

# New-Keynesian Model

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$$Y_t = \left(\int_0^1 Y_t(i)^{\frac{\theta-1}{\theta}} di\right)^{\frac{\theta}{\theta-1}}$$

$$Y_t(i) = Y_t \left(\frac{P_t(i)}{P_t}\right)^{-\theta}$$

$$P_t = \left(\int_0^1 P_t(i)^{1-\theta} di\right)^{\frac{1}{1-\theta}}$$

$$X = \frac{\theta}{\theta - 1} \frac{E_t \left( \sum_{k=0}^{\infty} (\alpha\beta)^k Y_{t+k} P_t + k^{\theta-1} MC_{t+k} \right)}{E_t \left( \sum_{k=0}^{\infty} (\alpha\beta)^k Y_{t+k} P_t + k^{\theta-1} \right)}$$

$$P_t^{1-\theta} = (1 - \alpha) X_t^{1-\theta} + \alpha P_{t-1}^{1-\theta}$$

$$X = \frac{\theta}{\theta - 1} \frac{E_t \left( \sum_{k=0}^{\infty} (\alpha\beta)^k Y_{t+k} P_t + k^{\theta-1} MC_{t+k} \right)}{E_t \left( \sum_{k=0}^{\infty} (\alpha\beta)^k Y_{t+k} P_t + k^{\theta-1} \right)}$$

$$\sum_{k=0}^{\infty} \frac{E_t C_{t+k}}{\left(\prod_{m=1}^{k+t} R_{t+m}\right)} = A_t + \sum_{k=0}^{\infty} \frac{E_t Y_{t+k}}{\left(\prod_{m=1}^{k+t} R_{t+m}\right)}$$

$$L = \sum_{k=0}^{\infty} \left(\frac{1}{1+\beta}\right)^k U(C_{t+k}) +$$

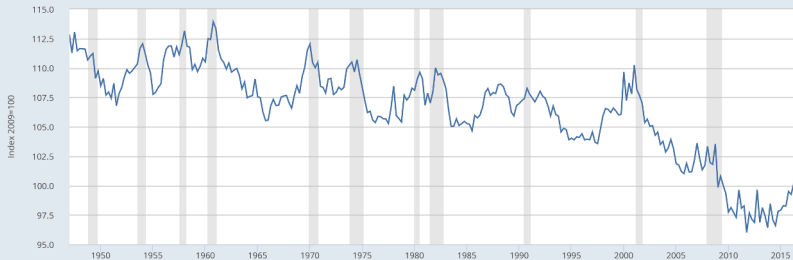
$$\lambda \left[ A_t + \sum_{k=0}^{\infty} \frac{E_t Y_{t+k}}{\left(\prod_{m=1}^{k+1} R_{t+m}\right)} - \sum_{k=0}^{\infty} \frac{E_t C_{t+k}}{\left(\prod_{m=1}^{k+1} R_{t+m}\right)} \right]$$

$$A = \frac{1}{1 + \sigma\phi_x + \kappa\sigma\phi_\psi} \begin{pmatrix} 1 & \sigma(1 - \beta\phi_\psi) \\ \kappa & \beta + \sigma\kappa + \beta(1 + \sigma\phi_x) \end{pmatrix}$$

$$B = \frac{1}{1 + \sigma\phi_x + \kappa\sigma\phi_\psi} \begin{pmatrix} 1 & -\sigma\phi_\psi \\ \kappa & 1 + \sigma\phi_x \end{pmatrix}$$

**FRED**

— Nonfarm Business Sector: Labor Share



Source: U.S. Bureau of Labor Statistics  
[fred.stlouisfed.org](http://fred.stlouisfed.org)

[myf.red/g/cAFT](https://myf.red/g/cAFT)