Research on the Impact of the County Administrated by Province Reform on the Improvement of County Economic Performance: Taking Sichuan Province as an Example

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Abstract

In the process of further transferring to the county of the space of economic and social development, how to solve the financial predicament at the county level, stimulate the vitality of county development and improve the people's livelihood security system at the county level through the adjustment of the financial system have become the core content of the financial system reform below the province level. Finance is a kind of distribution system of "controlling finance by government and administrating through finance" with the state regime system as the main body. It has great significance for the government to perform and transform its functions. Financial reform will inevitably become an important part of the overall reform. Based on the decentralized reform mode under the province, this paper investigates the economic performance of the reform of the County Administrated by Province and the transmission mechanism of the reform from the two aspects of economic growth speed and industrial structure adjustment.

Keywords

County Administrated by Province Reform, County Economy, Economic Growth Speed, Industrial Structure Adjustment

1. Introduction

To make up for the shortcomings of economic growth by promoting the stable and coordinated development of county economy is an important step to pro-

mote the structural reform of supply side, which is of great strategic significance. For a long time, the system of "municipality governing county" has many problems, such as too many administrative levels among the vertical governments and imperfect fiscal decentralization system below the provincial level. The county economy of our country has generally fallen into the predicament of weak growth, unbalanced development, lack of disposable financial resources at the county level and insufficient supply of local public goods, which seriously restricts the potential of County Economic and social development.

Since 2002, the reform of County Administrated by Province, which took the reform of "expanding powers and strengthening counties" as the pilot project, has greatly enhanced the autonomy limits of county-level decision-making units from the two aspects of "fiscal revenue and expenditure management" and "economic affairs management", and relatively weakened the economic and financial management authority at the municipal level. It is an effective index to portray the strict exogenous "strengthening decentralization" at the county level, constituting a typical quasi-natural experiment. Such quasi-natural experiments are ideal for studying how decentralization affects economic growth and government public expenditure (Zheng, Wang, & Zhao, 2011). It can be said that the fiscal system reform of County Administrated by Province is an adjustment of inter-governmental relations through decentralization at the county level. Therefore, based on the available county-level panel data of Sichuan Province, this paper intends to conduct an in-depth study of the economic performance of the fiscal system reform below the province from the perspective of decentralization.

This study has both theoretical and practical significance. Theoretically, the theoretical significance lies in the innovative research on using modern theories and analytical methods to analyze the above problems. To research on how to promote the reform differently from the theoretical perspective can further enrich the theory of intergovernmental relations and the theory of government hierarchy. Practically, the reform involves the adjustment of the financial and administrative system among the provincial, municipal and county governments, which also has significant meaning on county economy and society practically. Whether the system arrangement, policy making are scientific or not requires this study to analyze and inspect its economic impact and people's livelihood effect according to the reform practice and relevant data, so as to provide valuable suggestions for improving the reform practice.

Based on the significance of the County Administrated by Province reform and the continuous and in-depth promotion of the financial system reform under provincial level, this chapter intends to further investigate the impact of the County Administrated by Province reform on county economic growth and industrial restructuring through empirical research. The second chapter will make a review of relevant literature and put forward research hypotheses. The third chapter elaborates research design based on research hypotheses, including sample description and changes, quantity setting and model design. The fourth chap-

ter gives the results of empirical test and analysis of the impact of reform based on Sichuan County panel data, and finally gives conclusions and suggestions.

2. Literature Review

In the early stage of reform and opening up, China basically formed a vertical local government structure with "provincial-prefectural level city-county" as the core (Fu, 2010). However, since the tax-sharing system has gradually formed, the responsibility of grass-roots government expenditure is inconsistent with income, which is not conducive to the stable development of county economy. The supporting reform of fiscal and taxation system in China is an economic decentralization reform that meets the requirements of market economy. In order to meet the requirements of market economy, China has carried out fiscal and taxation system reform with the nature of economic decentralization. The financial difficulties of counties and townships accompanied by this reform lie in the fact that no real fiscal system of tax distribution has been established below the provincial level (Jia, 2007). Therefore, the County Administrated by Province reform which seeks a breakthrough in the development by flattening the financial system, has gradually risen to an important position. On the one hand, the reform experience of Zhejiang Province has strengthened the confidence of other provinces in reform; on the other hand, the reform of administrative system is of great importance, requiring the overall arrangement of the central government, and the change of the vertical financial structure is easier to implement (Jia & Ning, 2015).

Under the existing tax-sharing system, there are some basic positive opinions on the role of county reform in county economic growth (Mao & Zhao, 2012; Li, 2012; Sun, 2016). It is noteworthy that in the County Administrated by Province reform, although the Intergovernmental revenue and expenditure responsibilities have been further adjusted and divided, the political incentive mechanism has not changed. Because expanding power to county level in income can not only increase the proportion of tax share of county level government, but also increase the financial resources of county level government through transfer payment of provincial government, enhance enterprise profits through local tax competition, and promote county economic growth (Wang & Fang, 2015); in the reform of combining "expanding power and strengthening county" with "direct financial management", the decentralization of power (economic division) is accompanied by the further expansion of expenditure responsibility. In the well-known "top-down scale competition", county-level local governments still tend to increase investment in productive public goods, such as capital construction, which is conducive to economic performance. Therefore, based on the institutional background of the importance of "Getting Incentives Right" in China's economic growth, the following hypotheses are put forward.

H1: the County Administrated by Province reform is positively related to the improvement of county economic performance.

3. Study Design

3.1. Sample Description

Sichuan Province has 43 municipal districts, 14 county-level cities, 120 counties and 4 autonomous counties, totaling 181 county-level administrative units, hereinafter collectively referred to as counties. Considering the relatively low level of county economic and social development in minority areas, as well as the Wenchuan earthquake-stricken areas, the county-level data which will affect the reliability of the results are excluded. Finally, the study selected 112 sample counties in Sichuan Province from 2006 to 2014, including 56 pilot counties and 56 non-pilot counties, as shown in Table 1. The relevant data of the research are mainly collected from the financial data of Sichuan District, county and city provided by Sichuan Provincial Department of finance, and the rest of the social and economic data are supplemented by the China Financial Yearbook, local financial statistics and China county statistical yearbook.

3.2. Variable Setting

3.2.1. Setting of Interpreted Variables

On the choice of variables, economic growth is used to define economic performance on the one hand; on the other hand, for the objective evaluation of county economic performance, structural transformation factors should also be taken into account to show the so-called "stable growth, structural adjustment, benefit people's livelihood" development flexibility. Therefore, it is also necessary to integrate the optimization and upgrading of industrial structure into the evaluation of county economic performance system. Therefore, this paper evaluates county economic performance from two dimensions: the level of county economic growth and the adjustment of county industrial structure.

3.2.2. Measurement of Core Independent Variables

Because the fixed effect model and multiple difference method are used in the whole sample analysis, the measurement of virtual variables in provincial directly administered counties is different. The first kind of dummy variable is the dummy

Table 1. The selected 112 sample counties in Sichuan province.

56 Pilot county	56 Non pilot county
Guanghan, Jiangyou, Jiajiang, Pengshan, Fushun, Luxian, Zhongjiang, Santai, Shehong, Weiyuan, Zizhong, Nanbu, Yilong, Langzhong, Yibin, Yuechi, Huaying, Dazhu, Xuanhan, Quxian, Jianyang, Anyue, Renshou, Pingchang, Rongxian, Luojiang, Yanting, Zitong, Pengxi, Daying, Longchang, Qianwei, Jingyan, Xichong, Pengan, Yingshan, Nanxi, Jiang'an, Changning, Gaoxian, Linshui, Wusheng, Kaijiang, Lezhi, Yanbian, Emeishan, Hejiang, Xuyong, Gulin, Cangxi, Jiange, Wangcang, Xingwen, Wanyuan, Nanjiang, Tongjiang	Anju, Bazhou, Chaotian, Chongzhou, Chuanshan, Cuiping, Daxian, Da'an, Dayi, Dongpo, Dongxing, Fucheng, Gaoping, Gongjing, Guang'an, Jialing, Jiangyang, Jinkouhe, Jintang, Jingyang, Leshanzhong, Longmatan, Longmatan District, Longquanyi, Mingshan, Naxi, Neijiang Shizhong, Pixian, Pingshan District, Pingshan County, Pujiang, Qionglai, Renhe, Shawan, Shuangliu, Shunqing, Tongchuan, Wenjiang, Wutongqiao, Xinjin, Yantan, Yanjiang, Youxian, Yucheng, Danling, Qingshen, Miyi, Muchuan, Junlian, Gongxian, Yingjing, Hanyuan, Shimian, Tianquan, Baoxing, Hongya

variable of reform policy (D1), which is used to distinguish which years the reform has been implemented. The value of 1 represents the time before implementation of the reform, while the value of 0 represents the time after implementation of the reform. The second kind of dummy variable is the processing group dummy variable D2, which is used to distinguish which provinces are affected by the provincial directly administered county policy during the observation period. The value of 1 represents the areas participating in the reform during the observation period, while the value of 0 represents the areas not participating in the reform.

On the choice of decentralization indicators in the province, referring to the practice of Jia and others (2013), the proportion of per capita county fiscal revenue (expenditure) in the sum of per capita central fiscal revenue (expenditure), per capita provincial fiscal revenue (expenditure) and per capita county fiscal revenue (expenditure) is used to express[1].

3.2.3. Other Control Variable Settings

According to the prior study, five indicators of fixed assets investment, regional population density, human capital level, infrastructure carrying capacity and employment non-agricultural level were selected as control variables to be included in the overall regression equation. These variables were selected because of their significant causal relationship with regional economic growth and industrial restructuring. Calibration caliber and symbol settings for all variables are shown in the table.

3.3. Model Design

In view of the impact of Sichuan Province's reform on County Economic performance, this study further introduces the multiplier of policy fictitious variables and fiscal revenue and expenditure decentralization, on the basis of a priori study choosing policy dummy variables and fiscal revenue and expenditure decentralization as core explanatory variables as the core explanatory variables (Zheng et al., 2011; Luo et al., 2013; Jia et al., 2013), to examine whether the County Administrated by Province reform affect county economic growth and industrial restructuring through further decentralization between the provinces, cities and counties. In short, to examine the policy transmission mechanism of the County Administrated by Province reform based on the perspective of fiscal decentralization.

The panel regression model and the multiple-difference model of the impact of the County Administrated by Province reform on the economic growth of Sichuan county areas are as follows:

$$
\begin{aligned}
y_{it} = \beta_0 + \beta_1 D1_{it} + \beta_2 \mathrm{FDS}_{it} + \beta_3 \mathrm{FDZ}_{it} + \gamma_1 D1_{it} \times \mathrm{FDS}_{it} \\
+ \gamma_2 D1_{it} \times \mathrm{FDZ}_{it} + \sum_{i=1}^{n} \lambda_i \mathrm{Control}_{it} + \eta_i + \mu_t + \varepsilon_{it}
\end{aligned}
\tag{5-5}
$$

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[1]During the period of reform, there were two kinds of systems of provincial and municipal administration, so when calculating the decentralization level of fiscal revenue and expenditure, the average value of per capita local and municipal fiscal revenue and expenditure was assigned to 0.

$$y_{it} = \beta_0 + \beta_1 \text{EFFECT}_{it} + \beta_2 \text{FDS}_{it} + \beta_3 \text{FDZ}_{it} + \gamma_1 \text{EFFECT}_{it} \times \text{FDS}_{it}$$
$$+ \gamma_2 \text{EFFECT}_{it} \times \text{FDZ}_{it} + \sum_{i=1}^{n} \lambda_i \text{Control}_{it} + \eta_i + \mu_t + \varepsilon_{it} \qquad (5\text{-}6)$$

Among them, EFFECT is the intersection of policy dummy variable (D1) and treatment dummy variable (D2), representing the relative change of county economic performance before and after the implementation of the County Administrated by Province reform; $\text{EFFECT}_{it} \times \text{FDS}_{it}$ represents the intersection of policy dummy variable and fiscal revenue decentralization; $\text{EFFECT}_{it} \times \text{FDZ}_{it}$ represents the intersection of policy dummy variable and fiscal expenditure decentralization, to examine the transmission mechanism how the policies and measures of the County Administrated by Province reform affect county economy, under the perspective of "province-city-county" decentralization.

4. Testing the Overall Effect of the County Administrated by Province Reform on Economic Performance in Sichuan Province

In order to investigate the impact of the County Administrated by Province reform in Sichuan Province on County Economic performance, we used the full sample data to construct four sets of models under different estimation methods, among which we determined which was better according to the Hausman test results on the selection of fixed-effect model and random-effect model. In the comparison of random effect and mixed effect models, the results of BP-LM test are used to judge. In addition, in order to verify the robustness of the results, we further give the estimation results of the multiple-difference model for the evaluation of policy effects. It should be noted that there may be endogenous problems between real GDP per capita and HR of variable human capital level. In order to ensure the reliability of the results, we use one or two order lags as the tool variables to alleviate the possible endogenous problems. At the same time, we give the Sargan test results of the validity of the tool variables.

Before estimating the policy effect of the reform in Sichuan province, combined with the panel characteristics of sample data, this paper uses Hausman test and BP-LM test to determine which is better for fixed-effect model, mixed-effect model and random-effect model, and explained the economic meaning of the model based on the relative optimal model.

4.1. Impact on Economic Growth

From Table 2, we can see that in the study of regional economic growth, under the level of coefficient estimates and significance of important explanatory variables, the four groups of models, such as fixed effect model and multiple-difference model, have basically presented the same results. Based on the multiple-difference model, it can be found that the variables coefficient of the County Administrated by Province reform in Sichuan province is 0.486 ($P <$ 0.01), the reform promotes the development of county economy. Besides, on the

Table 2. Analysis of the impact of the county administrated by province reform in Sichuan province on the development of county economy.

Explanatory variable	Fixed effect	Stochastic effect	Multiple difference	2SLS
the County Administrated by Province reform	0.718***	0.517**	0.486***	0.485**
	(2.87)	(2.48)	(4.25)	(2.43)
Fiscal revenue distribution	−0.0109	0.0114	−0.00524	−0.0131
	(−0.89)	(0.93)	(−0.65)	(−1.29)
Fiscal revenue distribution*the County Administrated by Province reform	−0.00868	−0.0278	−0.0171	−0.00609
	(−0.55)	(−1.43)	(−1.44)	(−0.40)
Fiscal expenditure decentralization	−0.0431	−0.0931***	−0.0419**	−0.0362
	(−1.42)	(−3.35)	(−2.11)	(−1.55)
Fiscal expenditure decentralization*the County Administrated by Province reform	0.120**	0.0968**	0.0873***	0.0835**
	(2.58)	(2.56)	(4.15)	(2.39)
Infrastructure Bearing Capacity	0.0307	−0.00379	−0.00112	0.0229
	(1.11)	(−0.24)	(−0.09)	(1.39)
Human capital level	−0.00486	0.0487	−0.00615	0.0261
	(−0.11)	(1.13)	(−0.24)	(0.33)
Population density	−0.195**	0.0632*	−0.239***	−0.200**
	(−2.15)	(1.87)	(−3.03)	(−2.49)
Non-agricultural Employment	−0.0136	0.175***	−0.0365	−0.0439
	(−0.31)	(3.74)	(−1.06)	(−1.11)
Fixed assets investment rate	−0.0910***	−0.0484*	−0.0931***	−0.0912***
	(−3.36)	(−1.90)	(−7.51)	(−4.19)
Constant term	9.476***	8.097***	9.832***	10.46***
	(14.16)	(18.28)	(21.44)	(12.27)
N	1008	1008	1008	784
Time effect	Control	Control	Control	Control
Individual effect	Control	-	Control	Control
R^2	0.953	0.472	0.956	0.960
F statistics	455.5	-	893.1	-
Hausman statistics	-	6850.4	-	25,146.4

impact of fiscal decentralization on economic development, the coefficient of revenue decentralization is −0.00524, it is not significant. The decentralization of expenditure significantly inhibited the development of regional economy, and the degree of inhibition was −0.0419 ($P < 0.05$).

In order to test the transmission mechanism of fiscal decentralization in promoting county economic development, the interaction between fiscal decentralization factors and the County Administrated by Province reform is further in-

vestigated. It is found that the reform in Sichuan Province shows a positive impact on county economic development only through the strengthening of fiscal decentralization, with an estimated coefficient of 0.0873 ($P < 0.01$), but not shows any significant impact through fiscal revenue distribution deepening.

4.2. The Impact on Industrial Structure

From the results of Table 3, we can see that the County Administrated by Province

Table 3. Analysis of the impact of the county administrated by province reform in Sichuan province on industrial structure.

Explanatory variable	Fixed effect	Stochastic effect	Multiple difference	2SLS
the County Administrated by Province reform	0.106***	0.0845**	0.118***	0.178***
	(2.67)	(2.25)	(3.01)	(4.67)
Fiscal revenue distribution	0.00696***	0.00960***	0.00667***	0.00549***
	(3.17)	(4.39)	(3.04)	(2.85)
Fiscal revenue distribution*the County Administrated by Province reform	−0.00680**	−0.00879**	−0.00636**	−0.00298
	(−2.14)	(−2.54)	(−2.03)	(−1.02)
Fiscal expenditure decentralization	−0.0102**	−0.0209***	−0.0103**	−0.0163***
	(−2.16)	(−4.14)	(−2.15)	(−3.66)
Fiscal expenditure decentralization*the County Administrated by Province reform	0.0172**	0.0151**	0.0189***	0.0276***
	(2.40)	(2.23)	(2.66)	(4.15)
Infrastructure Bearing Capacity	0.00908**	0.00350	0.0107**	0.0125***
	(2.17)	(1.22)	(2.57)	(3.97)
Human capital level	−0.00201	0.0133*	−0.00194	0.00584
	(−0.26)	(1.70)	(−0.25)	(0.39)
Population density	−0.0450***	0.00760	−0.0427***	−0.0388**
	(−2.75)	(1.11)	(−2.60)	(−2.54)
Non-agricultural Employment	0.0197**	0.0500***	0.0209**	0.0149**
	(1.97)	(5.88)	(2.06)	(1.97)
Fixed assets investment rate	−0.00206	0.00493	−0.00196	−0.00410
	(−0.35)	(1.07)	(−0.33)	(−0.99)
Constant term	0.794***	0.521***	0.775***	0.702***
	(6.69)	(6.25)	(6.50)	(4.32)
N	1008	1008	1008	784
Time effect	Control	Control	Control	Control
Individual effect	Control	-	Control	Control
R²	0.950	0.226	0.951	0.955
F statistics	338.5	-	359.4	-
Hausman statistics	-	1654.2	-	22276.2

Note: * for $P < 0.10$, ** for $P < 0.05$, *** for $P < 0.01$.

reform of Sichuan province has a significant positive impact on the optimization of industrial structure, whether in the fixed effect model or in the multiple-difference model, which indicates that the reform has promoted the optimization of regional industrial structure to a certain extent. In the multiple-difference model, the coefficients of the County Administrated by Province reform are estimated to be 0.118 ($P < 0.01$), reflecting that the reform will promote the optimization of 0.118 units of regional industrial structure; in addition, the decentralization of fiscal revenue and expenditure in the model has opposite effects on the optimization of industrial structure, in which the coefficients of fiscal revenue decentralization are estimated to be 0.00667 ($P < 0.01$) and fiscal expenditure decentralization is -0.0103 ($P < 0.05$), indicating that fiscal revenue decentralization has a significant positive impact on the optimization of regional industrial structure, while fiscal expenditure decentralization is not conducive to the adjustment and optimization of regional industrial structure.

Combining with the theoretical analysis of the previous chapters, the study finds that the reason why the County Administrated by Province reform plays a positive role through financial expenditure is that the decentralization of economic management powers stimulates the productive expenditure of county-level finance. The reform has increased the positive impact of decentralization of expenditure on the optimization of industrial structure, while increasing the negative impact of decentralization of income on the optimization of industrial structure.

5. Conclusion and Suggestion

The study finds that the County Administrated by Province reform of Sichuan Province has indeed made a positive contribution to the development of county economy. Policy effect promotes the improvement of county economic performance through two levels of "ensuring steady growth" and "structural adjustment", which verifies the hypothesis 1 proposed by the study. At the same time, the study finds the transmission mechanism of the impact of reform, that is, the role of reform through fiscal revenue and expenditure decentralization presents obvious asymmetry in the above two levels. Based on this, the study puts forward the following two suggestions:

Firstly, it is necessary to further clarify the expenditure responsibility and boundary demarcation of governments at all levels in the reform of financial system, so as to avoid the over-burden of expenditure responsibility at county level caused by the phenomena of "responsibility isomorphism" and "performance isomorphism".

Secondly, it is necessary to cultivate the ability of grass-roots governments to solve financial difficulties, further expand the scope of fiscal revenue decentralization in enhancing the financial capacity of grass-roots governments, and actively promote the establishment of the provincial tax distribution system while appropriately expanding the tax power of county governments.

Although the conclusion of this paper is helpful for further deepening the reform as well as supporting the development of the county. However, due to the limitations of the objective conditions of the study, there are still some deficiencies and limitations in the paper. The details are as follows:

1) The limitation of sample representation. Due to the continuous transformation of county social and economic development, and the limitation of County Economic and social statistical capacity and statistical norms, it is extremely difficult to obtain the county economic and social development data in recent years, especially the transfer payment related data only updated to 2010, which is the shortage and regret of this paper.

2) Limitations in the establishment of index system. In the study of the performance of the reform, due to the limitation of data collection, the selected indicators are relatively one-sided, which fails to reflect the effect of the reform from multiple angles. I hope that in the follow-up study, through the establishment of the system performance evaluation system of the county directly under the provincial government, I can select the indicators reflecting the reform performance more comprehensively and objectively, in order to have a deeper insight into the mechanism of the financial system reform below the provincial level.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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