

Conspicuous Consumption and Poverty

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- Poor families around the world spend a large fraction of their income on consumption of goods that appear to be useless in alleviating poverty while saving at very low rates and neglecting investment in health and education.

This Paper:

- We offer an explanation for this observation, based on a trade-off between conspicuous consumption and human capital as signals for income.

Evidence

Banerjee-Duflo (2007) show that the typical poor:

- scarcely invest in their children's education
- are poorly fed
- suffer from health problems
- are worried and anxious to an extent that interferes with their sleep and work
- fail to make trivial investments in their businesses
- save so little that they cannot avoid cutting on their meals when they suffer a temporary decline in income

Evidence cont.

Yet, they spend a large fraction of their income on alcohol, cigarettes, and festivals, among other goods that seem useless in alleviating poverty

Evidence cont.

The New York Times (May 22, 2010)

"Moonshine or the Kids?"

- The reporter argues that “if the poorest families spent as much money educating their children as they do on wine, cigarettes and prostitutes, their children’s prospects would be transformed”.

Evidence cont.

- The Obamza family from the Congo Republic is eight months behind on the \$6-a-month rent and is in danger of being evicted.
- The Obamzas have no mosquito nets, even though they have already lost two of their eight children to malaria. They say they just can't afford the \$6 cost of a net.
- Nor can they afford the \$2.50-a-month tuition for each of their three school-age kids.

Evidence cont.

- Mr. and Mrs. Obamza spend a combined \$10 a month on cell phones
- Mr. Obamza goes drinking several times a week at a village bar, spending about \$1 an evening. By his calculation, that adds up to about \$12 a month.

Evidence cont.

- Mr. and Mrs. Obamza spend a combined \$10 a month on cell phones
- Mr. Obamza goes drinking several times a week at a village bar, spending about \$1 an evening. By his calculation, that adds up to about \$12 a month.
- Other villagers said that Mr. Obamza drinks less than the average man in the village

Evidence cont.

- Bloch-Rao-Desai (2004) and others
emphasize the prestige motive underlying marriage expenses.
Argue that daughter's marriage (dowry and celebrations)
could amount to more than six times a family's annual income
- Rao (2001)
festivals amount to 15% of households expenditures in rural
India



Evidence cont.

Case et al. (2008)

Households in South Africa spend the equivalent of a year's income for an adult's funeral, financed, in many cases, by borrowing.

Evidence cont.

The New York Times (March 18, 2010)

“For India’s Newly Rich Farmers, Limos Won’t Do”

- A newly rich farmer who sold land for about \$109,000, rented a helicopter for \$8,327 to transport his son to his wedding two miles away.
- The claim in the article, supported by statements from family members and experts, is that the intention is to impress other villagers with the family’s new status and spending power.



Evidence cont.

National Public Radio (2008)/ Radio Free Europe (2007)

- Tajikistan's President, Imomali Rahmon, banned gold teeth, the use of cell phones in universities and big birthday parties.
- The President criticized wealthy citizens “for ‘showing off their wealth’ by throwing elaborate parties and thereby setting a standard for others who try to appear wealthy by holding a large party despite having only modest incomes.”
- The President restricted the number of people at weddings to prevent Tajiks from “using their life savings just to compete with their neighbors”

Evidence cont.

- Charles-Hurst-Roussanov (QJE 2009)
college educated spend about 13 percent less than their high school educated counterparts on visible expenditures, controlling for current and permanent income. Trade-off between race and cons. as signals for success.

Evidence cont.

- Pinker (2003) *How the Mind Works*
status is in our genes and conspicuous consumption is universal
- Wilson-Daly (2004)
pretty women inspire men to discount the future
- Griskevicius et al (2007)
mating goals in men increase their willingness to spend on conspicuous luxuries (and display heroism or dominance). In women, mating goals boost public helping.

Evidence cont.

- Missy Elliott (2004)

bling bling culture (flashy jewelry worn especially as an indication of wealth) encourages young black men and women to spend their money irresponsibly. Artists should encourage young people to invest responsibly in stable, long-term assets







Related Literature

Conspicuous Consumption

Background: Veblen (1899) and others

Formal models: Study the implications of conspicuous consumption wrt market prices and savings.

- Identify positive and negative effects on economic growth.

Notable contributions include: Frank (1985, 1986), Basu (1989), Ireland (1994), Corneo-Jeanne (1994), Glazer-Konrad (1996), Bagwell-Bernheim (1996), Hopkins-Kornienko (2004)

Related Literature

Savings and Income

Friedman (1957): the observation that rich individuals save more is due to the smoothing of consumption

Dynan, Skinner, and Zeldes (2004): higher lifetime income households save a larger fraction of their permanent income

Dynan et al. conclude that their finding is inconsistent with:

- the standard life cycle model with homothetic preferences
- explanations that are based on differences in time preference rates
- subsistence consumption
- variation in Social Security replacement rates.

It is consistent with:

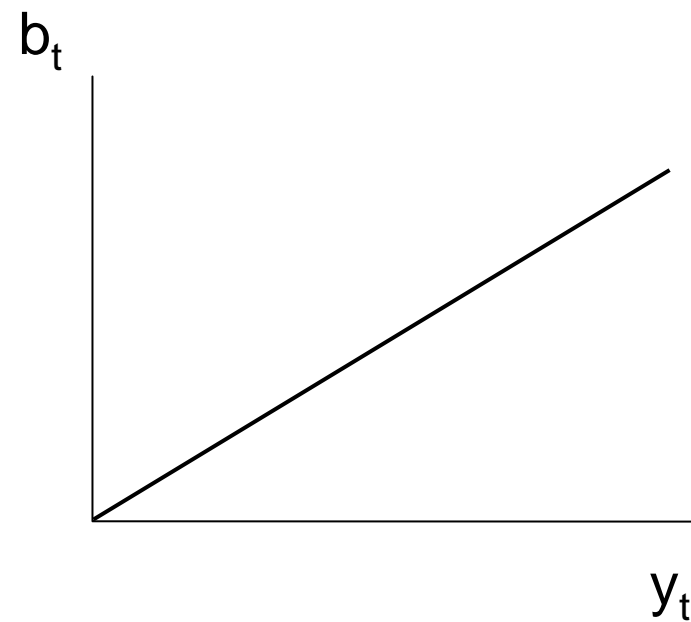
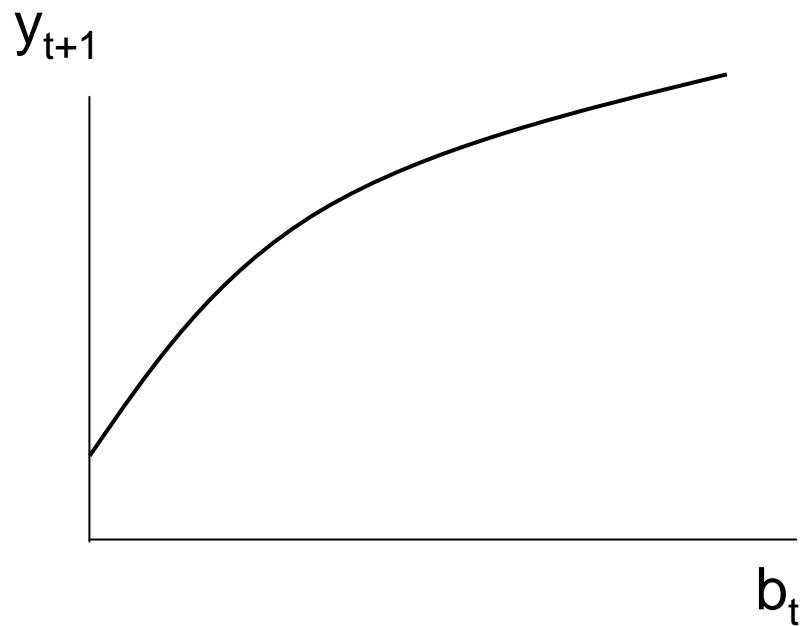
- hyperbolic discounting
- differential asset accumulation against out-of-pocket health expenditures late in life

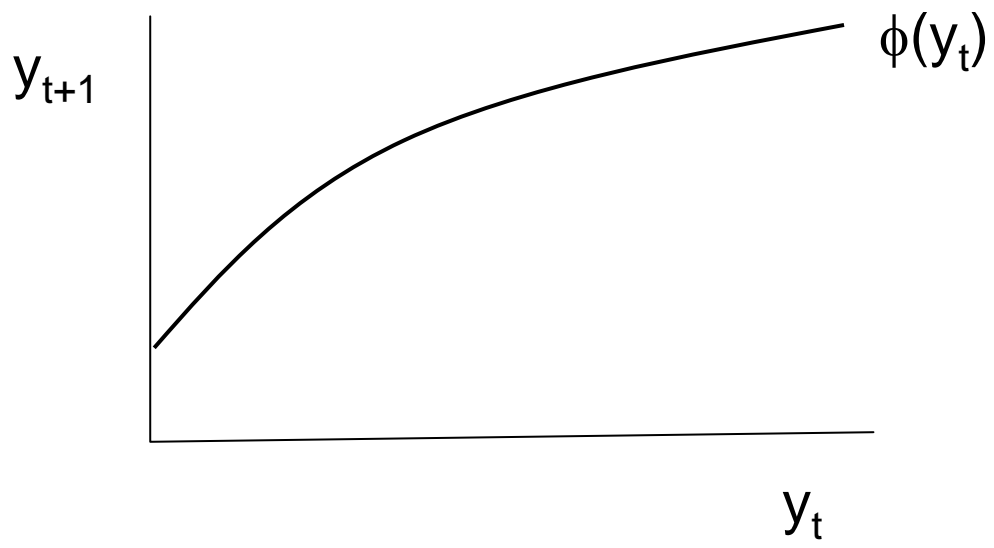
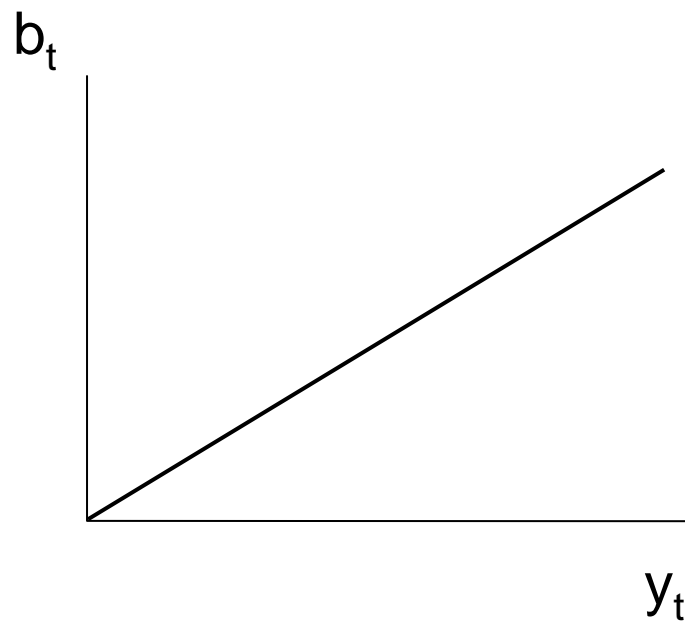
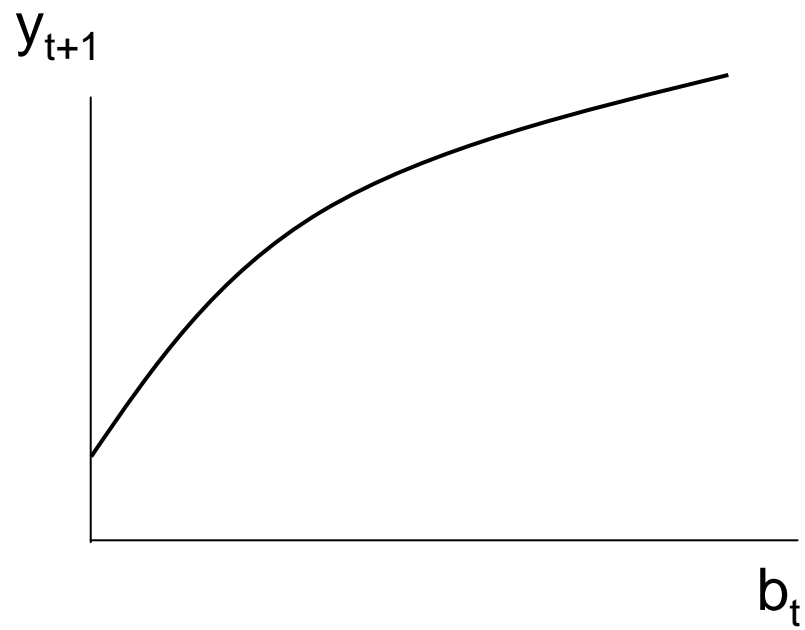
The explanation that is offered here is also consistent with their finding

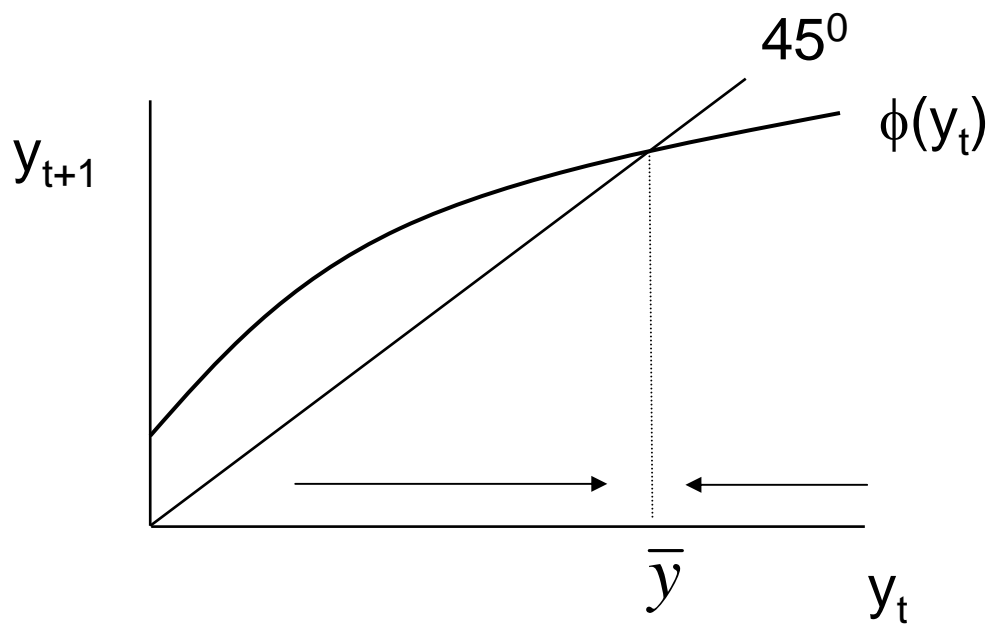
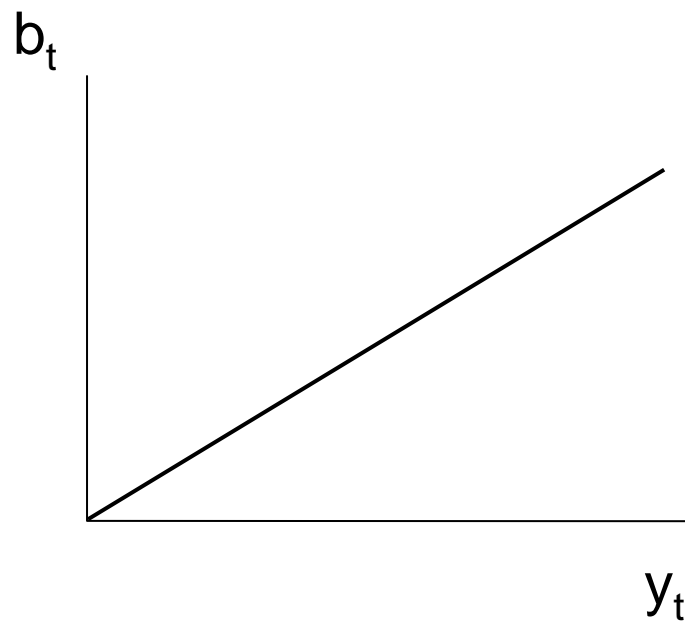
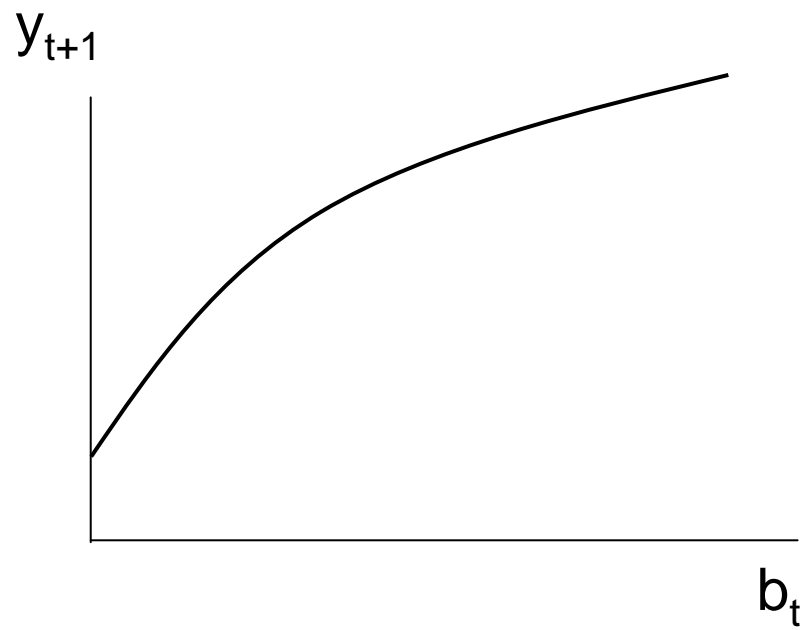
Related Literature

Poverty Traps

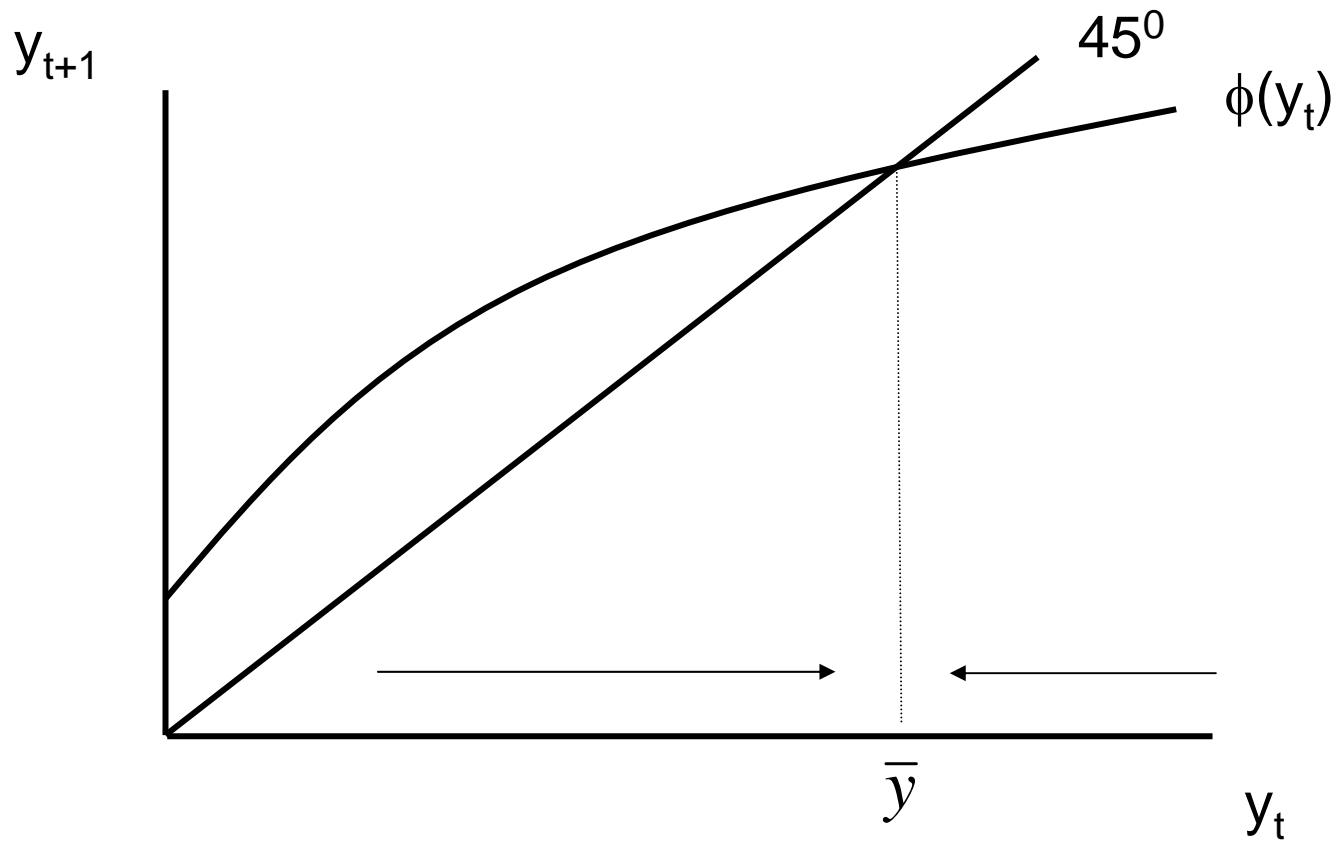
The dynamics of wealth within a dynasty:



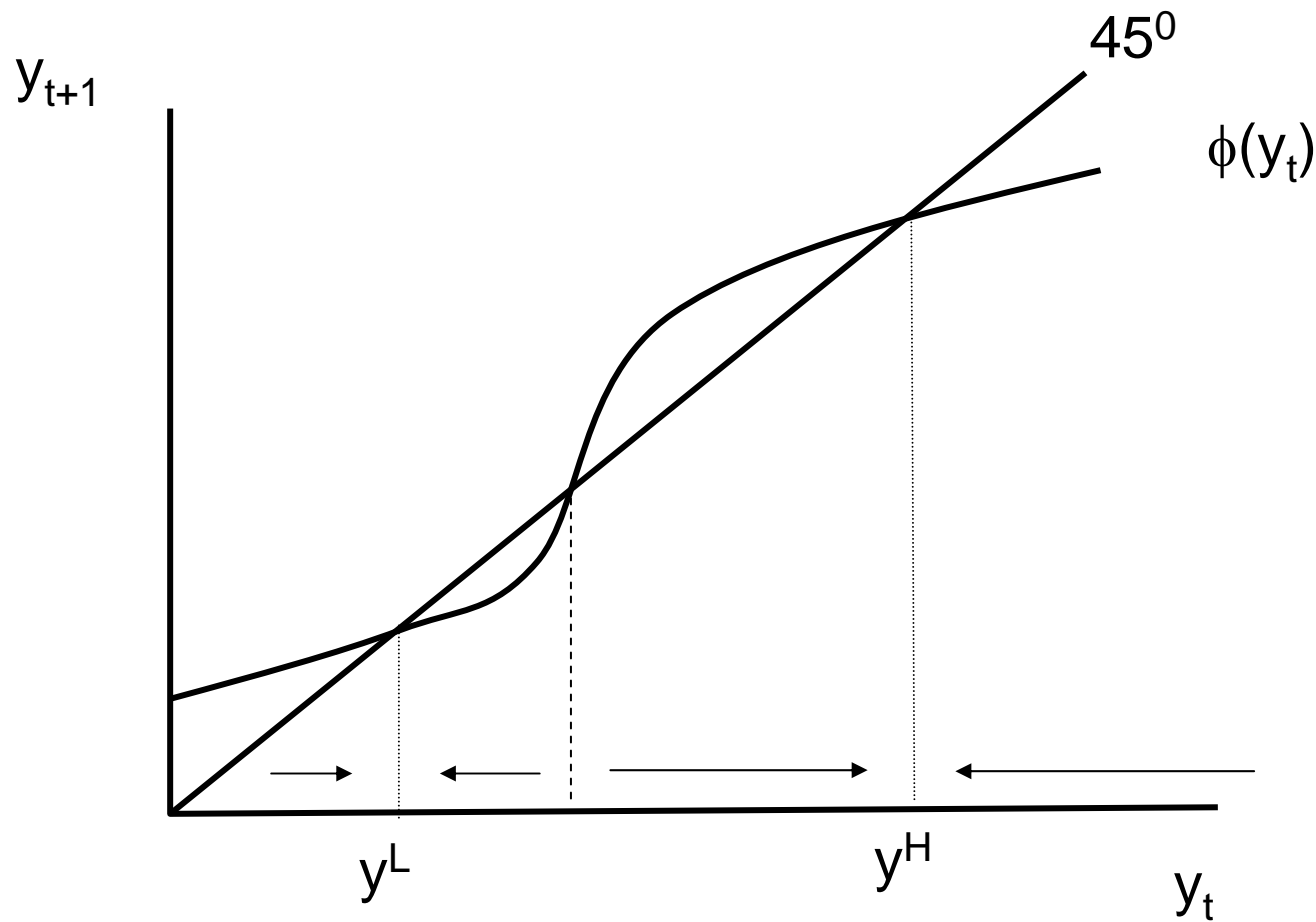


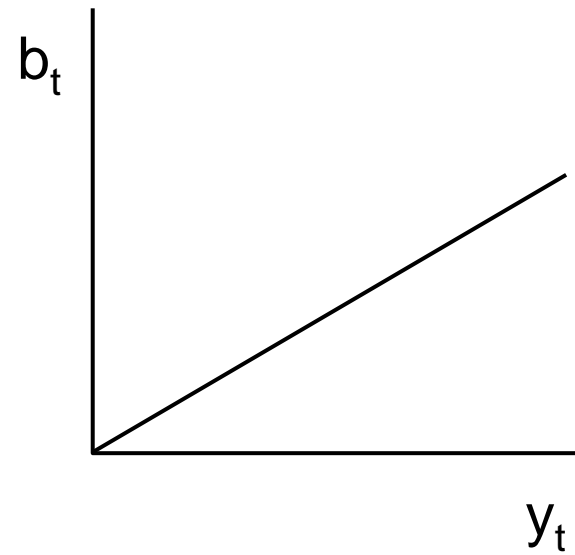
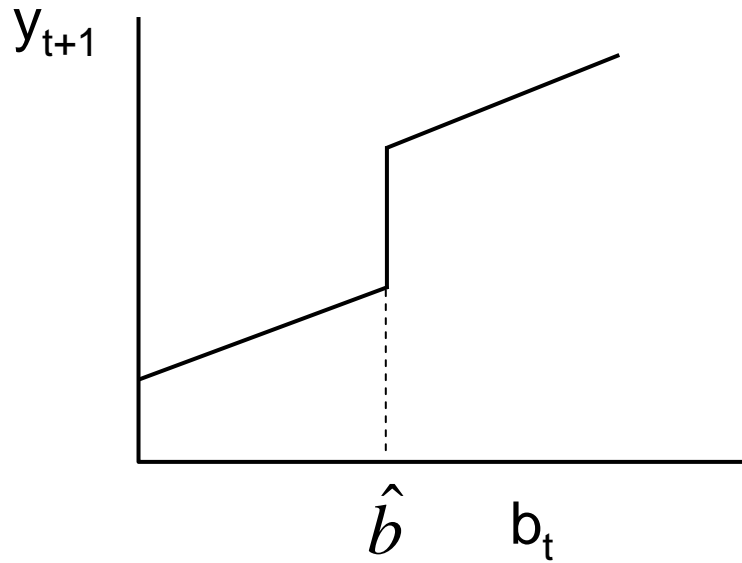


Unique Steady-State no poverty trap



Multiple Steady-States
require a range of $\phi''(y_t) > 0$





Dasgupta-Ray (1986)

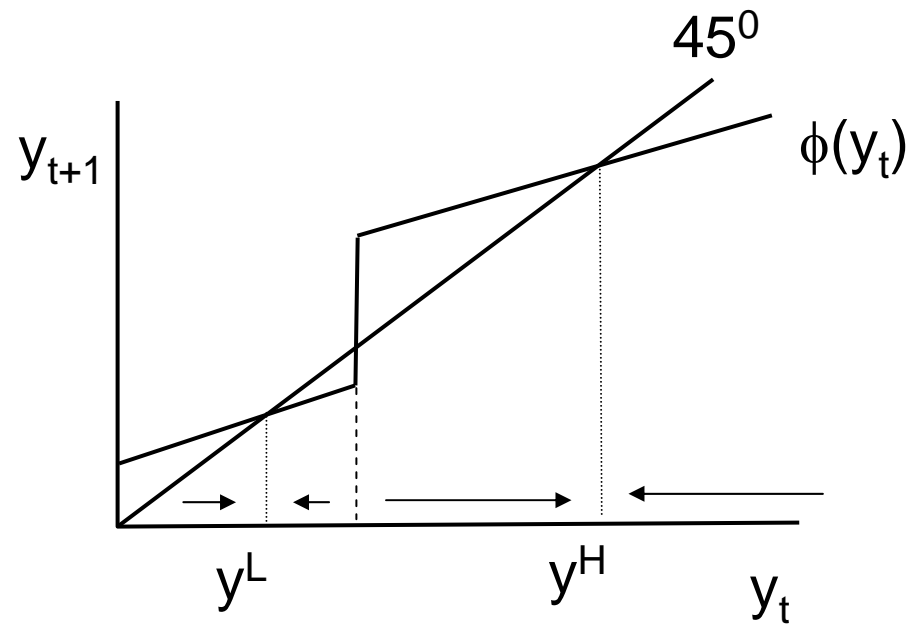
Banerjee-Newman (1993)

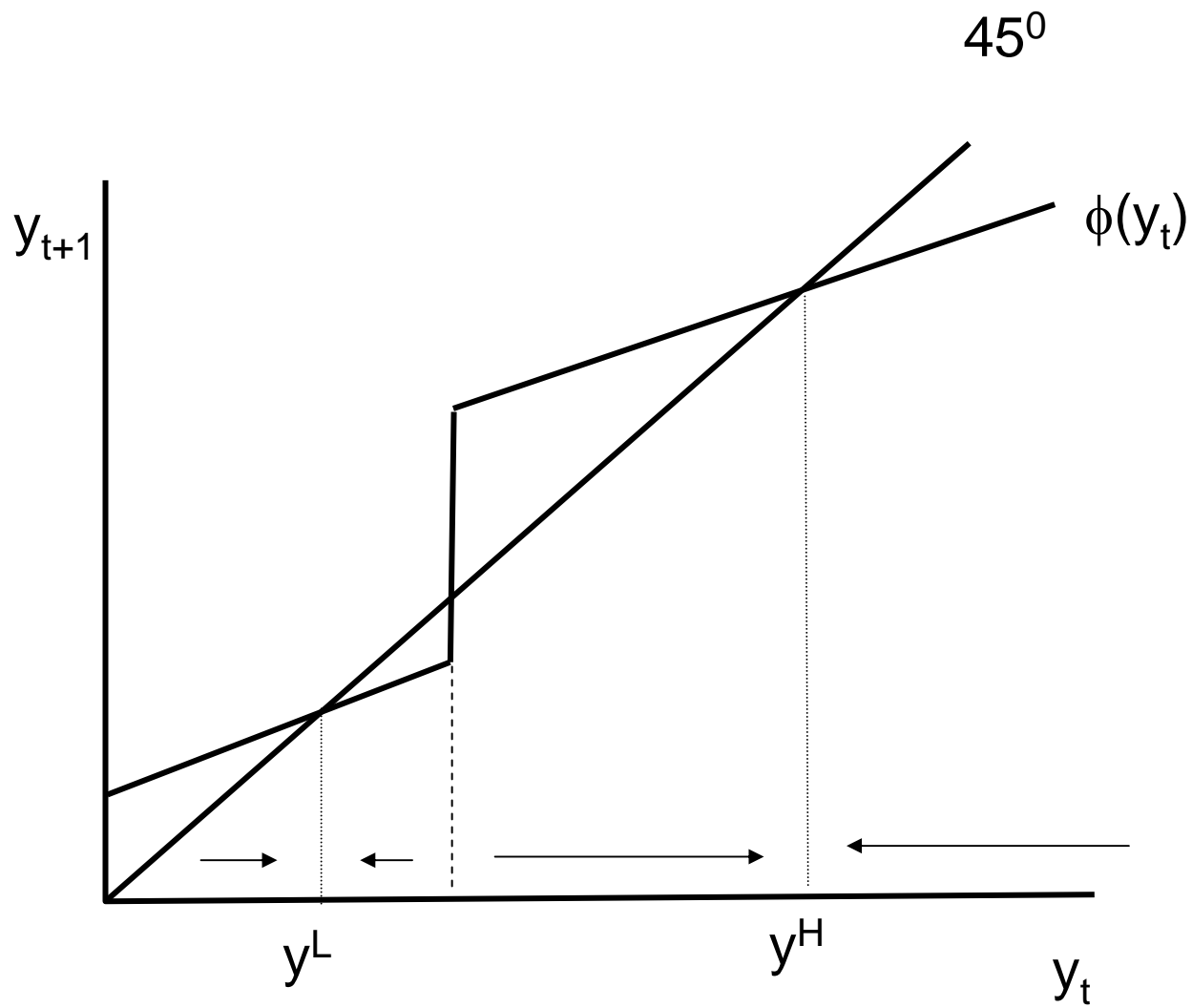
Galor-Zeira (1993)

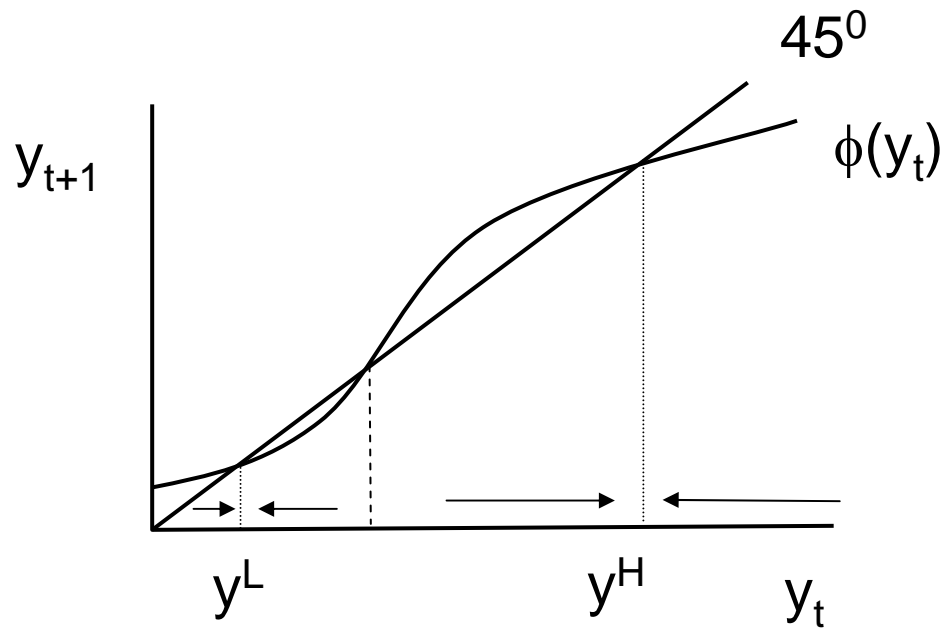
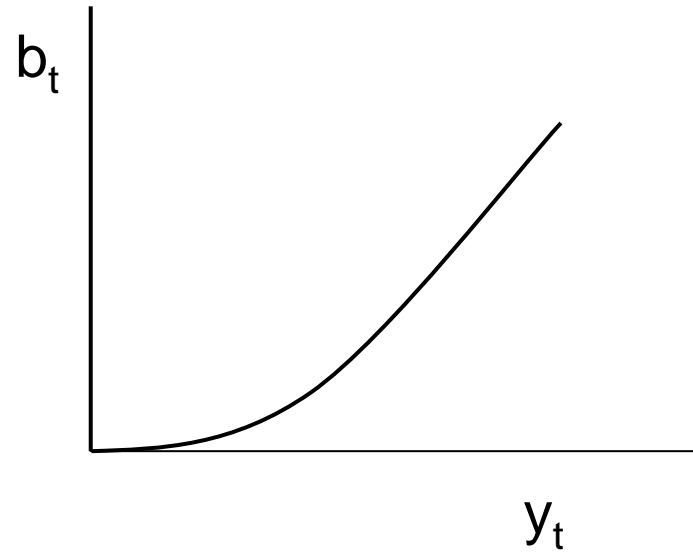
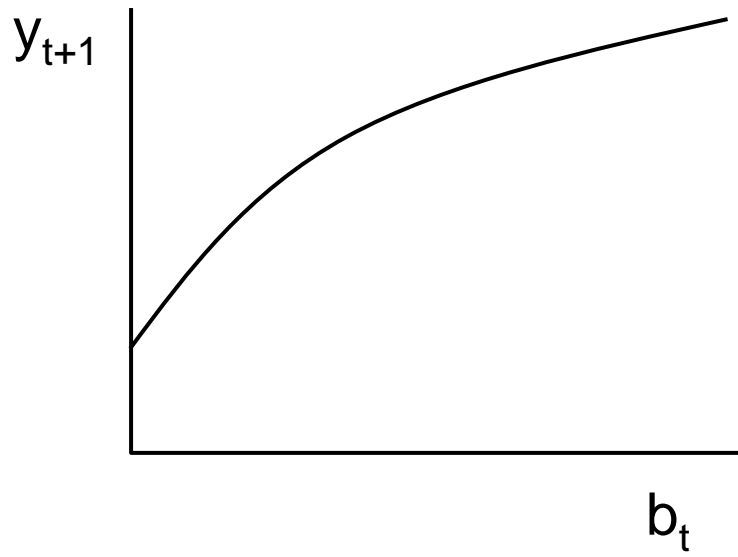
Piketty (1997)

Maoz-Moav (1999)

And many others







Moav (2002)

Moav (2005)

Banerjee-Mullainathan (2007)

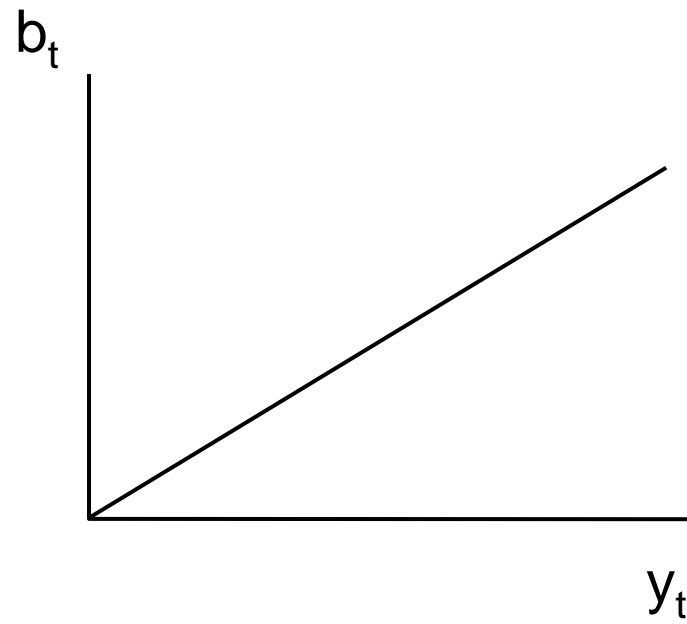
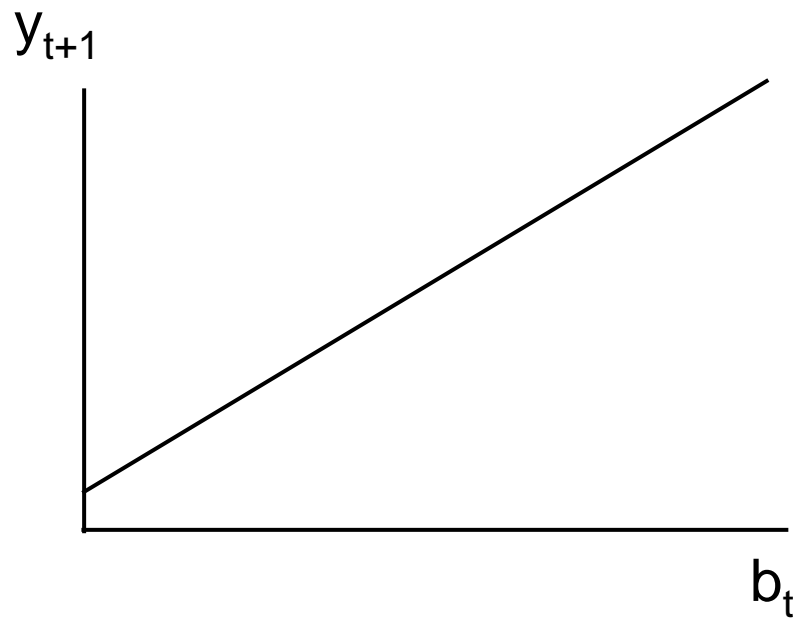
Moav-Neeman (2010)

In this paper:

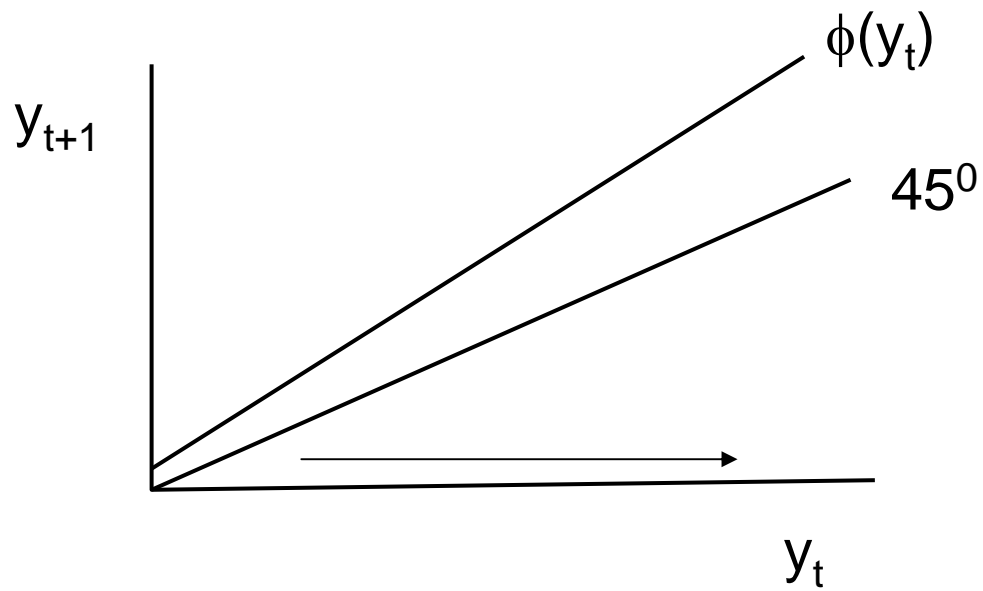
a trade-off between conspicuous consumption and education as signals for income:

→ increasing saving rates with income

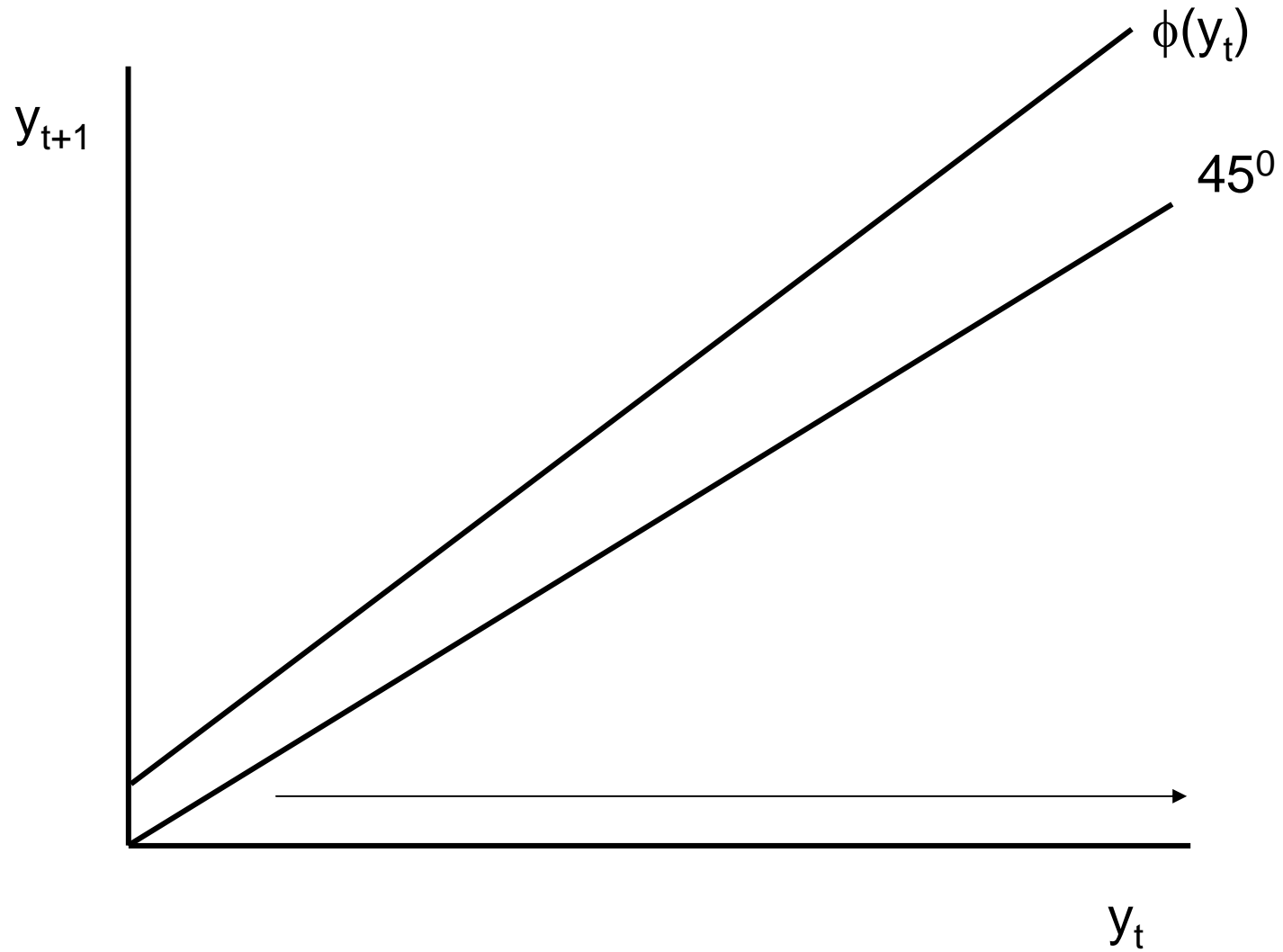
→ persistence of poverty



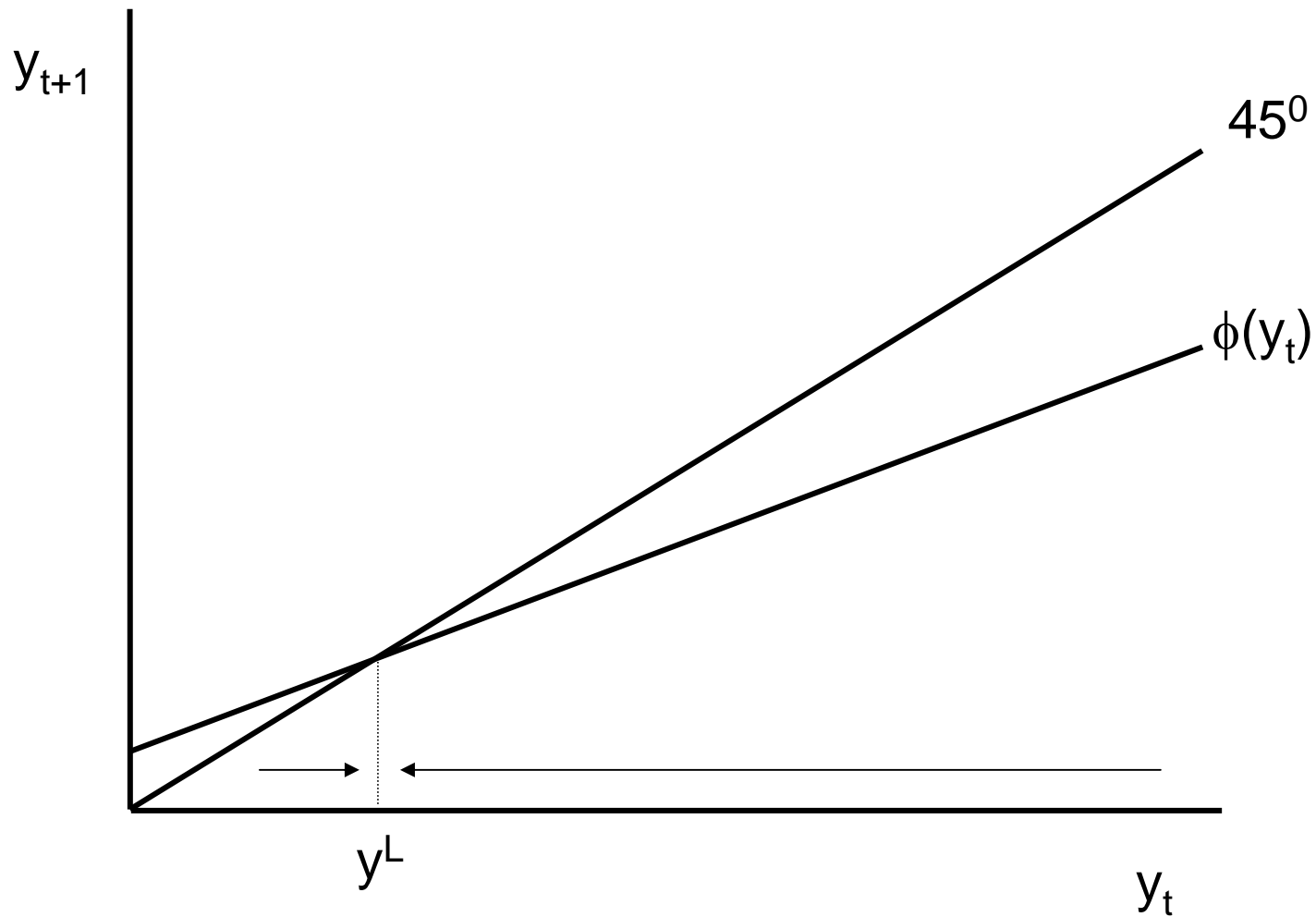
AK Model



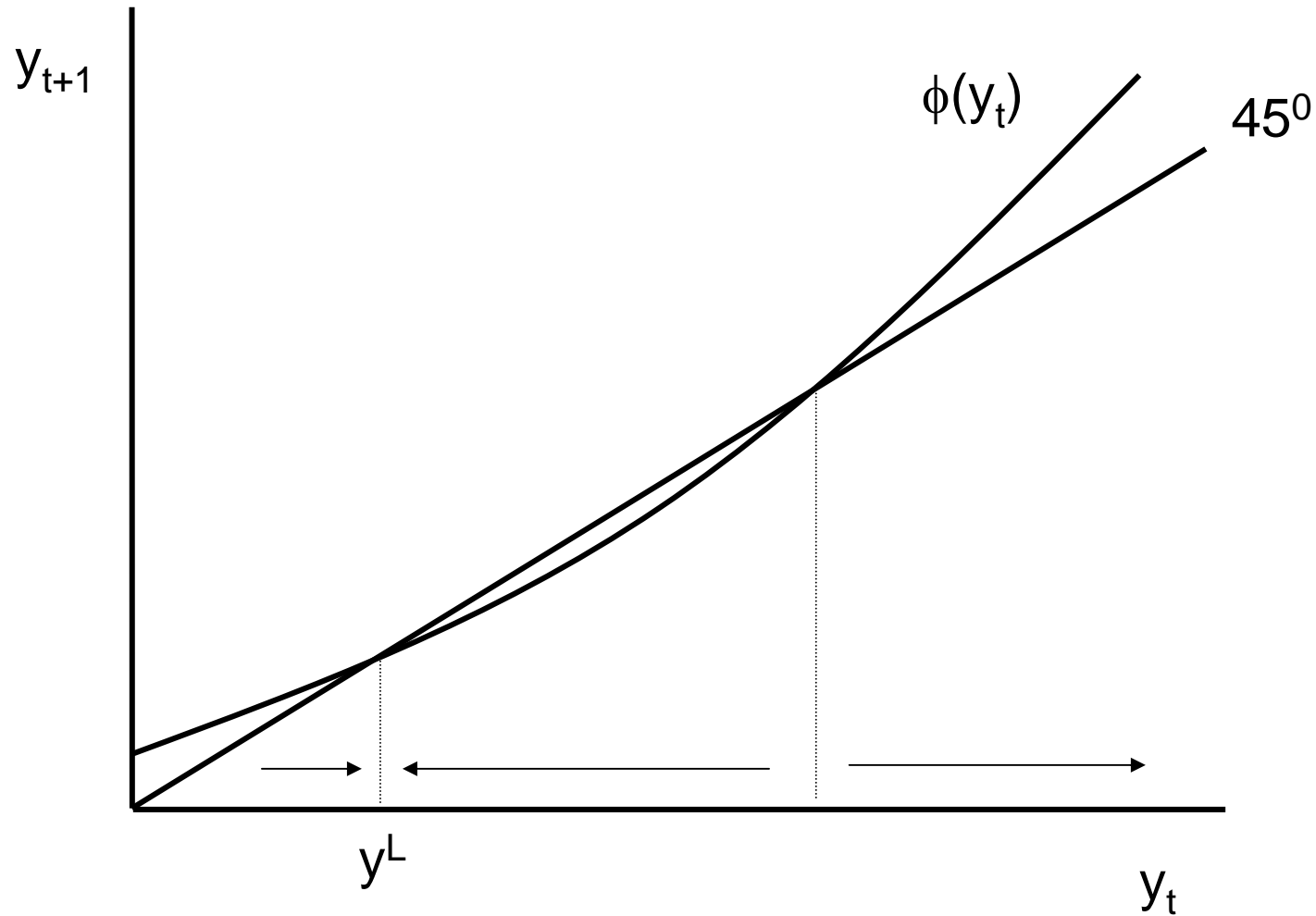
AK Dynamics



Conspicuous Consumption as a signal of income



Cons. Consumption + HC as signals of income

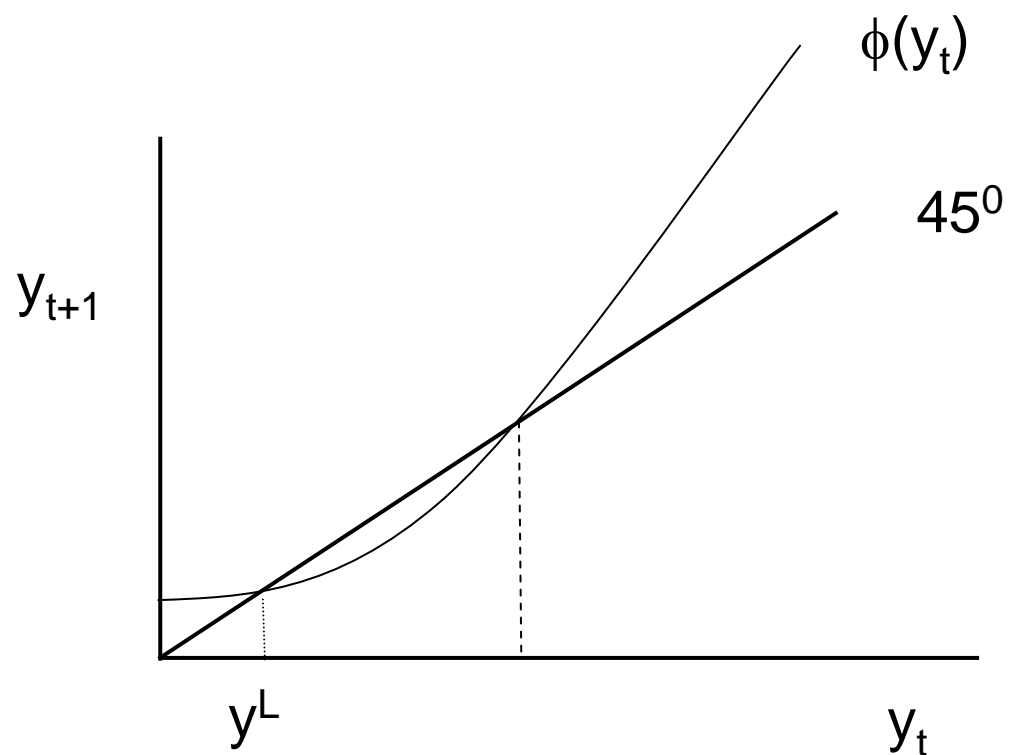


Note that a poverty trap implies:

$$\phi'(y_t) < 1$$

Followed by

$$\phi'(y_t) > 1$$



The Model

Individuals

- Live two periods in OLG:
childhood and adulthood
- Each child has one adult parent
- Each adult has one child

Childhood - invest in HC

Adulthood - work and allocate income between:

c - consumption

b - bequest

x - conspicuous consumption

Income

(at adulthood)

$$y = h + \pi \geq 0$$

h - observed human capital

π - unobserved income

budget constraint:

$$c + b + x \leq y$$

Preferences:

$$u = B(c^{1-\beta}b^\beta)^{1-\lambda}S^\lambda$$

$$\beta \in (0, 1)$$

$$\lambda \in (0, 1)$$

$$B = [(1 - \beta)^{\beta-1} \beta^{-\beta}]^{1-\lambda}$$

$$S = E(y|h, x)$$

is determined in equilibrium

Optimization with respect to b and c :

$$b = \beta(y - x)$$

$$c = (1 - \beta)(y - x)$$

Replacing in the utility function:

$$u = (y - x)^{1-\lambda} S^\lambda$$

The Production of HC

(at childhood)

$$h_{t+1} = \theta + \gamma b_t$$

→

$$\begin{aligned} y_{t+1} &= h_{t+1} + \pi_{t+1} \\ &= \theta + \gamma b_t + \pi_{t+1} \end{aligned}$$

Assumptions:

$$\beta\gamma > 1$$

$$(1 - \lambda)\beta\gamma < 1$$

Equilibrium

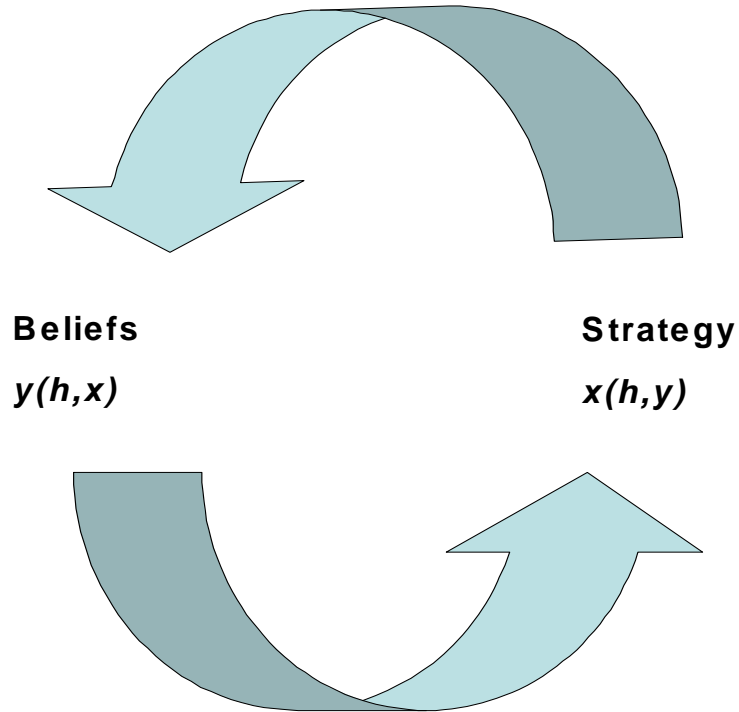
$x(h, y)$ - individual's conspicuous consumption

$E(y|h, x) \equiv y(h, x)$ - social beliefs about individual's expected income

A pair $x(h, y)$ and $y(h, x)$ is an equilibrium if:

1. $x(h, y)$ is optimal given $y(h, x)$
2. $y(h, x)$ is consistent with $x(h, y)$

Equilibrium



A simple example for a signaling equilibrium

Income (w) is

8 or 12

Utility:

$$(w - x)S$$

A separating equilibrium:

Beliefs:

$$S = \begin{cases} 12 & \text{if } x \geq 3 \\ 8 & \text{if } x < 3 \end{cases}$$

Conspicuous consumption:

$$x = \begin{cases} 3 & \text{if } w = 12 \\ 0 & \text{if } w = 8 \end{cases}$$

$$x = 0$$

$$x = 3$$

$$w = 8$$

$$\begin{aligned} 8 \times 8 \\ = 64 \end{aligned}$$

$$\begin{aligned} (8 - 3) \times 12 \\ = 60 \end{aligned}$$

$$w = 12$$

$$\begin{aligned} 12 \times 8 \\ = 96 \end{aligned}$$

$$\begin{aligned} (12 - 3) \times 12 \\ = 108 \end{aligned}$$

A pooling equilibrium:

Beliefs:

$$S = \begin{cases} 8 \text{ or } 12 & \text{if } x = 0 \\ 8 & \text{otherwise} \end{cases}$$

Conspicuous consumption:

$$x = 0$$

- The intuitive criterion (Cho & Kreps), which is the standard refinement applied to equilibria in signaling games, rules out a pooling equilibrium

Back to the model:

- $u = (y - x)^{1-\lambda} S^\lambda$
- $S = E(y|h, x) \equiv y(h, x)$
- $y = h + \pi \geq 0$

$h \geq 0$ - observable human capital

π - unobservable income

π - drawn from a continuous distribution

$$\pi \in [\underline{\pi}(h), \bar{\pi}(h)]$$

$$\underline{\pi}(h) \in [-h, 0]$$

$$E[\pi] = 0$$

Individuals' maximization problem is

$$\max_x (y - x)^{1-\lambda} y(h, x)^\lambda$$

→ *FOC*

$$\frac{\lambda}{1-\lambda} \frac{y-x}{y(h, x)} = 1 / \frac{dy(h, x)}{dx}$$

LHS - marginal rate of substitution =
 u_S / u_{y-x}

RHS - marginal cost of status = inverse of
the marginal effect of the signal on
beliefs (the cost of b and c is 1)

Under a fully separating equilibrium

$$y = E(y|h, x) \equiv y(h, x)$$

Replacing in the *F. O. C*

$$\frac{\lambda}{1 - \lambda} \frac{y(h, x) - x}{y(h, x)} = 1 / \frac{dy(h, x)}{dx}$$

A solution $y = y(h, x)$ of the differential equation is given by:

$$y(h, x)^{1/(1-\lambda)} - \frac{x}{\lambda} y(h, x)^{\lambda/(1-\lambda)} = \underline{y}(h)^{1/(1-\lambda)}$$

$$\underline{y}(h) \equiv h + \underline{\pi}(h)$$

→The signal x is an explicit function of y and h :

$$x(y, h) = \lambda \left(y - \frac{(\underline{y}(h))^{1/(1-\lambda)}}{y^{\lambda/(1-\lambda)}} \right)$$

This solution is the unique fully separating equilibrium

1. The MRS is unique for any bundle
→ a unique marginal cost of status
2. in a fully sep. eq. $x = 0$ for $y = \underline{y}(h)$
→ $y(h, 0) = \underline{y}(h)$

- An equilibrium that meets the intuitive criterion (Cho & Kreps) is fully separating
- The fully separating equilibrium is unique

Conspicuous Consumption

Properties of $x(h, y)$

$$x(h, \underline{y}(h)) = 0$$

$$\left. \frac{dx}{dy} \right|_h > 0, \quad \left. \frac{d^2x}{dy^2} \right|_h \leq 0$$

Properties of $x(h, y)$

$$\lim_{y \rightarrow h + \underline{\pi}(h)} \frac{dx}{dy} \Big|_h = \frac{\lambda}{1 - \lambda}$$

$$\lim_{y \rightarrow \infty} \frac{dx}{dy} \Big|_h = \lambda$$

$$\frac{dx}{dh} \Big|_y < 0$$

Properties of $x(h, y)$ - the effect of h

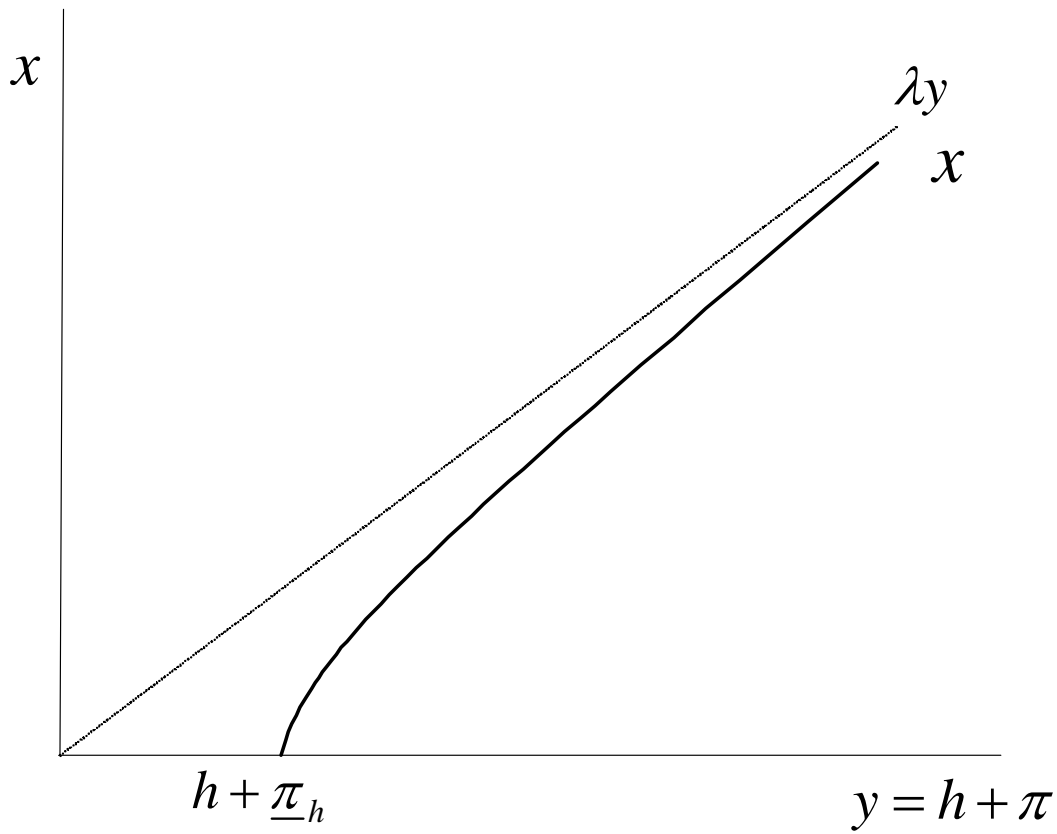
Assumptions:

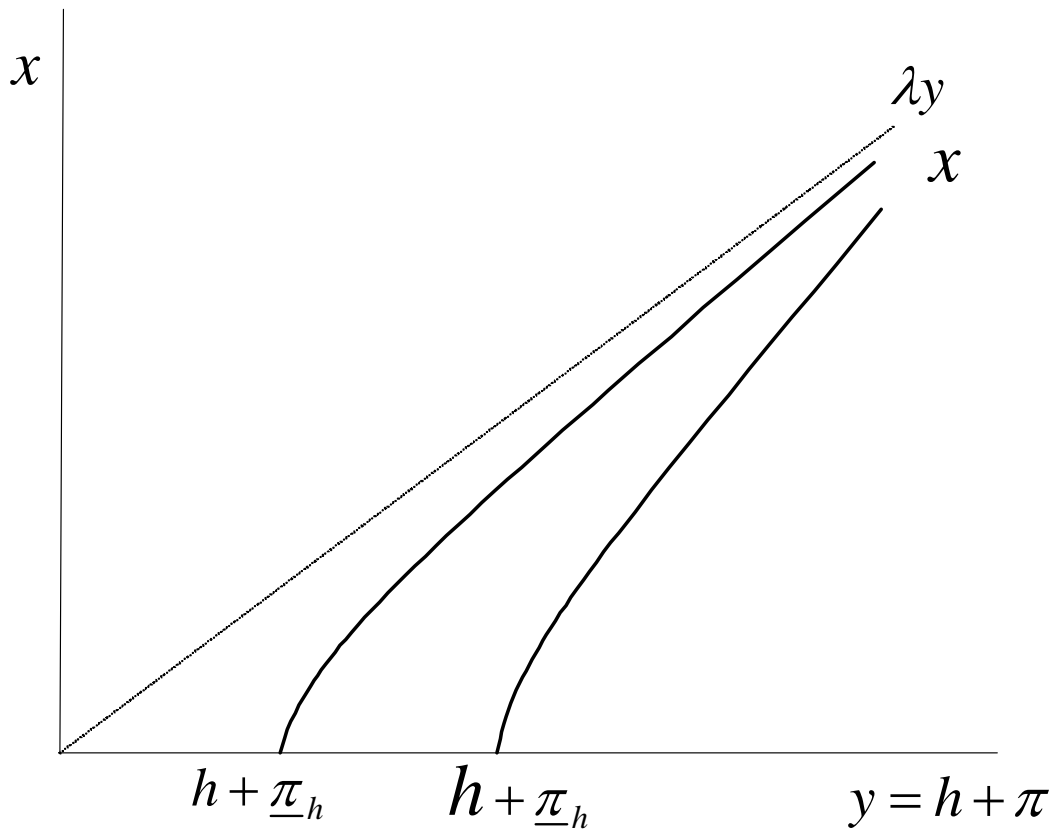
$$\underline{y}'(h) \in [0, 1] \text{ and } \underline{y}''(h) \geq 0$$

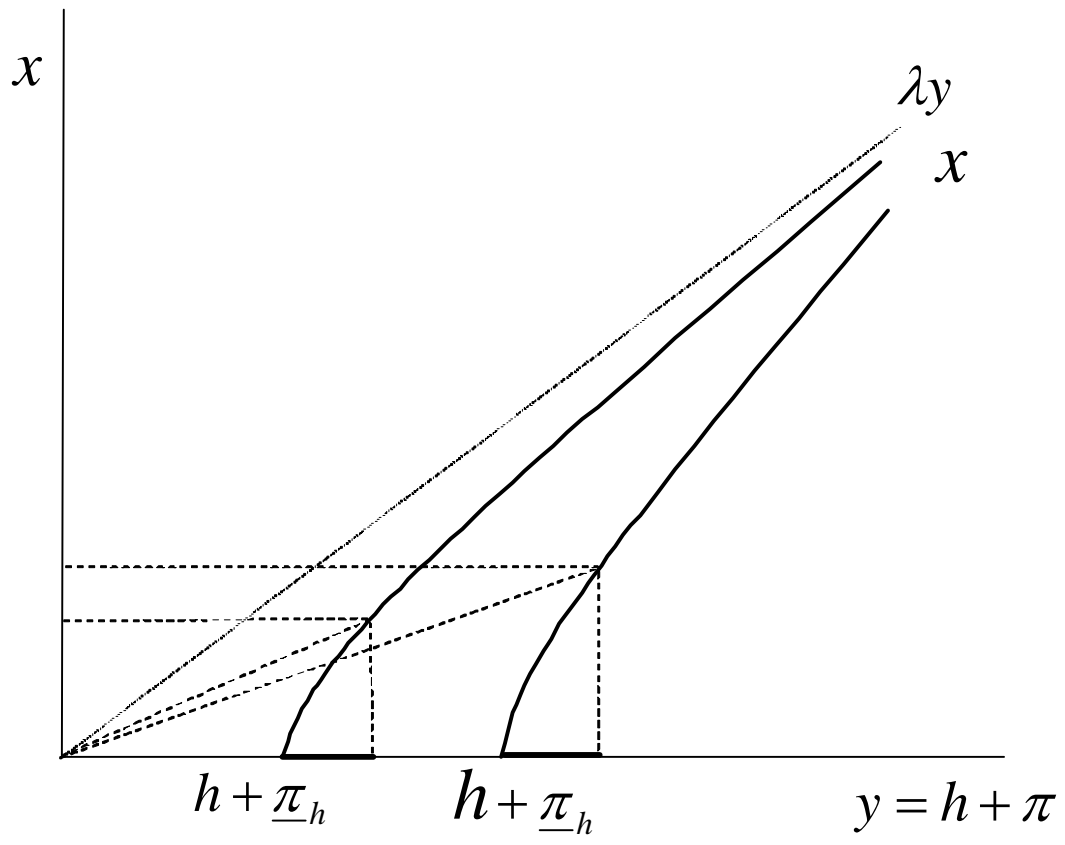
→

$$\left. \frac{dx}{dh} \right|_{\pi} > 0$$

$$\left. \frac{d(x/y)}{dy} \right|_{\pi} \leq 0$$







Comment:
if HC is not observable

$$S = E(y|x) \equiv y(x)$$

the unique fully separating equilibrium is:

$$y(x) = x/\lambda$$

$$x(y) = \lambda y$$

Individuals allocate a constant fraction of income to conspicuous consumption

→

no poverty trap

The Dynamical System (observable HC)

For a realization $\pi = E(\pi) = 0$

$$E(y_{t+1}) = h_{t+1} = \theta + \gamma\beta(h_t - x_t)$$

$$= \theta +$$

$$\gamma\beta\left((1 - \lambda)h_t + \lambda\left(\frac{(y(h_t))^{1/(1-\lambda)}}{h_t^{\lambda/(1-\lambda)}} \right) \right)$$

$$\equiv \phi(h_t)$$

Properties of $\phi(h_t)$

$$\phi(0) = \theta$$

$$\phi'(h_t) \in [(1 - \lambda)\gamma\beta, \gamma\beta] > 0$$

$$\phi''(h_t) \geq 0$$

Properties of $\phi(h_t)$

Suppose

$$\underline{\pi}(h) = \begin{cases} \underline{\pi} < 0 & \text{for } |\underline{\pi}| \leq h \\ -h & \text{for } h < |\underline{\pi}| \end{cases}$$

→ The function $\phi(h_t)$ is:

increasing and linear for $h_t < |\underline{\pi}|$

increasing and convex for $h_t \geq |\underline{\pi}|$

Properties of $\phi(h_t)$

Under the assumptions

$$\beta\gamma > 1$$

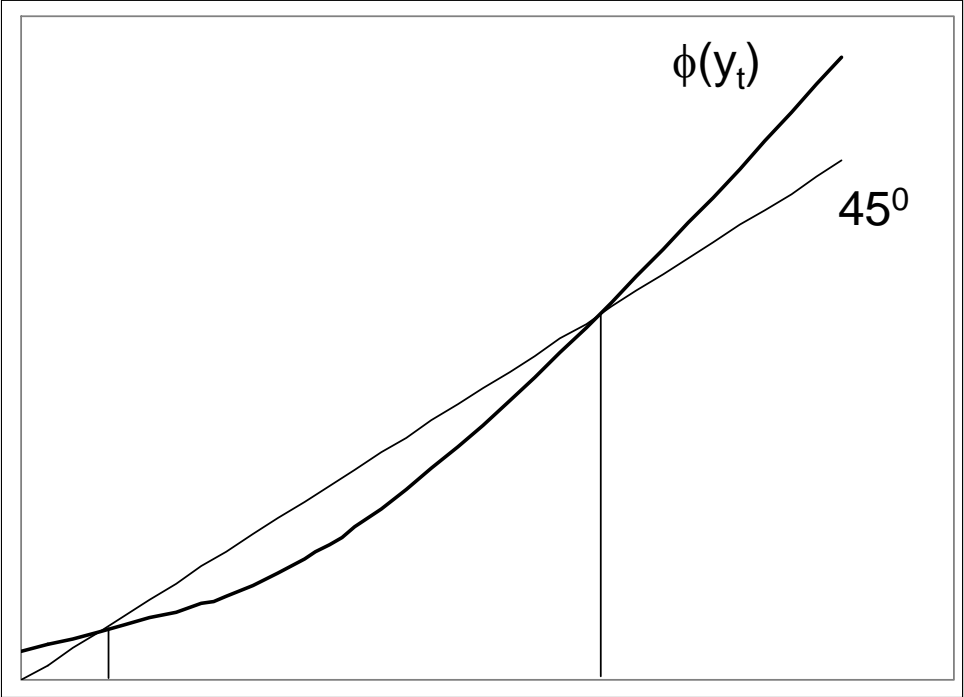
$$(1 - \lambda)\beta\gamma < 1$$

and

$$|\underline{\pi}| > \frac{\theta}{1 - \beta\gamma(1 - \lambda)}$$

$\phi(h_t)$ intersects the 45 degree line twice

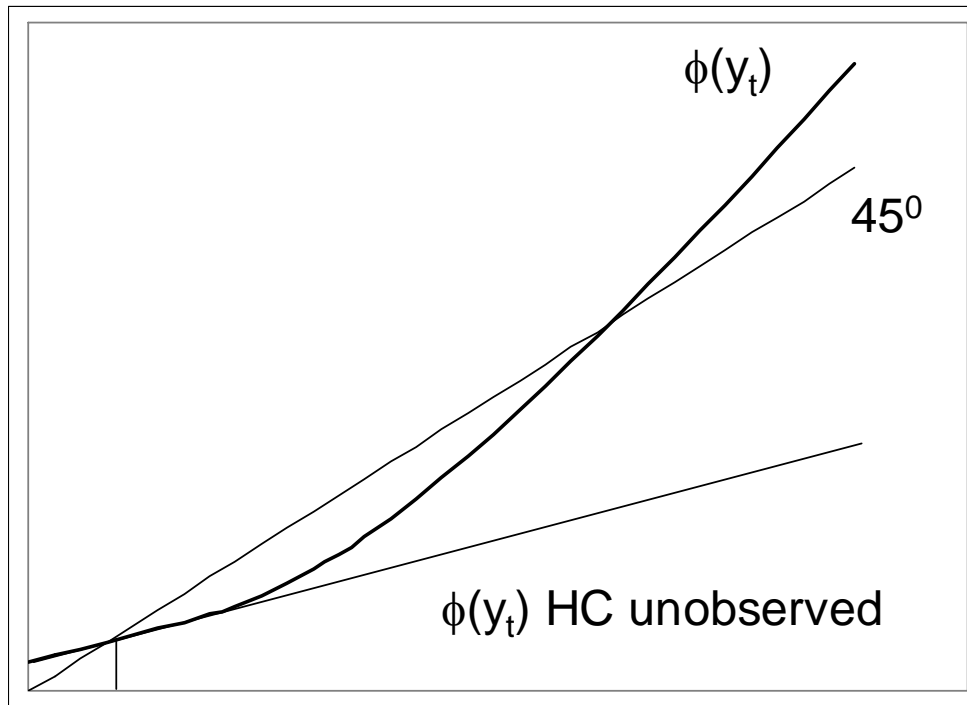
$E(y_{t+1})$



y^L

y_t

$E(y_{t+1})$



y^L

y_t

Concluding Remarks

- The trade-off between human capital and conspicuous consumption as signals for success could play a role in understanding the convex saving function and thereby the behavior of the poor and persistence of poverty
- Contribution to the conspicuous consumption literature: the role of HC and income distribution
- Contribution to understanding differences in "social norms" (differences in transparency of consumption and investment in schooling)

- Status can also be based on relative ranking rather than income (because individuals can improve their relative ranking only through conspicuous consumption).