

Communal Land and Agricultural Productivity
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Specific Mechanism: Communal Land Tenure (CLT)

- ▶ Land rights are uncertain:
 - ▶ Land can be taken - perhaps use it or lose it.
 - ▶ Transfers may be redistributive.
- ▶ Common in Africa
 - ▶ Goldstein and Udry (2008) study incentive implications.
- ▶ This paper studies:
 - ▶ Implications for size and makeup of agricultural work force.
 - ▶ Implications for land distribution.

Mechanisms

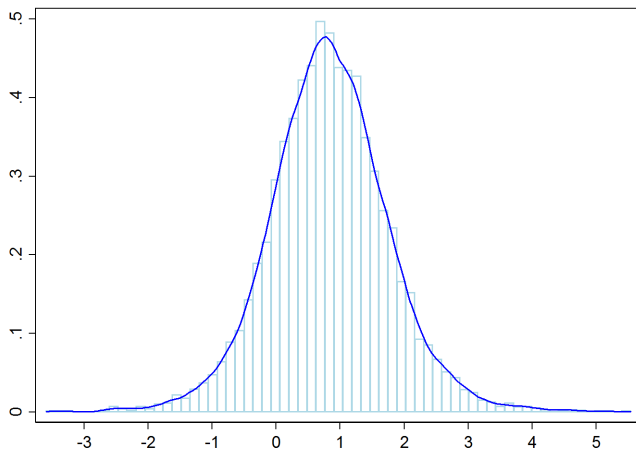
- ▶ CLT draws people into ag:
 - ▶ Get land if you are agricultural.
 - ▶ Don't lose land that you own.
- ▶ CLT distorts land distribution (with no trade):
 - ▶ Costly to rent out.
 - ▶ Land is redistributed.
- ▶ GE effect through changes in p_a .
 - ▶ $p_a \downarrow$ slows movement in to ag – could multiply or stabilize.
 - ▶ $p_a \downarrow$ means high z_a but low l people leave ag.

Building On: Lagakos & Waugh (2013) (LW)

- ▶ Recap:
 - ▶ Types: $\{z_a, z_n\}$.
 - ▶ Production $y_a = A \int z_a^i dG^i$ and $y_n = A \int z_n^i dG^i$
 - ▶ Food problem: $U = \log(c_a^i - \bar{a}) + \eta \log(c_n^i)$
- ▶ If comparative and absolute advantage are aligned, as $A \downarrow$:
 - ▶ The average productivity of agricultural workers decreases.
 - ▶ The average productivity of non-agricultural workers increases.
- ▶ Interesting possibilities for multiplier effects.

Building on: Restuccia & Santaaulalia-Llopis (2015) (RS)

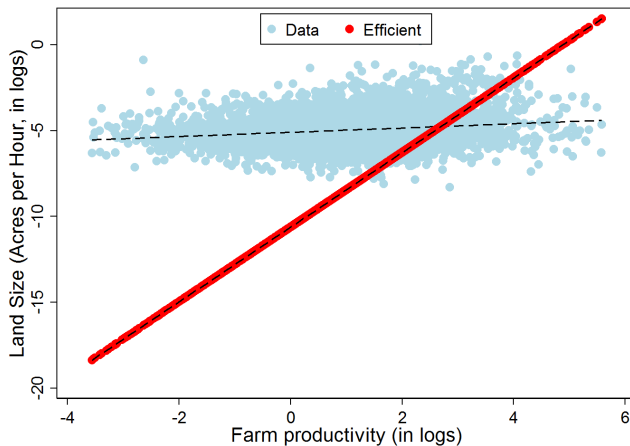
Figure 3: Density of Farm Productivity s_i (in logs), Malawi ISA 2010/11



$$y_i = s_i \zeta_i k_i^{0.36} (q_i l_i)^{0.18}$$

Building on: Restuccia and Santaaulalia-Llopis (RS)

(a) Land Size vs. Farm Productivity

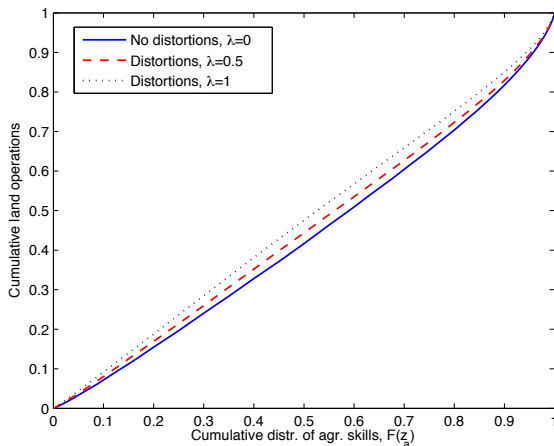


Massive agricultural output loss.

Findings: Distorting the US

- ▶ Creates misallocation of land.
- ▶ Small effect on Ag productivity: low dispersion in Ag talent.
- ▶ Small GDP effect: simply not enough people in agriculture.

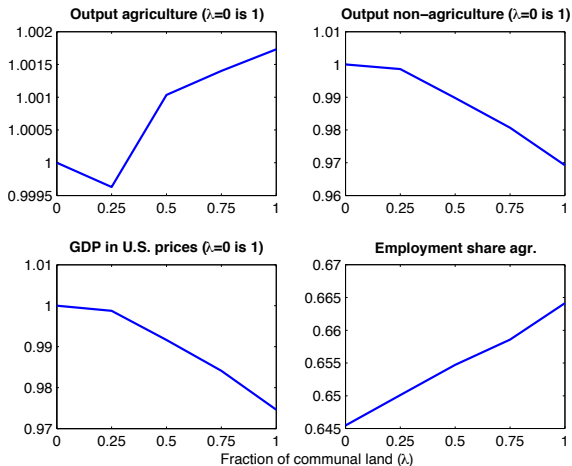
Findings: Distorting Ethiopia ($L^E = \frac{1}{3}L^{US}$, $A^E = \frac{1}{19}A^{US}$)



(B) Cumulative land operations

RS effect even without CLT \Rightarrow small effect on land misallocation.

Findings: Distorting Ethiopia



Price effects imply minimal movement into agriculture.

Why Small Effects: Land Ownership

- ▶ Production function in Ag:

$$y_a = Az_a^{1-\gamma}l^\gamma$$

- ▶ No labor - all ag workers own land.
- ▶ More ag workers \Rightarrow lower correlation l, z_a
- ▶ Implies RS effect from LW.
- ▶ Need not if most talented own and least talented work.

Why Small Effects: DRS

- ▶ How is low l, z_a correlation consistent with free land markets?
 - ▶ Strong decreasing returns to scale: $\gamma = \frac{1}{3}$.
 - ▶ Strong incentives to trade, even with lower talent people.
 - ▶ Splitting land among two equally talented farmers increases output by 1.6.
- ▶ DRS implies drawing people in to agriculture *increases* output.
 - ▶ No multiplier effect from LW mechanism.
- ▶ Contrast with Foster and Rosenzweig (2011) - Local IRS in Indian agriculture due to mechanisation.
- ▶ Calibrated from US land share - but does this imply DRS?

Why Small Effects: Frechet Calibration

- ▶ Frechet parameters taken from LW:
 - ▶ $\theta_a = 5.3$ matches variance in income (wages or earnings from self employment) for US ag workers.
- ▶ Implies 86% of distribution lies between 0.75 and 1.2
 - ▶ Willing to trade from high type to low type.
- ▶ Also implies misallocation of land not that important.
 - ▶ Contrast with RS.
- ▶ Are wage earners in the US the correct target for z_a ?

Why Small Effects: Closed Economy

- ▶ Price effects are quite large in this economy.
- ▶ Ethiopia is a net importer of agricultural goods.
 - ▶ Average ag price is 2 X international price
 - ▶ Consistent with food problem *and* open economy (Tombe)
- ▶ Possible to collect direct evidence.
 - ▶ Impact of world prices on local prices
 - ▶ Impact of local whether on local prices.
- ▶ (Price effects could reflect downward sloping demand for non-ag workers in short-run.)

Could we see large effects?

- ▶ LW would not imply RS if:
 - ▶ Ownership and labor are separated (UK manor farms).
 - ▶ Greater dispersion of agricultural productivity.
- ▶ Possible multiplier effects from LW if:
 - ▶ DRS is less strong.
 - ▶ Greater dispersion in agricultural productivity
- ▶ Further effects:
 - ▶ Small farms imply lower A_a : no tractors, less money for R&D?
 - ▶ Many people on farms means lower A_n ?