The Impact of Digital Inclusive Finance on Rural Consumption under the Background of Double Cycles

-- Based on Panel Quantile Model Analysis

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Abstract

How to give full play to the financial empowerment of consumption and the expansion of domestic demand for services is an important foundation for ensuring the smooth advancement of the new development pattern with internal circulation as the main body under the background of internal and external dual cycles. Based on the theoretical analysis of the dynamic mechanism of digital financial inclusion on the expansion of domestic demand in my country, this paper takes my country's rural market as an example to examine the dynamic effect of digital financial inclusion on the expansion of domestic demand in my country. The research believes that digital financial inclusion will enable the expansion of rural domestic demand in my country through the mitigation mechanism of liquidity constraints, convenient transaction mechanisms, income growth mechanisms, marginal cost reduction mechanisms, and inclusive network effect mechanisms. Hui finance has a significant enabling effect on the expansion of domestic demand. Digital financial inclusion will enable the expansion of domestic demand through direct effects, and will also enable the expansion of domestic demand through consumer intermediary effects, and there are significant regional differences. In comparison, digital financial inclusion has a stronger empowering effect on the expansion of rural domestic demand in developed areas than in underdeveloped areas. At the same time, the empowering effect of consumer intermediary effects in developed areas is significantly stronger than direct effects, while digital inclusive finance in underdeveloped areas The direct effect of expanding domestic demand in rural areas is comparable to the mediating effect of consumption.

Keywords

Double Loop; Digital Financial Inclusion; Panel Quantile Model; Dynamic Mechanism; Heterogeneity.

1. Introduction

Under the influence of the new crown pneumonia epidemic, external demand has continued to weaken, and the development of my country's real economy has been severely impacted. In this context, the Party Central Committee and the State Council have foresighted and proposed to vigorously develop the domestic demand market, release the endogenous driving force of consumption, and realize a new development pattern with internal circulation as the main body and joint development of internal and external cycles. Obviously, studying the dual-cycle unblocked power mechanism and measures with the expansion of domestic demand as the main feature has become the most important and urgent subject of concern to government decision-making departments. As we all know, the development of the real economy is inseparable from financial support. The expansion of domestic demand is the foundation of the development of the real economy. How to use finance to stimulate consumption vitality and

serve the expansion of domestic demand has become the top priority of all current tasks. Therefore, research on financial empowerment and expansion of domestic demand for services has important practical significance for realizing economic recovery in the current context. However, the consumption empowerment brought by traditional finance and the expansion of domestic demand for services are still relatively limited, resulting in a certain gap between actual effects and expectations. Fortunately, with the development of Internet information technology, the trend of financial digitization has become more and more obvious. Instead, digital financial inclusion has become an important means for finance to enable consumption and serve the expansion of domestic demand. However, in current research, there is relatively insufficient research on how digital financial inclusion enables consumption and the expansion of domestic demand for services, especially theoretically. How digital inclusive finance can empower consumption, and the driving mechanism for the expansion of domestic demand for services is even more lacking. Based on this, this article hopes to explore the dynamic mechanism and specific effects of digital financial inclusion on the expansion of domestic demand through a combination of theory and empirical research. [1].

2. Literature Review

In the context of the continuous empowerment of Internet information technology, the development of financial formats represented by digital financial inclusion has increasingly shown the role of expanding domestic demand, and the relationship between the two has been continuously enriched. Yi Xingjian and Zhou Li (2018) believe that digital financial inclusion can promote residents' consumption through two major mechanisms, easing liquidity constraints and facilitating residents' payment. Dong Yunfei, Li Qian, and Zhang Pu (2019) proposed that the Inclusive Finance Development Conference will improve the service consumption of rural residents in my country.The proportion of expenditures to promote the consumption upgrade of rural residents in my country. Lu Yanqin and Zhao Bin (2019) conducted research based on the relationship between the development of digital inclusive finance and the consumption gap between urban and rural residents in my country. Digital inclusive finance and economic growth, industrial structure optimization, and improved opening-up levels are equally capable of providing consumption for urban and rural residents. The narrowing of the gap has a positive effect. Kong Weihan and Li Aixi (2019) used the data of Jiangsu Province as an example to empirically test the impact of the development of inclusive finance on Jiangsu Province [2].

The influence and differences of rural residents' consumption in the same region. The research of He Zongyue and Song Xuguang (2020) further explored the integration of the Internet and the digital economy to promote the development of inclusive finance and the relationship between residents' consumption from a micro perspective based on household tracking survey data, and verified the possible mechanism of digital financial development for residents' consumption. Wang Gangzhen and Liu Tingting (2020) believe that digital financial inclusion will ease income constraints and liquidity constraints, and promote the release of household consumption. Chen Yanyu,Ren Ding (2020) and Liang Wei et al. (2020) discussed the impact of digital financial inclusion on household consumption from the perspectives of digital financial inclusion in rural residents' consumption promotion and changes in consumption structure, and digital technology to broaden the reach of finance. Zhang Donghao, Wang Dong, and Du Zaichao (2020) studied the impact of inclusive finance development on household consumption in my country based on household micro-survey data, and the difference in the effect of inclusive finance on households with different incomes. Nan Yongqing, Song Mingyue, and Xiao Haoran (2020) used provinces in the central and western regions as examples to study the effect of digital finance on the consumption of urban residents in the central and western

regions of my country. Cheng Xuezhen and Gong Qinyi (2020) discussed the impact of digital financial inclusion on the real economy from a broader perspective, and the resulting spillover effects on consumption, investment and other channels [3].

The above-mentioned literature discusses the relationship between inclusive finance (digital inclusive finance) and household consumption from a macro or micro level, laying the foundation for further research in this article. However, the existing problems are relatively obvious. Existing research mainly focuses on the empirical relationship between digital financial inclusion and household consumption, but lacks theoretical analysis, especially the lack of endogenous motivation for household consumption by the development of digital financial inclusion. The analysis of the mechanism, in fact, household consumption is only a manifestation of the expansion of domestic demand or an intermediate transmission factor, which is likely to be manifested in the form of an intermediary effect, and has an impact on the expansion of domestic demand. Therefore, the marginal contribution of this article is mainly manifested in the following aspects: First, based on the background of internal and external dual cycles, based on the expansion of internal demand, theoretically examine the endogenous dynamic mechanism of digital financial inclusion for the expansion of domestic demand; second, breakthroughs The traditional literature considers the limitation of using consumption as an internal loop variable, and examines the influence mechanism of the development of digital financial inclusion on the expansion of domestic demand from the dual perspectives of consumption and investment contained in the internal loop. The intermediary effect of the expansion; the third is to examine the regional heterogeneity of digital financial inclusion to the expansion of residents' domestic demand.

3. Theoretical Mechanism

The endogenous motivation mechanism of digital financial inclusion for the expansion of domestic demand is mainly based on the direct effects of investment channels and the indirect effects of consumption channels, and the indirect effects of consumption channels are the main transmission. Specifically, the direct effects are mainly the expansion of domestic demand based on production and operation inputs, and the indirect effects mainly include the mitigation mechanism of liquidity constraints, convenient transaction mechanisms, income growth mechanisms, diminishing marginal cost mechanisms, and inclusive network effects. Mechanism [4].

Liquidity of funds is the basis for determining residents' consumption. Digital financial inclusion allows residents to more easily obtain financial support, can solve the current consumer credit demand and maintain a fixed consumption level, continue to stimulate potential consumer demand, and improve residents' current consumption. Consumption level, to play the functional role of digital inclusive financial consumer credit resources, smooth the consumption level of residents at different stages, reduce the suppression of consumption levels due to personal income or other factors, and play a role in alleviating residents' liquidity constraints and promoting Resident consumption raises the level of residents' consumption, which indirectly drives the expansion of domestic demand. The development of digital financial inclusion can bring convenience to residents, especially the changes in payment methods brought about by the development of digital financial inclusion. Microfinance represented by Alipay and WeChat is the most typical representative of the development of digital inclusive finance. Online and offline payment methods have made residents' participation in consumption more frequent, which is conducive to the improvement of residents' consumption range, consumption choices, and consumption participation. . The basis for the expansion of domestic demand is the release of consumer demand. Economic theory believes that income is a key variable that determines household consumption, and the endogenous growth of income

is an effective means to promote household consumption. Digital financial inclusion relies on digital technology to effectively expand the breadth, depth and breadth of finance, relying on its strong information acquisition and processing capabilities, and effectively alleviate the information asymmetry between financial institutions and residents On the one hand, it reduces the marginal cost of financial institutions' acquisition of household consumption, which helps financial institutions provide consumers with more personalized and diversified investment and financing solutions, achieves accurate and effective investment of financial resources, and can also avoid information Residents' moral hazard and adverse selection caused by asymmetry. Digital financial inclusion has changed the traditional financial service model, built a financial service model that spans time and space, broadened the boundaries of the financial service market, achieved financial availability and wide coverage, and demonstrated the depth, breadth and breadth of financial services .

4. Establishment and Analysis of the Model

4.1. Variable Selection and Data Description

Dependent variable selection of the expansion of rural domestic demand: In general literature, household consumption is used to approximate the expansion of domestic demand. In fact, the expansion of domestic demand includes household consumption demand as well as investment demand, such as government consumption expenditure (government investment). Resident consumption to measure the expansion of domestic demand often leads to inaccuracy in the estimation results. Accordingly, this article refers to the definition of domestic demand, uses retail sales of consumer goods to reflect residents' consumption needs, and uses government finances to support.

Reflecting government investment demand, the sum of the two is used to measure the expansion of domestic demand, and the logarithm is used in the empirical research. Independent variable selection of the development of digital financial inclusion: The most authoritative measure of the development of digital financial inclusion is the data calculated by the joint research group of Peking University Digital Finance Research Center and Ant Financial Group. The data is divided into two stages. From 2011 to 2015 and 2016 to 2018, based on the data for this period, this paper estimates the data for 2019 through linear fitting, and finally obtains the data for digital financial inclusion from 2011 to 2019. Mediating effect variable selection: Based on the product of the domestic demand expansion variable obtained by the aforementioned calculation and the digital financial inclusion variable, the logarithm is processed in the empirical research. Selection of relevant control variables: select the per capita disposable income of rural residents, the level of regional economic development (measured by GDP), the level of Internet informatization (the ratio of the number of mobile phone users to the total number of people in each province at the end of the year), and the level of industrial structure (the tertiary industry accounts for Ratio measurement) as a control variable that affects domestic demand. The above control variables all come from the local statistical yearbooks and EPS of each province over the years.

Data platform. Per capita disposable income and regional economic development levels are processed in logarithm [5].

Based on the above model (1) and model (2), this paper selects the 2011-2019 provincial panel data of 30 provinces and municipalities in my country (excluding Tibet, Hong Kong, Macao and Taiwan) for estimation, using mixed regression, fixed effects and two-way fixed effects respectively Make an estimate and get the estimated result.

4.2. Build Panel Quantile Regression Model

This part builds a panel quantile regression model to conduct an empirical analysis of the consumption promotion effect of tax cuts and fee reductions in the context of the new dual-cycle development. The panel quantile regression model is also a weighted minimization residual error that modifies the traditional linear panel model. The regression estimation method of the sum of absolute values,in the form of:

$$Y_{it}(_T | X_{it}, D_{it}) = \alpha_i + \beta_T X_{it} + \theta_T D_{it} + \varepsilon_{T,it} \ . \tag{1}$$

Among them: Y_{it} is the explained variable,X_{it} is the explanatory variable,D_{it} is the control variable,β_T and θ_T are the marginal effect parameters at the Tth quantile,and $\varepsilon_{T,it}$ is the unobserved random item.

In the traditional mean linear model,all sample points are given the same weight in the estimation procedure,so the relative importance of the sample points has nothing to do with the position of the sample points in the sequence;and in the quantile represented by equation (1) In the numerical model,the relative importance of the sample points is constrained by the weight of the sample points in the sequence. The sample points within a given quantile level are given a higher weight.

Therefore,the parameters β_T,θ_T and $\varepsilon_{T,it}$ are actually conditional estimates under the conditions of a given quantile and a sample set {Y_{it},X_{it},D_{it}}. In the estimation procedure,the panel quantile model described by equation (1) is estimated by minimizing the conditional loss function in equation (2):

$$\min_{\alpha_{T,i}\beta_T} \sum_{T=1}^{T=M} \sum_{i=1}^{i=N} \sum_{t=1}^{t=T} |W_T L_T| \ . \tag{2}$$

Among them: W_T is the weight of the quantile of $T \in (1,2,...,M-1,M)$;L_T is the loss function of the panel quantile model parameter estimation,L_T is expressed by equation (3):

$$L_T = Y_{it}(_T | X, D_{it}) - (\alpha_i + \beta_T X_{it} + \theta_T D_{it}) + \lambda \left(\sum_{i=1}^{i=N} |\alpha_{T,i}| \right) . \tag{3}$$

The panel quantile model can not only effectively eliminate the normal distribution assumption based on the minimum residual square sum panel model for the unobserved residual items;it can also analyze the heterogeneity and adjustment of the parameter values at different locations in the sample interval. Direction to better reflect the rich information in the sample data set. Therefore,this study chooses the panel quantile model for empirical analysis to improve the value and accuracy of the research.

4.3. Descriptive Statistical Analysis

The estimation results show that the results obtained by the mixed model, fixed effect model and two-way fixed effect model all indicate that the development of digital financial inclusion has a significant positive effect on the expansion of domestic demand of rural residents in my country. Digital financial inclusion has its financial attributes. Relying on the breadth, depth and breadth of financial service consumption, through liquidity constraint relief, transaction convenience mechanism, income, growth mechanisms, diminishing marginal costs, and

inclusive network effects enable consumption, promote the consumption of rural residents in my country, and realize the expansion of domestic demand. Further from the estimated results of model (2), it can be seen that through the mediation effect of consumption, the enabling mechanism of digital financial inclusion for the expansion of domestic demand exists and is significant. The direct effect of digital financial inclusion on the expansion of domestic demand in rural my country and the indirect effect of consumption empowerment The effects are roughly the same (estimated coefficients are 0.0738 and 0.0836, respectively, based on the two-way fixed effect estimation results), and the indirect effects produced by consumption empowerment are slightly larger. In fact, the impact of digital financial inclusion on the expansion of domestic demand of rural residents is mainly manifested in the indirect enabling effect of consumption and the direct enabling effect of investment. Investment mainly refers to the use of financial resources in production and business activities. Consumption is the main endogenous driving force for rural residents to expand domestic demand with the help of digital financial inclusion. From the estimation results of the control variables, the income level of rural residents and the level of Internet informatization have the strongest effect on the expansion of rural domestic demand, and it exceeds the effect of digital financial inclusion on the expansion of rural domestic demand. This also shows that it affects the expansion of domestic domestic demand in China. The main factors are still the income level of rural residents and the level of Internet informatization [6].

The empirical test results show that digital financial inclusion still has a significant enabling effect on the expansion of rural domestic demand, and the driving effect on the expansion of rural domestic demand in developed areas is stronger than that of underdeveloped areas, which is in line with theoretical expectations. The relatively more complete level of digital financial inclusion in developed regions will naturally have a greater empowering effect on the expansion of domestic demand. The estimation result of model (2) shows that in developed areas. In the region, the direct effect of digital financial inclusion on the expansion of rural domestic demand is small, only 0.0237, while the indirect effect empowered by the consumption mediation effect is particularly strong, with an estimated coefficient of 0.1598. In less developed regions, digital financial inclusion Both the direct and indirect effects of the expansion of rural domestic demand are relatively small, and the total effect is also significantly smaller than that of developed regions. This may be due to the fact that residents in developed areas are more inclined to consume financial resources and are better at different forms of digital inclusive financial channels or products are used for consumption, such as diversified consumption through Ant Huabei, installment, credit cards, etc., while underdeveloped regions rely more on digital inclusive finance for production and operational investment. As a result, the direct effect of digital financial inclusion on the expansion of rural domestic demand (production and business investment) in developed and underdeveloped areas is relatively small, while the role of domestic demand expansion through the mediating effect of consumption is relatively different [7].

5. Research Conclusions and Policy Implications

How to play the role of financial empowerment to expand domestic demand is the basis for smoothly advancing the internal economic cycle. Based on the theoretical analysis of the dynamic mechanism of digital financial inclusion on my country's domestic demand expansion, this article further uses my country's national sample data from 2011 to 2019, and takes the rural domestic demand market as an example to examine the dynamic effect of digital financial inclusion on my country's domestic demand expansion.

First, in theory, digital financial inclusion will enable the expansion of domestic demand through the mitigation mechanism of liquidity constraints, convenient transaction mechanisms,

income growth mechanisms, marginal cost reduction mechanisms, and inclusive network effect mechanisms. The empirical study of the case further confirms that digital financial inclusion has a significant empowerment effect on the expansion of domestic demand. Specifically, digital financial inclusion will not only enable the expansion of domestic demand through direct effects, but also enable domestic demand through consumer intermediary effects.Need to expand, and there are significant regional differences.

Second, in terms of the difference in impact effects, digital financial inclusion has a stronger empowering effect on the expansion of rural domestic demand in developed areas than in underdeveloped areas. At the same time, the empowering effect of consumption intermediary effects in developed areas is significantly stronger than the direct effect. The direct effect of digital financial inclusion in developed areas on the expansion of rural domestic demand is equivalent to the intermediary effect of consumption.

Third, the estimated results of the control variables show that the per capita disposable income and the level of Internet informatization have the strongest promotion effect on the expansion of the rural domestic demand market, and the regional economic development level and industrial structure level have relatively weak promotion effects on the expansion of the rural domestic demand market, and It also shows that developed regions are stronger than underdeveloped regions.

Based on theoretical and empirical research conclusions, this article has the following enlightenment: First, we must attach importance to the empowering role of digital financial inclusion in expanding domestic demand, encourage financial institutions to deeply participate in digital financial inclusion innovation, and provide users with more and better digital inclusive benefits Financial products and services will further improve the convenience of payment and help residents to consume more conveniently; the second is to promote the development of digital inclusive finance by accelerating the pace of financial digital transformation and the development of digital inclusive financial development to promote the development of digital inclusive finance and give full play to financial services to the real economy The role of high-quality development is to drive the expansion of our domestic demand market; the third is to implement precise policies to make good use of the direct and indirect effects of digital financial inclusion on the expansion of domestic demand, and to better maximize the enabling effect of digital financial inclusion. For example, send darfur regions should play the leading role of digital inclusive finance in expanding domestic demand market through consumer intermediary effects, while underdeveloped regions should play the role of direct and indirect effects to promote the expansion of financial empowerment of domestic demand; the fourth is to strengthen digital popularization. The promotion and popularization of preferential finance fully ensure that residents can recognize and understand specific digital financial tools, and promote the availability of digital financial inclusion; fifth, pay attention to per capita disposable income (resident income level) and Internet information. The level of globalization plays a key role in the expansion of domestic demand, and the synergistic effect of various variables is played to jointly help the expansion of domestic demand.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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