Lecture 7: Unemployment
(chapter 6)

1) Natural rate

Recall the graph of unemployment from first day of class. There is always some unemployment, although it fluctuates around its mean level. The fluctuations we will try to explain later in the course. Here we will analyze the mean level around which fluctuates. Will develop here theory of why is unemployment as a long-run condition. Called the natural rate of unemployment

Natural rate of unemployment: steady state level of unemployment, toward which economy gravitates in the long run.

Recall \( L = E + U \) (labor force, employed, unemployed)

Unemployment rate = \( U/L \)

Let \( s = \text{rate of job separation} \) (fraction of employed who lose job each month)

\( f = \text{rate of job finding} \) (fraction of unemployed find job each month)

If natural rate is steady state, then \( U \) is constant:

\[ fU = sE \] (number of new hires equal number of new fires)

so:

\[ fU = sL - sU \]

\[ fU/L = s(1 - U/L) \]

\[ f(U/L) = s - sU/L \]

\[ (f + s)(U/L) = s \]

\[ U/L = s/(s+f) \]

So: any public policy aimed at lowering the natural rate of unemployment must reduce rate of job separation or increase rate of job finding.

2) Frictional unemployment: job search

Our models have assumed all workers are identical, serving same function and earning same wage. But are different types of jobs, and people have different qualifications.

When lose job, takes time to match an opening with the individual best suited for it. May take time to disseminate the information or relocate geographically.
Frictional unemployment: caused by time it takes for workers to search for a job.

Some is inevitable in a changing economy. As steel industry declines and as computer industry rises, steel-plant jobs in Pittsburgh disappeared and jobs in Silicon valley were being created. Takes time for labor force to figure out what’s going on, adjust to new skills, and relocate.

Public policies can help, by disseminating info on sectors hiring, retraining.

Some public policies make things worse: unemployment insurance may worsen natural rate: workers collect fraction of their wages. Typical in US 50 percent of former wages for 26 weeks. Higher in some European countries.

By lessening incentive to take less attractive job offers, will lower finding rate, thereby raise natural rate.

But also has benefits: lessens uncertainty, and allows longer search to find better match.

Empirical evidence that incentive has some effect: find unemployed more likely to find job once their benefits have run out.

3a) Real Wage Rigidity and Wait Unemployment

Wage rigidity: failure of wages to adjust until labor supply equals labor demand.

Leads to:
Wait unemployment: although workers are willing to work at the going wage, at that wage there are no jobs available.

If real wage adjusted to \(w^*\), then labor supply equal labor demand. Are an equal number of jobs and people wanting to work at that wage. If is unemployment, is frictional.

But if Wage held to high at \(w_2\), then fewer firms are willing to hire, because not profitable. So are more people wanting to work at that wage than there are jobs available.
b) **Causes of wage rigidity:**

1. **Minimum wages:**
   
   One source of wage rigidity is minimum wage laws. U.S. government sets wage at 30-50 percent of average wage in manufacturing, since 1938 Fair Labor Standards Act, aimed at helping low-income labor.

   Not binding for most. But affect those that otherwise would be paid less than minimum. Especially teenagers: less skills and compensation in form of on-the-job-training instead of pay.

   Think raises unemployment rate among teenagers. Some studies: 10% increase in minimum wage reduces teenage employment by 1-3 percent.

2. **Unions and Collective Bargaining:**
   
   Wages on unionized workers not determined by equilibrium of supply and demand, but by collective bargaining between union leaders and firm.

   Conflict of *insiders* and *outsiders*: those already hired want to keep wage high, but those outside want wage to fall, so firm will be willing to hire more workers. Result: if have spell of unemployment, people dropped from payroll and union lose their voice. Those remaining keep wage at level outsiders not get rehired. An explanation why unemployment can be persistent.

   Example of unionization: Canada and US in 1960s had similar unemployment rate and similar amount of unionization (30%). But diverged beginning in 1970s. Canadian laws have fostered unionization, while fell in US. Unemployment over last decade has been about 2-3 percentage points above US. Also see real wage about 30% higher in Canada. Suggests real wage kept above market clearing wage in Canada.

3. **Efficiency wages.** Pay wage above market clearing level because makes workers more productive.

   Reason 1: reduces labor turnover. So reduces cost of hiring and retraining.

   Reason 2: increase quality of workforce, if pay more than competitors.

   Reason 3: reduce shirking by increasing cost of being caught.

   Example: Ford cars, in 1914 started paying 5$ a day, compared to 2-3 usual. Lines. Workers worked harder, reduce absenteeism, improved discipline.

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**4) Patterns of Unemployment** : for class discussion