??

$$\dot{k}(t) = A(v(t)k(t))^{\alpha}(u(t)h(t))^{1-\alpha} - c(t) \tag{1}$$

$$\dot{h}(t) = B((1-v(t))k(t))^{\eta}((1-u(t))h(t))^{1-\eta} \tag{2}$$

t

$\hat{k} = Av^{\alpha}k^{\alpha-1}(uh)^{1-\alpha} - \frac{c}{k}$

$\chi = \frac{c}{k}$

$$\hat{k} = Av^{\alpha}u^{1-\alpha}\left(\frac{k}{h}\right)^{\alpha-1} - \chi \tag{3}$$

$x_1 = \frac{vk}{uh}$

$$\hat{k} = Ax_1^{\alpha}\frac{uh}{k} - \chi \tag{4}$$

$$\hat{h} = B\left[(1-v)\frac{k}{h}\right]^{\eta}(1-u)^{1-\eta} \tag{5}$$

$x_2 = \frac{(1-v)k}{(1-u)h}$

$$\hat{h} = Bx_2^{\eta}(1-u) \tag{6}$$

$$H = e^{-\rho t}\frac{c^{1-\sigma}}{1-\sigma} + \gamma_1(A(vk)^{\alpha}(uh)^{1-\alpha} - c) + \gamma_2 B[(1-v)k]^{\eta}[(1-u)h]^{1-\eta} \tag{7}$$

$\partial H \overline{\partial c != 0 \, \frac{\partial H}{\partial v} != 0 \, \frac{\partial H}{\partial k} != -\dot{\gamma_1} \, \frac{\partial H}{\partial u} != 0 \, \frac{\partial H}{\partial h} != -\dot{\gamma_2}}$

$\partial H / \partial c != 0$

$$e^{-\rho t}c^{-\sigma} - \gamma_1 = 0 \tag{8}$$

$$\gamma_1 = e^{-\rho t}c^{-\sigma} \tag{9}$$

γ_1

$$\frac{\partial \gamma_1}{\partial t} = \dot{\gamma}_1 \tag{10}$$

$\dot{\gamma}_1 = -e^{-\rho t}\rho c^{-\sigma} - e^{-\rho t}c^{-\sigma-1}\sigma\dot{c}$

$$\dot{\gamma}_1 = -e^{-\rho t}c^{-\sigma}(\rho + \sigma\hat{c}) = -\gamma_1(\rho + \sigma\hat{c}) \tag{11}$$

γ_1
γ_1

$$\hat{\gamma}_1 = -\rho - \sigma\hat{c} \tag{12}$$

$\partial H / \partial v != 0$

$$\gamma_1 A\alpha v^{\alpha-1}k^{\alpha}(uh)^{1-\alpha} - \gamma_2 B\eta(1-v)^{\eta-1}k^{\eta}[(1-u)h]^{1-\eta} != 0 \tag{13}$$

$$\gamma_1 A\alpha v^{\alpha-1}k^{\alpha}(uh)^{1-\alpha} = \gamma_2 B\eta(1-v)^{\eta-1}k^{\eta}[(1-u)h]^{1-\eta} \tag{14}$$

$$\frac{\gamma_2}{\gamma_1} = \frac{A\alpha v^{\alpha-1}k^{\alpha}(uh)^{1-\alpha}}{B\eta(1-v)^{\eta-1}k^{\eta}[(1-u)h]^{1-\eta}} \tag{15}$$

$$= \frac{A\alpha\left(\frac{vk}{uh}\right)^{\alpha-1}}{B\eta\left(\frac{(1-v)k}{(1-u)h}\right)^{\eta-1}} = \frac{A\alpha x_1^{\alpha-1}}{B\eta x_2^{\eta-1}} \tag{16}$$

$$\gamma_2 = \gamma_1\frac{A\alpha\left(\frac{vk}{uh}\right)^{\alpha-1}}{B\eta\left(\frac{(1-v)k}{(1-u)h}\right)^{\eta-1}} \iff \gamma_1 = \gamma_2\frac{B\eta\left(\frac{(1-v)k}{(1-u)h}\right)^{\eta-1}}{A\alpha\left(\frac{vk}{uh}\right)^{\alpha-1}}$$