The Impact of Digital Financial Inclusion on the Development of New Urbanization

DOI: 10.37420/j.emr.2021.030

Ming Xu*, Yuntao Tan
School of Economics and Management, Chongqing Normal University, Chongqing, China
***Corresponding author,e-mail: ideal_shen@qq.com**

Abstract

This study attempts to construct a comprehensive indicator system for the development of new urbanization to measure the development level of new urbanization in 30 sample provinces in China (excluding Hong Kong, Macao, Taiwan and Tibet) from 2011 to 2018. Use the Peking University Digital Financial Inclusive Index to build a model, Theoretical interpretation and empirical test of the impact of digital financial inclusion on the development of new urbanization. The main research conclusions are as follows: The development level of new-type urbanization in various regions of China presents typical facts of regional differences in fluctuations and increases, and the characteristics are characterized by the gradient of the eastern part higher than the central part and the middle higher than the western part.

Keywords

Digital financial inclusion; New urbanization; Two-step dynamic system GMM

Introduction

Under the impetus of reform and opening up, China started the process of urbanization in the modern sense, and the barriers between urban and rural areas began to loosen. With the implementation of the New Deals and regulations, a new type of urbanization was born. The new type of urbanization refers to people-oriented, and its essence is for urban and rural economic development, ecological livability and green sustainable development. With the convening of the 19th National Congress of the Communist Party of China, all provinces have responded vigorously to the rural revitalization strategy. How to achieve overall urban and rural development through financial means and promote sustainable economic development and the quality of economic development is an important task for comprehensively deepening reforms. In the era of big data, the emergence of digital financial inclusion undoubtedly has a great role in promoting technological innovation and rapid economic development (ROMER, 1990). Inclusive finance refers to the provision of appropriate and effective financial supply services under the requirements of equal opportunities and the principle of business sustainability. With the rapid development and mature application of modern digital information technologies

such as big data and cloud computing, traditional finance has been innovated, and digital inclusive finance has been given a new model. The new model integrates digitization and intelligence with inclusive finance, lowering the service threshold of digital finance (Zeng & Zheng, 2021), for economic and social development (Xue & Hu, 2020), infrastructure construction (Cheng & Feng, 2020), public services (Liao & Zhou, 2020) and the protection of the ecological environment (He & Yang, 2021) have a very good promotion effect. Exploring the growth mechanism and effects of digital financial inclusion on the development level of new urbanization undoubtedly has important theoretical value and rich policy implications.

Since the 18th National Congress of the Communist Party of China proposed the concept of new urbanization, many scholars have conducted numerous studies. Mainly focus on research on the connotation and extension of new urbanization, typical cases, measurement methods and economic growth. Zhang Zhanbin et al. (2013) and Huang Qinghua et al. (2016) theoretically explained the connotation of new urbanization and expounded the development prospects and risk opportunities of new urbanization. Jiang Bin et al. (2018) and Peng Wei (2015) conducted case analysis on the development of new-type urbanization in the region, and transformed the traditional passive urbanization into an active, new-type urbanization based on policies and regulations. Yu Jiang et al. (2018) and Gong Rui et al. (2020) used network analysis method, factor analysis method and entropy method to measure the development level of new urbanization. Shang Juan et al. (2021) and Li Jianpei et al. (2020) respectively used the systematic GMM model and the two-way fixed effects model to study and found that the increase in the development level of new urbanization can help increase regional economic growth and provide the possibility for sustainable economic development. Since the central bank issued the "G20 Advanced Principles of Digital Financial Inclusion" in 2016, the research on digital financial inclusion has mainly focused on the connotation and extension (Guo, Kong & Wang, 2017, Jiang, 2021), how to alleviate poverty (Liang & Li, 2021; Li, Shen, Yang & Chen, 2021), promoting economic development and promoting consumption (He & Wang, 2021; Jiang & Jiang, 2020), etc., although there are documents that provide useful information for the study of the relationship between the two Experience enlightenment and method reference, but there is still room for marginal expansion. Since the concept of digital financial inclusion was proposed late, there are still few studies on digital financial inclusion at this stage. Therefore, the existing literature has not yet deeply revealed the impact of digital financial inclusion and different dimensions of digital financial inclusion in new cities and towns. The role of promoting the development of internationalization.

To this end, this research innovatively incorporates the development of new urbanization into the analysis framework of the development effect of digital inclusive finance. Based on the systematic measurement of the development level of new urbanization in 30 sample provinces in mainland China from 2011 to 2018, the use of The dynamic system GMM estimation method empirically tests the influence and effect of digital financial inclusion on the development level of new urbanization.

Theoretical Mechanism

In order to deeply reveal the mechanism of digital financial inclusion on the development of new urbanization and provide theoretical hypotheses for subsequent empirical research, this research mainly starts from the endogenous common characteristics of digital financial inclusion, and fully combines the differences of

digital financial inclusion. Based on the heterogeneous characteristics of traditional digital finance, the influence mechanism of digital financial inclusion on the development of new urbanization is discussed from the dimensions of factor resource allocation effect and technological innovation effect.

Allocation Effect of Factor Resources

The development of digital financial inclusion has brought vitality to the driving force of financial supply, increased capital accumulation and circulation, eased financing constraints and promoted economic growth. In the case of reducing transaction costs and service costs, the financial threshold has also been greatly reduced, thereby reversing the mismatch of financial factors and suppressing the problem of "short-term loans and long-term investment" among enterprises, and prompting enterprise technology integration and upgrading (Tao & Hu, 2019). The acceleration of the urbanization process has also been accompanied by the expansion of industries and the increase of functions, attracting talents from all walks of life to create conditions for the development of digital finance, leading more urban and rural residents to understand financial knowledge and enjoy financial services. The development of digital finance not only benefits the general public, but also encourages government agencies to enjoy financial dividends, and provides financial support for the construction of urban and rural infrastructure and the improvement of public services, thereby better promoting the development of new urbanization.

Technological Innovation Effect

Thanks to the innovative development of new financial institutions and the rapid development of advanced technologies, digital financial inclusion in rural areas and other underdeveloped areas has developed rapidly in recent years. Compared with traditional finance, digital financial inclusion has inserted the wings of "digital" on the basis of traditional finance, and used trendy technologies such as big data and cloud computing to alleviate the traditional financial history of rural and underdeveloped areas, such as difficulties in lending and financing. Remaining problem. In addition, digital financial inclusion can also promote consumption upgrades through digital technologies such as O2O and the Internet of Things, combining online and offline services, reducing the difficulty of collecting effective transaction information, and solving information asymmetry (Guo, Zhang, Peng & He, 2020). Further promote the digitalization and gridization of the financial industry, provide more high-quality and convenient financial services for urban enterprises, improve the efficiency of financial transactions and promote the upgrading of the industrial chain, and bring convenience to urban and rural residents while promoting technological innovation in enterprises. The advancement of technology and the improvement of efficiency have provided technical support for the construction of urbanization, while at the same time injecting new vitality into the expansion of the scale of cities and towns and the development of urban and rural economy.

This study proposes a hypothesis: to enhance the growth of the development level of new urbanization by improving the development level of digital financial inclusion.

Models, Estimation Methods and Variables

This study uses a two-step dynamic system GMM estimation method to analyze the impact of digital financial inclusion on the level of new urbanization, which can effectively avoid the bias caused by self-variance, while avoiding endogenous problems, and use 2SLS and fixed effects models to further test its robustness sex.

The most commonly used estimation methods for panel data models generally include mixed effects (POLS), fixed effects (FE), random effects (RE) and other models. However, if the explanatory variable itself has endogenous problems, the results of the above three models are estimated to be Will produce deviations. Therefore, the system generalized GMM method (System GMM) improved on the basis of difference GMM (Difference GMM) is used for parameter estimation, which can greatly alleviate the endogeneity problem. For the system GMM method, a two-step estimation method is generally used, which can more effectively solve the sequence self Related and heteroscedastic problems, and can greatly improve the robustness of the estimation (Guo, Wang & Wang, 2020; Cai & Mo, 2021). Considering that the new urbanization may have the characteristics of dynamic continuity, this paper includes the one-lag period as an explanatory variable, and uses the two-step dynamic system GMM model to evaluate the impact of digital financial inclusion on the development of new urbanization in order to better control Some missing factors and deviations, the specific model is constructed as follows:

$$NU_{it} = \alpha + \beta_1 LNDFI + \beta_2 NU_{it-1} + \beta_3 X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

Variable Definition

Explained variables:New urbanization (NU), this variable is measured by the comprehensive index of new urbanization calculated in the previous article. The larger the comprehensive index, the higher the level of new urbanization development.

Core explanatory variables: This study selects the Peking University Digital Financial Inclusive Development Index compiled by Guo Feng [26] and others from 2011 to 2018 as the proxy variable for the development of digital financial inclusion (DFI). In addition, digital financial inclusion is also divided There are three dimensions of coverage (COV), depth of use (USE), and degree of digitization (DIG). The index is jointly compiled by Peking University and Ant Financial. It is based on massive user real transaction data and is authoritative, scientific and reasonable.

Control variables: In order to minimize the bias caused by the omitted variables, based on the reference to the existing literature, this study selects the following variables as the control variables of this study. Urbanization (URBAN), expressed by the traditional method of measuring the level of urbanization, characterized by the proportion of urban population in the total population at the end of the year; government fiscal expenditure (FE), measured by the proportion of government fiscal expenditure in the total value of the region; foreign businessmen Direct investment (FDI) is expressed in terms of the proportion of the province's foreign direct investment in the regional GDP. Industrial structure (TG), represented by the ratio of the tertiary industry in each province to the regional GDP; economic development (GDP), measured by the constant price

GDP in 2011 as the base period.

Result Discuss

First of all, this study uses a two-step dynamic system GMM to estimate the parameters of the model.

Table 1.

	Model One	Model Two	Model Three	Model Four
NU_{it-1}	-0.477***	-0.743***	-0.545***	-0.707***
	(-7.43)	(-11.43)	(-5.70)	(-6.30)
LNDFI	0.0726**	0.130***	0.323***	1.768***
	(2.32)	(5.30)	(2.70)	(2.75)
LNURBAN	-1.035**	0.419	0.221	0.656**
	(-2.23)	(1.41)	(0.93)	(2.13)
LNFE	-0.212	-0.386***	-0.186	0.113
	(-1.16)	(-4.89)	(-1.43)	(0.66)
FDI	0.000682	0.0156	-0.0417	-0.0699**
	(0.03)	(0.79)	(-1.17)	(-1.98)
LNTG	1.459***	0.554*	-0.267	-0.812*
	(2.89)	(1.87)	(-1.37)	(-1.84)
LNGDP	-0.0480	0.213***	-0.181***	-0.0680
	(-0.74)	(4.68)	(-3.27)	(-0.76)
Control area effect	Do not control	Do not control	Control	Control
Control time effect	Do not control	Control	Do not control	Control
AR (1)	0.001	0.005	0.002	0.017
AR (2)	0.231	0.297	0.165	0.117
Hansen	0.102	0.128	0.668	0.608
N	210	210	210	210

*Note: The t statistic is in parentheses; *, **, *** mean significant at the levels of 10%, 5%, and 1% respectively, the same below.*

As shown in column (1) of Tabl, AR(1) and AR(2) tests show that although the equation residual sequence cannot reject the first-order serial correlation, it can significantly reject the second-order correlation. The autocorrelation test can explain the model design. It must be feasible. The corresponding p-value of Hansen test is greater than 0.1, which cannot reject the null hypothesis that the instrumental variables are valid, indicating that the instrumental variables selected in the model are valid, and thus the estimation results of Model 4 are consistent and reliable.

In Model 4, the coefficient value of the core explanatory variable Digital Financial Inclusion (DFI) is 1.768, which is significant at the 1% level. This shows that under the control of other variables, digital financial inclusion (DFI) has a positive role in promoting the development of new urbanization. Every 1 percentage point increase in digital financial inclusion (DFI) will promote the development of new urbanization. An increase of 1.768 percentage points. This shows that the performance of advancing the development of digital finan-

cial inclusion is obvious and can significantly promote the development of new urbanization. The features of digital financial inclusion, such as convenience, rapidity, wide coverage, diversified products, and commercial sustainability, can fit well with the characteristics of continuous, high-frequency and small-amount heterogeneous demand for financial capital in the current process of urban economic development in China. And it can effectively alleviate the problems of capital constraints and credit that are plagued by traditional finance. Therefore, it is noncommittal that digital financial inclusion is a deepening of traditional finance, while at the same time promoting financial services to better benefit residents, driving regional economic development and ecological protection, and better promoting the development of new urbanization.

For the control variables, the coefficient of traditional urbanization development in Model 4 is significantly positive at the 5% level, indicating that traditional urbanization development also promotes new urbanization, indicating that the development of new urbanization is inseparable from traditional urbanization The two complement each other and develop together. Although government fiscal expenditure has promoted the development of new urbanization, it is not significant. The reason may be that government expenditure does not have much impact on the development of urbanization. The coefficient of foreign direct investment is significantly negative at the level of 5% in the short term, indicating that the increase in foreign direct investment inhibits the development of new urbanization. The reason may be that foreign direct investment squeezes regional capital flows in the short term. Restrained the development of new urbanization. The industrial structure has shown to inhibit the development of new urbanization. The reason may be that the development of the tertiary industry structure accelerates the loss of high-quality talents and leads to an imbalance in the allocation of factors. Although the level of local economic development inhibits the development of new urbanization, the impact is not significant. This may be because the short-term economic development has not reached a higher level.

Conclusions and Policy Recommendations

This study attempts to construct a comprehensive indicator system for the level of new urbanization to measure the development level of new urbanization in 30 sample provinces in China (excluding Hong Kong, Macao, Taiwan and Tibet) from 2011 to 2018. The theoretical interpretation and empirical test of the impact of digital financial inclusion on the new urbanization The impact of development, and discuss the moderating role of environmental regulations in the above impacts. Studies have shown that the level of new urbanization in various regions of China presents typical facts of regional differences, and is characterized by a gradient characteristic of higher eastern part than central part and higher central part higher than western part.

Based on the previous theoretical analysis and empirical investigation, in order to better play the role of digital finance in promoting the growth of the new urbanization development level, this article has the following policy recommendations: First, integrate digital financial inclusion into the new urbanization development policy framework and adopt To steadily improve the level of digital financial inclusion to promote the development of new urbanization, each region should fully integrate its own economic and social development, infrastructure construction, public services and ecological environmental protection functions, and effectively implement urban and rural resources. Integration, market regulation and policy guidance are combined to bring digital finance to urban and rural residents in a true sense.

References

ROMER, P. M. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5), S71-S102.

Zeng, F. S., & Zheng, Z. Z. (2021). Analysis of the Poverty Reduction Effect of Rural Digital Financial Inclusion from a Multidimensional Perspective. *Rural Economy*, (04), 70-77.

Xue, Y., & Hu, J. (2020). Financial technology boosts high-quality economic development: theoretical logic, practical basis and path selection. *Reform*, 4(03), 53-62.

Cheng, P., & Feng, X. Y. (2020). Research on Digital Infrastructure Construction of Inclusive Finance in China. *Journal of Fujian University of Business Studies*, 4(05), 18-24.

Liao, J. L., & Zhou, L. (2020). Digital financial inclusion, education level and household risk financial asset investment. *Modern Economic Research*, 4(01), 42-53.

He, M. B., & Yang, X. W. (2021). Digital financial inclusion, carbon emissions and total factor productivity. *Financial Forum*, 26(02), 18-25.

Zhang, Z. B. (2013). The strategic significance and reform problems of new urbanization. *Journal of National School of Administration*, 4(01), 48-54.

Huang, Q. H., Zhou, Z. B., & Chen, L. H. (2016). Research on the development model of new urbanization: based on international comparison. *Macroeconomic Research*, 4(12), 59-66.

Jiang, B., & Wang, H. L. (2018). Analysis and Prospect of Research on New Urbanization in Southwestern Minority Regions. *Journal of Southwest University for Nationalities (Humanities and Social Sciences Edition)*, 39(06), 41-47.

Peng, W. (2015). Realizing the transition from "passive urbanization" to "active urbanization"—A typical survey of Hubei's overall promotion of urbanization. *Hubei Social Sciences*, 4(01), 75-79 .

Yu, J., & Ye, L. (2018). Comprehensive evaluation of China's new urbanization development level: construction, measurement and comparison. *Journal of Wuhan University (Philosophy and Social Sciences Edition)*, 71(02), 145-156.

Gong, R., Xie, L., & Wang, Y. F. (2020). The interaction mechanism and empirical test of high-quality agricultural development and new urbanization. *Reform*, 4(07), 145-159.

Shang, J., & Liao, Z. Z. (2021). The impact of new urbanization on green total factor productivity. *Statistics and Decision*, 37(05), 116-119.

Li, J. P., & Gu, N. H. (2020). The impact of new urbanization on urban innovation-driven development: An empirical study based on the urbanization rate of Chinese registered population. *Urban Issues*, 4(10), 19-28, 67.

Guo, F., Kong, T., & Wang, J. Y. (2017). Analysis of the spatial agglomeration effect of Internet finance—Evidence from the Internet Finance Development Index. *International Finance Research*, (08), 75-85.

Jiang, Q. M. (2021). Research on the Development Strategy of Digital Inclusive Finance Empowered by Internet Technology. *New Finance*, (05), 55-60.

Liang, B., & Li, X. L. (2021). Digital financial inclusion, poverty alleviation and income distribution: an empirical analysis from China's micro data. *Shanghai Finance*, (05), 12-24.

Li, J. R., Shen, Y., Yang, J., & Chen, X. L. (2021). Research on the Impact of Internet Finance on Farmers' Multidimensional Poverty Reduction. *Statistics and Information Forum*, 36(05), 104-118.

He, Y. Q., & Wang, M. C. (2021). The Nonlinear and Heterogeneous Economic Growth Effects of Digital Financial Inclusion—An Empirical Study Based on the Smooth Conversion Model and Quantile

Model. *Journal of Sichuan Normal University (Social Science Edition)*, 48(01), 54-64.

Jiang, H. L., & Jiang, P. C. (2020). Research on the effect of digital financial inclusion in the improvement of household consumption level and structural optimization. *Modern Finance and Economics (Journal of Tianjin University of Finance and Economics)*, 40(10), 18-32.

Tao, J., & Hu, X. P. (2019). Research on the Impact of Environmental Regulation on the Quality of China's Economic Growth. *China Population, Resources and Environment*, 29(06), 85-96.

Guo, H., Zhang, Y., Peng, Y. L., & He, Z. W. (2020). Research on the Regional Differences of the Development of Digital Finance Affecting Rural Residents' Consumption. *Agricultural Technology and Economy*, (12), 66-80.

Cai, W. B., & Mo, Y. N. (2021). Boosting the high-quality development of the economy: secondary vocational education quality or increment—Based on the empirical test of the system GMM model and threshold model. *Modern Education Management*, (01), 92- 99.

Guo, F., Wang, J. Y., & Wang, F. (2020). Measuring the development of China's digital financial inclusion: index compilation and spatial characteristics. *Economics (Quarterly)*, 19(04), 1401-1418.