

② Long run :

$$\bar{Y}_t = \bar{S} A K_t^{1/3} \bar{L}^{2/3}$$

or an improvement in

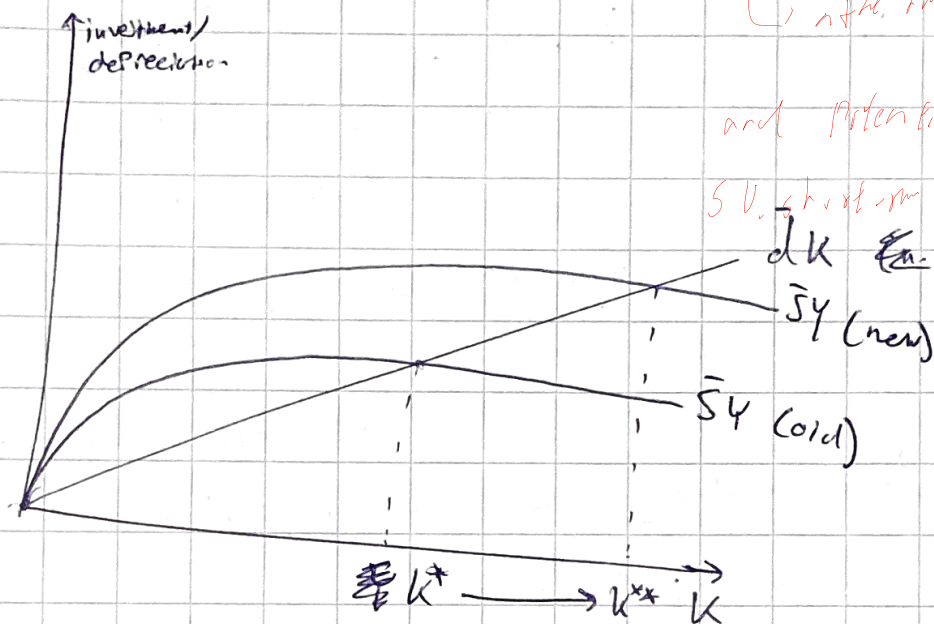
So if  $A$  rises because

in ~~tech~~ technology, the investment curve shifts up  $Y = \bar{S} A K_t^{1/3} \bar{L}^{2/3}$

$\bar{L}$  is the tech actual

and potential output

So short run output remain in ch



So capital ~~increases~~ <sup>starts increasing</sup> simultaneously, output immediately increases as  $A$  rises:

$$Y_t = A K_t^{1/3} \bar{L}^{2/3}$$

But because capital also rises, the long term effect will be an even bigger effect:

$$Y^* = \left(\frac{\bar{S}}{\delta}\right)^{1/2} A^{3/2} \bar{L}$$

So if  $A$  increases,  $Y$  output increases by  $3/2$  times by  $A^{3/2}$ .

Therefore  $Y_t$  would initially increase (Production would be lower than

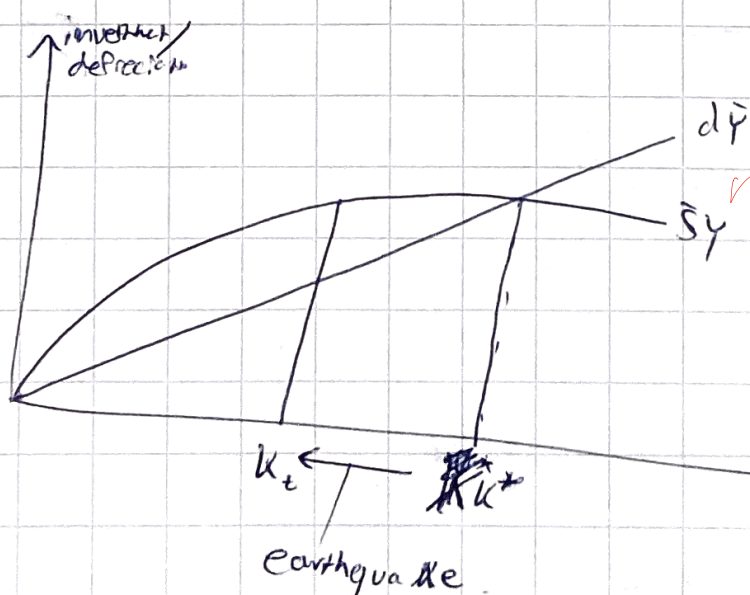
Potential Production) But it would reduce as more money would be invested in Capital:

$$\dot{Y}_t = Y_{\text{new}}^* - Y_t$$

↑  
this increases only by  $A$   
(at least in the short term)  
↑  
this immediately increases by  $A^{3/2}$

2. It would cause Capital  $K$  to fall (as it becomes damaged). the immediate effects will be that

$Y_t$  falls rapidly which will cause  $\dot{Y}_t$  to become negative:

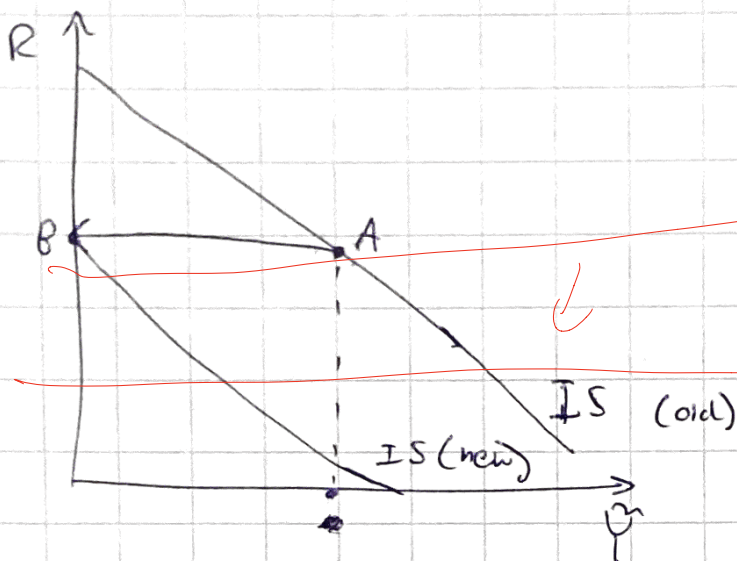


*L. if this is great,  $\dot{Y}_t$  may also wish to do it*  
↓  
*graph with  $\dot{Y}_t$  on vertical axis and  $K$  on horizontal axis. It shows a downward-sloping line labeled  $\dot{Y}_t$  and a horizontal line labeled  $\dot{Y}_t = 0$ . The intersection is marked with a vertical line down to the horizontal axis at  $K_t$ .*

However, over the long run, ~~more~~ more would be invested and  $\dot{Y}_t$  would ~~decrease~~ return back up.

Draw the IS-curve and argue that the government would reduce interest (IS-MP)

3. Export will reduce so  $\bar{a}_{ex}$  will fall so  $\bar{a}$  in  $\bar{Y} = \bar{a} - b(R_t - \bar{r})$  will fall so the IS curve shifts downwards:



So output will fall ~~back~~ as the economy goes from A to B. ( $\bar{Y}$  will fall).

For bonus mark:

(Japanese lost decade) when your interest rate goes to 0, people are indifferent to holding on to money or borrowing/investing. So it is very dangerous to go so low. And if it goes too low then people will just hoard cash/buy goats.