

Article

The Distributional Effects Associated with Land Finance in China: A Perspective Based on the Urban–Rural Income Gap

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Abstract: Land finance has become an important way of generating fiscal incomes in developing countries, while the urban–rural income gap (URIG) in developing countries remains high. However, existing research has not paid much attention to the connection between land finance and the URIG. Therefore, this study used a fixed-effects model to test this relationship for 275 prefecture-level cities in China from 2014 to 2017. To identify the effects of the potential omitted variables, this study conducted additional robustness checks using placebo tests. The results showed that land finance significantly widened the URIG, and this finding was maintained after a set of tests. Further study found that the effect of land finance on the URIG showed significant heterogeneity. Land grants by tender, listing, and auction significantly widened the URIG, while land grants by agreement did not affect the URIG; the effect of land finance on the URIG was more significant in Eastern and Middle regions, but not marked in Western regions; and land finance had no impact on the URIG in large and medium-sized cities, while it had a significant impact in small cities. Based on the above results, this study offers recommendations to improve land fiscal policy and urban-biased development strategies, which aim to promote the equalization of the basic rights and interests of urban and rural residents and reduce the URIG.

Keywords: land finance; income distribution; urban–rural income gap; urban preference

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1. Introduction

With the rapid progress of global urbanization, it is a remarkable fiscal phenomenon to use land assets to raise extra-budgetary funds for the authorities in many developing countries [1]. Some examples include China, India, Viet Nam, and sub-Saharan Africa [2–5]. Land grant incomes and land taxes have turned into one of the main sources of income for local authorities, and this revenue strategy is often referred to as “land finance” [6]. The phenomenon of land finance is typical in China as the largest developing country. Although there are differences between other developing countries regarding the system and the institutional context in which land finance is established, there are many commonalities among them [2]. There is no doubt that the experience and exploration of land finance in China provide a valuable lesson for other developing countries.

Since the reform of the marketization of land transactions in 2004, land finance has been growing rapidly at an average annual rate of 20.7% over the past ten years, based on the Data of the Ministry of Finance [7]. In 2021, the scale of land finance reached USD 1.35 trillion, which accounted for 78% of local fiscal incomes. Land finance plays an essential role in regional socioeconomic development. On one hand, land finance increases the local authorities’ income, accelerates the process of regional urbanization and industrialization [2,8], promotes the rapid development of infrastructure [9], and improves the regional economy [10]. On the other hand, the negative effects produced by land finance are also increasingly obvious. For example, it boosts the rapid growth of property

prices [11], exacerbates the risk of regional debts [12], induces illegal land use [13], breeds corruption [14], and increases macroeconomic fluctuations, etc. [15].

A high dependence on land finance has kept income gaps at a high level for a long time in China. In the 21st century, the Gini coefficient in China has remained above the high level of 0.4 [16]. One study found that excessive income inequality may be harmful to social stability, hinder economic development, and weaken residents' sense of well-being [17]. Income inequality in China mainly stems from the URIG. For example, based on Wan's estimation, the URIG in China accounts for 70–80% of the total income gap [18]. In a later study, Chen et al. concluded that this ratio was 58% [19]. Figure 1 indicates that the per capita disposable income ratio of urban and rural residents stayed above 2.5 from 2013 to 2021, although it slightly decreased. Considering the welfare difference between urban and rural residents, this gap will continue to increase [20]. The huge URIG has also attracted the criticism that “the welfare of urban areas is built on the backs of farmers” [21].

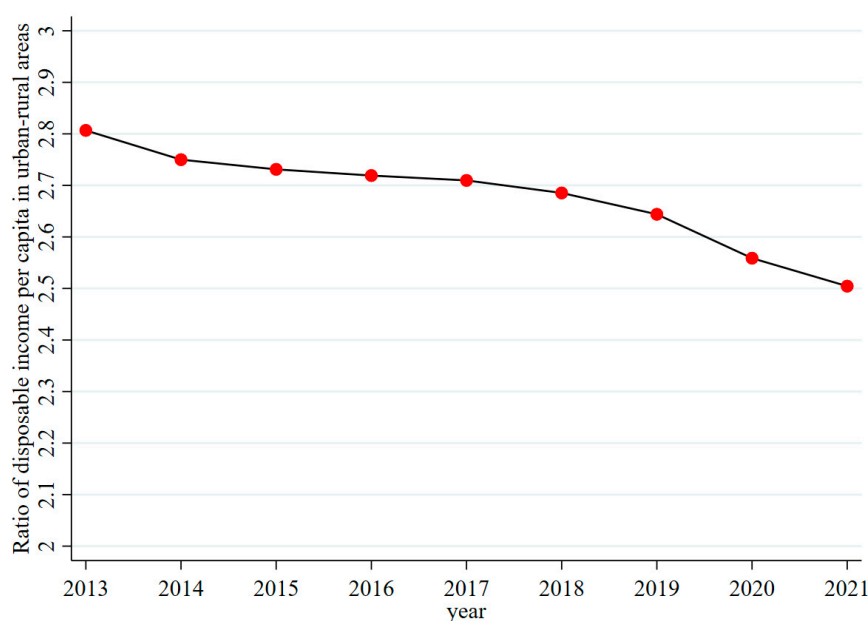


Figure 1. Ratio of disposable income per capita in urban–rural areas from 2013 to 2021.

The urban preference theory is often used to explain the URIG in developing countries, which attributes its cause to policies that favor the development of the urban sector [22]. Yang's study showed that urban preference policies, which include urban–rural labor market segregation, price control of agricultural commodities, discriminatory social benefits, and differentiated security systems, widened the URIG [23]. Sicular et al. found that the household registration system explained more than 50% of the middle-body income gap [24]. The household registration system distorts the labor market and helps urban residents obtain greater job opportunities with higher labor remuneration [25,26]. Moreover, the URIG, induced by a series of urban-preferred fiscal policies, including infrastructure investment, financial development, and education budgets, has been widely discussed [27–29]. Although the existing studies have analyzed the relationship between urban preferences, fiscal systems, and the URIG, there are few studies on the impact of land finance on the URIG. Land finance is dominated by the government with an obvious urban preference, and the government is probably contributing to the unequal distribution of factors between urban and rural areas through its intervention in land policy, which in turn affects income distribution [30]. Therefore, the relationship between land finance and the URIG needs to be further analyzed.

Based on the above background, this study analyzed the relationship between land finance and the URIG and tested this relationship using a fixed-effects model for 275 prefecture-level cities in China over the period 2014–2017, as well as an additional robust-

ness test using a placebo test in order to identify the effects caused by the potential omitted variables. The results indicated that land finance significantly widened the urban–rural income gap, and the conclusion still stood after a set of tests. The results showed that land finance significantly widened the URIG. Further study found that the effect of land finance on the URIG showed significant heterogeneity. Land grants by tender, listing, and auction significantly widened the URIG, while land grants by agreement did not affect the URIG; the effect of land finance on the URIG was more significant in Eastern and Middle regions, but not in Western regions; and land finance had no impact on the URIG in large and medium-sized cities, while it had a significant impact in small cities.

The potential contributions of this study are as follows. First, it enriches the literature on the socioeconomic consequences of land finance, expanding the framework of land finance-related studies. Second, it integrates land finance and the URIG into a unified analytical framework, exploring the causes and mechanisms of the continuing widening of the URIG, and providing a new explanation for the understanding of China's URIG. Finally, it examines in detail the effects of land finance on the URIG, which deepens the understanding of the relationship between land finance and the URIG, proving that the exploration of policies can effectively promote the reform of the land system and reduce the URIG. This study also provides an empirical reference for other developing countries.

The remainder of the study is structured as follows. Section 2 describes the institutional background and theory analysis. Section 3 constructs the econometric regression model and describes the measurement of the date and variables. Section 4 shows the results of the empirical analysis. Section 5 discusses the implications of the empirical evidence and points out the shortcomings. Section 6 draws the conclusions and proposes relevant policy recommendations.

2. Institutional Background and Theoretical Analysis

2.1. Institutional Background

2.1.1. Land Finance in China

In the 1994 tax-sharing reform, taxes were classified into three categories: central taxes, local taxes, and shared taxes. While the largest of these, VAT (value added tax), was shared between the central and local governments at the ratio of 75% to 25%, the consumption tax of enterprises was included in the central tax. The income tax reform implemented in 2002 even changed the corporate income tax and the personal income tax from a local tax to a shared tax, which was shared 50%:50% between the central government and the local government. Since 2003, it has shifted to 60% to the central government and 40% to the local governments [31]. In 2016, China fully implemented the business tax compared to VAT and further reduced local government income by reducing VAT and double taxation [32]. However, the cost of public services and infrastructure borne by the localities was not reduced at the same time [6]. Local governments must find new ways of generating income to make up for the fiscal gap. The reform of the tax system also has a significant impact on the extra-budgetary and non-budgetary funds of local governments. In particular, agricultural coordination and land transfer income related to land development are not in the budget. There is no effective management system after tax reform, and the land transfer income is fully owned by the local government. Therefore, non-budgetary funds, especially land transfer income, have become the main source of financial growth for the local government [31].

In 2007, land transfer income and expenditure were fully incorporated into the budget management of local government funds. Compared to the general budget, it obviously reflected “weak constraints”. The management of land grant revenues is still irregular, and expenditures are not transparent. Meanwhile, government officials, under the pressures of promotion and performance appraisal, must not only maintain a high GDP growth rate but also achieve higher rankings than the other candidates. As a result, they tend to adopt approaches that are inconsistent with the central government's policies and increase urban infrastructure investment through land finance to promote regional economic

growth [32,33]. In addition, after the global financial crisis in 2008, local governments enhanced the role of local government financing platforms (LGFPs) to support infrastructure development [34] and used future land grant income as an invisible guarantee for debt financing. The Ministry of Finance announced in 2009 that “local governments are allowed to finance investment projects from essentially all sources of funds, including land income, budgetary income, and funds borrowed from local financing instruments,” which also provided policy support for future invisible guarantees of land transfer income [35]. In 2014, to curb the risky rise of local financing platforms, the Chinese government amended its budget law to allow “provincial governments to raise capital for local investment in part by issuing local government bonds within the limits prescribed by the State Council”. The Ministry of Finance (MOF) issued guidelines for local government bonds in 2015, which allowed local governments issuing special bonds to use cash inflows from future infrastructure projects and the government’s future land sale income to repay the bonds, which also provided a formal legal link between local government land financing and debt financing [2], while strengthening the local government’s reliance on land-based finances to maintain land finance at a high level.

2.1.2. Land Acquisition Strategies in China

China has adopted a dualistic land system divided into urban and rural lands, where urban land is owned by the state, and rural land is owned collectively by peasants. The Land Management Law (unrevised until 2020) provides that the state may acquire collective land in the “collective interest” by law [36]. In practice, most urban land needs to be acquired by the local government. Only after the change of ownership to state-owned land can the land be used for industrial, commercial, or infrastructure construction. These mechanisms strengthened the right of the government to manage and control land resources and achieve the monopolistic position of the government in the supply of urban land [37]. There are two ways for the government to obtain newly developed urban land. One is to transform the land owned by rural collectives into new developable urban land, whereby the government exchanges its rural land ownership by paying compensation to rural collectives and farmers. The second is to obtain the right to use urban land through compensation [2]. However, in terms of compensation standards based on the Land Management Law, land expropriation only reflects the value of the land before expropriation and does not take into account the value of the land after expropriation [30]. For example, based on the Land Management Law, compensation for expropriation of arable land consists of three components: land compensation (the monetary value of the average value of agricultural output over the past three years); compensation for resettlement (4–6 times the productivity of the derived land); and compensation for ancillary assets of the land [36]. The Ministry of Land and Resources (MLR) further stipulates that the maximum compensation for land expropriation cannot exceed 30 times the derived land’s productivity. While the central government requires localities to dynamically update compensation standards to match the rate of economic growth, only a few provinces are raising compensation standards as recommended. The vast difference in the cost of land expropriation has led local governments to prefer expropriating rural collective land, which is cheaper. Local governments made huge profits by buying land at low prices and selling it at high prices. This mechanism is an important reason why local governments are able to implement land finance as well.

2.1.3. Local Government Income–Expenditure Structure of Land Concessions

Under the current financial framework of China, local governments have significant autonomy over the use of land concessions, and this autonomy of local governments has not been significantly limited, even though the full amount of income and expenditures from land concessions was incorporated into the budgetary management of local government funds in 2007. In 2008–2010, the average portion of land grant proceeds spent on cities was 69.56%, and the average portion spent on rural areas was 9.52% [38]. In 2010–2014,

the cost expenditures for land acquisition compensation, and subsidies for expropriated farmers decreased from 80% to 20%, and the proportion of expenditures for rural development was smaller and has been decreasing constantly, creating a widening gap between expenditures on rural and urban development [30]. Overall, urban residents gain more than rural residents in land grant income expenditures, which highlights the urban bias in these expenditures.

2.2. Theoretical Analysis

Under government domination, the land finance development strategy has an obvious urban preference in terms of income and expenditure, which will inevitably have a negative impact on urban–rural income distribution. On the one hand, in the land expropriation procedure, collective landowners (rural residents) do not have the ability to negotiate directly with urban land users, nor can they directly transfer land ownership to urban land users, and the amount of compensation for land transfer is entirely unilaterally decided by the local authorities [36]. This directly leads to land compensation for farmers being far lower than the market price of the land [30]. In the meantime, urban residents are receiving higher compensation in the process of land expropriation. Local authorities have gained funds for urban development, promoted urban expansion, and increased the income of urban residents by selling expropriated collective land at high prices [39,40]. This huge gap between low compensation prices and high land premiums can widen the URIG [41].

On the other hand, the main source of the local authority's tax income has changed from an enterprise tax to a business tax, which is mainly collected from tertiary industries and the construction industry. With the construction industry being the main target of the business tax, it is logical that the local authorities allocate land grant income to the urban areas where the secondary and tertiary industries are concentrated [31]. This strategy of urban-oriented development significantly increases the provision of infrastructure and public services in urban areas [42]. Improvements in public services and infrastructure enhance the value of housing for urban residents, which increases the wealth of urban residents and increases their personal incomes through higher rates of return on capital [21,30]. However, rural residents are unable to trade their own houses and land freely due to institutional constraints, thus making it difficult for them to access the benefits of rising property prices, which in turn raises the cost of urban labor [43] and inevitably widens the URIG.

In addition, land is not only a factor in agricultural production, but it is also the basis of farmers' survival [44]. The expropriation of rural land means that rural residents will no longer own their production factors or housing, resulting in many rural residents migrating between urban and rural areas or choosing to settle in urban areas. This not only reduces the productivity of agriculture but also inhibits an increase in the income of rural residents who work at home [45]. At the same time, due to the poor education and skill levels of urban migrant workers, they are at an obvious disadvantage in the job market. Therefore, it is difficult for them to find employment, and they can only take up low-paid and high-risk jobs with insufficient labor protection, which results in a lower growth in wages than that of urban residents [36,46]. Moreover, rural residents who choose to settle in urban areas must often pay a mortgage from their labor income [47], and the rising prices of urban housing exacerbate this function, which is also not conducive to their employment choices and wage income [48].

As a result of the above analysis, this study puts forward the following hypothesis:

The dependence of local authorities on land finance will significantly widen the URIG.

3. Model, Variable and Data

To identify the relationship between land finance and the URIG and taking into account the type of data and the features of the variables, this study adopted the fixed-effects model, which is commonly used in economics and management to conduct such a test. The

remainder of this section is arranged as follows. It first introduces the fixed-effects model, then describes the construction of the relevant variables, and finally explains the source and treatment of the data.

3.1. Fixed-Effects Model

The fixed-effects model is a panel data analysis method that is widely used in the fields of economics, sociology, and management by introducing dummy variables in the ordinary least squares regression model or using within-group de-meanings to prevent the endogeneity problem caused by omitted variables [49,50]. Usually, omitted variables affect the explanatory variables as well as the explained variables, leading to inaccurate estimation coefficients of the explanatory variables. Therefore, it is necessary to add more control variables. However, some of the control variables are unobservable, whereas the fixed-effects model can control the unobservable non-time-varying only-individual-varying omitted variables and the non-individual-varying only-time-varying omitted variables. The advantage is that it can largely mitigate the endogeneity problem caused by specific omitted variables, as well as eliminate inter-individual heterogeneity and improve the estimation efficiency and accuracy. The disadvantages are that it is unable to estimate the impact effect of the observable variables that do not vary over time, it cannot recognize inter-individual variability, and it may miss important differences between the individuals [51]. Taking into account the data features and variable features of this study, the fixed-effects model was used to test the relationship between land finance and the URIG. The specific form of the fixed-effects model is shown in Equation (1).

$$IG_{it} = \alpha_0 + \alpha_1 land\ fin_{it} + \alpha_2 X_{it} + \theta_i + \rho_t + u_{it}, \quad (1)$$

where IG indicates the URIG; $land\ fin$ indicates land finance; X indicates a set of control variables; θ indicates the city fixed effects used to control the omitted variables that vary only with the city and not with time, such as a city's geographic location; ρ indicates the time fixed effects used to control the omitted variables that vary only with time and not with cities, such as macro-level covariation; u indicates a random error term; and i and t indicate the city and year, respectively. The focus of this study was on the core index of α_1 , which should be positive if the hypothesis is true. The coefficient estimation was carried out using the Stata 15.1 software.

3.2. Variable Description

3.2.1. Explained Variables

There are two main indicators commonly used to measure the URIG. One is the ratio of disposable income of urban and rural residents as a direct measure of the URIG [30,41]. The second is the Thiel index [20,52]. Compared to the Thiel index, the ratio of disposable income of urban and rural residents is more intuitive due to it being simple to measure. However, it ignores the proportion of urban and rural populations and fails to reflect the changes in mobility between urban and rural populations [20]. Therefore, we used the Thiel index, which better reflected the flow of urban and rural populations, to measure the URIG. Its formula is shown in Equation (2). In addition, the ratio of disposable income of urban and rural residents was used for the additional robustness test.

$$TL_{it} = \sum_{j=1}^2 \left(\frac{P_{ijt}}{P_{it}} \right) \ln \left(\frac{P_{ijt}}{P_{it}} / \frac{Z_{ijt}}{Z_{it}} \right) \quad (2)$$

where TL_{it} indicates the Thiel index of city i in year t ; $j = 1, 2$ indicates the urban and rural areas, respectively; P_{ijt} indicates the per capita disposable income of city i in year t ; P_{it} indicates the per capita disposable income of city i in year t ; Z_{ijt} indicates the number of urban and rural resident populations of city i in year t ; and Z_{it} indicates the total resident population of city i in year t . The larger the Thiel index, the larger the URIG.

3.2.2. Main Explanatory Variables

Land finance: Land finance income primarily includes land grant, land-related tax income, and land mortgage, where the land grant counts as the main part of land finance [53]. Therefore, this study took the ratio of land grant income to public finance income as a proxy variable for land finance. Moreover, this study constructed the ratio of land grant income to GDP and per capita land grant income to measure land finance for the robustness test.

3.2.3. Control Variables

To avoid the possible omitted variables, the following control variables were selected in this study. The level of economic development (econ): measured the level of economic development by using GDP per capita with natural logarithmic treatment; industrial structure (indus): measured the industrial structure by using the ratio of the gross domestic product of the secondary and tertiary industries to the regional GDP; financial development (fina): measured the financial development by using the ratio of the balance of deposits and loans of financial institutions to the GDP at the end of the year; the level of opening up: measured opening by using the ratio of the total amount of regional imports and exports to the regional gross domestic product; authorities' intervention (gove): measured the authorities' intervention by using the ratio of public fiscal expenditure to the regional GDP; education level (educ): measured the education level by using the number of students enrolled in general higher education institutions per 100,000 people with a natural logarithmic treatment. Since some cities did not have any higher education institutions, one was added to the original data before taking the logarithmic value.

3.3. Data Sources

The data used in this study were mainly from the *China Land and Resources Statistical Yearbook* and *China Urban Statistical Yearbook*, and some of the missing data were supplemented by local statistical yearbooks or statistical bulletins. In 2013, the National Bureau of Statistics launched a survey on the income, expenditure, and living conditions of urban and rural residents, and the survey methodology and caliber of urban and rural incomes were changed. Thus, the data after 2013 were not comparable with the previous data, and the *China Statistical Yearbook of Land and Resources* had only counted the data up to 2017. Therefore, this study selected the sample interval as 2014–2017. In addition, to avoid the influence of the price factor, the variables in the nominal value of money statistics were deflated using the GDP deflator and using 2003 for the base period. The descriptive statistics for each variable are shown in Table 1.

Table 1. Descriptive statistics.

Variable	Obs.	Min.	Max.	Mean	Std. Dev.
TL	1100	0.0045	0.252	0.074	0.0373
land fin	1100	0.0086	3.141	0.494	0.361
econ	1100	8.737	11.78	10.21	0.512
indus	1100	0.495	0.997	0.878	0.077
fina	1100	0.717	22.32	2.485	1.369
open	1100	0	10.61	0.178	0.47
gove	1100	0.0439	2.06	0.207	0.127
educ	1100	0	4.752	2.471	0.928

4. Results

4.1. Baseline Regression Results

The results of the base regression results of this study are shown in Table 2. Where column (1) only controlled for the time fixed effects and city fixed effects, the regression coefficient of land finance was 0.0024, and it was significantly positive at the 5% level. Column (2) added two control variables, which were the economic development level and industrial structure, and the results showed that the regression coefficient of land finance

was 0.0028, and it was significantly positive at the 1% level. Column (3) added the financial development level and opening-up level based on column (2), and it was shown that the regression coefficient and significance level of land finance were not significantly changed compared to column (2). Column (4) added authorities' intervention and education level to column (3), and Table 2 shows that the regression coefficients and significance levels of land finance did not change significantly. According to the above results, land finance was indeed an important reason for the widening of the URIG in China, which initially verified the hypothesis of this study.

Table 2. Base regression results.

Variable	(1) TL	(2) TL	(3) TL	(4) TL
<i>land fin</i>	0.0024 ** (2.3654)	0.0028 *** (2.7604)	0.0027 *** (2.7272)	0.0028 *** (2.7960)
<i>econ</i>		−0.0161 *** (−3.0017)	−0.0165 *** (−2.8612)	−0.0158 *** (−2.8486)
<i>indus</i>		−0.0154 (−0.5697)	−0.0151 (−0.5611)	−0.0153 (−0.5617)
<i>fina</i>			−0.0002 (−0.6717)	−0.0004 (−1.2928)
<i>open</i>			0.0001 (0.3308)	0.0001 (0.3527)
<i>gove</i>				0.0047 (1.4958)
<i>educ</i>				−0.0015 (−1.6437)
<i>_cons</i>	0.0784 *** (121.2969)	0.2550 *** (4.4574)	0.2595 *** (4.2166)	0.2551 *** (4.2378)
Year fixed	Yes	Yes	Yes	Yes
City fixed	Yes	Yes	Yes	Yes
N	1100	1100	1100	1100
Adj. R2	0.289	0.325	0.324	0.326
F	82.0712	53.8820	40.4140	32.9928

Note: *t* statistics in parentheses (cluster in cities level). *** $p < 0.01$, ** $p < 0.05$.

4.2. Robustness Tests

4.2.1. Replace Relevant Variables

To verify the robustness of the results of the basic regression, robustness tests were conducted by replacing the variables. The results of the robustness tests are shown in Table 3. Column (1) was a measure of land finance using the per capita land transfer price, denoted by *land fin2*. The coefficient of *land fin2* was 0.0037 and was significantly positive at the 5% level. Column (2) was a measure of land finance using the ratio of the land transfer price to GDP, and the coefficient of *land fin3* was 0.0221 and was significantly positive at the 10% level. Column (3) was a measure of the URIG using the ratio of the disposable income per urban resident to the disposable income per rural resident (IR), and the coefficient of *land fin* was 0.0316 and was significantly positive at the 5% level. The above results demonstrated that after replacing the main explanatory variables, the signs and significance of the coefficients were not significantly different from the basic regression, which further indicated that the empirical results were robust.

Table 3. Robustness test regression results.

Variable	(1) TL	(2) TL	(3) IR	(4) TL
<i>land fin2</i>	0.0037 ** (2.4686)			

Table 3. Cont.

Variable	(1) TL	(2) TL	(3) IR	(4) TL
<i>land fin</i> ³		0.0221 * (1.9408)		
<i>land fin</i>			0.0316 ** (2.3153)	0.0014 (0.6646)
<i>land fin</i> ²				0.0007 (0.6863)
Control	Yes	Yes	Yes	Yes
Year fixed	Yes	Yes	Yes	Yes
City fixed	Yes	Yes	Yes	Yes
N	1100	1100	1088	1100
Adj. R2	0.323	0.322	0.228	0.326
F	34.4127	33.5594	15.6242	30.3025

Note: *t* statistics in parentheses (cluster in cities level). ** $p < 0.05$, * $p < 0.1$.

4.2.2. Non-Linear Regression

To verify the non-linear relationship between land finance and the URIG, the secondary term of land finance was also included in the regression equation in this section, and the regression results are shown in column (4) of Table 3. The coefficients of both the primary and secondary terms of land finance were positive and insignificant, and this result indicated that there was no non-linear relationship between land finance and the URIG.

4.2.3. Placebo Test

It is possible that, even after controlling for fixed effects and confounding variables, unobservable factors may still have affected the regression results. There may have been mechanisms that we could not observe that affected both land finance and the URIG, which could bias the estimated coefficients. Therefore, we used the placebo test to investigate whether the impact effect of land finance on the URIG stemmed from other unobservable factors. Referring to other placebo tests such as in La Ferrara et al. [54], the steps were as follows. First, the land finance data were randomly assigned to each city. Second, the regression was performed using Equation (1) to extract and preserve the regression coefficients of the land finance. Third, the above process was repeated 1000 times, and the regression coefficients extracted from these 1000 times were summarized and preserved. Finally, the 1000 regression coefficients were plotted according to the preserved kernel density distribution.

Figure 2 shows the distribution of kernel densities generated by the placebo test. The regression coefficients were approximated to a normal distribution with a mean of 0 and were mainly focused on the wings, while the absolute values of the 1000 regression coefficients were smaller than the base regression coefficients, which indicated that there was no effect related to virtual land finance. By inversion, the unobservable variables hardly affected the regression results.

4.3. Analysis of the Heterogeneity

4.3.1. The Heterogeneity of Land Grants for Industrial and Commercial/Residential Sites

In the process of land transfer, the authorities have adopted different modes of transfer for industrial land and commercial/residential land. In particular, the authorities usually grant industrial land at a low price, mainly by agreement, while they grant commercial and residential land at a higher and restrictive price, mainly by tender and auction. It is worthwhile to examine in detail whether this difference in the mode of land transfer may have different impacts on the URIG. Therefore, we used the agreement transfer transaction price as a proxy variable for the returns of industrial land, further exploring the impact of different land transfer returns on the URIG. We also used the tender and auction transfer transaction price as a proxy variable for the returns of commercial and residential land.

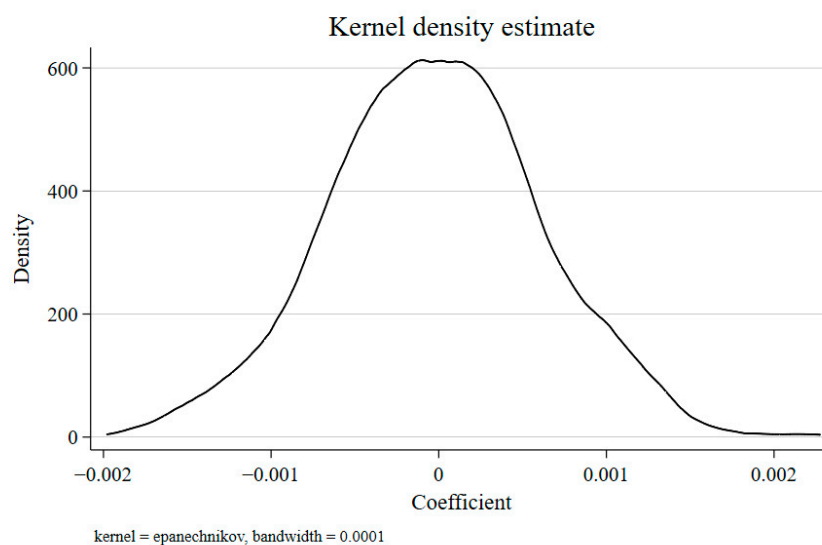


Figure 2. Placebo testing.

The regression results are shown in Table 3. Column (1) shows the regression results of the agreement to let, and column (2) shows the results of tender and auction. In column (1), the coefficient of agreement to transfer was -0.0017 but was not significant. In column (2), the regression coefficient of bidding, listing, and auctioning was 0.0034 and it was significantly positive at the 1% level. The above results showed that the proceeds from industrial land concessions by local authorities in the form of agreements did not have an impact on the URIG, while the proceeds from commercial and residential land concessions by means of tenders and auctions could aggravate the widening of the URIG.

4.3.2. Regional Heterogeneity

Due to the sheer size of China, there are large differences among regions. The land finance dependence varies from region to region, and the effect of land finance on the URIG may differ greatly. Therefore, this study further examined the effect on the URIG in different regions. The entire sample was classified into East, Middle, and West, according to the region, the regression tests were separately run, and the results are shown in columns (3–5) of Table 4. Column (3) shows the results for the East region, where the regression coefficient of land finance was 0.0037 and was significantly positive at the 1% level. Column (4) shows the results for the Middle region, where the coefficient of land finance was 0.0024 and was significantly positive at the 10% level. Column (5) shows the results for the West region, where the land finance coefficient was 0.0024 but was not significant. All these results indicated that in the Eastern and Middle regions, land finance widened the URIG while in the Western region, it had no significant effect.

Table 4. Heterogeneity analysis regression results for industrial and commercial/residential land.

Variables	(1) TL	(2) TL	(3) East	(4) Middle	(5) West
Agreement	-0.0017 (-0.9475)				
Tender and auction		0.0034^{***} (3.4550)			
land fin			0.0037^{***} (2.9845)	0.0024^* (1.8334)	0.0024 (0.6465)
Control	Yes	Yes	Yes	Yes	Yes
Year fixed	Yes	Yes	Yes	Yes	Yes
City fixed	Yes	Yes	Yes	Yes	Yes
N	1100	1100	384	400	316

Table 4. Cont.

Variables	(1) TL	(2) TL	(3) East	(4) Middle	(5) West
Adj. R2	0.320	0.328	0.295	0.531	0.439
F	33.8263	32.7332	20.6137	13.8762	16.5488

Note: *t* statistics in parentheses (cluster in cities level). *** $p < 0.01$, * $p < 0.1$.

4.3.3. Heterogeneity of City Size

There are large differences among Chinese cities in terms of functional positioning and resource concentration. Local authorities in different-sized cities differ markedly in their resource allocation rights, leading to differences in the impact of land finance on the URIG. Therefore, we further tested the effect of land finance on the URIG in different-sized cities. The Circular of the State Council on the Adjustment of the Standard for the Division of City Size classified city size into five types and seven levels. Considering that such a classification will lead to a reduction in the sample size, the city size was classified into three types in this study: cities with 500,000 or fewer residents were small cities, cities with 500,000 to 1,000,000 residents were medium cities, and cities with more than 1,000,000 residents were large cities. The city size was classified according to the 2014 resident population.

Table 5 shows the results for the different city sizes. In column (1), the coefficient of land finance was 0.0033 but was not significant in large cities. In column (2), the coefficient of land finance was 0.0011 and was not significant in medium cities. In column (3), the coefficient of land finance was 0.0035 and was significantly positive at the 5% level in small cities. All the results showed that land finance had no effect on the URIG in large and medium-sized cities, while in small cities, land finance had a widening effect on the URIG.

Table 5. Heterogeneity analysis regression results for city size.

Variables	(1) Large Cities	(2) Medium Cities	(3) Small Cities
<i>land fin</i>	0.0033 (1.1119)	0.0010 (0.5455)	0.0035 ** (2.5718)
Control	Yes	Yes	Yes
Year fixed	Yes	Yes	Yes
City fixed	Yes	Yes	Yes
N	252	372	476
Adj. R2	0.200	0.381	0.388
F	6.3603	12.7303	21.0853

Note: *t* statistics in parentheses (cluster in cities level). ** $p < 0.05$.

5. Discussion

This study theoretically analyzed and empirically tested the impact of land finance on the URIG in China, and we found evidence that land finance significantly widens the URIG. This finding not only helps us to understand the causes of the URIG in China and deepens our awareness of the income distribution effects of land finance, but also provides guidance for other developing countries. Nowadays, many developing countries are moving toward modernization and share many similarities with China in terms of the URIG [55,56]. Meanwhile, intense land expropriation is widespread [57]. This finding is a cautionary tale for other developing countries, who should be aware that rural residents whose land is expropriated bear the costs of urbanization, which is an important cause of frequent land conflicts [58]. Therefore, these countries should balance equity with the pursuit of efficiency in the future land development process to avoid infringing on the interests of rural residents, and they need to actively improve the current inequality.

This study found differences in the effect of land finance on the URIG depending on the way in which the land was granted. Specifically, it was found that land granting by

tender and auction significantly widened the URIG, while land granting by agreement had no effect on the URIG. This was due to the local authorities granting industrial land at a low price by way of agreement, which decreased the gap between the land appreciation and the land compensation price. Meanwhile, industrial expansion also absorbed many rural laborers and increased their income [59]. On the other hand, the local authorities granted commercial and residential land at high and restrictive prices, which increased the cost and reduced the supply of housing, thus pushing up the price of houses. It was easier to increase the income of urban residents through the wealth effect and increase the cost of living of rural residents who work in the city [21,60].

This study found that in the Eastern and the Middle regions, land finance had a widening effect on the URIG, and the widening effect was more significant in the Eastern region, while it had no effect in the Western region. This ranking was consistent with the level of economic development of each region, where the Eastern region had the best level of economic development, the Middle of the country was second, and the Western region was the worst. Additionally, this ranking was consistent with the degree of dependence of local governments on land finance, which was also highest in the East, next highest in the Middle, and lowest in the West. The reason for this was that the higher the level of regional economic development, the higher the urban land premium, and that the larger the gap with the land compensation price, the more the dependence of the local government on land finance is intensified, which increases the urban–rural income gap. In turn, the higher the dependence of the local government on land finance, the more it could promote regional economic development. Thus, the urban–rural income gap gradually increased under this bidirectional feedback mechanism. In addition, the Western region tended to benefit from the central government due to its lower economic development, thus alleviating the financial pressure, which explained its lower dependence on land finance [46,61].

Furthermore, this study found that the effect of land finance on the widening of the URIG was more significant in small cities, while it had no effect in large and medium-sized cities. A larger urban population meant a higher level of local urbanization, which could absorb more rural surplus labor and increase farmers' income, thereby reducing the URIG [62,63]. The reduction in the urban–rural income gap as a result of urbanization weakened the role of land finance in widening the urban–rural income gap. Compared to large cities, small cities had fewer sources of fiscal income, which made them more dependent on land finance, thus leading to the widening effect of land finance on the urban–rural income gap being more significant. Another possible explanation is that the sample sizes of large cities were relatively smaller, which led to insignificant regression coefficients, which could be verified in future research by increasing the sample size.

6. Conclusions and Policy Recommendations

The phenomenon of land finance has become more widespread in developing countries, with profound impacts on local economic and social development. However, there are few studies focusing on the income distribution effects it induces. This study examined the impact of land finance on the URIG from the perspective of the URIG, based on panel data from 275 prefecture-level cities in China from 2014 to 2017.

In general, the results indicated that land finance significantly widened the URIG. Further study found that the effect of land finance on the URIG showed significant heterogeneity. From a methodology perspective, land grants by tender, listing, and auction significantly widened the URIG, while land grants by agreement did not affect the URIG. From a regional perspective, the effect of land finance on the URIG was more significant in Eastern and Middle regions, but not in Western regions. From the city size perspective, land finance had no impact on the URIG in large and medium-sized cities, while the impact was significant in small cities.

These findings have important policy consequences for the reform of the land regime and the promotion of fairness in income distribution. Firstly, the authorities should accelerate the market-oriented reform of land supply to remove the monopolistic status

of local authorities in the primary land market, offer fair rights to rural residents in the land market, optimize the land income distribution system, ensure that rural residents receive fair and reasonable compensation for their landlessness under the market system, and rectify the uneven distribution of land premiums. Secondly, the authorities should change the present development strategy, accelerate the integration of urban and rural areas, and use the income from land concessions to enhance the public services provided in rural areas, providing the same opportunities for rural residents to obtain employment as urban residents and giving them the rights to the same public services. Lastly, authorities should actively promote the reform of the fiscal and taxation systems and change the local income structure to convert the income of local authorities from land transfer to stable and sustainable tax income. The dependence of local authorities on land finance must be removed at the source.

This study incorporated land finance and the URIG into a unified analytical framework, which deepened our comprehension of the relationship between land finance and the URIG, enriched the literature on the socioeconomic consequences of land finance, and provided empirical references for other developing countries. However, some shortcomings remained in the study that can be addressed in future research. First, this study only analyzed data from 2014 to 2017 due to the increasingly frequent adjustments in land finance policies in recent years with the continued advancement of urban–rural integration construction. In particular, with the revision of the Land Management Law in 2020, the government has strengthened the protection of rural residents’ interests, and the effect of land finance on the urban–rural income gap may be transformed. Due to limitations on the availability of the data, this study did not discuss and test the change. However, future research can use this as an entry point and compare the changes in the impact of the policy before and after the revision. In addition, due to limitations on the available data, this study only analyzed the influence path of land finance on the URIG in theory. Lastly, this study did not explore the possible spatial spillover effects of land finance on the URIG, which will be the focus of our next phase of research. Further, the external validity of the results of this study has yet to be tested. The land acquisition and transfer mechanism has significant Chinese characteristics, and the institutional contexts of other developing countries will be markedly different from those of China, along with the resulting impacts. However, the development strategy of urban preferences is consistent, which is an important reason why other developing countries can learn from China’s experience.

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References

1. Ye, F.; Wang, W. Determinants of Land Finance in China: A Study Based on Provincial-level Panel Data. *Aust. J. Publ. Admin.* **2013**, *72*, 293–303. [\[CrossRef\]](#)
2. Gyourko, J.; Shen, Y.; Wu, J.; Zhang, R. Land finance in China: Analysis and review. *China Econ. Rev.* **2022**, *76*, 101868. [\[CrossRef\]](#)
3. Vyas, I.; Vyas, H.N.; Mishra, A.K. Land-based financing of cities in India: A study of Bengaluru and Hyderabad and directions for reforms. *J. Public Aff.* **2022**, *22*, e2378. [\[CrossRef\]](#)
4. Nguyen, T.B.; van der Krabben, E.; Musil, C.; Le, D.A. Land for infrastructure’ in Ho Chi Minh City: Land-based financing of transportation improvement. *Int. Plan. Stud.* **2018**, *23*, 310–326. [\[CrossRef\]](#)
5. Berrisford, S.; Cirolia, L.R.; Palmer, I. Land-based financing in sub-Saharan African cities. *Environ. Urban.* **2018**, *30*, 35–52. [\[CrossRef\]](#)
6. Qun, W.; Yongle, L.; Siqi, Y. The incentives of China’s urban land finance. *Land Use Policy* **2015**, *42*, 432–442. [\[CrossRef\]](#)

7. Lu, Y.; Zhang, K.; Ouyang, J. Does Land Finance Hinder Regional Innovation? Based on the Data of 267 Prefectural—Level City in China. *J. Financ. Res.* **2018**, *5*, 101–119.
8. Liu, Y.; Chen, J. Land System, Financing Mode and Industrialization with Chinese Characteristics. *China Ind. Econ.* **2020**, *3*, 5–23. [[CrossRef](#)]
9. Guo, S.; Shi, Y.Y. Infrastructure investment in China: A model of local government choice under land financing. *J. Asian Econ.* **2018**, *56*, 24–35. [[CrossRef](#)]
10. Mo, J. Land financing and economic growth: Evidence from Chinese counties. *China Econ. Rev.* **2018**, *50*, 218–239. [[CrossRef](#)]
11. Du, H.; Ma, Y.; An, Y. The impact of land policy on the relation between housing and land prices: Evidence from China. *Q. Rev. Econ. Financ.* **2011**, *51*, 19–27. [[CrossRef](#)]
12. Pan, F.H.; Zhang, F.M.; Zhu, S.J.; Wojcik, D. Developing by borrowing? Inter-jurisdictional competition, land finance and local debt accumulation in China. *Urban Stud.* **2017**, *54*, 897–916. [[CrossRef](#)]
13. Tang, P.; Feng, Y.; Li, M.; Zhang, Y. Can the performance evaluation change from central government suppress illegal land use in local governments? A new interpretation of Chinese decentralisation. *Land Use Policy* **2021**, *108*, 105578. [[CrossRef](#)]
14. Cai, H.; Henderson, J.V.; Zhang, Q. China's land market auctions: Evidence of corruption? *Rand J. Econ.* **2013**, *44*, 488–521. [[CrossRef](#)]
15. Liu, Z.; Wang, P.F.; Zha, T. Land-Price Dynamics and Macroeconomic Fluctuations. *Econometrica* **2013**, *81*, 1147–1184. [[CrossRef](#)]
16. Wang, Q.; Feng, G.; Chang, C. Financial Structure Foundation of The Urban–Rural Income Gap in China: An Investigation from the Perspective of the Double Dual Structure. *Bul. Ekon. Monet. Dan. Perbank.* **2019**, *22*, 177–194. [[CrossRef](#)]
17. Su, B.; Heshmati, A. Analysis of the determinants of income and income gap between urban and rural China. *China Econ. Policy Rev.* **2013**, *02*, 1350002. [[CrossRef](#)]
18. Wan, G. Understanding Regional Poverty and Inequality Trends in China: Methodological Issues and Empirical Findings. *Rev. Income Wealth* **2007**, *53*, 25–34. [[CrossRef](#)]
19. Chen, J.; Fang, F.; Hou, W.; Li, F.; Pu, M.; Song, M.; Yuan, J. Chinese Gini Coefficient from 2005 to 2012, Based on 20 Grouped Income Data Sets of Urban and Rural Residents. *J. Appl. Math.* **2015**, *2015*, 939020. [[CrossRef](#)]
20. Ji, X.; Wang, K.; Xu, H.; Li, M. Has Digital Financial Inclusion Narrowed the Urban-Rural Income Gap: The Role of Entrepreneurship in China. *Sustainability* **2021**, *13*, 8292. [[CrossRef](#)]
21. Wang, Y.; Li, Y.; Huang, Y.; Yi, C.; Ren, J. Housing wealth inequality in China: An urban-rural comparison. *Cities* **2020**, *96*, 102428. [[CrossRef](#)]
22. Bezemer, D.; Headey, D. Agriculture, Development, and Urban Bias. *World Dev.* **2008**, *36*, 1342–1364. [[CrossRef](#)]
23. Yang, D.T. Urban-Biased Policies and Rising Income Inequality in China. *Am. Econ. Rev.* **1999**, *89*, 306–310. [[CrossRef](#)]
24. Sicular, T.; Ximing, Y.; Gustafsson, B.; Shi, L. The Urban–Rural Income Gap and Inequality in China. *Rev. Income Wealth* **2007**, *53*, 93–126. [[CrossRef](#)]
25. Wang, C.; Wan, G.; Yang, D. Income Inequality in the People's Republic of China: Trends, Determinants, and Proposed Remedies. *J. Econ. Surv.* **2014**, *28*, 686–708. [[CrossRef](#)]
26. Wu, X.; Treiman, D.J. The household registration system and social stratification in China: 1955–1996. *Demography* **2004**, *41*, 363–384. [[CrossRef](#)]
27. Lei, G.; Cai, X. The distortion of primary income distribution, urban-biased fiscal expenditure policy and urban-rural inequality. *J. Quant. Tech. Econ.* **2012**, *29*, 76–89. [[CrossRef](#)]
28. Lin, J.Y.; Chen, B. Urbanization and Urban-Rural Inequality in China: A New Perspective from the Government's Development Strategy. *Front. Econ. China* **2011**, *6*, 1–21. [[CrossRef](#)]
29. Chen, B.; Zhang, P.; Yang, R. Government education budget, human capital investment and urban-rural income disparity in China. *Manag. World* **2010**, *1*, 36–43. [[CrossRef](#)]
30. Wang, S.; Tan, S.; Yang, S.; Lin, Q.; Zhang, L. Urban-biased land development policy and the urban-rural income gap: Evidence from Hubei Province, China. *Land Use Policy* **2019**, *87*, 104066. [[CrossRef](#)]
31. Sun, X.; Zhou, F. Land Finance and the Tax-sharing System: An Empirical Interpretation. *Soc. Sci. China* **2014**, *35*, 47–64. [[CrossRef](#)]
32. Fan, X.; Qiu, S.N.; Sun, Y.K. Land finance dependence and urban land marketization in China: The perspective of strategic choice of local governments on land transfer. *Land Use Policy* **2020**, *99*, 105023. [[CrossRef](#)]
33. Li, H.; Zhou, L. Political turnover and economic performance: The incentive role of personnel control in China. *J. Public Econ.* **2005**, *89*, 1743–1762. [[CrossRef](#)]
34. Chen, Z.; He, Z.; Liu, C. The financing of local government in China: Stimulus loan wanes and shadow banking waxes. *J. Financ. Econ.* **2020**, *137*, 42–71. [[CrossRef](#)]
35. Bai, C.; Hsieh, C.; Song, Z. *The Long Shadow of a Fiscal Expansion*; University of Chicago: Chicago, IL, USA, 2016. [[CrossRef](#)]
36. Cao, G.; Feng, C.; Tao, R. Local “Land Finance” in China's Urban Expansion: Challenges and Solutions. *China World Econ.* **2008**, *16*, 19–30. [[CrossRef](#)]
37. Liu, S.; Xiong, X.; Zhang, Y.; Guo, G. Land System and China's Development Mode. *China Ind. Econ.* **2022**, 34–53. [[CrossRef](#)]
38. Liu, S. Characteristics, Problems and Reform of China's Dual Urban-Rural Land Tenure. *Int. Econ. Rev.* **2014**, *3*, 9–25. Available online: https://kns.cnki.net/kcms2/article/abstract?v=3uoqIhG8C44YLTIOAiTRKgchrJ08w1e7M8Tu7YZds8_WqnnxqWBNRK3zkWJvSjcnCJND6GNXhoQIBu6-NQCurcdkA5JwVQO8&uniplatform=NZKPT (accessed on 5 September 2023).
39. Huang, Z.; Du, X. Government intervention and land misallocation: Evidence from China. *Cities* **2017**, *60*, 323–332. [[CrossRef](#)]

40. Du, J.; Thill, J.; Feng, C. Wealth redistribution in urban land development under a dual land system: A case study of Beijing. *Pap. Reg. Sci.* **2014**, *93*, 501–517. [[CrossRef](#)]
41. Zhong, S.; Wang, M.; Zhu, Y.; Chen, Z.; Huang, X. Urban expansion and the urban–rural income gap: Empirical evidence from China. *Cities* **2022**, *129*, 103831. [[CrossRef](#)]
42. Zhu, C.; Zhang, X.; Wang, K.; Yuan, S.; Yang, L.; Skitmore, M. Urban–rural construction land transition and its coupling relationship with population flow in China’s urban agglomeration region. *Cities* **2020**, *101*, 102701. [[CrossRef](#)]
43. Yu, A.T.W.; Wu, Y.; Shen, J.; Zhang, X.; Shen, L.; Shan, L. The key causes of urban-rural conflict in China. *Habitat Int.* **2015**, *49*, 65–73. [[CrossRef](#)]
44. Hui, E.C.M.; Bao, H.J.; Zhang, X.L. The policy and praxis of compensation for land expropriations in China: An appraisal from the perspective of social exclusion. *Land Use Policy* **2013**, *32*, 309–316. [[CrossRef](#)]
45. Xie, D. Rural-urban Income Distribution Effect of Land Supply: A Perspective of Imbalance Development of Urbanization. *Nankai Econ. Stud.* **2017**, *2*, 76–95. [[CrossRef](#)]
46. He, S.; Liu, Y.; Chris, W.; Wu, F. Property Rights Redistribution, Entitlement Failure and the Impoverishment of Landless Farmers in China. *Urban Stud.* **2009**, *46*, 1925–1949. [[CrossRef](#)]
47. Zhang, J.; Ge, Y. The Influence of Land Market Allocation on the Rural—Urban Income Distribution in China—A Perspective of Imbalance Development of Urbanization. *J. Huazhong Agric. Univ. Soc. Sci. Ed.* **2021**, *3*, 172–181. [[CrossRef](#)]
48. Pintér, G. House Prices and Job Losses. *Econ. J.* **2019**, *129*, 991–1013. [[CrossRef](#)]
49. Bai, J. Panel Data Models with Interactive Fixed Effects. *Econometrica* **2009**, *77*, 1229–1279. [[CrossRef](#)]
50. Flannery, M.J.; Rangan, K.P. Partial adjustment toward target capital structures. *J. Financ. Econ.* **2006**, *79*, 469–506. [[CrossRef](#)]
51. DeHaan, E. Using and interpreting fixed effects models. *Soc. Sci. Electron. Publ.* **2021**. [[CrossRef](#)]
52. Yuan, Y.; Wang, M.S.; Zhu, Y.; Huang, X.J.; Xiong, X.F. Urbanization’s effects on the urban-rural income gap urban-rural income gap in China: A meta-regression analysis. *Land Use Policy* **2020**, *99*, 104995. [[CrossRef](#)]
53. Hou, S.; Song, L.; Wang, J.; Ali, S. How Land Finance Affects Green Economic Growth in Chinese Cities. *Land* **2021**, *10*, 819. [[CrossRef](#)]
54. La Ferrara, E.; Chong, A.; Duryea, S. Soap Operas and Fertility: Evidence from Brazil. *Am. Econ. J. Appl. Econ.* **2012**, *4*, 1–31. [[CrossRef](#)]
55. Cai, F. Rural urban income gap and critical point of institutional change. *Econ. Chang. Restruct.* **2007**, *40*, 189–206. [[CrossRef](#)]
56. Tan, Y.; Xu, H.; Zhang, X. Sustainable urbanization in China: A comprehensive literature review. *Cities* **2016**, *55*, 82–93. [[CrossRef](#)]
57. PETERS, P.E. Inequality and Social Conflict Over Land in Africa. *J. Agrar. Chang.* **2004**, *4*, 269–314. [[CrossRef](#)]
58. Lin, Q.; Tan, S.; Zhang, L.; Wang, S.; Wei, C.; Li, Y. Conflicts of land expropriation in China during 2006–2016: An overview and its spatio-temporal characteristics. *Land Use Policy* **2018**, *76*, 246–251. [[CrossRef](#)]
59. Lagakos, D. Urban-Rural Gaps in the Developing World: Does Internal Migration Offer Opportunities? *J. Econ. Perspect.* **2020**, *34*, 174–192. [[CrossRef](#)]
60. Wu, L.; Zhang, W. Rural migrants’ homeownership in Chinese urban destinations: Do institutional arrangements still matter after Hukou reform? *Cities* **2018**, *79*, 151–158. [[CrossRef](#)]
61. Ji, F.; Ba, S. Local Government Competition, Transfer Payment and Land Finance. *China Soft Sci.* **2020**, *11*, 100–109. Available online: https://kns.cnki.net/kcms2/article/abstract?v=3uoqIhG8C44YLTIOAiTRKibYIV5Vjs7i8oRR1PAr7RxjuAJk4dHXouqIIUjyeQixOny5fc_PPISibtvSj9RCTilxao6g1uB&uniplatform=NZKPT (accessed on 5 September 2023).
62. Chen, S.; Jiang, J. The Relationship of Financial Development, Urbanization and Urban-Rural Income Gap: An Empirical Research Based on Provincial Panel Data in China. *SHS Web Conf.* **2014**, *6*, 1228–1233. [[CrossRef](#)]
63. Su, C.W.; Liu, T.Y.; Chang, H.L.; Jiang, X.Z. Is urbanization narrowing the urban-rural income gap? A cross-regional study of China. *Habitat Int.* **2015**, *48*, 79–86. [[CrossRef](#)]

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