Homework Assignment 2
ECON 2020: Intermediate Macroeconomic Theory

Problem 1: (50 points)

Suppose the Federal Reserve bank decides to reduce the interest rates in the U.S. economy. Follow the steps below to use this information in the AD-SRAS-LRAS framework and show that the Phillips Curve is vertical in the long-run. Use appropriate diagrams and explanation for your answer and make connections between the two diagrams (AD-SRAS-LRAS and Phillips Curve) by considering the changes in the level of prices (inflation).

- *Step 1.* Show the initial long-run equilibrium in the AD-SRAS-LRAS framework (point A) with output level Y_1 and price level P_1. Show the corresponding point in the SRPC framework as point A.
- *Step 2.* Show the effect of the Fed's policy in the AD-SRAS-LRAS framework and call the second equilibrium point "B" with output level Y_2 and price level P_2. Show the corresponding point in the SRPC framework as point B.
- *Step 3.* As a result of moving from point A to B, the price expectations rise and the workers revise their wage expectations upwards. In the long-run, the workers demand higher wages, which in turn, causes the cost of production to increase. Show how the firms respond to this change in cost of production by a shift in SRAS and move the economy to long-run equilibrium. Call the third equilibrium point "C" with price level P_3.
- *Step 4.* What are the levels of output and unemployment at point C as we are back to the long-run equilibrium? Use this information to find the corresponding point C on the Phillips Curve framework and connect point A to C to get the long-run Phillips Curve (LRPC).

Problem 2: (10 points)

Can the natural rate of unemployment increase in any given economy over time? What are some of the ways in which this could happen (mention at least 3)?

Problem 3: **(15 points)**

Suppose that the inflation rate in the United States is 1.5 percent while GDP is 2 percent below the potential level. According to the Taylor Rule the Federal Reserve authorities should adjust the stock of base money to drive the target inflation rate to 2 percent. If the current federal funds rate is 2.75 percent, does this mean that the U.S. monetary policy is too tight? Explain (assume the real natural rate of interest is 2 percent and $\alpha = \beta = 0.5$).

Problem 4: **(10 points)**

Which of the following will count as unemployed when computing the rate of unemployment? Which of the following will not be counted as part of labor force?

1. A person who is not working because of being in jail.
2. A student who is not working because she is currently finishing her education.
3. A small child.
4. A person who quit her job to find another position that would be a better fit.
5. A person not working because of a decision to stay at home, to focus on raising children.

Problem 5: **(15 points)**

Explain how Wage Indexation would differ for a "Demand-Pull inflation" comparing to a "Cost-Push inflation". Which one can make the adjustments of the economy more complicated?