7.017)	0.055	0.144 (0.934)	0.154	-0.391** (-6.488)	0.060
	NAT	-0.036* (-2.170)	0.017	0.046 (0.955)	0.048	-0.019 (-1.405)	0.014
	CONS	0.259** (7.641)	0.034	-0.247 (-1.327)	0.186	0.104 (0.947)	0.110
R ² sample test	0.751		-7.219		-0.495		
	244		244		244		
	$F(5,208) = 103.980 \ p = 0.001$		$F(5,231) = 25.098 \ p = 0.001$		$F(5,201) = 11.891 \ p = 0.001$		

Note. ***, **, and *, respectively, indicate significance at the level of 1%, 5%, and 10%; *T* value is in parentheses.

TABLE 7: Impact of DIF subindex on RHQD.

	BRE FE model	DEP FE model	DIG FE model	PAY RE model	INS FE model	CRE RE model
	0.109** (3.426)	0.107** (3.938)	0.053** (2.740)	0.160** (2.617)	0.056** (3.032)	0.169** (3.235)
LAB	0.180* (2.176)	0.199** (2.658)	0.285** (4.538)	0.201 (1.838)	0.271** (4.175)	0.199* (2.090)
GOV	0.020 (0.513)	0.062* (2.056)	0.004 (0.085)	-0.030 (-0.546)	0.039 (1.183)	0.003 (0.067)
OPE	-0.392** (-6.485)	-0.407** (-6.824)	-0.447** (-6.782)	-0.088 (-1.176)	-0.461** (-6.792)	-0.149* (-2.400)
NAT	-0.037* (-2.177)	-0.043* (-2.492)	-0.049** (-2.968)	-0.034* (-2.058)	0.054** (-2.872)	-0.030* (-2.081)
CON	0.246** (11.738)	0.233** (13.333)	0.245** (11.465)	0.192** (4.891)	0.246** (11.723)	0.178** (4.985)
R ² (w)	0.751 (5,208) =	0.752 (5,208) =	0.725 (5,208) =	0.693 $\chi^2(5) =$	0.594 $\chi^2(5) =$	0.718 $\chi^2(5) =$
TEST	95.315 $p = 0.001$	106.460, $p = 0.001$	113.696, $p = 0.001$	484.759 $p = 0.001$	45.600 $p = 0.001$	512.670, $p = 0.001$

TABLE 8: Impact of DIF on different dimensions of RHQD.

	ECO RE model	STR RE model	GRE RE model	CIV RE model	INO RE model
DIF	0.222** (6.331)	-0.007 (-0.169)	0.051* (2.391)	0.102** (4.719)	0.167** (3.988)
LAB	0.649** (8.448)	-0.216* (-2.266)	0.021 (0.454)	0.012 (0.316)	-0.107 (-1.084)
GOV	-0.112* (-2.066)	-0.057 (-1.350)	0.046 (0.870)	-0.036 (-1.679)	-0.061 (-1.083)
OPE	-0.154** (-5.095)	-0.134** (-2.862)	-0.046 (-1.104)	-0.136** (-2.997)	-0.364** (-4.740)
NAT	-0.060* (-2.176)	0.004 (0.394)	-0.036 (-1.716)	0.062* (2.008)	-0.043* (-2.254)
CON	0.154** (5.248)	0.240** (5.728)	0.427** (9.279)	0.378** (8.408)	0.326** (6.347)
R ² (w)	0.857	0.522	0.356	0.493	0.594
TEST	$\chi^2(5) = 1066.164 \ p = 0.001$	$\chi^2(5) = 159.469 \ p = 0.001$	$\chi^2(5) = 48.365 \ p = 0.001$	$\chi^2(5) = 105.211 \ p = 0.001$	$\chi^2(5) = 45.600 \ p = 0.001$

TABLE 9: Nonlinear regression results.

	Coef	Std. Err	<i>t</i>	<i>p</i>	95% CI
DIF	-0.091	0.038	-2.389	0.018*	-0.167~0.016
Dif ²	0.275	0.086	3.194	0.002**	0.106 ~ 0.444
LAB	0.183	0.099	1.850	0.066	-0.011 ~ 0.378
GOV	0.035	0.036	0.978	0.329	-0.035 ~ 0.106
OPE	-0.051	0.083	-0.609	0.543	-0.214 ~ 0.112
NAT	-0.032	0.017	-1.854	0.065	-0.067 ~ 0.002
CON	0.206	0.039	5.322	0.001***	0.130 ~ 0.282
	R ² = 0.334	R ² (w) = 0.742	χ ² (6) = 505.236 p = 0.001		

TABLE 10: GMM estimation results.

		Systematic GMM				Iterative GMM			
		Estimate	S.E.	95% confidence interval		Estimate	S.E.	95% confidence interval	
				Upper limit	Lower limit			Upper limit	Lower limit
Endogenous explanatory variable	DIF	0.376 *** (0.000)	0.106	0.167	0.584	0.83 *** (0.00)	0.16	0.52	1.14
	LAB	0.219 *** (3.959)	0.055	0.111	0.328	-0.02 ** (0.02)	0.01	-0.03	0.00
Exogenous variable	GOV	0.06 (0.12)	0.37	-0.01	0.13	0.04 ** (0.05)	0.02	0.00	0.08
	OPE	0.82 * (0.06)	0.44	-0.04	0.13	0.75 *** (0.00)	0.23	0.28	1.21
CONS		-1.73 (0.15)	1.21	-4.10	0.64	-0.26 (0.68)	0.63	-1.49	0.97

6.4. Empirical Analysis of DIF and RHQD from a Nonlinear Perspective. If the coefficient of $Dif_{it}^2\beta_2$ is not 0 and significant, there is a nonlinear relationship between DIF and comprehensive and high-quality development. β_1 is negative, when β_2 is positive, the relationship between the two may be U-shaped. The regression results are shown in Table 9.

In Table 9, DIF and $Di f_{it}^2$ have passed the significance test, which shows that there is a nonlinear relationship between DIF and RHQD, and DIF coefficient is less than 0, and the quadratic term coefficient $Di f_{it}^2$ is greater than 0, indicating that there is a U-shaped relationship between DIF and RHQD, which first inhibits and then promotes after reaching the inflection point.

7. Endogeneity Test

We used systematic GMM and iterative GMM to solve the endogeneity problem. In Table 10, the R-square value of model is 0.562, which means that DIF, natural disasters, openness of labour resources, and government support can explain 56.2% of the reasons in the variation of RHQD.

The regression coefficient of DIF is 0.376 ($P < 0.01$), which means that DIF will affect MMS_ RHQD. The regression coefficient of natural disasters is 0.155 ($P = 0.011 < 0.05$), which means that natural disasters will have a significant positive impact on RHQD. The regression coefficient of labour resources is 0.219 ($P < 0.01$), which means that labour resources will have a significant positive impact on RHQD. The regression coefficient of the degree of opening to the outside world is 0.341 ($P < 0.01$), which means

that the degree of opening to the outside world will have a significant positive impact on RHQD. The regression coefficient of government support is -0.061 ($P = 0.189 > 0.05$), which means that government support will not have an impact on RHQD.

8. Conclusions, Suggestions, and Discussion

8.1. Conclusions

- (1) From 2011 to 2018, China's DIF index and rural comprehensive high-quality development index showed an upward trend, and the development of 31 provinces and cities showed regional heterogeneity.
- (2) DIF has a significant positive effect on the overall and high-quality development of rural areas. DIF can promote the overall and high-quality development of rural areas, which confirms hypothesis 1. Rural labour resources also have a positive impact on the overall high-quality development of rural areas. The degree of opening to the outside world and natural disasters has a negative impact on the overall high-quality development of rural areas. The role of government support is not significant.
- (3) The coverage, depth, digitization, payment, insurance, and credit of DIF have a positive impact on RHQD, which confirms hypotheses H21– H26. The impact of credit is the strongest.
- (4) DIF has a positive impact on the dimensions of economic development quality and efficiency, green ecological development, rural style, and people's

livelihood harmony and innovative development potential, which confirms hypotheses H11–H15. We also found that DIF has different effects on RHQD through different channels.

- (5) There is a nonlinear U-shaped relationship between the impacts of DIF on RHQD. In the early stage of the development of DIF, its role in promoting RHQD is not strong and may even be inhibitory. However, when the further development of DIF reaches a certain inflection point, it begins to promote the RHQD.

8.2. Suggestions

- (1) The construction of digital inclusive financial infrastructure in rural China should be improved. The laying of communication networks in rural areas should be expanded, the promotion and coverage of DIF should be strengthened, and the development level of DIF in all provinces and cities should be improved to improve the quality and efficiency of DIF in serving the high-quality development of rural areas.
- (2) Support for rural financial institutions should be increased. More rural financial institutions should be encouraged and guided to carry out digital inclusive financial services, their level of providing digital financial products and services should be improved, and the digitization of finance should be improved; at the same time, the financial literacy of rural residents should be improved, the knowledge of DIF in rural areas should be widely popularized widely to enhance the depth of the use of DIF in rural areas.
- (3) The construction of payment and insurance credit systems in rural areas should be accelerated. Relying on digital technologies such as cloud computing and big data, the construction of electronic payment and insurance credit systems in rural areas should be accelerated, payment levels should be improved, and information asymmetry should be alleviated. Risks through credit platform should be monitored to promote the stable and healthy development of DIF, which in turn promotes the all-round and comprehensive development of rural economy, culture, politics, and ecology, gradually narrowing the gap between urban-rural areas, and making continuous progress towards the goal of common prosperity.

8.3. *Discussion.* Finally, we discussed two limitations of this study. (1) Because we use the DIF index constructed by existing scholars, we only had the data from 2011 to 2018. Without a longer sample period, we cannot analyse the long-term spillover effect of DIF on RHQD. Therefore, we consider building our own index to extend the sample period in future studies. (2) We only used the

panel models for empirical research, without considering the possible spatial effects. Spatial effects need to be further investigated due to spatial dependence or heterogeneity among Chinese provinces and cities.

Data Availability

The data used to support the findings of this study are available from the author upon request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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