

$$I) \bar{s} Y_t = \bar{d} K_t$$

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~~$$Y_t = \bar{A} \left( \frac{\bar{s}}{\bar{a}} Y_t \right)^{1/3} L^{-2/3}$$~~

$$Y_t^{2/3} = \bar{A} \left( \frac{\bar{s}}{\bar{a}} \right)^{1/3} L^{-2/3}$$

$$Y_t = A^{3/2} \left( \frac{\bar{s}}{\bar{a}} \right)^{1/2} L$$

$$\frac{Y_t}{L} = Y_t^* = A^{3/2} \left( \frac{\bar{s}}{\bar{a}} \right)^{1/2}$$

$$II) C_t = Y_t - I_t = Y_t - \bar{s} Y_t = (1 - \bar{s}) Y_t$$

$$\frac{C_t}{L} = (1 - \bar{s}) \frac{Y_t}{L} = (1 - \bar{s}) A^{3/2} \left( \frac{\bar{s}}{\bar{a}} \right)^{1/2}$$

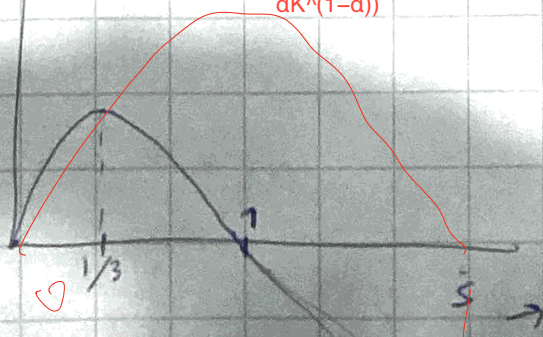
If investment is 0, because we are in steady state, then capital will be 0 so consumption will also be 0.

If investment is 1, everything goes to investment so nobody consumes.

III)  $C/L \uparrow$

- as  $s$  increases
- (1) you consume less
  - (2) but because investment rises  $\rightarrow$  production rises  $\rightarrow$  consumption rises

first (2) is stronger, then (1) becomes stronger because of diminishing marginal product of capital ( $MPK = \alpha K^{\alpha-1}$ )



If more than 100% of income is invested, consumption becomes negative.

First, consumption rises because total output increases, but then  $(s > \frac{1}{3})$  output increase slower than the rate of investment.

$$IV) \frac{\partial}{\partial s} (1-s) A^{3/2} \left( \frac{s}{d} \right)^{1/2}$$

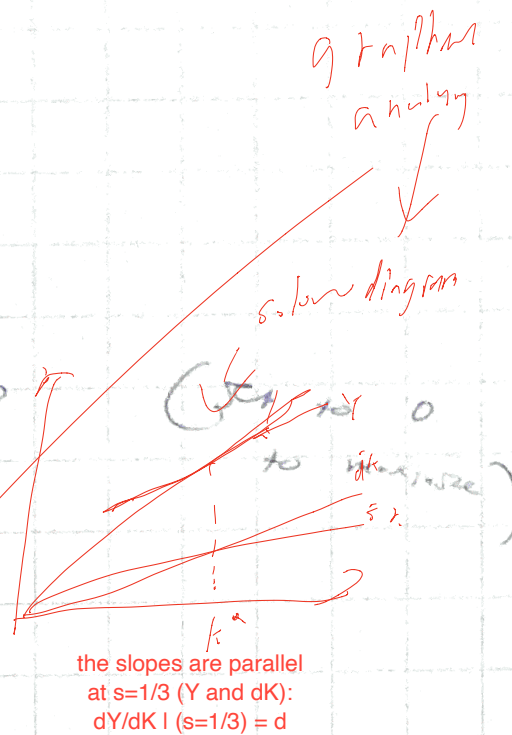
$$= \frac{\partial}{\partial s} A^{3/2} \left( \frac{s^{1/2}}{d^{1/2}} - \frac{s^{3/2}}{d^{1/2}} \right)$$

$$= A^{3/2} \left( \frac{1}{2} \frac{s^{-1/2}}{d^{1/2}} - \frac{3}{2} \frac{s^{1/2}}{d^{1/2}} \right) = 0$$

$$\frac{1}{2} \frac{s^{-1/2}}{d^{1/2}} = \frac{3}{2} \frac{s^{1/2}}{d^{1/2}}$$

$$\frac{1}{2} = \frac{3}{2} s$$

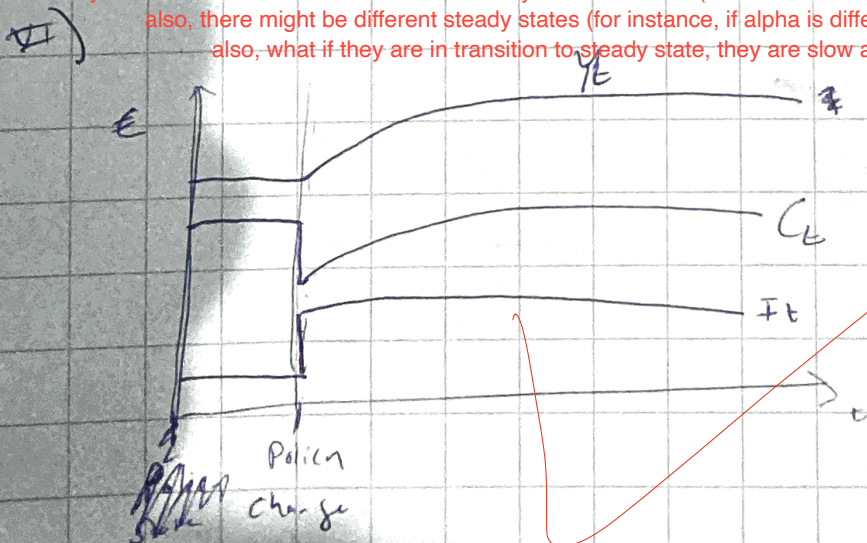
$$s = \frac{1}{3}$$



⇒ - Practically every country invests too little (<33.3%)  
only China and Singapore invest a little bit more.

- Increasing  $s$  will lead to a better steady state  
but in the short run, consumption per capita will decrease.

Maybe also much of the investment is done by other countries (China was the factory of the world) but it then doesn't get it also, there might be different steady states (for instance, if  $\alpha$  is different, different technology quality).  
also, what if they are in transition to steady state, they are slow and surely increasing their  $s$



Probably no policy support since, initially, consumption goes down.