Unemployment, Job Creation and Job Destruction
ECON 3133
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Problems

1. In a particular month, the labor force is 130 million, there are 9.1 million unemployed workers, the job-separation rate is 3 percent per month, and the job-finding rate is 40 percent per month.

   a. How many people will be unemployed next month?

   b. At what unemployment rate would the number of unemployed remain the same from one month to the next?

2. Suppose that Okun's Law relating unemployment and GDP is given by
$$(Y–Y^*)/Y^* = – 2 \times (U – U^*),$$
where U is the unemployment rate, U^* is the natural rate of unemployment, Y is GDP, and Y^* is potential GDP. Unemployment is measured as a fraction. Suppose that the natural rate of unemployment, U^*, is 6 percent. First, calculate the GDP gap, $(Y–Y^*)/Y^*$, for each of the years in 2015-2020 using the following unemployment rate, U, data: 5.6, 6.8, 7.5, 6.9, 6.1 and 5.6 percent, respectively. Second, if GDP, Y, for these same years is as follows: $5,670, $5,904, $6,091.6, $6,481.2, $6,936.1, and $7,207.2 billion, calculate potential GDP, Y^*, for each of these years. What is the average growth rate of potential GDP?

3. Discuss briefly how each of the following changes would affect the natural rate of unemployment.

   a. The economy enters a period of little structural change and all industries are growing at about the same rate.

   b. Schools operate for the full year, so there are no students looking for summer work.

   c. The Internet lists all the jobs available in the whole country, so it is easier for job seekers to locate potential job.

   d. People who quit their jobs are drafted into low-wage community service jobs.

   e. In addition to unemployment insurance, the unemployed receive a bonus for finding new jobs; the bonus is greater if the job is found in the first few weeks of search and declines with the duration of search.