Econ 210C Homework 3

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1. Sticky Wage Model

Instead of assuming that prices are sticky for one period, we now assume that nominal wages are sticky for one period,

$$W_1 = W_0$$

The short-run equilibrium is

$$Y_1 = A_1 N_1$$
$$\textcolor{red}{W_1 = W_0}$$
$$\frac{W_1}{P_1} = A_1$$
$$Y_1 = C_1$$
$$\frac{M_1}{P_1} = \zeta^{1/\nu} \left(1 - \frac{1}{Q_1}\right)^{-1/\nu} C_1^{\gamma/\nu}$$
$$1 = \beta E_1 \left\{ Q_1 \frac{P_1}{P_2} \frac{C_2^{-\gamma}}{C_1^{-\gamma}} \right\}$$

The long-run equilibrium $(t \geqslant 2)$ is

$$Y_t = A_t N_t$$
$$\frac{W_t}{P_t} = A_t$$
$$\frac{W_t}{P_t} = \frac{\chi N_t^{\varphi}}{C_t^{-\gamma}}$$
$$Y_t = C_t$$
$$\frac{M_t}{P_t} = \zeta^{1/\nu} \left(1 - \frac{1}{Q_t}\right)^{-1/\nu} C_t^{\gamma/\nu}$$
$$1 = \beta E_t \left\{ Q_t \frac{P_t}{P_{t+1}} \frac{C_{t+1}^{-\gamma}}{C_t^{-\gamma}} \right\}$$

(a) Are firms on their labor curve? Explain.

(b) Are households on their labor supply curve? Explain.

(c) How does the labor market clear?

(d) Solve for the long-run steady state.

(e) Does the Classical Dichotomy hold in the long-run? Explain.

(f) Solve for output and the money market equilibrium in the short-run.

(g) Does the Classical Dichotomy hold in the short-run?

(h) Explain intuitively (in words) how an increase in the money supply affects output in the short-run.

(i) How does productivity affect output? Explain intuitively.

(j) Derive the labor wedge. Is it procyclical or countercyclical?

(k) What moments of the data would you use to discriminate between the predictions of the sticky price and the sticky wage model?