

## ECON 210C PROBLEM SET # 5

MINKI KIM

### 1. PROBLEMS FROM ROMER

1.1. **Romer, Problem 6.13.**

1.2. **Romer, Problem 7.10.**

### 2. QUADRATIC COST OF ADJUSTING PRICES AND EFFECT OF MONEY (ROTEMBERG 1982)

- (a)
- (b)
- (c)
- (d)
- (e)

### 3. NEW KEYNESIAN MODEL IN DYNARE

- (a)
- (b)
- (c)
- (d)

4. GOVERNMENT SPENDING MULTIPLIERS IN THE NEW KEYNESIAN MODEL  
(CHRISTIANO, EICHENBAUM AND EVANS 2012)

(a) The economy is characterized by the following log-linearized equations:

$$\begin{aligned}\tilde{C}_t &= E_t \tilde{C}_{t+1} - \frac{1}{\psi} (i_t - E_t \pi_{t+1}) \\ \pi_t &= \beta E_t \pi_{t+1} + \kappa \left( \frac{\tilde{W}}{P} \right)_t, \quad \kappa = \frac{(1-\theta)(1-\beta\theta)}{\theta} \\ \left( \frac{\tilde{W}}{P} \right)_t &= \psi \tilde{C}_t + \frac{1}{\eta} L_t \\ \tilde{Y}_t &= \tilde{L}_t \\ \tilde{Y}_t &= s_g \tilde{G}_t + (1-s_g) \tilde{C}_t \\ i_t &= \phi_\pi \pi_t, \quad \phi_\pi > 1\end{aligned}$$

The first equation is a standard Euler equation. The second equation is a recursive formulation of inflation rate, telling us that current inflation is a present value of future marginal costs. The third equation is household's labor supply. The fourth equation denotes aggregate production function. The fifth equation is national account, where  $s_g$  is the share the government spending. Finally, the last equation implies that the central bank follows the Taylor rule.

- (b)
- (c)
- (d)
- (e)
- (f)
- (g)
- (h)
- (i)
- (j)
- (k)
- (l)