

## Business Cycles: A New Keynesian Model: Problems

1. Explain why this model is in the Keynesian tradition.
2. Explain why this is a New Keynesian Model as opposed to an old Keynesian model.
3. In class, we assumed that investment is decreasing in the real interest rate. But it is reasonable to assume that consumption is also decreasing in the real interest rate, lower interest rates make it easier, for example, to buy a new car. Modify the IS equation to allow for  $C_t$  to depend on  $R_t$  and discuss how the IS Equation changes.
4. Assuming that  $\pi_t$  is exogenous (the IS-MP model) how would your change to the IS curve from #3 affect the outcome of a reduction in nominal interest rates?
5. Suppose that inflation equals 7% and that the nominal interest rate equals 2%. What is the real interest rate?
6. True or False? In the New Keynesian model, the Central Bank faces a tradeoff between higher inflation and more output growth.
7. Suppose that consumption temporarily decreases. How should the Central Bank respond and can they prevent a decline in output?
8. What is a liquidity trap and how does it affect monetary policy?
9. Suppose that an adverse supply shock ( $u_t > 0$ ) affects the economy. Now suppose that the Fed wishes to limit the effect on inflation. What type of open market operations must it conduct and how will this affect the money supply?
10. In class, we assume that  $\pi_t^e = \pi_{t-1}$ . Now suppose that  $\pi_t^e = \pi_t$ . How does this change affect the ability of monetary policy to affect the output gap.
11. In class, we assume that monetary policy tries to stabilize inflation. Suppose that government spending uses a rule where  $G - T$  automatically increases during recessions. How would you incorporate this change into the model?
12. Suppose that the Federal Reserve wishes to increase the steady state rate of inflation. How would it go about this (in terms of open market operations) and what would be the effects on the output gap in the short run and long run?
13. What is the difference between the output gap and output?