

Can the 'Separation of Three Rights' Reform Promote Common Prosperity? — A Perspective Based on the Urban-Rural Income Gap

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Abstract

Narrowing the income gap between urban and rural areas is the focus of China's common prosperity. The "Three Rights Separation" policy of rural land has improved the enthusiasm of all subjects to manage land by liberalizing the right to manage land, which will inevitably have an important impact on the income gap between urban and rural residents. Its degree of impact and mechanism of action deserve in-depth study. Based on the panel data of 30 provinces in China from 2005 to 2021, this paper first uses a continuous dual difference model to test the impact of the "Three Rights Separation" policy of rural land on the income gap between urban and rural areas; Secondly, by building a panel fixed effect model, this paper explores the mechanism of the "Three Rights Separation" policy of rural land on the income gap between urban and rural areas. The results show that the "Three Rights Separation" policy of rural land has significantly narrowed the income gap between urban and rural areas in China's provinces, which is still valid after the robustness test; The analysis of heterogeneity shows that the negative impact of the policy of "Three Rights Separation" of rural land on the income gap between urban and rural areas is more significant in areas with moderate income gap between urban and rural areas and balanced income gap between urban and rural areas; The analysis of impact mechanism shows that the policy of "Three Rights Separation" of rural land mainly plays a role in narrowing the income gap between urban and rural areas by improving the level of agricultural mechanization. In the process of agricultural and rural modernization, China should adhere to measures such as liberalizing rural land management rights and protecting farmers' land rights and interests, and explore the way to achieve common prosperity in the coordinated development of "three rights" subjects.

Keywords: Common prosperity; Land; Urban-rural income gap; Separation of Three Rights; Continuous differential model

1.0 Introduction

At present, China is in the historical stage of promoting common prosperity, but there is still a contradiction between the growing needs of the people for a better life and unbalanced and inadequate development, which limits the process of common prosperity(Deng, Zhang, & Wan, 2022). Document No.1 of the Central Committee in 2022 points out that common prosperity should be promoted in narrowing the income gap between urban and rural areas to make farmers live a prosperous life(Chen & Luo, 2018). Land is an important resource to promote common prosperity(Xie, Bai, Yan, & Song, 2022). In 1978, China implemented the household contract responsibility system, which provided conditions for the "separation of two rights"(XU, HUANG, CHEN, XU, & ZHOU, 2022). Subsequently, the land fragmentation

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brought about by the "separation of two rights" hindered the promotion of common prosperity. In 2014, the Central Committee of the Communist Party of China proposed to improve the "Three Rights Separation" of rural land, forming a pattern of three rights separation of ownership, contracting rights and management rights and transfer of management rights(Dongdong & Du Haifeng, 2018). The "separation of powers" system provides institutional guarantee for the efficient use of land resources and is an important basis for achieving common prosperity(Fang & Guo, 2020).

The "Three Rights Separation" policy, especially the liberalization of agricultural land management rights, allows farmers to freely transfer land, endows management rights with property attributes, and converts land into real assets(GONG & LIU, 2023). The policy has significantly improved agricultural productivity, promoted the development of agricultural land rental market, and shifted land resources from inefficient small farmers to efficient new agricultural operators(HONG, HE, & SONG, 2021), which tend to adopt modern agricultural technology, promote agricultural division and specialization, and achieve large-scale operation(Huo & Chen, 2021). The instability and insecurity of land property rights caused by the "separation of two rights" land system have a "locking effect" on the labor force, making it unable to move freely(Jiangyi & QiuTongwei, 2021). The "three power separation" policy liberates the rural labor force through the transfer of management rights, attracts farmers to cities, and promotes the process of urbanization(LIAO, 2021). This paper mainly studies two questions: does the "separation of powers" policy promote common prosperity? What is the impact mechanism? The question focuses on two issues and puts forward public policy implications.

2.0 Theoretical analysis and research assumptions

The policy of "Three Rights Separation" has improved the market system of rural land factors and enhanced the potential of land production and market value. First of all, the policy allows diversified agricultural entities to participate in production through land transfer, increasing the possibility of rural land production(Long, Shuyun, & Zhenqi, 2022). Secondly, the policy encourages land management rights to participate in management by means of equity, cooperation and mortgage, which enhances their capital attributes and improves farmers' income(LUAN & ZHANG, 2021). Finally, the expansion of land transfer objects to the outside of the collective has promoted the horizontal and vertical development of the land market, narrowed the income gap between urban and rural areas, and promoted common prosperity. Accordingly, this paper puts forward the following assumptions:

H1: the "three power separation" policy can narrow the income gap between urban and rural areas and is conducive to achieving common prosperity.

Agricultural Mechanization plays an important role in increasing farmers' income and increasing the rate of agricultural land transfer(T. T. Zhang, Wang, Li, & Wang, 2023). The policy of "Three Rights Separation" enables efficient land transfer, centralized and continuous, promotes mechanized operation, and provides technical support for large-scale and intensive(XU et al., 2022). Mechanization makes production more efficient, reduces labor costs, shortens production cycles, improves the output and quality of agricultural products, increases farmers' economic returns, reduces the income gap between urban and rural areas, and promotes common prosperity(Cai, Cheng, & Shi, 2023). Accordingly, this paper puts forward the following assumptions:

H2: the "three power separation" policy reduces the income gap between urban and rural areas by improving the level of agricultural mechanization, which is conducive to achieving common prosperity.

In areas with large gaps between urban and rural areas, the "three power separation" policy promotes the scale of agricultural production and the diversification of farmers' employment(X. B. Zhang, Ye, Wang, Yu, & Luo, 2018), enhances farmers' income, reduces the income gap between urban and rural areas, optimizes rural socioeconomic structure, improves infrastructure and public services, attracts investment and talents, and promotes local economic development. However, in areas with small gap between urban and rural areas, because the income of rural residents is close to that of cities, the income promotion space of policies is small, and the marginal benefits of land reform are low(X. B. Zhang et al., 2018).

H3: the impact of the "separation of powers" policy on common prosperity is significantly heterogeneous in areas with different income gaps between urban and rural areas.

3.0 Model settings and data sources

3.1 Model settings

The confirmation of rural land rights is the premise of the "Three Rights Separation" policy, which is reflected by the issuance of land confirmation certificates. Before 2014, the certificate represented "separation of two powers" and then "separation of three powers", so the certificate can be used to analyze policy effects(Shouying & Tingyu, 2022). Due to the different provinces where the policy is implemented, it can be regarded as a quasi natural experiment for research. This paper uses a continuous dual difference model to estimate the impact of policy on common prosperity. Unlike the traditional model, which artificially divides the treatment group and the control group, this paper uses the continuous variable of "the number of land confirmation certificates issued" to distinguish between the treatment group in the provinces with more certificates and the control group in the provinces with less certificates. This model can more comprehensively show sample heterogeneity, avoid bias, and capture policy effects more accurately.

3.1.1. Parallel trend test

Before using the dual difference model, it is necessary to pass the parallel trend test, that is, before the implementation time of the policy, the change trend of the treatment group and the control group is consistent. If the parallel trend hypothesis cannot be passed, the dual difference model is meaningless. Therefore, this paper constructs the following model:

$$Gap_{it} = \alpha_0 + \sum_{t=2005}^{2021} \alpha_1 Cer_{it} \cdot D_t + \alpha_2 Control_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (1)$$

Where: Gap_{it} refers to the income gap between urban and rural areas in the i th Province during the t period; Cer_{it} indicates the number of land contract management rights certificates issued; D_t is the year dummy variable; $Control_{it}$ means the control variable over time; μ_i indicates the fixed effect of provinces; γ_t is the fixed year effect; ε_{it} is a small disturbance term; α_0 、 α_1 、 α_2 are the parameters to be estimated.

3.1.2. Benchmark Model

In view of the above reasons, in order to identify the impact of the "Three Rights Separation" policy of rural land on the income gap between urban and rural areas, the continuous dual difference model constructed in this paper is shown in formula (2):

$$Gap_{it} = \beta_0 + \beta_1 Cer_{it} \cdot I_t^{post} + \beta_2 Control_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (2)$$

Where: I_t^{post} represents the virtual variable of the year of the policy implementation node. β_0 、 β_1 、 β_2 are the parameters to be estimated.

3.1.3. Mechanism model

In order to test the role channel between the "Three Rights Separation" policy of rural land and the income gap between urban and rural areas, this paper draws lessons from the practices of Wen Zhonglin(Wen, Chang, Hau, & Liu, 2004), and constructs an intermediary effect model on the basis of formula (1), as shown in formula (3) (4):

$$Med_{it} = \theta_0 + \theta_1 Cer_{it} \cdot I_t^{post} + \theta_2 Control_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (3)$$

$$Gap_{it} = \varphi_0 + \varphi_1 Cer_{it} \cdot I_t^{post} + \varphi_2 Control_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (4)$$

In equation (3) (4): Med_{it} is an intermediary variable. θ and φ are the parameters to be estimated.

3.2 Data sources and variable selection

3.2.1. Data sources

The data in this paper come from China Statistical Yearbook, China rural operation and management statistical annual report, China Rural Statistical Yearbook, provincial statistical yearbooks and EPS database, covering 30 provinces in China (except Hong Kong, Macao, Taiwan and Tibet) from 2005 to 2021. The missing data were supplemented by linear interpolating method, and some data were logarithmized.

3.2.2. Explained Variable

This paper uses the ratio of per capita income of urban and rural residents to measure the income gap between urban and rural residents. The income ratio of urban and rural residents is equal to the ratio of per capita disposable income of urban residents to per capita disposable income of rural residents.

3.2.3. Explanatory variable

In this paper, the interactive term between the number of land contract management rights certificates issued and the implementation node of the "Three Rights Separation" policy of rural land ($Cer_{it} \cdot I_t^{post}$) is used as the explanatory variable. The time virtual variable of the implementation node of the "Three Rights Separation" policy is set to 0 before 2014 and 1 after 2014. At the same time, the interactive term between the number of household contract management contracts signed and the implementation node of the "Three Rights Separation"

policy of rural land ($Cer_{it} \cdot I_t^{post}$) is constructed as an alternative explanatory variable to test the robustness of the research results. (Chen Yusheng et al., 2023).

3.2.4. Mechanism variables

According to the previous theoretical analysis, this paper chooses the level of agricultural mechanization as the mechanism variable. Among them, the level of agricultural mechanization is the total power of agricultural machinery per unit of cultivated land.

3.2.5. Control variables

In order to reduce the estimation error caused by ignoring variables, this paper uses seven control variables, namely, the level of human capital, the level of information technology, the level of education expenditure, the level of opening up to the outside world, industrial structure, fiscal support for agriculture and land resources, which are measured by the annual limit of per capita education in rural areas, the number of mobile phone users at the end of the year, the amount of education expenditure, the total import and export volume, the proportion of GDP of the primary industry in GDP, the amount of government fiscal support for agriculture and the per capita cultivated land area in rural areas. The descriptive statistics of all variables are shown in Table. 1.

4.0 Empirical results and analysis

4.1 Parallel trend test

The first phase of the parallel trend test must be selected as the benchmark group, otherwise the results will produce complete collinearity. Referring to the practice of Zhou Li and others (Zhou Li and Liu Zongzhi, 2023), this paper selects the year before the implementation of the policy, that is, 2013, as the benchmark group. Fig. 1 is drawn according to the regression coefficient β_t of the interaction term of equation (1). The estimated results are shown in Fig. 1. Before the implementation of the policy, China's urban and rural income gap generally showed a downward trend, and its regression coefficient β_t passed through zero. It shows that there is no systematic difference between the experimental group and the treatment group before the implementation of the policy, and the test results pass the parallel trend hypothesis.

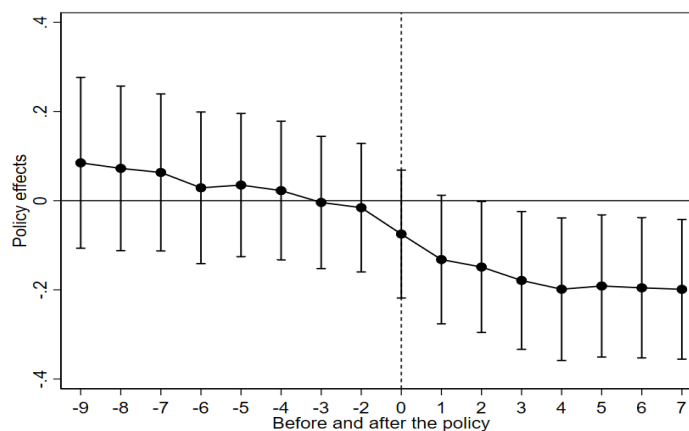


Fig. 1: Parallel trend test results.

Note: the solid dot in the figure is the regression coefficient β_t of formula (2), and the short vertical line is the 95% upper and lower confidence interval corresponding to the district and county robust standard error.

Table 1: Descriptive statistics

Variable	Variable Name	Variable Definition and Assignment	Mean	Standard Deviation
Explained variable	Common prosperity	Urban rural income gap (Gap)	2.735	0.508
		Theil index (Theil)	0.108	0.055
Explanatory variables	DID	Number of Land Contract Management Certificates (Cer)	0.684	0.501
		Number of household contracts (Con)	0.726	0.525
Mechanism variable	Agricultural mechanization level	Total power of agricultural machinery per unit cultivated land (Mac)	0.245	0.182
	Human capital level	Per capita education in rural areas (Edu)	7.623	0.698
	informatization level	Number of mobile phones (Inf)	3,655	2,916
	Educational investment	Education expenditure level (Ee)	0.163	0.026
control variables	Opening up level	Total imports and exports (Tei)	1.190	2.042
	industrial structure	Proportion of primary industry (Pri)	10.61	5.694
	Fiscal support for agriculture	Amount of agriculture related expenditure(Agr)	408.6	310.4
	Land resource	Per capita cultivated land area in rural areas (Cul)	2.495	2.285

4.2 Benchmark regression

This paper uses equation (2) to analyze the impact of the "three power split" policy on the income gap between urban and rural areas. The estimated results are shown in column (4) of Table. 2, which is significant at the 1% level. The results show that the implementation of the "three power split" policy can significantly narrow the income gap between urban and rural areas, so the hypothesis H1 is valid. This result is consistent with the original intention of the provinces to implement the "three power separation" policy, and directly reflects the promoting effect of the "three power separation" policy on narrowing the income gap between urban and rural areas.

Table 2: Benchmark model regression results

Varibales	(1)	(2)	(3)	(4)
	Gap	Gap	Gap	Gap
$Cer_{it} \cdot I_t^{post}$	-0.4205*** (0.022)	-0.1493*** (0.033)	-0.0753*** (0.027)	-0.1282*** (0.042)
Constant	2.8705*** (0.081)	4.5699*** (0.292)	3.0050*** (0.027)	2.9642*** (0.328)
Control variables	NO	YES	NO	YES
Province	NO	NO	YES	YES
Year	NO	NO	YES	YES
Observations	510	510	510	510
R-squard			0.728	0.753

Note: *, ** and *** indicate significance levels of 10%, 5% and 1%, respectively.

4.3 Robustness test

4.3.1. Data tailing

Considering that there may be extreme values in the sample data that affect the benchmark regression results, in order to avoid this phenomenon, this paper shrinks the tail of the explained variables by 5%, and the results are shown in column (1) of Table. 3. Excluding the extreme value of 5%, the regression coefficient is - 0.1264, which is significant at the 1% level. The estimated results are consistent with the benchmark regression results, indicating that the "three power separation" policy can narrow the income gap between urban and rural areas with stability.

4.3.2 Replacing explanatory variables

The effect of the "Three Rights Separation" policy can be expressed by the number of land contract management rights certificates issued, and can also be reflected by the number of household contract management contracts. If there is a causal relationship between the effect of the "three power separation" policy and the narrowing of the income gap between urban and rural areas. Then neither the number of land contract management rights certificates issued nor the number of household contract management contracts interacting with the virtual variables of the policy implementation time point will change the research conclusion. The estimated results in column (2) of Table. 3 show that the regression coefficient of the interactive term

$Con_{it} \cdot I_t^{post}$ on the income gap between urban and rural areas is - 0.1071, which is significant at the 1% level, and the model estimates are consistent with the expected results. It shows that this paper effectively captures the actual impact of the "three power separation" policy, and confirms that the policy can reduce the income gap between urban and rural areas, that is, to promote common prosperity.

Table 3: Robustness test results

Varibales	(1)	(2)	(4)
	Gap	Gap	Change the time
$Cer_{it} \cdot I_t^{post}$	-0.1264*** (0.036)		
$Con_{it} \cdot I_t^{post}$		-0.1071*** (0.040)	
$Cer_{it} \cdot I_t^{post2010}$			-0.0712 (0.044)
Constant	2.3929*** (0.287)	2.9694*** (0.329)	2.9187*** (0.330)
Control variables	YES	YES	YES
Province	YES	YES	YES
Year	YES	YES	YES
Observations	510	510	510
R-squard	0.762	0.752	0.749

Note: *, ** and *** indicate significance levels of 10%, 5% and 1%, respectively.

4.3.3. A period of policy change

The benchmark regression mentioned above is mainly based on the sample data from 2005 to 2021. In order to test whether the impact of the "three power separation" policy on the income gap between urban and rural areas changes with the change of sample time, the sample data from 2010-2018 are selected for regression. As shown in column (3) of Table. 3, after changing the length of the policy period, the "three power separation" policy still significantly narrowed the income gap between urban and rural areas, and significantly at the 1% level. The results show that no matter which time period is selected as the analysis window, the direction and size of the policy effect remain relatively stable, and the "three power separation" policy has a sustained and stable impact on narrowing the income gap between urban and rural areas.

4.4 Mechanism test

This paper selects the total power of agricultural machinery per unit of cultivated land as the proxy variable of the level of agricultural mechanization to test the intermediary role of agricultural mechanization between the "three power separation" policy and the income gap between urban and rural areas. The estimated results in column (2) of Table. 4 show that the regression coefficient of the explanatory variable $Cer_{it} \cdot I_t^{post}$ is significantly positive at the 1% level, which means that the "three power separation" policy has a significant positive impact on agricultural mechanization. Column (3) estimates show that the regression coefficient of the

explanatory variable $Cer_{it} \cdot I_t^{post}$ and the mechanism variable agricultural mechanization level is negative, which is significant at the 1% level, which means that the "three power separation" policy reduces the income gap between urban and rural areas by improving the level of agricultural mechanization. Therefore, H2 is assumed to be true.

Table 4: Mechanism test results

Varibales	(1)	(4)	(5)
	Gap	Mac	Gap
$Cer_{it} \cdot I_t^{post}$	-0.1282*** (0.042)	71.5677*** (11.308)	-0.1773*** (0.043)
Mac			0.0007*** (0.000)
Control variables	YES	YES	YES
Constant	2.9642*** (0.328)	85.6058 (89.166)	2.9055*** (0.322)
Province	YES	YES	YES
Year	YES	YES	YES
Observations	510	510	510
R-squard	0.753	0.804	0.762

Note: *, ** and * indicate significance levels of 10%, 5% and 1%, respectively.

4.5 Analysis of heterogeneity

This paper examines the heterogeneous impact of the "separation of powers" policy in different areas of urban and rural income gap. Based on the income gap between urban and rural areas in 2013, the regions are divided into three categories: urban and rural income inequality, moderate and balanced. Columns (1) to (3) of Table. 5 show that the "three power split" policy has a significant negative impact in moderate and balanced urban and rural income areas, and the effect is better in balanced urban and rural income areas, but not in uneven urban and rural income areas. The economic development of urban and rural income balanced areas is more balanced, the overall economic level is higher, the development of industrialization and service industry is diversified, more non farm employment opportunities are provided, and the income sources of rural residents are diversified. On the contrary, the economic development of urban and rural income inequality areas is unbalanced, the middle and lower reaches of urban economic development, the rural economy lags behind, the dependence on agriculture is high, and the development level of industrialization and service industry is low. The lack of development resources and opportunities limits farmers' ability to increase income through diversified economic activities, insufficient rural education and training resources, and limited farmers' skills and knowledge levels, resulting in insufficient competitiveness of farmers after land transfer, which can only increase a small amount of income through scattered work.

Table 5: Results of heterogeneity analysis

Varibales	(1)	(2)	(3)
	Inequality	Moderate	Balanced
$Cer_{it} \cdot I_t^{post}$	-0.1098	-0.1964***	-0.2426***
	(0.129)	(0.047)	(0.048)
Control variables	YES	YES	YES
Constant	4.1354***	2.7431***	1.2987***
	(0.536)	(0.470)	(0.456)
Province	YES	YES	YES
Year	YES	YES	YES
Observations	170	170	170
R-squard	0.901	0.860	0.787

Note: *, ** and *** indicate significance levels of 10%, 5% and 1%, respectively.

5.0 Conclusions and policy recommendations

5.1 Conclusions

By using a continuous dual difference model, based on the panel data of 30 provinces (autonomous regions and municipalities directly under the central government) in China except Hong Kong, Macao, Taiwan and Tibet from 2005 to 2021, this paper estimates the impact of the "separation of powers" policy on common prosperity. The main conclusions of this paper include the following three aspects.

First, the results of parallel trend test show that before the implementation of the "three power separation" policy, there is no systematic difference in the income gap between urban and rural areas in various provinces, which meets the preconditions for using the dual difference model; The results of benchmark regression model show that the policy can significantly narrow the income gap between urban and rural areas and promote common prosperity; After considering the robustness tests such as changing the implementation period of the policy, shrinking the tail of the data and replacing explanatory variables, the basic conclusion is still valid.

Secondly, the analysis of heterogeneity shows that in the dimension of urban and rural income gap, the policy effect of "separation of powers" in areas with moderate and balanced urban and rural income is significant in the negative direction, but not in areas with uneven urban and rural income, indicating that the more balanced urban and rural income, the better the effect of the policy reform, which has extremely important practical significance for promoting common prosperity in China in the future.

Thirdly, the analysis of impact mechanism shows that the policy of "separation of powers" has further narrowed the income gap between urban and rural areas and promoted common prosperity by promoting the improvement of the level of agricultural mechanization. The "three power separation" policy has a clear path to narrow the income gap between urban and rural areas and promote common prosperity.

5.2 Policy recommendations

Based on the above research conclusions, this paper puts forward the following relevant policy suggestions:

First, we should adhere to the implementation and implementation of the policy of "Three Rights Separation" of rural land, stabilize the right to contract rural land, liberalize the right to manage rural land, give priority to household contract management, and promote enterprise management, cooperative management and other management methods; We will improve the work flow of registration and confirmation of rural land management rights, strictly standardize the behavior of rural land transfer, strengthen the management of the whole process of rural land transfer, and improve the service efficiency of relevant government departments, so as to effectively achieve the goal of narrowing the income gap between urban and rural areas and promoting common prosperity through policy implementation.

Secondly, in view of the unique economic and geographical characteristics of different regions, differentiated strategies should be adopted to explore new ways to promote common prosperity. Especially in areas with large income gap between urban and rural areas, stronger policy support and flexibility are needed to promote effective land transfer and rational utilization of rural resources, thus weakening the gap between urban and rural areas. In areas with small income gap between urban and rural areas, due to the significant effect of the "three power separation" policy, we should continue to deepen such policies, strengthen land management and optimize agricultural support systems in order to consolidate the achievements. Through the implementation of this region specific strategy, we can more effectively promote the sustainable development of regional agriculture and the growth of farmers' income.

Thirdly, the government should provide financial subsidies and tax incentives to reduce the cost of farmers purchasing and using modern agricultural machinery, and implement targeted subsidy policies, such as machine purchase subsidies and use subsidies, in order to reduce the burden of farmers. At the same time, we should improve the insurance system related to agricultural mechanization and reduce the risk of agricultural production. Provide insurance guarantee for agricultural machinery investment and reduce the economic losses of farmers caused by mechanical failure or natural disasters.

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