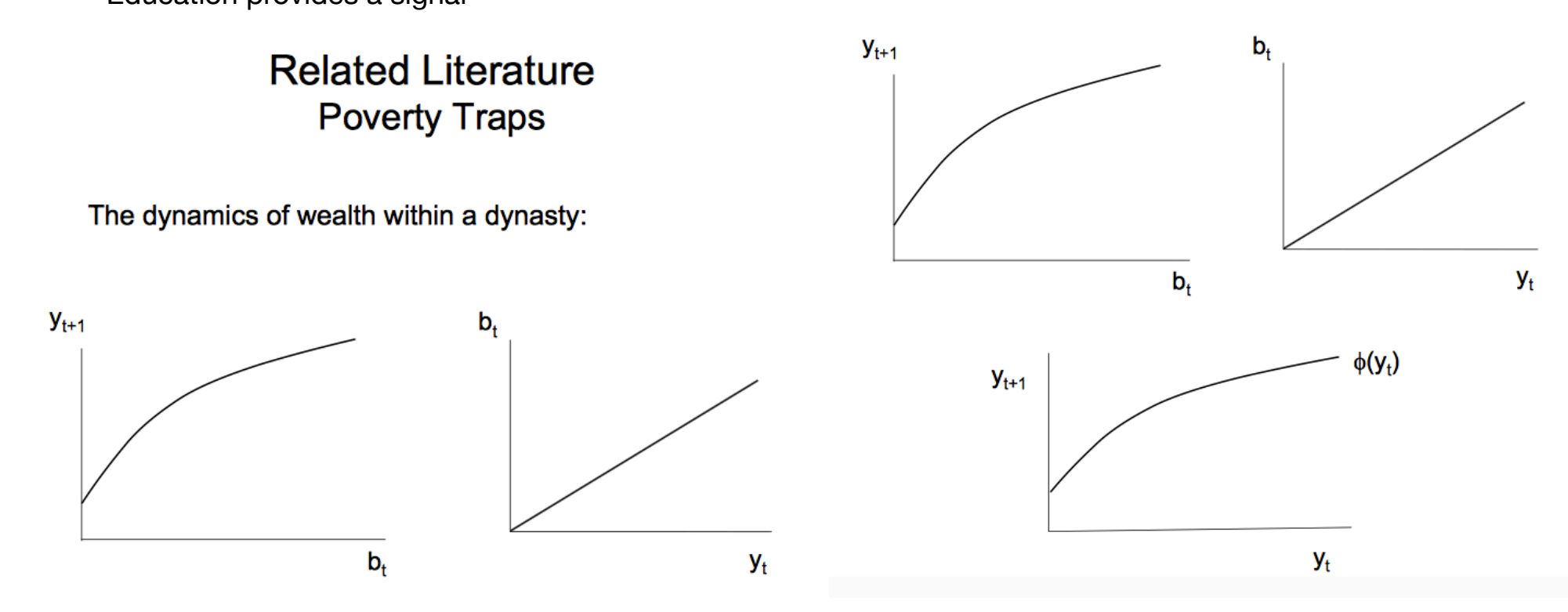
There is a TRADE-OFF between conspicuous consumption and education
Poor people spend a higher proportion of income on conspicuous consumption
The alternative is that accumulating human capital over time means less spent on cc (x)
Education provides a signal

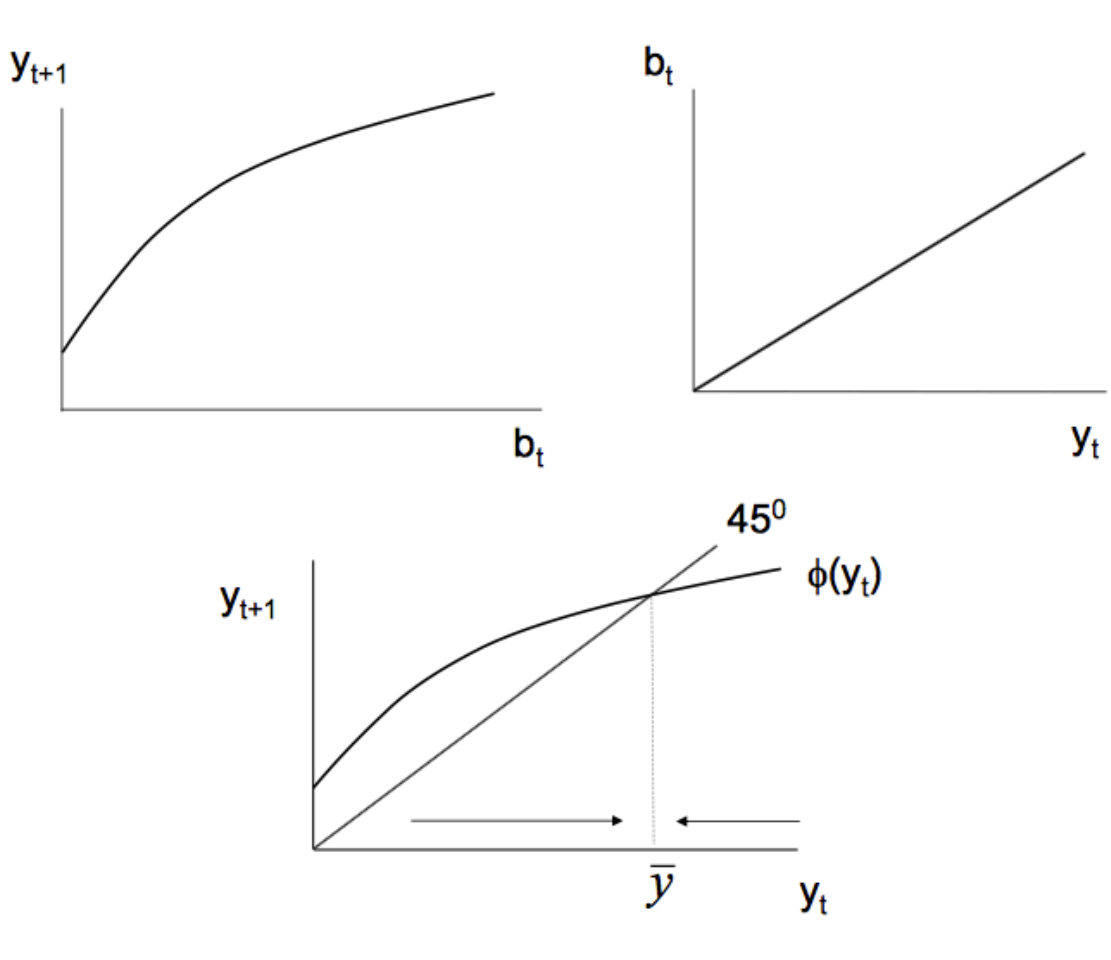
Related Literature
Poverty Traps

The dynamics of wealth within a dynasty:



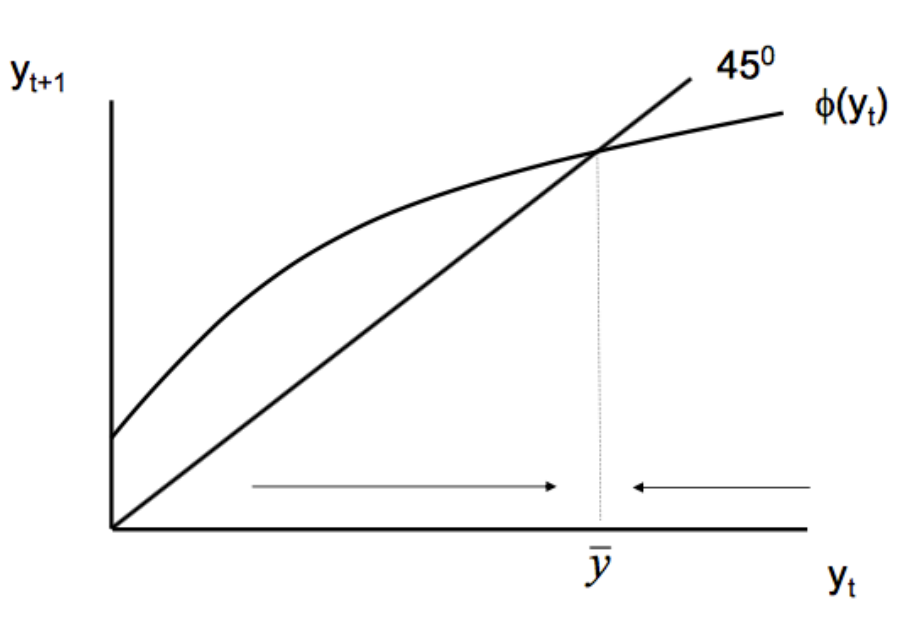
Simple case:
b = investment in education from parent for next generation
y= income of parent

The parents' investment in the education of their children will translate to increased income of their children when they become adults.
So, the combination of these two figures generate a mapping between *yt* and *yt+1* (**phi function).**
This is the shape it has under the assumption of homothetic preferences and a standard production function (increasing and concave - positive marginal products but diminishing).



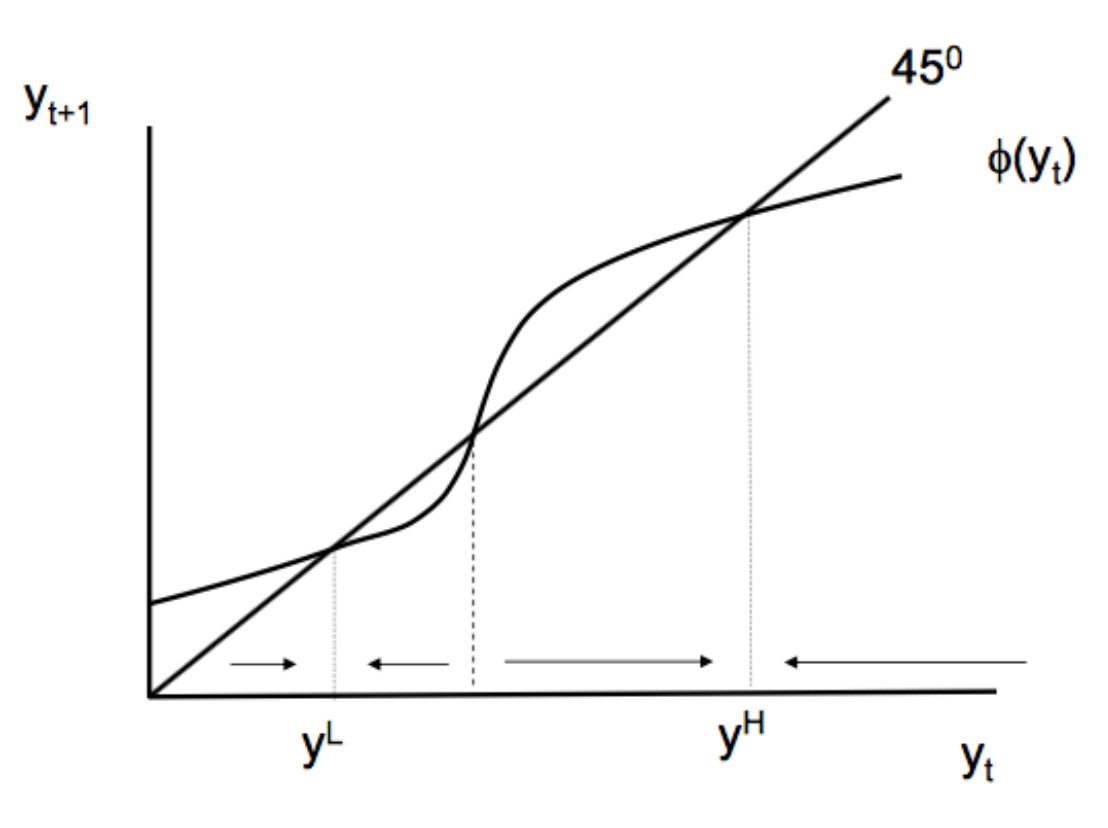
If we add a 45 degree line, so we understand the dynamics, we get a unique, globally stable, steady state - so **no poverty trap.**
In the first lecture, we gave ideas for the mechanisms which generate poverty traps - they basically say:
if the parents are poor they cannot invest much into the education of their children, so their children will become poor and poverty will persist - a poverty trap.
This phi function shows that this simple description of the poverty mechanism is not true:
It is true that poor people will have poor children, but, poverty doesn't persist - *under the standard assumptions we make in our economic models (nomothetic preferences and standard production function)* - **over time everyone is converging to the same income level** (so no poverty trap).

Unique Steady-State
no poverty trap



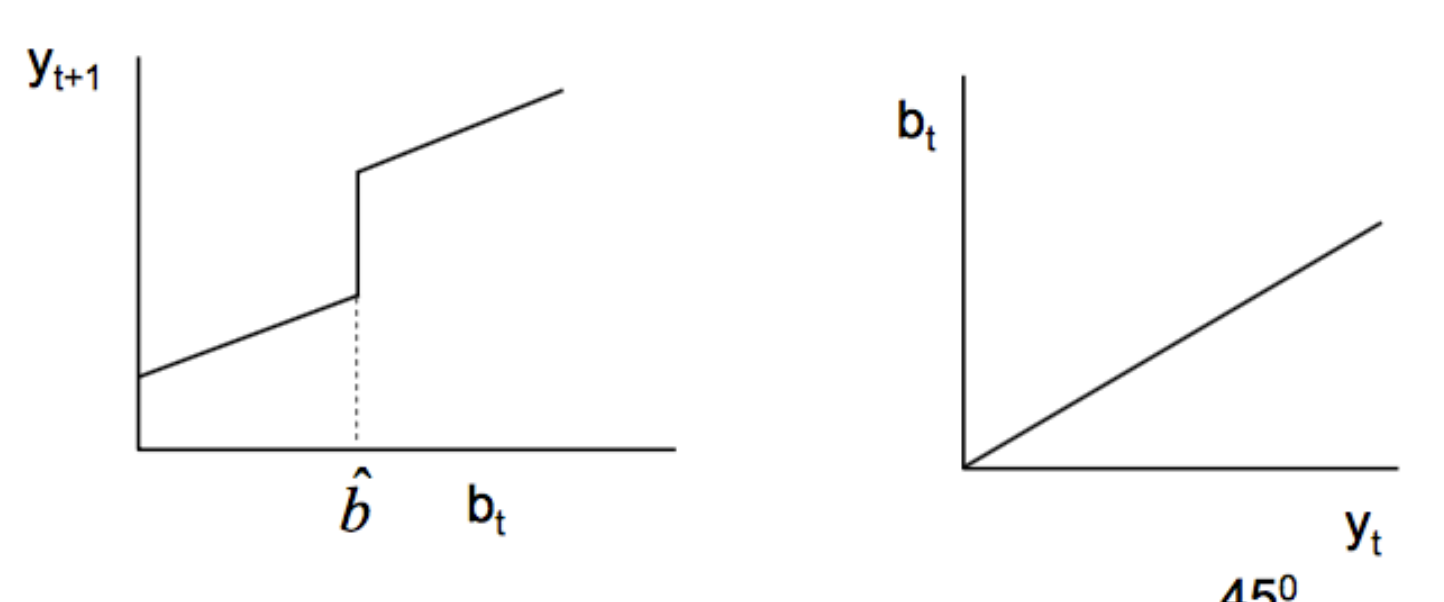
So in order for us to have a poverty trap we need a figure that looks like this:
That the phi function crosses the 45 degree line more than once.
There are 3 steady states, the one in the middle (P) is **un**stable and the two either side are **stable**.
When the phi function lies above the 45 degree line income is growing over time, and if it is below income is shrinking over time.
So we start some distribution of income. Everyone above P will converge to the high income steady state. Everyone below P will converge to the low income steady state.
We cannot just combine standard assumption to generate a poverty trap - we need this phi function to be, at some range convex, not just continuously concave. Because if it is continuously concave it will not cross the 45 degree line more than once.

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

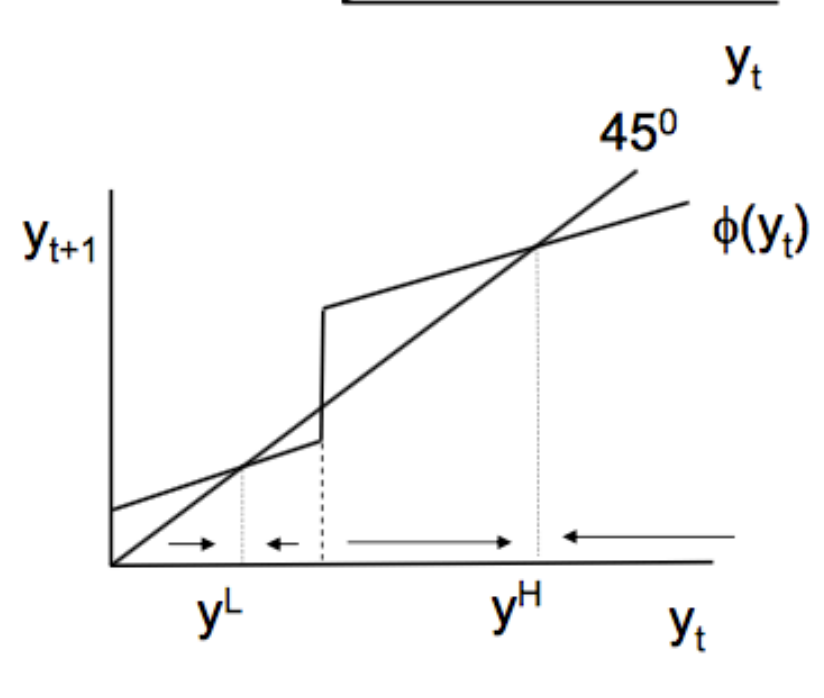


What the literature did about this:
Most of the literature kept the assumption about preferences (straight line), and played with the technology.

For instance, **Galor-Zeira (1993)** assumes that there is a jump at some stage in technology.

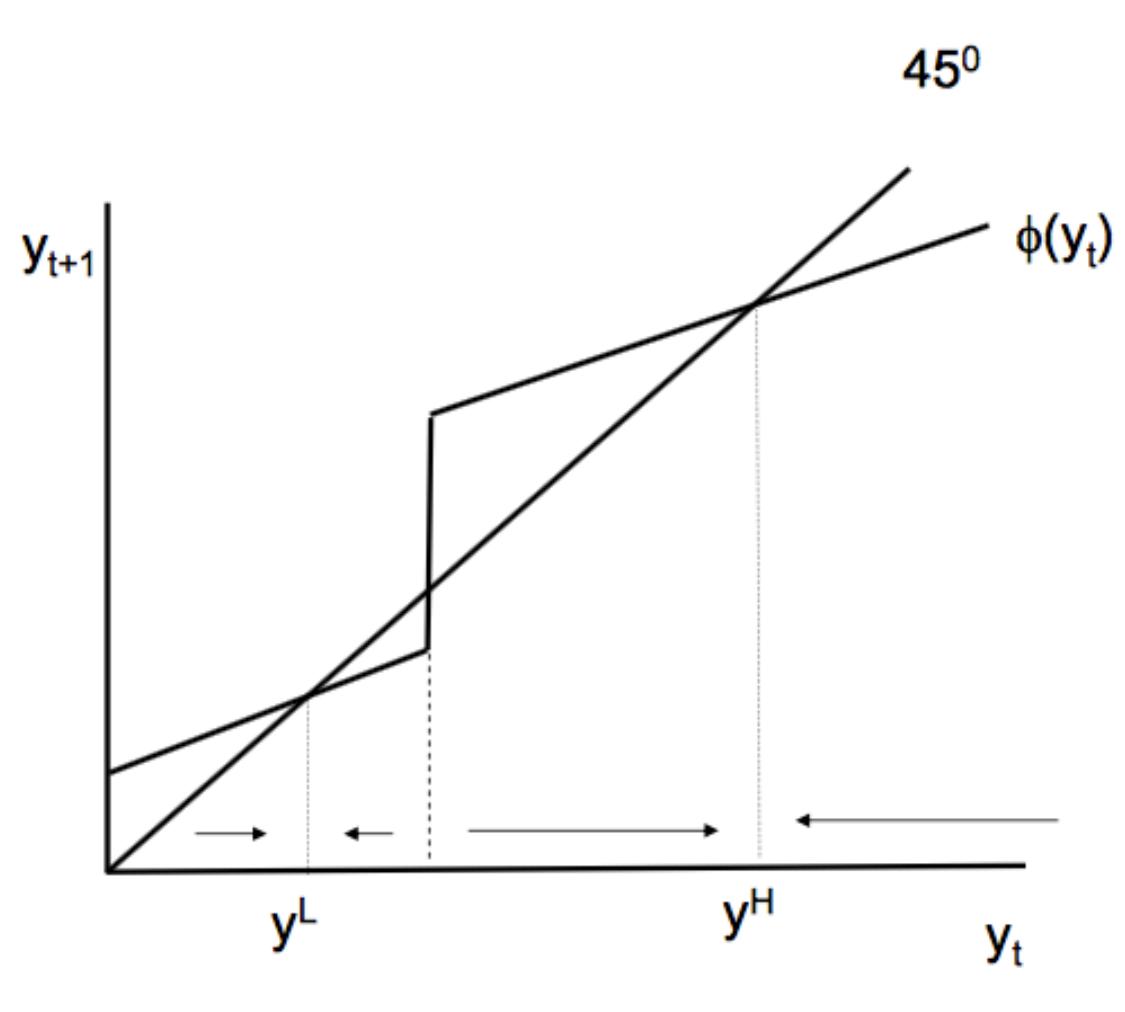


Dasgupta-Ray (1986)
Banerjee-Newman (1993)
Galor-Zeira (1993)
Piketty (1997)
Maoz-Moav (1999)
And many others



With **Dasgupta-Ray (1986)** it is a story about nutrition, and in their mechanism, poor people do not have enough money to buy enough food. And when people do not eat enough, they cannot work. And if they cannot work they cannot get enough money to buy food, which generates a poverty trap.
But, now we know this is not sufficient. We need to tell a story about the exact relationship between food consumption and the ability to supply labour, and it cannot be this standard, decreasing concave relationship.

In their model they assume something which is convex and then concave on the production function.
The production function in **Dasgupta-Ray (1986)** is how consumption of food translates to the ability to provide labour.
So once we combine this type of technology with this type of preferences, we could get a figure which looks like this (the vertical part is just for the purposes of illustration).
The production function describes how food consumption translates into production.



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Alternatively, instead of touching the technology, we can play with preferences/ the behaviour of the poor.
The advantage of looking at the behaviour of the poor rather than technology, is that, empirically, it seems the right approach.
The Galor-Zeira (1993) assumption of an indivisible cost of schooling (that there's a jump) is not realistic.
At first, the assumption of linearity seems realistic, (going to university is not an increasing concave function) because it is important to graduate from university. There is something discrete here - a jump in your future income if you graduate). This is indivisible.
However, when you consider the economy as a whole, suppose you didn't have enough money to go to university, **there are alternatives**, cheaper places like a 2 year course that provides you with lower skills but is still valuable. Or a 1 year course. There is a **continuum of things** you could study, including technical skills which requires a smaller investment. If you think of an envelope of all these options, there is no reason to think that technology would be anything other than a standard concave function. *This is the criticism against these indivisibilities.*

When we look at the behaviour of the poor, one thing we see that is very clear: **they save at a lower rate**. So homothetic preferences do not seem to be a right description of reality, and therefore we could indeed focus on the **behaviour of the poor.**
Not many people have looked at this: Moav is author of 3 of the papers. Banerjee is deep into the modelling of the behaviour of the poor.
*/**Dynan et al (2004)** find that savings as a proportion of income increases with wealth, so assumption of homothetic preferences is unrealistic - this justifies looking at the behaviour of the poor*
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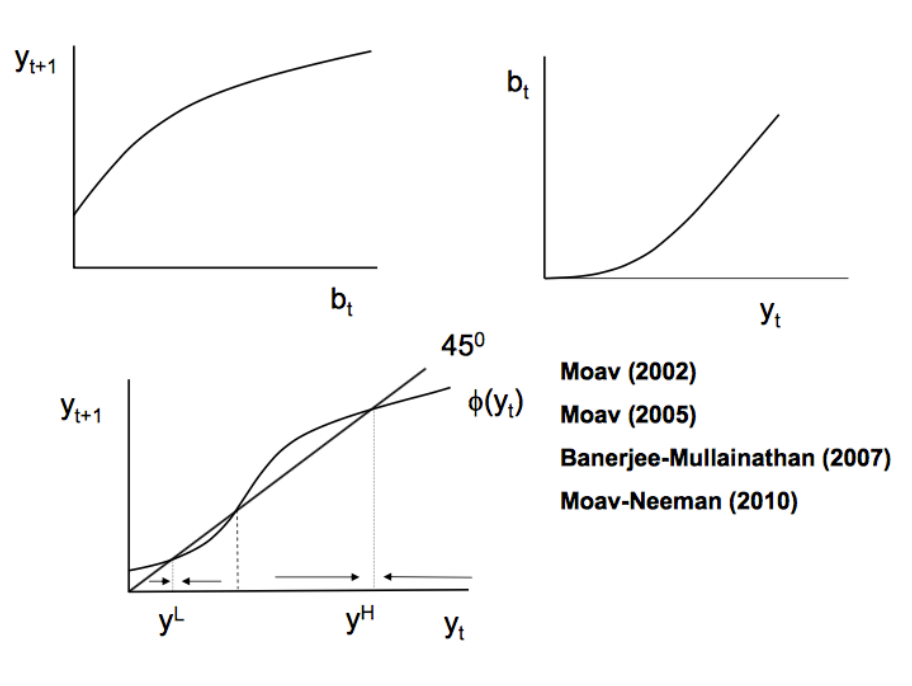
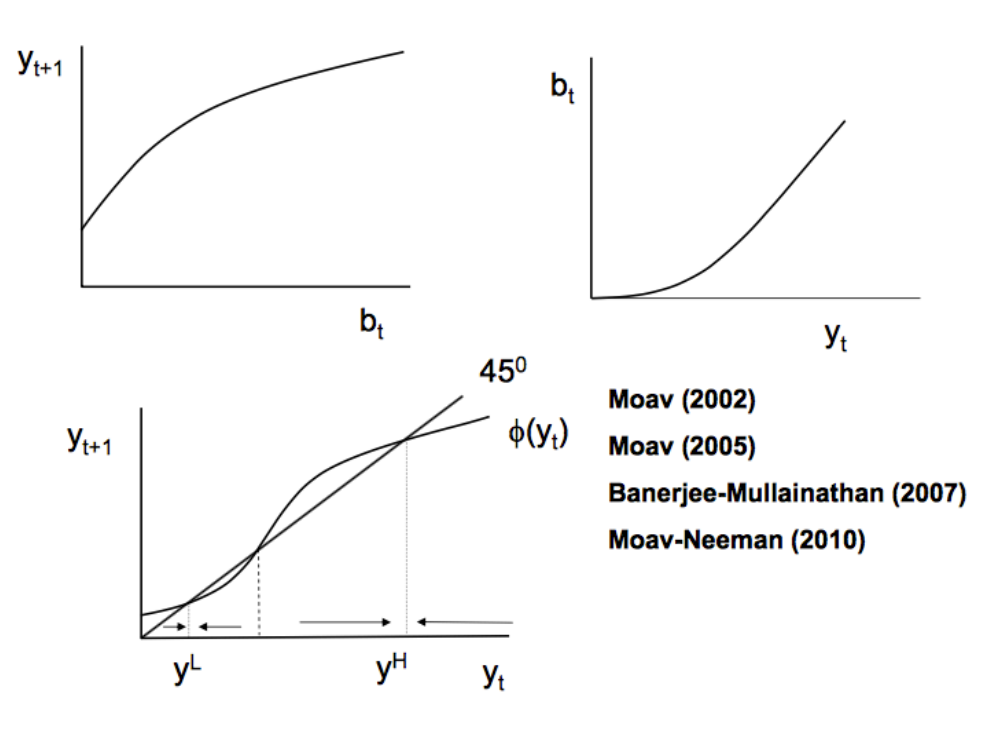
In **Moav (2002)** we simply assume that this is the shape of the saving function (or function of investment in off-spring).
We take the **Galor-Zeira (1993)** model but replace the non-standard technology with a standard technology.
Also, replace homothetic preferences with the assumption that the investment function in the education of the children is increasing and convex.
The combination of these 2 could create a dynamical system which generates a poverty trap.



(11:10)
/This type of behaviour cannot simply be justified by saying that poor live in 'subsistence' and their lack of wealth is self-perpetuating, generating a poverty trap in this way.
The evidence (e.g, Obamza family) suggests that the poor can afford to invest in the education of their children, but do not.
Moav (2005) tells a story of Becker (1983) in that there is a quantity-quality trade-off in children.
Poor people in poor countries have more children than rich people in rich countries.

How would we justify this type of behaviour?
Poor people live at subsistence - and when income is just sufficient for subsistence - you cannot afford to allocate income to the education of you children. So poor people live at subsistence, they don't save, and only above some threshold of income people start allocating their income to the education of their children.
This is inconsistent with the fact which we talked about in Lecture 3 about the behaviour of the poor.
The Obamza family do not send their children to school, even though the cost if $2.50 dollars a month per child. At the same time, they spend $22 a month on alcohol and phones. They are not on subsistence - they can afford to spend on items which are not part of subsistence, but don't invest in the education of their children.

We need a better explanation than simply saying 'subsistence'.
Moav (2005) looks at the clear fact that poor people in poor countries have more children than wealthy people in wealthy countries. Within countries, there is a correlation between education and fertility, and education and income.
Becker (1964) proposes a tradeoff between the number of children and the ability of parents to invest in the education of each child, then clearly more children imply less resources to each child - this is the tradeoff between the quality and quantity of children. (13:35)

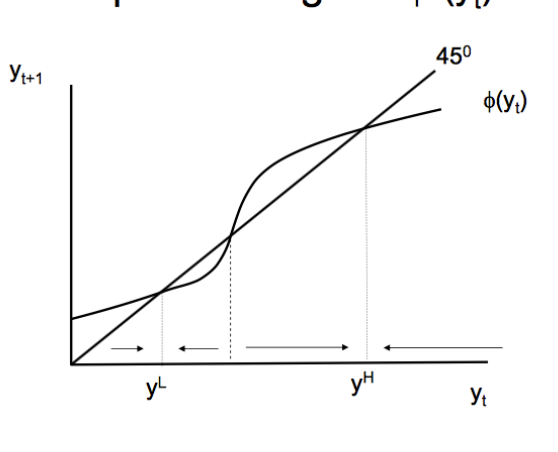


In this paper there is a model in which poor people choose to have more children because they ? education and they have a comparative disadvantage in educating their children because they choose a larger number of lower education children and despite assuming homothetic preferences, this quality-quantity trade-off generates an investment function which looks like this and a poverty trap.

Banerjee & Mullainathan (2007) tell a temptation story.
e.g, when an individual thinks of themselves a day in advance, they have a clear idea of what they would like to do and what they would not like to do. A key assumption according to **Banerjee & Mullainathan (2007)** is that there is a difference between poor and wealthy, in that the fraction of income allocated to temptation goods is decreasing with income. They justify it by arguing that for a poor person, a donut is a large fraction of income, whereas for a wealthy person a donut is a small fraction of income.
This is true if temptation is just for donuts. In reality, rich people can be tempted by more expensive goods. Temptation is not just for donuts - Ferrari/ jet/ etc. Not a reasonable assumption.
Could go the other way: poor people are not even tempted to spend money on a donut because they're so poor they realise that they have to cut on healthier and more important stuff.

Once you make this assumption that the fraction of income allocated to **temptation goods** is **decreasing** with income, this implies that the fraction of income that could go for useful stuff like **education** is **increasing** with income.
So by assumption you have this type of line:

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



But **Banerjee & Mullainathan's (2007)** story continues. Their model is a behavioural model in the sense that individuals are not the standard utility maximisers that simply fail to temptation.

Here is the key story they tell: Today I know that tomorrow I will suffer from temptation. But today when I think of myself tomorrow, I would like myself tomorrow to spend less money on temptation. From the point of view of myself today, temptation in the future is a tax on my income. So if my future income is taxed, I want to save less today and consume more. My savings in the future will be taxed by temptation, **which reduces the savings rate**.

Assuming that commitment mechanisms do not exist, and I know that a fraction of my future income is going on temptation, does this really reduce my saving rate? Income effect and substitution effect.

No, **Banerjee & Mullainathan's (2007)** assumption that poor individuals will reduce their savings today because they know they will be tempted tomorrow could be wrong:
If individuals know they will spend more next period, they will save more this period, to compensate.
Thus, it is not necessarily true that if individuals know they will face a higher tax in the future they will save less, because their future income is taxed. You may say the opposite: I will save more so that I have some income left after taxation.
Banerjee & Mullainathan's (2007) story is just about substitution effect: it ignores the income effect.
e.g, if interest rate falls, substitution effect implies less savings, but income effect implies more savings (because you will be less wealthy).
So we have to assume additionally that the substitution effect is greater than the income effect.

So there is a trade-off between conspicuous consumption and education as signals for income.
Result: we have savings rate increasing with income and persistence of poverty.

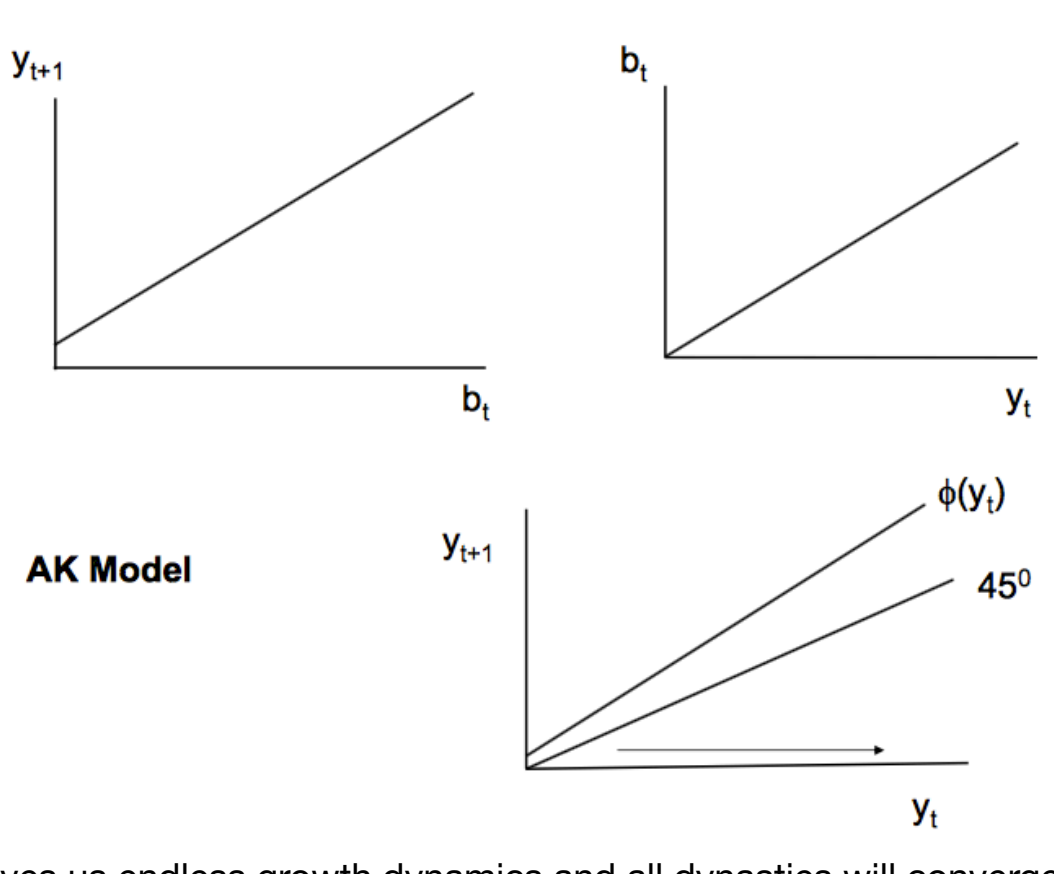
In this paper:

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

→ increasing saving rates with income

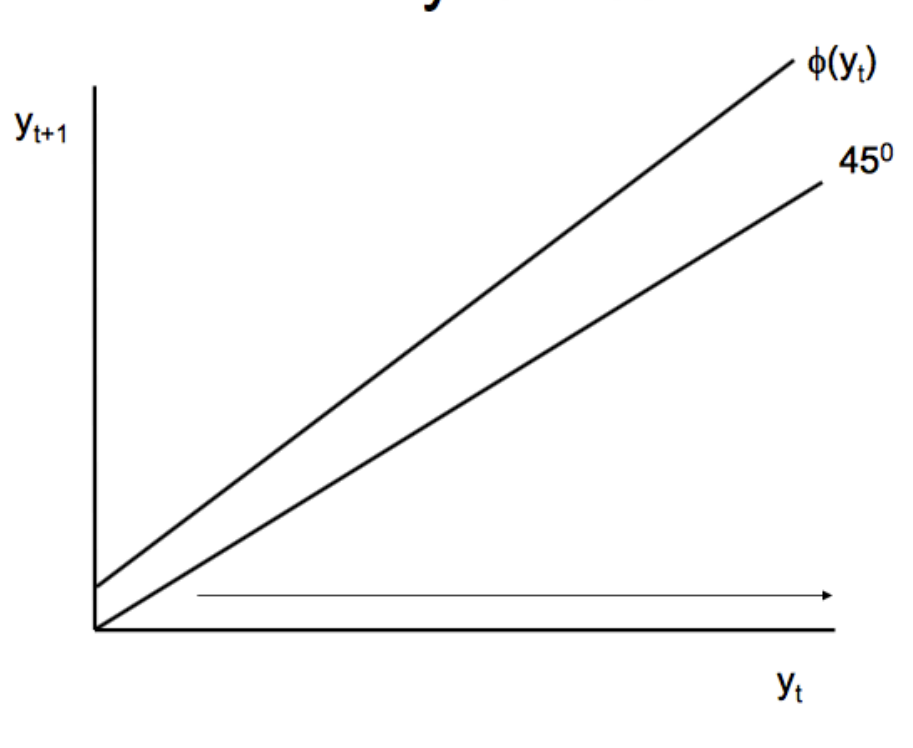
→ persistence of poverty

(23)
In terms of the mode we assume an AK model with linear technology (for simplicity).
So same basic figures that generate a dynamical system.
Assume homothetic preferences and a linear production function (which is fine: we want to avoid indivisibilities).
Combined, we have a linear phi function. If the slope is >1 then it will lie above the 45 degree line and we have endless growth.



This gives us endless growth dynamics and all dynasties will converge to a globally stable steady state.

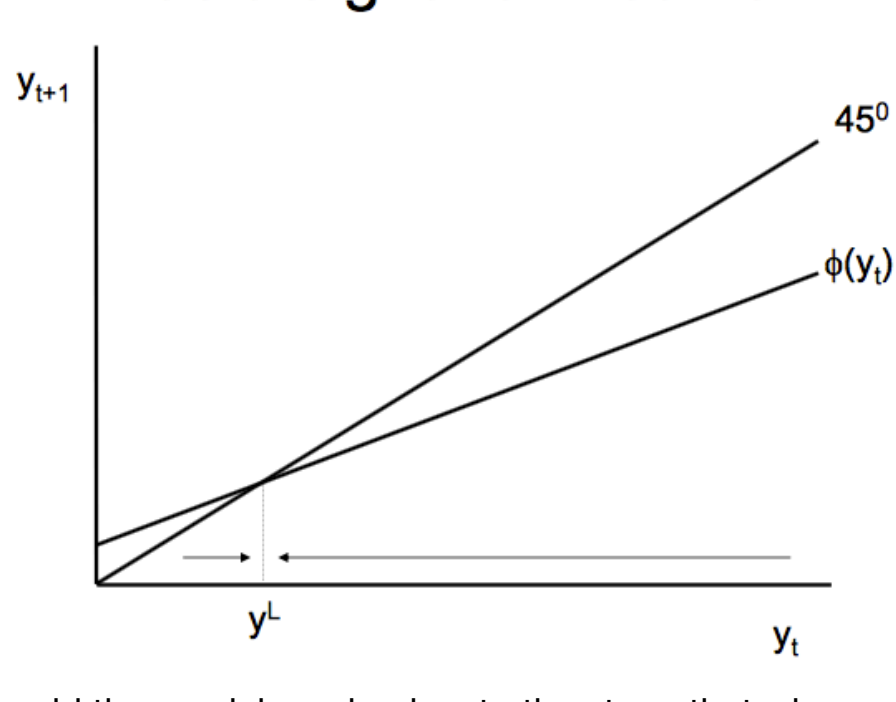
AK Dynamics



Introducing conspicuous consumption:
Assume poor and rich behave the same - they simply allocate a fraction of their income for conspicuous consumption. This reduces their savings. Allocating more income to conspicuous consumption means you make a show. This comes at the expense of other consumption and savings. SO the entire phi function would drop, and if it drops sufficiently, we have a steady-state.

Model shows that regardless of income, everyone is allocating the same fraction of income to conspicuous consumption. This gives us a linear phi function with a unique globally stable steady state.

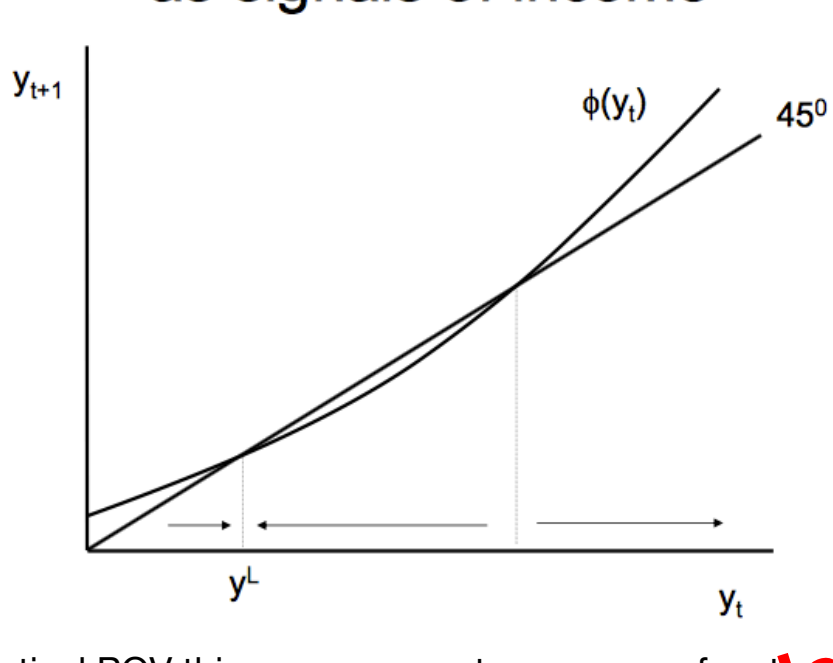
Conspicuous Consumption
as a signal of income



BUT now let's add the crucial mechanism to the story: that when education increases and with education income also increases; people reduce the fraction of income allocated to conspicuous consumption

Now assume that as income increases (as a result of more human capital), the fraction of income spend in conspicuous consumption is shrinking.
The phi function turns into a convex function, which gives us multiple steady states and a poverty trap. In this example, there is this threshold below which individuals converge to the low income steady state, and above which they enjoy constant growth of income. *You could block it so that convergence is to some high income level.*
What matters is that we have a threshold and below this people converge to a poverty trap, and above they converge to a high income or endless growing steady state.

Cons. Consumption + HC
as signals of income



From a theoretical POV this paper generates a convex function without making any assumptions that are non-standard on utility (assumed homothetic) or on technology (which is not characterised by indivisibilities) and you still get these dynamics.

In terms of what you need to know for the exam - DO NOT NEED THE DETAILS OF THIS PAPER - You need to understand ideas - UNLIKE GALOR-ZEIRA MODEL - which we do have to understand the details.
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Note that a poverty trap implies:

$\phi'(y_t) < 1$ **Followed by** $\phi'(y_t) > 1$