Evaluation of the Effectiveness of Inclusive Green Financial Policies in Supporting Regional Green Technology Innovation
——Empirical Evidence based on Green Patent Data of Lishui City

Beibei Li [1, a]

[1]School of economics and management,China Jiliang University,

Zhejiang,Hangzhou 310000,China

[a] 15958789313@163.com

Abstract. Based on the CNRDS innovation patent research data and the data released by the provincial official statistics bureaus, the DID double difference method is used to empirically test the impact of green inclusive financial policies on green technology innovation in Lishui City, and from the perspective of economic transformation and upgrading, the internal mechanism of inclusive green financial policies to promote regional green technology innovation is explored to prove the generalization of green inclusive financial policies. Finally, relevant suggestions are put forward to standardize and improve inclusive green financial policies and make them play an effective role. The empirical results show that the implementation of green inclusive financial policies has a significant role in promoting regional green technology innovation, and inclusive green financial policies have a significant role in promoting green invention patents, but the role in promoting green utility model patents is not significant. Therefore, in-depth implementation of inclusive green financial policies to promote regional economic transformation and upgrading, which will help promote regional green technology innovation.

Keywords: Inclusive Green financial policy;Economy transformation and upgrading;Green technology innovation;Double difference method;Green patent.

1. Introduction

Since the 18th National Congress of the Communist Party of China, under the guidance of Xi Jinping's thought of socialism with Chinese characteristics for a new era, China has adhered to the concept of " Green mountains are gold mountains" and steadfastly followed the path of "ecological priority and green development".China has made a commitment to the world to reach carbon peak by 2030 and achieve carbon neutrality by 2060, and to promote a comprehensive green transformation of economic and social development.Green technology innovation is the key to promoting green development. at the end of 2022, the national development and reform commission and the ministry of science and technology jointly issued the "implementation plan on further improving the market-oriented green technology innovation system (2023-2025)", urging to further strengthen the key support role of green technology for green low-carbon development, and improve and optimize the green technology innovation system from multi-dimensional The plan aims to further strengthen the key supporting role of green technologies for green and low-carbon development, improve and optimize the green technology innovation system from multi-dimensional aspects, and collaboratively promote carbon reduction, pollution reduction, green expansion and growth.

The integration and development of green finance and inclusive finance is an innovative financial policy to which the country has attached great importance in recent years. The two have common ground in development philosophy, their development objects intersect and their main ways of promoting development are similar. The integration of the two can guide the flow of funds to green and low-carbon fields with more effective incentive and constraint mechanisms, which can profoundly affect the vitality of green technological innovation in the economy and society. However, at the present stage of the integration and development of green and inclusive finance in

China, there are still problems that need to be solved,such as the legal protection system to be improved, the lack of an effective incentive and restraint mechanism, and the coexistence of supply and demand exclusion of green and inclusive finance.

In March 2012, Lishui, Zhejiang Province, was approved as the first national "bank-province" rural financial reform pilot, and in May, the People's Bank of China and the People's Government of Zhejiang Province jointly issued the "Notice on Rural Financial Reform Pilot Work in Lishui City, Zhejiang Province" and agreed to implement the "Lishui City Rural Financial Reform Pilot Program".After the policy was introduced, Lishui began to explore the innovation of financial institutions and mechanisms in supporting the green transformation of small and micro enterprises, promoting the development of green agriculture and guiding the green behavior of residents. After ten years of development, green finance and inclusive finance reform in the region have shown an integrated development. By the end of September 2022, the balance of the city's inclusive micro and small enterprise loans reached 106.681 billion yuan, an increase of 17.582 billion yuan or 23.3% over the beginning of the year, higher than the growth rate of loans by 3.4 percentage points. By the end of December 2022, the balance of green credit in Lishui reached 46.31 billion yuan, with a year-on-year growth rate of 77.11%, accounting for 7.94% of the balance of all loans. Its green credit growth rate and proportion are higher than the average level in Zhejiang Province. Based on what has been mentioned above, this paper takes Lishui, Zhejiang Province as the research object and adopts the DID model to conduct theoretical and empirical research on the effect of green technology innovation support of green inclusive financial policy mainly from three aspects: mechanism of action, validation of effect and proposed improvement, expecting the policy to have a impact on supporting and promoting green technology innovation.

2. Literature Review

Green technology innovation is a collective term for management innovation and technological innovation aimed at protecting the environment. The efficiency of regional green technology innovation largely depends on the efficiency of local economic transformation and upgrading, which in turn is closely related to inclusive green financial policies. Therefore, the relationship between inclusive green financial policies and regional green technological innovation can be linked through various influencing factors in economic transformation and upgrading, which is also the basis of the theoretical analysis in this paper. This paper discusses from two aspects: the economic transformation and upgrading effect of green inclusive financial policies, and the synergy between economic transformation and upgrading and green technological innovation

2.1 The economic transformation and upgrading effect of inclusive green financial policies

Bai(2022) argues that green finance can contribute to economic transformation and upgrading in three main ways[1]: the guiding effect of green finance on the development of green industries, the ability of asset pricing of green finance to create a crowding-out effect, and the ability of green finance to effectively lead and stimulate green consumption. Peng (2017)[2] argues that the development of inclusive finance provides indispensable support for crossing the "middle-income trap" and achieving the goal of advanced economies. Therefore, first of all, it can be argued that green finance and inclusive finance can promote regional economic transformation and upgrading respectively.According to Bu (2022) [3], promoting the integration of green finance and inclusive finance is to play the role of financial guidance and support for the green and low-carbon transformation of agriculture, farmer and rural area, and micro and small enterprises.Therefore, green and low-carbon transformation in agriculture, micro and small enterprises play an indispensable role in achieving the carbon peaking and carbon neutrality goals as well as economic transformation and upgrading.Meanwhile, Song et al. (2022) [4] analyzed that both green finance and inclusive finance insist on long-term sustainable development and concern for people's livelihoods, have obvious intersection in terms of specific service targets, and both need to be

spread from point to surface through government policy guidance and financial institutions' efforts in the main way of promoting development.This fully shows that green finance and inclusive finance have an inherent and intrinsic similarity from the conceptual point of view. Finally, combining with the results of existing practices, it can be seen from the general plans of the three pilot zones for financial inclusion reform in Tongchuan City of Shaanxi Province, Lishui City of Zhejiang Province and Chengdu City of Sichuan Province issued by the People's Bank of China in conjunction with relevant departments that the main targets of green financial inclusion policies are the agriculture, farmer and rural area as well as micro and small enterprises. The ecological value of the vast rural areas and agricultural fields can be fully explored under the green inclusive finance policy, thus promoting local economic transformation and upgrading.

2.2 The synergy between economic transformation and upgrading and green technological innovation

There are more factors affecting green technology innovation, but Zhang and Zhuo (2020) [5] argued that they can be divided into five aspects: industrial structure, environmental regulation, regional openness, R&D investment intensity, and education level, whichare roughly positively related to the degree of economic transformation and upgrading of the region.In terms of industrial structure, industrial structure upgrading requires continuous optimization of the ratio of production factors in the region, product production methods, which in the process not only promotes regional economic transformation and upgrading, but also puts forward new requirements for green technology innovation. Firstly, in terms of environmental regulation, the Porter hypothesis suggests that appropriate environmental regulation can induce enterprises to carry out more innovative activities, thus improving product quality and productivity, and ultimately leading to the transformation and upgrading of the regional economy, therefore, the intensity of environmental regulation has a positive impact on the level of green technological innovation. Secondly, as for regional openness, foreign investment provides more financial support to local enterprises' technological innovation, and also facilitates the introduction of advanced technologies by enterprises to achieve a win-win situation of promoting regional economic upgrading and improving technological innovation capability. Thirdly, in terms of regional openness, foreign investment provides more financial support to local enterprises' technological innovation, and also facilitates the introduction of advanced technologies by enterprises to achieve a win-win situation of promoting regional economic upgrading and improving technological innovation capability. Fourthly, when it comes to R&D investment intensity, the development of innovation activities requires a large amount of capital investment, and scholars generally believe that the degree of government support for enterprise innovation activities can make up for the lack of investment in enterprise green technology innovation, which in turn has a positive positive effect on enterprise green technology innovation and promotes the transformation and upgrading of enterprises and their regions. Finally for the level of education, technological innovation activities mainly rely on professionals, and professionals are needed at all stages of innovation activities. Also, the improvement of technological innovation level needs to be backed by a high-level workforce in major universities and research institutions. Improving the level of regional education plays a fundamental role in the transformation and upgrading of the local economy and the promotion of green technology innovation. According to the discussion above, the promotion of regional economic transformation and upgrading is inseparable from the promotion of regional green technology innovation.

Through the existing literature, it is found that green inclusive financial policies promote regional economic transformation and upgrading, and further achieve positive incentives for local green technology innovation. This suggests that the role of green inclusive financial policies in promoting regional green technology innovation is inevitable and replicate. Given that the existing literature focuses on theoretical explanation of the importance of inclusive green financial policies, while fewer studies directly investigate the relationship between green inclusive financial policies

and green technological innovation, this paper thus conducts a targeted empirical study. In summary, the following research hypotheses are proposed:

Hypothesis 1: The implementation of inclusive green financial policies has a significant promotion effect on regional green technology innovation.

Hypothesis 2: The implementation of inclusive green financial policies has a more significant promotion effect on the number of green invention patents.

Hypothesis 3: The implementation of inclusive green financial policies has a more significant promotion effect on the number of green utility model patents.

3. Empirical Research

3.1 Model Building

The DID model is a useful tool for policy effect assessment and it is based on a counterfactual framework to assess the changes in the explanatory variables in both cases of policy occurrence and non-occurrence. To use the model two key conditions must be met, the sample can be divided into treatment and control groups, and at least two periods of pre- and post-policy treatment data exist.

The basic model setup for the DID method is as follows:

$$Y_{it} = \alpha_o + \alpha_1 Policy_{it} + \alpha_2 Time + \alpha_3 Policy_{it} \times Time + \in_{it}$$

（1）

Table 1. Double Differential Principle

Period / Group	Pre-policy	Post-policy	Difference
Treatment Group	$\alpha_0 + \alpha_1$	$\alpha_0 + \alpha_1 + \alpha_2 + \alpha_3$	$\alpha_2 + \alpha_3$
Control Group	α_0	$\alpha_0 + \alpha_2$	α_2
Difference	α_1	$\alpha_1 + \alpha_3$	α_3

where Policy treatment variable indicates whether individuals are affected by policy implementation, 1 for the treatment group and 0 for the control group; Time variable indicates the time before and after the policy treatment, 1 after the policy treatment and 0 before the policy treatment. Combining equation (1) and Table 1, Policy $\times$ Time is the interaction term of the policy treatment variable and the time variable, and its coefficient reflects the policy implementation of the net effect, i.e., the double-difference result.

3.2 Research Design and methods

3.2.1 Data

In March 2012, Lishui City was approved as the first rural financial reform pilot site in China approved by the central bank, and in May of the same year, the People's Bank of China and the People's Government of Zhejiang Province agreed to implement the Overall Plan of Lishui City Rural Financial Reform Pilot Program. Therefore, the year 2012 is selected as the beginning of the policy in this paper. In addition, combining the analysis of various control variables such as regional GDP, Benxi City in Liaoning Province is used as the control group in this paper, and the reasons will be argued in the following.

Finally, this paper selects Lishui city and Benxi city as the research object of green technology innovation, and obtains the panel data of the two cities from 2009-2019, in which the green patent data are all from the CNRDS innovation patent research database, and other related data are obtained from the official statistics websites of the two cities, and the calculation caliber of each data is unified before the study.

3.2.2 Variable measurement

(1) Explanatory variable: green technology innovation

Considering that the number of green patents granted in each city per year has a certain lag and cannot fully reflect the green technology innovation capability in that year, this paper selects the number of green patent applications with higher reliability to measure the green technology innovation capability. In addition, this paper draws on Zhao (2021) [6] et al. by adding 1 to the sum of the number of green invention patents and green utility model patent applications for each year in each city and taking the logarithm to eliminate possible heteroskedasticity.

(2) Explanatory variables: *Policy* × *Time*

Policy is a dummy variable for policy treatment, and takes the value of 1 if Lishui City is affected by the policy, and 0 if Benxi City is not affected by the policy; Time is a dummy variable for policy time, and takes the value of 1 in 2012 and later, otherwise takes the value of 0. The coefficient of Policy × Time is the net effect of green technology innovation in Lishui City after the integration and development of green finance and inclusive finance.

(3) Control variables

In order to exclude the influence of other variables on the research results, this paper draws on the method of Zhao(2021) [6] and others to select the regional economic development level, science and technology expenditure, urbanization level, external opennesse, and industrial structure as control variables. The specific variable definitions and measurements are shown in Table 2.

Table 2. Variable Definitions and Measurements

Variable Name	Symbols	Calculation
Green Technology Innovation	LnTotal	ln (1 + Total number of green patent applications)
Green Invention Patent	LnFm	ln (1 + Total number of green invention patent applications)
Green Utility Model Patent	LnSx	ln (1 + Total number of green utility model patent applications)
Dummy variables (policy processing)	Policy	Lishui City takes 1, Benxi City takes 0
Dummy variables (time)	Time	2012 and later take 1, before take 0
Level of economic development	pgdp	Regional GDP per capita per year
Technology Expenditure	tec	R&D expenditure/internal expenditure (%)
Level of Urbanization	urb	Urban population/total population (%)
External openness	open	Total imports and exports/GDP (%)
Industry Structure	ind2	Value added of secondary industry/GDP (%)

3.2.3 Model Setting

In this paper, using stata, the effect of green inclusive financial policies on supporting green technology innovation is investigated by constructing the following DID double difference model:

$$LnTotal_{it} = \beta_0 + \beta_1 Policy \times Time + \beta_i \sum_{j=2}^{n} Control_{jit} + \lambda_t + \delta_i + \varepsilon_{it}$$

（2）

In equation (2), LnTotal is the explanatory variable as a measure of green technology innovation capacity in the two cities; Policy × Time is a double difference variable whose coefficient can be used to measure the impact of green inclusive financial policies on green technology innovation; Control is a control variable, a time fixed effect, an individual fixed effect, and a random disturbance term.

3.3 Model Application

3.3.1 Descriptive Statistics

Table 3-1.Descriptive Statistics for Lishui City

Variable	Count	Mean	Sd.	Min	Max
LnTotal	11	5.268	0.952	3.663	6.661
LnFm	11	3.864	1.252	2.484	5.849
LnSx	11	4.955	0.862	3.332	6.077
pgdp	11	46253	12805.48	25748	66936
tec	11	1.071	0.401	0.35	1.66
urb	11	55.045	5.320	46.5	63
open	11	17.860	1.870	13.88	20.17
ind2	11	2.448	2.214	0.67	7.07

Table 3-2.Descriptive Statistics for Baixi City

Variable	Count	Mean	Sd.	Min	Max
LnTotal	11	3.648	0.489	2.890	4.330
LnFm	11	2.472	0.682	1.386	3.526
LnSx	11	3.266	0 .519	2.079	3.761
pgdp	11	61245.64	11039.30	47517	75803
tec	11	0.186	0.055	0.1	0.26
urb	11	77.041	1.779	73.2	78.39
open	11	30.337	7.029	22.19	47.8
ind2	11	1.102	14.114	-36.67	12.92

First, the relevant data between the cities of Lishui and Benxi during the period of 2009-2019 were compiled and descriptively counted, and the results are shown in Table 3. From this, it can be tentatively determined that the green technology innovation capacity in the studied time period has changed significantly between the cities of Lishui and Benxi, within the city of Lishui, and within the city of Benxi. In addition, the trends of other variables between Lishui City and Benxi City are similar and comparable overall.

3.3.2 Double differential analysis

The data were double-differentiated and compared according to model (2), and the statistical results are shown in Table 4. From Table 4, it can be seen that the coefficient of Policy × Time is 1.167 and significantly positive at 5% statistical level before adding the control variables, and the coefficient of Policy × Time is 1.081 after adding the control variables, and the estimation result is still significantly positive. This means that this green inclusive financial policy has a significant positive effect on green technological innovation in Lishui City, which can prove that the green inclusive financial policy implemented in Lishui City effectively supports green technological innovation in the city and supports the previous hypothesis 1.

Table 4.Regression results

Outcome	LnTotal		S. Err.		|t|		P>|t|	
	Non control variables	Added control variables	Non control variables	Added control variables	Non control variables	Added control variables	Non control variables	Added control variables
Before Control Treated Diff								
	3.345	-18.940						
	4.116	-9.819						
	0.771	9.121	0.456	1.920	1.69	4.75	0.108	0.001***

After Control Treated Diff								
	3.763	-19.472						
	5.700	-9.270						
	1.938	10.202	0.279	2.308	6.94	4.42	0.000***	0.000***
Diff-in-Diff	1.167	1.081	0.535	0.563	2.18	1.92	0.043**	0.077*
Time-fixed effect							Yes	Yes
Individual fixed effects							Yes	Yes
R²							0.78	0.96

PS： *** p<0.01, ** p<0.05, * p<0.1

3.3.3 Heterogeneity Analysis

Table 5 shows the results of the regression analysis based on green invention patents and green utility model patents for the two samples. Among them, Table 5-1 shows the regression analysis using green invention patents as the explanatory variable. Before adding the control variables, the coefficient of the cross product term is 0.722 and insignificant at the 10% statistical level, but after adding the control variables, the coefficient of the cross product term increases to 1.195 and is significantly positive at the same statistical level, indicating that the inclusive green   financial policy has a significant promotion effect on green invention patents in Lishui City, which supports the previous hypothesis 2. Table 5-2 shows the regression analysis using green utility model patents as the explanatory variables, and after adding the control variables, the coefficient of the cross product term is 1.151, which is not significant at the 10% statistical level, indicating that the green financial policy also has a certain promotion effect on green utility model patents in Lishui City, but the promotion effect is not as strong as that of green invention patents, which is against the previous hypothesis 3. Thus, it can be proved that the promotion effect of green inclusive financial policy on green technological innovation in Lishui City is mainly reflected in green invention patents, which are usually more creative than green utility model patents, which means that the promotion effect of green inclusive financial policy on green technological innovation in Lishui City is deep and sustainable.

Table 5-1. Heterogeneity Analysis(LnFm)

Outcome	LnFm		S. Err.		$|t|$		P>$|t|$	
	Non control variables	Added control variables	Non control variables	Added control variables	Non control variables	Added control variables	Non control variables	Added control variables
Before Control Treated Diff								
	1.692	-33.963						
	2.559	-19.155						
	0.868	14.808	0.633	2.055	1.37	7.20	0.187	0.000***
After Control Treated Diff								
	2.765	-34.432						
	4.354	-18.429						
	1.589	16.003	0.388	2.471	4.10	6.48	0.001***	0.000***
Diff-in-Diff	0.722	1.195	0.742	0.603	0.97	1.98	0.344	0.069*
Time-fixed effect							Yes	Yes
Individual fixed effects							Yes	Yes
R²							0.65	0.96

Table 5-2. Heterogeneity Analysis(LnSx)

Outcome	LnSx		S. Err.		|t|		P>|t|	
	Non control variables	Added control variables	Non control variables	Added control variables	Non control variables	Added control variables	Non control variables	Added control variables
Before Control	3.169	-15.092						
Treated	3.882	-7.679						
Diff	0.713	7.413	0.445	2.639	1.60	2.81	0.126	0.015**
After Control	3.303	-15.705						
Treated	5.358	-7.141						
Diff	2.055	8.564	0.272	3.172	7.54	2.70	0.000***	0.018**
Diff-in-Diff	1.342	1.151	0.522	0.774	2.57	1.49	0.019**	0.161
Time-fixed effect							Yes	Yes
Individual fixed effects							Yes	Yes
R^2							0.79	0.92

4. Robustness Tests

4.1 Parallel Trend Test

Figure 1 depicts the trends of green technology innovation capability over time in Lishui and Benxi from 2009 to 2019, where the solid line indicates Lishui and the dashed line indicates Benxi. Taking 2012 (inclusive) as the policy node, it can be observed that before the implementation of the green inclusive finance policy, the trends of green technology innovation capacity over time in Lishui and Benxi cities remain roughly consistent. After the implementation of the policy, the difference between the two increases significantly. Thus, it is judged that the empirical analysis conducted in this paper basically satisfies the parallel trend hypothesis and the key preconditions for DID estimation are satisfied.
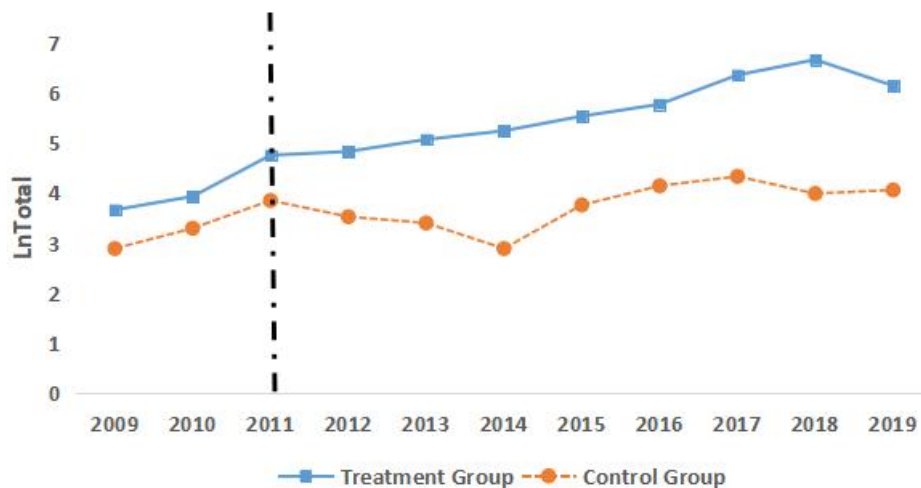

Fig. 1 Parallel Trend Test Result

4.2 PSM-DID Test

In order to further solve the possible endogeneity problem in the model and eliminate the differences between Lishui City and Benxi City, so as to obtain more accurate estimation results, the PSM-DID method is selected to test the statistical results obtained in the previous paper. Before regressing the data of treatment and control groups, the control variables including local economic development level, science and technology expenditure, urbanization level, external openness, and industrial structure were first selected for matching. By observing the PSM-DID test results obtained in Table 6, it is found that they are basically consistent with the conclusions obtained in the previous paper, indicating that the findings of the empirical analysis are relatively robust, i.e., inclusive green financial policies have a significant promotion effect on regional green technological innovation.

Table 6. PSM-DID Test Result

Outcome	LnTotal		S. Err.		$|t|$		P>$|t|$	
	Non control variables	Added control variables	Non control variables	Added control variables	Non control variables	Added control variables	Non control variables	Added control variables
Before Control Treated Diff								
	3.345	-18.278						
	4.116	-9.397						
	0.771	8.881	0.456	1.858	1.69	4.78	0.108	0.000***
After Control Treated Diff								
	3.763	-18.819						
	5.700	-8.854						
	1.938	9.965	0.279	2.242	6.94	4.44	0.000***	0.001***
Diff-in-Diff	1.167	1.083	0.535	0.556	2.18	1.95	0.043**	0.072*
Time-fixed effect							Yes	Yes
Individual fixed effects							Yes	Yes
R²							0.78	0.96

4.3 Changing the Timing of Policy Shocks

To further confirm the robustness of the empirical results and to examine whether the core explanatory variables remain significant when green inclusive financial policies are not proposed in Lishui City, this paper adopts a counterfactual test. After this test, if the core explanatory variables are still significant, it indicates that there are other unobserved factors that promote green technology innovation in Lishui City, and vice versa, it indicates that green inclusive financial policies have a stable and reliable promotion effect on green technology innovation. Therefore, this paper first advances the implementation year of inclusive green financial policy in Lishui City by one year (2011), and then re-runs the double difference analysis, and the results are shown in Table 7. After adding the control variables, the coefficient of the cross product term is 0.805, which is not significant at the 10% statistical level, which means that the significant promotion effect of green technology innovation in Lishui City was not shown before the implementation of green inclusive financial policy, and the model is basically consistent with the counterfactual assumption.

Table 7. Changing the Timing of Policy Shocks Result

Outcome	Added Control Variables			
	LnTotal	S. Err.	|t|	P>|t|
Before				
Control	-15.060			
Treated	-7.671			
Diff	7.389	1.754	4.21	0.001***
After				
Control	-15.162			
Treated	-6.968			
Diff	8.194	2.002	4.09	0.001***
Diff-in-Diff	0.805	0.497	1.62	0.129
Time-fixed effect				Yes
Individual fixed effects				Yes
R²				0.95

5. Conlusion and Policy Suggestions

5.1 Conclusion

This paper uses the total number of green patent applications and their corresponding economic data from 2009-2019 in Lishui and Benxi cities to construct a double difference model to study the impact of green inclusive financial policies on green technological innovation. The empirical analysis based on the proposed hypotheses finds that the research results basically satisfy Hypothesis 1 and Hypothesis 2, but violate Hypothesis 3. The main conclusions are as follows:

First, the implementation of inclusive green financial policies has a significant promotion effect on regional green technology innovation.

Second, there is a significant promotion effect of inclusive green financial policy on green invention patents, but not on green utility model patents, that is, the implementation of green financial inclusion policy has a deep and significant promotion effect on green technology innovation.

5.2 Policy Suggestions

At present, China's green technology innovation work has made great progress and remarkable results, but compared with the United States, Europe and Japan and other developed economies, there are still gaps in the depth of innovation, quality and key core technology breakthroughs, and the supporting role of green technology still needs to be enhanced. Based on the above conclusions, and drawing on the Lishui experience in the integration and development of green finance and inclusive finance, following policy recommendations are put forward:

1.Deepen the construction of green inclusive digital platform supported by digital empowerment. From a domestic and international perspective, digital inclusive finance will continue to be the key direction of inclusive finance development.It is necessary to enhance the exploration and application of digital technology in green inclusive identification, risk control, business model innovation, information security and protection, so as to bring more long-tail customers with financial needs into the formal financial service system and continuously improve the level of intelligence, refinement and integration of services while continuously enhancing the digitalization of financial products and services. Drawing on the innovative extraterritorial entrepreneurship platform launched in Lishui City to serve farmers who have gone out to start their own businesses, data information sharing can be achieved using information technologies such as blockchain and big data to promote the integration of information applications in the universal and green fields.

2.Promote green financial innovation and continuously optimize the inclusive green financial service system.It is necessary to encourage financial institutions to focus on key areas such as green

transformation of small and micro enterprises, rural revitalization and green consumption, and continuously improve the breadth of financial service coverage, service precision and support; at the same time, efforts should be made to build a full-coverage inclusive green financial institution system, improve relevant infrastructure, perfect related organization system and policy support system, innovate relevant products. It is necessary to make comprehensive use of monetary and credit, fiscal and taxation, industrial and differentiated regulatory policies to enhance the ability of financial institutions and intermediaries to provide green financial services.We can learn from the practice of Lishui City, which has innovatively launched "ecological loan", "two mountain loan" and other credit products and established "one line and one station" financial guarantee mechanism for the core problems of collateralization, transaction and realization of ecological product value, and it has made efforts to open up the "financial channel" for the realization of ecological product value.

3.Accelerate the exploration and development of green inclusive finance standards.At present, the system design, standard system and policy framework for the integration of inclusive finance and green finance are still at the initial exploration stage. For green finance and inclusive finance, there are many one-line guidelines and institutional approaches for the development of both, but few systems to promote integrated development.Therefore, it is necessary to accelerate the exploration and development of a inclusive green financial standard system, conduct research on the definition of inclusive green financial-related financing subjects and projects, enhance the efficiency and accuracy of identifying green production and operation activities or green subjects, and more effectively support small and medium-sized enterprises, agricultural-related production and operation subjects and other inclusive financial service groups to carry out green production and operation activities as well as implement green transformation.

References

[1] Bai Yaoping.Innovative and Specialized Green Finance Empowering Local Economic Transformation and Upgrading. Modern Commercial Banking,2022,28(12):56-61.

[2] Peng Jiangang,Zhu Bao.Strategic Thinking of Exploitation oriented Inclusive Financeunder the Vision of Developed Economies.The Theory and Practice of Finance and Economics,2017,38(06):2-7.

[3] Bu Yongxiang.Exploration and Thinking on the Intergrated Development of Inclusive Finance and Green Finance.China Sustainability Tribune,2022,21(11):12-13.

[4] Song Shumin, Li Xingye."Living Mortgage" to Boost the Investigation of Agriculture —— Take Changling Rural Credit Cooperative Union Beef Cattle "Living Mortgage" as an Example. Journal of Jilin Financial Research,2022, 43(04):64-65+76.

[5] Zhang Zaixu,Huang Zhuolin.Measurement and Factors of China's Provincial Green Technical Innovation Efficiency.Resources & Industries,2020,22(06):1-8

[6] Zhao N. Can green credit improve regional green technology innovation?——based on regional green patent data. On Economic Problems, 2021, 43(6): 33-39.

[7] Zou Yanan. Exploring the path of integration of green finance and inclusive finance at the level of digital financial development.Modern Finance Guide, 2022,36(11):30-34.

[8] Zhang Kui. Zhejiang Practice of Inclusive Finance and Green Finance Integration Development.China Finance,2022,73(21):54-55.

[9] Wang Wei.Effect Evaluation of Green Finance on Technological Innovation ofIndustrial Solid Waste Recycling Based on PSM-DID Model.Nonferrous Metals(Extractive Metallurgy) ,2022,74(09):173-178

[10] Wang Naihui. On the Integration of Inclusive Finance and Green Finance Systems Engineering-Theory and Practice. China Market,2022,29(16):11-13

[11] Ma Linbo.Take the road of deep integration of green finance and inclusive finance.China Rural Finance,2022,34(10):50-51.

[12] Xu Yupeng. Green finance is not "inclusive" enough. China Banking and Insurance News.2022-03-31(006).

[13] Wang Mengyuan, Fang houzheng. Can Green Finance Promote Green TechnologyInnovation of Enterprises With HighEnvironmental Risk?Evidence Based on Green Patent Data of Chinese ListedCompanies.Zhejiang Finance,2021,40(12):59-66+20.

[14] FANG Hui，ZHAO Shengli .Has the Belt and Ｒoad Initiative promoted the upgrading of China＇s industrial structure? A difference-in-differences test based on 285 cities of China.Industrial Economics Research,2021,20(01):29-42.

[15]]Tian Xiaofan. Discussion on the integration of inclusive finance and green finance.China Journal of Commerce,2019,28(07):71-72.

[16] Wei Changjiang.The Comparison and Integration of Green Finance and Inclusive Finance.Gansu Finance,2017,37(12):35-37.

[17] Chen Yi,Chen Fang.The Impact of Digital Inclusive Finance MultidimensionalRelative Povertyin Chinese Family-Analysis based on CFPS Data.Research of Finance and Education,2023,36(02):13-27.