Proceedings of Business and Economic Studies, 2024, Volume 7, Issue 4
http://ojs.bbwpublisher.com/index.php/PBES
Online ISSN: 2209-265X
Print ISSN: 2209-2641

Study on the Impact of Collective Commercial Construction Land Entering the Market on Rural Residents' Income: Taking Deqing County, Zhejiang Province as an Example

Panpan He, Haolong Zhao*

School of Urban Construction, Jiangxi Normal University, Nanchang 330022, Jiangxi Province, China

***Corresponding author:** Haolong Zhao, Zhl02170113@163.com

Abstract: The entry of collective construction land for business purposes is an important measure for deepening the reform of the rural land system, promoting the flow of urban and rural factors, and realizing rural revitalization. Since the production of the first batch of pilot projects in 2015, 33 county-level cities have participated in the pilot policy by 2023. Deqing County, Zhejiang Province, as the first area to participate in the pilot project, aims to achieve more fruitful results. This paper first examines how promoting farmers' income through the market entry of agricultural land can be achieved, then uses the synthetic control method to quantitatively study the impact of collective operational construction land on farmers' income using panel data from 2011 to 2019, and finally proposes relevant suggestions from the perspective of system reform.

Keywords: Collective operational construction land into the market; Farmers' income; Synthetic control method;

Online publication: August 26, 2024

1. Preface

The rural land system is the key to rural revitalization and common prosperity. Among them, the reform of agricultural land into the market is of great significance in promoting urban-rural integration and narrowing the income gap. Since 2014, the state has issued a series of documents to promote its development, and by 2023, 33 counties and cities have piloted them. How to promote agricultural land markets, build urban and rural land markets, activate land circulation, and realize rural revitalization has attracted the attention of scholars [1].

Most scholars hold a positive view that the introduction of agricultural land can promote the development of rural secondary and tertiary industries and increase farmers' income. An active land market can improve the efficiency of land use and promote urban and rural integration. The introduction of agricultural land also affects the transformation of rural industrial structure and agricultural modernization and increases farmers' wages and property income. Some studies also point out that the entry of agricultural land enhances the economic value

of rural collective construction land and increases, allowing farmers to earn income through dividends, shares, salaries, and public welfare funds, thereby expanding their income channels [2].

However, some scholars hold a conservative view, pointing out that the lack of a unified model or institutional arrangement for the agricultural land market, along with potential unfairness by local governments in distributing land appreciation income, may result in a loss of farmers' income. Additionally, the collective ownership of agricultural land differs from shareholding ownership, which may undermine the property rights of individual farmers.

2. Theoretical analysis of collective management in promoting farmers to increase their income through the construction land

Traditional rural land expropriation involves the government collectively expropriating land, compensating agricultural land at 30 to 50 times the annual output value, and handling construction land resettlement and social security services based on construction costs. The land demander negotiates with the government to pay the land use fee. The collective does not participate in the distribution of land value-added income, and the negotiation space for compensation and resettlement is limited. The amount and procedures are legally rigid, with the transferor passively accepting the terms, as shown in **Figure 1**.

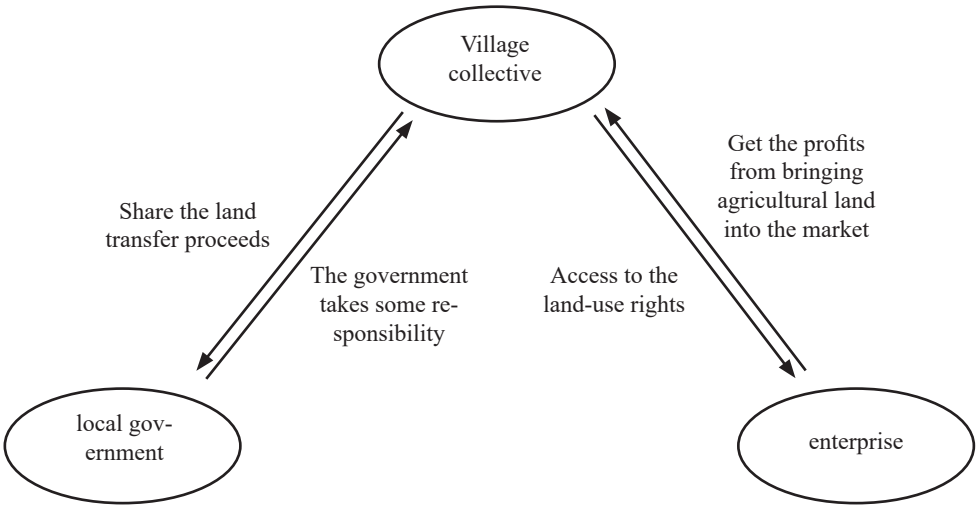

Figure 1. Traditional land expropriation model

Compared with the government-led expropriation-transfer mode of rural land entering the market, rural collectives and farmers can get more land value-added income. In the pilot practice, a variety of distribution methods are formed, including land collection and compensation, income tax on market income, and market income adjustment fund. Some pilot areas will raise the standards for tax collection and compensation. It is legal for the government to tax the collective transfer income, and the value-added income is mostly the collective income. Due to the low government value-added income and limited tax revenue under the income tax method, the government usually adopts the method of exempting income tax and transferring the market income adjustment fund, usually collecting 20% to 50% of the adjustment fund, as shown in **Figure 2**.

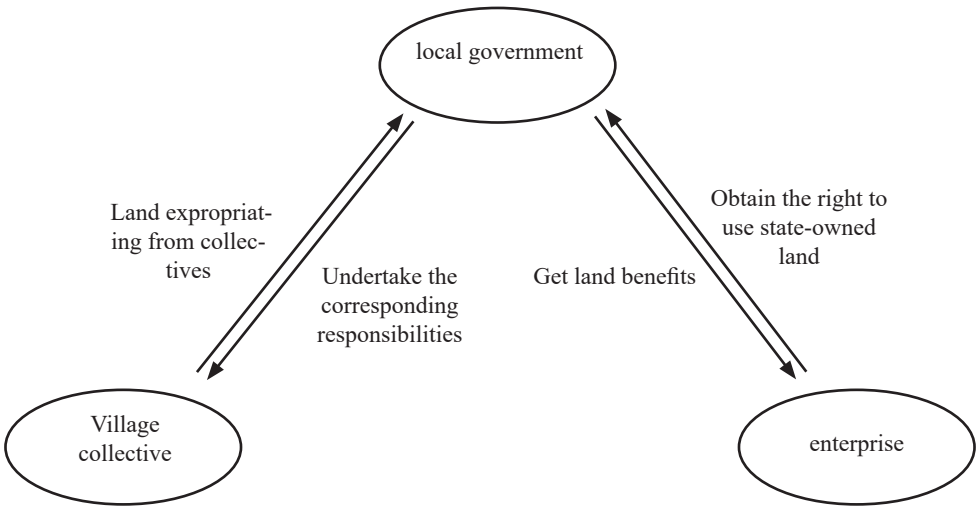

Figure 2. Transfer mode in the case of farmland market entry

In the current mainstream way of government participation in income distribution, the transfer income obtained by the collective is higher than the expropriation compensation obtained by the traditional government expropriation mode, so the way of agricultural land into the market can increase the income of the village collective and the villagers.

3. Empirical design

3.1. Research methods

In recent years, the dual difference method and the propensity score matching method are commonly used for quantitative policy evaluation, but they are mostly used for research in many experimental areas. The Synthesis Control Method (SCM) is used for quantitative study and the double difference method as a robustness test. Based on non-parametric estimation, SCM constructs a "synthetic control group" and "counterfactual control group," to avoid the endogenous problem of choosing a "control group" and ensure the scientific and robust nature of the results. Taking the pilot project of the agricultural land market in Deqing County as the experimental group, the virtual control group was constructed, and the pilot effect was compared, which reflected the influence of the agricultural land market on rural residents' income.

3.2. Selection and interpretation of variables

This paper studies the influence of agricultural land on rural income, measuring the per capita disposable income. The main explanatory variable is the virtual variable of whether to participate in the agricultural land market entry pilot. The control variables include regional economic development level, employment environment, agricultural development level, geographical location, industrial structure, education, and public service level. Descriptive statistics for the primary variables are presented in **Table 1**.

Table 1. Descriptive statistics for related variables

Variable name	*n*	Mean	SD	Min	Median	Max
Per capita disposable income of rural residents	480	19170.846	7789.31	6010	17938	40655
Per capita GDP	480	62136.811	29100.931	10803	58875.5	184263
industrial structure	480	0.487	0.093	0.136	0.501	0.645
General budget expenditure of local finance	480	455724.42	282228.19	82262	397058	2200000
Per capita output value of enterprises above the designated size	480	92792.448	79900.017	534.21	66533.398	545820
Distance from the prefecture-level city	480	45.24	24.605	5.939	41.387	130.08
Total grain output	480	100333.32	70722.167	100	84594.5	387662
farm machinery production	480	30.518	20.767	5.77	26.66	121
The number of students in ordinary middle schools	480	25769.173	16339.245	1873	22274	83737
Hospital beds	480	2035.487	1353.379	112	1844.5	7006

Abbreviation: SD, standard deviation; Min, minimum; Max, maximum; GDP, gross domestic product

3.3. Study area and data collection

3.3.1. Overview of the study area

Deqing County is located in Huzhou City, Zhejiang Province, with an area of about 935.9 km^2 and a developed economy. In 2019, per capita GDP was higher than the national level. The total population is 443,000, and the urban population accounts for about 40%. It is one of the first pilot cities for collective commercial construction land in China and took the lead in completing the first batch of transactions and mortgages in Zhejiang Province. By December 2020, 255 transactions with an area of 136.18 ha, farmers and village collective organizations had gained 48.2 billion yuan, benefiting more than 220,000 farmers [3].

3.3.2. Data sources

In this paper, county panel data from Zhejiang Province from 2010 to 2019 were used to eliminate severe missing areas and use linear interpolation to fill in individual missing values. The data include 480 samples from 48 county-level cities in Zhejiang province from 2011 to 2019, which are obtained from the China County Statistical Yearbook, China Regional Statistical Yearbook, and Zhejiang Provincial Data Open platform. After processing, a total of 480 samples were obtained.

4. Empirical results analysis and inspection

4.1. Analysis of the synthesis control results

According to the research method, the "synthetic Deqing County" was synthesized by the synthetic control method. Deqing County was the treatment group, while other areas were the control group. The per capita disposable income of rural residents and the influencing factors in the control group were taken as the predictive variables. The fitting results are shown in **Figure 3**, the straight line is real Deqing County, the dotted line is "synthetic Deqing County," and the red dotted line is the policy implementation point. Before the implementation of the policy, the gap between the real value and the fitted value is small, and the trend is consistent, which can represent the control group to evaluate the policy. After the implementation of the policy, the gap between the two increased, and the income of farmers in Deqing County increased significantly,

reflecting the effect of the agricultural land entry into the market.

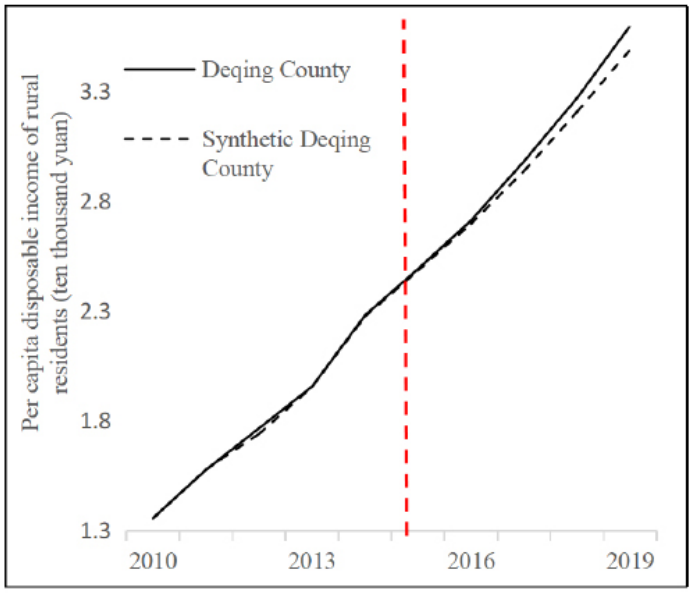

Figure 3. Real Deqing County and "synthetic Deqing County"
Note: X-axis is the year, Y-axis is the Per capita disposable income of rural residents (thousand yuan)

4.2. Treatment effect

In the synthetic control method, the difference between the real value and the fitted value is recognized as the treatment effect of the policy, and the difference between the real Deqing County and the fitted synthetic Deqing County studied in this paper is shown in **Figure 4.** It can be seen that before the implementation of the policy, the difference is close to 0. After the policy implementation point of the policy, the difference between the real Deqing County and the synthetic Deqing County increased, that is, the per capita disposable income of rural residents increased year by year after the implementation of agricultural land in Deqing County compared with other areas.

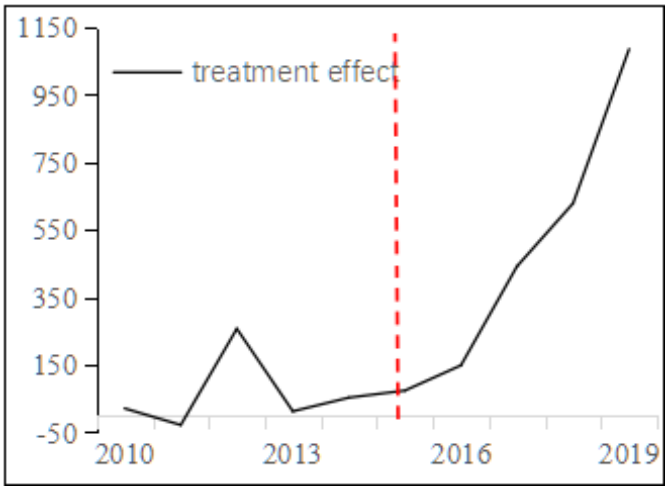

Figure 4. Treatment effect between the real and synthetic Deqing County
Note: X-axis is the year, Y-axis is the Per capita disposable income of rural residents (yuan)

4.3. Robustness test

4.3.1. Placebo test

Using the placebo test principle where the policy treatment effect was calculated by hypothesis experiment on the unreformed control group. If the control group is consistent with the effect of the policy pilot area, the change may be affected by time or other factors, that are not caused by the policy, and the research conclusion is not robust. Conversely, if the changes are attributable to the pilot policies, the research is considered robust. In this paper, we excluded the samples where the Root Mean Squared Percentage Error (RMSPE) was 1.5 greater than that of Deqing County. We found that the income increase effect of agricultural land in Deqing County after entering the market was significant, with a policy treatment effect probability of 0.059, and the empirical results were 90% significant (**Figure 5**).

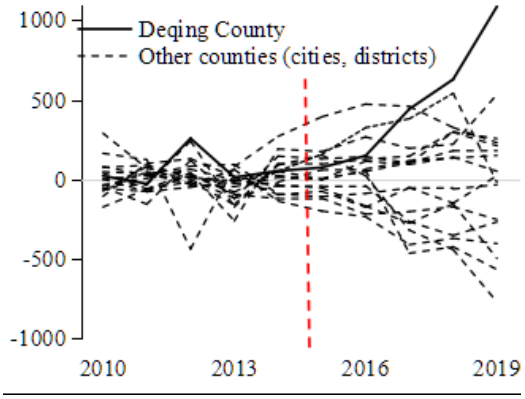

Figure 5. Placebo test

Note: X-axis is the year, Y-axis is the Per capita disposable income of rural residents (yuan)

4.3.2. Double difference test

In practice, the double difference method is widely used to evaluate the effect of the policy. This paper uses the double difference method to further test the robustness of the empirical results of the synthetic control method. Test results are shown in **Table 2**. In the two-way fixed effect regression of control time and individual, the policy pilot increased the disposable income of about 1,903 yuan to farmers on average, and the empirical results were significant at the level of 5% respectively, which further confirmed the reliability of the research results.

Table 2. Results of the double difference test

Variables	(1)	(2)	(3)
Difference-in-Differences (DID)	1956.551**	12248.400***	1,902.979**
	(2.41)	(3.05)	(2.33)
Constant	10,461.667***	19,043.258***	10,461.667***
	(14.35)	(65.04)	(56.8)
Observations	480	480	480
R-squared		0.021	0.961
Number of IDs	48	48	48
Individual Fixed Effects	no	yes	yes
Year Fixed Effects	yes	no	yes

Note: * is $P \leq 0.05$, ** is $P \leq 0.01$, *** is $P \leq 0.001$.

5. Conclusions and recommendations

Based on the panel data of county-level cities in Zhejiang Province, this paper uses SCM to analyze the influence and transmission path of agricultural land entry on rural residents' income. The main conclusions include:

(1) The income of rural residents in Deqing County increased significantly after the implementation of the policy, and the gap between it and the synthetic Deqing County increased year by year. The effect of the policy gradually improved from 2015 to 2019, increasing the per capita disposable income of 1,000 yuan for farmers in the pilot counties. The verification of the double difference method shows that the farmland market policy has increased the disposable income by about 1,500 yuan per capita for farmers in the pilot areas.

(2) The impact of the marketing of collective operational construction land on farmers' income expands year by year and has statistical stability.

(3) The main way for agricultural land to enter the market to promote the increase of farmers' income is that farmers directly participate as the transaction subject, and the proceeds from land transfer are directly returned to the village collective, which is significantly increased compared with the government collection subsidy.

Based on the above conclusions, this paper proposes the following policy implications:

(1) Expand the scope of the pilot project, relax restrictions on the transfer of rural land, increase farmers' income, and improve the efficiency of the use of homestead.

(2) Improve the market model of collective land for commercial construction purposes, endow the government with legal rights and strengthen supervision, and prevent infringement of villagers' rights and interests.

(3) Considering the particularity of local governments, local governments are given discretion to realize differentiated agricultural land market entry schemes.

Disclosure statement

The authors declare no conflict of interest.

References

[1] Yao Y, Xia Y, 2024, Advantages, dilemma and reform strategy of rural land system under the perspective of Chinese-style modernization. Journal of Qiushi, 2024(01): 1–13.

[2] Wang R, Tan R, 2023, Prototype analysis and enlightenment of the marketing of collective commercial construction land to promote the development of rural secondary and tertiary industries. Journal of Natural Resources, 2023(07): 1743–1755.

[3] Liu X, Liu Y, Chen Z, et al., 2015, The effect and spatial difference of the synchronous development of "four modernizations" on farmers' income growth—Based on inter-provincial panel data in China. Economic Geography, 2015(09): 165–171.