Let $w_T = h_T^{\gamma}$

$\frac{\partial w_T}{\partial h_T} = \frac{\gamma w_T}{h_T} = \gamma h_T^{\gamma-1} \frac{\partial w_T}{\partial h_T} \cdot h_T = w_T \gamma$

$\frac{\tau_T w_T}{e_T} = \frac{\tau_T h_T^{\gamma}}{\eta \tau_T \cdot \gamma w_T} = \frac{1}{\eta\gamma}$

$s_T = \frac{\mu\phi}{\mu\phi + \frac{1}{\gamma} - \eta}$

$e_T = \eta \tau_T \cdot \gamma w_T = \eta\gamma \cdot \tau_T \cdot h_T^{\gamma}$

$h_T = \eta^{\frac{\gamma}{1-\eta}} \cdot \tau_T^{\frac{\eta}{1-\eta}} \cdot (\gamma h_T^{\gamma-1})^{\frac{\gamma}{1-\eta}} \cdot a_T^{\frac{\alpha}{1-\eta}} \cdot s_T^{\frac{\phi}{1-\eta}} \cdot \left(\frac{2\tilde{H}_T}{\mu}\right)^{\frac{\sigma}{1-\eta}}$

$1 - \frac{\eta}{1-\eta}(\gamma-1) = \frac{1-\eta-\eta\gamma+\eta}{1-\eta} = \frac{1-\eta\gamma}{1-\eta}$

$h_T^{\frac{1-\eta\gamma}{1-\eta}} = \eta^{\frac{\gamma}{1-\eta}} \cdot \tau_T^{\frac{\gamma}{1-\eta}} \cdot a_T^{\frac{\alpha}{1-\eta}} \cdot s_T^{\frac{\phi}{1-\eta}} \cdot \left(\frac{2\tilde{H}_T}{\mu}\right)^{\frac{\sigma}{1-\eta}}$

$h_T = \left(\eta^{\gamma} \cdot \tau_T^{\eta} \cdot a_T^{\alpha} \cdot s_T^{\phi} \cdot \left(\frac{2\tilde{H}_T}{\mu}\right)^{\sigma}\right)^{\frac{1}{1-\eta\gamma}}$

$e_T = \gamma \left(\eta \cdot \tau_T \cdot a_T^{\alpha} \cdot s_T^{\phi} \cdot \left(\frac{2\tilde{H}_T}{\mu}\right)^{\sigma}\right)^{\frac{1}{1-\eta\gamma}}$

$1 + \frac{\eta\gamma}{1-\eta\gamma} = \frac{1}{1-\eta\gamma}$

$\left(\frac{1-s_T}{1-s_0}\right)^{\frac{1-\eta}{\mu}} \cdot \frac{\tau_T}{\tau_0} \cdot \left(\frac{a_T}{a_0}\right)^{\alpha} \cdot \left(\frac{s_T}{s_0}\right)^{\phi} \cdot \left(\frac{1+\tau_T^e}{1+\tau_0^e}\right)^{1-\eta} \cdot \frac{\gamma h_T^{\gamma-1}}{A_0} \cdot \left(\frac{\frac{1}{\gamma}-\eta}{1-\eta}\right)^{1-\eta} = 1$

$\left(\frac{1-s_T}{1-s_0}\right)^{\frac{1-\eta}{\mu}} \cdot \frac{\tau_T}{\tau_0} \cdot \left(\frac{a_T}{a_0}\right)^{\alpha} \cdot \left(\frac{s_T}{s_0}\right)^{\phi} \cdot \left(\frac{1+\tau_T^e}{1+\tau_0^e}\right)^{1-\eta} \cdot \left(\frac{\frac{1}{\gamma}-\eta}{1-\eta}\right)^{1-\eta} \cdot \frac{\gamma}{A_0} \cdot \left(\eta^{\eta} \cdot \tau_T^{\eta} \cdot a_T^{\alpha} \cdot s_T^{\phi} \cdot \left(\frac{2\tilde{H}_T}{\mu}\right)^{\sigma}\right)^{\frac{\gamma-1}{1-\eta\gamma}} = 1$

$\alpha + \alpha\frac{\gamma-1}{1-\eta\gamma} = \alpha\left(\frac{1-\eta\gamma+\gamma-1}{1-\eta\gamma}\right) = \alpha\gamma\frac{1-\eta}{1-\eta\gamma}$ $\qquad 1 + \frac{\eta(\gamma-1)}{1-\eta\gamma} = \frac{1-\eta}{1-\eta\gamma}$

$\left(\frac{1-s_T}{1-s_0}\right)^{\frac{1-\eta}{\mu}} \cdot \frac{\tau_T^{\frac{1-\eta}{1-\eta\gamma}}}{\tau_0} \cdot \left(\frac{a_T^{\frac{\gamma(1-\eta)}{1-\eta\gamma}}}{a_0}\right)^{\alpha} \cdot \left(\frac{s_T^{\frac{\gamma(1-\eta)}{1-\eta\gamma}}}{s_0}\right)^{\phi} \left(\frac{1+\tau_T^e}{1+\tau_0^e}\right)^{1-\eta} \cdot \left(\frac{\frac{1}{\gamma}-\eta}{1-\eta}\right)^{1-\eta} \cdot \frac{\gamma}{A_0} \cdot \eta^{\frac{\eta(\gamma-1)}{1-\eta\gamma}} \cdot \left(\frac{2\tilde{H}_T}{\mu}\right)^{\frac{\sigma(\gamma-1)}{1-\eta\gamma}} = 1$

$\tilde{H}_T = \eta^{\frac{\eta\beta}{\sigma(1-\eta\gamma)}} \cdot \left(\frac{2\tilde{H}_T}{\mu}\right)^{\frac{\beta}{1-\eta\gamma}} \sum_g \tau_{T,g}^{\frac{\eta\beta}{\sigma(1-\eta\gamma)}} \int a_{T,g}^{\frac{\alpha\beta}{\sigma(1-\eta\gamma)}} \cdot s_{T,g}^{\frac{\phi\beta}{\sigma(1-\eta\gamma)}} f_{T,g}(a)\,da$

$\tilde{H}_T^* = \eta^{\frac{\eta\beta}{\sigma(1-\eta\gamma-\beta)}} \cdot \left(\frac{2}{\mu}\right)^{\frac{\beta}{1-\eta\gamma-\beta}} \left(\sum_g \tau_{T,g}^{\frac{\eta\beta}{\sigma(1-\eta\gamma)}} \int a_{T,g}^{\frac{\alpha\beta}{\sigma(1-\eta\gamma)}} \cdot s_{T,g}^{\frac{\phi\beta}{\sigma(1-\eta\gamma)}} f_{T,g}(a)\,da\right)^{\frac{1-\eta\gamma}{1-\eta\gamma-\beta}}$