

Quiz #3

Enjoy!

March 28, 2008

Problem 1. Below are examples of different people and their behavior last week. Tell me whether they would be counted, last week, as being employed (**E**), unemployed (**U**), in the labor force (**LF**), and/or not in the labor force (**NLF**). For some of these people, you should have multiple answers! Just circle the appropriate status(es).

(a) Mary worked 40 hours last week at the library.

E / **U** / **LF** / **NLF**

(b) Joan is not working and has been looking and interviewing for jobs. Last week she received several job offers, but she turned them down because the pay was too low.

E / **U** / **LF** / **NLF**

(c) Frank retired a few years ago, but last week he started working only one day a week at Home Depot.

E / **U** / **LF** / **NLF**

(d) Kathy has been retired for years and isn't looking for a job.

E / **U** / **LF** / **NLF**

(e) John is in prison.

E / **U** / **LF** / **NLF**

Problem 2. Using some of the different labor force categories above (E,U,LF,NLF), explain two things:

(a) How is the unemployment rate calculated?

The unemployment rate is the number of unemployed people divided by the labor force. The labor force is the sum of unemployed and employed people. So,

$$U_{rate} = \frac{U}{LF}$$

where $LF = E + U$.

(b) You have an opportunity to meet with your senator. You tell him that you're worried about the economy: the US is entering a recession, and more and more people are losing their jobs. He replies, "Maybe things are getting bad, but you have your facts wrong about about the labor market. The latest data show the unemployment rate is falling!" Assuming your senator is correct about the unemployment rate data, why might you still be right about the labor market?

As employed workers become unemployed, the calculation above shows that the unemployment rate increases. But if these unemployed workers give up looking for work (because they think looking for a job is hopeless, for example), they are no longer unemployed or in the labor force. The exit of these workers of these workers will decrease the unemployment rate.

Problem 3.

- (a) Rolf starts a job getting paid \$35,000 a year. All Rolf cares about is whatever he can buy with his salary. During that year, inflation unexpectedly increases by 10%. Is Rolf better off or worse off, and why?

Rolf cares about how many (real) goods and services he can buy. After the inflation, he can only buy less goods and services than the could before the inflation, so Rolf is worse off.

- (b) Citibank lends Katie \$50,000 at a fixed 3% interest rate. Katie is supposed to pay back the money, plus 3% interest, the next year. But before she pays it back, inflation unexpectedly increases by 10%. Because of the inflation, is Citibank better off or worse off, and why?

Citibank lost on this deal, even after Katie paid back the money plus interest. The \$50k plus 3% interest is worth less after the inflation than the original \$50k; that is, Citibank was able to buy more goods and services with its \$50k before the inflation than what Citibank can do with the money plus interest after inflation.

If you think about it in terms of interest rates, for any loan it makes Citibank wants the highest real interest rate. Before the inflation the real interest rate was just equal to the nominal one: 3%. After the inflation, the real interest rate for Citibank was less than that: 3% minus 10%, which is -7%.

- (c) All Katie cares about is how hard it will be to pay back her loan. Because of the unexpected inflation, is Katie better off or worse off, and why?

For Katie, the difference between the situation without inflation and the situation with inflation is the difference in real interest rates. The lower the real interest rate, the easier it is for Katie to pay back her loan. without inflation, the real interest rate for Katie is 3%; after, inflation, it is -7%. Katie is therefore better off with the inflation than without it.

Problem 4. Below is a graph of the federal minimum wage in the United States, between 1950 and 2007, in *nominal* dollars per hour and in *real* dollars per hour. (Some states, like Massachusetts, have a higher minimum wage than the federal wage, but many states don't.)



- (i) If minimum wage workers only care about how much they can buy with their earnings, which years for minimum wage workers were the best years? The worst years? **The best years for workers were then the years with the highest real minimum wage (late 1960s and early 1970s), and the worst years were those with the lowest real minimum wage (early 1950s and early 2000s).**
- (ii) The US Congress and the President set the minimum wage into law. Just looking at the graphs, can you tell whether they set a nominal minimum wage or a real minimum wage? Explain your reasoning. **If the real wage were set at a particular level, the real wage would look constant over some period of time, which doesn't ever seem to be the case. The nominal wage is often constant for several years, so it seems that nominal minimum wages are set by Congress.**
- (iii) This graph is labeled poorly: I didn't tell you which year's dollars the *real* minimum wages correspond to. That is, to calculate real minimum wages for the graph, I needed to pick a base year. Which year does it look like I picked (and explain your reasoning)? **After converting nominal to real dollars for some base year, the real dollars at the base year will equal nominal dollars at that year. The base year above therefore looks like the year 2000.**