Economics 304 Fall 2017

Homework Set #6 Due: 9am, Friday, November 17

Part A

Read A. W. Phillips's original (1958) exposition of the Phillips curve (link on the reading list) and answer the following questions:

1. Characterize the mix of theory and empirical analysis in the Phillips paper. Do you find the theoretical analysis convincing? Do you find the empirical analysis to be convincing?
2. In light of the empirical difficulties that the Phillips curve encountered beginning in the 1970s when underlying inflation rates increased, why is it important to Phillips's results that the U.K. was on the gold standard (or a gold exchange standard) during the vast majority of the sample period?
3. Based on the graphs of the various sub-periods, what seem to be the typical values for what would later be called the "natural rate of unemployment"?
4. Using the more modern model, what would be the effects of a non-zero inflation rate or a non-zero rate of steady-state real-wage growth on the position of the Phillips curve (recalling that Phillips put wage inflation on the vertical axis)? What can we infer from the level of wage inflation that we observe at the natural rate of unemployment?

Part B

Suppose that the Phillips curve is given by $\pi = \pi^e - 2(u - u^n)$, where π^e is the expected rate of inflation and u^n is the natural rate of unemployment. Assume that expectations are "myopic" so that people expect the inflation rate next period to be the same as the actual rate this period.

The natural unemployment rate is 5% and the initial, stable inflation rate is 0%. However, the central bank is under the misconception that the natural rate is 4% and is committed to achieving that level.

1. In year one, it undertakes expansionary monetary policy to drive the actual unemployment rate down to 4%. Use the Phillips curve equation to determine the inflation rate in year one as a result of this expansion. Show this point on the Phillips curve.

2. In year two, the expected inflation rate rises to match the year-one actual rate. Show how the Phillips curve will be affected in comparison with year one. Show what will happen to inflation in year two if the central bank keeps unemployment at 4%.

3. What happens in year three if the central bank continues to hold unemployment down at 4%, below the natural rate? What will happen if this pattern continues indefinitely?