

Y ... OUTPUT y ... OUTPUT PER CAPITA $y = \frac{Y}{L}$
 K ... CAPITAL k ... CAPITAL PER CAPITA $k = \frac{K}{L}$
 L ... LABOUR

- $Y = F(K, L)$, WHEN WE ASSUME ROLE OF TFP $Y = AF(K, L)$
- COB-DOUGLAS PRODUCTION FUNCTION
 $Y = AK^\alpha L^{1-\alpha}$

- S-S model, deriving the STEADY STATE (k^*, y^*)
 $y = k^\alpha$... PRODUCTION FUNCTION, WHAT ARE k^*, y^* GIVEN n, s, δ .

- FROM $sy = (n + \delta)k$, DERIVE k^*
 $SAk^\alpha = (n + \delta)k$

$$\frac{SA}{n + \delta} = k^{1-\alpha}$$

$$\left(\frac{SA}{n + \delta}\right)^{\frac{1}{1-\alpha}} = k^*$$

- plug in for y^*

$$y^* = k^{*\alpha}$$

$$y^* = A \left(\left(\frac{SA}{n + \delta}\right)^{\frac{1}{1-\alpha}} \right)^\alpha$$

$$y^* = A \cdot A^{\frac{\alpha}{1-\alpha}} \cdot \left(\frac{S}{n + \delta}\right)^{\frac{\alpha}{1-\alpha}}$$

$$y^* = A^{\frac{1}{1-\alpha}} \left(\frac{S}{n + \delta}\right)^{\frac{\alpha}{1-\alpha}}$$

STEADY STATE OF THE OUTPUT IN ECONOMY DEPENDS ON SAVING RATE, POPULATION GROWTH, DEPRECIATION OF CAPITAL AND LEVEL OF TECHNOLOGICAL PROGRESS.

SOME ADDITIONAL NOTES!

① HOW TO DERIVE PER CAPITA TERMS?

$$Y = AK^\alpha L^{1-\alpha} / L^{-1}$$

$$\frac{Y}{L} = AK^\alpha L^{1-\alpha} L^{-1}$$

$$y = Ak^\alpha$$

② WHAT DOES "TO THE POWER" IMPLY FOR OUR CALCULATIONS?

$$L^{-1} = \frac{1}{L}$$

$$K^\alpha L^{-\alpha} = \frac{K^\alpha}{L^\alpha} = \left(\frac{K}{L}\right)^\alpha = k^\alpha$$

$$Y \cdot L^{-1} = \frac{Y}{L} = y$$