14.771: Land Markets

Ben Olken

What is effort?

- The moral hazard model had e as 'unobservable effort.'

- How do you interpret this in light of the results?

- In the paper they try to say: how much of the increase in output is driven by observables (land, non-owner labor, and capital)?Answer: about half.

- What else is going on? Crop choice (increased risk-taking). Explains the rest.

- So little 'unobservable effort.'Does that change the conclusions?

Distinguishing between risk aversion and limited liability

- How might you test between risk-aversion and limited liability models?
- Laffont and Matoussi (1995), which is the original limited liability - sharecropping paper – tries to distinguish these
- Idea: extent of limited liability is determined by "working capital" K, which is basically how much you can pay up-front
- In the model, if instead of saying $I >= 0$, you say $I > K$, then the higher K the more the contract looks like a rental contract rather than a sharecropping contract
- By contrast, in a risk-aversion model sharecropping is determined by total *wealth*, not working capital
- They find that low working capital predicts sharecropping much more than wealth
- What might a behavioral economist say?

Land reform

- Recall another difference between risk aversion and limited liability: long-run implications land reform.
    - Prediction under limited liability? Big long-run effect since it relaxes liability constraint
    - Prediction under risk aversion? Sharecropping may emerge endogenously as a way of providing insurance. Maybe a little less since richer, but not entirely.

Land reform

- There should be a great paper to write on land reform, since there were often sharp discontinuities in the amount of land people could retain
  - Outcome variable would be productivity of the land at the original pre-reform boundaries
  - RD in whether land was redistributed or not
  - Some examples where people have tried this: Kitamura (2016): study of Japan; Tuhkuri at MIT tried to study this in Finland.
- Some recent papers look at related questions:
  - Galán (2018) study of Colombia: compares accepted vs. rejected applicants to 'sharecroppers and tenants program' which provided land to the poor, allocated according to poverty levels with a threshold. Studies the effects on recipients and their children. Finds receiving land led them to participate more in modern economy(migrate, work in modern sector, etc) , i.e. income shock.
  - Montero (2018) study of El Salvador: RD on size: haciendas with 500+ hectares were reorgnized into worker cooperatives. Move from cash crops to staples, increase worker earnings. But doesn't speak to moral hazard question precisely.

Titling

- Discussion so far has all been about contract type – own vs. rent – and implications for moral hazard

- But conditional on owning, there are different degrees of security of ownership

- In particular, many people in developing countries do not have well protected, formal title to their land

- This can have many implications, including
    1. Reduced investment: weak property right means that someone who invests may not get the fruit of their investment or effort (Iyer and Do; Besley; Hornbeck; Field; Di tella et al.; Leight)
    2. Effort to prevent expropriation: people do costly things to defend their property (Field; Goldstein-Udry)
    3. Misallocation: factors cannot easily be allocated to best user (e.g. through renting, or working within household)
    4. Inability to sell off property in supporting other transaction: e.g. as collateral for loans (De Soto Argument).

- Much attention in policy space to to giving better property rights

Aside: institutions matter

- Aside: property rights may be more about institutions than just formal title
- Suppose you were buying a house and the seller offered you a "quitclaim" deed

Quitclaim

Definition

The owner/grantor terminates ("quits") any right and claim to the property, thereby allowing the right or claim to transfer to the recipient/grantee. Unlike most other property deeds, a quitclaim deed contains no title covenant and thus offers the grantee no warranty as to the status of the property title; the grantee is entitled only to whatever interest the grantor actually possesses at the time the transfer occurs. This means that the grantor does not guarantee that he or she actually owns any interest in the property at the time of the transfer, or if he or she does own an interest, that the title is free and clear. It is, therefore, possible for a grantee to receive no actual interest, and − because a quit claim deed offers no warranty − have no legal recourse to recover any losses. (from Wikipedia)

Aside: institutions matter

- Would you buy that house?
- Yet virtually all deed in Massachusetts (including my house) are sold via quitclaim deeds!
- Why? Have very good but imperfect land records so you can check for alternate claims, but not so perfect that you can get a guarantee
- Can buy "title insurance" to take care of remaining risks
- So the level of title assurance you need may depend on institutional environment

1. Investment increases with good property rights
Goldstein et al (2018)

- Examines a land demarcation program in Benin
- NB: not land titling; this is instead about clarifying and agreeing on boundaries, placing cornerstones, etc.
- Expectation that this will form the basis of future land titling, but not yet
- Does this matter?

Design vs. Alternative Design

Actual Design

Source: Information collected by authors.

Alternative Design
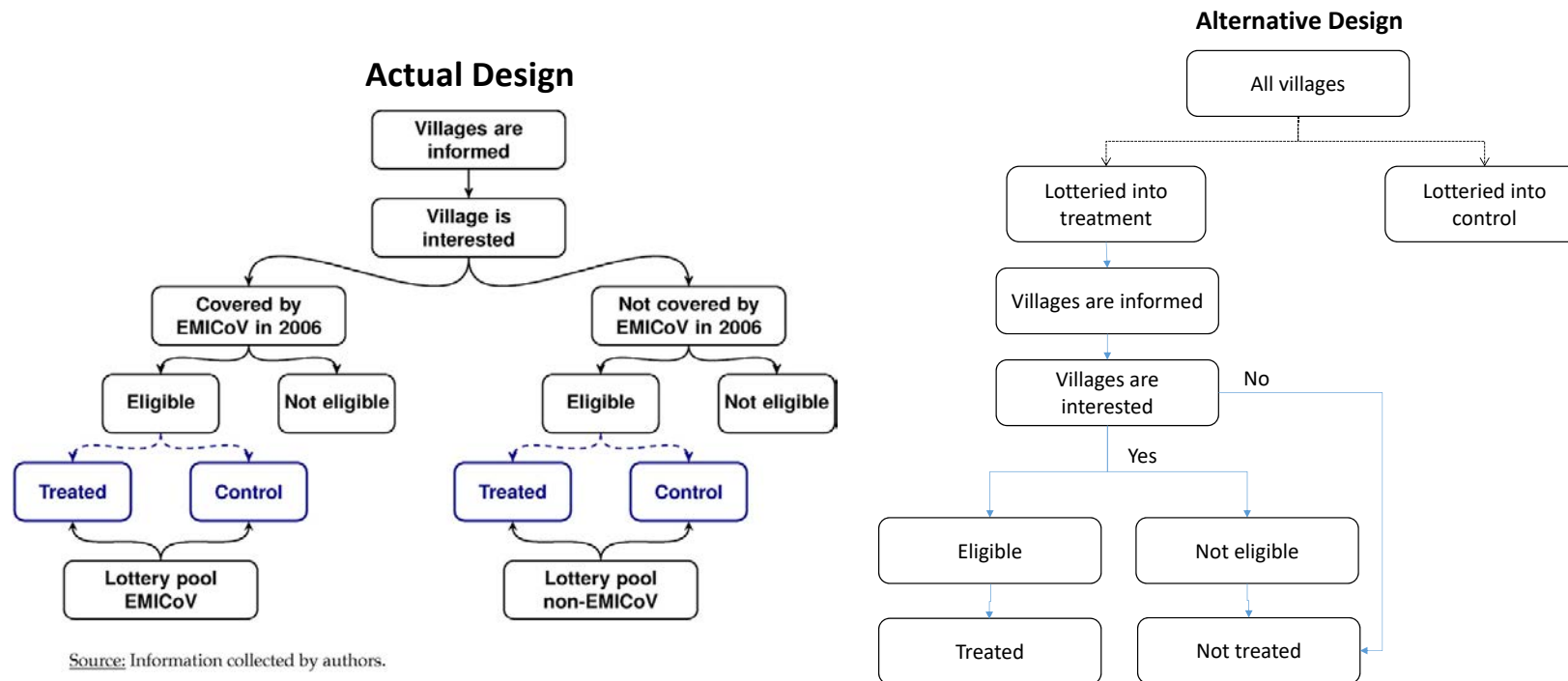
- Why condition on village interested and eligible before randomizing?
- When might you not want to do this?

Results

Table 2
Average effects of land demarcation activities.

	Obs.	Control		ITT	
		Mean	Std. dev.	Coeff.	s.e.
Panel A: Tenure security					
Parcel has clear borders[c]	6094	0.061		0.270***	(0.02)
Panel B: Cultivation and investment					
Started fallowing parcel[a][c]	6094	0.010		0.004	(0.00)
Investment in tree planting[a][c]	6094	0.040		0.017**	(0.01)
Perennial crops[c]	6094	0.103		0.024**	(0.01)
Panel C: Agricultural production[b]					
Parcel size (ha)	6094	2.908	8.903	0.047	(0.29)
Inputs					
-HH members labor supply (person-days/ha)	3994	108.170	168.578	4.532	(6.94)
-non-HH members labor supply (person-days/ha)	3994	94.684	182.618	−2.814	(6.98)
-fertilizer/high-yield seeds[c]	3994	0.272		0.018	(0.02)
Output					
-total value of output (Log USD)	3677	6.135	1.358	−0.044	(0.06)
-yield (Log USD/ha)	3677	6.379	1.064	0.022	(0.05)

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2. Doing inefficient stuff to protect property rights
Goldstein-Udry: Profits of power

- Setting: Ghana. Weak firm property right on plots.

- Competing claims on the land: the lineage (abusua) and the village. It is never clear whether you really have the right to farm the plot or not.

- Therefore, when someone leaves their land fallow, there is the risk that the land would be taken over from them: this discourages fallowing.

- Fallowing is the main way that farmers keep their land productive: this leads to much lower output.

- Result: People with more power fallow longer and have higher profits

Results

TABLE 7
FALLOW DURATION AND PLOT ORIGIN
Dependent Variable: Fallow Duration

	OLS: ALL PLOTS			
	(1)	(2)	(3)	(4)
Gender: 1=woman	−.35	−.36	−.28	−.48
	(.20)	(.20)	(.22)	(.24)
1 if officeholder	1.73		.68	
	(.49)		(.59)	
1 if holds inherited office		2.28		1.49
		(.93)		(.65)
1 if noninherited office		1.29		−.52
		(.53)		(.95)
Plot in same *abusua* as cultivator			.25	.36
			(.21)	(.27)
Cultivator holds office × Plot in same *abusua* as cultivator			3.24	
			(.89)	
Cultivator holds inherited office × Plot in same *abusua* as cultivator				1.63
				(1.57)
Cultivator holds noninherited office × Plot in same *abusua* as cultivator				2.92
				(1.01)
Observations	402	402	402	402
Fixed effects	Household and spatial fixed effects (250 meters)			

Second example: Field, 2007

- Setting: Land titling program in Peru (inspired by De Soto)
- in 1996, new agency embarks in the rapid issuance of property titles
- to get a title, residents just needed to establish residence
- By December 2001, 1.2 million of people have a title
- Data: survey of 2,75 urban households conducted in March 2000, including 355 which can be linked to LSMS
- Exploit whether or not the neighborhood was covered by titling yet (they will all be eventually)

TABLE III
PERCEIVED TENURE SECURITY, RAW MEAN DIFFERENCE IN DIFFERENCES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Have property title		Improvement in tenure security with last title?		Do you consider dwelling currently at risk of eviction/invasion?		Do you consider dwelling currently very secure from eviction/invasion?	
	Pre-program squatter ($N = 593$)	Pre-program titled ($N = 1{,}959$)	Pre-program squatter ($N = 192$)	Pre-program titled ($N = 1{,}529$)	Pre-program squatter ($N = 593$)	Pre-program titled ($N = 1{,}959$)	Pre-program squatter ($N = 593$)	Pre-program titled ($N = 1{,}959$)
No titling program	0.003 (0.017)	1.000 (0.000)	N/A	0.967 (0.006)	0.437 (0.034)	0.199 (0.016)	0.131 (0.022)	0.320 (0.018)
Titling program	0.718 (0.019)	1.000 (0.000)	0.979 (0.010)	0.970 (0.008)	0.162 (0.029)	0.091 (0.014)	0.372 (0.048)	0.383 (0.029)
Difference	−0.715 (0.025)**	0.000 (0.000)		−0.002 (0.009)	0.276 (0.045)**	0.098 (0.020)**	−0.241 (0.052)**	−0.063 (0.035)
Difference in difference		−0.715 (0.014)**	— —		— —	−0.177 (0.047)**	— —	0.178 (0.055)**

And increases work

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TABLE IV

HOUSEHOLD LABOR SUPPLY

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	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Weekly Hours in Labor Force									Work Location	
	Total Household Hours	Total Household Hours	Total Household Hours	Total Household Hours	Total Household Hours	Hours per Member Aged 5–69	Hours per Member Aged 5–69	Total Household Hours	Total Household Hours	Residence Used for Economic Activity	Household member commutes more than 2 hours
Squatter	−7.65 [4.41]+	−8.05 [4.40]+	−33.35 [17.58]+	−6.79 [4.65]	−7.33 [4.64]	−1.53 [1.11]	−1.64 [1.11]	−4.67 [4.58]	−4.7001 [4.57]	0.02 [0.03]	−0.03 [0.01]*
Squatter*program	13.50 [6.63]*	−7.96 [11.70]	58.55 [25.49]*	12.34 [7.48]	−12.59 [12.44]	3.04 [1.98]	−2.06 [3.35]	13.39 [7.37]+	−10.91 [14.33]	−0.11 [0.05]*	0.04 [0.02]*
Squatter*program periods		10.10 [4.27]*	8.16 [4.17]+		11.78 [4.60]*		2.41 [1.14]*		10.10 [5.11]*		
Squatter*program* tenure			−0.95 [0.53]+								
Squatter*program* working-age members			−28.05 [11.44]*								
(Squatter*program* working age members)^2			3.50 [1.25]**								
Fixed effects:	City	City	City	City	City	City	City	Neighbor-hood	Neighbor-hood	City	City
Full demographic controls?	Yes	Yes	Yes	No	No	No	No	No	No	No	No

3. Misallocation

- In theory, better property rights should lead to efficiency improvements – this is the Coase theorem
- Ravallion and Van de Walle (2006) investigate this in Vietnam
  - Investigate the introduction of private, tradeable land in Vietnam
  - Argue that high productivity farmers slowly ended up with more land after privatization

Ravallion and Van de Walle

- In the pre-period they estimate which X characteristics make land more productive
- Specifically they assume that the efficient allocation of land takes the form

$$(L_1^*, ... L_n^*) = \underset{L_i}{\text{argmax}} \sum_{i=1}^{n} C(L_i, X_i) \text{s.t.} \sum_{i=1}^{n} L_i = L$$

- They then estimate the $C(L_i, X_i)$ function parametrically as follows

$$lnC_i = a + b\ln L_i + X_i c + \epsilon_i$$

where C_i is a household's consumption and X_i are various household and farmer characteristics

- If $0 < b < 1$ then this is concave in land and there is an interior optimal amount of land per household which depends on $X_i c$
- The test is whether actual land allocations increase with predicted $\frac{L_i^*}{L_i}$
- Views? Concerns?

Ravallion and Van de Walle

- Potential issues:
  - Other reasons X_i influences C_i. E.g., political connections.
  - Other things in Vietnam may change besides property rights?
  - Outcome is consumption, not production
  - Also functional form dependent - assumes that X_i that is good for production at low L_i also would be good for production at high L_i. Is this right?
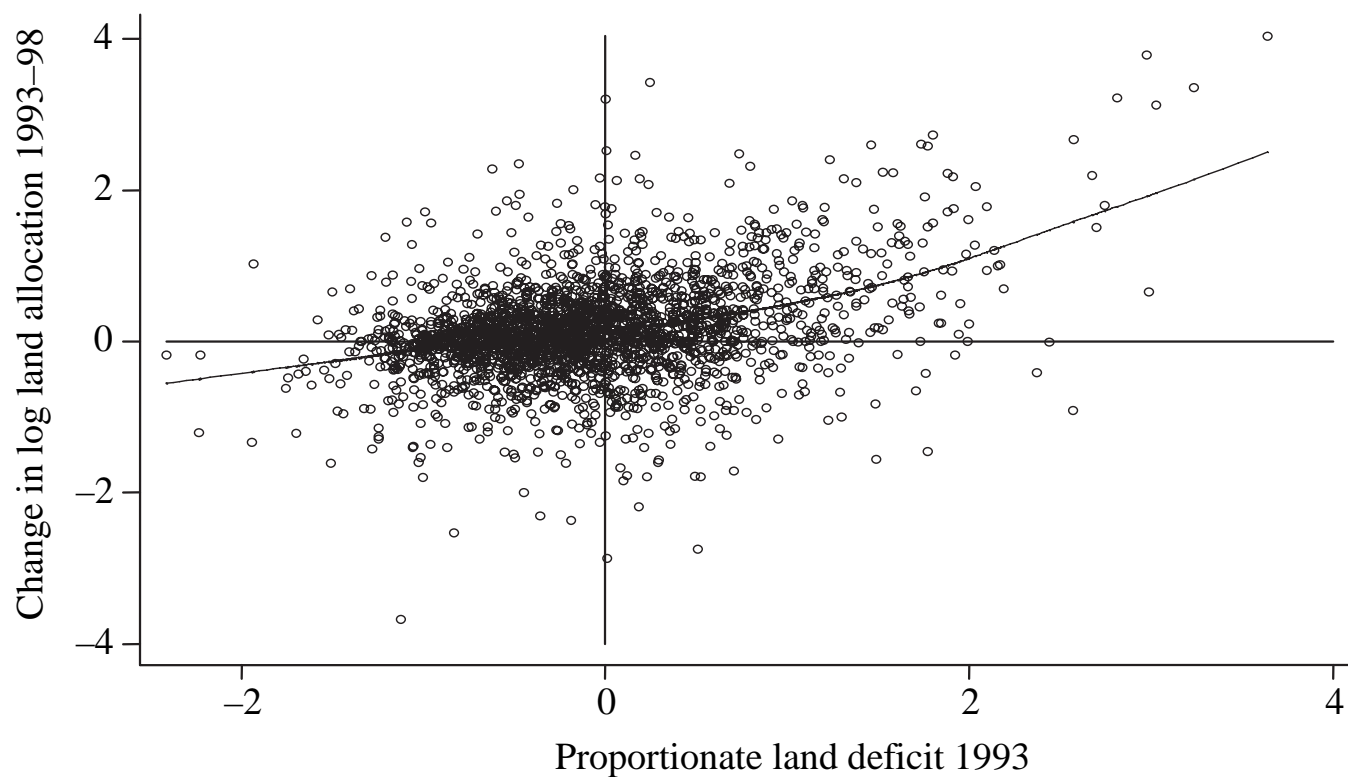
Results

Fig. 1. *Proportionate Land Reallocation 1993–8 Against the Proportionate Land Deficit (Efficient Minus Actual) in 1993*

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Coase theorem

Bleakley and Ferrie 2014: Land Openings on the Georgia Frontier and the Coase Theorem in the Short and Long-Run

- Note, however, that this reallocation process can take a *long* time
- Bleakley and Ferrie study land allocations in US state of Georgia
- Georgia frontier was opened up to settlers in waves, and different waves use different parcel sizes
- Bleakley and Ferrie use RD across the boundaries between waves and ask: how persistent are those initial parcel sizes
- Answer: Coase theorem works, but it takes about 100 years

Results

Panel C: Average Percentage Loss in the Lottery Zone from Misallocation
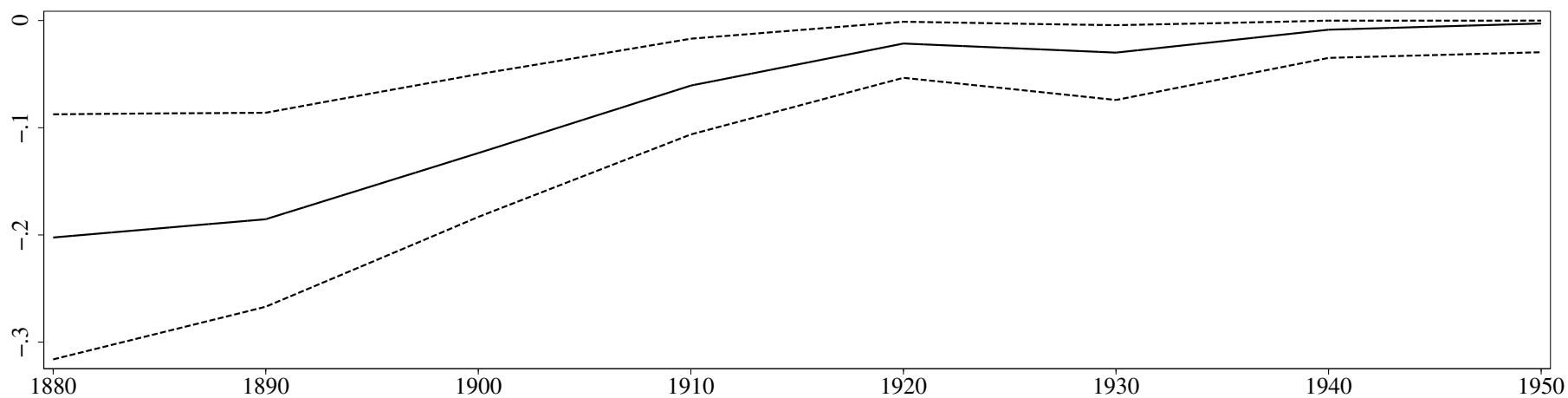
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Alternative approach

- An alternative approach would have been to have some random or quasi-random variation in land rights and see if productivity increases in areas with land rights
- That's less functional form dependent
- Would it work?