THE IMPACT OF GREEN FINANCE ON ECONOMIC GROWTH IN DIFFERENT REGIONS

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The development of green finance is in line with the concept of green development in the national development concept, and has become a new growth point of China's economic development. This paper makes an empirical study on the influencing factors of green finance development in China, and puts forward corresponding countermeasures and suggestions to promote the sustainable development of green finance in China.

Keywords: China; green finance; economic development; different regions.

ВЛИЯНИЕ ЗЕЛЕНЫХ ФИНАНСОВ НА ЭКОНОМИЧЕСКИЙ РОСТ В РАЗНЫХ РЕГИОНАХ

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Развитие зеленых финансов соответствует концепции зеленого развития в национальной концепции развития и стало новой точкой роста экономического развития Китая. В данной работе проводится эмпирическое исследование факторов, влияющих на развитие зеленых финансов в Китае, и выдвигаются соответствующие контрмеры и предложения по содействию устойчивому развитию зеленых финансов в Китае.

Ключевые слова: Китай; зеленые финансы; экономическое развитие; разных регионах.

Research design

In this paper, panel data of 30 provinces and municipalities in China except Tibet during 2016–2020 are selected as research samples. The data used are all from National Bureau of Statistics, China Statistical Yearbook, China Provincial Statistical Yearbook and China Insurance Yearbook, etc.

Variable definition

In this paper, per capita *GDP* of each province (ten thousand yuan) is chosen to represent the level of economic development, and *GDP PC* is used to represent it. The green finance index of each province is selected to represent the development level of green finance and is represented by *GFI*. The control variable is the general financial expenditure of each province (100 million yuan), expressed by *FE*.

Research method

In order to test the impact of green finance on economic growth, this paper takes green finance index (*GFI*) and fiscal expenditure (*FE*) as explanatory variables, and per capita *GDP* (*GDP PC*) as explained variables to construct the following model, see Formula (1).

$$GDP\ PC = \alpha_1 GFI + \alpha_2 FE + \mu, \tag{1}$$

where: *GDP PC* stands for per capita *GDP*;
GFI stands for Green Finance Index;
FE stands for general expenditure;
α are all coefficients;
μ represents the error term.
The results of Hausma test show that the fixed effects model is significantly better than the random effects model. Therefore, this paper uses the fixed effect model to analyze the panel data. Based on the above analysis and selected panel data, Model 2 is constructed, as shown in Formula (2).

$$GDP\ PC_{it} = \alpha_1 GFI_{it} + \alpha_2 FE_{it} + \mu_i + \varepsilon, \tag{2}$$

where: *i* represents 30 provinces in China;
t is for time.
GDP PC$_{it}$ refers to the per capita *GDP* of Province *i* in year *t*, *GFIit* refers to the green finance index of Province *i* in year *t*, and the general fiscal expenditure of Province *i* in year *t* is *FE$_{it}$*. Both α$_1$ and α$_2$ are coefficients. μ$_i$ represents the individual difference term and ε is the random disturbance term.

Analysis of empirical results

In order to test the influence of different regional economic development, the regions are divided into two groups. The original panel data is divided into two groups based on the median annual *GDP* per capita, which are economically more developed regions and economically less developed regions. The regression results are shown in the table.

Table

The regression results of green finance and economic growth in different regions with different economic development conditions

Indicator	Economically developed areas		Economically less developed areas	
Variable	GDP PC	GDP PC	GDP PC	GDP PC
GFI	23.87006***	23.87006***	23.87006***	23.87006***
_____	(3.232837)	(3.232837)	(3.232837)	(3.232837)
FE	0.0003498***	0.0003498***	0.0003498***	0.0003498***
_____	(0.0000949)	(0.0000949)	(0.0000949)	(0.0000949)
Constant	-1.046498**	-1.046498**	-1.046498**	-1.046498**
_____	(0.6909462)	(0.6909462)	(0.6909462)	(0.6909462)
Adjust R2	0.5759	0.5759	0.5759	0.5759

*, ** and *** are significant at the level of 10 %, 5 % and 1 % respectively; The standard deviation in parentheses.

The relative comparison between the two groups of data shows that the *GFI* coefficients of the two groups of data are both positive, indicating that green finance can promote the economic development of both developed and underdeveloped regions. However, through the comparison of coefficients (23.87006 > 10.98127), it is found that the index coefficient of green finance development in economically developed areas is larger. In addition, for developed areas, *GFI* coefficient is significantly positive at 1 % ($P = 0.000$). For less developed areas, the *GFI* coefficient was significant at the level of 10 % ($P = 0.083$).

Conclusion

Due to the differences in geographical environment, economic base, industrial structure and technical level among regions, the promoting effect of green finance on economic development is

different among regions. For the economically developed regions, which have more resources and capital, green investment will increase and play a stronger role in promoting economic development under the background of vigorously developing green finance. However, for the less developed areas, due to the geographical environment, they have to rely on natural resources, and the proportion of heavy industry is relatively large, and the investment amount of green industry is relatively small. If the economic transformation needs to be realized quickly, the cost is relatively high. Therefore, the promotion effect of green finance on economic growth is limited.

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