

Assignment Four
Due: March 25, 2004

1. Obtain data for real GDP (Y), the GDP Deflator (P) and the civilian unemployment rate (U) from Fred II.

Define the growth rate of output to be $DY_t = \ln(Y_t) - \ln(Y_{t-4})$.

Define the rate of inflation to be $DP_t = \ln(P_t) - \ln(P_{t-4})$.

Define price acceleration (A) to be the change in the inflation rate: $A_t = DP_t - DP_{t-4}$.

- a. Create three graphs.
- i. The first graph is an update of Figure 9-1 on page 239 of the text.
 - ii. The second graph adds the unemployment rate to the first graph. To add U to the graph, you must obtain a quarterly U series from the monthly series you downloaded. Let the March observation be the first quarter observation, the June observation be the second quarter observation, and so forth.
 - iii. The third graph is a time line of DY and A for 1960-2003. To make the graph easier to interpret, subtract the sample mean of DY from DY before creating the graph. Subtracting the mean will center the time line for DY around zero. The mean of A is already close to zero for this sample.
- b. Use the first graph to identify the most serious recessions. Explain your reasoning and refer to the graph.
- c. What relationship does the second graph show between unemployment and recessions? Describe the relationship in a paragraph. It is not enough to observe that the unemployment rate rises in recessions. Provide more detail.
- d. Does the third graph show evidence for the hypothesis that inflation accelerates when output is above its long run equilibrium value? Explain why or why not.

Make sure to explain how you generated the data and to display each graph. Answer parts b and c in detail and relate you answers to the graphs in a clear way.

2. Problem 2, Page 256.
3. Problem 5, Page 280
4. Problem 3, Page 305.