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.