



Industrial policy and spatial arrangement of land leasing in China: A case of Jiangsu Province

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Highlights

- Chinese local government makes spatial arrangement of land leasing under industrial policy.
- Local governments place key industries closer to prefecture-level city center.

Abstract

The governments play an important role in allocation of land resources In China. However, few studies have focused on the local governments' spatial arrangement of land supply within their jurisdictions. Using the Jiangsu Province as a study area, this paper reveals the Chinese local governments' spatial response of land leasing to the industrial policy. Competition between localities for relative economic performance forces local governments to implement two spatial strategies in land leasing, maximizing economic performance and beggar thy neighbor. Rational prefectural governments are inspired to place policy-favored industries in municipal district or location closer to prefectural city center. First, allocating policy-favored industries the land adjacent to the city center or in municipal district will help to attract industrial investment. Second, assigning policy-favored industries far from the administrative boundary contributes to reduce the positive spatial spillovers to the neighboring jurisdictions. However, local governments may also

adopt inter-regional cooperation strategy of not intervening in the location of land leasing for the industries closely linked to the advantageous industries of neighboring regions.

Introduction

In China, the government plays an important role in the allocation of key resources (Xiong, 2018). Land leasing and industrial policy are commonly used by the Chinese local governments. A small but growing body of literature explores the impact of industrial policy on land leasing in China. Aghion et al. (2015) found that if an industry is listed as a key sector, local governments will ensure priority of resources allocation. Consistently, Chinese local governments implement industrial policy to allocate the land resources across industries with different policy favoritism. The land is more likely to be assigned to policy-favored industries (Yang & Luo, 2018). Zhang et al. (2017) found that local governments prioritize providing larger area of land parcel to the policy-favored industries. On the contrary, policy-averse industries receive less support in land supply. Tang et al. (2018) argued that if a city is designated as a low-carbon economy pilot city, the scale of land supply to energy-intensive industries will decrease rapidly.

For Chinese local government, industrial policy logically coincides with land leasing strategy, both of them is related to regional competition. To promote local economic performance, local governments have incentives to use industrial policy to support specific industries (Aghion et al., 2015). Under the same logic, local governments use land leasing as a tool to attract investments and drive economic development (Deng et al., 2010; Dong et al., 2022; Zhou et al., 2019). A large strand literature has discussed the local governments' motivation of land leasing from a variety of perspectives, such as financial incentives (e.g. Tian & Ma, 2009; Wu et al., 2019), promotional incentives (e.g. Cai, 2017; Lichtenberg & Ding, 2009; Wang et al., 2020), and economic development incentives (e.g. Tao et al., 2010; Zhou et al., 2021). Nevertheless, almost all land leasing behaviors can be attributed to competitive-incentive strategy. A voluminous amount of literature has shed lights on the land leasing behaviors of local governments in regional competition. Local governments are encouraged to implement the strategy of “attracting investment through low-cost land” (He & Huang, 2014; Huang & Du, 2017a; Tao et al., 2010), distort land supply between industrial and commercial land (Henderson et al., 2022; Wang & Hui, 2017), prefer to lease out more land to industries easy to attract investments (Tian, 2015; Zhou et al., 2021), intervene in transaction method to regulate land use (Gao, 2019).

Besides, another strand of literature documents that regional competition shapes strategy interaction in local governments' land leasing. Local governments adjust their behaviors according to those of other regions, especially neighboring ones. Local governments always use cheap land to compete with each other to attract investors (He & Huang, 2014; Tao et al., 2010). Neighboring regions often participate in the low-price competition in industrial land supply (He & Huang, 2014; Huang & Du, 2017b). More than a low-price competition between local governments, Yang et al. (2014) also found a bottom-line race to attract investment at the expense of investment quality for large-scale industrial land leasing.

As noted above, previous research has presented much discussion on the causes and consequences of land leasing in China. While most studies in this specific context have focused on land type

structure, land price, scale of leased land, and transaction method, few studies have been done on the spatial characteristics of land leasing. Accordingly, few studies have discussed whether local governments manipulate the spatial distribution of industries with different policy favoritism in their jurisdictions. It is unclear whether and how the two important tools, industrial policy and land leasing, exhibit self-consistency in governments' behaviors in terms of land spatial arrangement or industrial location. As a result, therefore, there are limitations on whether and how the government interferes with the location of land supply, and whether and how regional completion shapes location of land leasing. In conclusion, the spatial strategy of local governments' land leasing is not clear.

The spatial arrangement of land leasing can well indicate the incentives of local governments' behaviors in regional competition. In China, there is a significant phenomenon of “administrative economy” and “border effects” (Yang et al., 2022). Since the reform and open-up, Chinese local governments have deeply participated in regional competition, and consequently are forced to implement market segmentation with the “beggar-thy-neighbor” strategy. To reduce positive spatial spillovers to other regions, local governments may reduce investment in areas near the administrative border (Ma & Zhao, 2022). The spatial characteristics of industrial land leasing are directly related to the industrial collaboration system across regions and spatial spillovers to other regions. Therefore, it is necessary to observe government's behaviors from a spatial perspective.

Thus, the purpose of this paper is to examine the impact of industrial policy on spatial allocation of land leasing in China, and to reveal the spatial strategy of local governments' land leasing. Specifically, we aim to answer the following questions: whether industrial policy affects the location of land leasing across industries? What are the differences in spatial characteristics between the policy-favored and non-policy-favored industries? How competition between local governments shapes strategy interaction in spatial arrangement of land leasing? To do so, we motivate our empirical specification with a theoretical framework in which regional competition forces local governments to implement heterogeneous spatial arrangement of leased land across the industries with different policy preferences. Taking Jiangsu Province as a case study and using data on firm-specific land leasing, we found that local governments are encouraged to implement the strategies of maximizing economic performance and beggar thy neighbor. Accordingly, prefectural governments tend to place policy-favored industries in municipal district or location closer to prefectural city center, which will help to increase investment and to reduce the spatial spillovers to other regions that compete with local area.

This paper contributes to the existing literature by providing an original political economy story about China's land leasing. To the best of our knowledge, our study is the first one explores the micro-spatial allocation of land leasing influenced by industrial policy, and also the first to show how local governments play a key role in shaping spatial organization of land leasing within their jurisdictions. This study expands the understanding of features and incentives of local government's land supply from the spatial dimension. Our paper thus enriches the literature on local governments' behavior in land leasing or supply, as well as the literature on land use policies and regulations from the perspective of political process determining the land use plan, for which most current research is set in the context of democratic countries (Gyourko & Raven, 2015).

Our study also contributes to the literature on the competition and strategic interaction among local governments. This study is the first one sheds light on the strategy interaction in spatial arrangement of land leasing among local government driven by regional competition. We provide new insights of the strategic interaction in local governments' land supply from a spatial perspective. It also can be a supplement to the studies on competition-incentive driven strategic interaction in local governments' tax policy in Western democratic countries (e.g. Mast, 2020). Our study thus enriches the literature on strategic interaction in local governments' behaviors. Evidences from multiple perspectives help to investigate and identify the universal sources of strategic interaction among local governments, and to induce worldwide policy implications.

Moreover, this study contributes to a large strand of literature on market segmentation and border effects. Most empirical studies in this specific context have focus on trade or production factor follows (e.g. Anderson & van Wincoop, 2003), price differences between regions (e.g. Parsley & Wei, 1996), and spatial distribution of economic activities (e.g. Yang et al., 2022). Our study extends this line of literature by linking local governments' spatial arrangement of land leasing to the inter-regional industrial correlation, which is arguably one of the tools used by local governments to compete each other for relative economic performance.

The rest of the paper is organized as follows. In Section 2 we present theoretical analysis from which we generate our empirical prediction. Section 3 presents the empirical strategy and describes the data. The results and mechanism analyses are separately presented in 4 Empirical results, 5 Mechanism analysis, respectively. In Section 6, we discuss the results. Section 7 concludes.

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Section snippets

Chinese local government behavior in regional competition

The Chinese local governments' behavior is deeply influenced by regional competition. Since China's reform and opening up, the inter-governmental relationship between central and local governments has been featured by political centralization and economic decentralization (He et al., 2016; Xu, 2011). Competition among local governments has become a regular phenomenon. The mainstream literature represented by Zhou (2004), Zhou (2007), Li and Zhou (2005), and Li et al. (2019) proposed a theory of ...

Model specification

Eqs. (1), (2) are the models for empirical test. $Indis_{p,i,c,t}$ and $municipal_{p,i,c,t}$ are the two types of dependent variables indicating spatial location of land parcel p in period t , respectively. $policy_{p,i,c,t}$ is a dummy variable whose value is 1 if c is a policy-favored industry of prefecture i located in land

parcel p in year t , and 0, otherwise. D is a series of moderating variables used to explore the influencing channels of industrial policy on the spatial characteristics of land leasing. ...

Baseline results

To explore whether the industrial policy of local governments have an impact on the spatial arrangement of land leasing, this study conducted regressions using Model 1 and Model 2, and the results are shown in Table 2. Taking proximity to the prefectural city center as the dependent variable and controlling for variables such as the historical industrial location of land leasing, the spatial co-agglomeration of related industries, pollution characteristics, and so on (Column 3), the estimated ...

Promoting economic performance

We added the interaction terms of industrial policy and industry-specific investment contribution to economic performance to test whether the local government's spatial arrangement of land leasing, which favors certain industries, is driven by the intention to achieve better economic performance (Table 8). As shown in Columns 1 and 2, in the model whose dependent variable is the leased land's proximity to the prefectural city center, the estimated coefficient of the interaction term of the ...

Discussion

Using Jiangsu Province as a case study, this study demonstrates that the spatial characteristic of land leasing is affected by industrial policy. Competition between localities for relative economic performance forces local governments to implement industrial policy to regulate resources allocation. Along with the industrial policy, local governments intervene in land resource from multiple aspects. Besides the impact of industrial policy on land area and price (e.g. Yang & Luo, 2018; Zhang et ...

Conclusions

This paper provides evidences on how the Chinese local government makes spatial arrangement of land leasing. The results show that the spatial characteristic of land leasing is affected by industrial policy. Specifically, local government tends to lay out policy-favored industries near to the center of a prefectural city or in municipal district. The influence of industrial policy on the location of land leasing is related to the regional competition. Driven by attracting more industrial ...

CRedit authorship contribution statement

Mao Qiliang: Conceptualization, Methodology, Software, Formal analysis, Writing – original draft.
Liu Linlu: Data curation, Writing – original draft. **Ji Wenyan:** Project administration, Writing – review & editing. ...

Declaration of competing interest

No conflict of interest exists in the submission of this manuscript, and manuscript is approved by all authors for publication. ...

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