ECO 156, Fall 2026, Required Assignment #3

Applications to Aggregate Demand and Aggregate Supply

This exam is due on Thursday, November 5 at 5 PM. Note that the second midterm is the following Monday, plan accordingly.

Instructions Answer each of the following questions. Most questions can be effectively answered in a few concise sentences. Submit your assignment via this Google form. You will need to be logged into your Bates account to access the link.

Part I: Housing and Inflation: Recently, the Bureau of Labor Statistics released its October 2026 Consumer Price index data.

1. Find this report and summarize what both core and overall inflation were in October 2026. You answer should focus on the year-over-year (12 month) rate of change. Also, explain the difference between core and overall inflation and why many economists focus on the former.

2. The basket of goods for core-CPI inflation is 45% shelter and 55% everything else. Construct a table showing prices for each of these two components in September 2025 and September 2026 (look for "adjusted indexes" in the BLS report) and how they led to your answer from #1 for core inflation. The following formula may be useful to you:

$$\pi_{core} = 0.45\pi_{shelter} + 0.55\pi_{everythingelse} \tag{1}$$

3. Many economists believe that $\pi_{shelter}$ is mismeasured because of "owners' equivalent rents." What are these and how do they affect inflation data? Provide a source.

4. Zillow estimates that housing prices have grown 1.2% over the past year. If the CPI used this as its measure of shelter inflation (keeping the 45% share of the basket of goods constant), what would core inflation be? How might this affect how the Federal Reserve should think about inflation?

Part II: Monetary Policy in the AS/AD model

Suppose that the the Aggregate Supply curve is : $\pi = 0.02 + \tilde{y}$ and that the Aggregate Demand Curve is $\pi = 0.1276 - 2\tilde{y} - 2i_t$, where i_t is the Federal Funds rate. Note that 3% inflation should be entered as 0.03.

5. What was the value of i_t as of October 20, 2026. Provide a source and present a simplified aggregate demand curve by inserting this value into the curve.

6. Solve for the equilibrium inflation rate and output gap.

7. On October 28, the Federal Reserve considered raising interest rate. Suppose that they did so by 1% (0.25% would be much more realistic). How would this change affect inflation and the output gap? Would we expect this variables to change immediately?

8. In words, explain how a higher interest rate would affect the behavior of households and firm in the model. Explain how this behavior is consistent with utility and profit maximization.

Part II: Monetary Policy in the AS/AD model

9. What is the difference between a lagging and leading economic indicator? Which is more useful for predicting what will happen to an economy over the *next* year?

10. Is housing usually considered to be a leading or lagging indicator? Provide a potential reason for why this is the case. I am asking you to say something about what motivates people to buy or build houses. Do they become less likely to buy or build a home before the economy gets worse, or once it does?

11. Is unemployment considered a leading or lagging economic indicator? Provide a potential reason for why this is the case. As with #10, avoid just restating the definition (*e.g.* unemployment is a leading indicator because it increases before the economy weakens). Instead, say something about why and when firms might layoff workers.

12. Provide another example of a leading economic indicator and explain why you think it may predict upcoming economic conditions. Include a graph or other visualization of your variable.

Notes.

1.**AI use** You may use AI to search for sources. All answers should be crafted in your own words. You should not use AI to solve any math problems. Hand drawn graphs are recommended. If you use AI to create graphs, this should be indicated and the graphs should be customized to the details of the question.