Economics 100

Homework #5

Due November 19, 2013

**Directions:** The homework will be collected in a box **before** the lecture. Please place your name, TA name and section number on top of the homework (legibly). Make sure you write your name as it appears on your ID so that you can receive the correct grade. Late homework will not be accepted so make plans ahead of time. **Please show your work.** Good luck!

**Please realize that you are essentially creating “your brand” when you submit this homework. Do you want your homework to convey that you are competent, careful, professional? Or, do you want to convey the image that you are careless, sloppy, and less than professional. For the rest of your life you will be creating your brand: please think about what you are saying about yourself when you do any work for someone else!**

1. In your own words explain what the retirement poverty problem is and what the retirement uncertainty problem is. Then, reflect on the class lectures on retirement planning and write a brief (no more than three paragraph essay on what you found interesting, intriguing, thought provoking, new information to you and/or worrisome about that topic.

2. Many companies, including insurance companies, worry a great deal about two types of asymmetric information problems: adverse selection and moral hazard. Moral hazard refers to behavior that one party engages in after the transaction is made that is potentially hazardous in its impact on the other party to the transaction. For example, if you borrow your parent’s car on the day you get your driver’s license and then go out and drive 80 miles per hour you are acting in a morally hazardous manner toward your parents: they have agreed to lend you their car and now your behavior puts at risk the car (if you crash its worth may be completely lost) and your life (something that most parents value very highly). For each of the following scenarios determine what the morally hazardous behavior is.

a. Howard, has just gotten approval for his health insurance coverage at his place of employment. Howard decides that he will take up chain smoking and heavy drinking after getting this coverage.

b. Susie has a car insurance policy that covers her use of any kind of motorized vehicle. Susie decides that now that she is insured she will trade her Volvo for a Ferrari.

c. Bank of Midfield has deposits from many different depositors who earn a low rate of return on their deposits at the bank. Bank of Midfield uses these deposits to provide mortgages to borrowers, to buy different financial assets, and to make a variety of investments which they hope will result in higher returns than they must pay to depositors: in this manner, Bank of Midfield can hope to earn profits as a banking institution. Bank of Midfield has deposit insurance with the FDIC (Federal Deposit Insurance Corporation) which means that should the bank fail, all depositors will get the full amount of their deposits back due to the government’s guarantee of these deposits. Currently, Bank of Midfield knows it has made a number of bad investments (think mortgages that will likely not be repaid and where the value of the house has fallen below that of the mortgage) and that it is bankrupt, but the bank examiners have yet to discover this. So, Bank of Midfield is pursuing a very aggressive campaign consisting of investing in much higher risk, but much higher potential return (or loss), than their more normal investment strategy.

3. Many companies, including insurance companies, worry a great deal about two types of asymmetric information problems: adverse selection and moral hazard. Adverse selection refers to behavior that one party engages in before the transaction is made that results in the pool of applicants that the other party faces being “adversely selected” from the other party’s perspective. For example, in the case of healthcare insurance the individual seeking insurance knows more about their general health and well-being than does the insurance company: it is likely that the pool of people seeking healthcare insurance is adversely selected from the perspective of the insurance company since it is likely that the pool will be a less healthy pool than the general population. For each of the following scenarios determine whether there is an adverse selection problem or a moral hazard problem. Explain your answer.

a. Healthy Choices Insurance Company offers health insurance to young people under age thirty. Their premiums for this health insurance is quite reasonable based upon the company assuming that most young people under thirty will likely have low health care costs. Healthy Choices Insurance Company is surprised at the end of the year to find that their costs exceed their revenues by a significant amount.

b. Bob meets with a life insurance representative and answers a battery of questions attesting to his health status and his mental state. The life insurance representative provides Bob with a life insurance policy that promises to pay Bob’s beneficiaries $200,000 if Bob dies during the current year. The day after the policy is issued Bob commits suicide.

c. Jenny when she moved to Madison needed to set up a checking account at a local financial institution. She selected her bank by choosing the one that was located closest to campus. Jenny did not check out the bank’s financial statement, its solvency, its Board of Directors, or anything having to do with how well the business operated. Jenny reasoned that her account would be protected by the FDIC, the Federal Deposit Insurance Corporation, or the NCUA, the National Credit Union Association, should her institution become financially insolvent.

d. Bobby is out of money and out of work, but he thinks he can get dressed up and pose as a good loan candidate at his local bank. He doesn’t really care what the interest rate on the loan is as long as he can get the loan.

4. For each of the following scenarios determine the effect on GDP in 2013 of the described event. Then, explain the reasoning behind your answer.

a. Mary’s Tops produces 1000 spinning tops in 2012 and sells 800 of these tops in 2012 for a price of $8 per top. In 2013 Mary’s Tops produces another 1000 tops and sells 1200 tops in 2013 for a price of $8 per top.

b. Bart’s Marketing in 2013 decided to expand the business and to do this it needed to raise financial capital. The company issued 200 shares of stock and sold these shares for $50 per share. The business expansion is slated to begin sometime in mid-2014.

c. Sammy and Joan live next door to each other and they each have two children that are under the age of five. During the week Sammy looks after Joan’s children and on the weekend Joan looks after Sammy’s children. The value of these childcare services is equal to $300 per week for each household. Sammy and Joan, recognizing that the value is equivalent for both of them, do not actually write each other a check in payment for the services and they do not record this income on their respective tax returns.

d. Harry and Megan live next door to each other and they each have two children that are under the age of five. During the week Harry looks after Megan’s children and on the weekend Megan looks after Harry’s children. The value of these childcare services is equal to $300 per week for each household. Harry writes Megan a check each week for fifty weeks (two weeks both households are on vacation) and Megan writes Harry a check each week for fifty weeks. Both Megan and Harry comply with all income tax regulations and social security regulations with regard to reporting this income.

e. Elizabeth has a vase she purchased in 1995 for $55 that was created in 1890. In 2013 she realized that the vase needed repair after years of heavy use. She took it in to “Dr. Phil”, a local fine art restorer, who re-glued and repaired the vase. The bill for this work was $115.89.

5. Suppose you are told that in the economy of Millsville that rent payments for land resources are equal to $100 million in 2010, interest payments for capital are equal to $150 million in 2010, consumer expenditures on goods and services are equal to $320 million in 2010, profits are equal to $50 million in 2010, government expenditures on goods and services are equal to $90 million in 2010, and net exports are equal to -$20 million in 2010. You also know that in Leesville in 2010 that wage income was two times bigger than the level of investment spending on goods and services during that same year. Determine the level of GDP in Millsville in 2010, the level of wage income in 2010, and the level of investment spending in 2010. In determining these levels verbally describe how you are finding these answers and in your verbal description make specific reference to the definition(s) of GDP you are using to find the answers.

6. Consider the community of Richville. There are two hundred people who live in Richville and your task is to answer the following set of questions based on the information below:

* In Richville there are 40 people who are less than 16 years old
* In Richville there are 30 people who are over 70 years old and are fully retired
* In Richville there are 15 people who are currently not working, are available to work, and have submitted job applications during the past four weeks
* In Richville there are 20 people who are currently not working, are available to work, but who have given up submitting job applications because they do not believe there is any work to be had in Richville
* In Richville there are 50 full-time college students who are not currently seeking work
* In Richville there are 25 people who are working part-time but who would like to work full-time
* The rest of the Richville population is over 16 years old and currently working

a. What is the number of employed people in Richville? Explain how you got your answer.

b. What is the number of unemployed people in Richville? Explain how you got your answer.

c. What is the labor force equal to in Richville?

d. What is the unemployment rate in Richville? Show how you found your answer.

e. How would the unemployment rate change in Richville if discouraged workers were counted as unemployed workers? Verbally describe how the unemployment rate would change and then calculate a numeric value based on this change in the definition of unemployment.

f. How would the unemployment rate change in Richville if part-time workers were counted as unemployed workers rather than employed workers? Verbally describe how the unemployment rate would change and then calculate a numeric value based on this change in the definition of unemployment.

7. For each of the following scenarios decide whether the person is employed or unemployed. Explain the reasoning behind your answers.

a. Joe will turn sixteen on June 6, 2013. He currently works at a local fast-food restaurant twenty hours a week.

b. Mary is eighteen years old and works in her family’s restaurant business twenty hours a week. She does not get paid for this work.

c. Jordan volunteers at a local food pantry twenty five hours a week. He is otherwise in school full-time. Jordan is twenty years old.

d. Vince is currently out of work but is looking for work. However for the next four weeks he will be on an extensive family vacation that will take him away from the town where he lives. Vince is thirty five years old.

e. Leann is currently out of work, is available for work and is looking for work but has recently had trouble finding any possible positions that would suit her skills and interests. She last filled out an application for a potential job in January 2013 and it is now June 2013. Leann is forty five years old.

f. Michael is currently working twenty hours a week but would prefer to be working full-time. He has submitted applications for potential jobs in the last four weeks but has not found anything that is full-time yet. Michael’s birthdate is 8/15/1998.

g. Cory works for a local auto body shop for forty hours a week. Cory is twenty six years old. Cory has been on vacation for the past two weeks and has not been to the auto body shop to work during this time.

8. Suppose that an economy consists of only two types of final goods: computers and automobiles. Sales and price data for these two goods for two different years are as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | Quantity of Computers Sold | Price per Computer | Quantity of Automobiles Sold | Price per Automobiles |
| 1990 | 500,000 | $6,000 | 1,000,000 | $12,000 |
| 2013 | 5,000,000 | $2,000 | 1,500,000 | $20,000 |

a. Nominal GDP in any year is calculated by multiplying the quantity of each final good sold by its price and summing over all final goods. Calculate nominal GDP in 1990 and in 2013.

b. Real GDP in any year is calculated by multiplying that year’s quantity of each final good sold by its price in the base year and summing over all final goods. Using 1990 as the base year, calculate real GDP in 1990 and in 2013.

c. Calculate the percentage change in the real GDP between 1990 and 2013 using 1990 as the base year

d. Using 2013 as the base year, calculate real GDP in 1990 and in 2013. Calculate the percentage change in the real GDP between 1990 and 2013 using 2013 as the base year

e. Explain why the base year chosen affects the percentage change in the real GDP between 1990 and 2013.

f. The CPI in a given year is equal to the (cost of a fixed market basket of consumer purchases in that year divided by the cost of that same market basket in a base year)\*(scale factor). Although the cost of the market basket changes over time, the composition of the market basket remains the same. For ease in reporting, the official CPI is equal to this ratio multiplied by 100. Thus, if 1990 is the base year, the reported CPI for 1990 would equal 100. If the fixed market basket is the total amounts of computers and automobiles purchased in 1990, calculate the CPI in 2013, using 1990 as the base year and a 100 point scale.

g. The GDP deflator for any year is equal to (nominal GDP in that year divided by real GDP)\*(scale factor). Calculate the GDP deflator in 2013, using 1990 as the base year and a 100 point scale.

h. Calculate the percentage changes in CPI and the GDP deflator between 1990 and 2013. Explain why your answers to the two percentage changes are so different.

9. Frictional unemployment is short-term unemployment experienced by people between jobs or by those who are just entering the job market. Structural unemployment results from mismatches—in skills or location—between jobs and workers. What, if anything, could the government do to reduce frictional and structural unemployment?