

# ECON 3510 - INTERMEDIATE MACROECONOMIC THEORY

Fall 2015

Mankiw, *Macroeconomics*, 8th ed., Chapter 7

## Chapter 7: Employment and Unemployment

### Key points:

- Understand the natural rate of unemployment
- Search-matching model of the labor market
- What makes wages rigid?
- Comparative labor market experiences of US and Europe

### Unemployment: A Model:

- DRAW flows: Employed  $\rightarrow$  job separation(s)  $\rightarrow$  unemployed  $\rightarrow$  job finding(s)  $\rightarrow$  employed
- Think of the economy in the long run
  - $L$ , # in the labor force, is fixed
  - Focus on “steady-state”
    - \* Unemp neither rising or falling
- By definition,  $L = U + E$  (unemp + emp)
- Let  $s$  = the rate of job separation
  - Fraction of employed who lose/quit job in a year
- Let  $f$  = the job finding rate
  - Fraction of unemployed who find a job in a year
- SS implies that unemployment rate doesn't change:

$$- \underbrace{fU}_{\# \text{ leaving unemp}} = \underbrace{sE}_{\# \text{ entering unemp}}$$

– Know that  $L = U + E \Rightarrow E = L - U$

–  $\Rightarrow fU = s(L - U)$

– Now put in terms of unemployment rate =  $\frac{U}{L}$

–  $\Rightarrow f\frac{U}{L} = s(1 - \frac{U}{L})$

– Now solve for unemp rate:

$$- \frac{U}{L} = \frac{s}{s+f} = \frac{1}{1+\frac{f}{s}}$$

–  $\Rightarrow$  steady-state unemp depends upon job separation and job finding

$$* f \uparrow = \frac{U}{L} \downarrow$$

$$* s \uparrow = \frac{U}{L} \uparrow$$

\* Any policy affecting steady-state unemp must affect  $f$  and/or  $s$

\* This steady-state level of unemp is called the “natural rate of unemp”

- Show graph from Fig 7-1 with unemp over time and natural rate

#### Frictional Unemployment: Job Search and Matching:

- Frictional unemp: unemp caused by the time it takes for workers to find a job and for employers to find a worker
- Workers separate because:
  - Preference for another job/location
  - Sectoral shifts
    - \*  $\Delta$  in labor demand for sector/region
  - Firm failures
  - Poor performance
  - Many other reasons...
- Main idea:
  - Some workers are better at particular jobs
  - Workers search for a job that is a good match for their interests/skills
  - Employers search for workers who are a good match for their needs
  - It takes time to find those jobs/workers
- Policies affecting frictional unemp:
  - Unemployment insurance
    - \*  $\uparrow$  b/c take more time (compared to if have no benefits)
    - \*  $\downarrow$  b/c find better job (so less likely to separate later)
  - Training programs
    - \*  $\downarrow$  b/c better match for more jobs (so less likely to separate)

#### Structural unemployment:

- Idea: Wages rigid - don't fall to clear labor market
- Result: "Structural unemp"
- Usually: DRAW labor market that clears - note no unemp
- Structural unemp: DRAW labor market with wage fixed above market clearing wage - Note unemp
- Why are wages rigid/sticky?
  1. Min wage laws
  2. Unions
    - Monopoly on labor supply  $\Rightarrow$  price (wage) too high (i.e., above competitive mkt eq'm rate)
  3. Efficiency wages
    - Pay people greater than their marginal product of labor (demand curve) b/c:
    - $\rightarrow$  reduces turnover
    - $\rightarrow$  reduced adverse selection (get better employees)

- → reduces moral hazard (shirking on job)
- NOTE: last two above rely on asymmetric info better employer and employee - employer doesn't know if hard worker/good match or not

### Unemp in the US:

- Duration:
  - Most are out of the workforce for a short time (60% < 1 month)
  - Most of the aggregate time out of work from the few long spell of unemp (69% of time out of work by those with unemp > 2 months)
- Demographic Differences:
  - Young have higher unemp rates
  - Those with lower education have higher unemp rates
- SHOW graphs of unemp by age, race, gender. Point out recession diffs
- Trends
  - < 5% in the 1950's and 60's
  - > 6% in the 1970's and 80's
  - < 5% in the 1990's to 2007
  - > 7% 2008-2013
  - ~ 5% since 2013
  - Why?
    - \* Demographics
    - \* → baby boom ⇒ lots of workers so more unemp in the 70's and 80's
    - \* → this doesn't completely hold up when you see that w/in age group unemp rates also changed
    - \* Sectoral shift
    - \* → more job separations during the turbulent 70's and 80's and late 2000's
    - \* Productivity
    - \* → slowing productivity in the 70's and 80's and rigid wages?
    - \* → Not consistent with the late 2000's where productivity increases, but high unemployment

### The labor market in Europe:

- On avg, higher unemp than in US
- The Rise in Unemp
  - SHOW figure with unemp rates by different countries. e.g. <https://twitter.com/justinwolfers/status/367652797>
  - Fall in demand for low-skill labor + large unemp benefits = high unemp
  - Most recent rise as result of recession a combination of sectoral shifts in countries and monetary policy not able to respond fully
- The Rise in Leisure
  - Europeans work about 20% less than Americans

- \* e.g. in US work about 25.1 hours per person of working age
  - \* Germany it's about 18.6 hours (or about 25% less)
  - \* e.g. US workers work 46.2 weeks per year on avg.
  - \* In France, it's 40 wks per year
- Why?
- \* Taxes: higher and increasing tax in Europe (DRAW labor market and who points along Labor supply curve for diff after tax wages)
  - \* Union bargaining for shorter hours and more holidays (e.g. limitations on workweek)
  - \* Tastes (may be exacerbated by coordination - e.g. you want time off, but only if friends also off)