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An Analysis of Studying Model for Digital Finance in China

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Abstract

Digital finance belongs to the pioneering field of finance theory in the 21st century. It demonstrates unique characteristics and drives the traditional financial theory into financial digitalization. Some researchers in China have recently been engaging with this new field to discover a new era in finance, namely digital finance. The main purpose of this paper is to evaluate the model and characteristics of digital finance explored in China as of date based on econometric theory and methodologies. The principal results are problems derived from literature in digital finance. It would be of importance, significance and implication for the learning world and society to conclude that the technical characteristics of digital finance can be summarized as a centralized digital financial system developed based on blockchain technology; its core foundation must be fiat currency digitization like E-CNY. Furthermore, decentralized Bitcoin is impossible to be the cornerstone of digital finance, nothing more than just a driving force to the development of digital finance.

Keywords: Digital finance; Model design; Financial digitalization; Fintech

JEL Classification: C800, G000, O300

Introduction

This is a comprehensive review paper on the current state of research about digital finance in China. Here the digital finance-related papers referenced by this paper largely covered the latest research status in this field. The existing ones summarized here are digital finance and the related problems derived from the references. It is in the future that research, the cornerstone of a series of follow-up work, will be conducted. This may be the academic value of the current work. In order to study the status of digital finance, there must be a holistic cognition of it. There will be seven main parts to be investigated in the rest of this paper, like digitalization of finance, the concept of digital finance, digital financial technology features, risk characteristics of digital finance, digital finance with the power in interpretation, digital finance research paradigm and its problems, as well as conclusion and discussion. Now, they are stated separately as follows.

Financial Digitalization

The "14th Five-Year Plan" for the Development of Digital Economy was issued by State Council of the PRC by the end of 2021, Fintech Development Plan (2022-2025) was issued by People's Bank of China and guidance on digital transformation for Banking and Insurance was issued by China Banking and Insurance Regulatory Commission-clear objectives and requirements were proposed for the digital transformation of financial institutions in those documents [1]. Financial digitalization for the traditional financial systems has been in the transformation process, and all works for that process are at the beginning, all knowledge on the topics are being constantly enriched on the way. Some research on the process of financial digitalization was summarized to "the framework of three-dimensional analysis", forming a triangular structure with financial institutions (goods), digitalization corporations (fields)

and clients (peoples), and forming a stable structure of business, fund and data interrelation between two of them, based upon new regulatory framework established by "finance belongs to finance, technology belongs to technology, data belongs to credit information" [2]. In fact, the reformation of financial digitalization doesn't begin at this moment, it has been reforming since the past decades, for example, SWIFT would be one of the best samples. The Society for Worldwide Interbank Financial Telecommunication, or SWIFT, was founded in Belgium in 1973, with 239 banks as members from 15 countries. Since 1977, SWIFT had 518 institutions as members from 22 countries, and dealt with over 10 million messages in the same year. So far, SWIFT has members over 11,000 institutions from over 200 countries and districts, which has enormous business financial data transmitting and balance within the system.

Table 1: *SWIFT's developing situation as a sample.*

Year		1973	1977	1983	1989	1999	2009
	Nations and districts	15	22	53	79	189	209
	Institutions	239	518	1000	2814	6797	9281
Messages in quantity			10 million	46.9 million	296 million	1.06 Billion	3.76 Billion

Table 1 shows SWIFT's development in total as taking a tube peep at the leopard in the following: As for modern society, the year 1977 would be the first year of financial digitalization, since the system of SWIFT swiftly provides the normal service for payment across borders among nations around the world, and SWIFT is a part of communities in the social world. If considering the scale of payment in society, Papal would be the earliest payment equipment online in the USA in 1998. But, it was well known that the largest market of online payment must belong to China (Table 1). It was believed that the time of Alipay being online in August, 2003 or Yu'ebao being online in June, 2013 was the first year of digital finance development [3,4]. Digital currency issue is the milestone of the development of digital finance, belonging to the infrastructure of digital finance. Satoshi Nakamoto published the white book of Bitcoin: A Peer-to-Peer Electronic Cash System on 3rd January, 2008, and digged out the first genesis block on 3rd January, 2009. Bitcoin is one of the best success signs in the application of block chain technology [5]. Digital currency such as Bitcoin, E-CNY and cash deposited in Alipay, only E-CNY belongs to sovereign fiat currency, which is centralized management by People's Bank of China [6]. All of three currencies have their own supports of technical infrastructure respectively, Bitcoin relies on block chain as its technical infrastructure, E-CNY's technical infrastructure are formed by one or more technical programs including block chain through market's competition, currency deposited in Alipay choses the distributed data architecture as its technical infrastructure [7,8]. As the sovereign fiat currency, E-CNY really represents the underlying economic foundation of digital finance. However, concerning the status of digital finance investigated in China, the research status is still in the initial stage. According to knowledge graph analysis through Cite Space software, a series of works on digital currency research are lack of aggregation effect, lack of close academic partnerships among researchers, lack of strong horizontal linkages within research institutes, and the discrete digital currency research status show that the research derived from the related scholars and institutions is still in its infancy and the depth of the study has not yet been achieved so far [9]. Hence, as a result of financial digitalization, it is possible for E-CNY to be the foundation of digital finance. Bitcoin and Alipay currency, supporting digital finance, are makeshift, in the initial status of financial digitalization or digital finance.

What the digital finance is

Chinese scholar suggested that the first year of digital finance was the year 2003 when Alipay was launched, or the year 2013 when Yu'ebao was launched [10]. From the perspective of scale, the Alipay/Yu'ebao launches have been widely accepted in Chinese society, people from all levels of society use Alipay instead of cash to buy or consume goods and services every day, no nation on the earth could stand ahead of China in using cashless payment for day-to-day purposes in scale and scope. So, how to emphasize what the first rank level Chinese development of digital finance stands for in practice? It is impossible to exaggerate its importance. Digital finance or Fintech is seemingly the binding product of technology and finance. In some special and strict sense, digital finance would be the product of binding the joint design, joint optimization, or joint innovation with informal system and financial system, and be the new finance of the digital representation, where it characterizes the "data assetization" or "asset digitization" of its personal characters with "digital identity-digital currency-digital asset-digital economy-digital China-digital planet-digital world or metaverse" [11]. In fact, as for the awareness of digital finance, even though digital finance is widely accepted by people from variable level of society, the essence of digital finance is still to support funding of the financing process with instead financing term scale and risk, and reduce the degree of information asymmetry [12,13]. But, there have still been debated differences in perception of digital finance in academia, so far. Concerning digital finance, there are many

definitions for it, with respect to digital finance in a broad sense and digital finance in a narrow sense. Digital finance in a broad sense would mean that the financial business was carried out using digital technology by banks, other financial institutions and internet enterprises, or be simply defined by the mode of mobile Internet financial service [14]. And for digital finance in a narrow sense. It would be described as the new financial mode operated by internet enterprises, or convergence of innovative finance with "human nature technology" based on block chain thinking [15]. All of those definitions of digital finance, they are reflected in digital technology, such as, digital finance, a new form of financial services integrates internet informational technology and the traditional financial services. The technology of digital finance extends the unlimited financial inclusion effects in a special region, but the interaction effect across the global Financial Connections Space [16,17]. Digital information could reform the appearance of financial status, but does not include the intrinsic nature of finance. The current definition of digital finance mainly epitomizes in digital technology at the level of application in finance, especially in financial inclusion as an alternative, a trend towards digital finance in application. According to The Global Partnership for Financial Inclusion, financial inclusion defines that financial services, including credit loans, savings, payment and insurance, should be credibly accessible to adults in need from all levels of society, no matter of their gender, professions, ages, races, etc. [18]. Digital financial inclusion index is widely accepted as the representation of digital finance in the learning world, which was compiled by the Research Centre for Digital Inclusion Finance, Peking University. The compilation of digital financial inclusion index included the following indicators shown in Table 2: Preparation of plans based on the index of the table 2, compiled digital financial inclusion index of three levels, dates from 2800 counties, 337 prefecture levels above the cities, 31 provinces, during the years 2011-2018, and studied the development trends and spatial characteristics of Chinese digital financial inclusion index, according to the Moran index [19]. The digital financial inclusion index is of its special traits, including significant regional differences being eliminated by regional converges of the development of digital financial inclusion in China (Table 2).

Table 2: *Compiling factors for digital financial inclusion index.*

Name	Index compilation composition	The weight of each section	The number of all metrics
Digital financial inclusion index	Breadth of digital financial inclusion	54.0%	33 specific indicators
	The depth of use of digital financial inclusion	29.7%	
	The degree of digitization of digital financial inclusion	16.3%	
Sources: Collated according to references.			

The two digital financial inclusion indexes in two different areas illuminate clarity the levels of development of inclusive finance [20]. From the perspective of the convenience of using digital finance, many scholars tend to accept the digital financial inclusion index compiled by Peking University, as the alternative of digital finance [21-29]. In the remainder of this paper, the digital finance the digital financial inclusion index compiled by Peking University, which seems to reflect the characteristics of financial technology.

Features of digital financial technology

According to Ministry of Industry and Information Technology of the People's Republic of China, office of the Central Commission on Network Security and Informationization about instruction of accelerating the application of block chain technology and Industry Development, issued on May, 2021, the comprehensive strength of China's block chain industry will reach the world's advanced level by the year 2025, and the industry shall begin to take shape. The comprehensive strength of China's block chain industry shall have continued to improve, the scale of the industry shall have further expanded, by the year 2030. White Paper on the Development of Block chain Enterprises in China during year 2020-2021 was issued by Research Institute for China Electronics and Information Industry on November 2021, and it declared that the number of enterprises associated with the block chain should have exceeded 70,000, and strengthen "to prudent development of financial technology, to accelerate the digital transformation of financial institutions" [30]. Even though digital and internet finances are the concrete embodiment of financial technology of fintech, the greatest essential feature between them would be the block chain involvement and the paradigm revolution induced. The inner connection among digital identity, digital finance was established by the block chain technology, which has six features of credible, secure, privacy protected, socially responsible, intelligent and efficient [31]. Digital finance is the important cornerstone of the digital finance theory. Digital currency is deeply integrated with applications by new technology like block chain, cryptography, artificial intelligence, and traditional finance theory. Digital currency represents the latest developments of fintech [32]. Digital finance reflects the core concept of joint design, joint innovation and joint optimization of financial systems including content, business, mode, product, process,

mechanism, supervision etc., and informational system with respect to technology. The next digital financial information infrastructure measures, system architecture and computing paradigm based on trusted Big Data and artificial intelligence would be bringing about revolutionary change in finance [33]. The relationship between digital technology and the real economy has varied from auxiliary, supporting, empowering development to integration, native and ubiquitous. Block chain, as one of digital technologies, under new technology innovation and Industry transformation, is playing an increasingly important role in those such as, cross-border payments, supply chain finance, agriculture finance, financial Inclusion, smart cities, agriculture, farmer and rural area, livelihood, interbank information sharing for settlement payments, foreign exchange transaction and trade finance, etc. [34]. All in all, the technical characteristics of digital finance can be summarized as a centralized digital financial system developed based on block chain technology, its core foundation must be the fiat currency digitization like E-CNY. The various technical features described above eventually come back to the establishment and improvement within the scope of a centralized digital financial system. The decentralized Bitcoin is impossible to be the cornerstone of digital finance, nothing more than just a driving force to the development of digital finance.

Digital financial risk characteristics

The risks that arise from digital finance in practice are mainly from scenarios' applying the indirect financial risks which arising from the illegal appropriation of information. As for the direct financial risk, yes, as referred to here, the digital financial systemic risk, including system architecture such as software support risks, hardware Information capacity saturation risk, organizational and operational risks. The data operational risk at all levels, as network users continue to expand, gradually emerges [35]. Based on the data from the China Internet Information Centre, it was displayed that Chinese internet network user scale was up to 988 million, 86.4% of these users' payment using the network, as of December 2020, among those internet users, including a large number of enterprise and individual users. About enterprise users, enterprise risk taking levels such as corporate earnings fluctuate, policy behaviour, survival state, attitude indicators, etc. All of these indicators show that the development of digital finance significantly improves the ability of companies to take risks [36]. As for individual users including household users, the development of digital finance significantly reduces the probability that families would fall into poverty in the future [37]. However, digital finance as a fintech, which faces the risk management issues mainly manifested in technology manages risk and laws and regulations lag behind and regulate risks [38,39]. The dilemma facing the development of digital finance is described by that the financial ethics and awareness are weak, the relevant legal system is not sound, the social credit reporting system is not perfect, the way of regulation is not scientific and the level of technology is low [40]. The block chain network is about passing credit, a network of trust and value, and it has embedded algorithms and machine credits, which transforms financial risks like credit risk and section operational risks etc. into algorithmic and technical risks [41]. Technology manages risk is mainly embodied in some cases, complicated financial data risks, concealment and diffusion characteristics, financial data security risks like the cryptocurrency and web anonymity technology easy to steal data, to tamper with data, to sell data, to compromise data, to pollute the data and to make data attacks, etc. [42]. Since the first year of Internet finance in 2013, That 5IABCDE is the representative of various types of digital technologies and financial services continue to integrate and innovate have formed innovative service methods of digital finance in together, combining telecom with networked payments [43,44]. The laws and regulations lag behind and regulate risks have caused various risks, such as, data monopoly risk, damage to the rights and interests of consumers, hindering the entry of competitors, data-driven merger and acquisition, undermining the openness and transparency of digital financial markets, privacy, business secret, social security, being difficult to define financial data responsibilities and rights, execution being stuck in a dilemma, cross-border regulatory risks being increased, "long-arm jurisdiction "increasing data management risk, etc. [45]. Although stated above in aspects of digital financial risk characteristics, this did not include the representation of all digital financial risk characteristics. The biggest financial evolution of the 21st century reflects the inevitable trend of the development of the times. This prologue has only just begun. The connotation and extension of financial risk must continue to evolve and change by the development of digital finance. This shall be the norm of digital finance risk characteristics that accompany the development of digital finance.

The explanatory power of digital finance

According to the literature here, the explanatory power of digital finance is primarily measured by the test of the t-statistic of the parameter, through the empirical research done derived from the establishment of relevant models. The digital finance explains the distribution of topics, included but not limited to, financing constraints, enterprise Innovation, total factor productivity, business growth, green innovation, regional Innovation, region entrepreneurship, agriculture-related loans, agricultural innovation, rural economy, entity economy, financial assets, economic growth, economic inclusive growth, trade finance, banking risk, impoverished/ poverty. For these topics, a large number of scholars have adopted an empirical approach to study them. On the issue of financing constraints, many scholars from

different perspectives gave a different portrayal. For example, to define the financing constraint problem based on three dimensions, in terms of financing costs, financing structure namely indirect financing ratio and financing efficiency [46]. There are also differences in financing behaviour in companies of different sizes. Maybe it's not a simple linear process in financing constraints for businesses. In fact, as a measurement of financing constraints for business, the enterprise size is a nonlinear representation of the logarithm [47]. The larger the enterprise, its operating costs can occur complex changes, namely, as the size of the enterprise grows, the high operating costs could decrease, and after reaching the lowest point, the costs will continue to expand as the size of the enterprise continues, successively show a rapid or even sharp rise, until to be bankruptcy. The operating costs of the business are reflected in the sensitivity to cash flows [48,49]. Corporate financing constraints seriously affect corporate innovation. A measure of enterprise innovation is not exactly unified. The general metrics are: the ratio of research or experimental development expenditures and GDP, the ratio of inputs to outputs in science and technology innovation, the number of patent applications, the ratio of number of patents granted and the investment in scientific and technological innovation, the invention creation yield [50,51]. No matter what kind of enterprise innovation is measured, including the breakthrough innovation and incremental innovation, or equity pledge, estimated by parameter t, the criterion of the t test shows that the developments in digital finance seem to be contributing significantly to it [52-54]. In order to ease financing constraints, in turn, to promote enterprise innovation, digital finance encourages companies to lower the threshold for corporate financing, reduces valuation approval costs and reduces information asymmetry [55]. The enterprise innovation has increased dramatically in total factor productivity. To improve total factor productivity must surely be going to accelerate the growth of enterprises, and to consolidate the development of a green economy in urban areas enables regional innovation, namely the ratio of the number of patent applications for invention to R&D and the green innovation [56,57]. Regional entrepreneurship is achieved through an increase in employment rates [58]. It is broad and deep for digital finance to impact on all walks of life in society, which significantly and positively impacts agriculture-related lending, significantly promotes agricultural innovation [59,60]. It is not significant for digital finance to improve the rural economy. The role played by digital finance to improve economic development is difficult to form a consistent decision based on existing research methods. As known by empirical examination, digital finance significantly improves energy efficiency, significantly promotes the development of the real economy, and at the same time, significantly inhibits the tendency to allocate financial assets, significantly contributes to economic growth, including inclusive economic growth, and having injected new impetus into the development of small and medium-sized enterprises [61,62]. The small and medium-sized enterprises play an important role in foreign trade, but the trade finance is an important initiative to make up for the development of small and medium-sized micro enterprises. Digital finance drives the probability of poverty. Has deepened the extent of multidimensional poverty, and does not have a statistically significant impact on consumption among poor households. However, it has a statistically significant impact on the consumption of non-poor households, of a Matthew effect [63]. The size of consumer funds and the efficiency with which they are used can be fed back to the bank's operational risk monitoring, because consumers' spending money basically comes from their balance of deposits in the bank. With the development of digital finance, the transfer of consumer funds is controllable, and the probability of the risk occurring will be significantly reduced. So, the development of digital finance will significantly strengthen the risk bearing capacity of banks, the level of economic development has increased instead has weakened significantly banks' risk-taking capabilities.

Digital finance research paradigm and its problems

Non-large data indicates that information disclosure is not sufficient. Digital finance, or trusted finance can be decomposed as, big data, model, algorithm, system, process, operation, management, design, pricing, trade, hedge, risk control, internal control, supervision, etc., where big data is trustworthy and a trusted model is a support. Quantitative finance based on data and models will be the backbone of finance. However, the model on which digital finance is based is not necessarily credible, that is, the best evidence is that its model has a low fit to the data. According to the literature listed here, there may be a big discrepancy from the actual observation for a lot of empirical conclusions, since researchers rarely do in-depth research on it, and properly explain the reasonable or unreasonable parts of it. The current research paradigm for digital finance can be summarized as follows：

Model Settings (borrow) +Variable Statistics Basic Analysis +Sample Basic Statistical Characteristics Described + Metrology Analysis + Conclusion

This research paradigm is popular today, but the results of the proof are not ideal. The reasons are at least the following：

One: There is no rational logical analysis of the model, to borrow from or the traces of imitation are too obvious, so be it. Inadvertently, the logical relationship between variables is diluted, it seems a little more casual;

Two: The definition of variables is not precise enough, and compare rough. The reason may be multifaceted, one of the high probabilities is that variables are selected based on the ease of availability of the data. As for whether such a variable can better illustrate the problem itself under study, no one did mind whether subjectively or objectively;

Three: "Only see the trees but not the forest", the results are generally interpreted in mode, regardless of whether the mode is set appropriately after passing the empirical test, regardless of whether the explanatory variable of interest is statistically significant. On the surface, it looks beyond reproach, but in practice it is really ineffective. The so-called; "the skin does not exist (the rationality of the model), the hair will be attached (explain the statistical significance of variables)"? The skin no longer has its proper function, what is the point of studying Mao? Regrettably, this is how many papers do the like;

Four: In addition to the so-called robustness test in form, the empirical conclusions drawn about the results, have not been explained from a theoretical level, but abruptly stopped. It is difficult to justify itself;

Five: Theoretical analysis lacks logical reasoning, and it is simply to cite the existing literature to elaborate. The problem is that the cited literature is inherently problematic, the discussion is very inadequate. In this case, there seems to be a point of "the effect of spreading false rumours". This reason may be a good explanation, why so many writing styles of articles are the same or like! The theoretical basis for model building is insufficiently elaborated, the addition or subtraction of variables is arbitrary. This invisibly affects the fit of the model, and it is also difficult to avoid the risk of model interpretation. This is the case, why, basically, it reflects the current state of similar research. The risk is very high to draw conclusions based on models that are not robust. It's like gambling, in an irrational situation. This is precisely the use of seemingly rational scientific analysis methods, but to get a true portrayal of irrational conclusions. It's all irrational to make any policy recommendations based on such a conclusion, although the original intention was rational. The problem with model setup is mainly based on the simplification of subjective speculation, this results in the setup of the model or selection on, its objectivity is relatively low, the model's ability to interpret samples is very limited, or the predictive risk of the model is very large. This case is detached from the academic value and practical significance of using models to study practical problems, thus derived from that for the sake of the model and the form of the model is formatted. It is extremely serious for such academic thinking and research methodology to harm the entire academic community. It is almost always exercised in the name of academic research to spread false rumours, the degree of harm cannot be overemphasized.

Conclusion and Discussion

Are the models on which most studies are based are necessary? If necessary, why don't most research papers care about the suitability of models? If not, why spend a lot of time building a model and do regression analysis on it? Maybe a meaningful explanation is true that those who are used by "me" are true. "Only see the trees and not see the forest" thinking mode weakens the ability to interpret the variables of the explanation, even the interpretive function that causes failure. The model's building argument is inadequate, basically, to borrow someone else's model or that the original does not move or to make small additions or subtractions to the original model, etc., to prove the authority of the applied model. At the same time, "tangerine planted in the south of Huai river is orange, but in the north of Huai river is 'bitter orange'", the results are predictable. Many studies are based on model sources derived from the same way. That's why a lot of research is similar, lacking the necessary academic value.

According to the previous study, the following four main conclusions are summarized, respectively, the statements are as follows:

The model lacks rationality for its settings. This is primarily based on the model's fit to the data, not enough to support the credibility of the model. It also shows that the establishment of the model lacks scientific and rationality

This section is listed that empirical findings lack reliable arguments, their common problem is that the model fits very poorly, the resulting final result interpretation credibility is not enough to support their conclusions, see Table 3 in summary (Table 3).

Table 3: *Credibility of the interpretation of the conclusion.*

Interm input	Description of Conclusion	Sources	Confidence Level in Total
	To improve the small and medium-sized enterprises' technology innovation	Tang, et al, 2020; Jia & Liu, 2021; Xie & Zhu, 2021; Xie & Yan, 2022; Li & Liu, 2022; Zheng, et al, 2022	
	To promote the total factor	Ran & Tan, 2021; Jiang & Jiang,	

The development of digital finance	productivity	2021	Low in sense of Statistics
	To improve the business growth	X. Gao, et al, 2022	
	To improve the Urban or regional technology innovation	Pan, et al, 2021; Nie & Wu, 2021	
	To strengthen the regional carbon reduction capacity	H. Sun, et al, 2022	
	To promote the ability of a business to take risks	F. Yan, et al, 2021	
	To promote the household Consumption	Zhang, Wan, et al, 2019; He & Zhao, 2020; Zhang, Yang, et al, 2020	
	To weaken the monetary policy	Y. Xu, et al, 2020, He & Wei, 2022	
	To motivate the corporate cross-border mergers and acquisitions	Jin & Zhang, 2021	
	To reduce the leverage ratio of enterprises	Zhao & Cao, 2022	
	To magnify household debt risk	Wang & Yang, 2022	
	To reduce the probability of relative poverty	J. Sun, et al, 2020	
	To accelerate the aggregation of labor	Ma & Hu, 2022	

Table 4: *The rural poverty alleviation poverty poor population changes.*

The country's rural poor population	The year of 2012	The year of 2019	The year of 2020
Quantity (ten thousand)	9899	551	Basically lift yourself out of poverty according to existing standards
where：west quantity (ten thousand)		323	
central quantity (ten thousand)		181	
east quantity (ten thousand)		47	
Sources: compiled from references.			

The model setup lacks logic, this leads to the occurrence of pseudo-regression

The pseudo-regression due to improper model settings, in a wide variety of academic papers that have been published, is seemingly, not easy to spot. But, from the regression reports of those papers, the evidence is still difficult to hide. Here are some of the specious phenomena that appear in the literature, to be discussed below.

1. Before the introduction of financial freedom, the bank concentration has had a positive and significant impact the expansion of financial inclusion; but when financial freedom was introduced, although the banking concentration and financial freedom are positive implications for financial inclusion expansion, and it's just that the effect doesn't work. In theory, it should be in the opposite direction for the banking concentration and financial freedom respectively to affect the financial inclusion in expansion. The development of digital finance will significantly strengthen banks' risk-taking capabilities, and the level of economic development has increased, instead, has weakened significantly banks' risk-taking capabilities. These empirical conclusions do theoretically not seem too reasonable, because that the banks' poor loan rates should be with the development of digital finance and the reduction is in line with the logic of digital finance. At the same time, the economic development will have a capital pooling effect, and also reduce the bank's unfavourable loan ratio, unless the bank's lending behaviour is irrational.
2. The governmental financial support does not produce positive results for the economic development in rural areas. This justment is contrary to what has actually been observed. The likelihood of rural poverty is relatively large. Digital finance drives the probability of poverty occurring, and deepens the extent of multidimensional poverty. This empirical conclusion is very different from people's general observations. If the development of digital finance exacerbates the likelihood of poverty and the extent of poverty, according to the existing literature, 2013 was the first year of digital finance, and then, how to explain table 4? As can be seen from Table 4, basically, it is digital finance as defined today, China's "Poverty Alleviation" Battle occurs within the year in which it occurred. This fact also illustrates that digital finance has accelerated the process of

poverty alleviation, if digital finance has an impact on poverty, not the opposite (Table 4).

3. Government fiscal expenditure has a significant inhibitory effect on inclusive growth for the economy. As known, a big feature of governmental expenditure is to create a balance of opportunities for economic growth as much as possible, and close the income gap as much as possible. But, the empirical results do not support this original intention of the government's goals in the public financial policy. If the empirical results are reliable, that is to say what the government spends for inclusive economic development is ineffective. However, the conclusion is inconsistent with the actual observations.
4. Digital finance development significantly and positively impacts the high level of quality development. Look at the regression results, the population is becoming more educated and also significantly promotes high-quality development. But, it is inexplicable for us to know that fixed asset investment and infrastructure construction play little role in high-quality development. On the contrary, the GDP significantly affected by investment is an important driver of high-quality development. The industrial structure does not play a bigger role in promoting high quality development. So here's the problem, what is the foundation of high quality development? Why is there no foundation to support the growth? These illusions are obviously not caused by the facts themselves, the problem should be that it comes up on the scale, namely, the non-scientific nature of the model settings.
5. It is of significant positive facilitation for the development of digital finance to support high-quality economic development. The ability to innovate has increased, but it has decreased the degree of high quality economic development. This result is contrary to the facts.
6. The increased levels of innovation in agriculture have been significantly inhibited by the level of lending by financial institutions, and also, the development of the first industry and agricultural innovation have a significant negative correlation. The situations are contrary to the objective situation well known.

The rationality of the model structure lacks rigorous scientific arguments, the model reflects the poor objectivity of the sample

Those are explained from the settings of the following model. Settings for the baseline model, the explained variable, area technology innovation and the core explain variables, digital finance, they have a cross-generational relationship in time, but why is the relationship, between them, of the same generation missing? What is the theoretical basis for the settings? One of the reasons given in the text is "to consider that digital finance may affect the level of technological innovation with the hysteresis characteristics for the region, and to a certain extent, relieve endogenous problems of reverse causality" [64]. Such reasons are subjective and insufficient. In fact, technological innovation is a continuous process, not an intermittent process, and the missing values for the same period can be logically represented by 0. So, the scientific and rational nature is debatable for such a model's setting. Given the reasons above, the arguments are not too robust for the conclusion of "digital finance significantly increased the regional level of technological innovation" in the article. According to empirical studies, other than that the digital financial upfront conditions have a significant positive impact on today's bank loans. In a word, during the setup of the model, why should digital finance lag behind one period? What role will digital finance play in the same period? For the key factors, if the article can be demonstrated from a theoretical level, or from an empirical point of view, characterized by statistical analysis, then, that would solidify the robustness of the empirical results, and circumvention should be nowhere in the occurrence of pseudo-regression.

Literature citations lack scientific rigor, this leads to citations only to my liking, and do not ask whether the cited text is reasonable and credible.

Not all published papers are logically correct, and all the conclusions obtained would be inevitable from logical reasoning. In fact, there is no shortage of rare ones for conclusion fallacy caused by research methodological errors, among the many published papers. Unfortunately, there are no fewer authors that have very serious behavioural biases in quoting in their papers. They just go to look for those related a few words as a point of view to support their own research, but don't explore that just a few words are reliable, scientific reasoning, or that the resulting arguments are supported by lack of factual evidence based on virtual assumptions? There is no doubt that there is a huge risk of error and omission for quoting without interpretation pointed out that the conclusions obtained by are inconsistent with those by for the same problem, but did not argue the difference between them, namely, why are they so? Why? All unreasonable or who is reasonable and who is unreasonable? These key elements are not clarified, but just a few listings [65]. What does this mean? This is not an isolated phenomenon, but it's the norm of academic writing for years. This model of research shows that everyone only says their own thing, convergence citation, if not, it should be charged. Such a research status, the beneficial communication for scholarship is negative, nor does it fit the scientific logic of the problem [66].

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