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14.771 Development Economics: Microeconomic Issues and Policy Models  
Fall 2008

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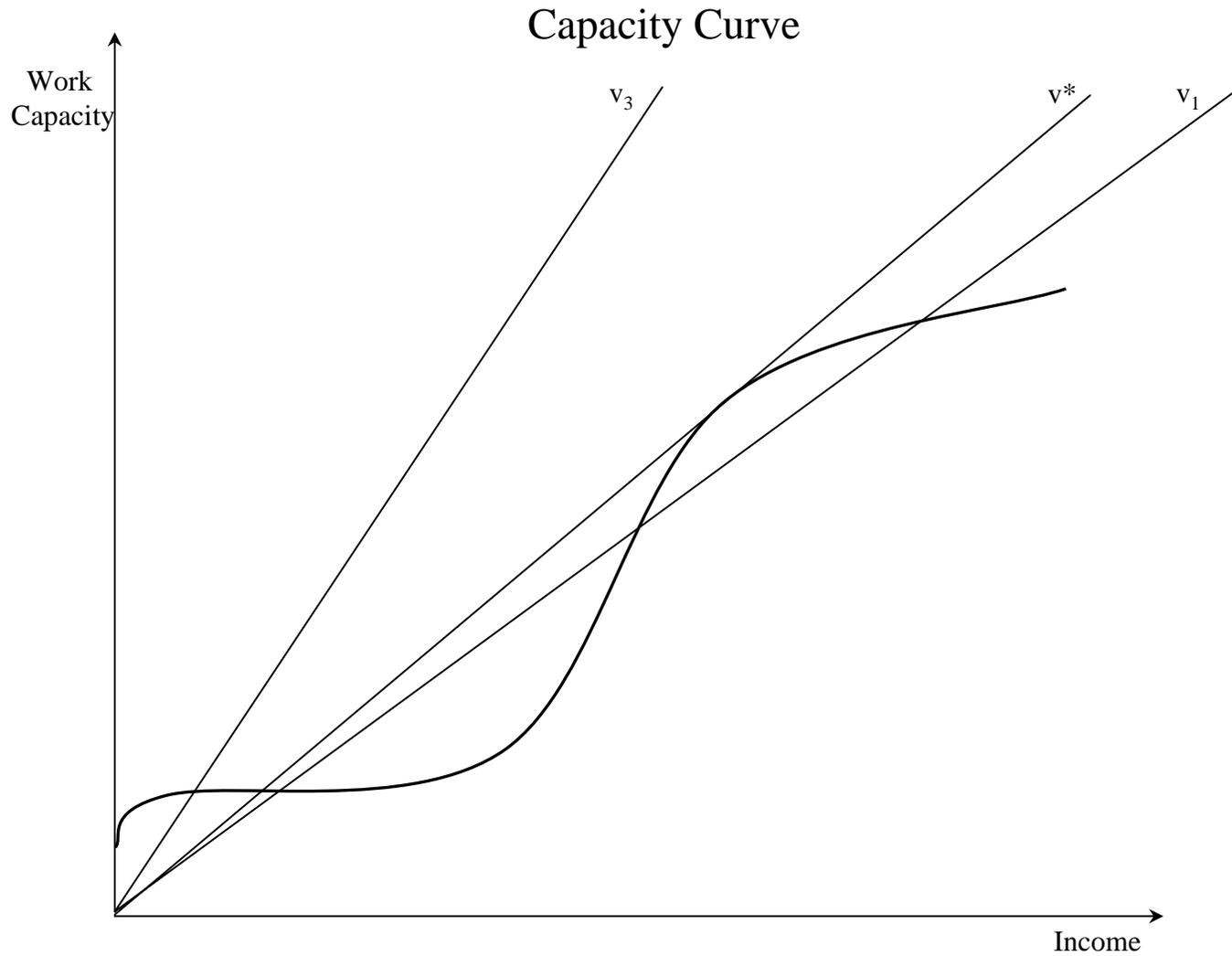
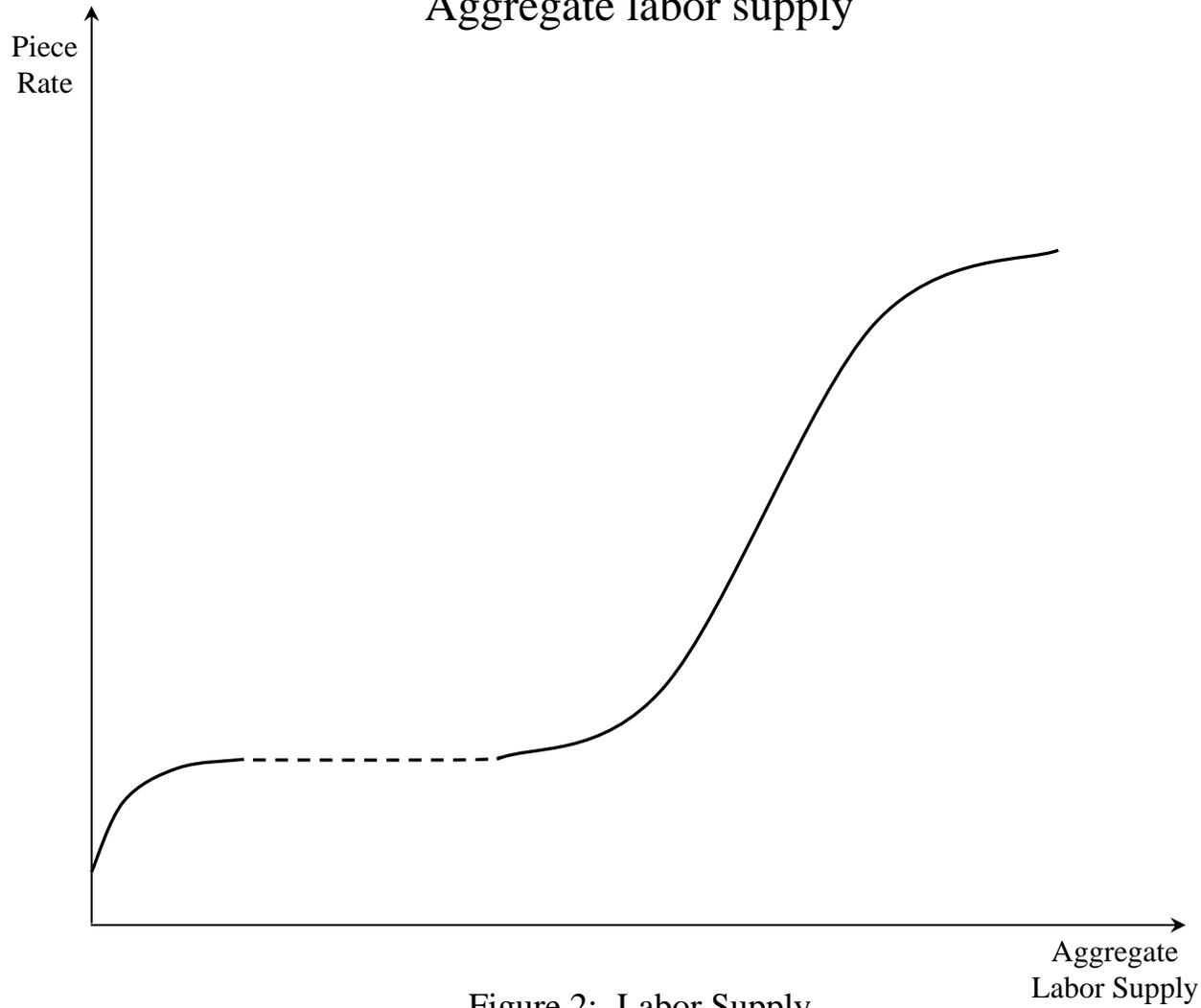


Figure 1: The Capacity Curve  
The Piece Rate

# Aggregate labor supply



# Possible equilibria

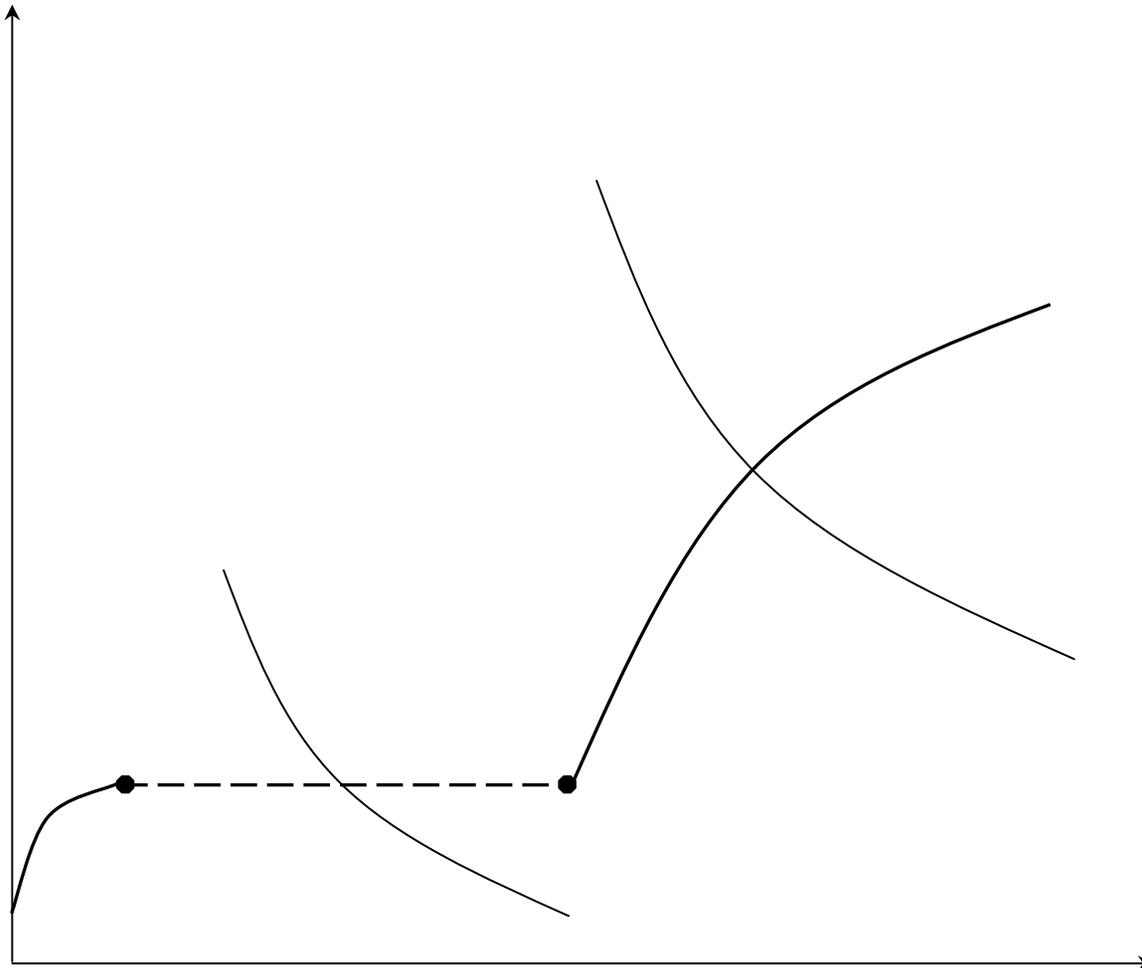


Figure 3: Possible Equilibria

# The effect of non-labor income

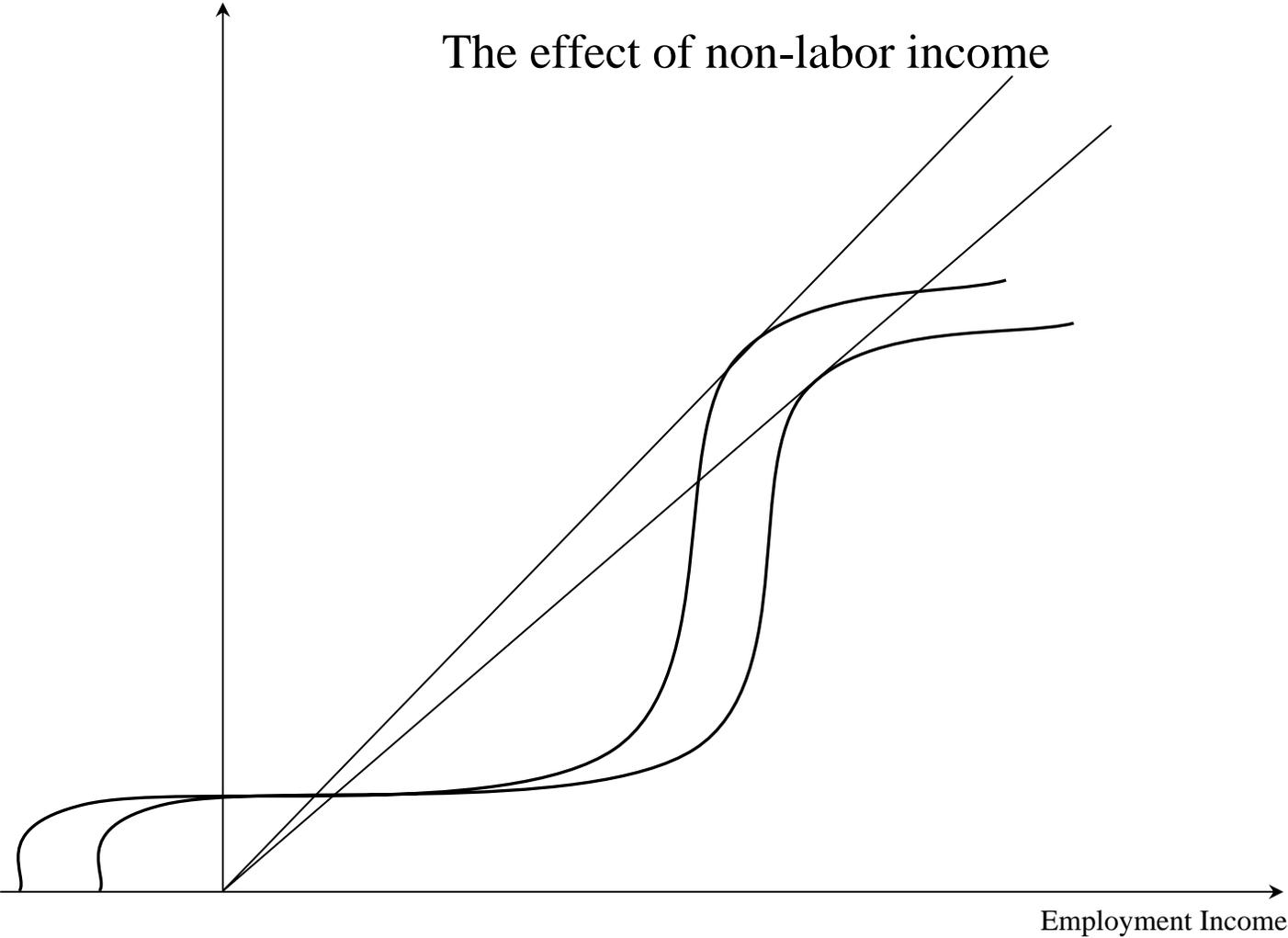


Figure 4: Effect of Non-Labor Income on the Capacity Curve

# Distribution of land

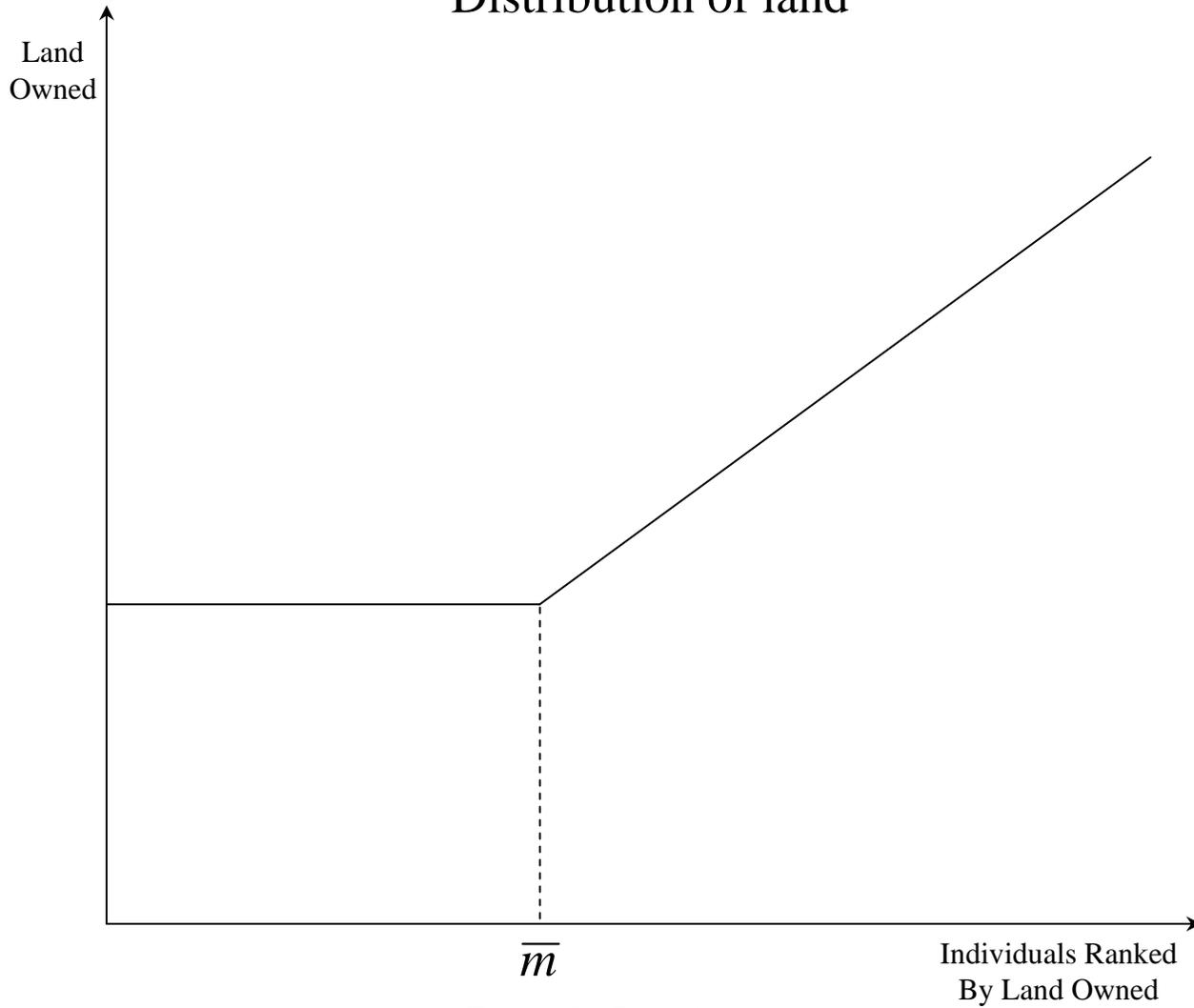


Figure 5: Distribution of Land

# Labor supply as function of land owned

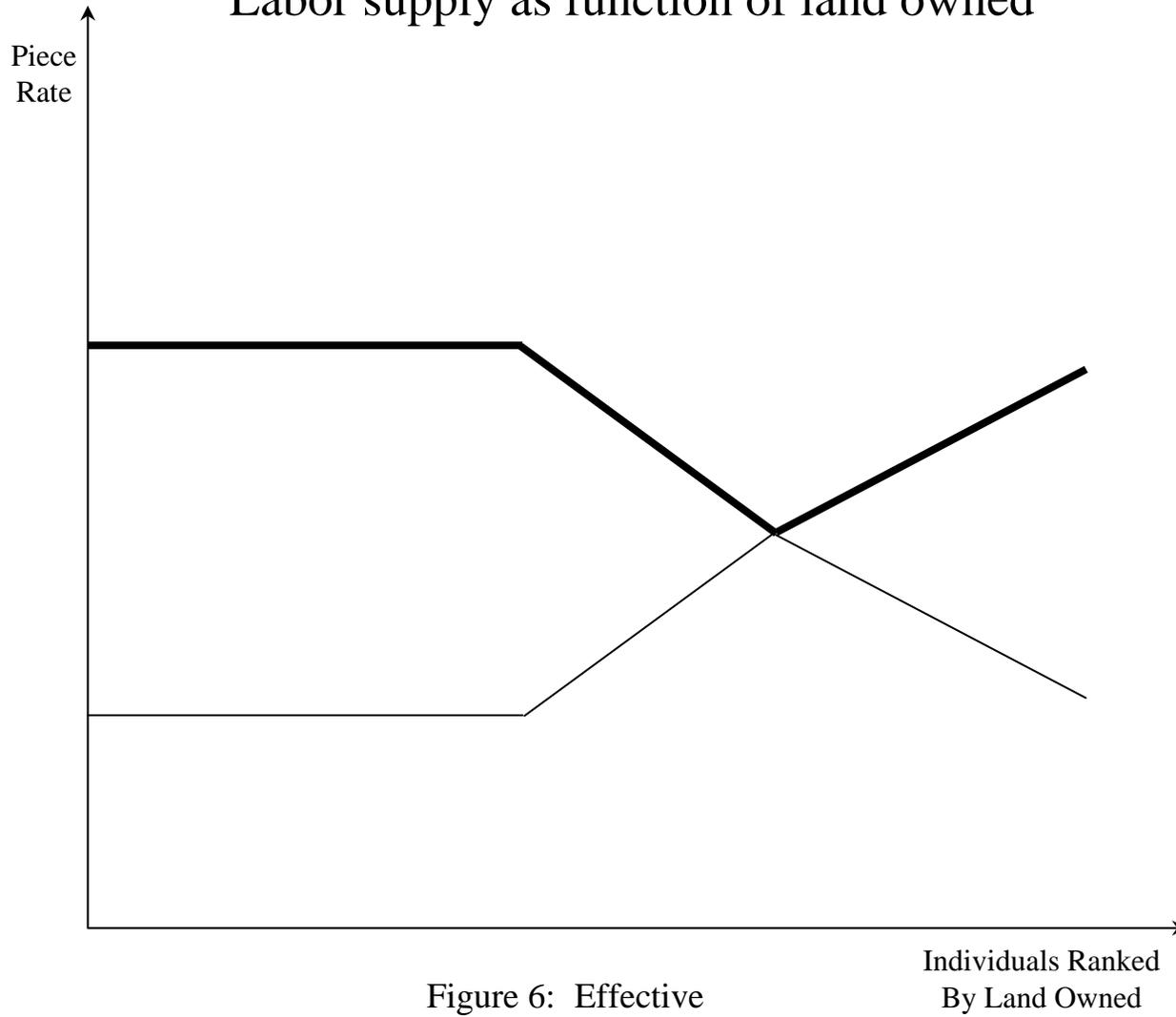


Figure 6: Effective  
Reservation Wage

# Different types of equilibria

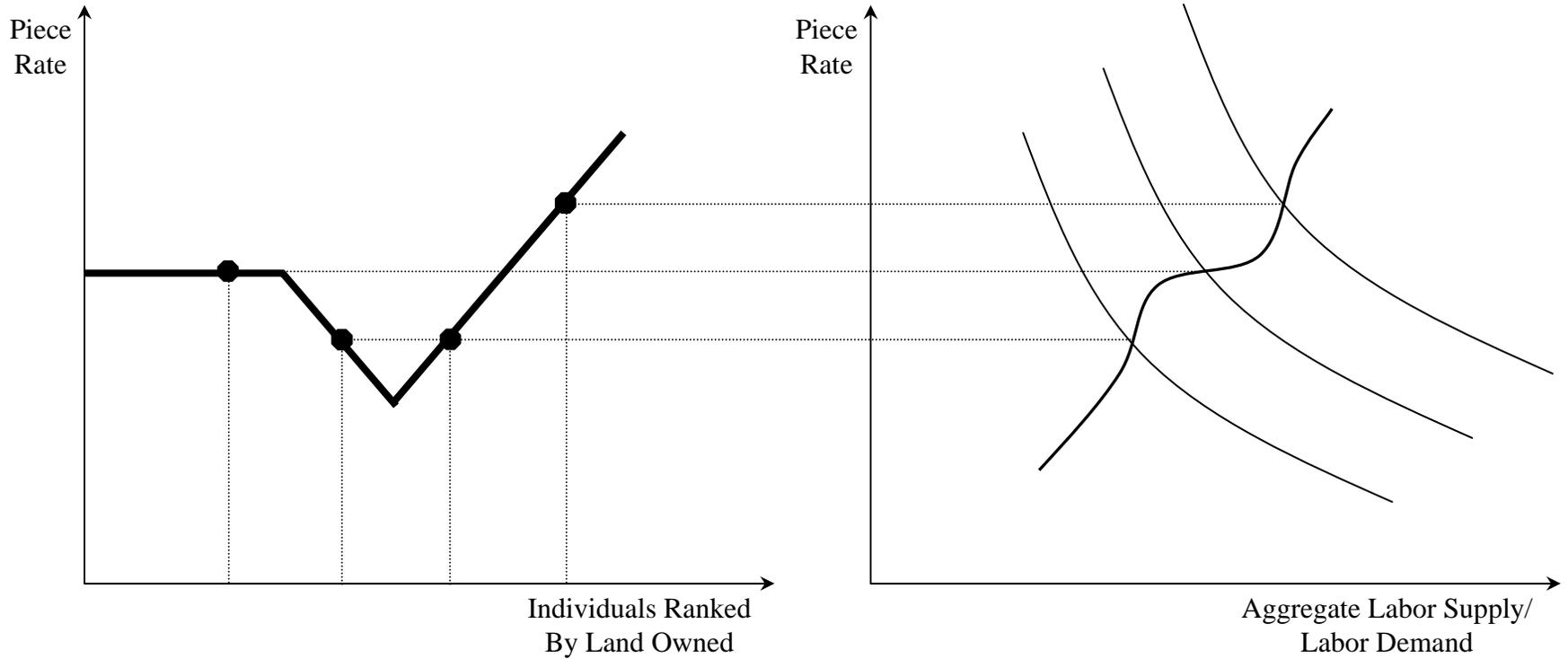


Figure 7: Type of Equilibria

# Policy experiments

# Dynamic versions of capacity curve

# Dynamic version of the capacity curve

- Capacity curve:

– Health affects income  $y_{t+1} = g(h_t)$

– Income affects health  $g(h_t) = f(y_t)$

$$y_{t+1} = g(f(y_t))$$

- Capacity curve:

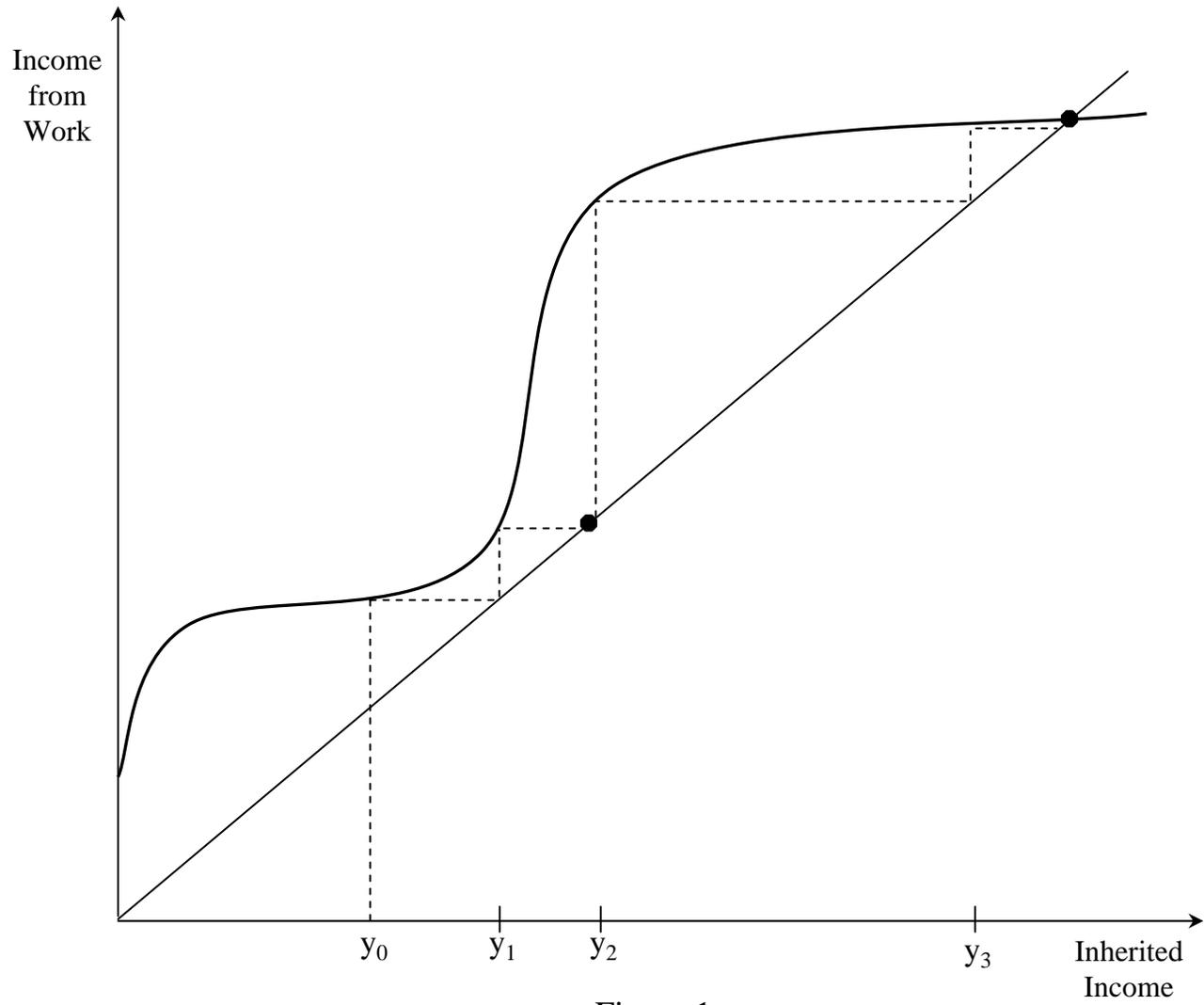


Figure 1

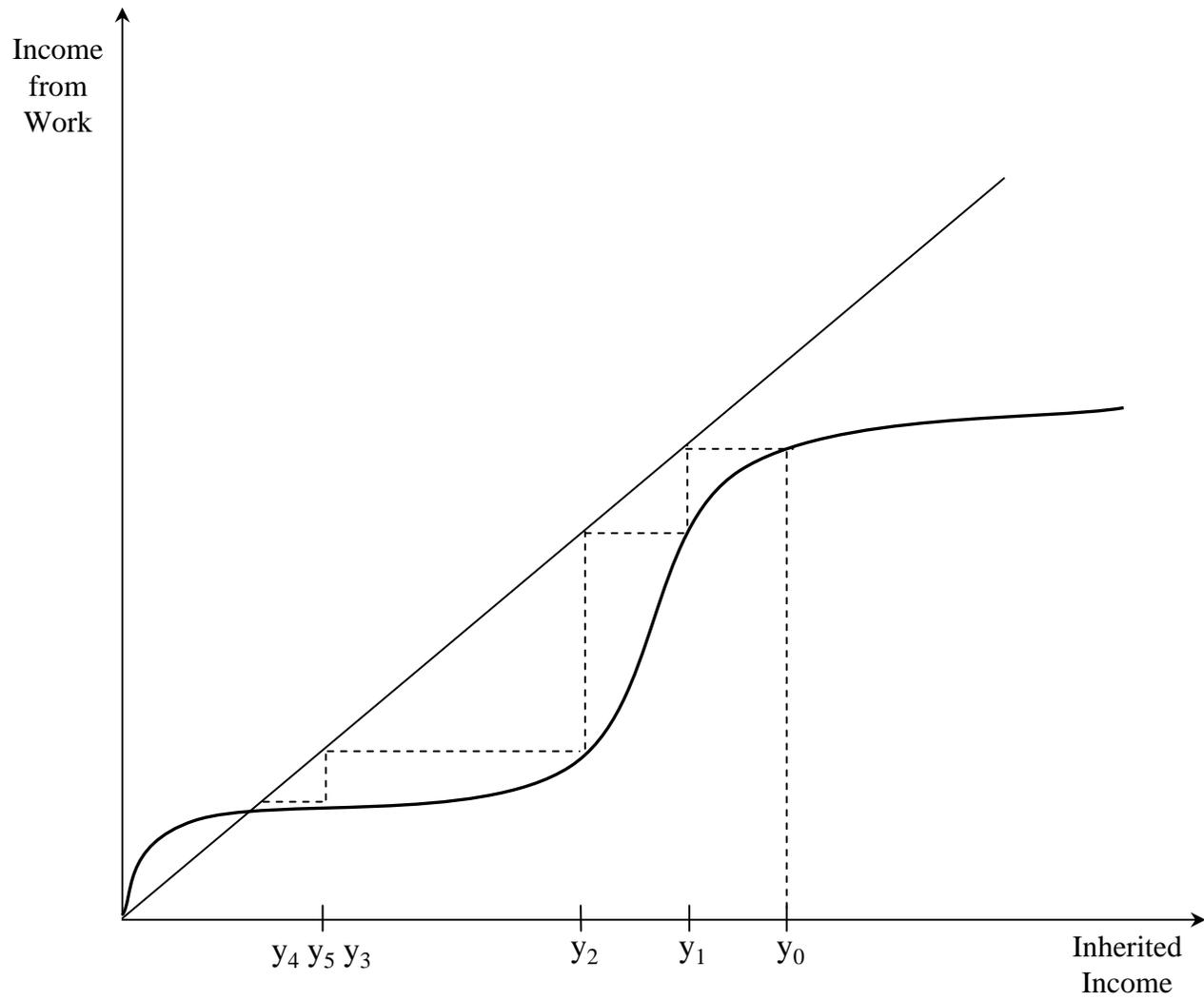


Figure 2

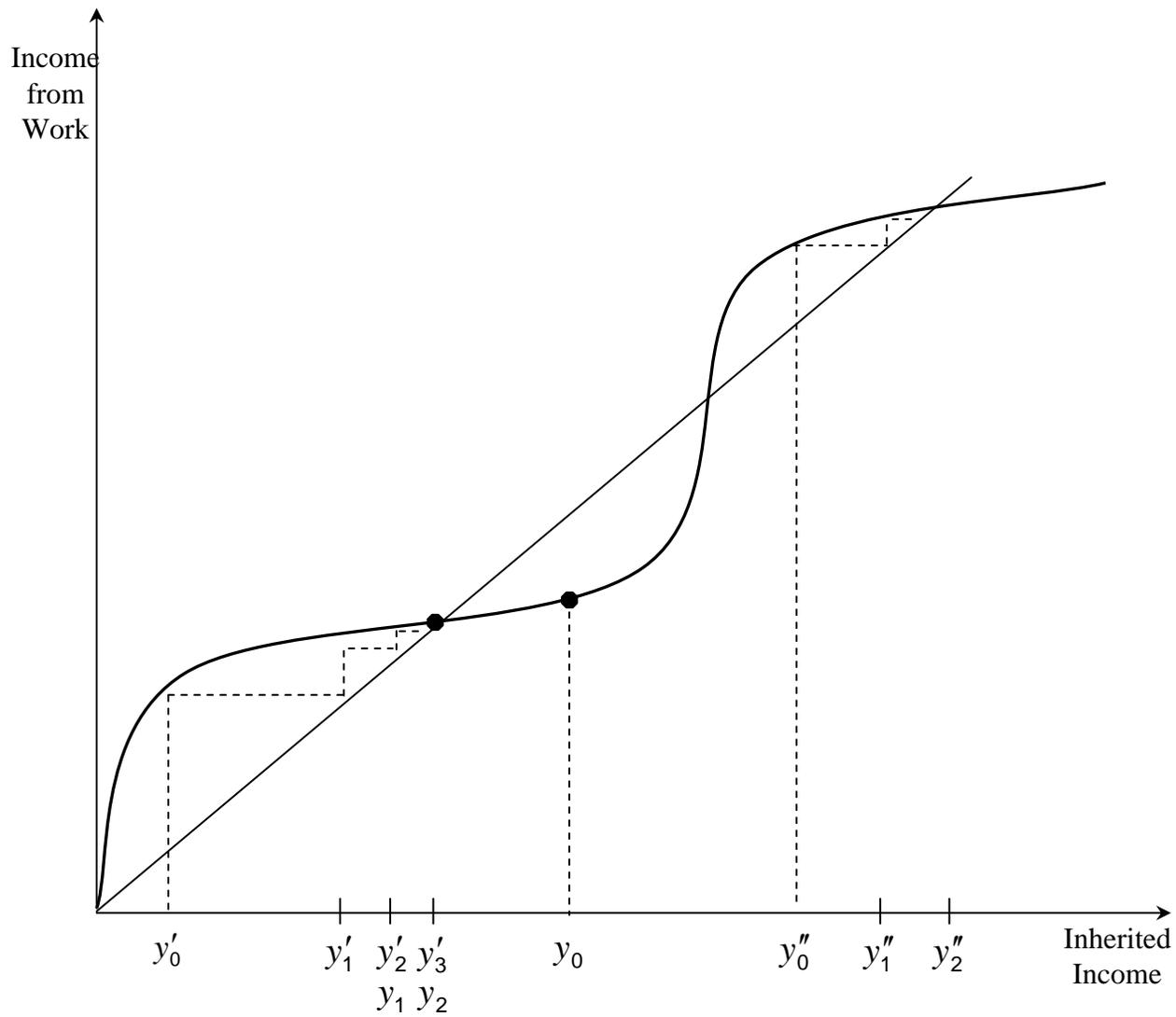


Figure 3

# When will a property trap emerge?

- Capacity curve:
  - Health affects income  $y_{t+1} = g(h_t)$
  - Income affects health  $g(h_t) = f(y_t)$
- Capacity curve:  $y_{t+1} = g(f(y_t))$
- Multiple equilibria (usually interpreted as poverty trap) will arise iff the capacity curve intersects the 45 degree line from below

# Conditions for capacity curve to intersect 45 degree line from below

- Let  $y^*$  be the point at which the capacity curve intersect the 45 degrees line. At this point, the derivative  $((g(f(y^*)))' > 1$

- Now:  $(g(f(y^*)))' = g'(f(y^*)) * f'(y^*)$

$$= \frac{g'(f(y^*))f(y^*)}{g(f(y^*))} \frac{f'(y^*)y^*}{f(y^*)}$$

- Because  $g(f(y^*)) = y^*$

- $\frac{g'(f(y^*))f(y^*)}{g(f(y^*))}$  is the elasticity of  $g$  with respect to  $h$  (income with respect to health)
- $\frac{f'(y^*)y^*}{f(y^*)}$  is the elasticity of  $f$  with respect to  $y$  (health with respect to income)
- By continuity, over some range, the product of the elasticities must be greater than one.
- A very general point, which we will now explore in the case of health

# Caveats

- What is a period? (one day? One life time? One year?)
- What is health?
- What is income?