First challenge: Solutions
Eco 212, Fall 2006

Question 1 (5 points).

The nominal interest rate is the amount of dollars borrowers pay and lenders receive for loans, the real rate is what lenders can buy with their interest. Alternatively, the real rate is the rate of interest holding prices constant, so the dollars lent buy the same amount of goods as the dollars repaid. The nominal rate uses current prices, so the dollars repaid buy less than the dollars lent.

All rates we see in the newspapers or on our bank statements, including student loans, are nominal rates. However, we care about real rates.

Question 2 (10 points).

The value of the finished goods, the two rings, is $\$3000 \cdot 2 = \$6000$. Since all approaches give the same answer, we must get \$6000 for both the value added and the income approach. Value added equals revenue less cost of goods. As seen in the table below, the mining co. has no cost of goods and \$5000 in revenue. Thus the value added of the mining co. is \$5000. Similarly, the value added of the jeweler is \$1000. So the total value added equals \$6000. As seen in the table below, the mining co. has no wages, and the jeweler has a wage bill of \$500. The profits are revenues less cost of goods and wages, which total \$5500. Thus total income equals wages plus profits which equals \$6000.

firm	revenue	cost of goods	value added	wages	profits
mining co.	\$1000 + \$4000	0	\$5000	0	\$5000
jeweler	\$6000	\$5000	\$1000	\$500	\$500
total			\$6000	\$500	\$5500

Question 3 (10 points).

a. Raw materials are not finished goods and therefore are not counted.

b. Sales tax is part of the market value of a good and is therefore counted.

c. Social Security is a transfer of money (transfer payment) from the government to retirees, so no good or service is produced. Therefore social security is not counted.

d. We count only goods purchased in the current period, so the used car is not counted.

e. New houses are a finished good produced in the current year, and are therefore counted.

Question 4 (5 points).

The CPI attributes increases in quality which raise the price of a good to inflation. For example, a rise in the price of a car might be due to a quality increase like airbags rather than inflation. The CPI also uses base goods and therefore fails to account for substitution to lower priced goods. When prices rise unevenly, consumers evade inflation by buying lower priced goods. The CPI assumes the same number of goods are purchased as before the price increase.

Question 5 (15 points).

a. Pete is working and being paid and is thus employed.

b. Rick is looking and willing to work, so he is unemployed.

c. Dave does not start for more than a month and is thus not participating.

d. Those unable to work are young/institutional.

e. Part time workers are employed.

f. Adrian is not willing to work and is thus not participating.

g. The labor force is the employed and unemployed and the working age population is the labor force plus those not participating. The participation rate is thus:

$$\text{participation rate} = \frac{\text{labor force}}{\text{working age pop.}} = \frac{2+1}{2+1+2} = \frac{3}{5} = 60\% \tag{1}$$

The unemployment rate is:

$$\text{unemployment rate} = \frac{\text{unemployed}}{\text{labor force}} = \frac{1}{2+1} = \tfrac{1}{3} = 33\% \tag{2}$$

Question 6 (10 points).

The reasons discussed in class are:

a. Wage taxes on firms are higher in Spain and falling in the US. These reduce demand for labor and thus raise unemployment since wages cannot fall in response to the lower demand for labor.

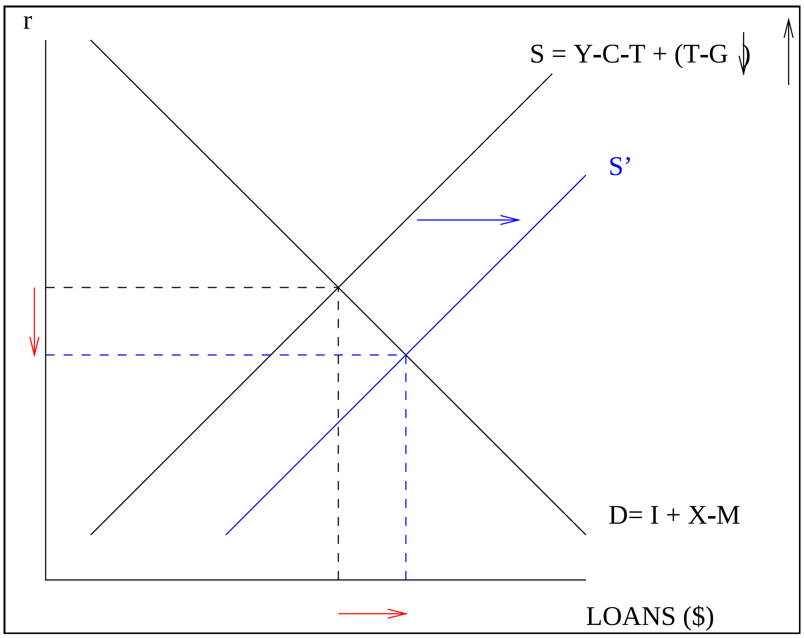
b. Union membership is higher in Spain and falling in the US. Unions sometimes negotiate contracts or push for laws which prevent firings in order to hire cheaper outside labor (insider laws).

c. Unemployment benefits are larger and longer in duration in Spain, and have been falling in the US due to inflation. Such benefits allow workers to search longer in order to find a better job.

Minimum wages have been falling in the US, but are not very high in Spain.

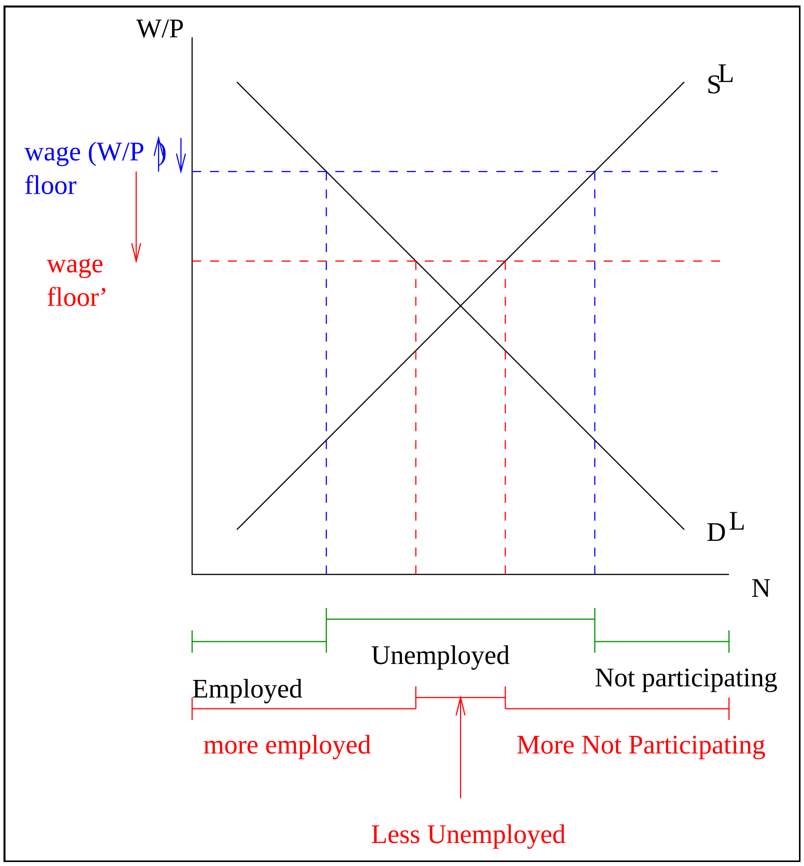
Question 7 (20 points).

A decrease in government spending means the government is spending less but taking in the same amount of tax revenue. The government therefore saves the extra money. Public savings rises, and therefore national (public plus private) savings rise. The rise in savings relative to borrowing means the price or interest rate must fall. Private savings remains unchanged.



Question 8 (25 points).

When prices rise, the minimum wage buys less goods. Therefore the real minimum wage falls. In this problem, the price floor was the real minimum wage, so the price floor falls as well. When the price floor falls, some workers drop out of the labor force and become not participating. Further, more firms are willing to hire at the lower real minimum wage. Therefore unemployment falls.



W/P
S^L
wage (W/P)
floor
wage
floor'
D^L
N
Unemployed
Employed
Not participating
more employed
More Not Participating
Less Unemployed