ECO 103, Winter 2021, Exam #2

Name: Key

Instructions: Answer all parts of all questions. You have 90 minutes to complete the exam. This exam is open note, but not open book. You are welcome to use any written materials that you might find helpful excluding textbooks. Calculators, but no other electronic devices, are allowed. Here are some things to keep in mind.

i. Explain all of your answers. Unsupported answers will receive little or no credit.

ii. On true/false questions, I only care about the quality of your explanation. Simply writing "true" or "false" will yield no credit.

iii. Avoid extensive irrelevance, this will also cost you points. Your goal should be to provide clear and concise explanations.

iv. It is more important to demonstrate that you understand the correct method. Minor math errors will result in only minor deductions.

v. All parts of all questions are worth the same amount.

vi. Many questions ask you about a deviation from something that we did in class. If you simply copy down what we did in class, I will award no credit.

Consider the following employment data for questions #1-2:

Table 1: Employment Data

	May 2021	June 2021
Population	200	200
Employed	170	165
Unemployed (ASW)	15	10
Underemployed	10	15
Discouraged Workers	5	10

1. Calculate the U-3 unemployment rate in both May and June.

$U\text{-}3 = \frac{\text{UnEmployed}}{LF}$

$LF = \text{Employed} + \text{Unemployed (ASW)}$

May 2021

$U\text{-}3 = \frac{15}{170+15} = 8.1\%$

June 2021

$U\text{-}3 = \frac{10}{165+10} = 5.7\%$

2. Did the labor market improve or weaken between May and June? To receive full credit, use the data from the table to construct an appropriate measure of the health of the labor market.

It became weaker. We see 5 employed workers became underemployed and 5 unemployed workers became discouraged workers. U-6 reflects this.

May 2021

$U\text{-}6 = \frac{30}{200} = 15\%$

June 2021

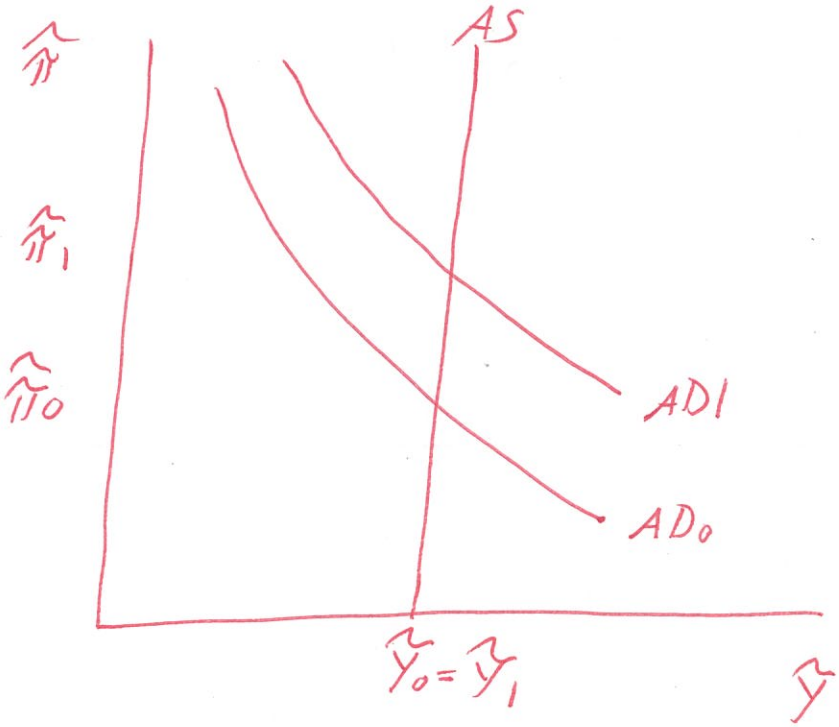
$U\text{-}6 = \frac{35}{200} = 17.5\%$

3. Most structural unemployment is involuntary and is typically damaging to the households suffering from it. How do most economic policy makers try to cope with structural unemployment?

Because structural unemployment is part of the normal workings of a healthy economy, the goal is not usually to eliminate it. We would not, for example, want to prohibit technological progress, the biggest cause of structural unemployment. Instead, most economists support relief or other support to households affected by structural unemployment.

4. True or False? If wages are flexible, then changes to aggregate demand have very large effects on output.

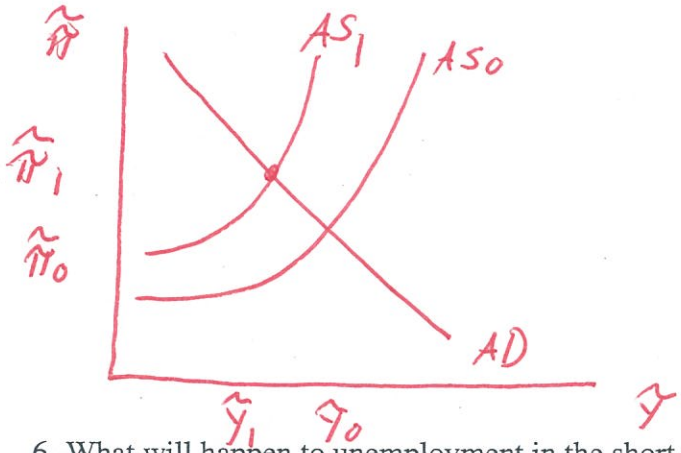
False. If wages are flexible, then the AS curve is vertical. Changes to AD then have no effect on output.



For questions #5-7, suppose that lower productivity causes firms to demand less labor. For simplicity, assume that, prior to this event, the output gap is zero and that inflation is at target. Assume that wages are sticky in the short-run.

5. Using the AS/AD model (you very likely want a graph), show how output and inflation are affected in the short-run.

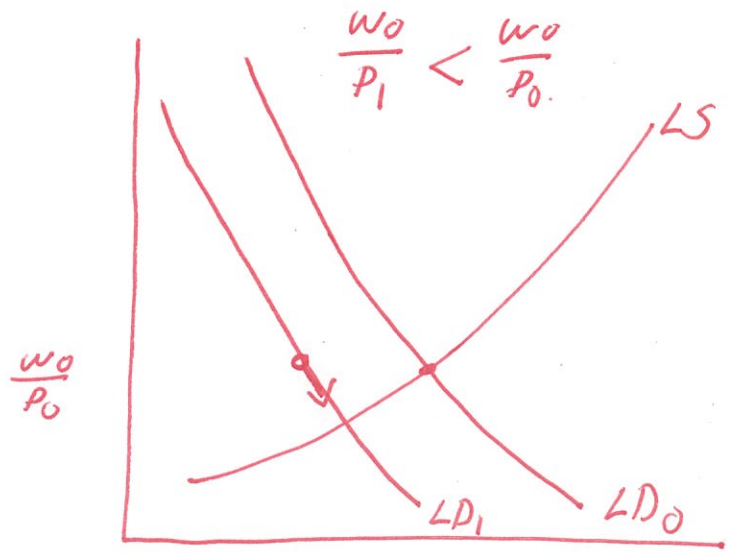
– Lower productivity reduces labor demand. This causes AS to shift to the left.



Inflation rises
Output falls.

6. What will happen to unemployment in the short-run?

Here we use the labor market.



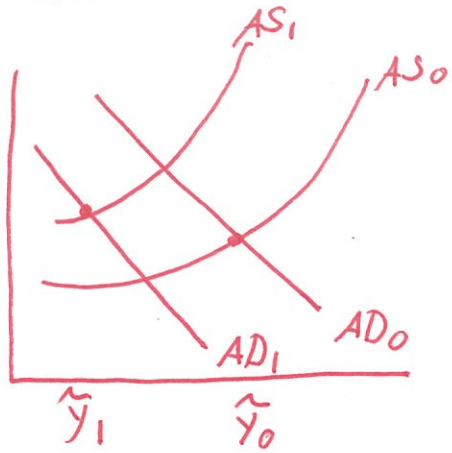
Lower productivity causes LD to decline. Higher inflation reduces $\frac{w}{P}$.

we can't say for sure what happens to u.e. It may or may not rise.

$\frac{w_0}{P_1} < \frac{w_0}{P_0}$

7. What will happen if the Central Bank responds to lower productivity by raising interest rates?

This is contractionary monetary policy and shifts AD to the left.



This policy amplifies the decline in output. It does, however, reduce inflation compared to no change in monetary policy.

8. Why do governments often raise spending or cut taxes during recessions?

Expansionary fiscal policy shifts AD to the right.

1.) If the recession was caused by a lack of demand, then expansionary policy might offset the lack of demand and return the economy to $\tilde{Y} = 0$ and $\pi = 2\%$.

2.) If the recession was caused by a lack of supply, then there is a harder trade-off. Expansionary fiscal policy increases Y, but also leads to more inflation (which may be a social bad).

9. Why are more liquid assets more likely to be counted as money.

More liquid assets make for a better means of exchange. They are more likely to be able to used to buy goods and services, or they may be converted more easily to an asset that can be used to make purchases.

10. Briefly describe the trade-offs involved with switching from commodity backed money to fiat money.

the primary advantage is that fiat money is not influenced by random swings in the money supply (e.g. gold being impacted by gold discoveries). This leads to more stable prices if the monetary authority is competent.

the disadvantage is if there is a lack of trust in the government, the public may not adopt fiat money as a social convention.

11. For question #11, refer to the following table:

Table 2: Value of Assets in the Economy

Asset	Value
Electronic Reserves at the Central Bank	50
Real Estate	200
Corporate Bonds	100
Checkable Deposits	40
Currency	40

11. Calculate the monetary base and M1 money supply.

M_0 = Currency + electronic Reserves = 90

M_1 = Currency + Checking Accounts = 80

12. What social problem does having an independent Central Bank (as opposed to elected officials) conduct monetary policy potentially solve?

1.) It may prevent elected officials from pursuing overly-inflationary policies that provide short-term benefits.

2) It may act as a lender of last resort by making loans during periods of economic and financial stress, preventing unnecessary business failures.

13. Suppose that May's inflation data comes in higher than expected. How might this impact the Federal Reserve's monetary policy?

Higher inflation provides an incentive for the Fed to raise interest rates. Such a policy reduces aggregate demand and lowers inflation. Historically, the Taylor Rule predicts that 1% higher inflation leads to about 1.5% higher interest rates.

14. Expansionary monetary policy often increases output and reduces unemployment. Given this, why don't Central Banks always engage in expansionary monetary policy?

1.) Eventually, this will put the economy on the steep part of the AS curve where further increases to AD only lead to more inflation.

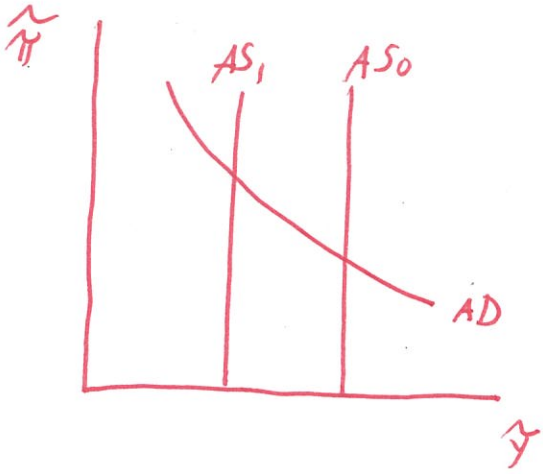
2) Keeping rates too low for too long may cause firms or households to take on too much debt, which can be de-stabilizing.

15. True or False? When the Federal Reserve lowered interest rates during the covid-19 pandemic, it did so by conducting open market sales.

False. ~~Partly true.~~ the Fed did seek to lower interest rates by buying, not selling, assets, taking its balance $ sheet from $4 trillion to $8 trillion. But it did other things as well to lower rates, including lowering the rate on reserves and the rate on reverse-repo loans.

Bonus: How would your answers to #5-7 change if wages were fully flexible?

- when labor productivity declines, AS still shifts to the left.



- In the labor market, nominal wages (w) increase to keep the economy at the intersection of LS and LD. The loss in output is thus larger (there is never unemployment

- Contractionary monetary policy would reduce inflation, with no effect on output.