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ECO 156, Fall 2026, Exam #2

Note: Write you name on the last page, not here.

Instructions:

1. This exam consists of eleven questions and a bonus. You are encouraged to use the models from class when formulating your answers. Consider including graphs even if the question does not explicitly ask for one

2. Some questions are open ended. You will be graded more on the quality of your explanation than your specific answers. On "true/false" questions, for example, answering only "true" or "false" will receive no credit, even if correct.

3. You may use a five page outline while taking this exam. You may not use any electronic devices, you do not need a calculator.

4. All questions will be graded out of ten points, including the bonus. To maximize the potential for partial credit, craft clear and concise responses. If you making assumptions, state them clearly.

1. True or False? Inflation is costly because the average household is able to afford fewer goods and services.

False. This describes a decline in GDP. Inflation is socially costly because it is re-distributionary.

2. Provide an example of an event that occurred in the 1970s that might explain why crime rates began to decline in the 1990s. How might we know that this event had such an effect?

There are several reasonable theories. Lead, for example, may reduce impulse control of children are exposed to it. Lead remediation (paint, gas, etc.) through the 1970s may have thus reduced crime with a long lag.

Other possible explanations:

- violent video games
- access to abortion
- changes to policing.

For #3-#4, consider the following economy. Unless otherwise noted, assume that a good is domestically produced:

Item	Q_{25}	P_{25}	Q_{26}	P_{26}
Coffee	10	\$8	9	\$12
New Housing	2	\$40	2	\$50
Lumber used to make New Homes	2	\$10	1	\$30
Attorney Services	3	\$10	2	\$12
2016 Mazda Miatas	1	\$5	2	\$5

3. Solve for national income in 2025. Then, using this answer, calculate real GDP growth using 2025 as a base year. Feel free to leave your answer as a fraction.

As a used good, Miatas do not count. As an intermediate good, lumber does not count.

Nat. income / GDP (25) = \$(10×8 + 2×40 + 3×10) = \$190

RGDP$_{26}$ = \$(8×9 + 2×40 + 10×2) = \$172

GDP growth = $\frac{-18}{190}$ = -9.5%

4. Define a basket of goods designed to capture what a consumer purchases in a given year. It must include at least two goods or services and it must include coffee.[1] Then calculate inflation in 2026.

My basket of goods is 1 new home, 2 units of coffee, and 1 Miata.

$CPI_{25} = \$(1\times40 + 2\times8 + 1\times5) = 61$

$CPI_{26} = \$(1\times50 + 2\times12 + 1\times5) = 79$

$\pi_{26} = \frac{18}{61} = 29.5\%$

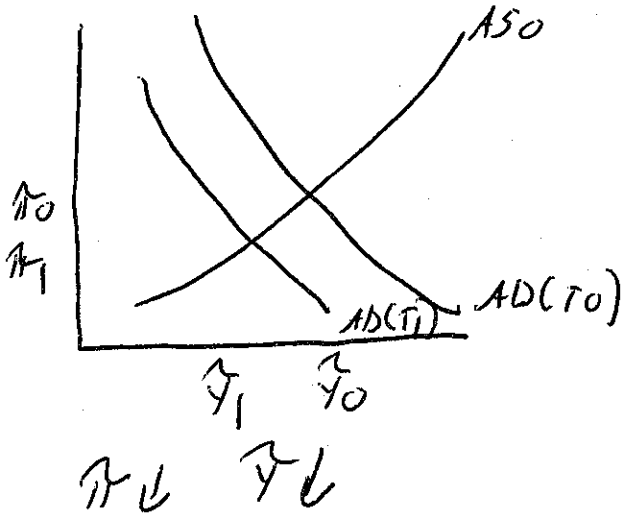
5. Suppose that coffee in 2026 is far superior to coffee in 2025. How does this impact the validity of your estimate from #4?

If so, then the increase in price from \$8 to \$12 reflects better quality and not just inflation. 29.5% overestimates inflation.

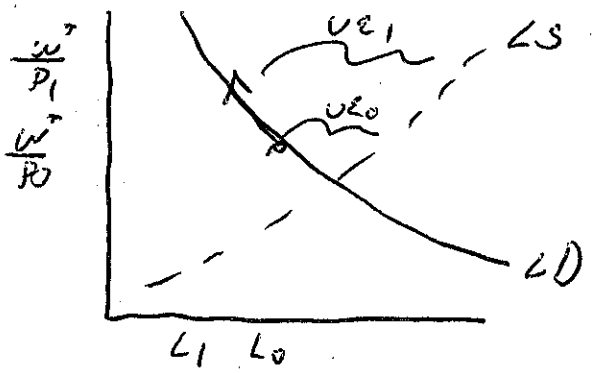
[1]This is partly to make question #5 work and partly because any basket neglecting coffee cannot possibly represent consumer preferences.

6. Suppose that Congress engages in contractionary fiscal policy. Provide an example of such a policy and show the effects on the output gap, inflation, and unemployment. Your answer should include a graph of the labor market and AS/AD space.

one example is higher taxes, $T_1 > T_0$. Lower government spending is another. Higher taxes reduce disposable income, shifting AD left



In the labor market, a higher real wage reduces hiring and raises unemployment

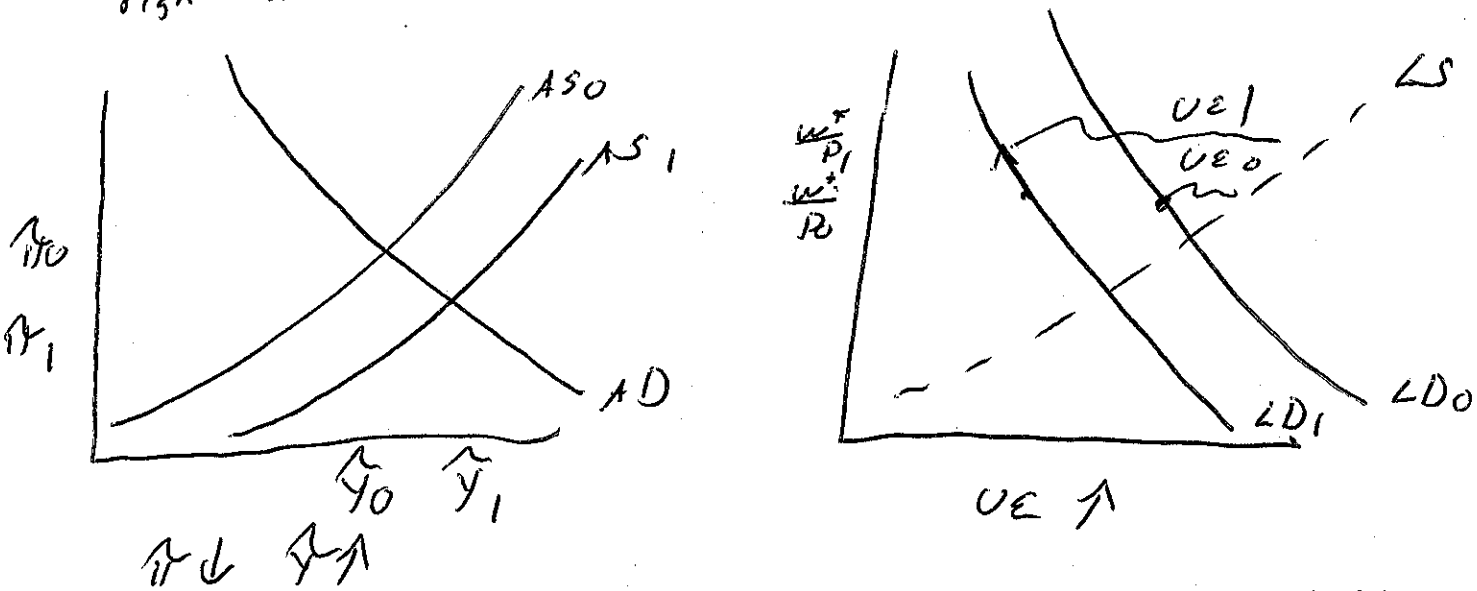


7. Is housing usually considered to be a leading or lagging indicator? Provide a potential reason for why this is the case.

Housing is usually considered to be a leading indicator because it moves ahead of the business cycle. One reason is that it captures households' expectations, if they are pessimistic about the future, then they are unlikely to buy a home.

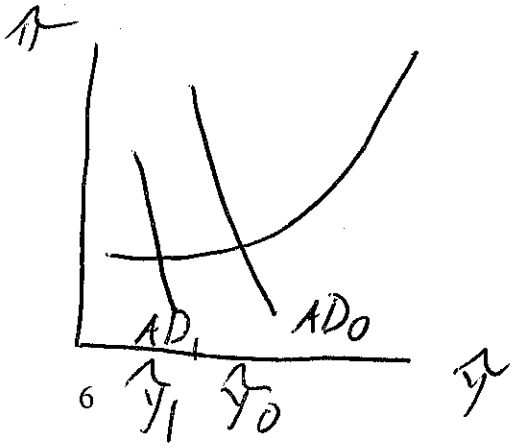
8. Suppose that the "alarmed" are correct and AI will substitute for human labor. Show the effects on the output gap, inflation, and unemployment Your answer should include a graph of the labor market and AS/AD space.

- In this case, labor demand will fall. Although not obvious from graphs alone, we assumed AS shifts to the right due to higher productivity



9. Explain how a sovereign debt crisis may cause or deepen a recession. Include a graph of the AS/AD model.

In a sovereign debt crisis, a government loses the ability to borrow. It may respond with contractionary fiscal policy. this shifts the AD curve to the left, amplifying any reduction in $\hat{y}$.



10. An economy consists of the following: 5 actively employed people, 2 unemployed people actively seeking work, 2 discouraged workers, and 1 child (named Timmy). Calculate the U-3 rate. Is it possible that this rate could fall even if the labor market gets weaker?

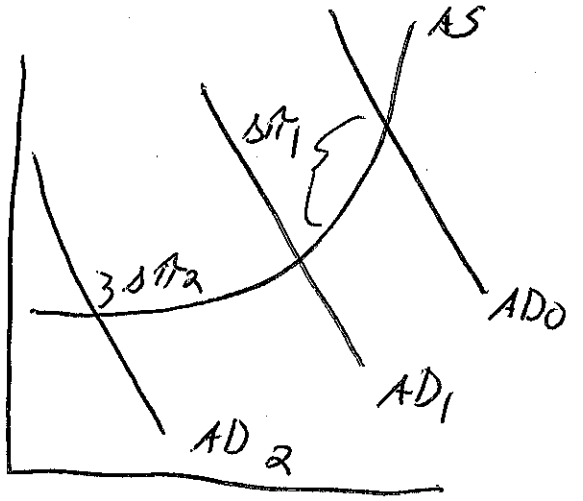
U-3 labor force = 7

U-3 = 2/7

• Suppose one unemployed worker becomes a discouraged worker. U-3 then falls to 1/6.

11. Suppose that the unemployment rate is 4%. The Federal Reserve then raises interest rates, leading to a 1% decline in inflation. If the unemployment rate had instead been 10%, would this same increase in interest rates have had a smaller or larger effect on inflation?

when unemployment is higher, we are on the flatter part of the AD curve. Here, shifting the AD curve has smaller effect on inflation.



$\Delta i\%_2$ → effect when UE ≈ 10 %

$\Delta i\%_1$ → effect when UE ≈ 4 %

Bonus. What is an automatic stabilizer and provide an example?

- An automatic stabilizer is a policy that reduces economic volatility without explicit action by a policymaker. one example is unemployment insurance, which is a form of fiscal policy.

- When unemployment rises, UI insurance automatically boosts G. This shifts the AD curve to the right, offsetting some of the higher unemployment.

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