

ECO 150, Winter 2022, Exam #3

Name:

Instructions:

1. This exam consists of thirteen questions and a bonus. Answer them all (5 points on the bonus is the same as 5 points on another question). You are encouraged to use the models from class when formulating your answers.
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. Do not just copy from the course materials. Doing so will receive no credit.
4. This is an open note exam. You may use your notes, the textbook, and all course materials from the website. These must be printed. **No electronic devices may be used.** Feel free to leave answers as fractions when computing GDP, unemployment, or inflation.

Please sign the following statement:

In completing this exam, I did not communicate with any other student or person about this exam.
I understand that doing so would be a violation of the Student Conduct Policy.

Sign:

Printed Name:

Key

1. Suppose that government spending can be set at either 10% of GDP, or 20% of GDP. Further assume that the former initially results in GDP of \$10,000 and 2% growth while the latter yields GDP of \$20,000 and 1% growth. Which policy results in higher levels of social welfare?

The key here is that neither GDP nor growth are welfare. Welfare is a subjective concept and one needs to consider the other costs and benefits of these policies to decide which is best.

2. In 2018, the U.S. Congress enacted a major round of tax cuts. During 2018, the U-3 unemployment fell from 4.0% to 3.8%. How should we evaluate the impact of this tax cut on unemployment?

We cannot simply claim that the tax cut led to lower unemployment. We should compare the data to a counterfactual where there was no tax cut.

4. What would happen to unemployment if all 5 unemployed workers (actively seeking work) gave up and became discouraged workers?

there would be no change to U-6 because it treats discouraged workers as unemployed

$$U-3 = 0$$

5. Why do most economists believe that pursuing an unemployment rate (U-3 or U-6) equal to zero is both futile and a bad idea?

Because this would require eliminating frictional unemployment, which is often voluntary and healthy, and structural unemployment, which is also essential for long-term economic performance.

For questions #3-4, consider the following data:

Table 1: Labor Market North of the Wall

Group	# of People
Full Time Employed	20
Unemployed, Actively Seeking Work	5
Children	10
Discouraged Workers	5

3. Calculate the labor force participation rate and U-6 unemployment rate North of the Wall.

$$LF(U-3) = 25 \text{ (no discouraged workers)}$$

$$LF(U-6) = 30 \quad Pop = 30$$

$$LFPR(U-3) = 5/6$$

$$U-6 = \frac{10}{30} = 1/3$$

6. Provide two distinct reasons why GDP underestimates the amount of economic activity in a country.

- It does not include non-market activity such as homemaking.
- It does not include consumption of imports, which may provide utility.
- It does not consider trades of used goods which also benefit consumers.

+ ...

For Questions #7-8 use the following data:

Table 2: Good and Services Purchased in 2021-22

Good or Service	Quantity (21)	Price (21) (\$)	Quantity (22)	Price (22) (\$)
Vegetables	3	4	10	5
Fertilizer	7	5	2	30
Imported Books	4	9	9	4
Private Schooling	1	12	2	9

7. Calculate real GDP growth in 2022. Use 2021 as the base year.

-I will assume fertilizer is an intermediate good (not obvious).

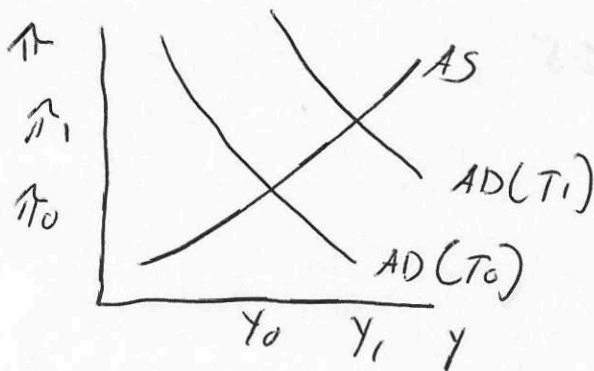
$$RGDP(21) = 3 \times 4 + 1 \times 12 = 24$$

$$RGDP(22) = 4 \times 10 + 2 \times 12 = 64$$

$$\text{growth} = \frac{40}{24}$$

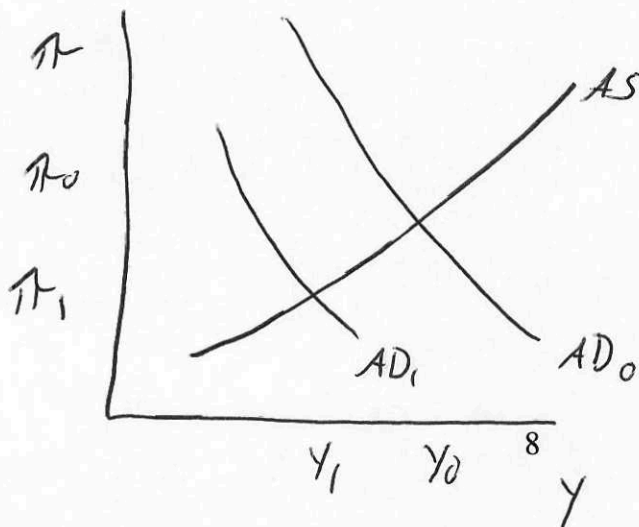
10. Why might a government choose to cut taxes as a way to boost short-term economic performance?

- Cutting taxes increases households' disposable income. They thus increase consumption and investment, raising aggregate demand.



11. Using the AD/AD model, show how declining asset prices can cause a recession.

- Lower asset prices reduce households' wealth. They thus reduce their consumption and investment, reducing AD.



8. Using 2022 as the base year, construct a consumer price index with at least two items, and calculate inflation.

I use 10 vegetables and 2 units of schooling.

$$P(21) = 10 \times 4 + 2 \times \frac{12}{1} = 64$$

$$P(22) = 10 \times 5 + 2 \times 9 = 68$$

$$\pi = 4/64$$

9. True or False? Inflation is socially costly because it means that the average household can afford fewer goods and services.

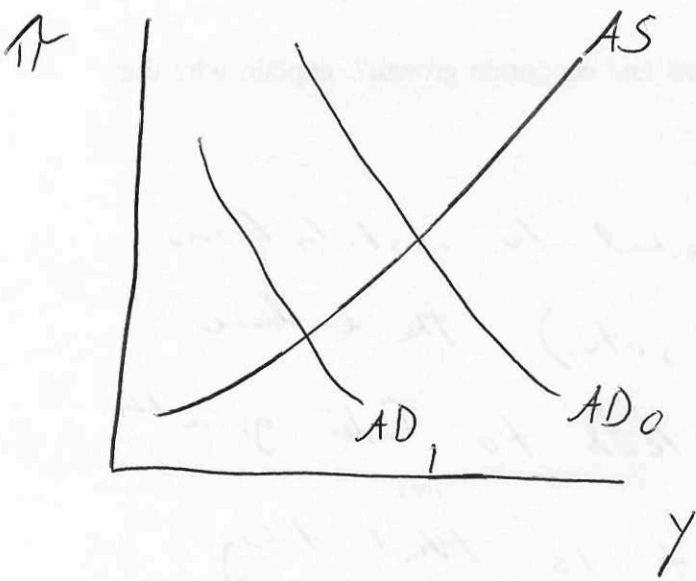
False, this refers to a reduction in output.

Inflation is socially costly because it redistributes wealth.

Bonus: Suppose that the U.S. economy experiences rising unemployment and higher inflation. Is lower government spending or lower worker productivity more likely to be the culprit?

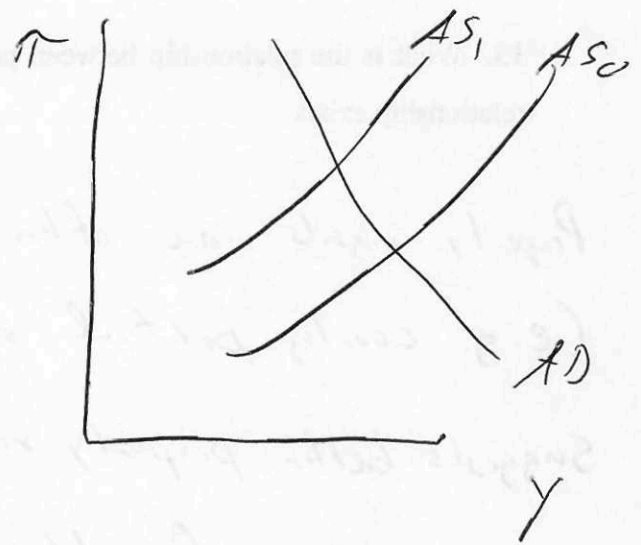
Both of these policies lead to higher unemployment through less output. Lower productivity also leads to higher inflation, making it the more likely culprit.

Lower G



$\pi \downarrow$
 $Y \downarrow$

Lower productivity



$\pi \uparrow$
 $Y \downarrow$

12. True or False? 3% annual GDP growth would be better than the historical average.

It depends on how the historical average is calculated. For most of human history GDP growth was very close to zero, making this statement true over that horizon.

13. What is the relationship between property rights and economic growth? explain why this relationship exists.

Property rights are often connected to institutions (e.g. courts, political systems, etc.). The evidence suggests better property rights lead to faster growth. The intuition for this result is that they encourage investment and innovation.