

$$g = \pi s$$

$$W = wE$$

$$f = \frac{I}{Z}$$

$$\pi = \frac{Y - W}{Z}$$

$$\frac{I}{Z} = s \frac{Y - wE}{Z}$$

$$Y = u n k Z$$

$$f = \frac{k(Y - f(L-E))}{kZ} s w$$

$$Z(t)$$

$$K_t = k Z_t$$

$$\frac{I}{Z} = s \frac{u.n.k.Z - wE(1 - \frac{E}{L})}{Z}$$



$$L_t = L_0 e^{rt + pt}$$

$$Z_t = Z_0 e^{gt}$$

$$\Delta \left(\frac{L-E}{L} \right) = \frac{r-1-g}{L}$$

Use difference equation

$$\frac{W}{E} = w = f \left(\frac{L-E}{L} \right)$$

$$L > E$$

$$W \geq \text{debt}$$



$$I \rightarrow \Delta K \rightarrow \Delta E$$

$$\text{deccy: } \mu K \rightarrow$$

$$I \rightarrow \Delta L$$

Both E and L are functions of I
But effect on L depends on the form of investment (depreciation)

Thermostat (warranted rate) growth (2-dim output)

$$g = \frac{Y - W}{Z} s =$$

$$(Y - W) s = I$$

$$= \frac{Y - W}{kZ} k s$$

$$(Y - wE) s = I = gZ$$

$$\Delta K = F(w) = F \left(y \left(\frac{L-E}{L} \right) \right)$$

$$r = \frac{D K}{K}$$