Chapter 6 - Unemployment

Key Ideas

I. Natural Rate of Unemployment

II. Two types of unemployment: frictional and wait.

III. Efficiency Wages – A model based on monitoring costs.

IV. Characteristics of the duration of unemployment in the US.

I. Natural Rate of Unemployment

Working Age Population

<table>
<thead>
<tr>
<th>Unemployed (U)</th>
<th>Employed (E)</th>
<th>Not in Labor Force</th>
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Labor Force = (LF) = U + E

Unemployment Rate: \( u = \frac{U}{LF} \).

✓ The unemployment rate is affected by the rate of job separation (s), the rate of job finding (f), and the movement of individuals in and out of the labor force.

The Natural Rate of Unemployment (u*): the unemployment rate which doesn’t change. The number of people finding work is equal to the number of people losing work (ignore changes in labor force).
That is: \( u^* \) is defined by \( sE = fU \).

Rearranging terms:

\[
sE = fU \Rightarrow s(LF - U) = fU \Rightarrow sLF = (s + f)U \Rightarrow \frac{U}{LF} = \frac{s}{s + f}
\]

Or,

\[
u^* = \frac{s}{s + f}.
\]

Numerical example: Suppose that 1% of the employed lose their jobs each month \((s = 0.01)\) and 20% of the unemployed find jobs each month \((f = 0.20)\). (These are reasonable numbers: the first implies that the average job lasts 100 months while the average duration of unemployment is 5 months.)

\[
u^* = \frac{0.01}{0.01 + 0.20} = 0.0476
\]

Question 2 from your book:
Suppose that the unemployment rate does not begin at \( u^* \), show that unemployment will evolve over time and reach this steady-state. (Hint: express the change in the number of unemployed as a function of \( s, f, \) and \( U \)).

\[
\Delta U = sE - fU = s(LF - U) + fU = sLF - (s + f)U
\]

Factor out the term \( LF(s + f) \) from both terms on the RHS:

\[
\Delta U = LF(s + f) \left[ \frac{s}{s + f} - \frac{U}{LF} \right] = LF(s + f)[u^* - u]
\]

Hence \( \Delta U \ (>, =, <) 0 \) as \( u \ (\leq, =, \geq) u^* \).
The critical implication: Any discussion of unemployment must focus on the two critical flows: the rate of job separation and the rate of job finding. The policy question of influencing the natural rate involves affecting these two flows.

Some of the factors:

1. Unemployment insurance – affects the rate of job finding.
2. Job matching – skills required = current labor skills (retraining).

II. Two types of unemployment

A. Frictional unemployment: The background level of unemployment due to job destruction and job creation. Unavoidable in a market based economy as inefficient firms and/or taste changes result in changes in labor market.

B. Wait unemployment: rigidity in labor market keeps the equilibrium real wage above market clearing. At the market wage, more labor is supplied than demanded.

Three causes:
1. Minimum wage laws.
2. Unionization or threat of unionization.
3. Efficiency wages.

III. Model of efficiency wages
IV. Duration of unemployment

In the US, duration of unemployment is characterized by two facts:

Fact 1: Most unemployment spells are of short duration, roughly 2 months or less.

Fact 2: Most people who are unemployed on a given date are experiencing unemployment spells of long duration.

Not contradictory statements – Example:

Labor Force = 100. Two assumptions:

(A1) At the beginning of every month, 2 workers become unemployed and remain unemployed for 1 month.

(A2) At the beginning of every year, 4 workers become unemployed and remain unemployed for the entire year.

Over the course of a year, there are 28 spells of unemployment:

24 spells that last one month (A1) and 4 spells that last one year (A2). Thus, 

(24/28) = 86% of unemployment spells are of short duration – Fact 1.

On any given date (after January), there are six unemployed workers: 2 that have been unemployed for less than one month and 4 that have been unemployed for more than a month. Hence, (4/6) = 67% of the unemployed are experiencing long spells of unemployment. – Fact 2.