

6E:204 Macroeconomics  
Assignment 10

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Due: December 13, 2001

1. Consider the cash-in-advance model in Chapter 10 of my notes, and suppose that  $\gamma_t = \gamma^*$  if  $t$  is even, and  $\gamma_t = \gamma^{**}$  if  $t$  is odd, where  $\gamma^* > \gamma^{**}$ .
  - (a) Suppose first that  $\theta_t = 1$  for all  $t$ , so that the money supply is fixed for all  $t$ . Determine how employment, output, consumption, the price level, the real interest rate, and the nominal interest rate fluctuate between even and odd periods.
  - (b) Now suppose that  $\theta_t$  is set optimally each period. Determine the optimal monetary rule. Is money growth higher in even or odd periods at the optimum?
  - (c) Explain your results in parts (a) and (b).
2. Again consider the cash-in-advance model of Chapter 10, but now suppose that  $\gamma_t$  is an i.i.d. random variable.
  - (a) Suppose that  $\theta_t = 1$  for all  $t$ , and determine how employment, output, consumption, the price level, the real interest rate, and the nominal interest rate fluctuate with  $\gamma_t$ .
  - (b) Determine the optimal monetary rule, and determine how  $\theta_t$  fluctuates with  $\gamma_t$  at the optimum.
  - (c) Explain your results in parts (a) and (b) and compare to problem 1.