

Land reform and human capital accumulation

Household level evidence from West Bengal

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Why land distribution can be of interest

- Unequal asset distribution may have side effects
 - Lack of social & political articulation, participation and voice
 - Nature of public goods provided
 - Social problems, violence, and disruption
 - Shift in distribution can change equilibrium
- The poor may be caught in a trap
 - Credit market imperfections & indivisible investment keep them
 - Not because they are less productive
 - One-time transfer of wealth can help them escape
- Farm-size productivity relationship
 - Small farms generally more productive than large ones
 - Farm size increases via pull rather than push (unlike LAC)
 - Redistribution will increase productivity of land use

Land reform in India - types & magnitude

- Tenancy reform
 - Gives permanent use rights to tenants
 - Limits (but does not abolish) rent to be paid
 - Requires quick registration to forestall preventive evictions
 - Sublease generally not allowed; freezes tenancy market
 - Counteracting effect
- Ceiling legislation
 - Land ownership above certain ceiling prohibited
 - To be acquired by state & redistributed
 - Can effectively prevent accumulation; but subdivision possible
 - Major implementation effort needed
- Implementation -> state responsibility
 - Generally slow & lukewarm (picked up in 1970s, then slowed again)
 - West Bengal (operation Barga) the great exception

Evidence on land reform impact

- National: State level variation
 - Positive impact on poverty but not productivity with no of laws (B&B)
 - Not robust (yields); possibility of equity-efficiency trade-off (Ghatak)
 - Use of implementation: Positive impact on HC & asset accumulation
- Land reform in West Bengal
 - Operation Barga in 1977: 3.5 mn beneficiaries (50% barga; 50% patta)
 - Positive productivity effect 28% neighbor; pipeline (Banerjee et al.)
 - Positive productivity but effect much smaller (Bardan and Mokejee)
- Limitations
 - Some measures/results controversial
 - No individual-level effects or distinction between reform types
 - Short-term effects only – little evidence on poverty traps or cost

Data and approach

- Motivation
 - Government interest to give permanent tenant rights
 - Need to assess potential economic benefits
 - Obtain sample frame to get owner-cum tenants
- Listing in 200 villages
 - About 95,000 households (pattadars & bargadars)
 - Education by all dynasty members (900,000 individuals)
 - Includes 78 head, parents, siblings, off-spring
- Identify long-term effect on human capital formation
 - Did land reform affect educational progress?
 - Incorporate key initial conditions
 - Differentiate by gender, generation, type of land reform benefit

... formally

$$\Delta E_i = \alpha + \beta R_{ik} + \sum \phi X_{ij} + \delta D_r + \varepsilon_{ij}$$

$$\Delta E_i = E_i - E_{i0}$$

Symmetric window around 1978 as cut-off
 Diff. in education between 'old' & young generation
 Case reported: 14 years as cut-off (also 1, 6, 11)
 New generation: Education decisions after reform (< 44 in 2008)
 Old generation: Educated before reform (44 to 74 in 2008)
 Control for age dummies, village fixed effects, initial conditions
 -> Allow for explicit placebo test
 Preferred scenario 34-54 in 78 (64-94 in 2008) with 61,305 obs.

Household characteristics & targeting

- Beneficiaries' initial conditions
 - Backward castes and landless (for patta)
 - Worse living conditions (walls, floors)
 - Less physical (bullocks, bicycle) & human capital assets
 - In line with other literature (good community control)
- Beneficiaries' current conditions
 - Landlessness significantly reduced
 - Still less income per capita than non-beneficiaries
 - Some convergence in head's education
 - But no miracle -> investment?
- Productivity of land use
 - Significantly lower than average, especially for bargadars
 - Consistent with Marshallian inefficiency, investment disincentive

Impact of Land Reform on Human Capital Accumulation

Beneficiary	0.094** (2.34)	-0.351*** (5.56)	0.044 (0.85)	-0.426*** (6.54)
Male	-0.501*** (18.95)	-0.600*** (20.99)	-0.501*** (13.44)	-0.601*** (21.05)
Beneficiary*male		0.667*** (9.09)		0.701*** (9.26)
Second generation			0.762*** (5.13)	1.001*** (4.72)
Second generation*male				-0.338 (1.27)
Landless	-0.403*** (13.62)	-0.401*** (13.55)	-0.402*** (9.01)	-0.400*** (13.51)
SC/ST	-0.220*** (4.81)	-0.222*** (4.84)	-0.218*** (2.93)	-0.220*** (4.80)
Observations	94178	94178	94178	94178
R-squared	0.21	0.21	0.21	0.21

Impact of Land Reform on Human Capital Accumulation				
Beneficiary	0.127** (2.56)	-0.157** (1.99)	0.069 (1.35)	-0.235*** (2.87)
Patta Beneficiary	-0.083 (1.14)	-0.478*** (4.07)	-0.064 (0.85)	-0.463*** (3.81)
Male	-0.501*** (18.94)	-0.600*** (21.00)	-0.501*** (18.95)	-0.602*** (21.05)
Beneficiary*male		0.430*** (4.60)		0.458*** (4.73)
Patta Beneficiary*male		0.569*** (4.14)		0.574*** (4.03)
2 nd generat'n beneficiary			0.803*** (4.80)	0.942*** (3.57)
2 nd generation patta			-0.118 (0.44)	0.079 (0.18)
2 nd generation *male				-0.196 (0.58)
2 nd generation patta*male				-0.281 (0.51)
Landless	-0.401*** (13.53)	-0.399*** (13.46)	-0.400*** (13.49)	-0.398*** (13.42)
SC/ST	-0.219*** (4.79)	-0.219*** (4.78)	-0.218*** (4.75)	-0.217*** (4.74)
Observations	94178	94178	94178	94178
R-squared	0.21	0.21	0.21	0.21

Placebo Test for Reform Effect				
Beneficiary	-0.002 (0.19)	-0.001 (0.03)	-0.001 (0.09)	0.001 (0.04)
Male	-0.010 (1.27)	-0.009 (1.13)	-0.010 (1.27)	-0.010 (1.13)
Landless	-0.002 (0.25)	-0.003 (0.28)	-0.002 (0.25)	-0.003 (0.28)
SC/ST	-0.002 (0.11)	-0.001 (0.10)	-0.001 (0.11)	-0.001 (0.10)
Beneficiary*Male		-0.004 (0.17)		-0.003 (0.10)
Beneficiary*landless		0.003 (0.13)		0.001 (0.04)
Beneficiary*ST/SC		-0.001 (0.06)		-0.002 (0.08)
Patta beneficiary			-0.002 (0.10)	-0.007 (0.14)
Patta beneficiary*Male				-0.003 (0.06)
Patta beneficiary*landless				0.006 (0.14)
Patta beneficiary*SC/ST				0.004 (0.09)
Observations	65991	65991	65991	65991
R-squared	0.01	0.01	0.01	0.01

Conclusion & implications

- Overall nature and size of benefits
 - Modest size and gender-biased in first generation
 - Much larger in 2nd generation; no more gender bias
 - Helps those at the bottom catch up over time, (no difference whether beneficiaries are low caste/landless)
- Variation by type & with initial conditions
 - No difference between patta and barga
 - Less impact for initially landless in 1st generation
 - Disappears in 2nd generation as well
- Is land reform worth doing?
 - Depends on other costs/benefits (productivity), alternatives
 - In a poor agrarian economy yes
 - But how it is done matters as well
 - ... and full ownership may have made it easier and quicker