Land Acquisition and Corporate Investment in India– Impact of the Historical Land Ceiling Legislations

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American Economic Association Annual Meeting
Philadelphia, January 2018

Abstract

Firms in India often find it difficult to purchase land, resulting in projects being delayed, relocated, or cancelled.

Analysing firm- and state-level data, we explore the impact of post-independence land reforms – especially those related to land ceilings - on corporate investment in the country.

Our conjecture is that India's land ceiling legislations ultimately increased the transaction costs of buying land and the price premium firms pay when acquiring land. In reaction to higher land costs, firms find it optimal to invest less in land and capital.

The results from our empirical analysis are supportive of the conjecture that India's land ceilings lead to less corporate investment

Motivation and research question

As India strives to grow through liberalisation and industrialisation, firms find it difficult to purchase land; this often leads to tussles between farmers, industrialists and government.

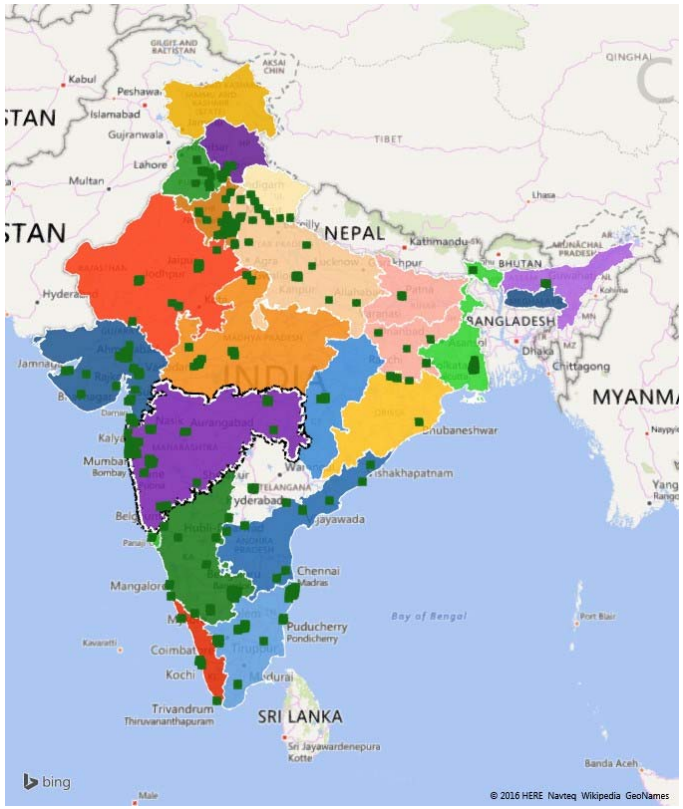
While the reasons behind this difficulty are unclear, anecdotal evidence suggests that the consequences are both visible and sizeable: Projects are delayed, relocated, or cancelled.

Here we shed light on some of the causes and consequences of firms' difficulty to purchase land. Specifically, we ask whether the historical land ceiling legislations make it more difficult to purchase land, and whether these difficulties have an effect on corporate investment

Land ceiling legislations

- While India’s land reform programme had various components, our analysis, particularly focusses on the role of land ceiling legislations defining the ceiling size of land holdings.
- By 1961-62, ceiling legislations were passed in all states. The size of the ceiling varied from state to state, and was different for food and cash crops. The unit of application of ceiling also differed across states: in some states ceilings were based on 'land holder', whereas in others ceilings were based on 'family'.
- In order to bring about uniformity and comparability, a new policy was introduced in 1971 based on the fertility of the land. Different land ceilings were imposed on three categories of land: land cultivated with two crops, land cultivated with one crop, and dry land. The size of ceilings was the lowest for the land cultivated with two crops.

Land reform variation across Indian states



State	Cumulative land legislations	State_Rank
West Bengal	15	9
Kerala	9	8
Karnataka	8	7
Tamil Nadu	7	6
Uttar Pradesh, Haryana	5	5
Gujarat	4	4
Madhya Pradesh	3	3
Maharashtra	2	2
Rajasthan, Punjab	1	1

The Green dots in Fig 1 represent the location of a firm in a state. Clearly, there
is a lot of clustering in the western states of Gujarat, Maharashtra, and also in and around Delhi/Haryana/Punjab.

We want to examine if this is linked to the historical land reform legislations enacted between 1960-85 across the states

Hypotheses

- Transaction costs increased after India's land reforms because, by imposing land ceilings, the reforms redistributed land from a few large landowners to many small owners. A firm looking to acquire a plot of a given size has to negotiate and buy land from a larger number of owners after the reform than before. Each of these acquisitions is costly, and the larger their number, the larger the transaction costs.
- Much for the same reason, the price premium that firms pay to acquire land is higher after these land ceiling reforms, as landowners may refuse to sell or demand a higher than the market premium, knowing that it is costly for the firm to engage in multiple new transactions with various land owners.
- Taken together we hypothesize:
- ***H1: The higher (lower) the size of ceiling (in hectares) legislation in a state, higher (lower) is the level of corporate investment, keeping the size and fertility of land unchanged.***

Results

- State-level data for the period 1960-1985 have been compiled from various sources, but primarily from the World Bank. We collect the historical data on land ceiling size from the Department of Land Resources, GOI
- Table 1 shows the effects of ceiling size on fixed as well as total capital-output ratios, after controlling for various factors that may also influence investment.
- The coefficient estimates on the ceiling size on the most fertile land are positive in both column 1 and column 2, which suggest that for each unit increase in ceiling size, fixed (column 1) and total (column 2) capital-output ratios increase significantly.
- The corresponding effects are not as significant when we consider the average ceiling size (columns 3 and 4) where the average land ceiling is the average of the ceilings for the different types of land weighted by the share of each land type in a given state
- We get similar results when we use the firm-level data for 1996-2012

Table 1. Relationship between land ceilings and investment in fixed and total capital-output ratios

	(1)	(2)	(3)	(4)
Variables	Fixed capital-output ratio	Total capital-output ratio	Fixed capital-output ratio	Total capital-output ratio
Ceiling size on the most fertile land	0.0660*** (0.0186)	0.0596*** (0.0175)		
Average ceiling size			0.00933* (0.00521)	0.00147 (0.00510)
Control Variables	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Observations	368	368	368	368
R-squared	0.206	0.229	0.189	0.211

*Notes: (i) The following are controlled for: Net domestic product, population density, share of population of scheduled castes and tribes, share of urban population, literacy rate, soil fertility, natural logarithm of man days lost due to strikes, and a constant. (ii) Robust standard errors in parentheses. (iii) *** p<0.01; ** p<0.05; * p<0.1.*
(iv) These results are robust to additional controls (e.g., city dummies or labour militancy) and dropping West Bengal and Kerala, two states where land reforms were most successfully implemented

Underlying mechanism

- Ceteris paribus, states with low fertile-land ceilings tend to have lower investment in capital than those with high fertile-land ceilings
- We find direct evidence supporting the mechanism behind our key result. Specifically, we find that the size of household land holdings is smaller in states with more restrictive ceilings.
- Figure 1 illustrates this point. Smaller land plots suggest more land fragmentation, that is, a larger number of owners per unit of land, and thus higher transaction costs for acquiring a given acreage of land.
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Figure 1. Relationship between ceiling size and average household land holdings

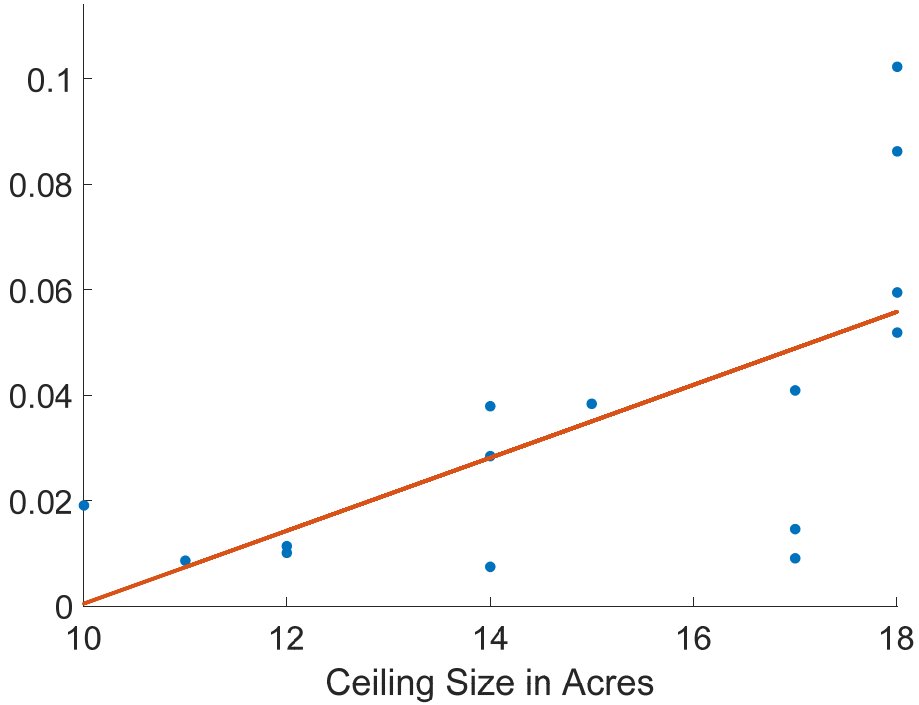

Table 2. Heterogeneous effects of ceiling size on lower/higher land-intensive firms

VARIABLES	(1) Fixed capital	(2) Total capital	(3) Fixed capital	(4) Total capital
Most fertile ceiling size	-0.0214***	0.00105		
	(0.00635)	(0.0187)		
High land intensity	-0.308***	-0.560	-0.208**	-0.260
	(0.0982)	(0.355)	(0.0821)	(0.221)
High land intensity*Most fertile ceiling	0.0182***	0.0199		
	(0.00660)	(0.0206)		
Average ceilings			-0.00393*	0.00802*
			(0.00234)	(0.00423)
High land intensity*Average ceiling			0.00556**	0.00141
			(0.00242)	(0.00499)
Other controls	Yes	Yes	Yes	Yes
Industry, State, Year dummies	Yes	Yes	Yes	Yes
Observations	4,835	1,116	4,835	1,116
R-squared	0.105	0.259	0.110	0.271

Disincentives created by transaction costs and price premium extends to capital investments especially when land and capital are complements, such as in the case of the automobile sector, or, when capital cannot easily substitute land. The effect is particularly pronounced for fixed capital as indicated by the coefficient estimate of the interaction term

Conclusion

- To conclude, our results highlight an unintended consequence of land ceilings on corporate investment: more stringent land ceiling lowers capital-output ratio
- Ultimately, lower investment leads to lower economic growth.
- While one cannot reverse the adverse effects of historical land reform, in a land-scarce economy with growing population to feed, options for future policy development require closer scrutiny of the 2015 amendment of the Land Acquisition Act
- Our results indicate the shortcoming of the ‘national’ consent clause – one size does not fit all. Clearly the diversity across the states wrt the variation in the ceiling size needs to be taken into account.