

Econ 375

Problem Set 1 Answers

1. The marriage would reduce GDP since any transaction between the couple would not now pass through a market institution.
2. Included in GDP: GM purchasing tires to replace worn out tires on executives' cars; purchase of new window; tuition.
3. Treating auto purchases like housing purchases would move auto purchases out of consumption expenditures and into investment purchases. Measured savings would increase and investment would increase.
4. This is for you to fill in.
5. You did this one for homework.
6. Production function question: (See appendix to Chapter 3)
 - a) $Y = 2000$
 - b) Real wage = MPL; the $MPL = (.5)(A)(K/L)^{-.5} = (.5)(10)(100/400)^{-.5} = 2.5$
 - c) Real price of capital = MPK; the $MPK = (.5)(A)(L/K)^{-.5} = 10$.
7. Labor demand for a bakery.

Number of Workers	Number of Loaves Baked per hour	MP of Labor	Price per loaf	$P \times MP$	Nominal Wage Rate (W)	Real Wage Rate (W/P)
0	0	--	\$1	--	\$8	\$8
1	20	20	\$1	\$20	\$8	\$8
2	36	16	\$1	16	8	8
3	48	12	\$1	12	8	8
4	56	8	\$1	8	8	8
5	60	4	\$1	4	8	8
6	62	2	\$1	2	8	8

- a) Diminishing returns set in with the hire of the 2nd worker (since MP of the second worker is less than the MP of the first worker).
 - b) $MP \times P$ represents the labor demand curve.
 - c) 4 workers
 - d) 5 workers; 4 workers
8. Impact on real prices of inputs:
- a) real wage will fall.
 - b) real price of capital will rise.
 - c) real wage and price of capital will rise.

9. Changes in national income variables:

- a) rises by \$100b
- b) falls by \$30b
- c) rises by \$70b
- d) rises by \$70b

10. Using the long run model of GDP, an increase in consumer confidence will raise C. But, since Y must remain constant in the long run, that means I must decrease. This occurs because the interest rate will rise due to the drop in national saving as consumers increase their consumption.

11. Goods Market Equilibrium: $Y = C + I + G$

$$Y = 6000$$

$$C = 600 + 0.6(Y - 500)$$

$$I = 2000 - 100r$$

$$G = 500$$

- a) $C = 3900$; $I = 1600$; $r = 4\%$
- b) $S_{\text{private}} = 1600$; $S_{\text{public}} = 0$; $S = 1600$
- c) $C = 3900$; $I = 1100$; $r = 9\%$

No, the amount of investment "crowded out" depends only on the size of the increase in government spending.

- d) $S_{\text{private}} = 1600$; $S_{\text{public}} = -500$; $S = 1100$
- e) $C = 3600$; $I = 1900$; $r = 1\%$

Yes, the amount of investment "crowded in" is equal to the tax increase times the MPC.

- f) $S_{\text{private}} = 1400$; $S_{\text{public}} = 500$; $S = 1900$
- g) $C = 3600$; $I = 1400$; $r = 6\%$

Investment is lower because r is higher. The interest rate rose because private national fell (see below).

- h) $S_{\text{private}} = 1400$; $S_{\text{public}} = 0$; $S = 1400$

i) Investment is favored, other things equal, by a government budget surplus, because government spending "crowds out" investment, while high taxes "crowd in" investment, according to the models in Chapter 3.

#12 through #18 refer to Chapter 6 (Unemployment). You are not responsible for this material.

19. Traveler's checks and food stamps have a store of value and serve as a medium of exchange. A vacation home has a store of value.

20. Ask your grandparents this one.

21. The real interest rate is 2%. We know this from the quantity theory equation: $M' + V' = P' + Y'$. Since $M' = 14\%$ and $V' = 0$ and $Y' = 5\%$, we know that $P' = 9\%$. The nominal interest rate, i , equals the real rate plus the inflation rate. Since $i = 11\%$ and inflation = $P' = 9\%$, then the real interest rate must be 2%.

22. The major benefit of having a national money is seigniorage--the ability of the government to raise revenue by printing money. The major cost is the possibility of inflation or even hyperinflation, if the government relies too heavily on seigniorage. The benefits and costs of using a foreign money are exactly the reverse: the benefit of foreign money is that inflation is no longer under domestic policy control, but the cost is that the domestic government loses its ability to raise revenue through seigniorage. (There is also a subjective cost to having pictures of foreign leaders on your currency.)

The foreign country's political stability is a key factor. The primary reason for using another nation's money is to gain stability. If the foreign country is unstable, then the home country is definitely better off using its own currency--the currency remains more stable and it keeps the seigniorage.

23. See the table below:

Time	Actual Inflation	Nominal interest rate	Ex post real interest rate (a)	Ex ante real interest rate (b)
Year 1	1%	5%	4%	--
Year 2	2%	5%	3%	4%
Year 3	4%	6%	2%	4%

c) The person who makes the loan (the creditor) will be unpleasantly surprised since the expected interest rate was 4% and the realized interest rate was only 2%.

24. This is for you to ponder.

25. Coolidge was referring to an often used practice by governments to inflate away their budget/debt problems. If the government simply prints more money, thereby creating inflation, the value of their outstanding debt will fall in real terms. That is, they can pay of their loans with dollars that are worth less than before the inflation.

26. Demand for real money balances:

a) $i = 4\%$; $P = 0.50$

b) $i = 5\%$; $P = 1.00$