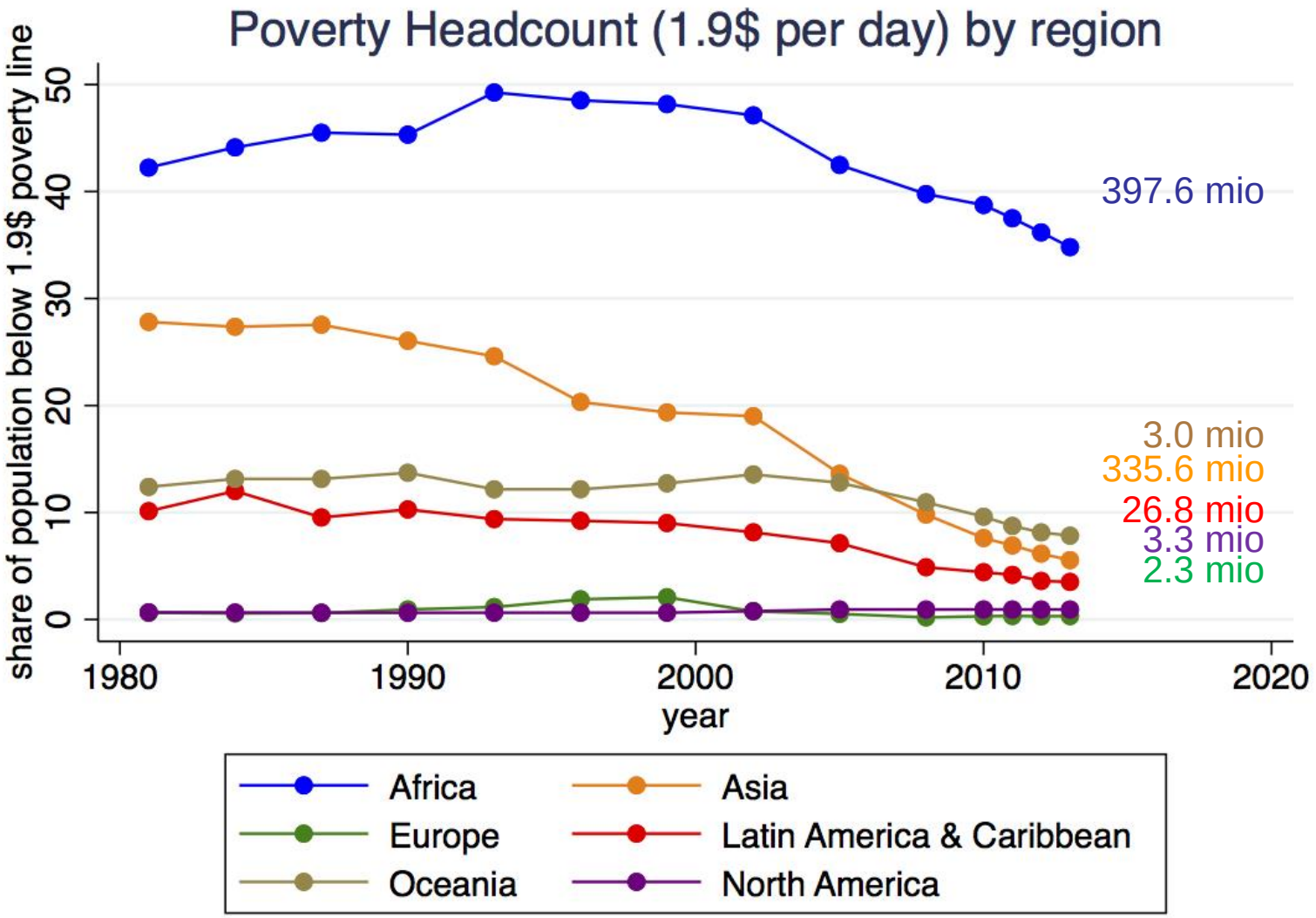
Why do people stay poor?

Oriana Bandiera

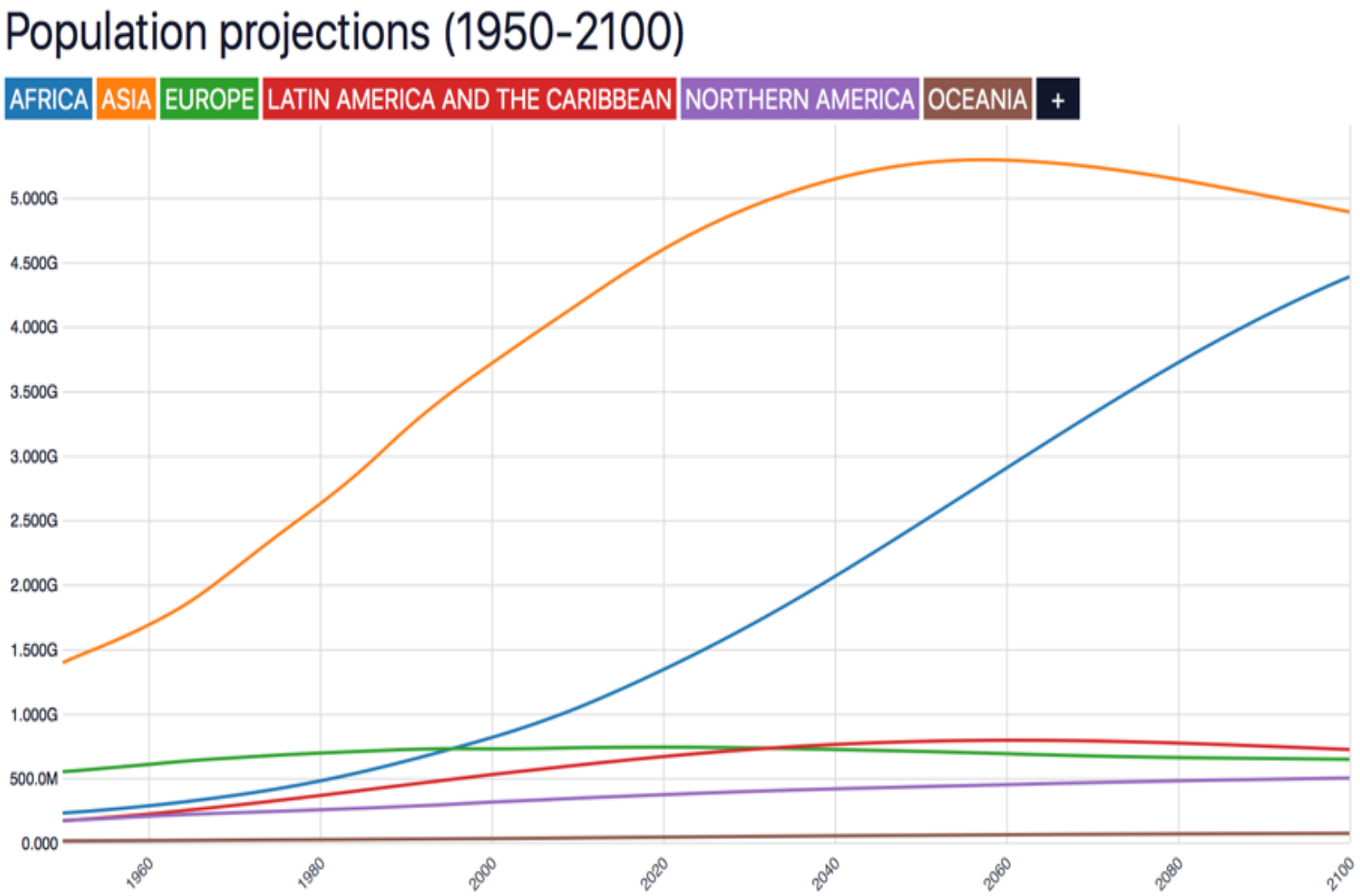
with Clare Balboni, Robin Burgess, Maitreesh Ghatak and Anton Heil

LSE

Poverty has been decreasing but is still high in SSA and SA



These are the regions where population growth will be fastest



Eradicate extreme poverty by 2030 (SDG1)?

- Need to address the “stubborn poverty” problem: a lot of poor people are left behind even as countries grow.
- We need to understand why people stay poor in order to design policies that lift the poorest out of poverty

Poverty: consumption below poverty line

Consumption

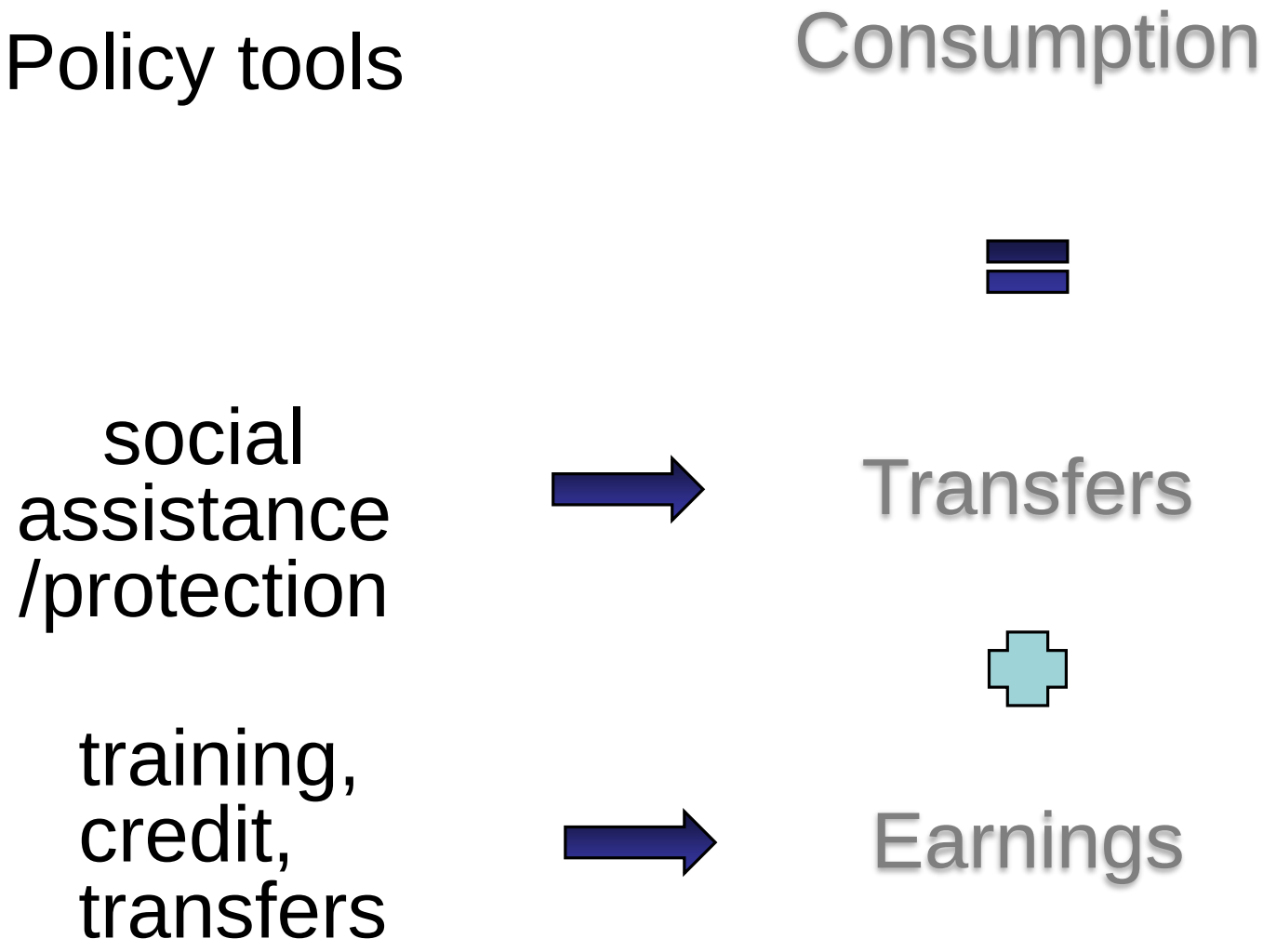
=

Transfers

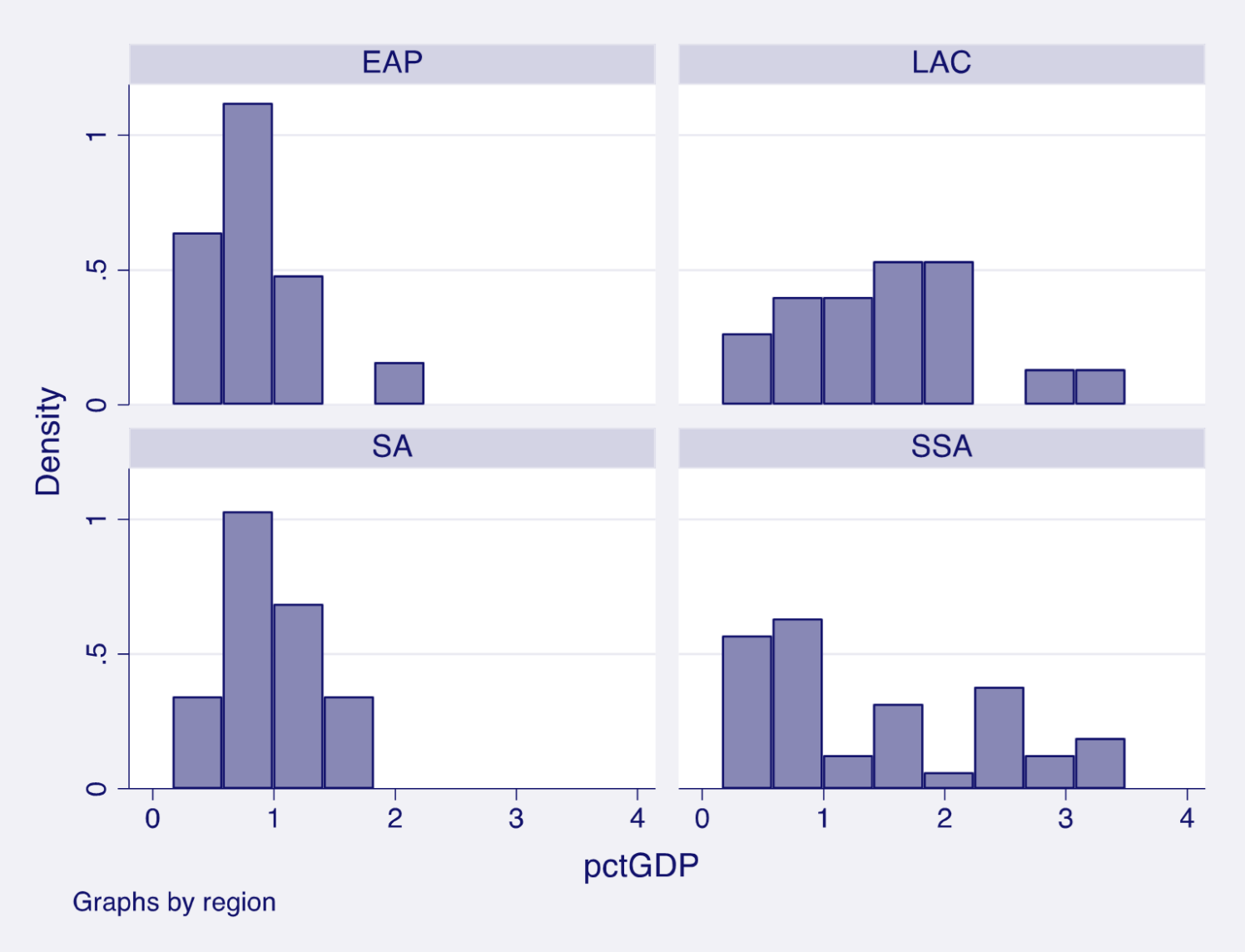
+

Earnings

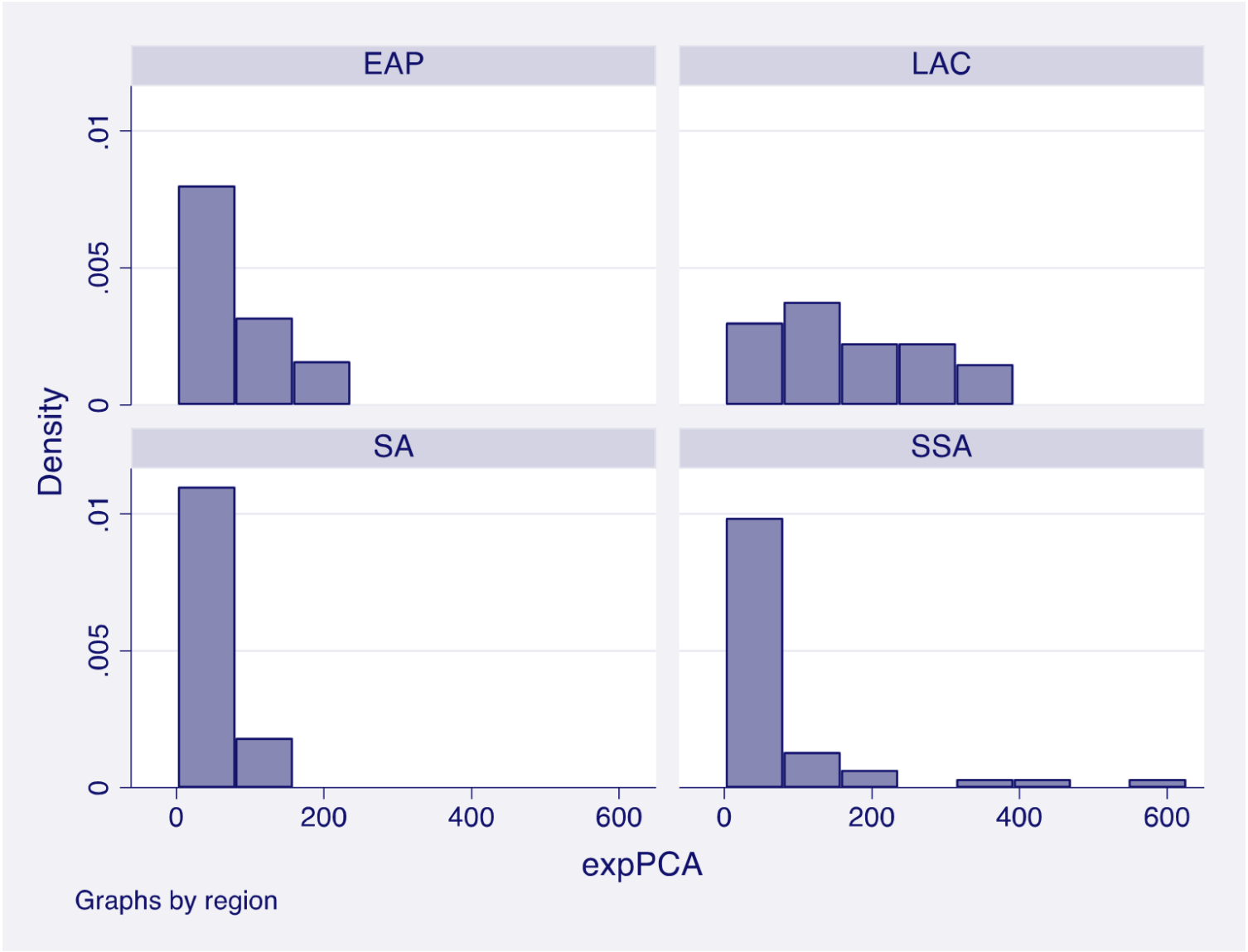
Policy tools tackle one of the two components



Most countries spend a large % of GDP in social protection



But expenditure per capita is lowest in the poorest regions



Can we increase labor earnings instead?

- Policies aim to improve productivity within occupation & access to better occupations via
  - credit
  - training
  - grants
- We need to understand why people stay poor to assess whether these programs can be effective

Two views of why people stay poor

Equal access to opportunity, different traits

- People have different innate traits which determine their standard of living
- Initial endowments do not matter, allocation of talent is efficient

➔ Social protection programs

Unequal access to opportunity, same traits

- People have different access to opportunity which determines their standards of living
- Initial endowments matter, talent is misallocated

➔ Large asset/skill transfers

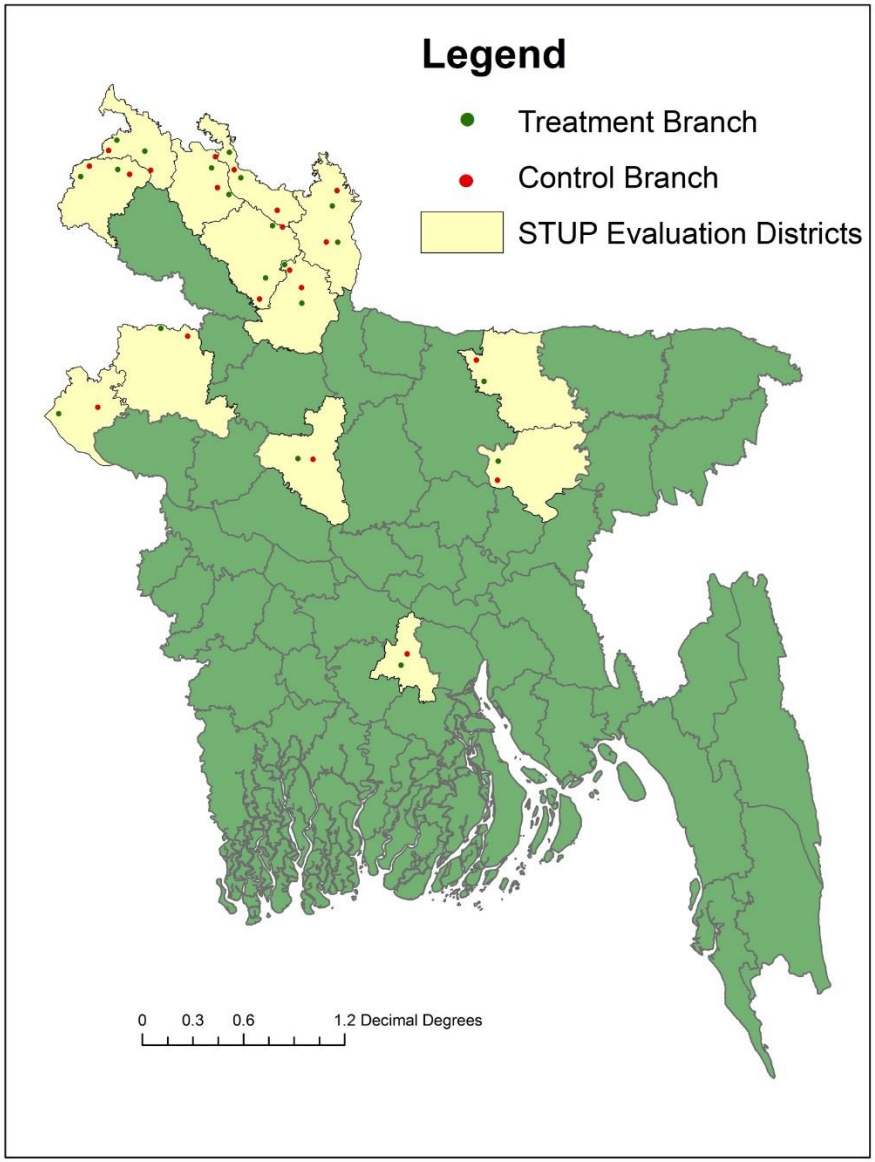
This lecture

1. Use theory to illustrate how response to exogenous shock to capital can be used to test between the two views of poverty
2. Implement test using RCT in Bangladesh (Bandiera et al., 2017) tracking 23k HHs across wealth distribution over 7 years
3. Inform the design of policies for poverty reduction

Setting

Study site map

Monga region: a lack of demand for casual wage labor, higher grain prices, extreme poverty and food insecurity

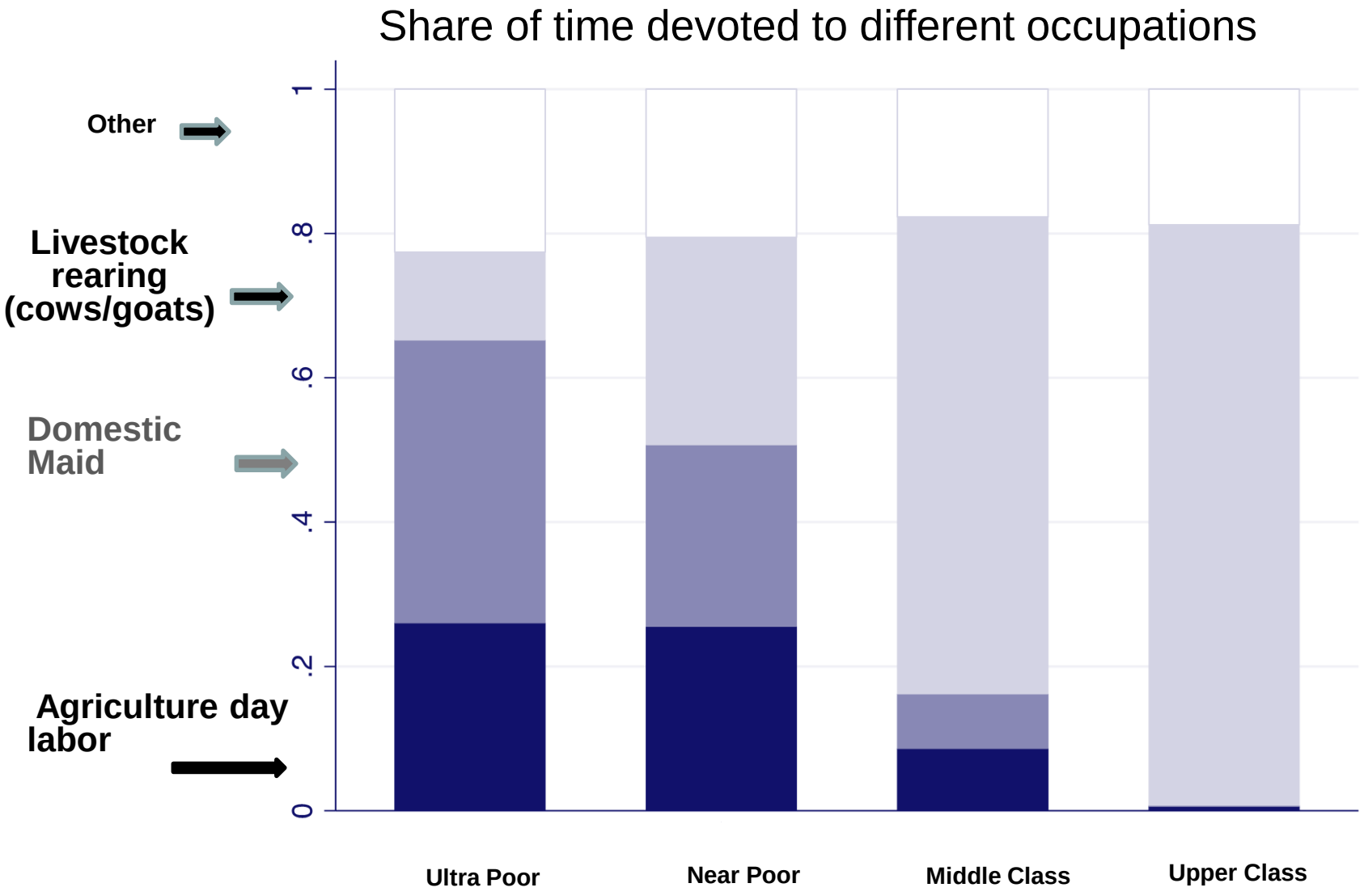


Data

- 23K households surveyed 4 times (07,09,11,14)
  - labor market activities
  - productive assets

- 4 wealth classes, ranked by the community

Three jobs account for most hours worked & occupation is correlated with wealth class

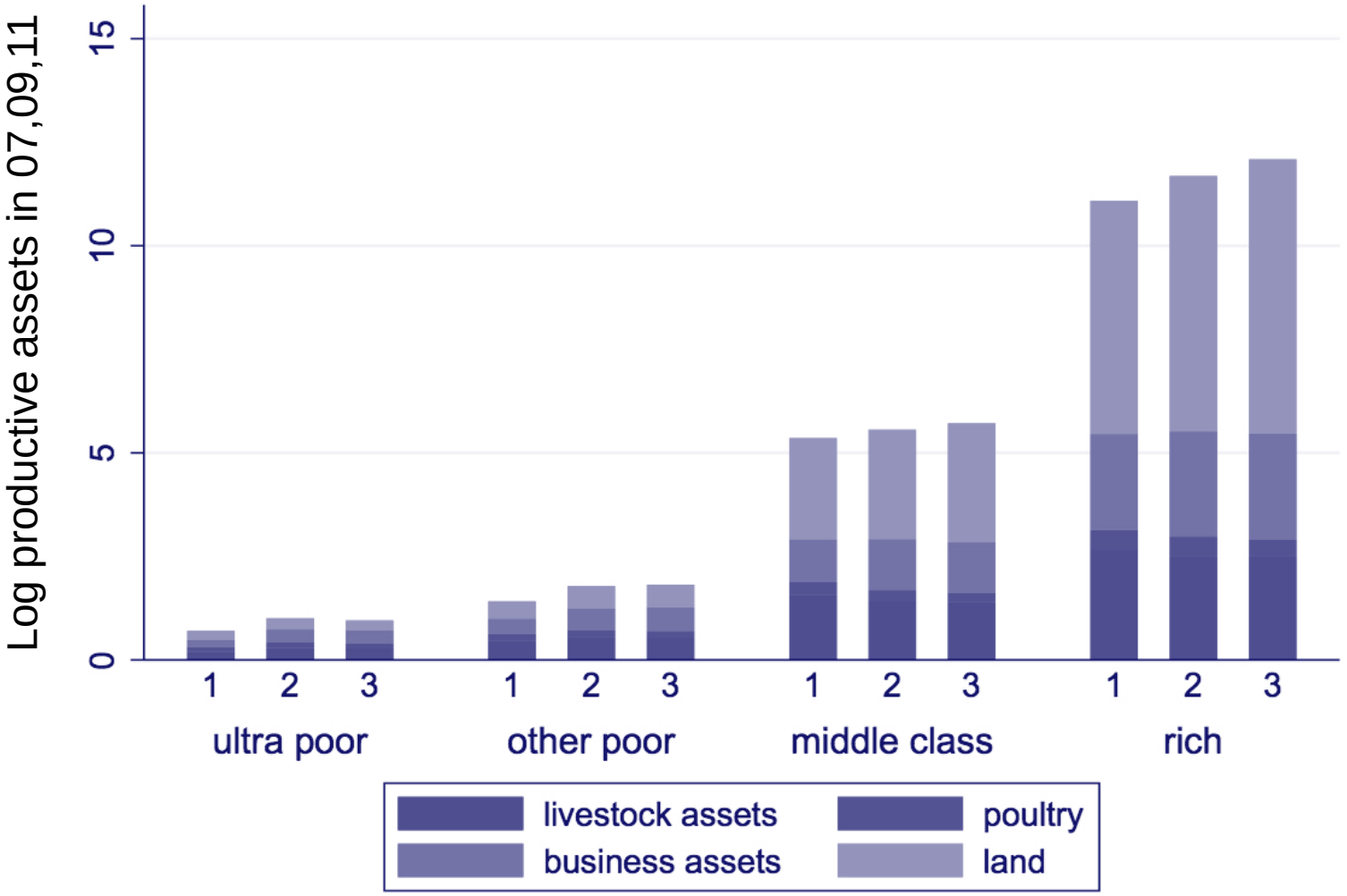


Jobs

- Wage labor is uncertain, seasonal and pays less per hour
- Occupation correlated with ownership of productive assets (k): livestock, business assets (rickshaws, boats, sheds, agricultural machinery etc.) and land
- Asset holdings stable through time

- *In this setting, physical capital is likely to drive any potential trap, in other settings it might be human capital*

The poor have fewer assets and don’t accumulate over time



Framework

Make precise the assumptions underpinning the two views of why people stay poor

Equal access to opportunity, different traits

- People have different innate traits which determine their standard of living
- DRS to factors that can be accumulated
- Perfect credit markets

Unequal access to opportunity, same traits

- People have different access to opportunity which determines their standards of living
- IRS to factors that can be accumulated
- Imperfect credit markets

Occupational choice under the two views

- Each person i is born with one unit of time, wealth endowment E_i and talent A_{ij} for occupation j $= 1,2$

- 1 is wage labor, pays w
- 2 is livestock rearing, requires capital K and yields $A_{i2} f(K)$
- Assume $A_{i1} = 1$ for all *i*'s, A_{i2} can differ among people, call it A_i to simplify

Perfect credit markets +DRS→ equal opportunities

- Everybody faces the same cost of capital r, $f(K)$ is concave
- Individual *i* chooses K^* to maximise

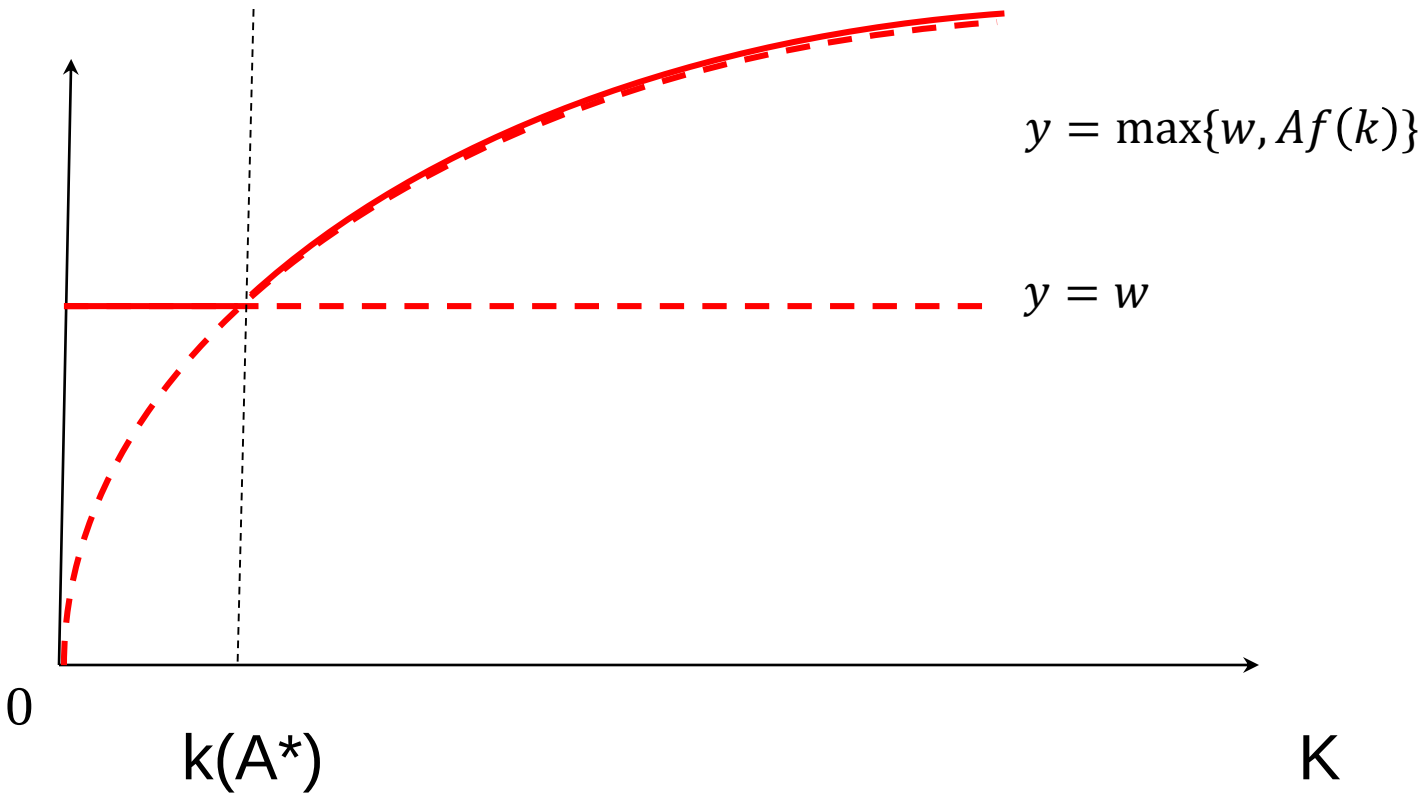
$$A_i f(K_i) - rK_i \; s.t. K_i \geq 0$$

- This yields the standard FOC

$$A_i f'(K_i^*) = r$$

- → threshold A^* s.t.
  - $A_i < A^*$ choose $K^* = 0$
  - $A_i > A^*$ choose $K_i^* > 0$, increasing in A_i

- → Endowments do not matter (with perfect credit markets non-convexities can be overcome by borrowing)
- → All individuals with $K_i = 0$ have $A < A^*$


$y = \max\{w, Af(k)\}$
$y = w$
0
k(A*)
K

No credit markets → poverty trap?

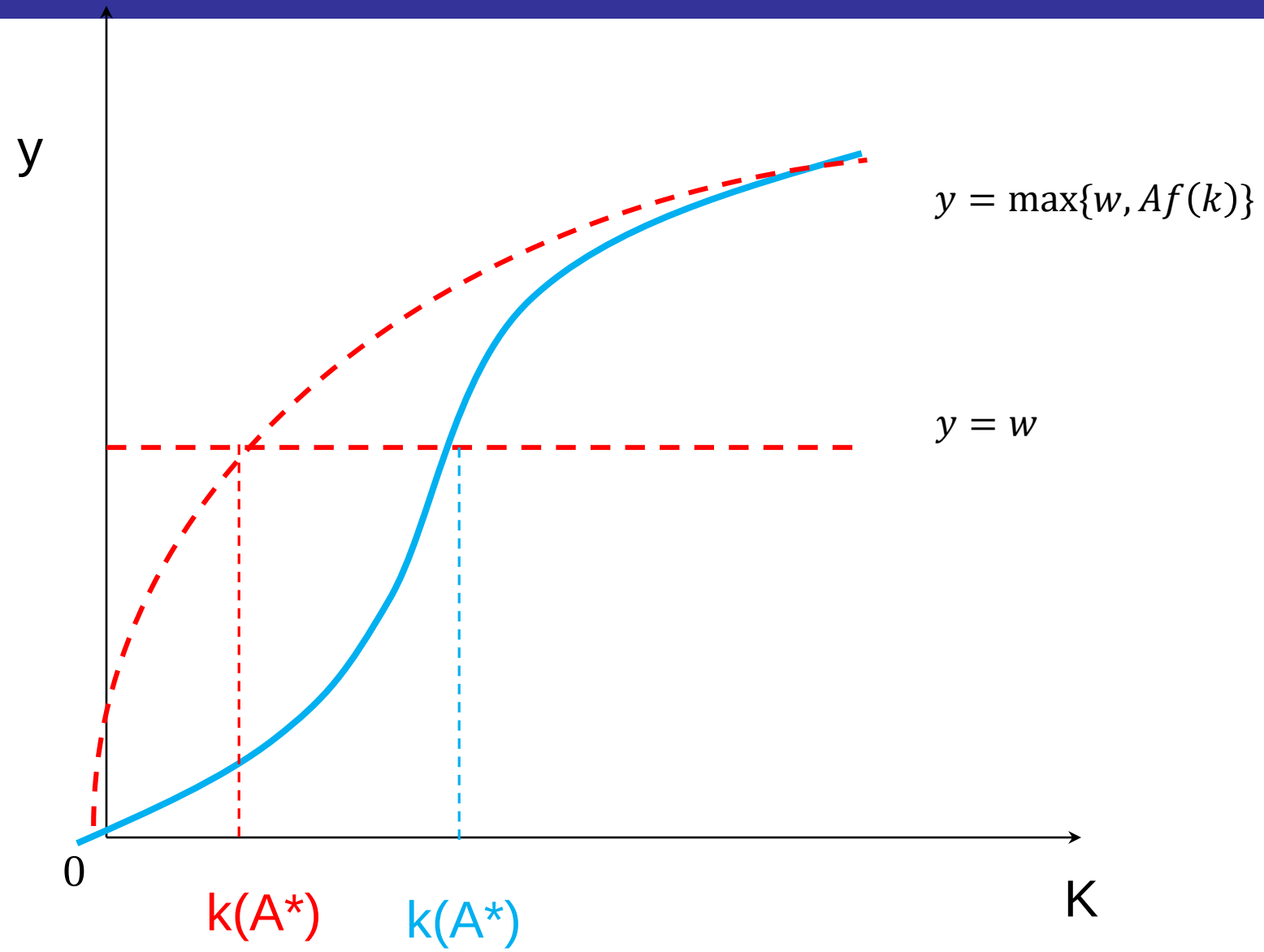
- Without credit markets individual i chooses K^*, to maximise

$$A_i f(K_i) - rK_i \; s.t. E_i \geq K_i \geq 0$$

- Now $A_i f'(K_i) - r = 0 \; for \; K_i^* < E_i$ and $A_i f'(K_i) - r > 0 \; for \; K_i^* > E_i$

- In a model with savings, individuals can save their way out of poverty as small investments at low *K* have high returns
- That is, as long as f(.) is concave, *credit market imperfections cannot generate a trap*

IRS at low K increase the minimum viable scale



No credit markets + convexity→ poverty trap

- We now have two groups of people for given talent *A*:

- those for whom $E_i > K(A_i^*)$ → same as in previous world
- those for whom $E_i < K(A_i^*)$ → stuck in low earnings occupation, $K = 0$

→ endowments matter

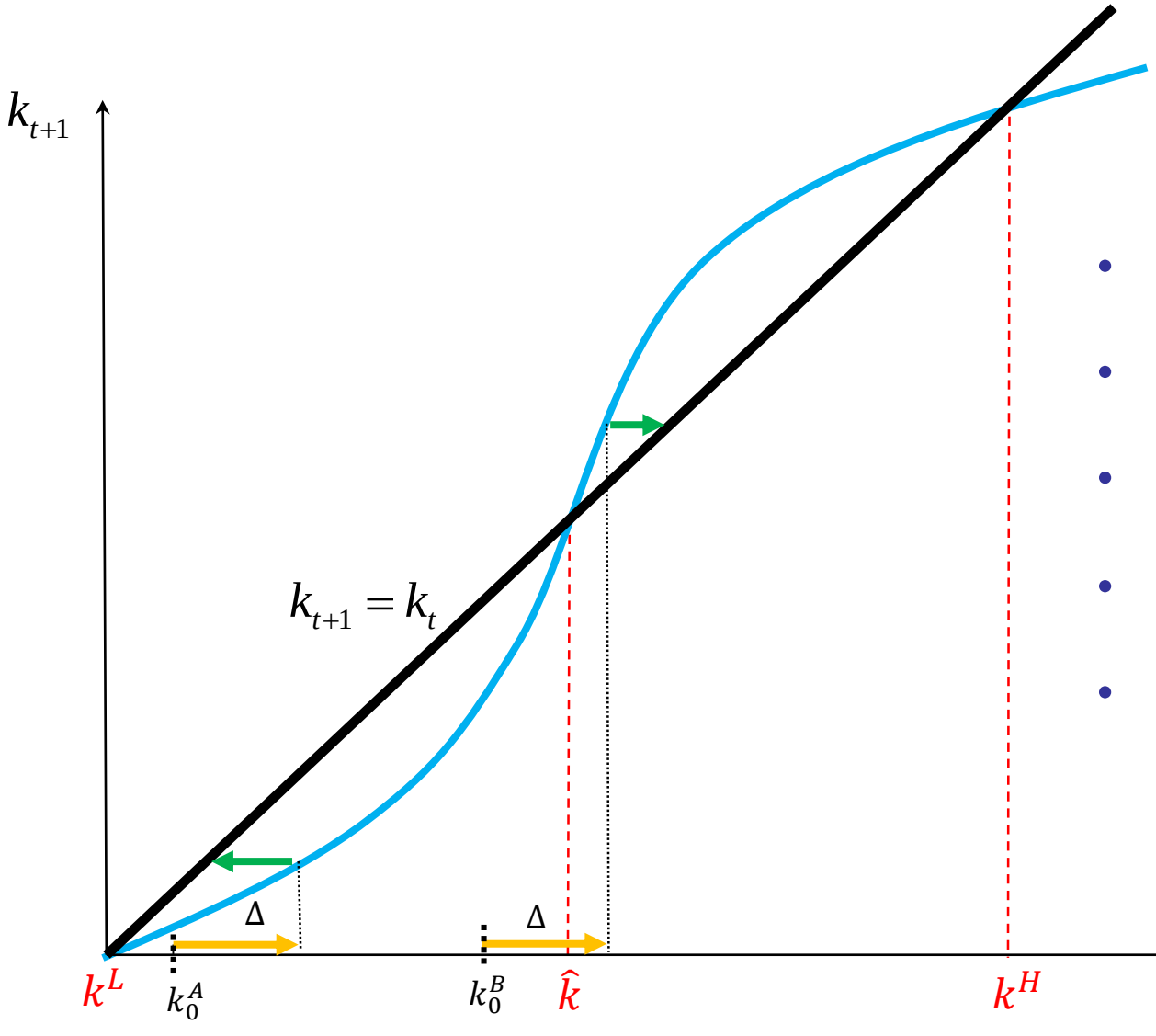
→ some people with $K = 0$ actually have $A > A^*$

Test

We use BRAC's Targeting the Ultrapoor Program

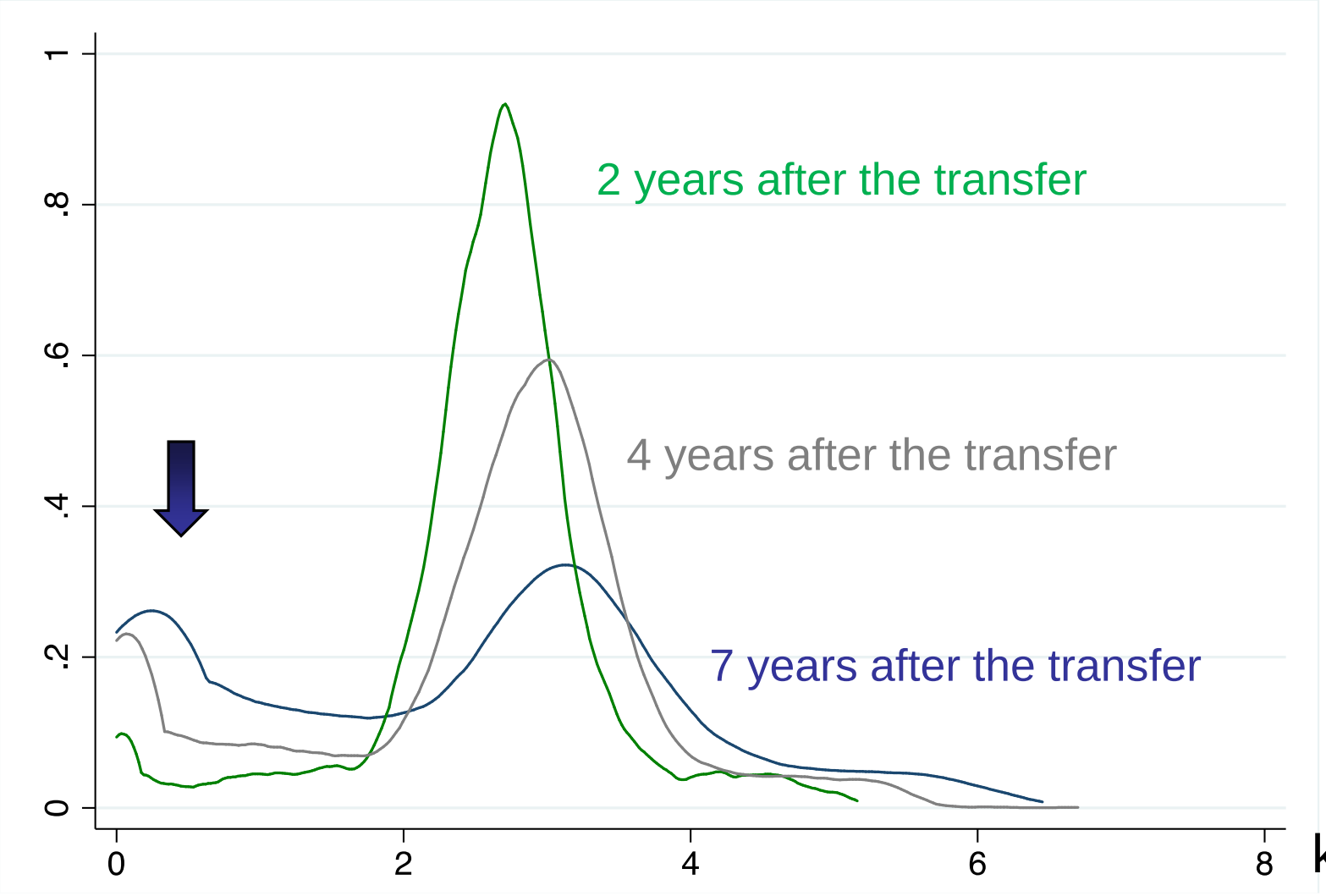
- K shock: Asset transfer worth 1 year of PCE
- 4k HHs received the program at the same time
- By design all get a package of similar value
- But they start with different assets at baseline

We test the joint H0 that (i) there is a threshold and (ii) the program pushes some above and leaves others below



- Compare person A with person B
- Both receive transfer of size Δ
- Transfer sends A below and B above $\hat{k}$
- A reverts back towards low steady state, k^L
- B escapes poverty and ends up at high steady state, k^H

Preliminary evidence

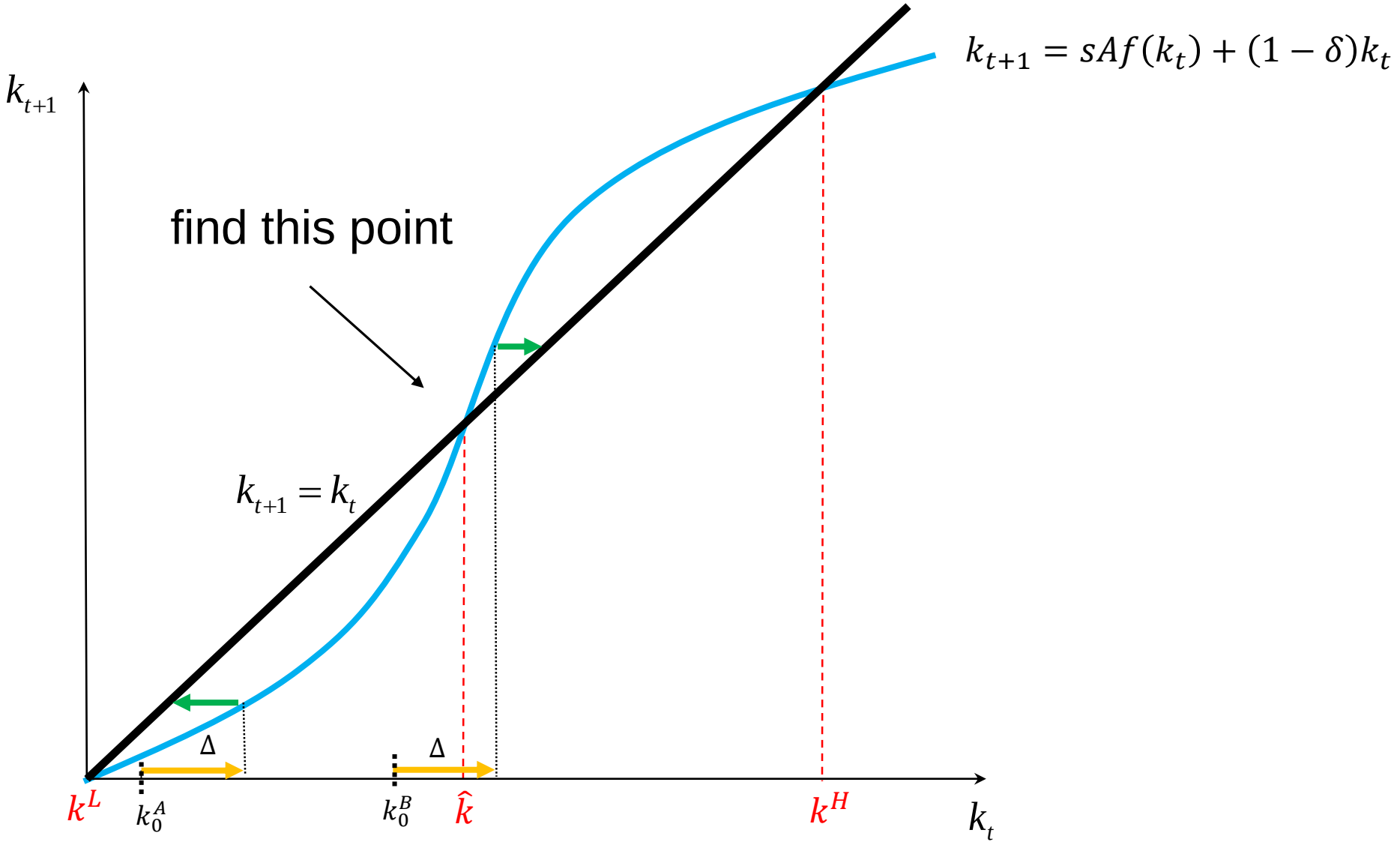


Identifying the threshold

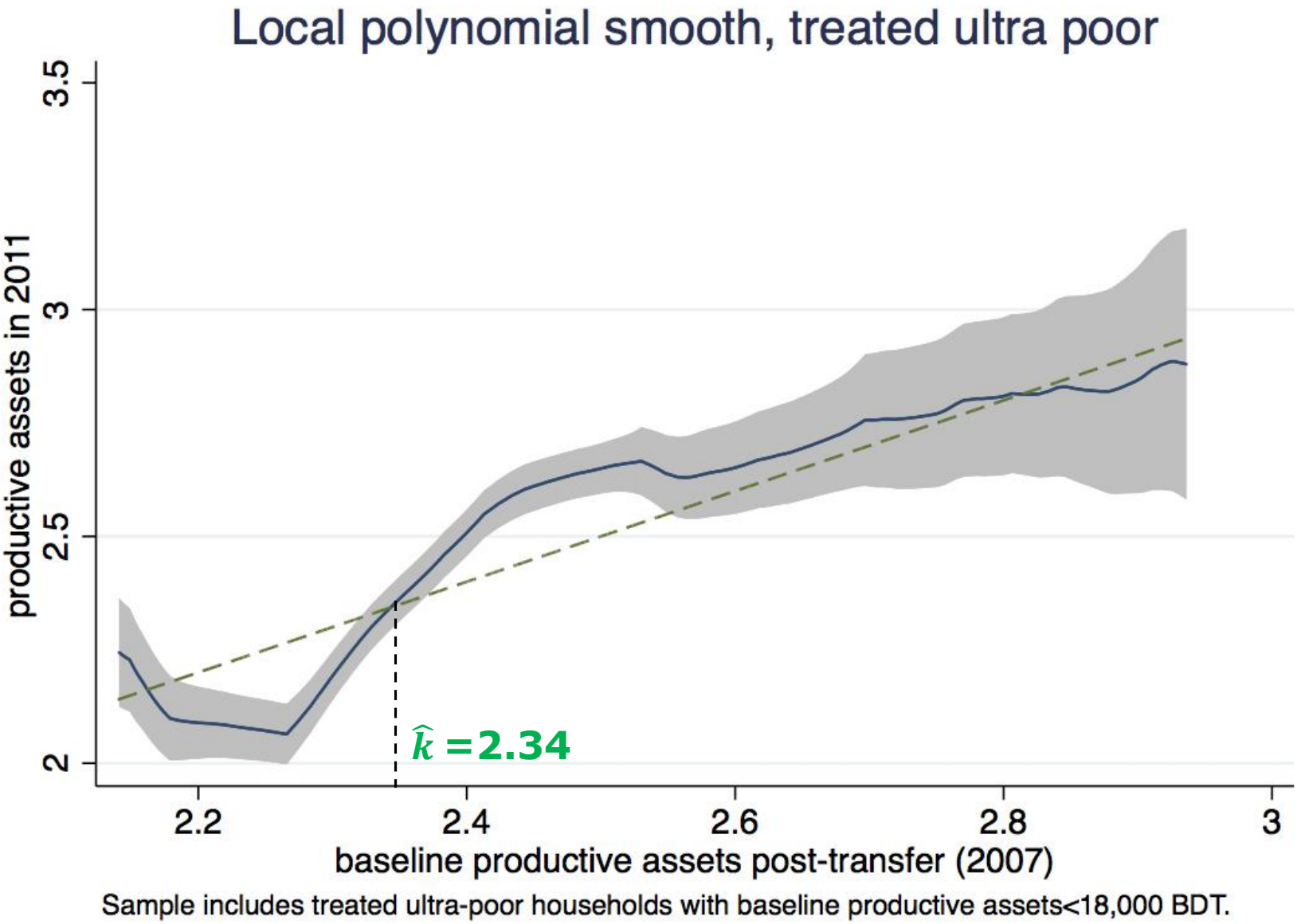
- Level of k such that those below fall back into poverty and those above escape
- This is identified by:
  - estimating the transition equation for K
  - finding the point, if any where it crosses the 45 line from below

- Note: this estimates an average threshold
- In progress: structural estimates of individual thresholds

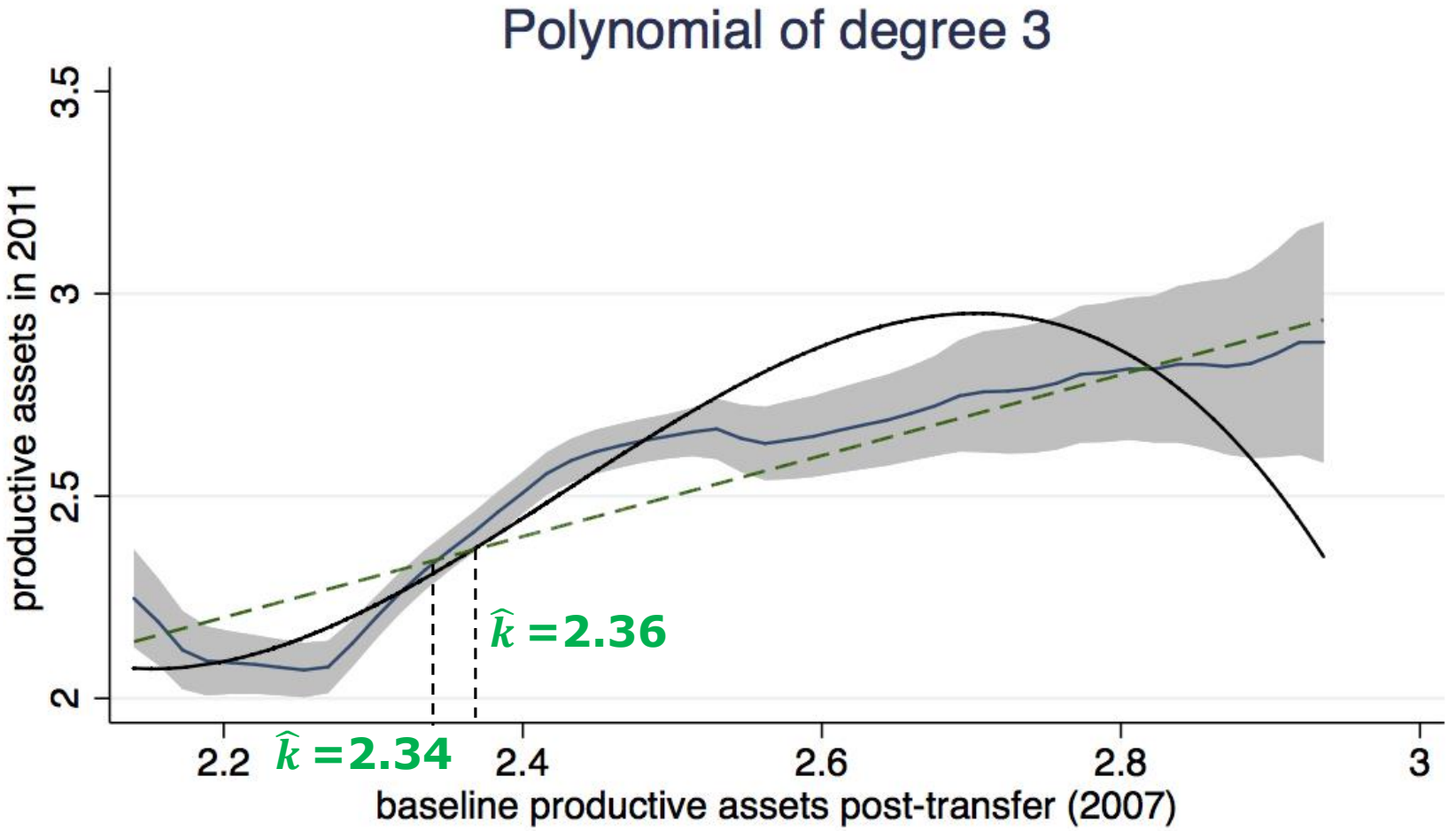
The transition equation



Non-parametric identification



Parametric identification



Is this really a poverty trap?

- Identification exploits differences in baseline assets
- These could be correlated with

1. traits –e.g. talent- that determine the return to K
   - the estimated k^ is an average of different thresholds
   - no guarantee that people below it would be able to escape poverty had they been given enough

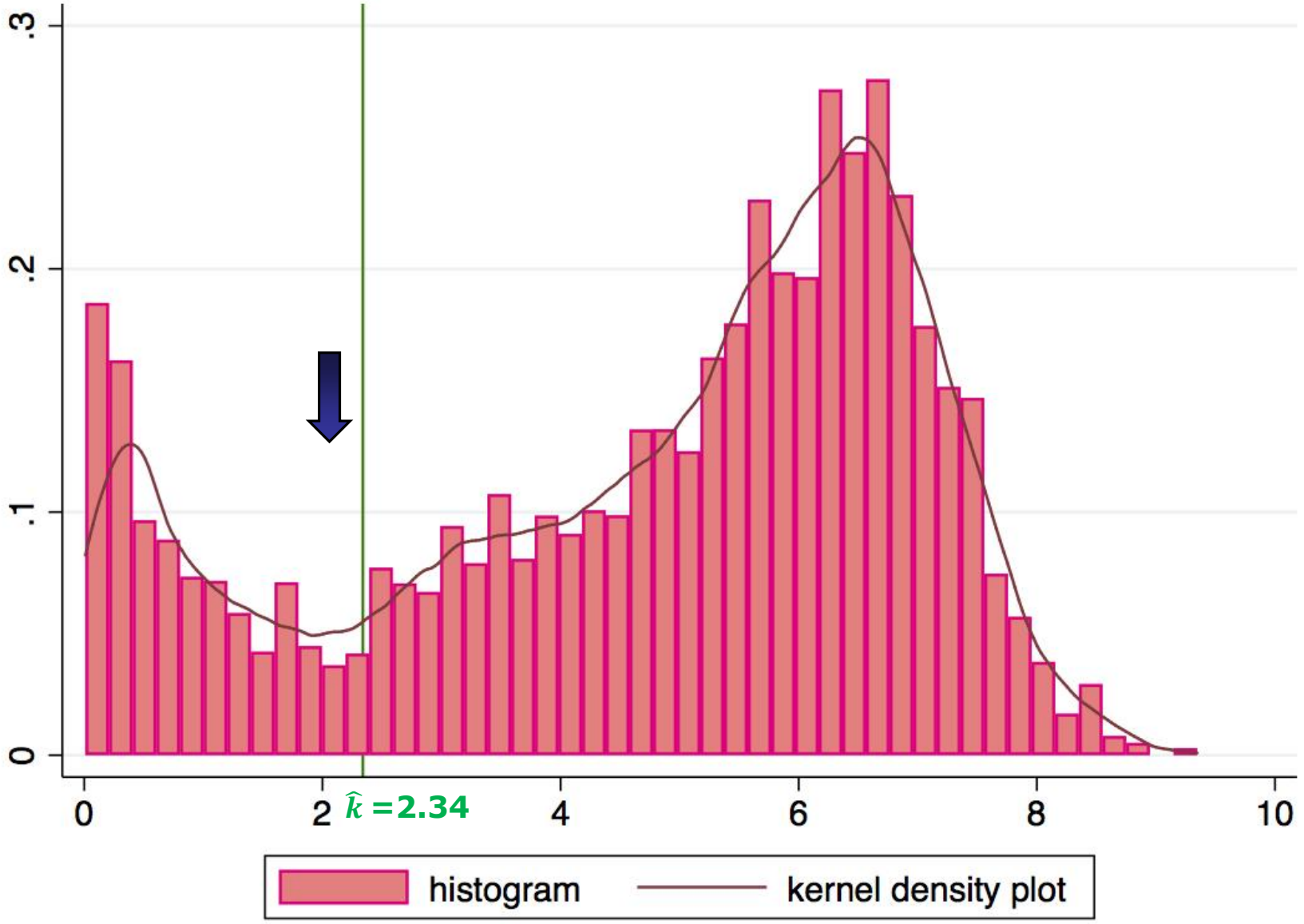
2. shocks that drive capital accumulation

Four tests

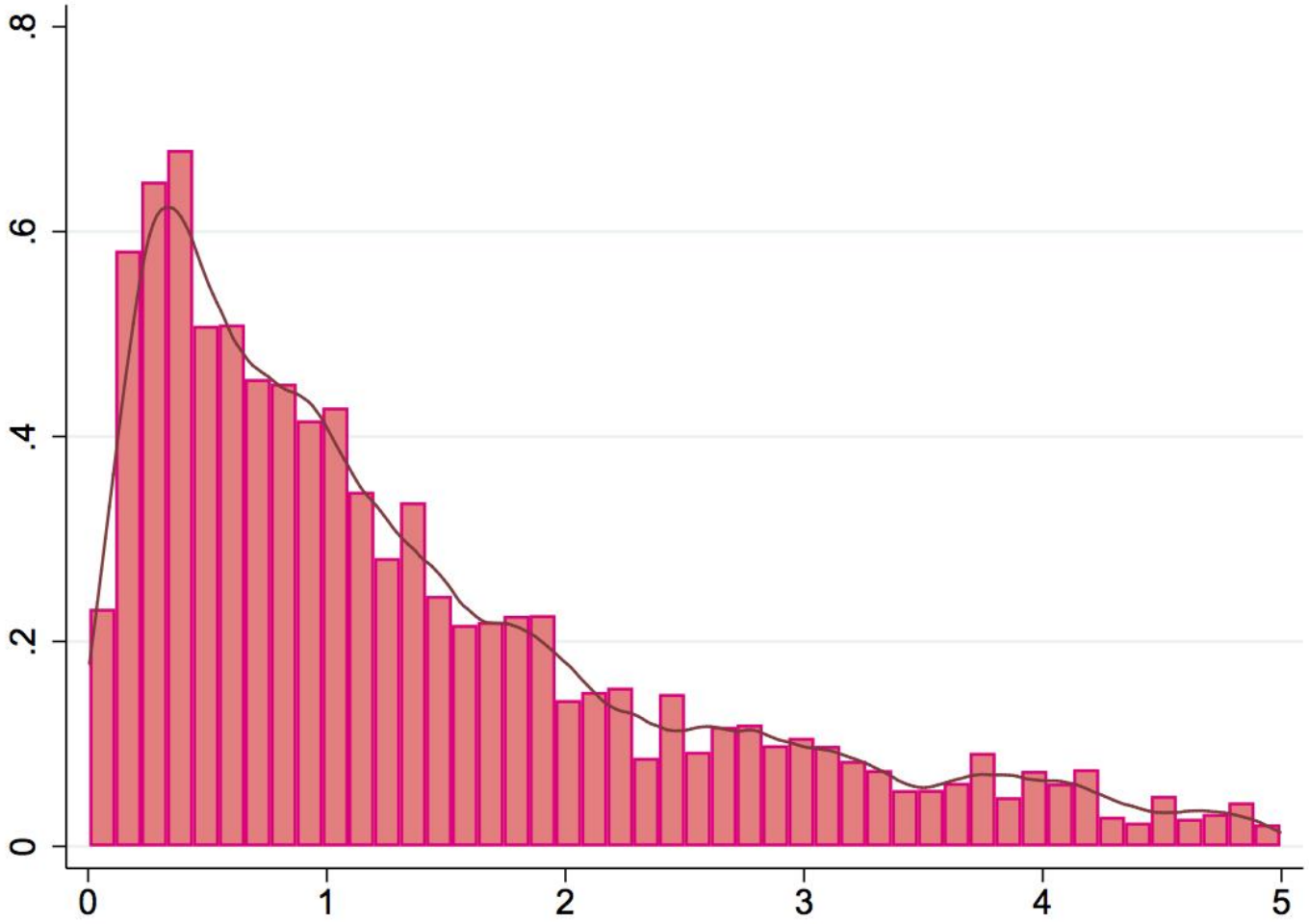
- We present four tests to assess whether the patterns we observe can be explained by shocks or differences in talent/preferences correlated with baseline assets

1. Missing Mass Test

Missing mass around the threshold in CONTROL villages



But A is unimodal



2. Sorting test

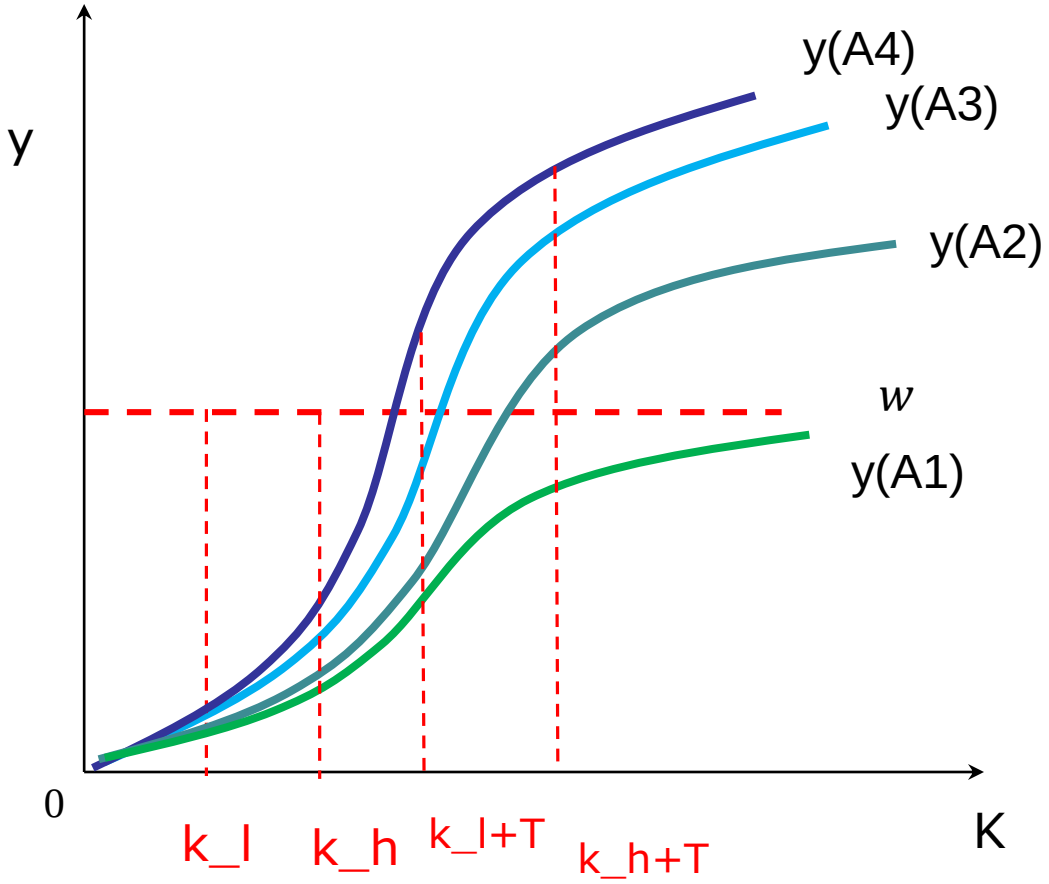
Sorting when A is uncorrelated with k0

2 types of k0: low and high

4 As in each type

before transfer both types are in wage labor

after the transfer, only the brightest of low (A4) but almost all of the high move to livestock



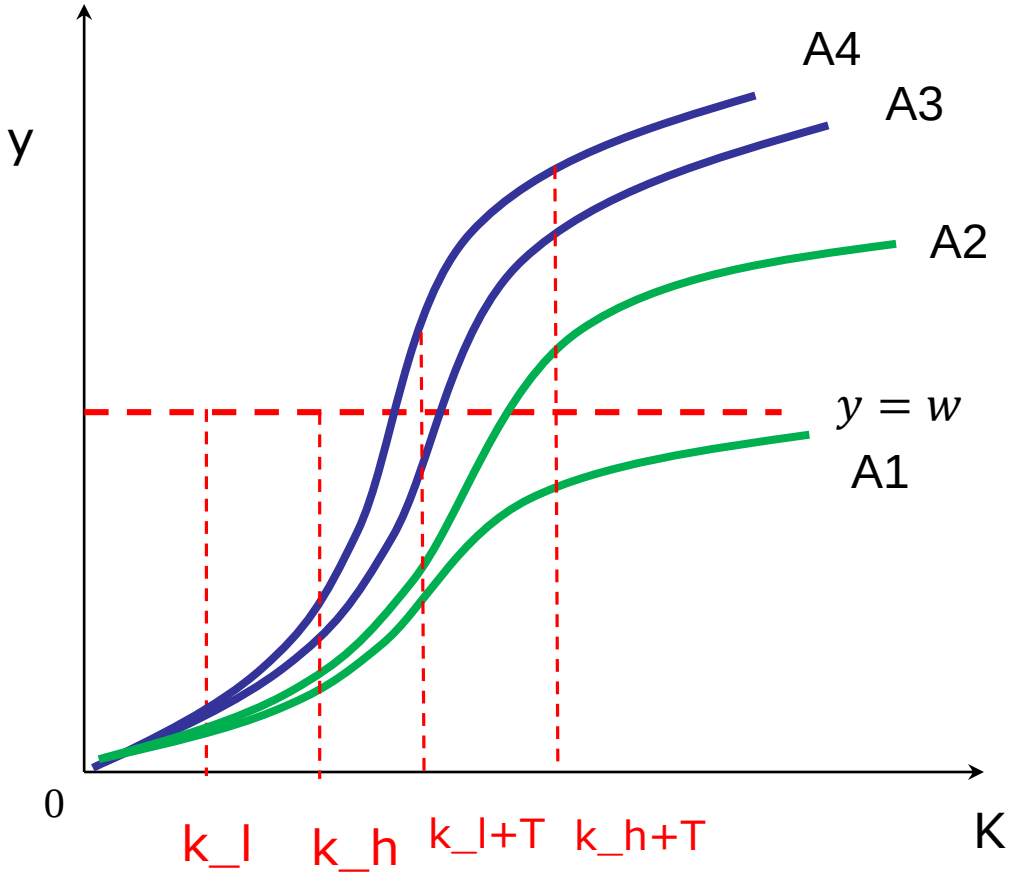
Sorting when A is correlated with k0

2 types of k0: low and high

low has A1-2, high has A3-4

before transfer both types are in wage labor

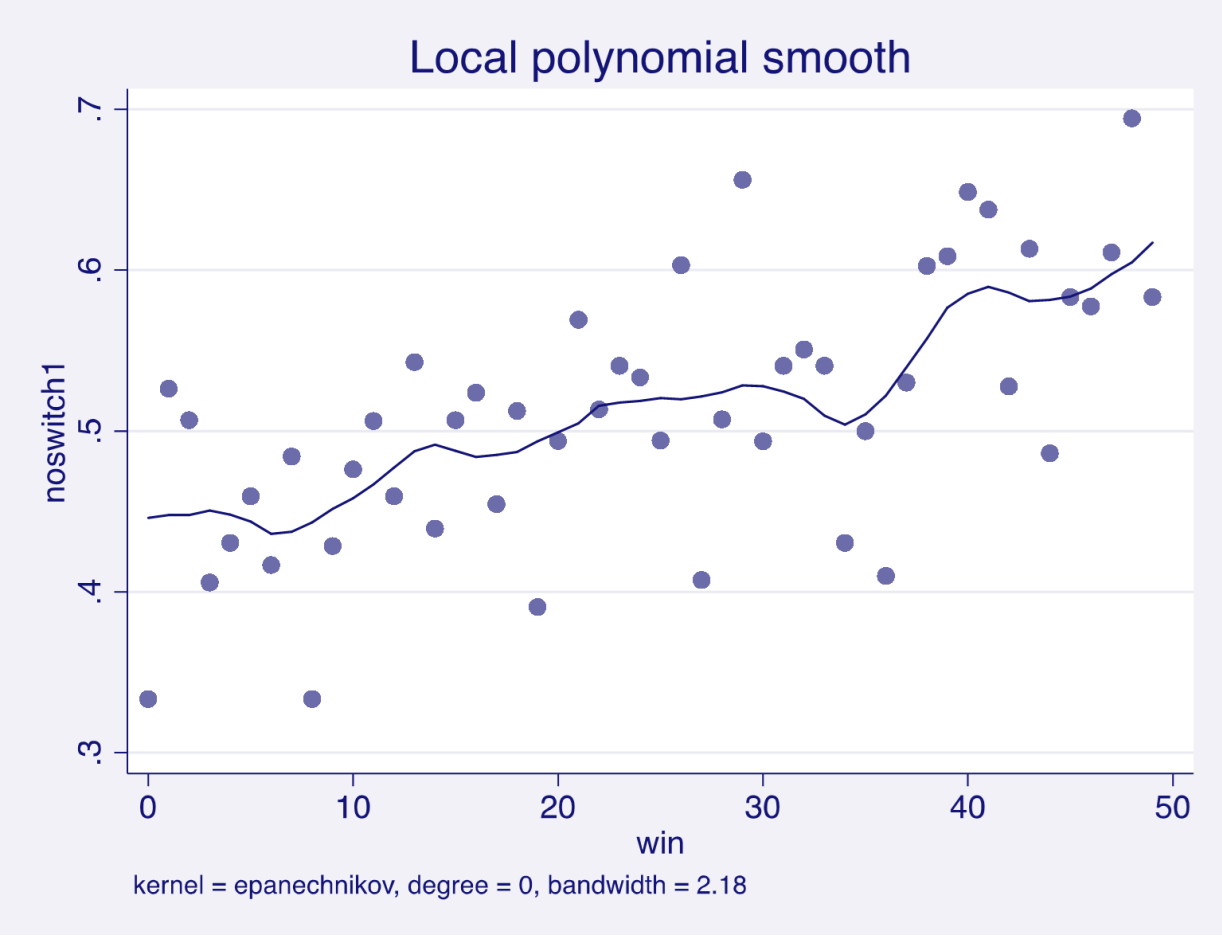
after the transfer, none of the low but all of the high types move to livestock



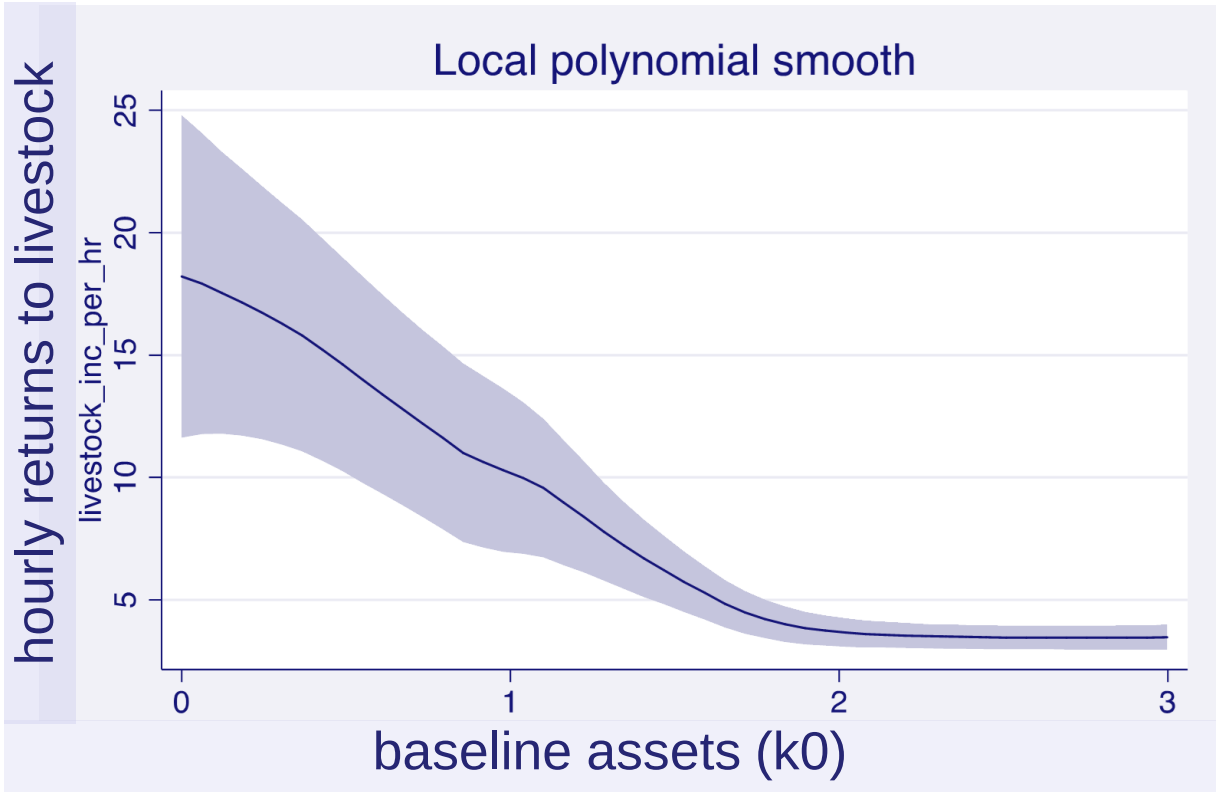
Implications of cov(k0,A)=0 (vs cov(k0,A)>0)

1. The number of switchers is monotonically increasing in k (flat with a discrete jump)
2. The average A for switchers is ***decreasing*** in k0 (increasing)
3. The max A for switchers is ***decreasing*** in k0 (increasing)

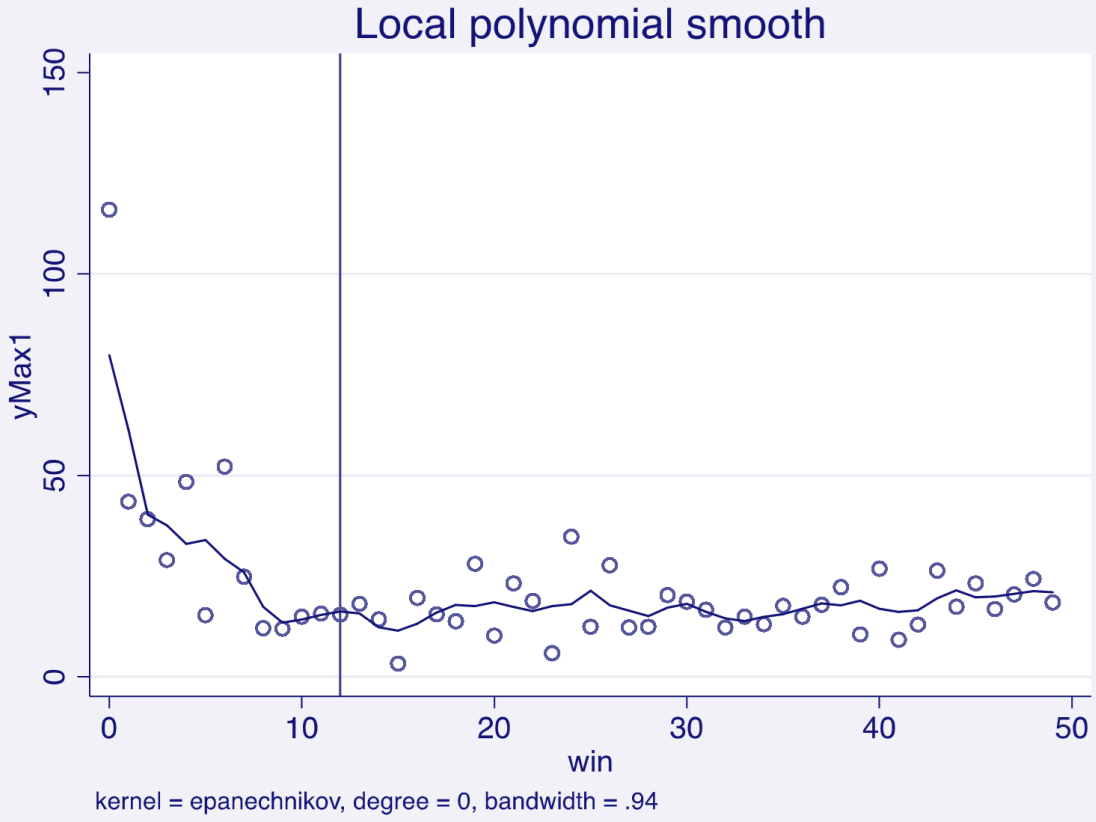
1. Number of switchers is monotonically increasing



2. Average productivity of switchers is decreasing



3. Max productivity of switchers is not increasing



baseline assets (k0)

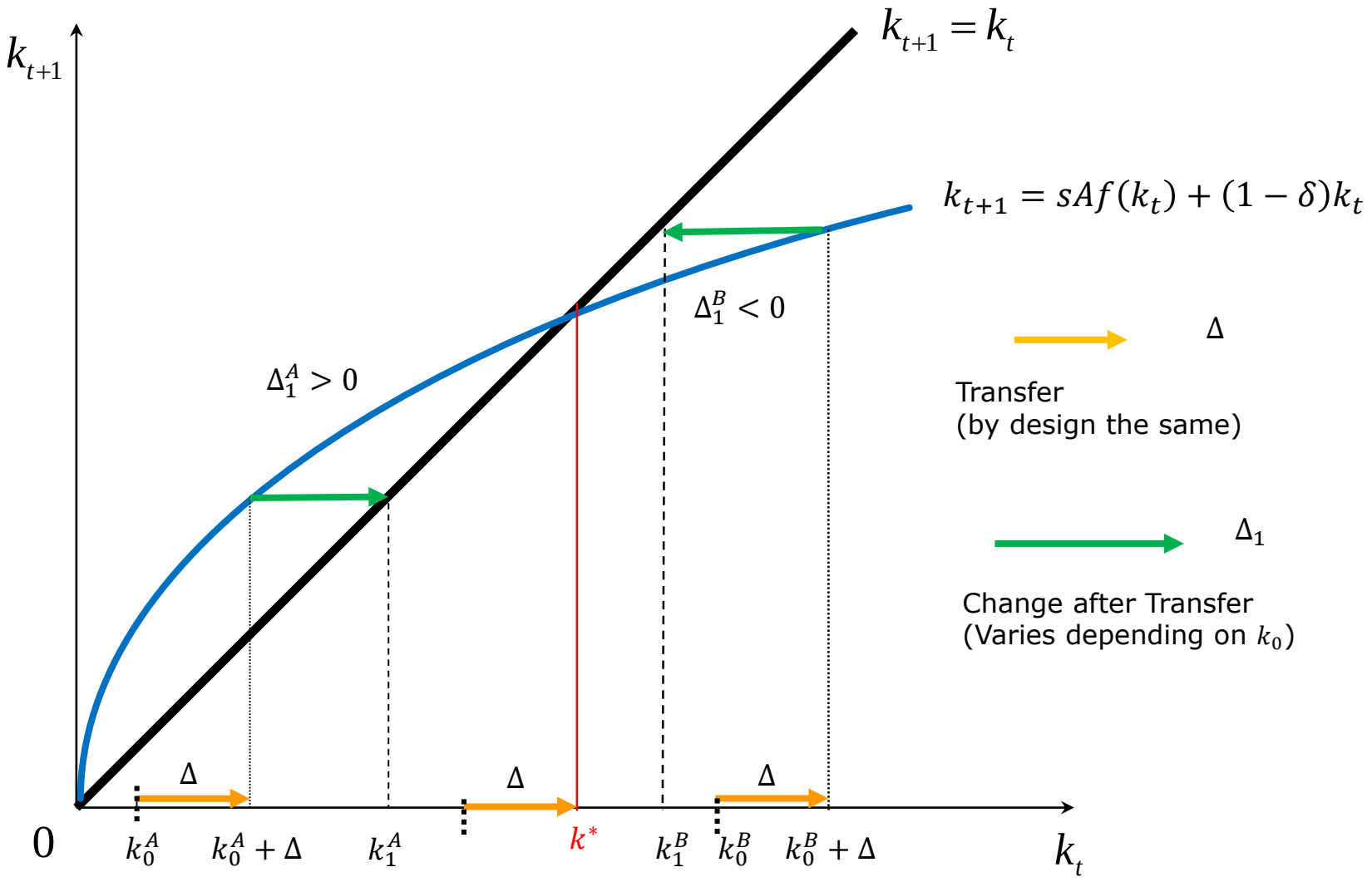
Implications of cov(k0,A)=0 (vs cov(k0,A)>0)

1. The number of switchers is monotonically increasing in k ~~(flat with a discrete jump)~~ ✓
2. The average A for switchers is ***decreasing*** in k0 ~~(increasing)~~ ✓

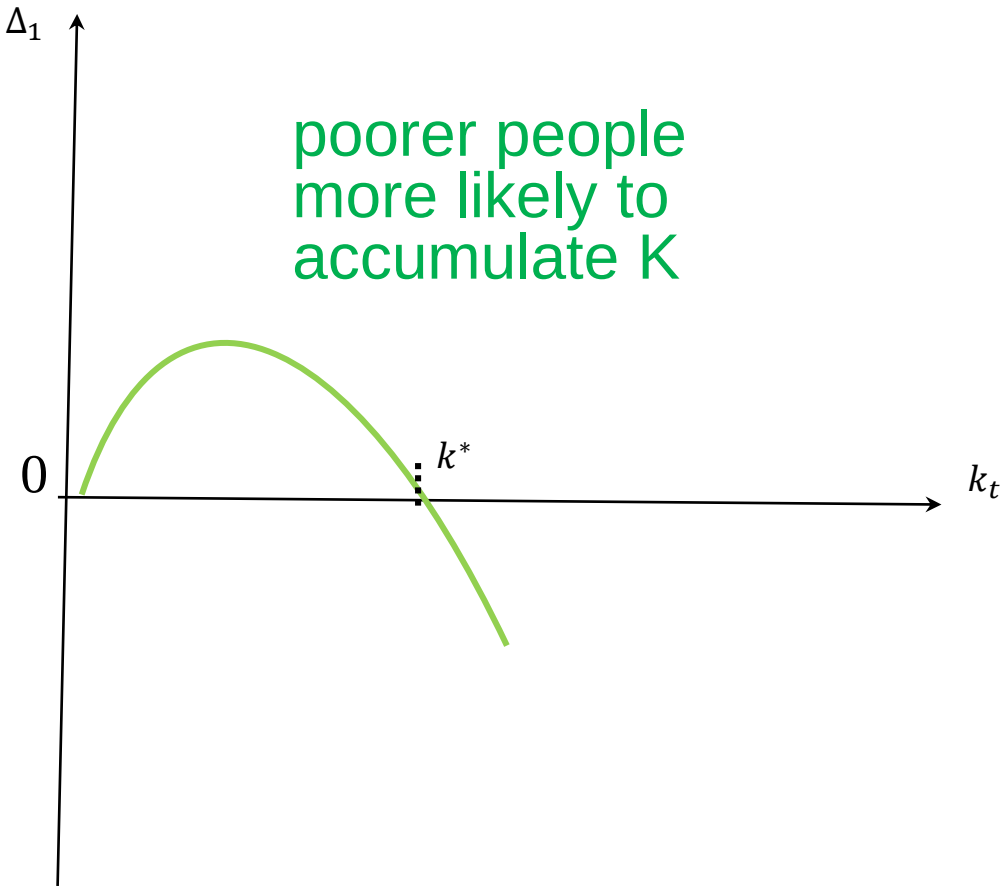
3. The max A for switchers is ***decreasing*** in k0 ~~(increasing~~) ✓

3. Responses to K transfer test

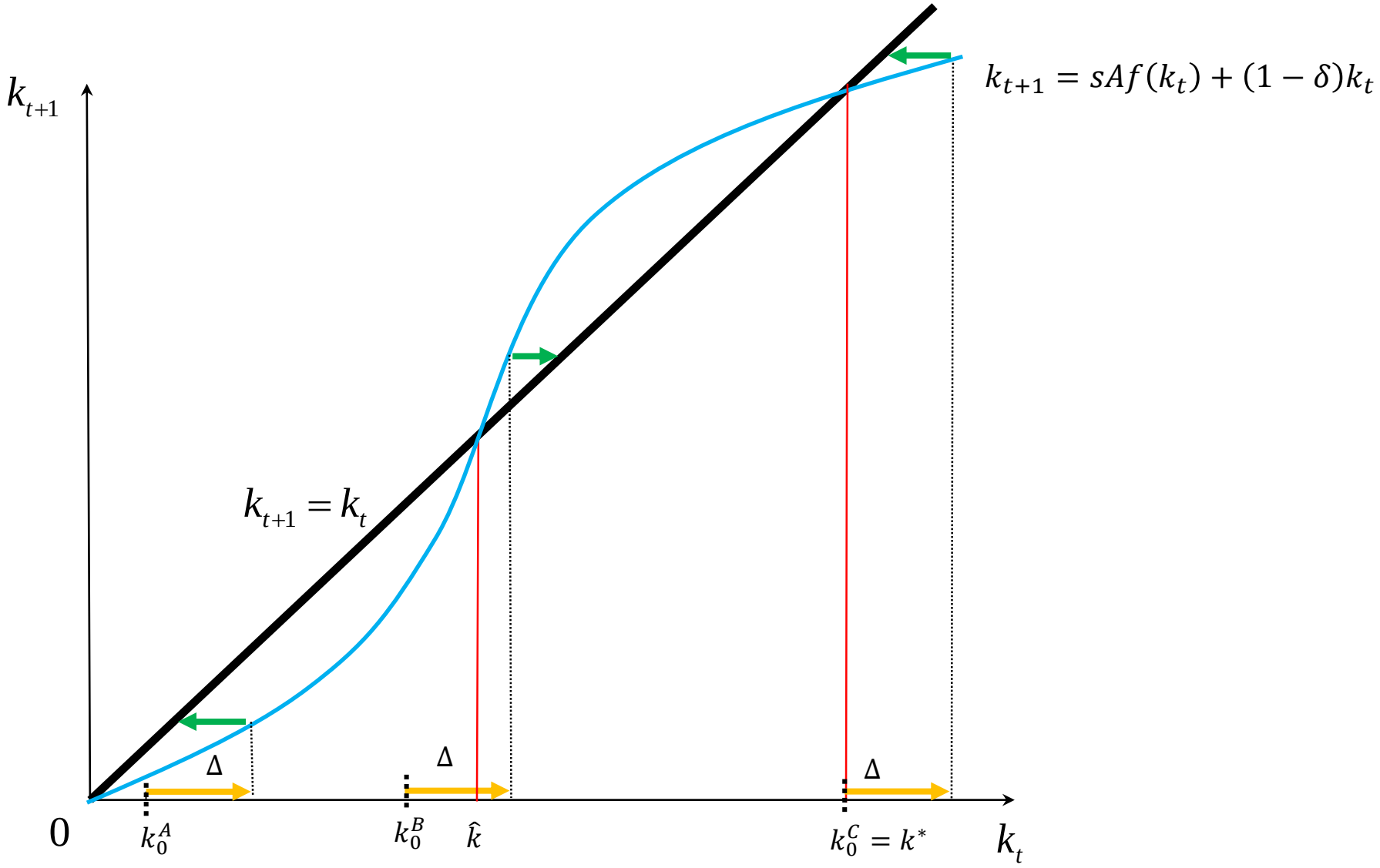
Response to asset transfer in equal opportunity view



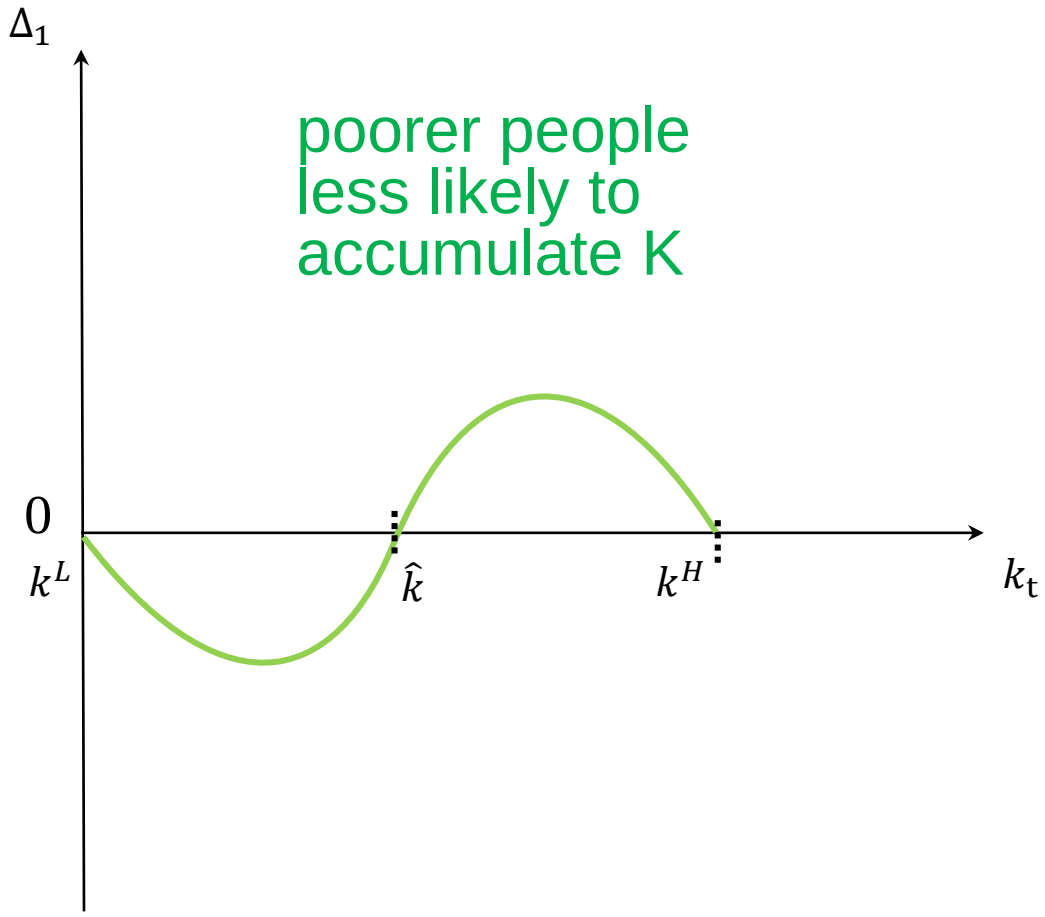
Response to asset transfer in equal opportunity view



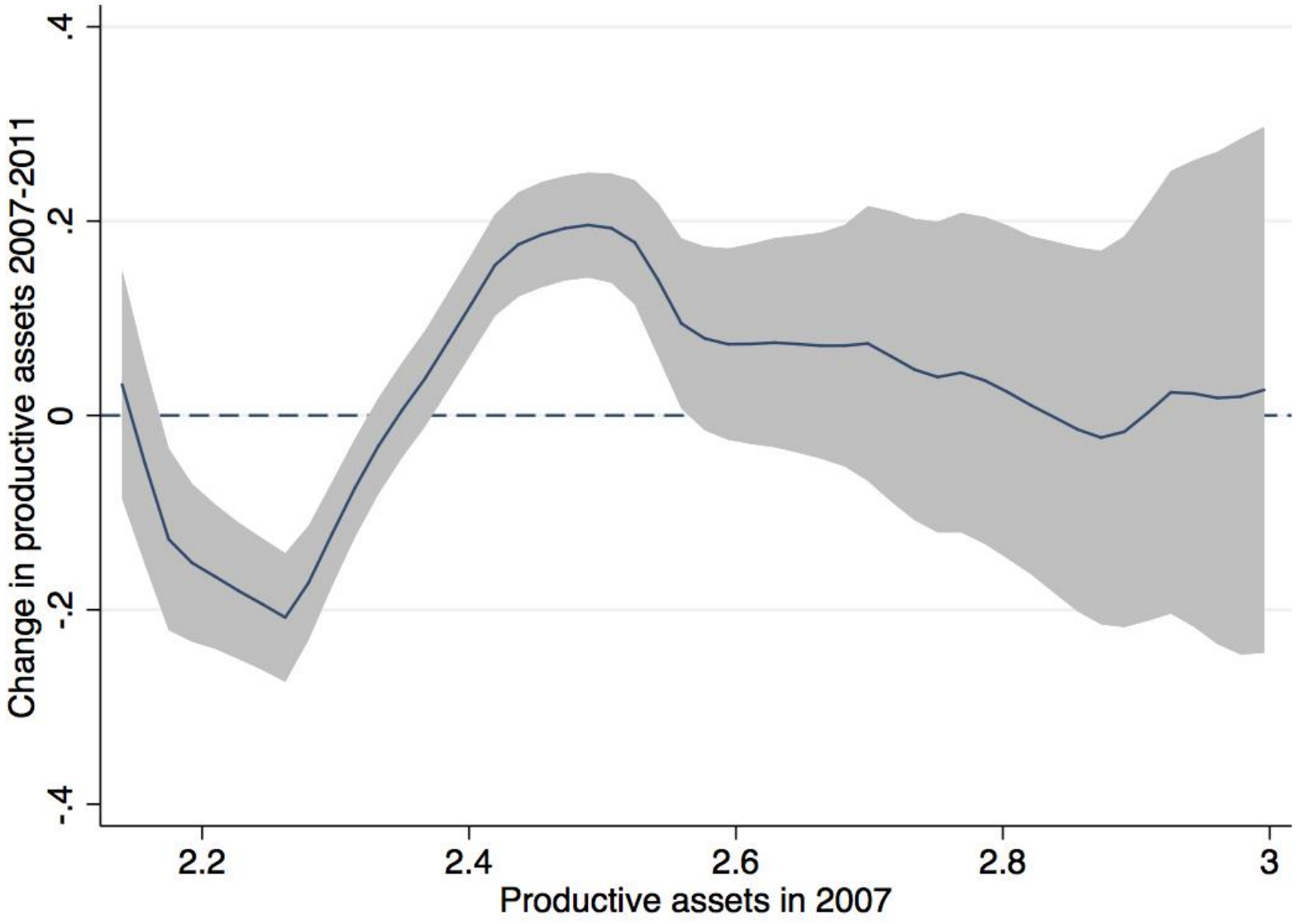
Response to asset transfer in unequal opportunity view



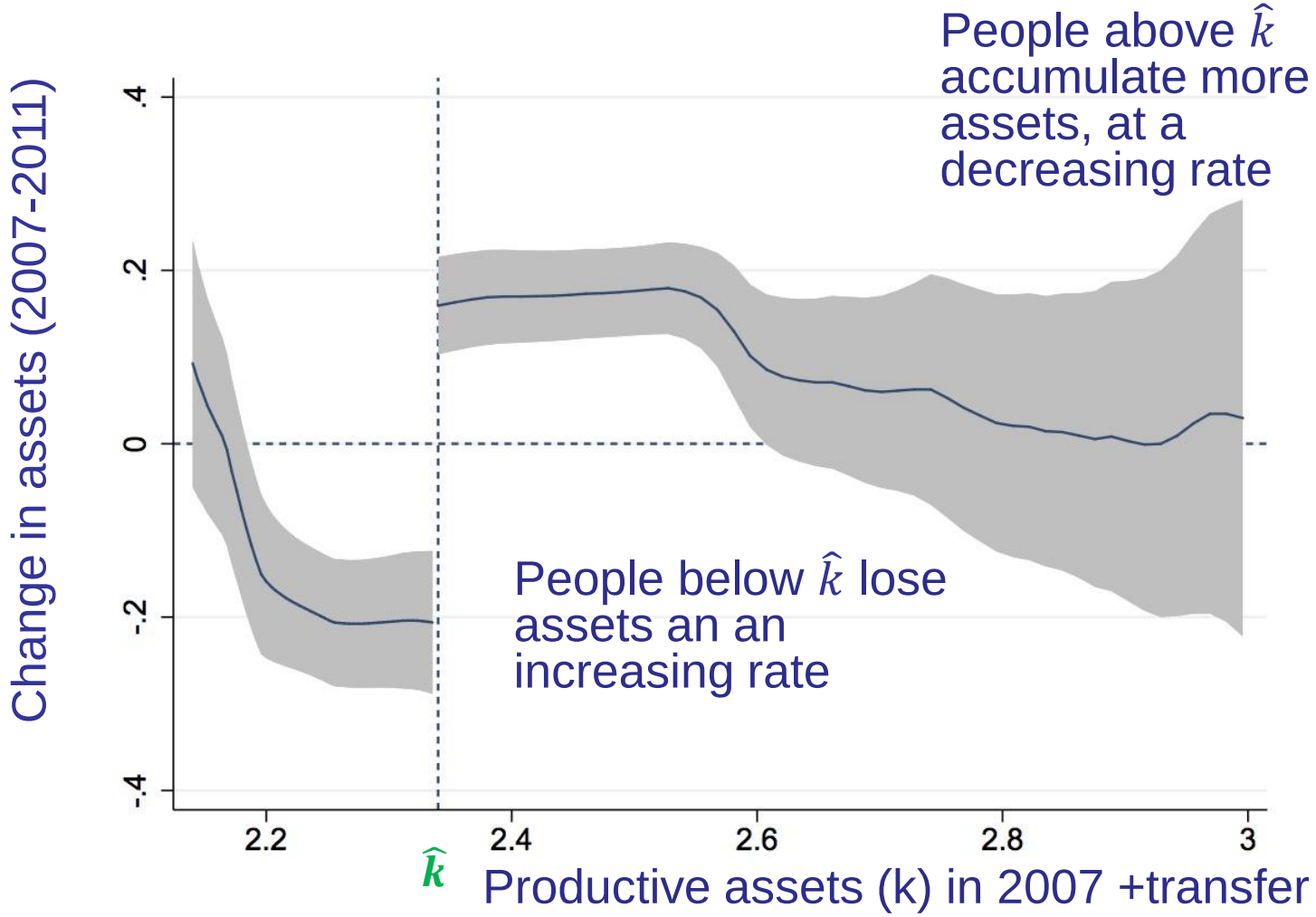
Response to asset transfer in unequal opportunity view



Response to asset transfer in data



Response to asset transfer in data, allowing for discontinuty

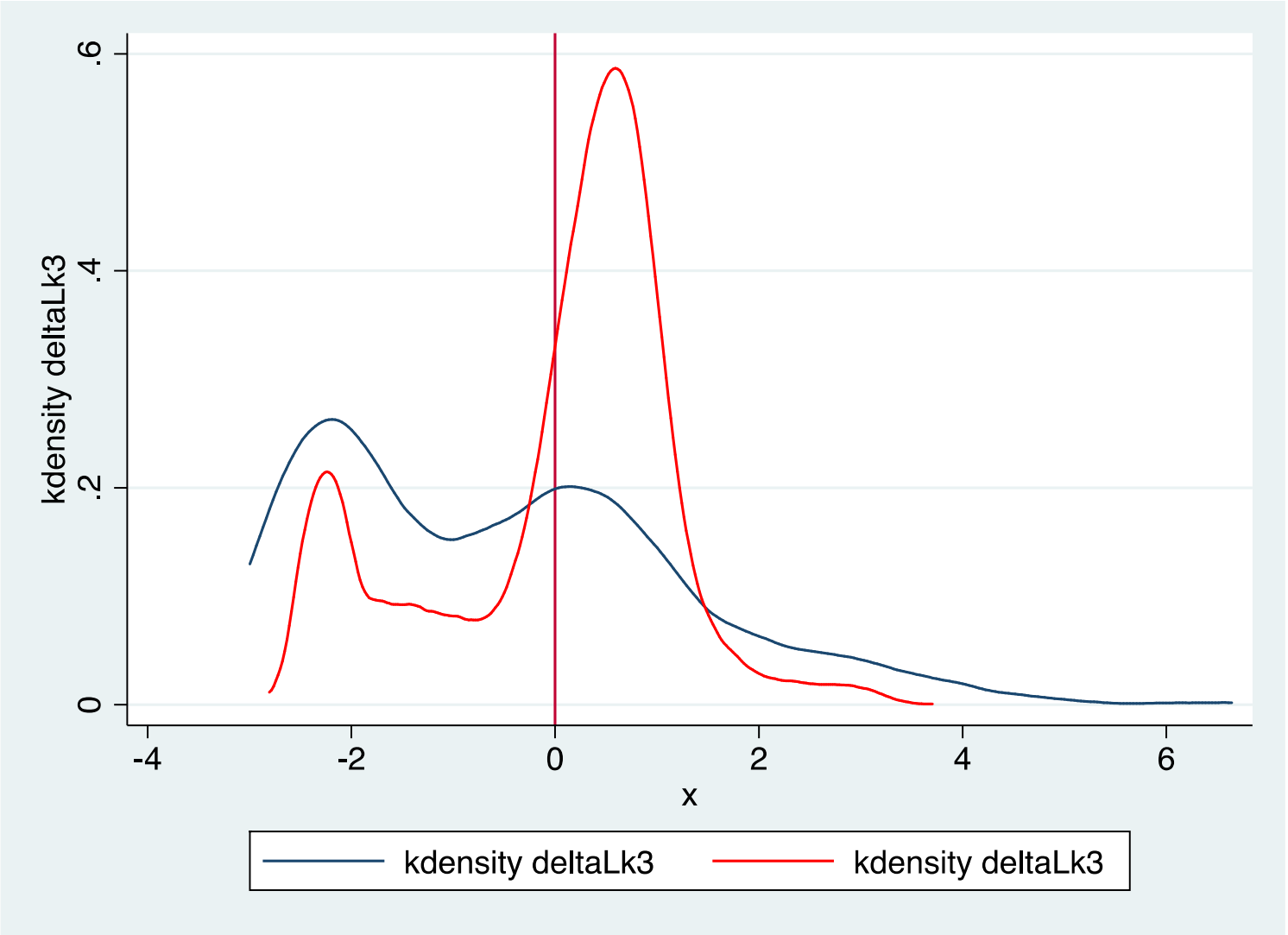


Shocks?

Measuring shocks

- If controls are in steady state, any changes in assets must be due to shocks → we use data from controls
  1. to test whether shocks can explain the pattern of asset accumulation we see in treatment
  2. to adjust for shocks

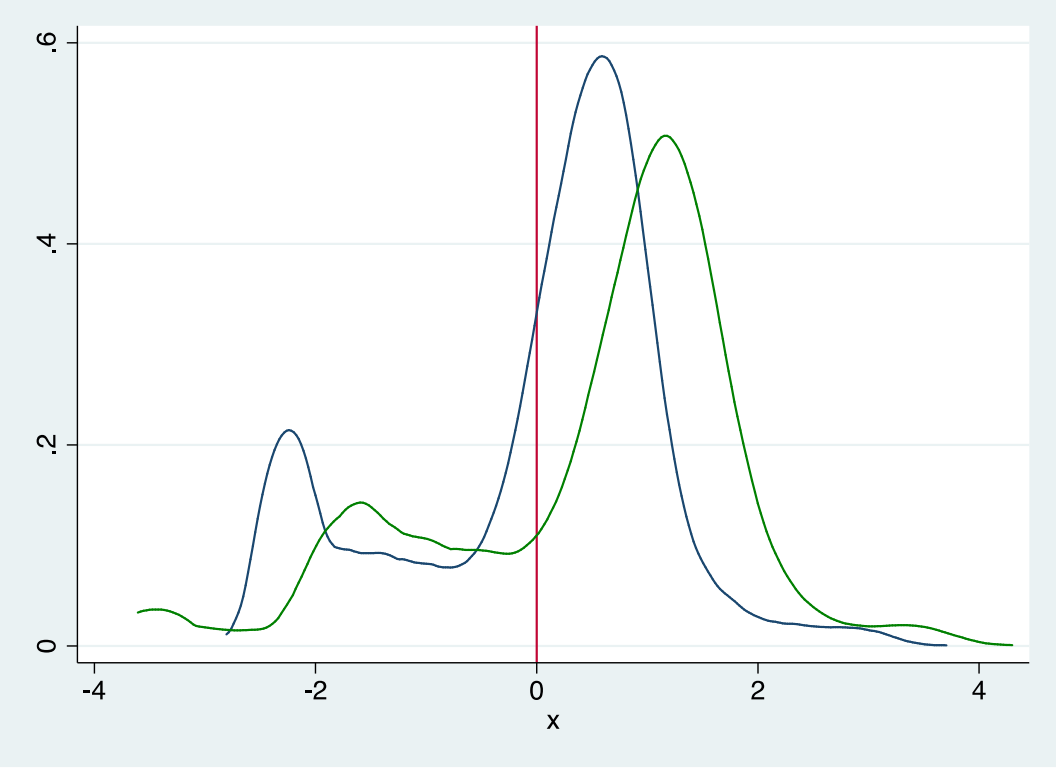
Shocks (blue) cannot explain the distribution of changes in treatment (red)



Adjust for shocks

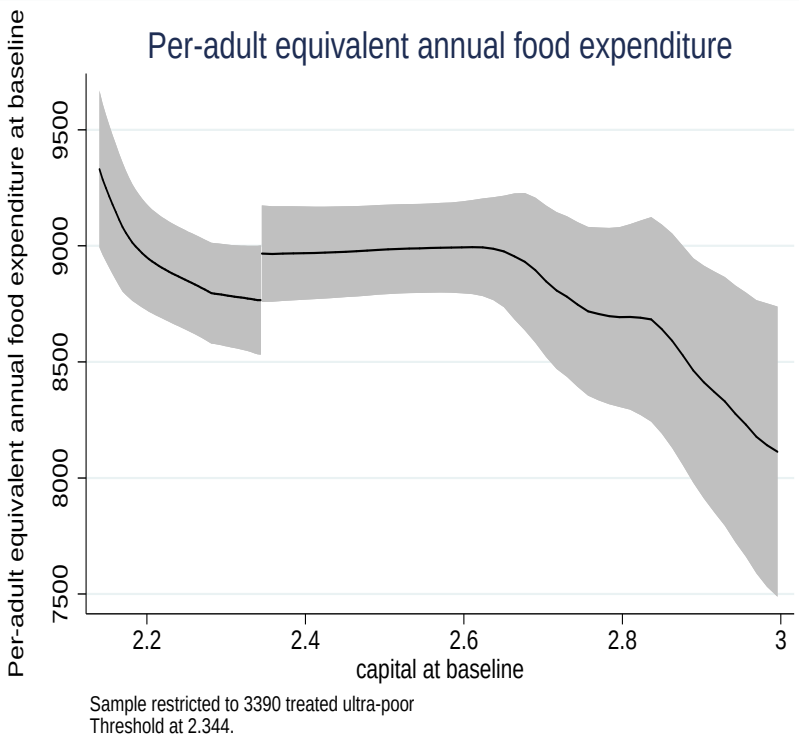
- We rank beneficiaries by their assets+transfer value
- We compute the average shock of controls at similar levels of assets (20 windows)
- Under the assumption that people with similar asset value receive similar shocks we can use shocks experienced by controls to adjust the beneficiaries' responses

Changes in assets with shock adjustment (green)

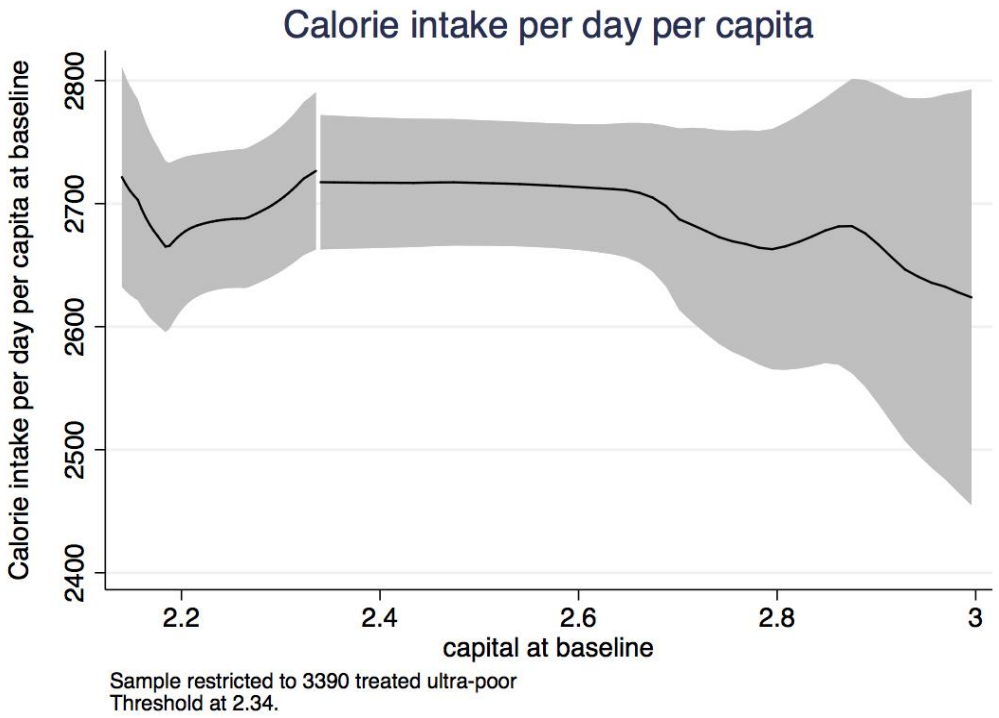


4. Changes in observed traits around the threshold

Nutrition

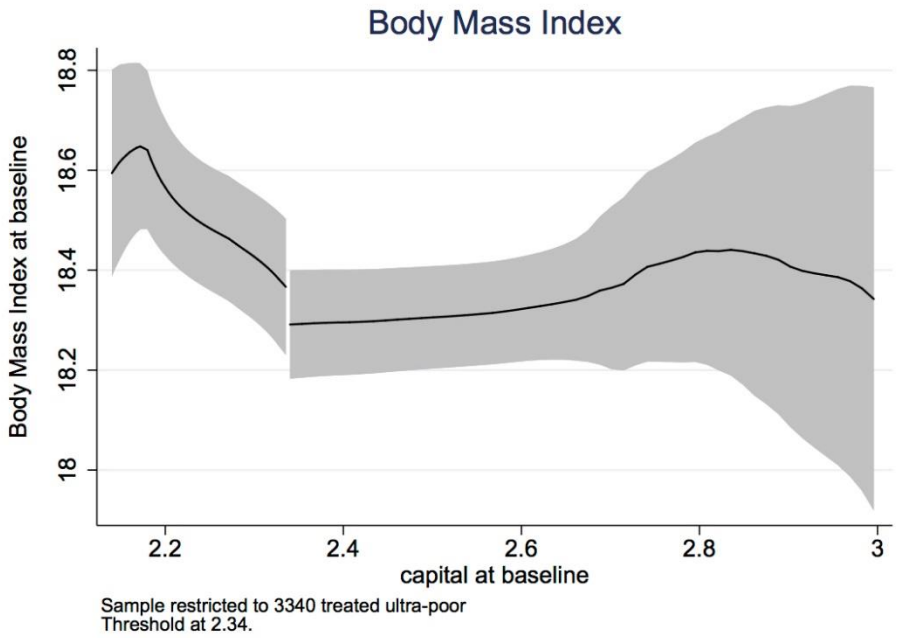


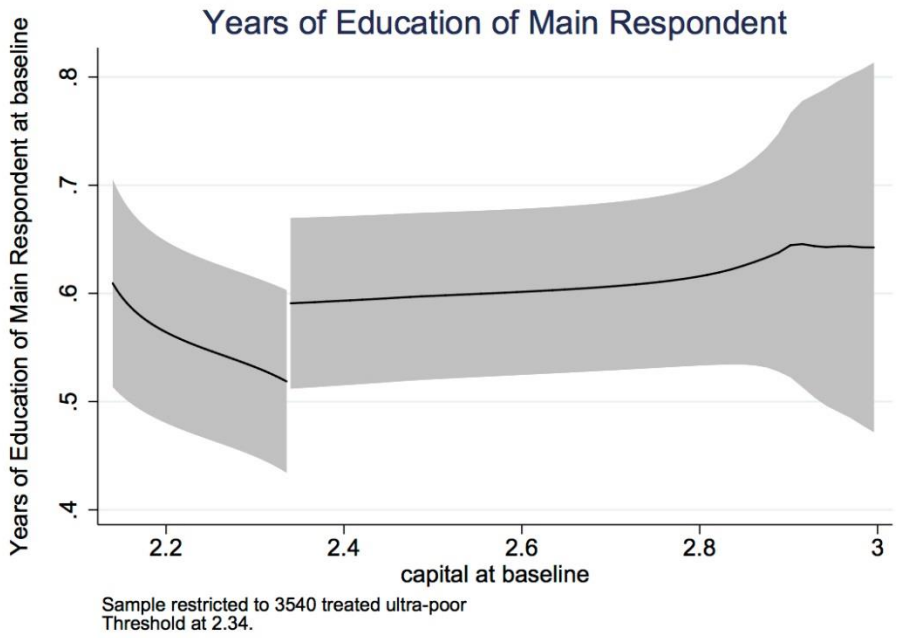
Sample restricted to 3390 treated ultra-poor
Threshold at 2.344.



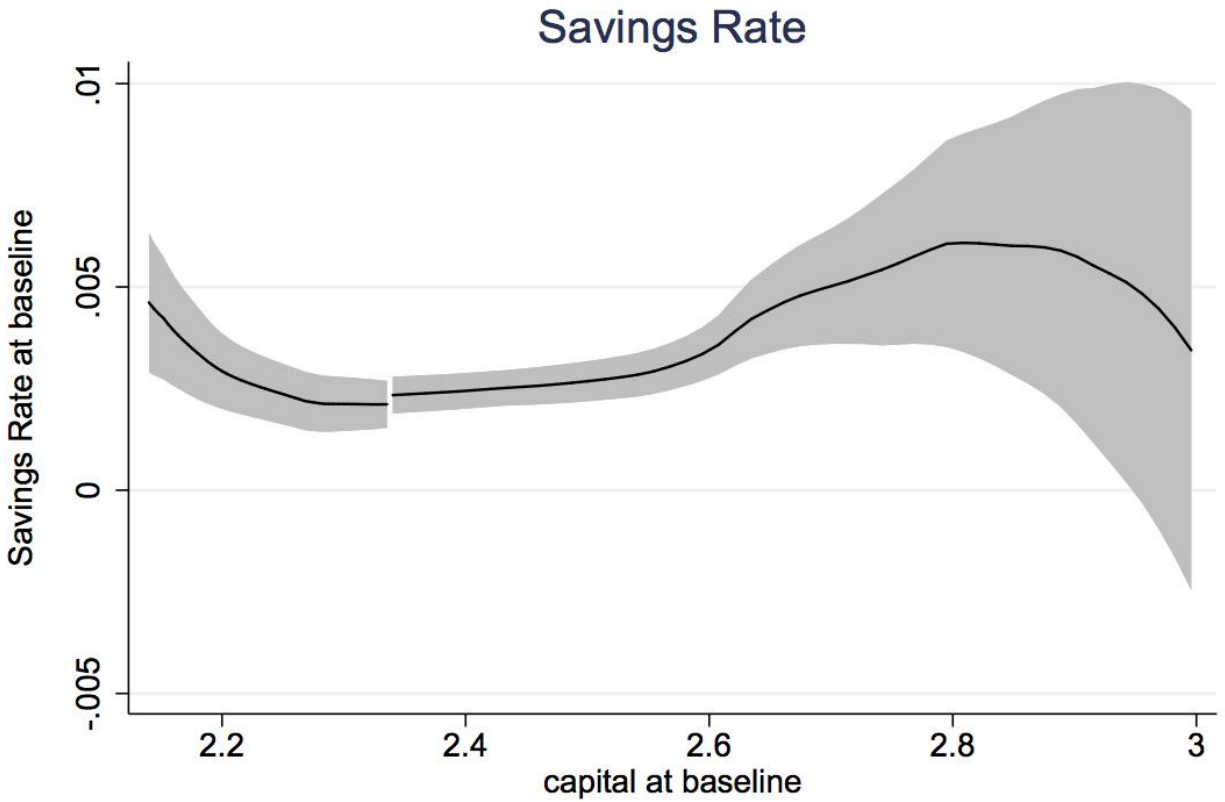
Sample restricted to 3390 treated ultra-poor
Threshold at 2.34.

Human capital

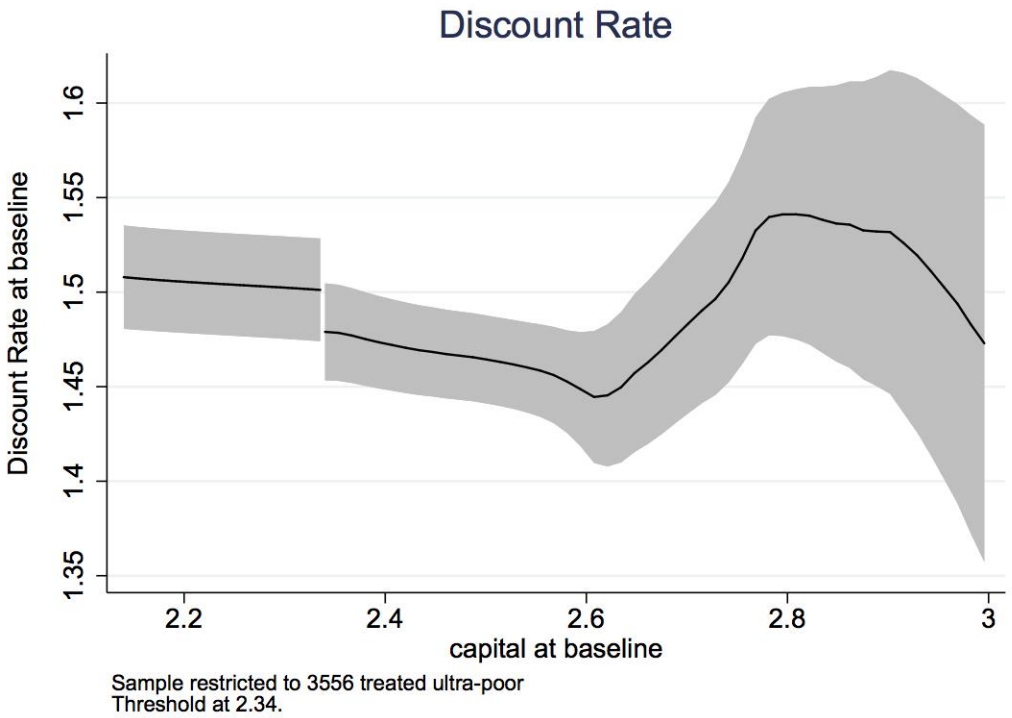




Behavioral 1: impatience



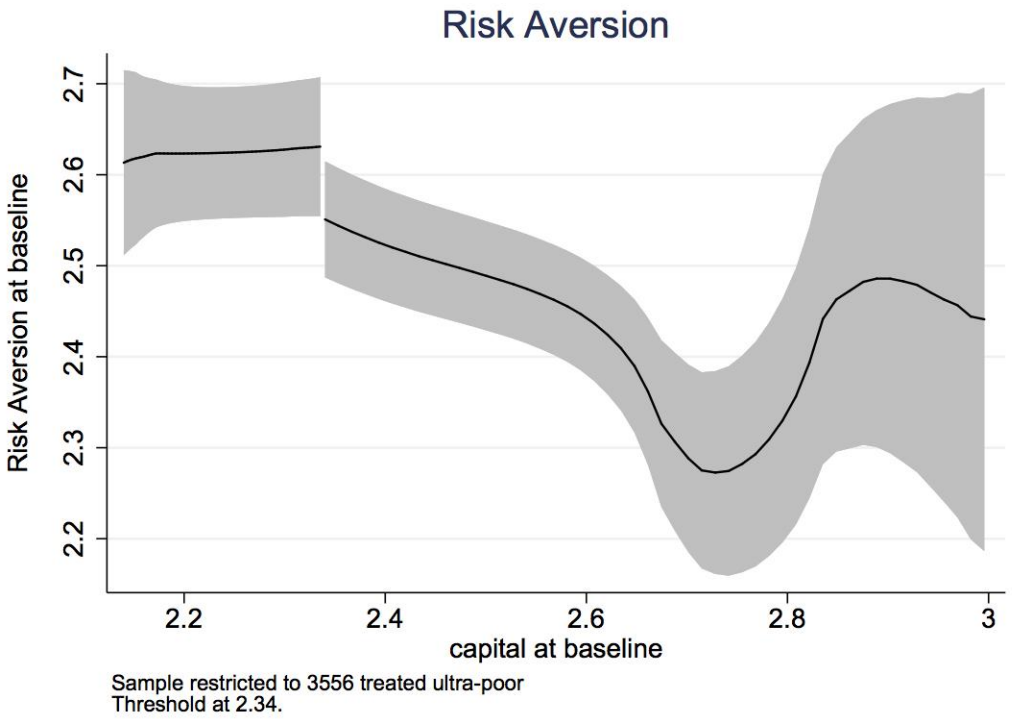
Behavioral 1: impatience



Suppose you have won 200 taka in a game. You can get this 200 taka today or get 250 taka instead in one month. Which one would you prefer?

1) 200 taka today
2) 250 taka in one month

Behavioral 2: risk aversion



Which payoff would you prefer?

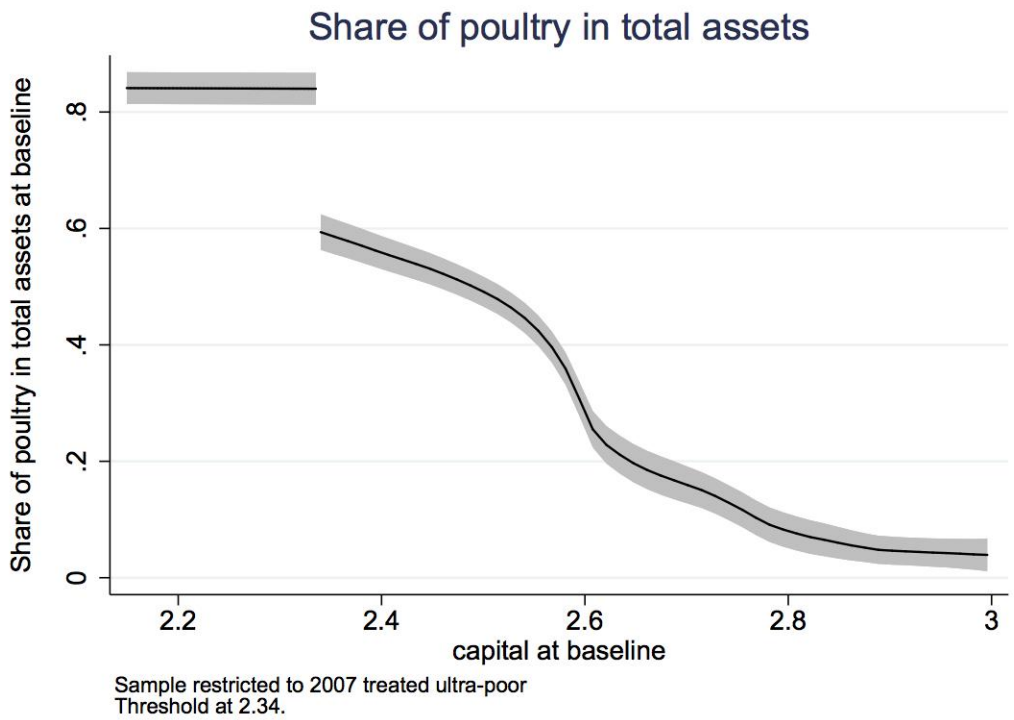
1) 100 for winning, 100 for losing
2) 200 for winning, 60 for losing
3) 300 for winning, 20 for losing
4) 400 for winning, 0 for losing

Mechanisms

Technology

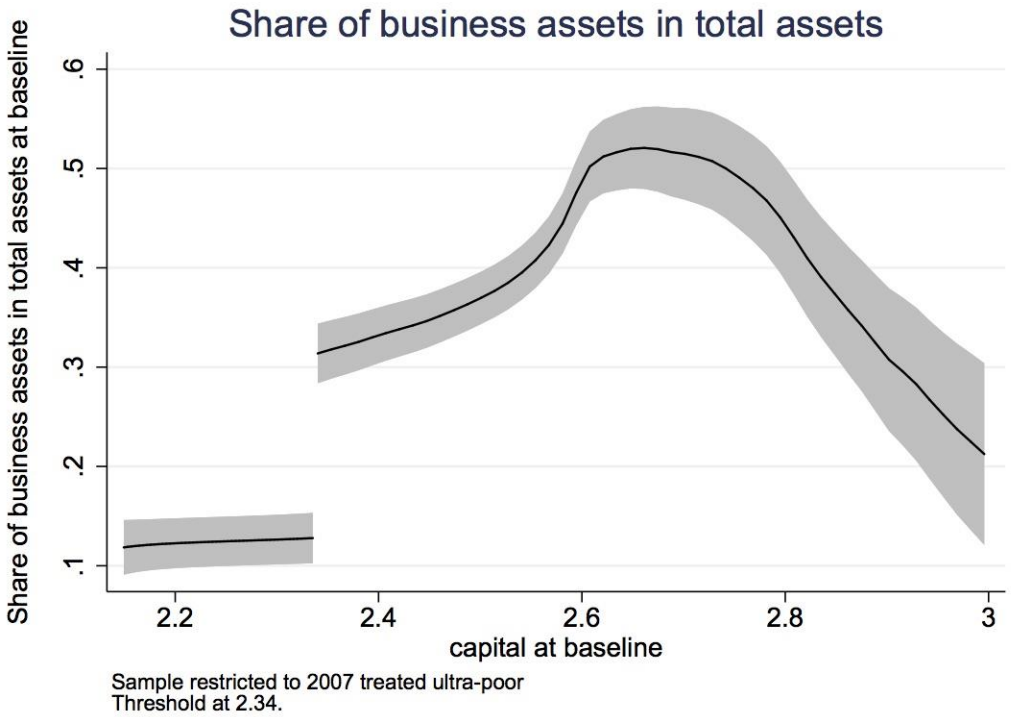
- Why can't the poor get past $\hat{k}$ on their own?
- Recall: need IRS and no credit markets
- We know they cannot borrow and that they have negligible savings
- Evidence for IRS: fixed factors/ indivisibilities

Asset composition differs: fewer chickens



20%
DROP

More business assets (esp rickshaws and boats)



20%
HIKE

Taking stock

- Beneficiaries who do not start with complementary inputs regress back to poverty despite the large transfers
- Those who do are elevated above the threshold and set on a sustainable path out of poverty
- They save and invest year after year
- They diversify into assets (e.g. land) that were not transferred by the program

Policy

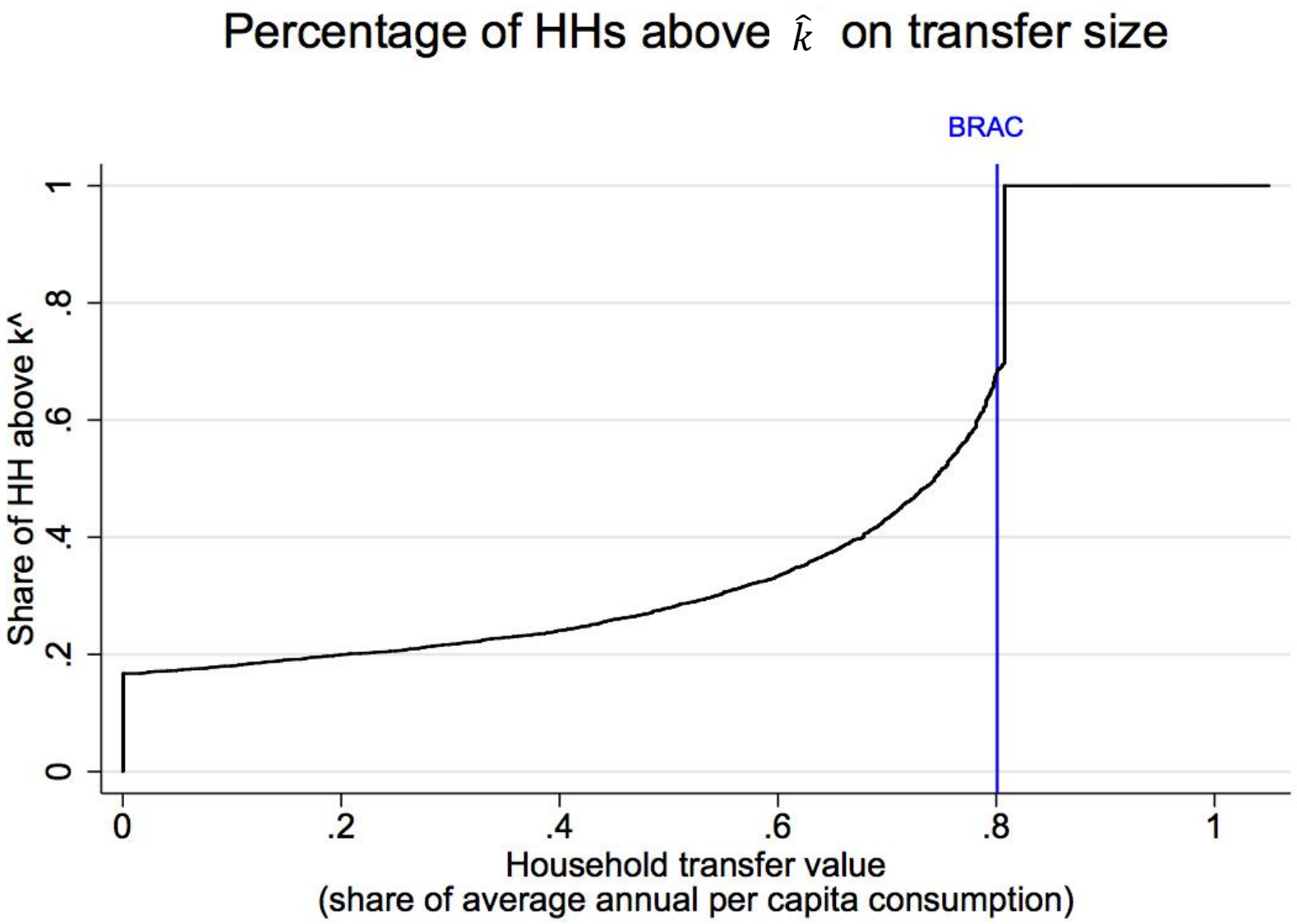
Policy implications

- The existence of a poverty threshold implies that only transfers large enough to push beneficiaries past the threshold will reduce poverty in the long run
- Smaller transfers might increase consumption for a short period but will have no long lasting effects
- BRAC asset transfer worth $515 (.88 of PCE) was enough for 66% of beneficiaries
- Micro-loans are typically <$200

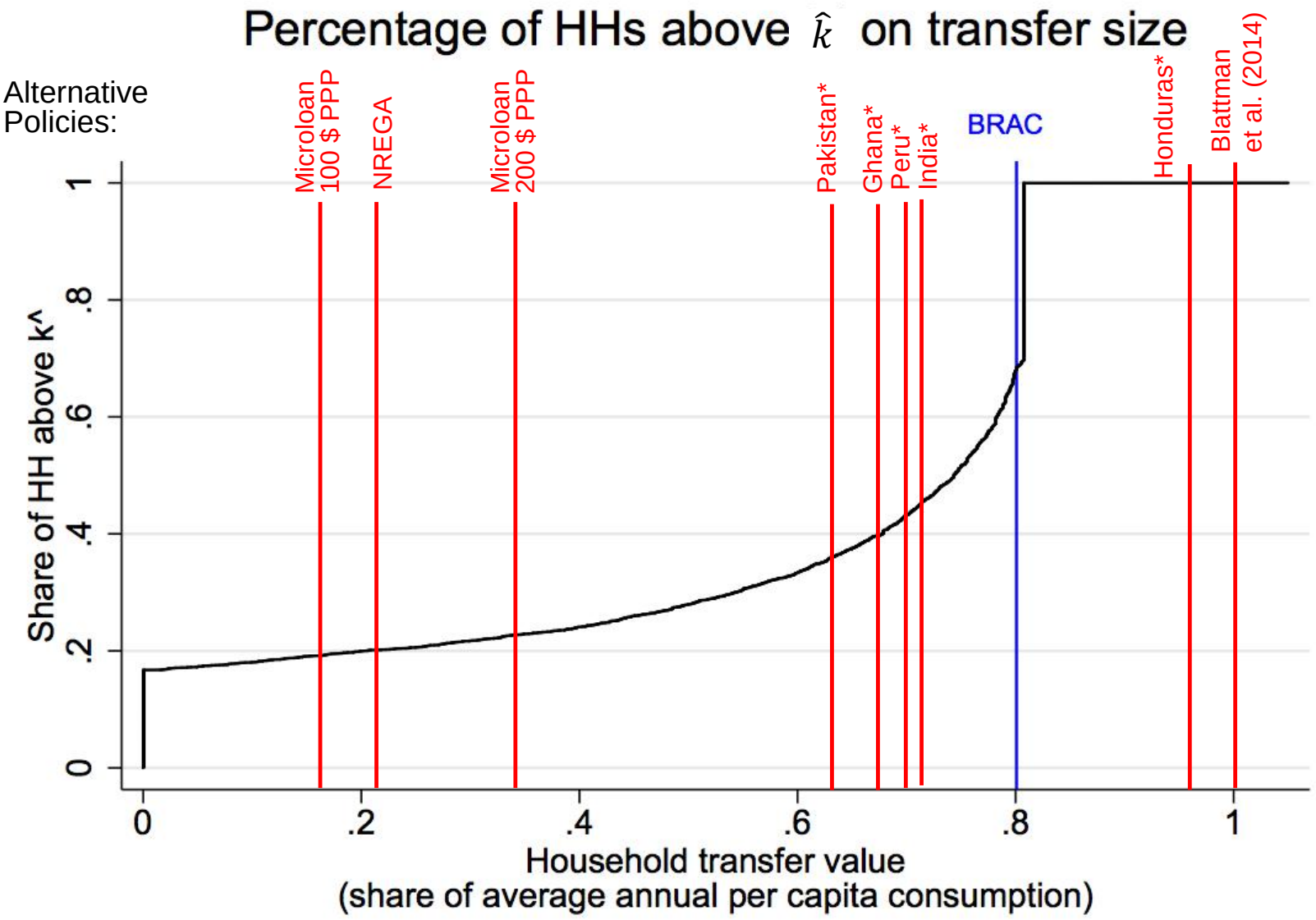
The evidence in one slide

- Microfinance is cheap (even profitable) but ineffective at allowing access to more remunerative occupations (Meager 18, Banerjee et al 15)
- Vocational training programs typically have low take up if not they are effective, but expensive (McKenzie 17, Alfonsi et al 18)
- Large assets & cash grants are effective at promoting occupational change, but expensive (Banerjee et al 15, Blattman et al 14,16, Bandiera et al 17)

A big problem requires a big solution



A big problem requires a big solution



* Country names refer to study sites in Banerjee et al. (2015)

thank you