# Assignment 4: Aggregate Demand

**Question 1**

In the sticky-price model, describe the aggregate supply curve in the following special cases.

**a.** All firms have sticky prices

**b.** The desired price does not depend on aggregate output (a = 0)

**Question 2**

Suppose that an economy has the Phillips curve

$$\pi = \pi_{-1} - 0.5(u - 5)$$

**a.** What is the natural rate of unemployment?

**b.** Graph the short-run and long-run relationship between inflation and unemployment.

**c.** How much cyclical unemployment is necessary to reduce inflation by 4 percentage points? Using Okun's law, compute the sacrifice ratio.

**d.** Inflation is running at 6 percent. The central bank wants to reduce it to 2 percent. Give two scenarios that will achieve that goal.

**Question 3**

According to the rational expectations approach, if everyone believes that policymakers are committed to reducing inflation, the cost of reducing inflation —the sacrifice ratio —will be lower than if the public is skeptical about the policymaker's intentions. Why might this be true? How might credibility be achieved?

**Question 4**

An economy has the following equation for the Phillips curve:

$$\pi = \mathrm{E}\pi - 0.5(u - 6)$$

People form expectations of inflation by taking a weighted average of the previous two years of inflation:

$$\mathrm{E}\pi = 0.7\pi_{-1} + 0.3\pi_{-2}$$

The economy begins at its natural rate of unemployment with a stable inflation rate of 5 percent.

**a.** What is the natural rate of unemployment for this economy?

**b.** Graph the short-run tradeoff between inflation and unemployment that this economy faces. Label the point where the economy begins as point A. (Be sure to give numerical values for point A)

**c.** A fall in aggregate demand leads to a recession, causing the unemployment rate to rise 4 percentage points above its natural rate. On your graph in part (a), label the point the economy experiences that year as point B. (Once again, be sure to give numerical values.)