

Answer all questions on these sheets:

1. (4 points) When the Winter Semester ends on April 17th, all the Econ 102 GSIs (there are 5 of them) will no longer be employed by the University. On that day they all begin looking for new jobs.

a) Using the definition of the unemployment rate, show how the unemployment rate in Ann Arbor will change on April 17th if the GSIs don't find new jobs right away.

*The unemployment rate is unemployed / labor force. The labor force doesn't change, but the number of unemployed goes up because the GSIs are looking for work but don't have new jobs yet. Thus U/L increases.*

b) Now assume that instead of looking for new jobs starting on April 17th, the GSIs decide to take the whole summer off for a long vacation. What happens to the unemployment rate in Ann Arbor on April 17th now?

*Under this scenario the labor force decreases by 5, but the number of unemployed is unchanged, so the unemployment rate increases.*

2. (4 points) Suppose that banks are required to hold reserves equal to exactly 10% of their deposits, and banks lend out the rest of their holdings, and that the public never holds cash (that is, they use only bank deposits as money).

a) Ben Bernanke, the Chairman of the Fed, wakes up tomorrow and decides to increase the money supply. Should he direct the Fed to buy or sell bonds? If the Fed (buys / sells) \$30,000 of bonds, by how much will the money supply increase?

*He should tell the Fed to buy bonds to increase the money supply. The money multiplier is  $1/0.10 = 10$ , so the money supply rises by  $10 * 30,000 = \$300,000$ .*

b) Now suppose that when Bernanke calls the trading desk at the New York Fed to tell them to conduct open market operations, nobody answers the phone. The need to increase the money supply is urgent, so Bernanke considers his other options. What are the other two ways the Fed could increase the money supply, and how would they need to be changed?

*The reserve ratio could be lowered, allowing banks to use some of their reserves to make new loans, which would increase deposits.*

*The rate the Fed charges for overnight loans to banks could be lowered, making it cheaper for banks to borrow to cover their reserve ratio, allowing them to make extra loans.*

3. (2 points) An article in the WSJ talked about why Venezuela is experiencing a high rate of inflation this year. Assuming that the money demand curve has not shifted, use the quantity theory of money to show how the inflation has affected the value of the Bolivar (the Venezuelan currency).

*The quantity theory of money is  $MV=PY$ . Money demand is  $M=PY/V = Y/(V*(1/P))$ . If money demand has not shifted, but prices are rising, then we must be moving along the money demand curve due to an increase in money supply. The value of the Bolivar is  $(1/P)$ , which is falling.*