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Posted Date: 21 April 2026

doi: 10.20944/preprints202604.1471.v1

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Article

Digital Finance, New Quality Productive Forces and Foreign Investment: Evidence from China

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Abstract

China is committed to building a new development paradigm to realize Chinese modernization. Therefore, it is of great significance to delve into, from the standpoint of new quality productive forces (NQPF), how digital finance affects foreign investment. This study utilizes data from 31 Chinese provinces from 2011 to 2023 to ascertain the impact of digital finance on foreign investment. The findings indicate that digital finance exerts a significant and positive effect on foreign investment, with this effect being stronger in the central and western regions. With regard to transmission mechanism, digital finance can enhance foreign investment by improving regional NQPF, which has significant characteristics of regional heterogeneity. Further research makes a discovery that the outward foreign investment's level in the central and western regions, is positively associated with the strength of digital finance's effect on foreign investment, while the outward foreign investment's level in the eastern regions, is negatively associated with the strength of digital finance's effect on foreign investment. This research provides evidence for deepening digital finance's development to promote foreign investment.

Keywords: digital finance; new quality productive forces (NQPF); foreign investment; regional heterogeneity

1. Introduction

After performing reform and opening up policy, China has continuously intensified its efforts in "attracting foreign investment" and provided numerous conveniences to foreign-funded enterprises in terms of policies, systems, and environment, thereby attracting an increasing number of investments of foreign-funded enterprises. Foreign investment plays a significant role both domestically and internationally. From China's perspective, foreign-funded enterprises bring capital as well as advanced technology and management expertise, driving technological upgrading and industrial transformation of local enterprises, extending the domestic industrial chain into the high-end sector, and effectively promoting China's economic and social development. As seen by foreign-funded enterprises, while obtaining profits, they also promote their own technological iteration and model innovation, achieving the dual goals of scale expansion and value enhancement. Actively facilitating the entry of foreign investment, strengthening the service and support for it, enhancing the efficacy of foreign capital utilization, and creating the "Invest in China" brand are important elements in building a high-level opening-up in conjunction with a novel open economic system. Foreign investment plays an important supporting role in promoting the smooth operation of the domestic economic cycle and is a key way to enhance the synergy between the domestic and international dual cycles. The scale of foreign investment in China shows continuous growth. Data shows that the total foreign-funded enterprises' investments in China were \$2.99 trillion in 2011, and increased to \$29.34 trillion in 2023.

However, nowadays, China is still facing a blocked globalization environment, a weakening momentum of world economic and trade growth, and a sluggish global cross-border investment scenario. In face of the increasing global risks and uncertainties, slowing economic growth, and

intensifying competition in emerging economy, how to enhance the attractiveness of foreign investment and ensure the stabilization, expansion and quality of foreign investment has become an important issue (Liu et al., 2023) [1]. Digital finance constitutes a novel form of finance development with the potential to address problems such as the inadequacy of traditional financial supply and imbalances in financial development, as well as to reduce the cost of financing, improve financial efficiency, and develop new quality productive forces (NQPF). The efficient and innovation-driven NQPF overcome the limitations of traditional productivity, optimize resource allocation, promote industrial upgrading, improve the business environment, and become for a pivotal contributor to the realm of foreign investment. In view of the fact that the research on digital finance's impact on foreign investment relies on the NQPF, which can facilitate the advancement of digital finance to promote NQPF and energize foreign investment, we conduct this empirical research based on the data of 31 provinces from China covering the period from 2011 to 2023.

This study is notable for the following contributions. First, in consideration of the prevailing circumstances that the digital economy and the real economy are inextricably linked, where the mutual promotion of high-quality economic development is a key consequence of this integration, this paper explores the mechanism through which digital finance affects foreign investment, grounded in the NQPF, which are unlike those in the existing studies (Liu and Li, 2022; Wang et al., 2023; Xie, 2024; Jiang et al., 2025) [2–5]. It can provide a basis for constructing a system to promote the deep integration of real economy and digital economy, as well as for promoting digital finance's development to enhance foreign investment from the perspective of NQPF, thereby contributing to high-quality development. Second, coordinated regional economic development is important for promoting common prosperity and realizing high-quality development and China-style modernization, but some unfavorable factors, such as the “digital divide” and the financial resources misallocation, in the central and western regions have constrained the economic boom. There still remain prominent regional economic imbalances as well as disharmony. This paper explores, through the lens of regional heterogeneity, digital finance's impact on foreign investment, which can provide practical experiences on how to deliver an inclusive function of digital finance that enhances regional innovation in productivity for coordinated regional economic development. In addition, this paper explores the moderating effect of outward foreign investment in which digital finance influences foreign investment from a “going-global” perspective. It provides a basis for further understanding how “going-global”, digital finance and “bring-in” relate to each other, and has important reference value for harnessing synergies between digital finance and “going-global” to promote foreign investment.

The structure of the remainder is delineated as below. Section 2 offers theoretical analysis and research hypothesis. Section 3 details empirical research design. Section 4 analyzes the empirical results. Section 5 tests the impact mechanism. Section 6 further examines the impact of “going-global”. The final section concludes and provides recommendations.

2. Theoretical Analysis and Research Hypotheses

2.1. Digital Finance and Foreign Investment

The theory of transnational investment zone selection suggests that multinational investment firms tend to invest in areas where the financial system is better developed. Because a host country's well-developed financial markets can not only finance multinational investment firms at lower cost (Desbordes and Wei, 2017) [6], but also can stimulate economic dynamism by easing financial friction and reducing information asymmetries (Jiang et al., 2025) [5]. Compared to traditional finance, digital finance can enhance information symmetry and market transparency by using digital technologies, for example, the Internet, big data, block chains as well as artificial intelligence (AI), to deliver financial products and services to economic agents quickly and easily, which can optimize resource allocation, promote technological innovation, improve economic efficiency and provide a favorable market environment for foreign investment. The extant literatures indicate that the likelihood of

cross-border capital flows increase as digital finance develop (Gou et al., 2024) [7]. As a result, digital finance exerts a favorable promotional influence on foreign investment.

Regarding the impact mechanism of digital finance on foreign investment, concretely speaking, following mechanics can be provided. First, the financing possibilities for foreign investment can be enhanced by digital finance. The innovations of financial products and services based on digital technologies can break out of spatial constraints by providing individualized and diversified sources of financing for foreign investment, greatly increasing the financing possibilities for foreign investment. Second, digital finance enables a reduction in the cost of foreign investment. Financial services offered by digital finance are no longer overly dependent on physical facilities, but rather use the Internet as a vehicle for transactions, using digital technology to smart financial operations, establish direct point-to-point linkages between financial service providers and those in need, and accelerate the flow of funds across time and space, thereby effectively reducing the cost of financial transactions, the searching costs and the assessment costs (Li and Ran, 2021)[8]. The deepening of digital finance and increased competition in financial markets have been driven by financial institutions' digital transformation, forcing many financial intermediaries in host countries to increase their competitive advantages and reducing local financing costs for transnational corporations. Third, digital finance enables a reduction in the risk and uncertainty of foreign investment. Unlike traditional finance, which operates on credit and mortgage basis, physical networking generates rich data, AI and cloud computing improves data processing efficiency, and block chains facilitate data updating and real-time dissemination, making IT-based digital finance disruptive to traditional finance in terms of broadening the sources of risk assessment, exploiting potential user demand, improving risk pricing efficiency, etc. (Hui et al., 2023) [9]. In a context of digital economy and financial development, foreign investment firms and commercial financial institutions can easily form loan cooperation based on the concept of mutual benefit. As rational brokers, financial institutions focus on high returns while also focusing on the risk level of investment projects. Digital finance, which is built upon digital technologies such as big data, can provide conditions to reduce business risks and uncertainties that drive foreign investment.

Given above analysis, we advance following research hypothesis:

H1: *Digital finance has a promotion impact on foreign investment.*

2.2. Mediating Mechanism: New Quality Productive Forces

NQPF break through the constraints of traditional productivity, typically characterized by high quality, efficiency, and innovation. NQPF are characterized by the leapfrogging of the total factor productivity, with science, technology and innovation at its core driving force (Wang et al., 2025) [10]. Depending on the objective trends in productivity development, NQPF can be composed of science & technology, green and digital productive forces (Hong, 2024) [11]. Digital finance is characterized by inclusiveness, time and space unconstraint, low transaction costs, efficient services, transparency of information, etc., which can accelerate the flow and effective configuration of elements such as finance, information, data and so on, break out of old productivity chains, improve patterns of productive relations and contribute to the upgrading of NQPF.

First, the science & technology productive forces can be enhanced by digital finance. The development of digital technologies, for example, block chains, big data, cloud computing, AI, etc., constantly stimulates innovation in digital finance products and services, providing diversified sources of financing for enterprises that can ease financing constraints, reduce financing costs, improve efficiency in financing. The provision of enhanced financial assistance and superior services for the purpose of promoting innovation in the domains of science and technology is hereby facilitated, boost the leapfrogging of total factor productivity, enable technological innovation or productivity enhancement to reshape the boundaries of production possibilities, generate new industries, new models and new dynamic energy, and drive NQPF to cross-border development. By improving the business innovation environment, increasing resource allocation and market

efficiency, and innovating and cross-cutting productivity, digital finance can achieve a new quality of productivity from an innovative perspective. Digital finance can thus boost the increase in science & technology productive forces.

Second, green productive forces can be achieved with the help of digital finance. Digital development of financial sectors is also driving the development of green low-carbon industries and supply chains, helping to re-engineer green low-carbon cycle economic systems, building efficient eco-green industry clusters, and promoting green development. In fact, the green development serves as the undertone of high-quality development, and NQPF are essentially the green productive forces. Therefore, NQPF can be boosted by digital finance through a leap in green productive forces.

Third, digital finance has contributed to rising digital productive forces. The combination of data elements and financial attributes in digital finance can better serve utilization of data elements, evolution of a digital economy, promotion of deep real-digital integration, creation of internationally competitive clusters of digital industries, promotion of industrial digitization and digital industrialization, as well as formation of new digital productive forces in the digital economy era, all of which are important manifestations of the rise in new quality productive force. It is evident, then, that digital finance is a contributory factor to the development of NQPF by virtue of the enhancement it brings to the digital productive sector.

While nurturing as well as evolution of new-quality productive forces built upon innovative, subversive and cutting-edge technologies, can lead to the emergence of new areas, novel models, unprecedented dynamic energy, and a number of new industries. Applying results of science & technology, green, digital innovation to specific industries and industrial chains, transforming and upgrading traditional industries, nurturing new and emerging ones, developing future industries, improving modern industrial systems, can provide new market demand and new investment opportunities for foreign investment, and create a “new gravitational force” for NQPF, which will stimulate foreign investment firms to invest in China’s markets at last.

Given the above analysis, we advance the research hypothesis as follows:

H2: *Digital finance promotes foreign investment through the upgrading of new quality productive forces.*

2.3. Regional Heterogeneity Effects

In China, foreign investment and digital finance development have significant heterogeneous features. As far as foreign investment is concerned, the eastern region has taken the lead in implementing reforms and opening up, with a high degree of marketization and openness and a high level of economic development, providing very favorable conditions for foreign investment, which is concentrated in the eastern region. Due to their later start in reform and opening up, the central and western regions possess a limited degree of marketization, economic development, and openness, as well as relatively small foreign investment. Regard to digital finance developments, eastern region has experienced a greater degree of engagement with digital finance than other regions, which have shown comparatively lower levels of adoption.

Given weak credit environment, economic environment, and intellectual property rights in the central and western regions, lagging market development as well as greater financial exclusion faced by enterprises. Digital finance is poised to make significant strides in face of an unfavorable external environment with fewer networks of financial institutions, a narrow range of financial operations and inefficient services (Hui et al., 2023) [9]. Digital finance, although less developed in the central and western regions, grows faster now. Through Internet information technology, digital finance can enable financial services to achieve a break-through physical nodes and business hours, widen their coverage, enhance the quality of traditional financial services by using “competitive effects” and “demonstrated effects” and promote reform of traditional financial institutions. The central and western regions experience a relative dearth of access to finance, moreover, their demand for financial resources is stronger than that of the eastern region (Wang and Yin, 2022) [12]. In the face of an unfavorable external financing environment, digital finance has the capacity to function as “help in

one's hour of need". Digital finance is enabled by digital information technology that breaks through geospatial barriers and takes full advantage of low-threshold and low-cost features to improve capital misallocation in underdeveloped areas in the country's central and western provinces (Li and Jiang, 2022) [13], it helps improve market continuity in central and western regions, creates market-scale benefits as well as increases the attractiveness of foreign investment. Digital finance provides access to information at lower risks and costs, alleviating corporate finance constraints and information asymmetries (Zhan et al., 2023) [14]. Innovative incentives for digital finance have become more visible in less developed regions where traditional financial development lags behind, and are better able to promote digital transformation for the central and western areas, thus, through upgrading of NQPF, providing a greater incentive to attract foreign investment.

The economic development is high, financial services are well developed, and traditional financial institutions have a large network of established and large-scale services in the eastern part of the country. Developments in digital finance in the eastern part of the country may be more focused on complementing already relatively adequate financial supply, and the development of digital finance may serve as a "gilding the lily" effect (Xie et al., 2018) [15]. At the same time, foreign investments are large and marginal gains from factor inputs are smaller than in other regions. Apart from that, the eastern region's financial development has contributed to an acceleration of capital flows, a shift from social idle finance to investment, and an increase in internal absorptive capacity of credit funds, which has led to domestic investment being a substitute for foreign investment. As a result, the impact of digital finance on foreign investment will be less significant.

Given the above analysis, we advance the research hypothesis as follows:

H3: *Digital finance is more likely to boost foreign investment in the central-western regions than that in the eastern region.*

3. Research Design

3.1. Data

The data pertaining to digital finance are derived from the Peking University Digital Financial Inclusion Index of China (2011-2023), data of the NQPF are available from the CSMAR Innovative Productivity Research Database, and the other provincial data are mainly from the EPS database or the National Bureau of Statistics of China. The data is treated as follows: First, in order to eliminate exchange rate effects, USD values of the variables are converted into CNY based on the USD/CNY exchange rate. Second, to remove the influence of related price factors, the nominal variables are deflated by using the related consumer price index for residents, the industrial producer price index and the fixed asset investment price index.

3.2. Variables

3.2.1. Dependent Variable

Foreign investment ($\ln FI$), is measured by logarithm of the total amount invested by foreign investment enterprises in each province, autonomous region or municipality directly under the Central Government (hereinafter referred to as "province"). In addition, logarithm of the number of foreign investment enterprises $\ln NFFE_{it}$, logarithm of registered capital of foreign investment enterprises $\ln RCFFE_{it}$, and logarithm of the registered capital of foreign investment enterprises from foreign investors $\ln RCFFE_{it}$ are used as the alternative variables to test the robustness of the results.

3.2.2. Independent Variable

Digital finance ($\ln DIF$), is measured by logarithm of digital inclusive finance index, and we use a one-period lag of the variable considering that the policy effects exhibit a time lag. For robustness

check, we use the three sub-dimension indices of digital finance, i.e., depth of usage ($\ln Depth$), coverage breadth ($\ln Breadth$), and digital support services ($\ln Digit$) of digital finance as the alternative explanatory variables to do the test. Following the same way, we use the one-period lag of logarithm of each sub-dimension indices.

3.2.3. Mediating Variable

New quality productive forces ($\ln Npro$), is measured by logarithm of the composite index of the NQPF, which is measured in terms of scientific & technological productive forces, green productive forces and digital productive forces, using the entropy method to construct. In terms of robustness tests, three sub-dimensional indices of NQPF are used with the same way, the logarithmic value of science & technology productive forces ($\ln Scip$), green productive forces ($\ln Greep$) and digital productive forces ($\ln Digp$).

3.2.4. Control Variable

Taking into account the impact of regional economic development, capital intensity, labor costs and resource endowments on the foreign investment, we include the following key control variables: economic development ($Pgdp$), capital intensity ($\ln KL$), labor costs ($\ln Wage$), human resources ($Human$), forestry resources ($\ln Forest$), water resources ($\ln Water$) and the emissions ($\ln SO$).

Table 1 presents the type, symbol, name and definition of the main variables.

Table 1. The type, name, symbol and definition of the main variables.

| Type | Symbol | Name | Definition |
|----------------------|--------------|-------------------------------|--|
| Dependent variable | $\ln FI$ | Foreign investment | logarithm of the total amount invested by foreign investment enterprises of each province |
| Independent variable | $\ln DIF$ | Digital finance | One-period lag of logarithm of digital inclusive finance index of each province |
| Mediating variable | $\ln Npro$ | New quality productive forces | Logarithm of the new quality productive forces index measured with entropy method of each province |
| Control variable | $Pgdp$ | Economic development | Gross domestic product (GDP) per capita of each province |
| | $\ln KL$ | Capital intensity | One-period lag of the logarithm of fixed assets to employment of each province |
| | $\ln Wage$ | Labor costs | Logarithm of the average wage of employed persons in private establishments of each province |
| | $Human$ | Human resources | Average number of students per 100 population in secondary and higher education of each province |
| | $\ln Forest$ | Forestry resources | Logarithms of forest land area of each province |
| | $\ln Water$ | Water resources | Logarithm of water per capita of each province |
| | $\ln SO$ | Emissions | Logarithm of Sulphur dioxide emissions of each province |

3.3. Models

To empirically examine the impact of digital finance on foreign investment, we set up the baseline model as follows:

$$\ln FI_{it} = \alpha_0 + \alpha_1 \ln DIF_{it-1} + X'_{it} \beta + \tau_t + \varepsilon_{it} \quad (1)$$

where i refers to the province, t indicates the year of the period. $\ln FI_{it}$ is the dependent variable, which represent foreign investment; $\ln DIF_{it-1}$ is independent variable, which represents digital

finance. And X'_{it} is the vector of a group of control variables. τ_t is the year fixed effect, and ε_{it} is the error term.

To test the mediating mechanism, we set up the mediating effect model as follows:

$$\ln Npro_{it} = \gamma_0 + \gamma_1 \ln DIF_{it-1} + X'_{it} \beta + \tau_t + \varepsilon_{it} \quad (2)$$

$$\ln FI_{it} = \phi_0 + \phi_1 \ln DIF_{it-1} + \phi_2 \ln Npro_{it} + X'_{it} \beta + \tau_t + \varepsilon_{it} \quad (3)$$

where $\ln Npro_{it}$ is the mediating variable of new quality productive force.

4. Empirical Results Analysis

4.1. Descriptive Statistics of Main Variables

To describe regional heterogeneity of main variables, the entire sample is divided into two sub-samples, i.e., the eastern region, as well as the central and western regions, according to the regional classification of China's National Bureau of Statistics. The descriptive statistics of main variables are reported in Table 2. The data show that the eastern region has not only a high level of foreign investment but also a high level of digital financial development relative to the central and western regions; At the same time, there are significant differences in economic development, capital intensity, labor costs, resource endowments and emissions between two regions.

Table 2. The descriptive statistics of main variables.

| Variable | All sample | | | Eastern region | | | Central and western regions | | |
|--------------|------------|--------|-------|----------------|-----------|-------|-----------------------------|--------|-------|
| | Obs | Min | SD | Obs | Min | SD | Obs | Min | SD |
| $\ln FI$ | 364 | 8.815 | 1.504 | 132 | 10.104*** | 1.077 | 232 | 8.082 | 1.185 |
| $\ln DIF$ | 364 | 5.342 | 0.664 | 132 | 5.465*** | 0.573 | 232 | 5.273 | 0.702 |
| $Pgdp$ | 364 | 5.421 | 2.604 | 132 | 7.469*** | 3.091 | 232 | 4.255 | 1.214 |
| $\ln KL$ | 364 | 1.843 | 0.434 | 132 | 1.925*** | 0.411 | 232 | 1.797 | 0.441 |
| $\ln Wage$ | 364 | 10.534 | 0.267 | 132 | 10.688*** | 0.276 | 232 | 10.446 | 0.217 |
| <i>Human</i> | 364 | 2.874 | 0.888 | 132 | 3.227*** | 0.965 | 232 | 2.674 | 0.775 |
| $\ln Forest$ | 364 | 6.406 | 1.303 | 132 | 5.441*** | 1.519 | 232 | 6.955 | 0.725 |
| $\ln Water$ | 364 | 7.116 | 1.333 | 132 | 6.347*** | 1.253 | 232 | 7.553 | 1.171 |
| $\ln SO$ | 364 | 2.741 | 1.443 | 132 | 2.284*** | 1.835 | 232 | 3.000 | 1.085 |

Note: (1) The unit of the total amount invested by foreign investment enterprises is 1 billion yuan; the unit of gross domestic product per capita is 10,000 yuan; the unit of fixed assets is 1 million yuan; the unit of employment is: persons; the unit of average wage for urban private sector employees is: dollars; the unit of average school attendance per 100 inhabitants is: people; the unit of land area used in forestry is 10 million hectares; the unit of water resources per capita is: cubic meters; and the unit of Sulphur dioxide emissions is: tons. (2) An average t test by regional grouping was conducted, ***, ** and* indicating a significant level of 1%, 5% and 10%, respectively. (3) The eastern region, comprises 11 provincial-level regions, including Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan. The central region includes 8 regions: Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hunan, and Hubei. The western region consists of 12 regions, including Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang.

4.2. Baseline Regression Results Analysis

The findings, outlined in Table 3, show that digital finance significantly influences foreign investment, which supports H1. The results indicate that digital finance has a significant impact on the efficiency of financial markets and institutions as well as the continuous innovation of financial products and services, and significantly promotes foreign investment. Table 3, column (7), reports the following regarding the control variables: Firstly, economic development significantly influences foreign investment, indicating that the regional economic development is an important driver of

foreign investment, since areas with higher levels of economic development can provide a better environment for foreign investment and make it more attractive. Secondly, capital intensity negatively affects foreign investment, suggesting a crowding-out effect of increased capital intensity or an increase in domestic capital inputs. Thirdly, labor costs positively impact foreign investment. A possible explanation is that even though rising labor costs will result in higher foreign investment costs which negatively affects foreign investment, while higher labor costs may be due to better local economic development or high labor quality, which will create positive effects on foreign investment. Fourthly, human resources positively influence foreign investment, forestry resources negatively impact foreign investment, while the effect of water resources on foreign investment is statistically insignificant, suggesting that regional resource endowments influence the flow of foreign investment to varying degrees. Fifthly, emissions positively affect foreign investment, possibly due to higher levels of waste generation in the more economically developed regions, while foreign investors tend to invest in the more economically developed regions.

Table 3. Baseline model regression results.

| Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|
| <i>lnDIF</i> | 5.425*** (0.486) | 3.744*** (0.490) | 3.822*** (0.475) | 3.793*** (0.473) | 3.556*** (0.452) | 3.555*** (0.454) | 3.617*** (0.455) | 3.108*** (0.442) |
| <i>Pgdp</i> | | 0.173*** (0.027) | 0.202*** (0.031) | 0.183*** (0.057) | 0.145*** (0.052) | 0.154*** (0.055) | 0.141*** (0.054) | 0.154*** (0.052) |
| <i>lnKL</i> | | | -0.617*** (0.156) | -0.609*** (0.159) | -0.646*** (0.162) | -0.634*** (0.161) | -0.622*** (0.159) | -0.690*** (0.137) |
| <i>lnWage</i> | | | | 0.320 (0.675) | 0.476 (0.640) | 0.538 (0.650) | 0.802 (0.586) | 1.371*** (0.491) |
| <i>Human</i> | | | | | 0.213** (0.099) | 0.230* (0.106) | 0.147 (0.093) | 0.314*** (0.099) |
| <i>lnForest</i> | | | | | | 0.045 (0.057) | 0.130* (0.072) | -0.146** (0.059) |
| <i>lnWater</i> | | | | | | | -0.151* (0.077) | 0.076 (0.064) |
| <i>lnSO</i> | | | | | | | | 0.428*** (0.105) |
| Year | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | -20.168*** (2.599) | -12.125*** (2.519) | -11.563*** (2.421) | -14.693** (7.204) | -15.400** (7.084) | -16.457** (7.289) | -18.753*** (6.695) | -23.477*** (5.802) |
| Obs | 364 | 364 | 364 | 364 | 364 | 364 | 364 | 364 |
| <i>R</i> ² | 0.508 | 0.551 | 0.569 | 0.570 | 0.578 | 0.578 | 0.587 | 0.626 |

Note: Robust standard errors are reported in parentheses, ***, ** and * indicating significant levels of 1%, 5% and 10%, respectively and used throughout.

4.3. Robustness Test

4.3.1. Instrumental Variable Estimation

For addressing endogenous issues, we adopt the instrumental variable (IV) method. Regarding the selection of IVs for digital finance, there have been studies on the use of Internet penetration rate of each province (Xie et al., 2018) [15], and a distance between the prefecture-level city and Hangzhou (Zhang et al., 2019) [16]. The distance between the prefecture-level city and Hangzhou is likely to have stronger exogeneity than Internet penetration rate of each province, and has been used as an instrumental variable, because it is reasonable that Hangzhou, which is a key component of China's digital finance development, has more advanced digital finance development with a stronger radiation-driven effect, so a city, which is further away from Hangzhou, exhibits a comparatively diminished degree of development in the sphere of digital finance. However, the distance from each

city to Hangzhou lacks characteristics that change over time. Regarding this, drawing on Zhang et al. (2022) [17], in this paper, due to that we use provincial data to do the study, we construct Bartik IV (*Bartik_IV*), which is equivalent to the logarithm of Internet penetration rate in each province and the proportion of the distance from each provincial capital city to Hangzhou in the total of all distances from provincial capital cities to Hangzhou (*Dist*). The reasons are the following, firstly, the provincial capital is generally considered as primary political, economic or cultural center of each province, and the provincial digital finance development is usually most representative of the provincial capital city. Secondly, similar to the distance between the prefecture-level city and Hangzhou, it is more difficult for digital finance to spread when it is far away from Hangzhou, which is directly linked to the extent of its development; and the provincial capital's distance to Hangzhou is hardly related to other factors affecting foreign investment than digital finance. As such, it can be used as an IV for digital finance. The Bartik IV can be expressed as follows:

$$Bartik_IV_{it} = \ln Int_{it} \times \frac{Dist_{it}}{\sum Dist_{it}} \quad (4)$$

The Bartik IV, which includes both Internet penetration rate within each province as well as the distance from provincial capital city to Hangzhou in each province, has made it possible for the distance from provincial capital city to Hangzhou to be of a time-changing nature as well as to increase the externality of Internet penetration rate. The results of the IV estimation are shown in column (1) of Table 4, where the endogeneity test indicates that there exists endogeneity, Kleibergen-Paap rk LM statistic and Kleibergen-Paap rk Wald F statistic show that the selected tool variables are valid and there is no problem with the weak instrumental variables. The IV estimates are consistent with the baseline model estimates. Moreover, the estimated coefficients on the control variables are stable in sign and magnitude relative to the baseline estimates. Due to space limitation, these results are not reported or analyzed. This convention applies to all subsequent tests.

Table 4. IV estimation results.

| Variable | (1) | (2) |
|---|---------------------|---------------------|
| <i>lnDIF</i> | 14.936** (3.696) | 18.310** (4.709) |
| Control variables | Yes | Yes |
| Year | Yes | Yes |
| Endogeneity test statistic | 31.868 | 30.977 |
| (P-value) | (0.000) | (0.000) |
| Kleibergen-Paap rk LM statistic (P-value) | 12.751 (0.000) | 13.031 (0.000) |
| Kleibergen-Paap rk Wald F statistic | 15.005 | 15.051 |
| Obs | 364 | 364 |
| Instrumental variables | <i>Bartik_IV</i> | <i>Bartik_IV2</i> |

Similarly, Shenzhen is also the leading center for Chinese innovation and financial science and technology, as well as its digital finance is at forefront of regional development. So, we use Shenzhen instead of Hangzhou to construct another Bartik IV (*Bartik_IV2*) to do the test. The estimation results, reported in column (2) of Table 4, still indicate the robustness of the results.

4.3.2. Estimation with Alternative Variables

Firstly, the dependent variable is replaced. $\ln NFFE_{it}$, $\ln RCFFE_{it}$ and $\ln RCFFFE_{it}$ are used as the alternative variables. the results, reported in columns (1) - (3) of Table 5, show that digital finance significantly affects foreign investment enterprises' number, registered capital and registered capital from foreign investors, supporting the basic conclusions of this study. Secondly, the independent variable is replaced. We use the three sub-dimension indices of digital finance, i.e., depth of usage (*lnDepth*), coverage breadth (*lnBreadth*), and digital support services (*lnDigit*)

as the alternatives of explanatory variables, and results appear in columns (4) - (6) of Table 5. According to the results, both the coverage breadth and use depth of digital finance exert significantly effects on foreign investment, while the impact of digital support services on foreign investment is not statistically significant, indicating that the coverage breadth and use depth of digital finance account for its impact on foreign investment, with increased digital finance's coverage breadth and deeper access to digital finance, it can drive foreign investment.

Table 5. Estimation results with alternative variables.

| Variable | (1) <i>lnNFFE</i> | (2) <i>lnRCFFE</i> | (3) <i>lnRCFFFE</i> | (4) <i>lnFI</i> | (5) <i>lnFI</i> | (6) <i>lnFI</i> |
|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|----------------------|
| <i>lnDIF</i> | 2.688*** (0.386) | 3.246*** (0.456) | 3.473*** (0.480) | | | |
| <i>lnBreadth</i> | | | | 0.858*** (0.184) | | |
| <i>lnDepth</i> | | | | | 2.527*** (0.526) | |
| <i>lnDigit</i> | | | | | | -0.343 (0.282) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | -14.259*** (5.328) | -26.493*** (6.021) | -31.603*** (6.233) | -14.467*** (5.259) | -19.426*** (5.459) | -12.137** (5.207) |
| Obs | 364 | 364 | 364 | 364 | 364 | 364 |
| <i>R</i> ² | 0.713 | 0.634 | 0.619 | 0.589 | 0.656 | 0.569 |

In addition, we use $\ln NFFE_{it}$, $\ln RCFFE_{it}$, $\ln RCFFFE_{it}$ as the dependent variables, while using the three sub-dimension indices of digital finance as the independent variables, to do the robust tests, the estimation results are basically consistent. Due to space limitation, these results are not reported; we will provide them upon request.

4.3.3. Regional Heterogeneity Tests

Firstly, as shown in Table 6, estimates were made using samples from the eastern, central and western regions, respectively. The results show that in the eastern region, the estimated coefficient of digital finance on foreign investment is 1.509, this result is significant at 5% level; and the estimated coefficient of digital finance on foreign investment in the central and western regions is 3.275, which is significant at 1% level. The results point to the fact that digital finance has a stronger catalytic effect on foreign investment in the central and western regions than that in the eastern region, supporting H3. Secondly, according to the regional marketization, openness, economic development, traditional financial development, digital financial development and the foreign investment, Areas with variables equal to or above the sample mean are classified as higher marketized, higher openness, higher economic development, higher traditional financial development, higher digital finance development and larger foreign investment size regions. Areas with lower averages than the variants are divided into regions with lower marketized, lower openness, lower economic development, lower traditional financial development, lower digital finance development and smaller foreign investment size regions. The results of the sub-samples are shown in Tables 7 and 8, which show digital finance's impact on foreign investment displays greater in areas with relatively lower levels of marketization, openness, economic development, traditional financial development and digital financial development and smaller foreign investment size. The above results indicate that differences exist in digital finance's impact on foreign investment are closely related to the characteristics of regional economic development.

Table 6. Regional heterogeneity tests (1).

| Variable | (1) | (2) |
|--------------------------|-----------------------|-----------------------------|
| | Eastern region | Central and western regions |
| $\ln DIF$ | 1.509** (0.581) | 3.275*** (0.567) |
| Control variables | Yes | Yes |
| Year | Yes | Yes |
| Constant | -29.344*** (7.477) | -11.185* (6.478) |
| Obs | 132 | 232 |
| R^2 | 0.617 | 0.629 |
| <i>Empirical p-value</i> | 0.000 | |

Note: Empirical p-values are the p-values of the Fisher's Permutation test, which tests whether the group estimation coefficients differ significantly, and used throughout.

Table 7. Regional heterogeneity tests (2).

| Variable | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------|-----------------------|----------------------|----------------------|---------------------|-----------------------------|----------------------------|
| | Higher marketized | Lower marketized | Higher openness | Lower openness | higher economic development | lower economic development |
| $\ln DIF$ | 2.329*** (0.683) | 2.840*** (0.566) | 2.344*** (0.784) | 3.791*** (0.648) | 2.427*** (0.711) | 3.154*** (0.615) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | -24.284*** (5.791) | -20.419** (9.501) | -17.707** (8.794) | -14.505* (7.393) | -28.021*** (6.928) | -12.338 (8.240) |
| Obs | 201 | 163 | 118 | 246 | 131 | 233 |
| R^2 | 0.753 | 0.625 | 0.573 | 0.574 | 0.683 | 0.551 |
| <i>Empirical p-value</i> | 0.000 | | 0.110 | | 0.000 | |

Note: Among them, the regional marketization is measured by the proportion of private industrial firms above the designated size in the total number of industrial firms above the designated size in each province; openness is measured by the proportion of total import and export volume in GDP in each province; economic development is measured by per capita GDP in each province; traditional financial development is measured by the proportion of total RMB deposits and loans in GDP in each province; digital financial development is measured by the logarithm of the digital inclusive finance index in each province; and foreign investment is measured by the logarithm of the total amount invested by foreign investment enterprises in each province.

Table 8. Regional heterogeneity tests (3).

| Variable | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------|--|---|------------------------------------|-----------------------------------|--------------------------------|---------------------------------|
| | Higher traditional financial development | Lower traditional financial development | Higher digital finance development | Lower digital finance development | Larger foreign investment size | Smaller foreign investment size |
| $\ln DIF$ | 2.132*** (0.612) | 3.164*** (0.519) | 2.519*** (0.576) | 3.999*** (0.718) | 2.061*** (0.442) | 2.903*** (0.546) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | -22.854*** (8.466) | -26.447*** (7.049) | -19.357*** (5.900) | -16.591** (8.048) | -18.110*** (4.823) | -7.847 (6.596) |

| | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|
| Obs | 161 | 203 | 160 | 204 | 186 | 178 |
| R ² | 0.712 | 0.647 | 0.599 | 0.587 | 0.623 | 0.719 |
| Empirical p-value | 0.080 | | 0.000 | | 0.000 | |

5. Test the Mediating Mechanism of New Quality Productive Force

Test results of the mediating mechanism can be seen in Table 9. First, we test mediating mechanism using the NQPF ($\ln Npro$) as an intermediary variable. Columns (1)- (2), reports the test results. They indicate that digital finance significantly positively affects the NQPF, and the NQPF significantly positively affect foreign investment, demonstrating that digital finance can promote foreign investment by upgrading the NQPF, which can support H2. And as a new financial industry, digital finance rooted in digital technology can accelerate financial resources' allocation, increase information symmetry and transparency, reduce financing costs, improve financial efficiency, optimize financial supply, stimulate economic digitization and innovation, and contribute to the formation and development of the NQPF. Subsequently, the NQPF driven by high quality, efficiency, as well as innovation can break free from the shackles of traditional productivity, drive industrial upgrading and improve the business environment, and become an important engine for foreign investment.

Second, we test the mediating mechanism using the indices, $\ln Scip_{it}$, $\ln Greep_{it}$ and $\ln Digg_{it}$, as the mediating variables, the test results are reported in columns (3)-(8) of Table 9. They indicate that digital finance can promote foreign investment by promoting scientific & technological productive forces, green productive forces and digital productive forces, and empirical results support H2. Digital finance contributes to high-technology's development and modern industrial clusters through digital technologies, for example, AI and block chains, the Internet, big data, cloud computing, which contributes significantly to the development of scientific & technological productive forces, green productive forces and digital productive forces. Along with the sustained increase in domestic scientific & technological productive forces, green productive forces and digital productive forces, foreign investment firms rely on domestic systems of innovative resources and supply chains to generate a strong investment dividend that attracts foreign investment into new areas and sustains an increase in domestic reinvestment.

Finally, taking into account regional heterogeneity, the tests of the mediating effects are based on samples from diffident regions respectively. Results are shown in Tables 10 and 11, which show that digital finance can drive foreign investment by promoting the NQPF, both in these regions. Regard to regional heterogeneity, digital finance not only has a stronger positive impact on foreign investment in the central and western regions than that in the eastern region, but can also have a higher positive effect on foreign investment through the mediating effect of the NQPF. In terms of indicators of three sub-dimension of the NQPF, the central and western regions are better able to drive foreign investment through scientific & technological productive forces, while the eastern regions are better able to boost foreign investment through green and digital productive forces.

Table 9. Test results of the mediating mechanism.

| Variable | (1) $\ln Npro$ | (2) $\ln FI$ | (3) $\ln Scip$ | (4) $\ln FI$ | (5) $\ln Greep$ | (6) $\ln FI$ | (7) $\ln Digg$ | (8) $\ln FI$ |
|-------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|--------------------|---------------------|
| $\ln DIF$ | 1.375*** (0.314) | 2.042** (0.378) | 1.578*** (0.352) | 1.892*** (0.341) | 0.329** (0.069) | 2.400*** (0.371) | 1.069** (0.333) | 2.456*** (0.416) |
| $\ln Npro$ | | 0.775*** (0.096) | | | | | | |
| $\ln Scip$ | | | | 0.771*** (0.056) | | | | |
| $\ln Greep$ | | | | | | 2.153*** (0.333) | | |
| $\ln Digg$ | | | | | | | | 0.610*** |

| | | | | | | | | |
|-------------------|-----------------------|-------------------|-----------------------|-------------------|-----------------------|------------------|-----------------------|--------------------|
| | | | | | | | | (0.117) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | -25.397*** (4.029) | -3.788 (5.840) | -29.664*** (4.597) | -0.601 (4.793) | -12.683*** (0.893) | 3.827 (7.095) | -21.682*** (3.829) | -10.249 (6.290) |
| Obs | 364 | 364 | 364 | 364 | 364 | 364 | 364 | 364 |
| R ² | 0.697 | 0.717 | 0.688 | 0.741 | 0.877 | 0.691 | 0.674 | 0.686 |
| Sobel (P-value) | Z=4.578 (0.000) | | Z = 4.762 (0.000) | | Z= 3.62 (0.000) | | Z= 3.456 (0.001) | |

Table 10. Test results of the mediating mechanism in eastern region.

| Variable | (1) lnNpro | (2) lnFI | (3) lnScip | (4) lnFI | (5) lnGreep | (6) lnFI | (7) lnDigp | (8) lnFI |
|-------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|
| lnDIF | 0.976** (0.349) | 1.020* (0.615) | 1.429** (0.413) | 1.059 (0.687) | 0.263** (0.077) | 0.584 (0.614) | 0.793* (0.433) | 1.130** (0.566) |
| lnNpro | | 0.502*** (0.187) | | | | | | |
| lnScip | | | | 0.315* (0.189) | | | | |
| lnGreep | | | | | | 3.517*** (0.880) | | |
| lnDigp | | | | | | | | 0.478*** (0.172) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | -35.763*** (5.249) | -11.408 (12.258) | -42.557*** (6.300) | -15.940 (13.173) | -14.393*** (0.762) | 21.276 (14.188) | -27.178*** (5.774) | -16.363 (10.403) |
| Obs | 132 | 132 | 132 | 132 | 132 | 132 | 132 | 132 |
| R ² | 0.817 | 0.652 | 0.845 | 0.634 | 0.984 | 0.658 | 0.767 | 0.653 |
| Sobel (P-value) | Z=1.775 (0.076) | | Z = 1.746 (0.081) | | Z= 2.579 (0.010) | | Z= 1.44 (0.150) | |

Table 11. Test results of the mediating mechanism in central and western regions.

| Variable | (1) lnNpro | (2) lnFI | (3) lnScip | (4) lnFI | (5) lnGreep | (6) lnFI | (7) lnDigp | (8) lnFI |
|-------------------|--------------------|---------------------|----------------------|---------------------|----------------------|---------------------|-------------------|---------------------|
| lnDIF | 1.227** (0.561) | 2.628*** (0.507) | 1.676*** (0.593) | 2.029*** (0.379) | 0.437*** (0.122) | 2.778*** (0.559) | 0.376 (0.654) | 3.172*** (0.530) |
| lnNpro | | 0.527*** (0.131) | | | | | | |
| lnScip | | | | 0.744*** (0.067) | | | | |
| lnGreep | | | | | | 1.137*** (0.352) | | |
| lnDigp | | | | | | | | 0.274* (0.141) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | -8.637 (5.283) | -6.630 (6.439) | -13.498** (5.513) | -1.147 (5.579) | -7.994*** (1.348) | -2.097 (7.953) | -6.166 (6.030) | -9.493 (6.633) |
| Obs | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 232 |
| R ² | 0.586 | 0.685 | 0.652 | 0.760 | 0.862 | 0.661 | 0.486 | 0.647 |
| Sobel (P-value) | Z= 2.402 (0.016) | | Z = 3.147 (0.002) | | Z=2.284 (0.022) | | Z=0.7105 (0.477) | |

6. The Impact of “Going-Global”

As “going-global” development strategies like the Belt and Road Initiative are implemented, the investment of Chinese multinational enterprises has continued to grow (Hu et al., 2023; Liu et al., 2024; Liu et al., 2025) [18–20]. Data shows that, in terms of flow, China's outward foreign direct investment (OFDI) flow reached \$74.654 billion in 2011, ranking sixth among countries (regions) worldwide; in 2023, it reached \$177.288 billion, ranking third. In terms of stock, China's OFDI stock stood at \$424.781 billion in 2011, ranking 13th among countries (regions); in 2023, it reached \$2,955.4 billion, ranking third (The data is sourced from the Statistical Bulletin of China's Foreign Direct Investment over the years). “Going-global”, the outward foreign investment, as a major way for enterprises to operate transnationally, is an important aspect of building high levels of external openness, also playing a very important role in acquiring reverse technology spillovers, driving technological innovation, enhancing market competitiveness, promoting industrial transformation and upgrading, and promoting employment and economic growth (You and Solomon, 2015; Piperopoulos et al., 2018; Buckley et al., 2018; Liao et al., 2021; Zhang et al., 2024; Peng et al., 2024) [21–26]. It represents a key method for promoting a new development pattern underpinned by the mutual reinforcement of domestic and international cycles. On one hand, accelerating the pace of “going-global”, opening up international markets, participating in international division of labor as well as deeply integrating into the global value chains could lead to increased foreign investment; on the other hand, accelerating the pace of “going-global”, actively seeking technology and gaining access to reverse technological spillovers would also lead to digital finance development. Simultaneously, digital finance development will provide greater financial supports for “going-global” and promote outward foreign investment to create technologically innovative advantages that will lead to an expansion of outward foreign investment. Thus, “going-global” and digital finance are closely linked to “bring-in”. With regard to the impact of digital financial on foreign investment, how does “going-global” moderate it? This study is important for expanding openness, building a two-way investment system, and promoting foreign investment through linkages with digital finance. For this investigation, we establish the following model:

$$\ln FI_{it} = \delta_0 + \delta_1 \ln DIF_{it-1} + \delta_2 \ln OFDI_{it-1} + \delta_3 (\ln DIF_{it-1} - u_1) \times (\ln OFDI_{it-1} - u_2) + X'_{it} \beta + Year_t + \varepsilon_{it} \quad (5)$$

where $\ln OFDI_{it-1}$ denotes outward foreign investment, the “going-global” variable, measured by the logarithms of OFDI flows of each province. u_1 is the mean value of $\ln DIF_{it-1}$ and u_2 is the mean value of $\ln OFDI_{it-1}$. Other variables are the same with model (1). Column (1) of Table 12 reports a significantly positive synergistic effect of outward foreign investment and digital finance on foreign investment, with digital finance's greater impact on foreign investment in regions with larger outward foreign investment. The results of the regional sample estimates, as shown in columns (2) and (3) of Table 12, show that in the eastern region, regions with greater outward foreign investment experience a smaller impact of digital finance on foreign investment, suggesting that increased outward foreign investment would weaken the positive impact of digital finance on foreign investment; in the central and western regions, however, regions with larger outward foreign investment experience a greater positive impact of digital finance on foreign investment, indicating that expanding outward foreign investment will reinforce the positive impact of digital finance on foreign investment. Such regional heterogeneity outcomes are inextricably linked to regional characteristics such as the level of economic, technological and financial development of the region, where foreign investment is smaller and digital finance is less developed in regions with lower levels of economic development, and where digital finance's impact on foreign investment can be more effectively enlarged by a greater extent of “going-global”; in regions with higher levels of economic development, where foreign investment is larger and digital finance is more advanced, greater “going-global” will weaken the impact of digital finance on foreign investment. With regard to robustness tests, we use $\ln NFFE_{it}$, $\ln RCFFE_{it}$ and $\ln RCFFFE_{it}$ as dependent variables, while using the logarithm of OFDI stocks of each province, $\ln OFDIS_{it-1}$ as a moderating variable, and estimate separately from samples in the eastern region and the central and western regions. The results

continue to show positive synergies in the impact between digital finance and outward foreign investment on foreign investment, and mainly in the central-western regions.

Table 12. Test results of moderating effect of “Going-global”.

| Variable | (1) | (2) | (3) |
|-------------------------------------|---------------------|----------------------|-----------------------------|
| | All sample | Eastern region | Central and western regions |
| $\ln DIF$ | 2.481*** (0.406) | 0.723 (0.652) | 3.203*** (0.554) |
| $\ln OFDI$ | 0.446*** (0.045) | 0.385*** (0.124) | 0.252*** (0.043) |
| $(\ln DIF-u1) \times (\ln OFDI-u2)$ | 0.113*** (0.043) | -0.356** (0.163) | 0.102*** (0.038) |
| Control variables | Yes | Yes | Yes |
| Year | Yes | Yes | Yes |
| Constant | -9.049** (4.548) | -19.099** (9.312) | -2.423 (6.000) |
| Obs | 362 | 132 | 230 |
| R^2 | 0.727 | 0.671 | 0.677 |

7. Conclusions and Policy Recommendations

In an environment characterized by extensive interconnectedness between the digital and real economic sphere, digital finance provides innovative and diversified financial supports for foreign investment, with NQPF' upgrading becoming a new incentive to attract foreign investment. The paper examines digital finance's impact on foreign investment from a NQPF' perspective, and shows that (1) digital finance significantly promotes foreign investment and has a stronger positive effect on foreign investment in the central and western regions than that in the eastern region. (2) NQPF play an important mediating role in which digital finance significantly promotes foreign investment. (3) “going-global” of outward foreign investment has a positive moderating effect on digital finance's impact on foreign investment, but there are significant regional heterogeneity features. This study provides a theoretical and empirical basis for national and government efforts to promote digital finance development and the formulation and implementation of foreign investment-related policies, with important policy inspiration.

First, there is a need to deepen digital financial development in a comprehensive manner. To make full use of the important functions of markets and government and intermediary organizations, it should devote all the efforts to promoting digital finance, building up digital finance infrastructure such as digital credit systems, digital services and digital assets, increasing investment in digital finance technology, accelerating the digital transformation of financial institutions, improving the mismatch between financial resources, improving the quality of financial services, widening digital finance coverage, deepening digital finance utilization, developing a sound digital financial ecosystem, promoting the supervision and management of digital financial services, preventing and addressing digital financial risks, creating a favorable investment climate, enhancing investment confidence and willingness on the part of foreign firms, and providing greater facilities for foreign investment.

Second, it should promote the upgrading of digital finance, optimize resource allocation efficiency, accelerate traditional industries' upgrading, give impetus to new and emerging ones' growth, promote industrial transformation and upgrading, facilitate industries' transformation to digitalization, intelligence and intellectual skills through new technologies, for example, big data and artificial intelligence, create new dynamical energy and new advantages, boost full factor productivity, speed up new competitions and new areas of production, increase new opportunities and demand for foreign investors to invest in new and future industries in China, stimulate

investment in new industries, new business models and new forms of business, and encourage foreign investors to invest in China's market on a continuous basis.

Third, the central and western region will also need to use digital financial development as an opportunity to build on the benefits of post-market advantages and resource endowments, improve the business environment as well as reduce gap between economic development and digital finance in the eastern region, thereby increasing foreign investment's attractiveness. There is a need to strengthen government guidance, deepen reforms and increase openness, actively encourage research and development institutions and scientific and technological enterprises to provide technical, product and service supports to the central and western regions, promote interregional production convergence, exploit the advantages of digital finance for inclusion, accessibility and low transaction costs, and facilitate external investment flows to the central and western region and regional economic coordination.

Finally, it is important to continue promoting two-way empowerment and foreign investment. Governments should be proactive in pursuing their policies of external openness, increasing openness and regulating international investment behavior; actively promoting the participation of economic actors in the international division of labor and deeper integration into the global value chains; promoting two-way empowerment of "going-global" and "bring-in", enhancing global resource allocation capabilities, increasing the resilience of value chains in industrial chains, gradually opening up new business practices and new areas, and reshaping new advantages. And using regulatory mechanisms for "going-global" to enhance synergies between digital finance and "going-global" outward investment and to actively promote foreign investment.

Author Contributions: Conceptualization, L. H.; methodology, L. H. and Z. J.; software, L. H. and Z. J.; validation, L. H.; formal analysis, L. H. and Z. J.; investigation, L. H. and Z. J.; resources, L. H.; data curation, Z. J.; writing—original draft preparation, L. H., Z. J. and S. F.; writing—review and editing, L. H., Z. J. and S. F.; visualization, L. H., Z. J. and S. F.; supervision, L. H.; project administration, L. H.; funding acquisition, L. H. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Humanities and Social Sciences Special Project of Ningbo University "Theoretical and Empirical Research on the Mechanism of the Impact of OFDI Technology Seeking Motivation on the Markup of Chinese Multinational Enterprises" (Grant No. XPYQ21007). This paper is supported by International Research Centre for Sustainable Finance, Ningbo University.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

Conflicts of Interest: The authors declare no conflicts of interest.

Abbreviations

The following abbreviations are used in this manuscript:

| | |
|-------|---|
| NQPF | New Quality Productive Forces |
| AI | Artificial Intelligence |
| CSMAR | China Stock Market & Accounting Research Database |
| USD | United States Dollar |
| CNY | Chinese Yuan |
| OFDI | Outward Foreign Direct Investment |

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