

Exercise Session 9

Unconventional Monetary Policy, Natural Interest Rate, Zero Interest Equilibrium

TASK 1: ZLB on nominal interest rates

- a) Show algebraically how the IS-MP curve has to be adapted if we account for the ZLB.
- b) Show graphically the effect of a large, negative demand shock in the IS-MP-PC model if we account for a ZLB. What are the possible medium-run effects?
- c) Derive the level of inflation at which the ZLB starts binding.

TASK 2: Unconventional Monetary Policy

- a) Define Quantitative Easing and Forward Guidance in your own words. What are the associated transmission channels and goals?
- b) Show graphically how the central bank can counteract a negative demand shock by employing unconventional monetary policy measures.

TASK 3: The Decrease in the Natural Interest Rate

- a) Show algebraically and graphically how a decreasing natural interest rate leads to a higher frequency of hitting the ZLB.
- b) Discuss the possible reasons behind the decline of the natural interest rate

TASK 4: Zero Interest Rate Equilibrium

- a) Show graphically that by imposing the ZLB, the IS-MP-PC model may have two steady states.
- b) Assume that the central bank increases its inflation target. Show graphically as well as algebraically how inflation and output are affected for the two equilibria we already imposed before.
- c) Why is increasing the inflation target a problematic policy tool?