

Discussion - Persistence of Poverty and Anti-Poverty Policies

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Discussion of Papers

- Three Papers: Araujo, Bosch & Schady (ABS), Macours & Vakis (MV), and Bandiera, Burgess, Das, Gulesci, Rasul, Sulaiman (BBDGRS)
- All three papers study some form of cash/wealth transfer to the poor,
 - A pure cash transfer (ABS)
 - Combination of transfer of:
 - * Livestock assets and skills (BBDGRS)
 - * CCTs combined with exposure to social interaction with local leaders (MV)

- All three are interested in medium to long term effects
- In particular, the latter two look at effects even after the direct resource transfer is withdrawn
- So well placed to study the effect on such policies on persistence of poverty

- ABS study whether cash transfers can help households escape poverty traps, i.e., the long-term effects of cash transfers
- Transfers could have positive effects by helping liquidity constrained households invest in productive assets as well as invest in child human capital
- Transfers could have negative effects if they discourage work
- In their review, they find mixed evidence on whether cash transfers increase human capital in the long term as well as whether households invest cash transfers in productive assets
- On whether cash transfers affect work, there is clearer evidence - no negative effect.

- ABS use two data sets and empirical strategies to look at the medium-and long-term effects of a cash transfer program in Ecuador on human capital
- Experimental evidence (comparison of “early” and “late” treatment groups) - do children in households that received cash transfers while they were in utero or younger than 5 years of age have better schooling outcomes (enrollment rates, years of schooling completed, test scores, “strengths and difficulties”) 10 years later?
- The answer they find is not really - short-term effects on child physical and cognitive development (Paxson and Schady 2010), but no long-term effects on enrollment, grade attainment, or test scores

- RD evidence (comparison of just-eligible and just-ineligible households): Are children whose families received cash transfers while they were in late childhood or early adolescence more likely to be enrolled in secondary or post-secondary education 7 years later?
- Confirm impacts on school enrollment (as in Schady and Araujo 2008), modest for younger children (1-2 percentage points), somewhat larger for older children (3-5 percentage points)
- One of the cash transfer program in Latin America, covering ~40 percent of the population, costing 0.7 percent of GDP and transfers amounted to ~15-20 percent of pre-transfer income of average recipient household

- Specific comments: why not so effective?
 - Were the sums small relative to need (private schools)?
 - Was it the lack of conditionality (some confusion about this)?
 - Was it lack of combination with other interventions (e.g., improvement in schools)?

- MV analyses the medium-term impacts of a short-term transfer programme in Nicaragua
- Builds on earlier work by authors that showed that social interactions with successful leaders substantially increased program impacts on nutritional and educational investments while the program was operating.
- In this paper they use data collected two years after the program ended, to show that these social multiplier effects persisted to a remarkable degree.
- Two years after the transfers stopped, households who live in the proximity of successful leaders still show significantly higher investments in both education and nutrition of their children.

- The earlier work showed social interactions with nearby leaders positively affected human capital and productive investments as well as the future-oriented attitudes of other beneficiaries during the program.
- Worry is whether these shifts are sustainable - households might well quickly revert back to pre-program behaviour when the transfers stop.
- New results suggest that interactions with leaders may have affected other households' aspirations by setting good examples and sharing their experiences.
- They further show that interactions with leaders changed parents' beliefs or expectations about their children's educational and occupational potential, which can help explain the sustained higher levels of human capital investments.

- Specific comments : combination of shifting beliefs and resources is effective, and effect longlasting
 - Would be useful to see clearly the marginal contribution of individual inputs, i.e., beliefs and resources
 - Is it shifting the expected returns parameter and if so, more like a productivity shock as opposed to a poverty trap?

- BBDGRS study a large, one-off transfer of assets (livestock) and skills (TUP)
- Labor survey fielded in 1309 village in rural Bangladesh, covering 21k HHs across the wealth distribution over 7 years
- Poor women mostly engage in casual labor while wealthier women specialize in livestock rearing which has higher hourly returns and more regular labor demand
- Why do the poorest choose casual labor?
- Can a one-off transfer set them on a sustainable trajectory out of poverty?

- They find that the program allows poor women to work in livestock rearing
- The poor were willing but unable to rear livestock and the program removes barriers that stopped them
- This sets the poor on a trajectory out of poverty where they save more (9 fold increase after 2 & 4 years)
- Accumulate more assets over time, leading to larger gains which is consistent with poverty traps
- The program leverages idle capacity: the average beneficiary works 22% more hours and earns 37% more

- The baseline labor choices were therefore not optimal

- Specific comments : very compelling evidence on poverty traps
 - Is it the size or the kind of transfer that make it work?
 - In particular, is it the combination of assets and training that works?
 - If access to capital is the binding constraint, an equivalent transfer of cash or access to credit in suitable terms might have worked too.

General Thoughts

- Combination of policies seem to work well - good old complementarities?
 - Say, production function is $y = Af(x_1, x_2)$ and $f_{12} > 0$
- Alternatively, multiple-friction or distortion view of the world and so just a big enough cash transfer or making credit available is not enough
 - Certain critical markets other than credit could be imperfect (e.g., training)
 - Individuals may not possess the best information about themselves or the external world (aspirations, self-belief)
 - Throwing cash or capital may not be sufficient

- Poverty traps or just relaxing constraints (conditional convergence view)?
- If poverty traps, what is the mechanism?
- Generic story - y depends on some choices (likely, constrained) x and then x depends on y through either income effect, or reflecting saving and accumulation
- In Ghatak (2015) I distinguish between two kinds of poverty - "External Frictions" or "Choice under Scarcity" views
- The first view is the poor is just like the non-poor in terms of their potential (that includes ability, preferences) and they simply operate in an unfavourable environment or with low endowments

- In terms of a production function $q = Af(x)$ - low x , bad A (conditional convergence).
- Various frictions can impede the smooth functioning of markets as well as technological non-convexities that make it disadvantageous to be poor or operating at very low scales - the true A' is worse than potential A

- We lump these together and call them "external frictions" (along with frictions that arise from poor governance, infrastructure etc) that prevent the poor from making the best use of their endowments through exchanges in the marketplace or through technology.
 - Market frictions
 - Government Frictions
 - Social Frictions
- To the extent this can be fixed by placing a poor individual in a favourable external environment, it will be a transient phenomenon but otherwise the poor may be trapped in poverty.

- In a sense, in this view the phenomenon of poverty, other than being *inequitable*, is also *inefficient*: a combination of individual rationality and market forces should work to utilize any potential gains (e.g., lost income from insufficient investment in human capital) and the question is, what policies will remove the frictions that prevent this from happening.

- A very different view of poverty is, even if there were *no external frictions*, the poor are subject to different pressures and constraints from the non-poor and that drives them into making *choices* that are very different, and more importantly, that can reinforce poverty.
- It is tempting to call this view "poor but *behavioural*" but we are going to argue that this is a broader phenomenon
- I will ignore for now behavioural or cognitive frictions ("internal frictions")
- Even if all individuals are rational in the neoclassical sense, choices under extreme scarcity can reinforce the tendency of the poor to stay poor due to *non-homothetic preferences*, or *strong income effects*.

- For example, at very low income levels, subsistence considerations may rule out the feasibility of saving at a reasonable rate, and investing money in health and education to secure a better future for themselves and their children.
- In this view, poverty is "efficient" and there are no self-correcting mechanisms to be unleashed with suitable supply-side policies
- Either redistribute, or focus on policies that will change behaviour (or, ignore!)

A Benchmark Model

- Representative individual, non-stochastic environment
- Suppose production depends on a single non-labour input k_t given by a standard neoclassical production function:

$$q = Af(k_t).$$

- Preferences are homothetic and people save at a constant rate s , as in the Solow model.
- Let k_t denote the capital endowment in time t

- Assume capital depreciates fully after use
- Bequests of generation t determines capital endowment in period $t + 1$:
 $b_t = k_{t+1}$

- With perfect capital markets we get

$$k_{t+1} = s(\pi + rk_t).$$

- Denoted by red line in the figure below
- Assuming $sr < 1$ we get convergence.

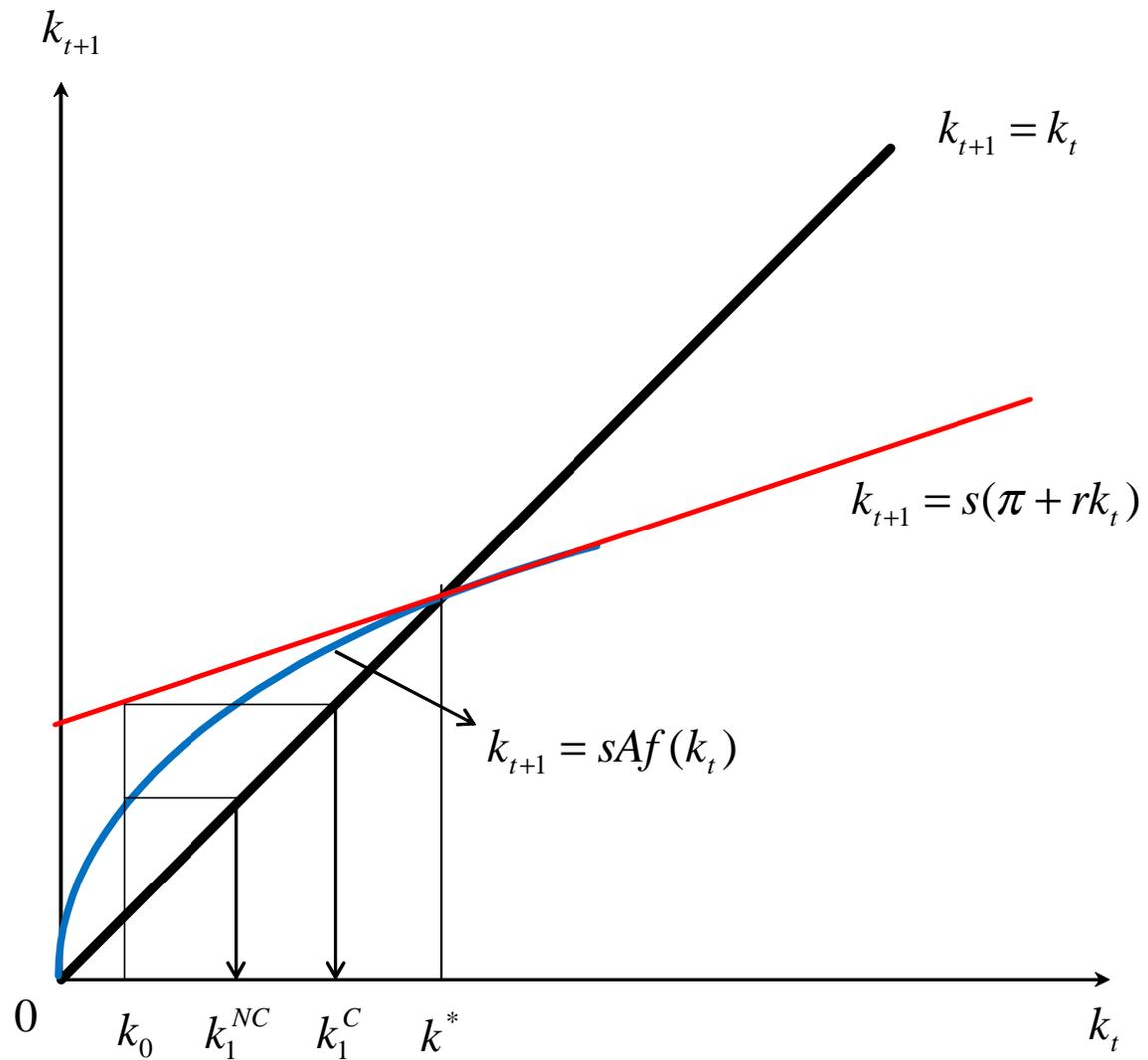


Figure 1: Convergence in the Solow Model

- Convergence is the anti-thesis of poverty traps
- If the deep parameters are the same ($s, A, f(\cdot)$) then initial endowment of k does not matter in the long-run
- In the short-run initial endowments matter for individual income, but not productive efficiency
- Of course, if these parameters are different then individuals converge to different steady states: **conditional convergence**

2. Departures from Benchmark Model - External Frictions

- Relax various assumptions of the benchmark model to allow the possibility that two individuals who are *identical in all respects except for their initial endowment of capital (or wealth), k_0* , can end up with different levels of incomes and capital stocks in steady state, which is a formal way of describing a poverty trap
- Multiple stable steady states, initial conditions matter, one-shot policies may have long-run effects

2.1 Capital Market Imperfections

- Suppose capital markets are imperfect.
- For expositional simplicity, let us assume that there are no capital markets.
- The case of no capital markets is equivalent to the standard Solow model where individuals save a constant fraction of their income to accumulate capital over time.
- As we assume capital fully depreciates, the modified transition equation is:

$$k_{t+1} = sAf(k_t).$$

- Depicted by blue curve in Figure 1
- We still get convergence- with capital markets convergence is speeded up

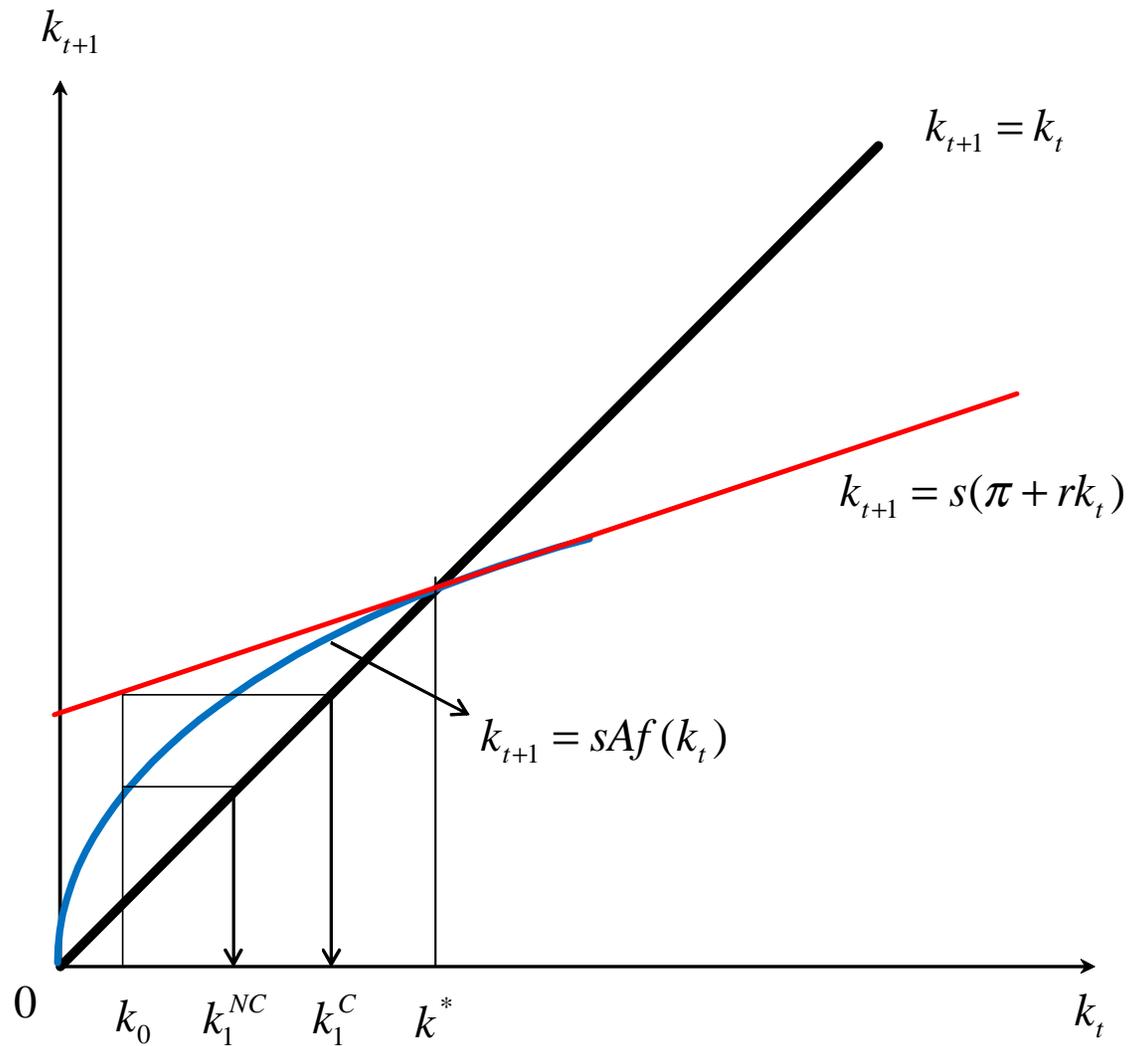


Figure 1: Convergence in the Solow Model

2.2 Non-convexities - in the Production Technology

- For example, let us introduce set-up costs
- $y = Af(k)$ for $k \geq \underline{k}$, $= \underline{w} > 0$ otherwise.
- $\underline{w} < Af(\underline{k})$ is returns from subsistence activity
- You can still save up: sr will be slope
- In this case, there will be multiple steady states (Figure 2)

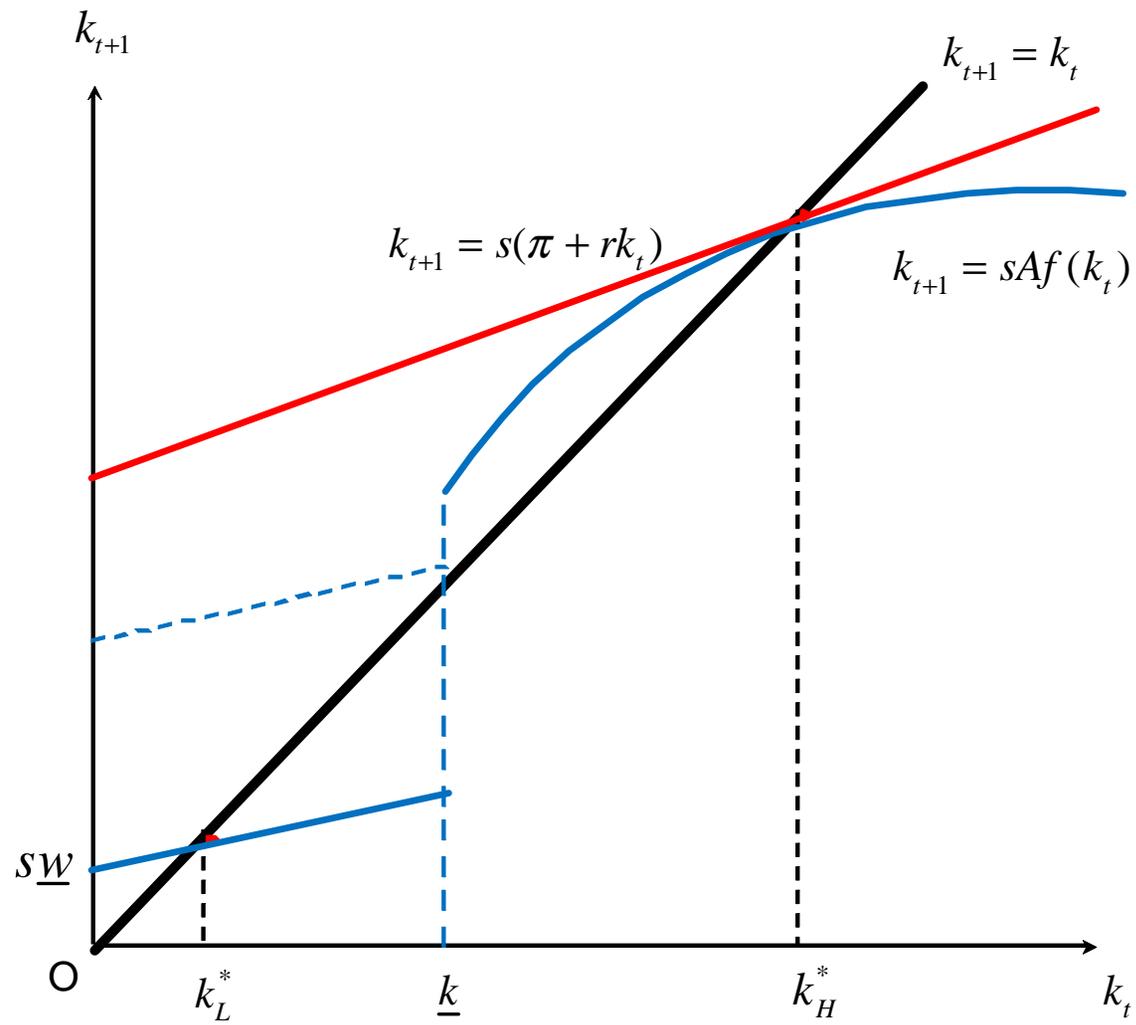


Figure 2: Non-convergence in the Solow Model

- With perfect capital markets, it is possible to borrow \underline{k} or more, and there is no poverty trap.
- Or, if s or \underline{w} or r are high enough, then can save your way out of the poverty trap

2.3 Non-convexities in the savings technology or A

- Recall that without capital markets the wealth transition equation is:

$$k_{t+1} = sAf(k_t).$$

- Suppose everyone has the same s as far as preferences go, but due to imperfect property rights (easy to steal from the poor), only the wealthy are able to save effectively (similarly, for A , which captures complementary inputs such as skills or infrastructure)
- Will get poverty traps without any technological non-convexities.

Friction-driven Poverty Traps - Take Away Points

- First, no single friction is sufficient to trap individuals in poverty
 - If it is capital market frictions we would require some other departure from the standard framework (e.g., non-convexities)
 - That is why the fact that some studies fail to find any direct evidence of lumpiness of investments *or* find that microfinance loans have not been effective in reducing poverty significantly, *alone* is not sufficient to conclude that there is limited empirical support in favour of poverty traps (as Kraay and McKenzie, 2014 argue).

- Second, if capital is the only input or all other inputs have perfect rental or sales markets so that capital is, in effect, a "sufficient" input (for example, in the presence of cash-in-advance constraints), then capital market frictions or restrictions on inter-temporal resource allocation are *necessary* for friction-driven poverty traps to emerge independent of any other frictions.
- Third, if inputs other than capital are needed for production (such as human capital or land) and these markets are subject to imperfections that cannot be overcome via the capital market, then direct intervention in the market of this input would be warranted.

3. Departures from Benchmark Model - Non-homothetic Preferences

- When preferences are non-homothetic, then one can have poverty traps that are driven by income effects only.
- Output is given by $q = Af(k)$ and that capital markets are perfect, and so the income of an individual is

$$y_t = \pi + rk_t$$

where

$$\pi = \max_k Af(k) - rk.$$

- Suppose there are no external frictions whatsoever, barring bequests being non-negative

- As before, let us assume agents derive utility from consumption c and from bequest b .
- In addition, we allow individuals to consume a luxury good z .
- The utility function is given by:

$$U(c, b) = \log c + \beta \log (b + B) + \gamma \log(z + Z)$$

- $B > 0$, $L > 0$, $\beta \in [0, 1]$, and $\gamma \in [0, 1]$.
- We assume that the marginal utility of bequests at $b = 0$ is higher than the marginal utility of luxury goods when $z = 0$

- We can think of c as basic consumption, b as money passed on to children, and z , a luxury good (durables, a vacation) which is not essential for survival but is consumed as income goes up.
- Our assumption ensures that for low levels of income, all income is spent on c , for moderate levels of income it is split between c and b , and finally, for high levels of income it is split between c , b , and z .
- Total income at time t is

$$y_t = \pi + rk_t$$

- As before, $k_{t+1} = b_t$.

- The budget constraint is

$$c_t + b_t + z_t = \pi + rk_t.$$

- It is straightforward to derive that there will be two income thresholds, \underline{y} and \bar{y} , and corresponding thresholds for capital

$$\underline{k} \equiv \frac{B - \beta\pi}{\beta r}$$
$$\bar{k} \equiv \frac{(1 + \beta)Z - \gamma B - \gamma\pi}{\gamma r}$$

- Using the fact that $b_t = k_{t+1}$, we will have:

$$\begin{aligned}
 k_{t+1} &= 0 \text{ for } k \leq \underline{k} \\
 &= \frac{\beta}{1+\beta} (rk_t + \pi) - \frac{B}{1+\beta} \text{ for } \underline{k} \leq k \leq \bar{k} \\
 &= \frac{\beta}{1+\beta+\gamma} (rk_t + \pi) - \frac{(1+\gamma)B - \beta Z}{1+\beta+\gamma} \text{ for } k_t \geq \bar{k}.
 \end{aligned}$$

- Depicted in Figure 4

- We assume that $\frac{\beta}{1+\beta}r > 1 > \frac{\beta}{1+\beta+\gamma}r$ and $B - \beta\pi > 0$ (which is likely in economies with low productivity, namely, a low level of A) to generate a poverty trap.

- In particular, families that start poor (capital stock less than \underline{k}) don't save at all and therefore, have a steady state capital stock of 0, those who start with more than \underline{k} grow rapidly up to the point where the saving rate falls (as luxury consumption kicks in) and they converge to a high capital stock (k^*)

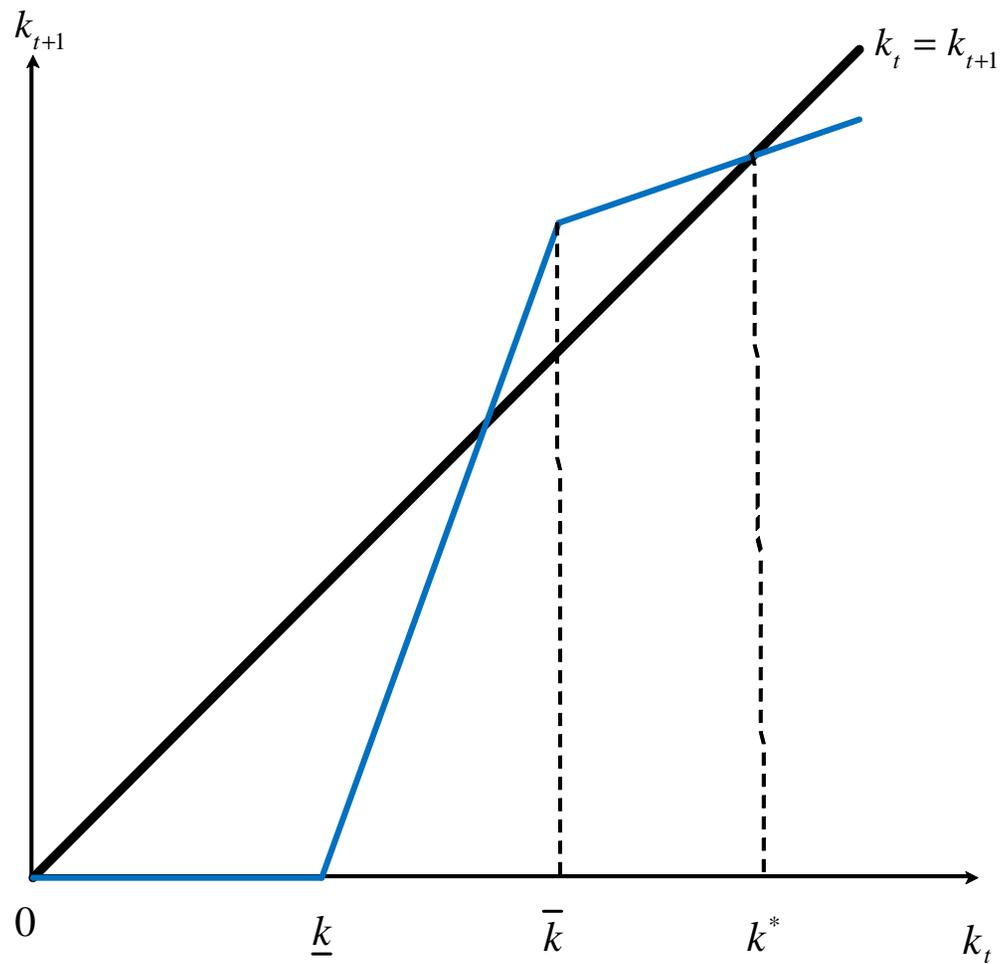


Figure 4: Income effects & poverty traps

- The sources for these kinds of poverty traps that emerge if choices are non-homothetic in income, can be more general than in the specific channel developed above.
- For example, the scarce resource in question may be time or attention span or cognitive capacity rather than physical or financial capital.

- It is possible to extend the scarcity channel to consider how it interacts with insufficient intergenerational altruism, as well as various behavioural biases.
- Interpreting b broadly as any investment in the productive capacity or welfare of children, suppose society puts a greater weight (say, $\hat{\beta}$) on the welfare of children (or, in the case of gender bias, a greater weight on the welfare of female children) than parents do (namely, β) where $\hat{\beta} > \beta$.
- Given the income effect identified under the scarcity channel, we can readily see that the gap between the socially optimal level of investment and what will be chosen by parents will be larger, the poorer are the parents.
- Similarly, we can allow individuals to have behavioural biases in addition to the channel of limited time or attention span

- Has to be that not that only the poor are subject to these kinds of biases, but that low incomes exacerbate these biases, or, their negative consequences.
- Introduce an inessential consumption good (e.g., tobacco or alcohol) v and add the term $\delta \log(v + V)$ (where $\delta \in [0, 1]$ and $V > 0$) to the utility function and make the assumption $\frac{\delta}{V} > \frac{\beta}{B}$.
- This is similar to what Banerjee and Mullainathan (2010) call a temptation good.
- By a familiar argument, individuals will spend all their income on c for very low levels of k , but now they will spend some of their income on v as k crosses a threshold, and only for a higher threshold they will choose a positive value of b .

- Earlier, a cash transfer to increase the financial resources of a poor family above \underline{k} would be sufficient to help them escape the poverty trap but now, there is an intermediate range of k such that an unconditional cash transfer will partly get frittered away on v

Take Away Message - Scarcity-Driven Poverty Traps

- First, poverty traps can exist even without any external frictions due to the operation of strong income effects in the behaviour of individuals.
- Second, as the root cause of scarcity-driven poverty is scarcity, the most obvious policy implication is a lump-sum transfer to the poor but if there are external frictions to fix (say, in capital markets or in health or education) then these can go together, but there are likely to be strong complementarities between these kinds of policies

- Third, to the extent there are grounds for a paternalistic intervention, because the preferences of the individual is different from that of the policymaker (which can be due to behavioural biases or insufficient intergenerational altruism or gender bias), unconditional lump sum transfers may not be the most efficient form of intervention and there may be a case for other policy instruments (e.g., conditional cash transfers).

4. Theory to Policy

- Three broad categories of anti-poverty policies

1. Enabling the poor greater access to markets

2. Improving the access of the poor to public services and infrastructure

3. Explicitly redistributive in nature.

- All through, in discussing their relative merits we ignore implementation issues (e.g., targeting and self-selection) as well as externalities

Examples

- Reducing transactions costs in specific markets (e.g., savings, credit, insurance), providing inputs which are not readily available in the market (e.g., training specific skills), improving access to information, and reforming property rights.
- Various measures to improve accountability and reduce leakage and corruption in the provision of public services like health and education.
- Directly transferring resources to the poor, in cash or in kind.

- Forms of transfers

- Cash transfers can be unconditional, or conditional on children attending school and family members receiving preventative health care (e.g., Progresa, renamed Oportunidades and now, Prospera, in Mexico, and Bolsa Familia in Brazil) or in-kind (e.g., food, sanitation, education, health services provided free or at a subsidized rate to the poor).
- We will refer to these as UCTs, CCTs, and IKTs.

Lesson 1: Other than access to capital and savings, or an UCT no other *single* intervention is likely to get rid of poverty traps.

- More broadly, this reflects the standard economic argument that unless we know what is the specific friction, it is best to leave it to the recipient to decide what she will do with the savings or loan, or the cash transfer.
- Only in an extreme case where some critical non-capital input (e.g., training or land) is not available in the market or is very costly, and the income generation technology is non-convex with respect to it, there are grounds for intervening directly to make that input accessible to help overcome poverty traps.
- This is one of the arguments behind the recent policy interest in UCTs.

- For example, the work of GiveDirectly in Kenya, a charity that gives no-strings attached cash grants, equivalent to almost two year's worth of local income, to the poor has received a lot of attention.
- While long term impacts are yet to be known, at least in the short-run the impacts are quite good in terms helping build assets, encouraging investment in and generating revenue from businesses (Haushofer and Shapiro, 2013).
- In addition, several studies using randomized field experiments have highlighted the importance of capital and access to a savings technology.
- A well-know study by De Mel et al (2008) have found high potential rates of return to capital in small business among Sri Lankan microenterprise owners that far exceed formal sector interest rates.

- Another important study show that providing access to non interest-bearing bank accounts led to significant increase in savings, productive investments and private expenditures (Dupas and Robinson, 2013).

Lesson 2: Even with these policies, at best poverty traps in a narrow sense will be eliminated, i.e., two individuals who, except for income or wealth, are identical will not end up very differently in the long-run. But if other markets are underdeveloped (e.g., acquiring skills), infrastructure is poor, then neither will do very well.

- In terms of our model the main problem is A is low, i.e., the problem of conditional convergence remains and individuals who are otherwise identical but live in better environments (in terms of market access, infrastructure) will do better.
- As noted above, cash transfers or facilitating borrowing or saving will have limited impact on incomes if markets for certain critical (non-capital) inputs are not developed.

- Ghatak, Mitra, Kumar (2014) who study the bicycle programme in Bihar found that the poorer sections, who lived in more remote areas with little market access did prefer in-kind transfers to cash.
- In such circumstances, a direct intervention in improving A (or, encouraging migration from a low A to a high A area) may be the best policy, and an excessive focus on poverty traps can distract our attention from this more basic problem.
- Indeed, even if there does not exist multiple steady states, the elasticity of response to changes in certain policies can be quite high.
- The steady-state level q is $q^* = (A)^{\frac{1}{1-\alpha}} s^{\frac{\alpha}{1-\alpha}}$, i.e., the steady state output is a *convex* function of A and so elasticity of response to policy changes could be quite high.

Lesson 3: A mix of interventions that relax the budget constraints of the poor *and* remove certain external frictions are likely to yield significantly high returns compared to an intervention that addresses only one of these problems

- For example, if we fix financial markets or give a large cash grant, and improve access to training or infrastructure, gains are likely to be much higher than these individual interventions.
- Recall from our model that $q = Af(k)$, i.e., k (or h) and A are complements.

- Indeed, Bandiera et al (2013) find that sizable transfers of assets and training to impart skills in Bangladesh enable the poorest women to shift out of agricultural labor and into running small businesses, which persists and strengthens after assistance is withdrawn, and leads to a 38% increase in earnings.
- Similarly, Blattman et al (2014) find that cash transfers coupled with business training very effective among impoverished Ugandan women.
- In contrast, McKenzie and Woodruff (2014) review training business owners from a dozen randomized experiments and find little lasting impact on profits or sales.

Lesson 4: CCTs may be preferred to UCTs when the individual's preference and the policymakers preference differs.

- Could be due to the presence of behavioural biases (e.g., excessive weight on temptation goods or present consumption), insufficient intergenerational altruism, or gender bias
- Even though there isn't that much evidence that the poor fritter the money away (Evans and Popova, 2014), there is fairly compelling evidence that CCTs are more effective than UCTs in raising educational outcomes.
- Baird et al (2013) studied twenty-six CCTs, five UCTs, and four programmes that ran both in parallel and found that school enrolment rose by 41% on average across all the CCT programmes, while under the UCT programmes, the increases was 25%.

- This does not necessarily mean CCTs are better in welfare terms than UCTs, but as with taxes or subsidies on a specific good or service, it does affect behaviour through the standard combination of price and income effects.
- Also, if the amount the poor invest on children (b in our model) depends on income (y) or wealth (k) in a way that is convex over some region, then given the complementarity between A and k noted above, combining a UCT with a policy that directly tackles a friction on the supply side (say, better schools or health facilities) or raises overall productivity A , is likely to yield higher returns than a policy (with a comparable budget) that makes a cash transfer conditional on individuals undertaking a certain minimum investment in b .

- However, if indeed the underlying grounds for paternalism are strong or externalities are significant, then arguments in favour of CCTs continue to be valid.

General Comments on Combining Theory & Empirical Work

- The choice of a given policy reflects a researcher's implicit priors about what is the binding constraint or scarce input in a given setting
- For that baseline surveys, some basic diagnostic theoretical framework is needed, and quantitative analysis (as in Kaboski's presentation, Besley-Burchardi-Ghatak 2013 on property rights)
- Otherwise, there is a risk of throwing darts in the dark, or applying a treatment or medicine on a patient without checking the symptoms.
- The recent findings on microfinance does suggest it works well in some areas and for some people.

- Therefore, given overall average treatment effects are not impressive, we cannot abandon it as a policy tool - it would be the same as abandoning a particular medication for the population at large, and not those subject to certain health conditions.
- This feeds into a broader point that there is no unique policy that will help remove poverty or achieve development.
- As much as different ailments require different treatments, rather than ask “What works” it is best to ask “What works for a particular problem for a given individual” .
- “What works” presupposes we know the problems of a given individual or an area well, and are simply trying to figure out which method works best