Das dynamische Gleichgewicht

$$\dot{Y} = \frac{Y}{K} \cdot \dot{K} \qquad \text{(Kapazitätseffekt)}$$

$$\frac{\dot{Y}}{Y} = \frac{\dot{K}}{K} \quad \text{für} \quad \frac{K}{Y} = v = \text{const.}$$

$$\frac{\dot{K}}{K} = \frac{I}{K} = \frac{S}{K} = \frac{sY}{K} = \frac{s}{v}$$

$$\dot{Y} = \frac{sY}{v}$$

$$\dot{I} = \dot{S} = s\dot{Y}$$

$$\dot{Y} = \frac{\dot{I}}{s} \qquad \text{(Einkommenseffekt)}$$

$$\dot{Y} = \frac{1}{v} I = \frac{1}{s} \dot{I}$$

$$\frac{\dot{Y}}{Y} = \frac{\dot{K}}{K} = \frac{\dot{I}}{I} = \frac{\dot{S}}{S} = \frac{s}{v}$$ „steady state“

$$Y_t = Y_0 e^{\frac{s}{v}t}$$

Neoklassik:

$$Y = Y(A, K)$$

$$\frac{Y}{A} = y = f(k)$$

$$k = \frac{K}{A}$$

$$\underbrace{\frac{\dot{k}}{k}}_{G_k} = \underbrace{\frac{\dot{K}}{K}}_{G_K} - \underbrace{\frac{\dot{A}}{A}}_{G_A} = \frac{sY}{K} - n$$

„Zentrale Bewegungsgleichung“:

$$\dot{k} = \frac{sY}{A} - nk = sy - nk$$

$$n = \frac{\dot{A}}{A} = \frac{\dot{K}}{K} = \frac{\dot{Y}}{Y} \cdots = \frac{s}{v}$$

Optimales Sparen

$$(1-s)\,f(k) \rightarrow \text{Max!}$$

Nebenbedingung:

$$sf(k) = nk$$

$$L = (1-s)\,f(k) + \lambda\left(sf(k) - nk\right)$$

$$\frac{\partial L}{\partial s} = -f(k) + \lambda f(k) = 0 \Rightarrow \lambda = 1$$

$$\frac{\partial L}{\partial k} = (1-s)\,f'(k) + \lambda\left(sf'(k) - n\right) = 0$$

$$f'(k) = n \quad (\text{„goldene Regel“})$$

Vollständiger Wettbewerb:

$$r = f'(k) = n$$

$$sf(k) = nk = rk = sy$$

$$s = \frac{rk}{y} \quad \text{(Profitquote)}$$

Mit technischem Fortschritt:

$$r = n + g \overset{?}{<} 0$$