Unemployment and Employment: Key

Consider the following employment data for the economy of Frogland:

Category	**Number**
Total Population	150,000,000
Full Time Employed	90,000,000
Unemployed, Actively Searching	10,000,000
Unemployed, No Longer Searching	5,000,000
Serving in the Army	20,000,000
Prison Inmates	1,000,000
Part Time Workers, Including Students	15,000,000
Children	9,000,000

1. The labor force participation rate is the labor force (employed plus unemployed) divided by the civilian adult non-institutionalized (the military, children and inmates do not count) population. Here:

$$\frac{90+10}{150-9-1-20} = 10/12 = 86.7\% \tag{1}$$

U-3 is the unemployed over the labor force:

$$U-3 = \frac{10}{90+10} = 10\% \tag{2}$$

2. U-6 includes discouraged workers and the underemployed for economic reasons in both the count of the unemployed and the labor force. I know that there are 5 million discouraged workers. The data do not break down part time workers into those who are underemployed for economic reasons. So I have to make an assumption. I will assume that 1/2 of them, 7.5 million, are underemployed for economic reasons. The U-6 labor force is this 112.5 million, the sum of the U-3 labor force discouraged workers, and the underemployed for economic reasons.

$$U-6 = \frac{22.5}{112.5} = 20\% \tag{3}$$

3. Not very. If all 15 million part time workers are students, or if all are underemployed for economic reasons, then my calculation will be way off. The data are not precise and as a result my calculation is imprecise a well. This illustrates why calculating U-6 is harder than U-3/

4. Discuss the implications on U-3 and welfare of the following changes to these data:

i. U-3 falls to $5/95 = 5.3\%$. This is, however, likely a sign of a worse labor market although U-3 fails to detect this. Note that U-6 would be unchanged.

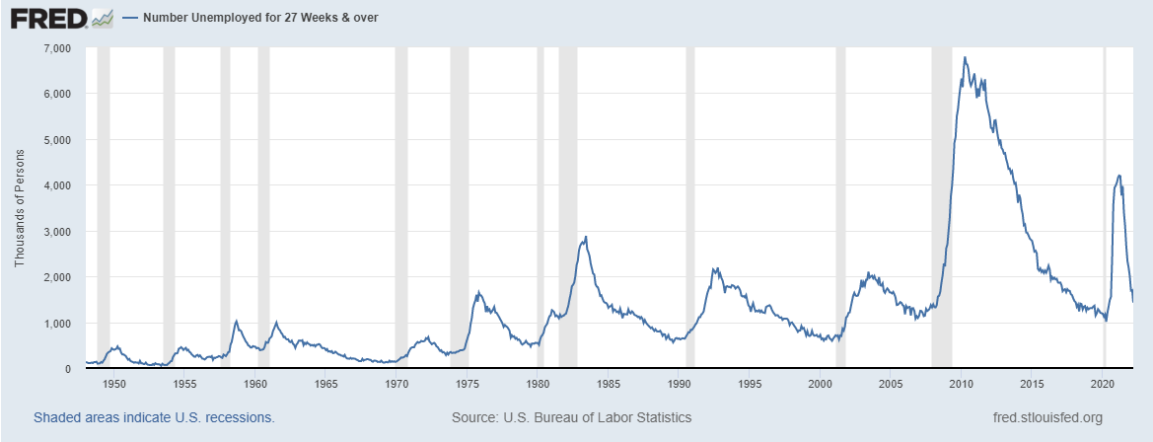
ii. U-3 falls to $5/100 = 5\%$. The labor market is getting better and the decline in U-3 reflects this.

iii. U-3 now equals $10/120 = 8.3\%$. This is just a change in measurement. No real economic changes have occurred.

iv. U-3 is now $10/101 = 9.9\%$. As with iii, this is just a change in how we measure U-3 and it reflects no real economic changes.

5. True. As of April 2022, the level of long-term unemployed is close to baseline levels.

Figure 1: U.S. Long-Term Unemployment



6. False. The natural rate of unemployment is the sum of frictional and structural unemployment.

7. This is an example of structural unemployment which is unemployment resulting in broad changes to the nature (structure) of the economy. In this case, a type of job will be replaced with another, putting the employee out of work.

8. Because this policy will extend ordinary spells of unemployment, it will mostly impact frictional unemployment. But you might argue that it will allow allow spells of structural and cyclical unemployment, so there is some ambiguity here.

9. The intuition is the same as for #9 in that most of the impact will be on frictional unemployment. But because this change makes it easier for workers to find jobs, it will reduce unemployment.

10. Most observers would say no. U-3 which peaked at 14.8% in April 2020 likely underestimates the harm. It does not, for example, include millions of workers who dropped out of the labor force.

11. As the workforce of many developed economies has aged, labor force participation has trended downwards. This is not seen as a problem (although it can have negative side effects, such as straining pension programs). The decline in labor force participation during covid-19 was involuntary, however, and was concerning.

12. Unemployment tends to rise after recessions begin. It is thus known as a lagging variable. A leading variable would be one that moves before a recession begins.