

**Exercise Session 11**  
**Fiscal Policy and the ZLB**

**TASK 1: Fiscal Policy in the IS-PC Model**

- a) Use the IS-PC representation discussed in class to show that a permanent positive fiscal shock increases the natural rate of interest. Discuss the underlying economic mechanisms concisely and use a graph to support your argument.
- b) Briefly explain, how the effects of a temporary positive shock differ from those of a permanent positive fiscal shock.
- c) Describe the difference between the IS-PC and the IS-MP-PC representation in this context.

**TASK 2: Fiscal Policy at the Zero Lower Bound**

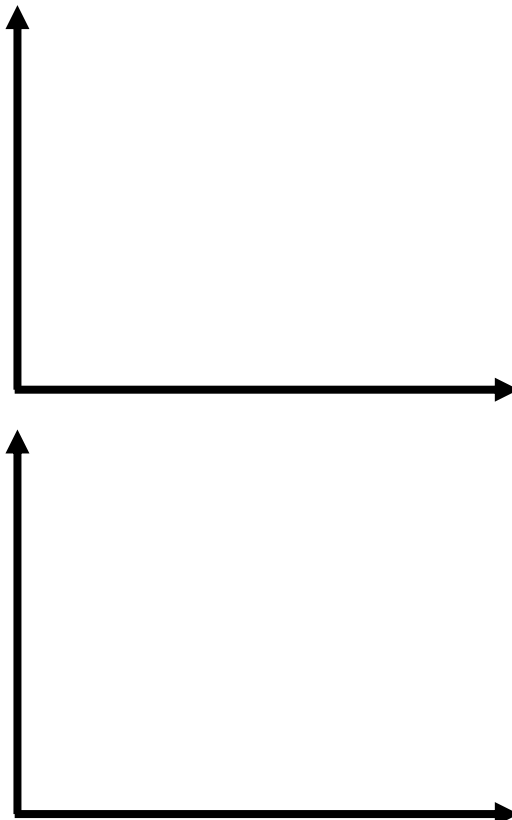
In class, the effects of  $\varepsilon_t^y$  on  $y_t$  were discussed first without considering the Zero Lower bound:

$$\frac{\partial y_t}{\partial \varepsilon_t^y} = \frac{1}{1 + \alpha\gamma(\beta_\pi - 1)}$$

and second considering the Zero Lower Bound:

$$\frac{\partial y_t^{ZLB}}{\partial \varepsilon_t^y} = \frac{1}{1 - \alpha\gamma}$$

- a) Using the solutions given above, explain why fiscal policy is more effective at the Zero Lower bound. Explicitly explain the role of  $\beta_\pi$ .
- b) Use the following graph to show again that fiscal policy is more effective at the Zero Lower Bound compared to the situation when it is not binding.



- c) Discuss the implications for monetary and fiscal policy at the Zero Lower Bound. Put this into perspective of the ongoing COVID-19 crisis.
- d) Discuss the impact of central bank policy on inflation at the Zero Lower Bound. Use the algebraic expressions discussed in class to underpin your argument.
- e) Discuss why the effectiveness of fiscal policy increases in terms of the output reaction with the degree of flatness in the Phillips Curve. What is the implication for inflation stabilization?