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Research on the Influence of Comprehensive Financial Reform Pilot Area on the Urban Primacy

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Abstract

Urban primacy is an important index to measure the radiation and influence of a city, and it represents the strength and position of the city in its region. The comprehensive financial reform pilot zone, as the policy experimental field of China's financial system reform, undertakes the mission of promoting the healthy development of the financial circle . Understanding the relationship between them will undoubtedly have important guiding significance for the formulation and implementation of financial excellent policies. In view of this, this paper using the panel data from 1999 to 2018, evaluates the policy effect of five national comprehensive financial reform pilot areas through the multi-time DID model, and investigates the influence of the comprehensive financial reform pilot projects on the urban primacy. The results show that: (1) the comprehensive financial reform pilot zone can reduce the degree of urban primacy and promote regional economic integration and coordinated development; (2) there are regional differences in the effect of reducing the urban primacy in the financial comprehensive reform pilot area; (3) the improvement of financing structure and the improvement of investment efficiency are two important ways to reduce the urban primacy in the experimental area of comprehensive financial reform.

Keywords

The comprehensive financial reform pilot zone; Urban primacy; Influence.

1. INTRODUCTION

For a long time, the development of urban agglomerations has become the main form to promote regional economic development, and the driving role of its rise has become the main engine to promote the rapid economic growth of a country or region, thus making the concept of urban primacy become a hot word today. Correspondingly, influenced by many theories and policies, the financial system of big cities or mega-cities with industrial policy advantages and geographical location advantages is often relatively developed.However, financial support is too concentrated, so as materials and elements, which are concentrated in big cities in various regions. The first city, far ahead, develops independently and even plunders the resources of other surrounding areas, which leads to the situation that the city is dominant and resources are too concentrated in its province [1]. The Matthew effect caused by the high urban primacy in many areas of China has restricted the development of the overall economy [2].

In order to promote the coordinated development of various regions and ensure the sustainable economic growth, the central government put forward the principles of systematic concept and overall planning in the 13th and 14th Five-Year Plans. Correspondingly, in terms of specific financial reform measures, the state has successively launched a series of comprehensive financial reform pilot zones. From 2012 to 2014, Zhejiang, Guangdong, Fujian, Yunnan, Guangxi and Shandong financial comprehensive reform pilot zones were established one after another, which constantly promoted the innovation of financial system and explored

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the road of regional economic development. Obviously, they are closely related to regional economic development, especially to optimizing the distribution of urban primacy, that is, how to effectively promote the rational and optimal allocation of resources in the region and radiate the economic development of the surrounding areas by improving the problem of excessive urban primacy. At the same time, this problem also involves the driving factors and the degree of influence of the financial comprehensive experimental zone on the change of urban primacy. In order to analyze its influencing mechanism, this paper uses the panel data from 1999 to 2018, evaluates the policy effect of five national comprehensive financial reform pilot areas by multi-time DID model, and investigates the influencing factors and degree of the comprehensive financial reform pilot projects on the city primacy.

The follow-up structure of this paper is as follows: The second part is literature review; The third part is theoretical analysis; The fourth part is the model description; The fifth part is the empirical results; The last part is the conclusion.

2. LITERATURE REVIEW

2.1. Research on the Comprehensive Financial Reform Pilot Zone

During 2012-2016, the pilot zones for comprehensive financial reform were established one after another, highlighting that the state has given a series of "combination boxing" support for financial reform policies to the pilot zones for comprehensive financial reform in view of the differences in regional economic development levels and urban priorities of different places. The local financial autonomy of these pilot zones granted by the state is comprehensive, systematic and coordinated.

With the gradual opening of the pilot area of comprehensive financial reform, some literatures began to discuss these pilot projects. Chen Yeting et al. [3] used synthetic control method to conduct counterfactual test on five national financial reform experimental areas, which proved that different experimental areas had obvious differences in the impact on total production factors. Zhou Li and Lei Zhonghao [4] use the quarterly panel data from 2008 to 2016, and use the double difference method to investigate, finding that the financial reform pilot zone has an inverted U-shaped relationship with economic growth.

The radiation capacity of the comprehensive financial experimental zone will make the development resources of cities spread to the outside. Other areas will take over the spilled resources, and the surrounding relatively underdeveloped areas have also made progress [5]. The differences among cities will be reduced, so the primacy of cities will be reduced.

2.2. Research on Urban Primacy

Urban primacy is not only a measure of regional economic situation, but also an important index to measure the rational allocation of regional resources. The concept of the first city was put forward by Jefferson [6]. The first city always has an advantage in economic development and social resource allocation. The population of the second city is hard to surpass that of the first city, and the city level is very stable. Even though the statistical methods or calculated ratios of each country or region are different, they all follow this law, which is the birth of the urban primacy law.

As for the study of urban primacy, the literature that has positive and negative effects has been published, and scholars' attitudes are mixed. For example, according to the viewpoint that the first city causes external costs, an oversized first city absorbs disproportionate public resources from other parts of the economy, which leads to the deterioration of the conditions of ordinary cities. Therefore, the redistribution of public resources caused by excessive primacy leads to the deterioration of the quality of life of non-first cities [7]. There are also different views. Faraji et al. [8] think that there is no obvious negative feature for a city in developed

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countries to occupy the first place, but the urban system in developing countries is facing serious problems. As a phenomenon of urban network in developing countries, the first place in cities shows that the urban system in these countries is unbalanced and abnormal.

In recent years, scholars pay more attention to the complex relationship between urban primacy and economic growth, and give different research conclusions. Ding Renchong and Zhang Hang [2] analyzed the relationship between population primacy, economic primacy, land primacy and comprehensive primacy calculated from their average values through spatial Dubin model effect decomposition and cluster analysis, and found that urban primacy has an inverted U-shaped relationship with economic growth.

2.3. Literature Review

Previous studies have mentioned that the financial comprehensive reform pilot zone can promote the rational allocation of resources, and the positive effect of urban primacy on regional economic development is limited. However, there is little literature to link the two, and there is no research on whether urban primacy can promote the overall development of regional economy from the perspective of regional economy and urban theory. Secondly, the previous literature researches on urban primacy mostly focused on the relationship between urban development and economic growth.They did not involve the empirical research on the impact of comprehensive financial reform pilot area on urban primacy, thus excluding the important factor of local financial reform. Thirdly, the previous literature mostly involved the research on the influence of comprehensive financial reform pilot zone on economic indicators. Many articles agreed that the pilot zone could promote economic growth, but there was no discussion on whether the pilot zone had the leading ability to drive the virtuous circle of urban agglomeration economy and whether it had the guiding role of sustained and healthy economic development.

This paper holds that if the financial system reform measures in the pilot area of comprehensive financial reform are proper, the resources of the first city and other cities can flow in both directions, the dependence between these cities can be strengthened.The economy can develop as a whole, and the city priority will be reduced. Therefore, we try to use DID model to evaluate the mature pilot policy of the pilot area of comprehensive financial reform, discussing the development essence of the pilot area of comprehensive financial reform and the urban primacy, and whether its financial reform promotes the optimal allocation of financial resources and the overall development of the region to adapt to the current "new normal" . This research will be of great reference significance to the future direction of financial reform.

3. THEORETICAL ANALYSIS

Urban primacy can be used to measure the resource allocation, factor flow and development differences in the whole economy. The more resources in a region are concentrated in the first city, the better the economic situation of the first city, the higher the public welfare and the more population inflows, the greater the differences between other cities and the first city, and the higher the primacy. The more dispersed the resources are, there is little difference in economic conditions and welfare facilities between cities, and the population will not flood into the first city in large numbers, and the lower the first degree of cities will be. Guided by the regional policies planned by the government, the comprehensive financial reform pilot zone promotes the healthy development of the financial system. By getting rid of the geographical constraints, the resources of the first city and other cities can flow in two directions, which can effectively reduce the urban primacy.

In the pilot zone of comprehensive financial reform, all financial institutions can concentrate private capital through financing business. And then, with the guidance of collecting

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information of various enterprise projects and identifying feasible investment projects, they can deliver financial resources to enterprises. With the development of science and technology and the operation of Internet finance, the financial system can transmit service and transaction information at low cost, breaking the gap of geographical space [9]. Therefore, in addition to promoting the development of local economy, the comprehensive financial reform pilot zone will also have a great driving effect on the surrounding regional economy, through three effects to realize the coordinated development of regional economy.

One is the resource allocation effect. With the help of the financial system's influence on the resource allocation function across space and time, the establishment of financial institutions and the improvement of the financial system in the zone can effectively process the information of the market environment, identify the high-quality funds and high-quality projects in various places, and transform savings into effective investments, so that the high-quality industrial projects in various places can be supported by funds,which can develop continuously and drive local economic growth.

The second is the spatial spillover effect. The establishment of the comprehensive financial reform pilot zone can strengthen the geographical agglomeration of financial resources and spill over to the surrounding areas, so that the areas can obtain a large amount of funds, elements or trading opportunities, form a regional financial network and stimulate local economic development. Financial test areas are generally built in big cities that have developed to a certain extent. The agglomeration of financial resources exceeds local restrictions and will gradually flow to the surrounding areas, which will promote the economic development of other areas through the spatial spillover effect.

The third is the neighborhood imitation effect. The planning of the comprehensive financial reform pilot zone is coordinated and guided by governments at all levels. As a benchmark of financial reform, it plays an exemplary role in other regions. Effective measures will attract the attention and imitation of the governments in the surrounding regions. The constraints of resource flow in regions with similar financial development level and development mode will be eased, and it will be easier to promote the free flow of resources and trade cooperation, thus improving the local financial and economic development level.

The whole theoretical logic process of this paper is as follows Figure 1 shown.

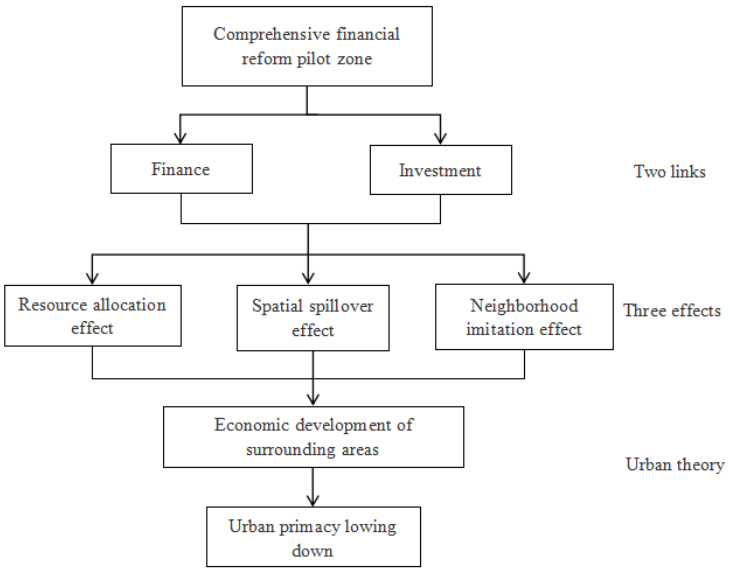

Figure 1. Logical framework

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4. MODEL SETTING AND VARIABLE DESCRIPTION

This paper uses the data of five financial comprehensive reform experimental zones setting up in six provinces of Zhejiang, Guangdong, Fujian, Yunnan, Guangxi and Shandong from 2012 to 2014. It selects the panel data of provinces from 1999 to 2018, and excludes the data of four municipalities directly under the Central Government. Tibet and Qinghai are also excluded due to the serious lack of data. Due to the different establishment time of the test area, the multi-time point DID model is adopted. Now set the model as follows:

$$pcity_{it} = \alpha + \beta\, project_{it} + \varphi X_{it} + \delta_i + \gamma_t + \mu_{it} \quad (1)$$

The definitions and descriptions of each variable are shown in Table 1.

Table 1. Definition and description of variables

Variable classification	Variable name	Variable definition	Calculation
The dependent variable	pcity	Urban primacy	(GDP of the first largest city/GDP of the second largest city) * 100
The main explanatory variable	project	Pilot area project	Take 1 after processing the construction pilot area, and take 0 in other cases.
Control variables	finance	Government financial expenditure	General government budget expenditure /GDP
	fdi	Foreign direct investment	Actual used funds of foreign direct investment * exchange rate /GDP*100
	infra	Infrastructure construction	(Railway operating mileage+highway mileage)/land area of each province
	indus	Industrial structure	Total industrial assets /GDP

Among them, pcity is the dependent variable, which represents the urban primacy. In this paper, we use the economic city priority, that is, the ratio of the GDP of the first largest city to that of the second largest city, which is used as a percentage. Subscripts i and t represent provinces and times respectively. The data comes from the national research data.

The main explanatory variable project is the virtual variable of policy project implementation. Six provinces in the experimental area were set up, Zhejiang, Guangdong, Fujian, Yunnan, Guangxi and Shandong as the treatment group, and the other provinces as the control group. If the sample is not only the treatment group, but also the year after the construction of the pilot area, but not including the year when the test area was established, take 1, and take 0 in other cases. δi and γt are regional fixed effect and time fixed effect respectively.

X is other control variables that affect the urban primacy, including government finance (finance), foreign direct investment (fdi), infrastructure construction (infra) and industrial structure (indus).

Government expenditure is general government budget expenditure /GDP. In view of the change of statistical caliber, fiscal expenditure was selected from 1999 to 2006 and general budget expenditure from 2007 to 2018. All data come from EPS database.

Foreign direct investment is the actual use of foreign direct investment funds multiplied by the exchange rate divided by GDP, expressed as a percentage. The actual used amount of foreign direct investment comes from Wande database, and the exchange rate comes from national research data.

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Infrastructure construction is the sum of railway operating mileage and highway mileage divided by the land area of each province. Highway and railway mileage comes from the national research data, and the area of each province comes from the Chinese government portal website.

Industrial structure is the total assets of industrial enterprises divided by GDP. Normally, the transformation of a country from rural economy to industrial economy will promote urbanization [10], and the development of industrial industry will lead to the priority development of some cities, and the first place of cities will rise. Total assets of industrial enterprises come from national research data.

Descriptive statistics of main variables are shown in Table 2. The minimum value of urban primacy degree is 100.06% and the maximum value is 1349.91%, which is quite different, but the average value is 293.69%, which still conforms to the convention that the first city is about three times the size of the second city [6]. There are only two variables in the main explanatory variable: 0 and 1. Because there are fewer variables after the establishment of the experimental area, the mean and variance are also small, which are 0.06 and 0.24 respectively. The dimension of each variable is still different after adjustments, but it does not affect the empirical test and the comparison of relative size.

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
pcity	499	293.69	204.89	100.06	1349.91
project	500	0.06	0.24	0	1
finance	500	1914.59	826.37	629.59	4574.58
fdi	497	2.25	1.97	0.04	11.94
infra	500	6512.64	4185.44	212.22	17948.92
indus	500	1.28	0.36	0.60	2.75

5. EMPIRICAL ANALYSIS

5.1. Basic Empirical Conclusions

Firstly, this paper tests the policy effect of the comprehensive financial reform pilot zone on the urban primacy. Table 3 shows the basic regression results of formula (1). Column (1) and column (2) do not add or add control variables respectively, and both control the regional fixed effect and time fixed effect. The numbers in brackets are robust standard error, and the asterisk indicates the significance of the coefficient.

The coefficient of the policy dummy variable, project, in column (1) is -40.251, and its sign is negative, which is significant at the statistical level of 1%. It shows that the implementation of the project in the experimental area can indeed reduce the urban primacy through the interaction of resource allocation effect, spatial spillover effect and neighborhood imitation effect outstandingly. The regression coefficient of the policy dummy variable project with control variables added in column (2) is -25.385, which is lower than that in column (1), indicating that the control variables absorb some of the influence brought by the projects in the experimental area alone, but the result is still stable.

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Table 3. Influence of experimental area on urban primacy

	Urban primacy (pcity)	
	(1)	(2)
project	-40.251*** (11.780)	-25.385** (11.710)
finance		-0.022* (0.013)
fdi		10.374*** (2.533)
infra		-0.004 (0.003)
indus		57.507*** (21.432)
_cons	296.275*** (3.781)	262.649*** (45.804)
Regional fixed effect	control	control
Time fixed effect	control	control
N	499	496
r2_a	0.827	0.832

Standard errors in parentheses

* p < 0.1, ** p < 0.05, *** p < 0.01

5.2. Parallel Trend Test

In order to make the test result of DID model reliable, it is necessary to eliminate the difference between the experimental group and the control group in the quasi-experimental structure. Next, this paper tests the hypothesis of parallel trend according to ESA method.

To dynamically evaluate the policy effect of the experimental group, the binary variable project should be grouped according to time, with -n in the nth period before the policy, and n in the nth period after the policy, where n is between 0 and 6, and n still take 6 if it exceeds 6. It will be divided into 13 groups. According to the divided groups, 13 dummy variables are regenerated. The dummy variables in the first six phases of the policy are defined as D__6-D__1, and those in the last six phases of the policy are defined as D6-D1. In order to prevent the collinearity, the dummy variables in the current phase of the policy (n=0) are deleted. Then we use D__6-D__1 and D6-D1 to replace the policy dummy variable project as the explanatory variable for regression. The specific regression model is as follows:

$$pcity_{it} = \alpha + \beta \sum \mathrm{D__n_{it}} + \omega \sum \mathrm{Dn_{it}} + \varphi X_{it} + \delta_i + \gamma_t + \mu_{it} \quad (2)$$

Draw the trend chart of policy effect according to the estimated result of formula (2). As shown in Figure 2, the circle represents the regression coefficient of each virtual variable of policy time, and the dotted line passing through the circle is the confidence interval of the corresponding coefficient. It can be intuitively seen in the chart that the coefficient for measuring policy effect swings up and down at 0 before the implementation of the policy, and the coefficient gradually shows a downward trend after the implementation of the policy.So the assumption of parallel trend is verified.

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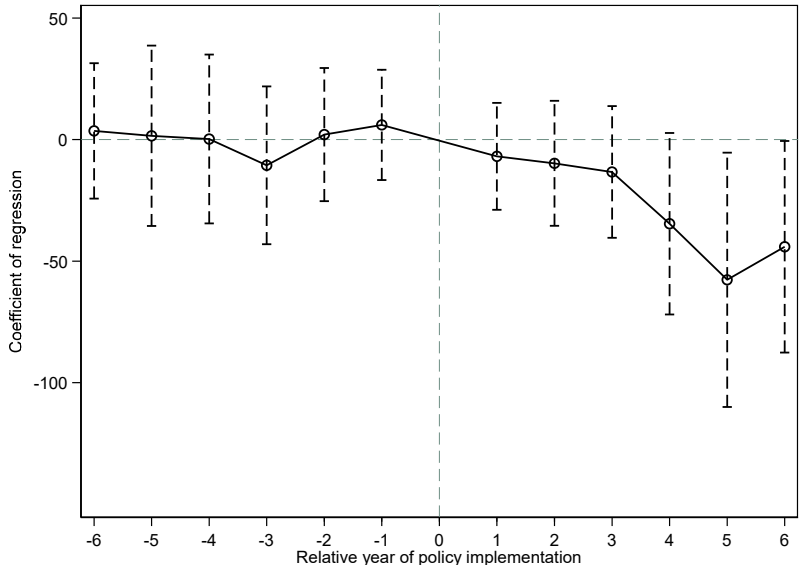

Figure 2. Trend chart of ESA results

5.3. Placebo Test

5.3.1 Replace the control group

The establishment of a clean and reliable quasi-experiment requires that the treatment group and the control group conform to the principle of random distribution. The control group is selected as the provinces involved in the three newly approved financial experimental zones and the provinces with outstanding financial development after 16 years. In view of this, the control group is replaced by nine provinces of Henan, Guizhou, Sichuan, Jiangxi, Jiangsu, Hebei, Liaoning, Hubei and Hunan, while the treatment group is still the original six provinces. According to the above methods, the financial development of the experimental group and the control group both meet the conditions for setting up the experimental area, and the situation of artificially selecting the experimental group and the control group can be well controlled.

Table 4. Placebo test of replacement control group

	Urban primacy (pcity)	
	(1)	(2)
project	-38.441** (17.523)	-40.708** (16.148)
finance		0.001 (0.024)
fdi		7.038** (2.914)
infra		-0.008* (0.004)
indus		-3.897 (39.298)
_cons	291.843*** (5.457)	341.526*** (72.511)
Regional fixed effect	control	control
Time fixed effect	control	control
N	299	298
r2_a	0.827	0.829

Standard errors in parentheses

* p < 0.1, ** p < 0.05, *** p < 0.01

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Table 4 being the regression result after changing the control group, the regression result of the policy dummy variable project is -38.411 without adding the control variable in column (1), and the regression result of project after adding the control variable in column (2) is -40.708. Both regression coefficients are significant at the statistical level of 5%, which shows that even if the control group is changed, the policy effect will still be effective after weakening, and the decline of urban primacy in the experimental area is not caused by the grouping of artificial control experimental group and control group.

5.3.2 Change policy time

During the implementation of the financial comprehensive reform pilot area project, the impact of other policies or environmental changes in the same period may affect the evaluation of the effect of the pilot policy. So this paper conducts counterfactual test during the non-project implementation period to eliminate such interference factors.

We set a dummy variable projecti, t-4, which will advance the policy effect by four years, and then selected the sample range to be tested before the project, that is, before 2012. Regression results are as follows Table **5.** Placebo test of change policy time 5. Column (1) did not add the control variable, and the regression result of projecti ,t-4 was -16.623, while column (2) added the control variable and the regression result was -10.170. The projecti , t-4 coefficients obtained by the two regressions are not significant, which indicates that during the period of no financial reform, the urban primacy of the provinces where the experimental area is located has not changed significantly. Therefore, the decline of urban primacy is not interfered by other economic factors or other policy impacts in the same period,which means the policy effect is reliable.

Table 5. Placebo test of change policy time

	Urban primacy (pcity)	
	(1)	(2)
Projecti, t-4	-16.623 (14.488)	-10.170 (16.990)
finance		-0.012 (0.018)
fdi		6.455** (2.993)
infra		-0.000 (0.003)
indus		6.628 (50.490)
_cons	288.137*** (4.723)	285.549*** (73.739)
Regional fixed effect	control	control
Time fixed effect	control	control
N	350	350
r2_a	0.818	0.816

Standard errors in parentheses

* p < 0.1, ** p < 0.05, *** p < 0.01

5.3.3 Random grouping and extraction policy time

Next, this paper randomly selects treatment groups and policy time for placebo test, and further minimizes the artificial factors of grouping and time selection.

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Firstly, the data are grouped by provinces and sorted randomly, then the first six provinces are taken as the experimental group and the rest as the control group. A year is randomly selected from the year variables of the first six provinces as its policy time, and binary variables are generated according to the classification and policy time of the experimental group and the control group. The experimental group after the policy time takes 1 and the rest takes 0. Then, the urban primacy is regressed according to formula (1). The above extraction and regression process is repeated 500 times, and the result is shown in Figure 3. Among them, the scatter chart is the scatter chart of coefficient and p value of regression result, and the line chart is the kernel density function of 500 regression coefficients. Intuitively, the P value with a coefficient of 0 is as high as 0.9, so the assumption that the regression coefficient is 0 can't be rejected. Therefore, the fact that the control group and the experimental group are randomly divided into groups and randomly set the policy time will not affect the urban primacy. The placebo test passed, and the result is robust.

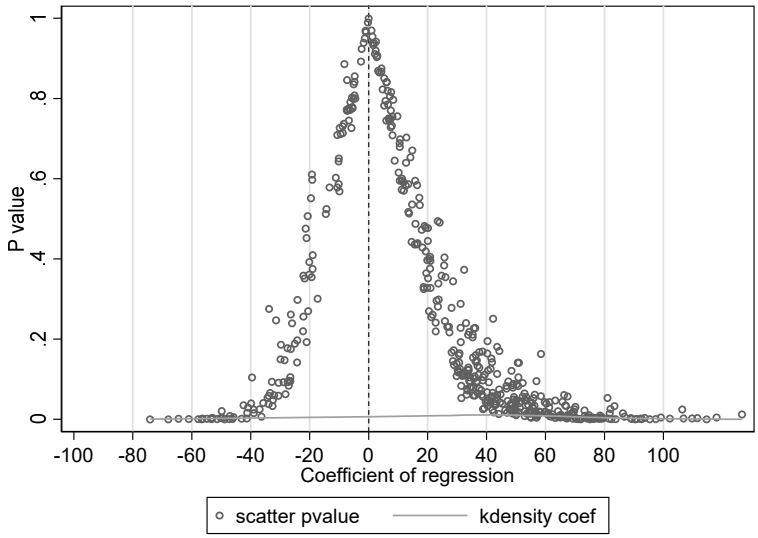

Figure 3. Placebo test of random grouping and extraction policy time

5.4. Heterogeneity Analysis

The area with the highest urban primacy will rely too much on the first city.Thus huge population pressure, economic pressure and social pressure will gather in the first city. On the contrary, the high urban primacy means over-development and low efficiency [11]. Studies have shown that it is more beneficial to the provincial economic growth to reduce the urban primacy in areas with higher urban primacy [2]. The emphasis of financial reform measures will vary according to the economic scale and financial development of each province. Therefore, next, we will investigate whether the impact of the pilot area projects on the city primacy has regional heterogeneity.

Sub-sample regression results such as Table 6, the samples are divided into two groups according to the degree of urban primacy. Column (1) and column (2) are samples with low urban primacy, and the regression coefficients of the policy dummy variables without control variables and with control variables are -35.036 and-14.994 respectively. Column (3) and column (4) are the samples with the high urban primacy, and the regression coefficients without control variables and with control variables are -81.069 and -127.387 respectively. The four regression coefficients are all significantly negative, indicating that the implementation of the experimental area can reduce the urban primacy and alleviate the problem of uneven regional development, regardless of the level of urban primacy. Compared with the regression results of

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samples with low urban primacy, the regression coefficient of samples with high urban primacy is larger in absolute value, which indicates that the higher the urban primacy, the greater the extent of reducing urban primacy in the financial comprehensive reform pilot zone. So there is the heterogeneity of policy effects among different regions.

Table 6. Sample regression

	Urban primacy (pcity)			
	Low urban primacy		High urban primacy	
	(1)	(2)	(3)	(4)
project	-35.036***	-14.994**	-81.069**	-127.387***
	(9.176)	(7.491)	(39.993)	(47.564)
finance		0.048***		-0.013
		(0.013)		(0.026)
fdi		2.334		47.160***
		(1.441)		(9.843)
infra		0.000		-0.017
		(0.002)		(0.013)
indus		30.828		-14.255
		(21.527)		(53.393)
_cons	160.817***	35.098	443.900***	511.416***
	(2.601)	(31.143)	(7.664)	(135.092)
Regional fixed effect	control	control	control	control
Time fixed effect	control	control	control	control
N	260	259	239	237
r2_a	0.646	0.711	0.660	0.687

Standard errors in parentheses

* p < 0.1, ** p < 0.05, *** p < 0.01

5.5. Analysis of Ways to Reduce the Urban Primacy in the Pilot Zone

It has been verified that the comprehensive financial reform pilot zone can reduce the urban primacy, but what specific financial reform measures are playing a role?

It is mentioned in the overall plan of various financial comprehensive reform pilot zones that we should improve the financing structure, increase the proportion of direct financing and expand the scale of direct financing by developing the bond and equity markets.The efficiency of direct financing is obviously better than the efficiency of resource allocation in the banking industry. Therefore, the improvement of the financing structure in the experimental area can lower the financing threshold of small and micro enterprises, remove the obstacles of capital flow, make capital adjust production factors in the whole economy, and promote the optimal allocation of resources.

Only improving the financing level and structure is not enough to reflect the function of financial resource allocation and service optimization. The industry has a high rate of return, and the financial market is prone to the problem of low investment efficiency. The funds raised are still idling in the financial market and cannot serve the real economy. Therefore, the experimental area also focuses on the aspect of investment efficiency, rectifies the information sharing mechanism and property rights system between enterprises and financial institutions, improves adverse selection, and strengthens risk control. These measures can reduce uncertainty of social environment, strengthen investment willingness [12], and effectively convert savings into investment and promote resource allocation. Therefore, from the two ways of improving the financing structure and the investment efficiency, this paper examines the influence of the comprehensive financial reform pilot zone on the urban primacy.

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When conducting empirical research, the dependent variable is replaced by the ratio of direct financing to indirect financing and the efficiency of capital allocation for regression. The specific regression model is as follows:

$$finstru_{it} = \alpha + \beta\, project_{it} + \varphi X_{it} + \delta_i + \gamma_t + \mu_{it} \quad (3)$$

$$efficient_{it} = \alpha + \beta\, project_{it} + \varphi X_{it} + \delta_i + \gamma_t + \mu_{it} \quad (4)$$

In order to investigate the financing structure, this paper uses the ratio of direct financing to indirect financing (finstru) to measure the financing structure of financial market. The transaction volume of stocks and bonds in Shanghai and Shenzhen stock exchanges is chosen as the direct financing, and the transaction volume is often used as an index of stock market liquidity [13], so the transaction volume can not only reflect the scale of direct financing, but also reflect the activity of financial markets. Indirect financing uses various deposits of banking financial institutions.The data comes from Wande database and EPS database.

When investigating the investment efficiency, this paper adopts the method of Odedokun [14], which uses the reciprocal of capital output rate, that is, the reciprocal of capital increment/output increment (ΔGDP/ΔK) to measure the efficiency of capital allocation. Output increment selects GDP increment,and capital increment selects the added value of RMB deposit balance. The data comes from Wande database and EPS database.

Table 7. Ways to optimize the allocation of resources

	Ratio of direct financing to indirect financing (finstru)		Efficient of capital allocation (efficient)	
	(1)	(2)	(3)	(4)
project	1.395*** (0.300)	1.091*** (0.281)	0.216** (0.093)	0.203** (0.093)
finance		-0.000*** (0.000)		-0.000 (0.000)
fdi		-0.119*** (0.029)		0.049 (0.041)
infra		0.000 (0.000)		-0.000 (0.000)
indus		-0.386** (0.170)		-0.223 (0.246)
_cons	1.141*** (0.028)	2.635*** (0.291)	0.689*** (0.021)	1.125*** (0.364)
Regional fixed effect	control	control	control	control
Time fixed effect	control	control	control	control
N	475	472	375	372
r2_a	0.745	0.766	0.441	0.459

Standard errors in parentheses

* p < 0.1, ** p < 0.05, *** p < 0.01

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The regression results are shown in Table 7. The dependent variable in column (1) and column (2) is the ratio of direct financing to indirect financing.Column (1) has no control variable, and the regression coefficient of the policy dummy variable project is 1.395. Column (2) adds the control variable with the regression coefficient of 1.091. All coefficients are significant at the statistical level of 1%. The dependent variable of column (3) and column (4) is the efficiency of capital allocation. Column (3) has no control variable, and the regression coefficient of policy dummy variable project is 0.216. Column (4) has added control variable with regression coefficient of 0.203. All coefficients are significant at the statistical level of 5%. The project coefficients obtained by the four regressions are all significantly positive, which shows that the experimental area can really promote the financial market financing structure and the investment efficiency. From the comparison of coefficients, the absolute value of the regression coefficient of direct and indirect financing ratio in the experimental area is greater than the efficiency of capital allocation, which shows that the improvement of direct and indirect financing ratio in the experimental area is a more effective way to reduce the urban primacy.

6. CONCLUSIONS

Through financial system innovation, the comprehensive financial reform pilot zone optimizes the urban development pattern and injects vitality into the healthy development of urban agglomerations. In order to investigate the relationship between the pilot area and the urban primacy, this paper selects the provincial panel data from 1999 to 2018, and uses the multi-point DID model to evaluate the policy effect of five comprehensive financial reform pilot areas, which draws the following conclusions: (1) The comprehensive financial reform pilot area can reduce the urban primacy through the financial system reform. (2) The reform effect is heterogeneous in different regions, and the comprehensive financial reform pilot zone has a more obvious effect on reducing the city's primacy in regions with high urban primacy. (3) Improving the financing structure and the investment efficiency are two important ways to reduce the urban primacy in the experimental area of comprehensive financial reform.

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