# Chapter 9: Unemployment & Its Natural Rate

**Brian To | Feb. & Mar. 2016**

**Economy's Natural Rate of Unemployment**: amount of unemployment economy normally experiences
**Cyclical Unemployment**: year-to-year fluctuations in unemployment around natural rate

How is Unemployment measured?

- Every month, Statistics Canada (SC) conducts Labour Force Survey (LFS)
- Data are collected on: unemployment, employment, length of workweek, duration of unemployment
- From results of the survey, each adult (aged 15 & older) from survey is either
  - **Employed** – spent some time in previous week working at a paid job
  - **Unemployed** – on temporary layoff or is looking for work
  - **Not in Labour Force** – none of the above (e.g. full-time student, retiree, homemaker)

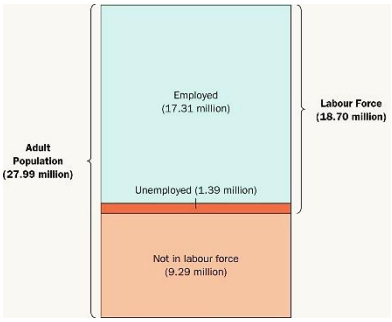



*Figure 9.1: Breakdown of Population in 2011*

**Labour Force (LF)**: total # of workers, including both employed & unemployed

$$LF = \#\ of\ employed + \#\ of\ unemployed$$

**Unemployment Rate (U):** % of labour force that is unemployed

$$U = \frac{\#\ of\ unemployed}{LF} \times 100$$

**Labour Force Participation Rate (LFPR):** % of adult population that is in labour force

$$LFPR = \frac{LF}{Adult\ Population} \times 100$$

**Practice**

Compute labour force, u-rate, adult population, & labour force participation rate using this data

| **Adult population of Canada by group (x 1000)**, Sept. 2013 | |
|---|---|
| # of employed | 17 780.7 |
| # of unemployed | 1325.0 |
| not in labour force | 9657.2 |

Labour force = employed + unemployed
= 17 780.7 + 1325.0
= **19 105.7** thousand

Population = labour force + not in labour force
= 19 105.7 + 9657.2
= **28 762.9**

U-rate = 100 x (unemployed)/(labour force)
= 100 x 1325.0/19 105.7
= **6.9%**

LF part. rate = 100 x (labour force)/(population)
= 100 x 19 105.7/28 762.9
= **66.4%**

*Table 9.1: Labour-Market Experiences of Demographics*

| Demographic Group | Unemployment Rate | Labour-Force Participation Rate |
|---|---|---|
| Both sexes, 15 years and over | 7.4% | 66.8% |
| Males, 15–24 years | 15.9 | 64.7 |
| Males, 25–44 years | 6.6 | 91.3 |
| Males, 45–64 years | 6.4 | 80.1 |
| Females, 15–24 years | 12.4 | 64.4 |
| Females, 25–44 years | 6.4 | 82.1 |
| Females, 45–64 years | 5.6 | 71.0 |

3 interesting facts are revealed in these statistics:

1) W/in same age group women have lower rates of labour force participation than men
2) Young people aged 15 to 24 have much higher rates of unemployment than older people
3) Similarly aged men & women tend to have similar rates of unemployment. There is an exception b/c in 2011 unemployment rate of young males was higher than young females. This is a residual effect of last recession. This phenomenon has been tagged a man cession b/c it affected unemployment rates of males more so than the unemployment rates of females

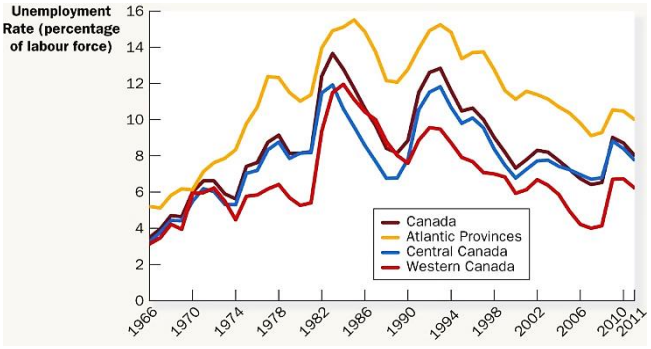
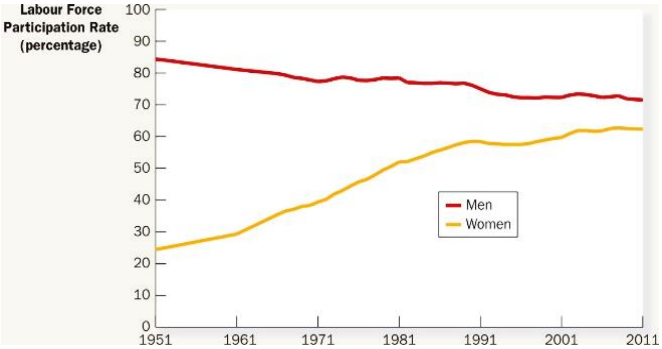



*Figure 9.2: Canadian & Regional Unemployment Rates 1966-2011)*

- ⇨ Economy always has some unemployment & that amount changes from year to year
- ⇨ Both unemployment rate from year to year vary widely for different regions of Canada
- ⇨ International comparisons of unemployment rates can sometimes be misleading b/c of definitional differences
- ⇨ For example, in USA the labour force is defined as # of people aged 16 years & above, while in Canada, cut off is 15 years & above

*Figure 9.3: Labour-Force Participation Rates for Men & Women since 1951*




- ⇨ Over past several decades, women have entered labour force & men have left

<u>Does Unemployment Rate measure what we want it to?</u>

- Movements into & out of labour force are common & complicate measurement of amount of unemployment
- B/c ppl move into & out of labour force often, statistics on unemployment can be difficult to interpret
  - Unemployed ppl who aren't try trying hard to find a job (might be due to temporary layoff & are waiting to be recalled to work)
  - Ppl call themselves unemployed to receive unemployment insurance
  - Ppl who are officially unemployed but are working "under the table"

*<u>**NOTE**</u>*:

- ➢ More than 1/3 of unemployed are recent entrants into labour force (young workers looking for their first jobs, such as recent university and college graduates OR older workers who had previously left labour force but have now returned to look for work)
- ➢ Not all unemployment ends w/ job seeker finding a job. Almost half of all spells of unemployment end when unemployed person leaves labour force

**Discouraged searchers**: individuals who would like to work but have given up looking for a job

*Table 9.2: Alternative Measures of Labour Underutilization*

| Measure and Description | Percentage of the Labour Force |
|---|---|
| Unemployed 1 to 4 weeks | 2.5% |
| Unemployed 5 to 13 weeks | 2.0 |
| Unemployed 14 to 25 weeks | 1.1 |
| Unemployed 26 to 52 weeks | 1.1 |
| Unemployed more than 52 weeks | 0.8 |
| **Official Unemployment Rate** | 7.4 |
| Discouraged searchers | 0.2 |
| Those awaiting recall | 0.6 |
| Involuntary part-time workers | 1.6 |
| Official rate + discouraged searchers + those awaiting recall + involuntary part-time workers | 9.8 |

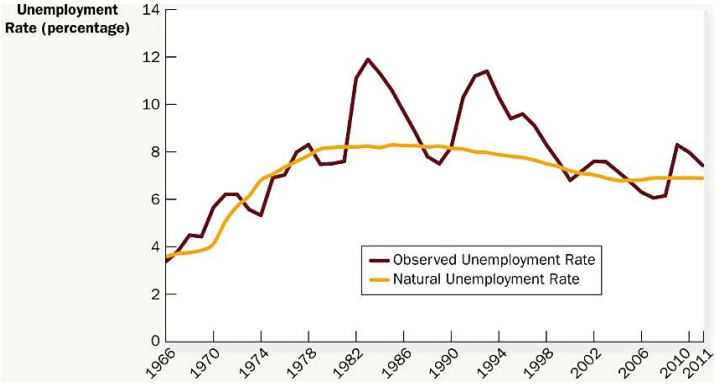
How long are Unemployed w/o Work?

- ⌘ In 2011, avg. unemployment lasted 18.8 weeks
- ⌘ From Table 9.2, 1/3 are unemployed for < 1 month & 3/5 are unemployed for < 3 months
- ⌘ Policy solutions directed toward fixing unemployment problem should be directed at those suffering long unemployment

**Natural Unemployment Rate:** rate of unemployment to which economy tends to return in the long run

- ⇨ For Canada, it's btw/ 6% & 8%

*Figure 9.4: Observed & Natural Unemployment Rates, 1966-2011*




- ⌘ Most economists agree that natural unemployment rate increased during 1970
- ⌘ Stabilized at about 8% in 1980s & has followed a slow downward path since mid-1990s
- ⌘ Difference btw/ observed unemployment rate & natural unemploy. rate = cyclical unemployment
- ⌘ Recession in early 1980s, early 1990s, 2008 & 2009 are identified by jump in observed unemployment rate well above natural rate

**Cyclical Unemployment**: deviation of unemployment from its natural rate

- ⇨ Arises due to short-term economic fluctuations

**4 ways to explain unemployment in long-run:**

1. **Frictional unemployment:** unemployment that results b/c it takes time for workers to search for jobs the best suit their tastes & skills
   - ⌗ Often result of changes in demand for labour by firms
   - ⌗ Inevitable b/c economy is always changing
   - ⌗ Process where jobs are created in 1 industry but destroyed in another leads to higher productivity & higher living standards
   - ⌗ Mismatch btw/ available jobs & ppl seeking employment explains why 1 in every 8 unemployed worker is w/o a job
   - ⌗ Today, manufacturing, petroleum & aircraft manufacturing industries = major sources of employment
   - ⌗ Today, agriculture has fallen from being largest single source of employment to minor source of employment
2. **Structural unemployment:** unemployment that results b/c # of jobs available in some labour markets is insufficient to provide a job for everyone who wants one
   - Often occurs when wages are set above level that brings supply & demand into equilibrium
   - (2) wage laws, (3) unions, (4) efficiency wages

   ~ Occurs when quantity of labour supply exceeds quantity of labour demand

**Job search:** process by which workers find appropriate jobs given their tastes & skills

⇨ Gov't programs try to facilitate job search thru gov't-run employment agencies & public training programs

~ Workers differ in their tastes & skills, jobs differ in their attributes, & info about job candidates & job vacancies is disseminated slowly among many firms & households

**Employment insurance (EI):** gov't program that partially protects workers' incomes when they become unemployed

⇨ May reduce hardship of unemployment, but design of program influences workers' behaviour in ways that will increase unemployment rate

~ Since 1971, 2 considerations to determines when & how long someone can collect EI benefits
= # of hrs worked in past year & unemployment rate in area of residence

~ As of 2011, EI regulations require workers who live in a region where unemployment rate >16% = must work only 420 hrs to become eligible for 37 weeks of benefit

~ If unemployment rate >6% = must work min. 700 hrs to become eligible for 19 weeks of benefit

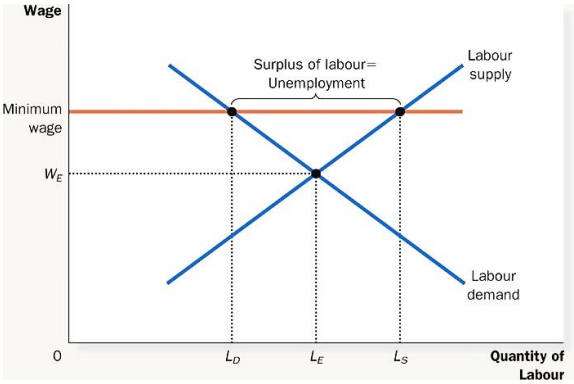
~ EI provides an incentive for ppl to enter labour force when they may not otherwise have done so

~ EI does reduce income uncertainty faced by unemployment

∴ Unemployed ppl as a result of EI program conduct a more thorough job search, resulting in a higher wage

*Figure 9.5: Unemployment from a Wage above Equilibrium Level*

- ⌘ In labour market, wage where S & D balance = $W_E$
- ⌘ @ equilibrium wage = quantity of labour supplied & quantity of labour demanded boat = $L_E$
- ⌘ By contrast, if wages are forced to remain above equilibrium level (perhaps due to minimum wage laws), quantity of labour supplied rises to $L_S$ & quantity of labour demanded falls to $L_D$
- ⌘ ∴ Result surplus of labour, $L_S - L_D$ represents unemployment
  - Unions = competition is good; unions get together to set a higher price (which is the wage); in macroeconomics, unions uniting is not a good thing; supply & demand must be perfect competition however it doesn't always happen; too much negotiation power creates unions
  - Problem is higher wage creates unemployment, people outside have big disadvantage = tradeoff



**Union:** worker association that bargains w/ employers over wages & working conditions

- ⇨ As of 2011, 30% of all employed workers in Canada belong to unions
- ⇨ Economics of Unions
  - **Collective bargaining**: unions & firms agree on terms of employment
  - **Strike**: organized withdrawal of labour from a firm by a union
  - When unions raise wage above equilibrium level, it raises quantity of labour supplied & reduces quantity of labour demanded, .:. causing unemployment
  - Workers who remain employed are better off; workers who lose their jobs are worse off
    ~ It is believed that unions cause conflict btw/ insiders & outsiders
    ~ Insiders = those that benefit from high union wages
    ~ Outsiders = those who do not get union wages; can respond to your status in 2 days: some remain unemployed & wait to become insiders OR take jobs w/ firms that aren't unionized
- ⇨ Are Unions Good or Bad?
  - Unions argue they're merely a type of cartel
  - Advocates of unions contend that unions = necessary antidote to market power of firms that hire workers & claim that unions are important for helping firms respond efficiently to concerns of workers

**Theory of Efficiency Wages**

**Efficiency wages**: above-equilibrium wages paid by firms in order to increase worker productivity

- ⚔ May be profitable for firm to keep wages high even if it causes a surplus of labour (or unemployment)
- ⚔ Higher wages may increase efficiency of workers

*__NOTE__*: Unemployment is a result of wages above level that balances supply & demand of labour…
HOWEVER there is an importance difference…

- ↳ minimum wage laws & unions prevent firms from lowering wages in presence of surplus of workers
- ↳ efficiency wages theory states that such a constraint on firms is unnecessary in many cases b/c firms may be better off keeping wages above equilibrium level

***4 Possibly Efficiency-Wage Theories***

1) **Worker health** – better paid workers eat a more nutritious diet & .:. healthier & more productive
2) **Worker turnover** – the more firm pays its workers, the less often its workers will choose to leave, .:. a firm can reduce turnover by paying higher wages (happens when you're already employed)
3) **Worker effort** – high wages make workers more eager to keep their jobs, giving workers an incentive to put forth their best efforts
4) **Worker quality** – when firm pays a high wage, it attracts better pool of workers, .:. increasing quality of its workforce (happens before you're employed)

*__NOTE__*: Restructure incentives in wages to pay workers is needed to be done as you can't observe them in person and know how productive & effort they are, .:. offering high wages creates better selection of candidates

**__4 reasons why economies always experience some unemployment__**

(1) Job Search
(2) Minimum-Wage Law
(3) Unions
(4) Efficiency Wages