

Problem Set #1

Due at the beginning of lecture Monday, September 15, 2010

NOTE: To ensure proper grading, write your answers in the area indicated.

1. Explain whether or not, why, and how the following items are included in the calculation of GDP:
 - a. Increases in business inventories.

 - b. Fees earned by real estate agents on selling existing homes.

 - c. Social Security checks written by the government.

 - d. Building of a new dam by the Army Corps of Engineers.

 - e. An economist earning \$2,000 by giving a speech to members of San Francisco's Commonwealth Club.

 - f. Interest that your parents pay on the mortgage they have on their house.

 - g. Purchases of foreign-made trucks by American residents.

 - h. Purchase of a remaindered item from inventory by T.J. Maxx from American Apparel.

 - i. 12 million Americans watching a commercial on network television.

- j. An economist earning \$2,000 by giving a speech about the state of financial markets to the employees of Morgan Stanley.
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2. Calculating real magnitudes:
 - a. When you calculate real GDP, do you do so by dividing nominal GDP by the price level or by subtracting the price level from nominal GDP?

 - b. When you calculate the real interest rate, do you do so by dividing the nominal interest rate by the price level or by subtracting the inflation rate from the nominal interest rate?

 - c. Are your answers to the two parts the same? Why or why not?
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3. Suppose that the appliance store buys a refrigerator from the manufacturer on December 15, 2010 for \$600, and that you then buy that refrigerator on February 15, 2011 for \$1000:
 - a. What is the contribution to GDP in 2010?

 - b. How is the refrigerator accounted for in the NIPA in 2010?

 - c. What is the contribution to GDP in 2011?

 - d. How is the refrigerator accounted for in the NIPA in 2011?

4. Is real GDP per worker a good measure of material welfare? Of human well being? Why do you think it is or is not?

5. Suppose a quantity—like real GDP per worker—grows at a steady proportional rate of 2.4% per year. How long will it take to double? Quadruple? Grow 1024-fold?

6. Suppose we have a quantity x that varies with time t , which we write $x(t)$ to indicate that it can be different at different times. Define $dx(t)/dt$ to stand for that quantity's rate of change with time. (Don't blame me: blame Newton and Leibnitz.) If $x(t)$ follows the equation: $dx(t)/dt = -(0.06)x + 0.36$, at what level of x will it be constant—i.e., not changing over time? Call that equilibrium value x^* . If $x(t) > x^*$, is x growing or shrinking over time? If $x(t) < x^*$, is x growing or shrinking over time? Is x^* a stable equilibrium or an unstable equilibrium?

7. Solve for the equilibrium level of real GDP Y in the Keynesian framework where: $Y = C + O$, $C = c(o) + c(y)Y$:
- With $c(o) = \$5$ trillion/year, $c(y) = 1/3$, $O = \$5$ trillion/year
 - With $c(o) = \$4$ trillion/year, $c(y) = 1/3$, $O = \$5$ trillion/year
 - With $c(o) = \$5$ trillion/year, $c(y) = 1/3$, $O = \$4$ trillion/year
 - With $c(o) = \$4$ trillion/year, $c(y) = 1/2$, $O = \$4$ trillion/year
 - With $c(o) = \$4$ trillion/year, $c(y) = 1/2$, $O = \$6$ trillion/year
8. Solve for the change in the equilibrium level of real GDP in the Keynesian model where $Y = C + O$, $C = c(o) + c(y)Y$:
- $c(y) = 4/5$ and the change in $O = -\$300$ billion/year
 - $c(y) = 3/4$, and the change in $O = -\$200$ billion/year
 - $c(y) = 1/3$, and the change in $O = +\$50$ billion/year
 - $c(y) = 1/2$, and the change in $O = +\$500$ billion/year

- e. $c(y) = 2/3$, and the change in $O = +\$80$ billion/year
9. In the monetarist framework where $Y = (M/P) \cdot V$ and V is constant, solve for the equilibrium level of real GDP Y :
- If $V = 5$ and $M/P = \$3$ trillion
 - If $V = 4$ and $M/P = \$6$ trillion
 - If $V = 10$ and $M/P = \$10$ trillion
 - If $V = 3$ and $M/P = \$5$ trillion
 - If $V = 5$ and $M/P = \$4$ trillion
10. In the monetarist framework where $Y = (M/P) \cdot V$ and V is constant, solve for the change in the equilibrium level of real GDP Y :
- If $V = 4$ and the change in M/P is $-\$1$ trillion
 - If $V = 6$ and the change in M/P is $+\$600$ billion

- c. If $V = 5$ and the change in M/P is +\$400 billion

 - d. If $V = 7$ and the change in M/P is -\$300 billion

 - e. If $V = 3$ and the change in M/P is -\$100 billion
11. Suppose that the government has decided that it wants to boost the equilibrium level of real GDP Y , and is working within the Keynesian framework and wishes to do so by increasing the level of other spending $O = G + NX + I$:
- a. What is the principal argument for trying to increase O by raising government purchases G ?

 - b. What is the principal argument for trying to increase O by raising net exports NX ?

 - c. What is the principal argument for trying to increase O by increasing private investment spending I ?

 - d. What is the principal argument against trying to increase O by raising government purchases G ?

 - e. What is the principal argument against trying to increase O by raising net exports NX ?

- f. What is the principal argument for against trying to increase O by increasing private investment spending I ?
12. Suppose that the government has decided that it wants to boost the equilibrium level of real GDP Y , is working within the Keynesian framework, and is deciding whether it will try to do this by increasing the level of other spending O or by increasing $c(o)$:
- a. What is the principal argument for preferring to attempt to increase O rather than $c(o)$?
- b. What is the principal argument for preferring to attempt to increase $c(o)$ rather than O ?
13. How should a government working within the Keynesian framework implement these plans?
- a. What policy steps should it take if it wants to boost G ?
- b. What policy steps should it take if it wants to boost NX ?
- c. What policy steps should it take if it wants to boost I ?
- d. What policy steps should it take if it wants to boost $c(o)$?

14. Suppose that a government working in the monetarist framework decides that it wants to boost the equilibrium level of real GDP Y . What policy steps should it take?
15. The principal monetarist critique of the Keynesian framework is that a government that tries to boost real GDP Y by boosting, say, government purchases G will find that its attempts to do so produce increases in interest rates that crowd out and reduce NX and I , the remaining two components of "other" spending.
- Under what conditions is the monetarist critique likely to be right?
 - Under what conditions is the monetarist critique likely to be wrong?
16. The principal Keynesian critique of the monetarist framework is that a government that tries to boost real GDP Y by boosting the money stock will induce an offsetting collapse in the velocity of money V and so have little if any effect.
- Under what conditions is the Keynesian critique likely to be right?
 - Under what conditions is the Keynesian critique likely to be wrong?
17. Minskyites tend to say that both Keynesians and monetarists are wrong--at least in dealing with deep depressions. From their perspectives, attempts to boost either the economy's money stock or the planned amount of (risky) investment in building firm capacity are likely to fail to relieve depression.
- What is the Minskyite story for why normal monetarist attempts to cure depression are unlikely to be completely successful?

- b. What is the Minskyite story for why normal Keynesian attempts to cure depression are unlikely to be completely successful?
18. Classify each of the situations below into one of our three types of depression: monetarist, Keynesian, and Minskyite:
- Very low interest rates on short-term and long-term government bonds, but high interest rates on risky corporate bonds and low stock prices.
 - Very high interest rates on short-term and long-term government bonds, high interest rates on risky corporate bonds and low stock prices.
 - Very low interest rates on short-term and long-term government bonds, low interest rates on risky corporate assets and depressed stock prices.
 - Very low interest rates on short-term government bonds, high interest rates on risky corporate bonds, low stock prices, and high interest rates on long-term government bonds.
19. What are the chief arguments against the Minskyite proposal to cure a depression by having the government guarantee the liabilities of banks and finance companies, thus bailing them out?