Economics 471 Professor H.J. Schuetze

Practice Problem Set 4

Read each question in its entirety before beginning, then answer the question as clearly and concisely as possible. Make sure to answer all of the questions. You may find it helpful to outline the important points first, and then fill in the details.

1. Suppose the economy consists of a union and a nonunion sector. The labour demand schedule in each sector is given by L = 1,000,000 – 20w. The total (economywide) supply of labour is 1,000,000, and it does not depend on the wage. All workers are equally skilled and equally suited for work in either sector. A monopoly union in the union sector sets the wage at $30,000.

a) What is the union non-union wage differential?
b) What is the union wage gain?
c) What is the impact of the union on the wage in the nonunion sector?

2. Suppose there are 100 unemployed persons in the economy. You are given the following data about the length of unemployment spells:

Durration of Spell in Months	Exit Rate
1	0.6
2	0.2
3	0.2
4	0.2
5	0.2
6	1.0

where the exit rate for month t gives the fraction of unemployed persons who have been unemployed t months who "escape" unemployment at the end of the month.

a) How many unemployment months will the 100 unemployed workers experience?

b) What fraction of persons who are unemployed are "long-term unemployed"? (that is, are in unemployment spells that last 5 or more months)

c) What fraction of unemployment months can be attributed to persons who are long-term unemployed?

d) What is the nature of the unemployment problem in this example: too many workers losing their jobs or too many long spells? Explain.

3. a) Assume that the marginal benefit of a week's job search is given by

$$MB = a - b \times Weeks; \quad a, b>0$$

where Weeks is the cumulative number of weeks of searching. What factors will affect the returns to search, that is, what factors will cause a or b to be higher or lower?

b) Assume as well that the marginal cost of a week's job search is given by

$$MC = c + d \times Weeks; \quad c, d>0$$

What factors will affect the marginal cost of search, that is, what factors will cause c or d to be higher or lower?

c) Find an expression for the optimal number of weeks of search, that is, express the optimal number of weeks of search, W*, as a function of a, b, c, and d. Use this expression to discuss what happens to W* if there is an increase in b or an increase in d. Interpret your answers.

4. State whether you agree or disagree with each of the following statements. If you agree with the statement, explain why you agree, and if you disagree, explain why you disagree (include the correct statement in your answer). I encourage you to illustrate your answers using diagrams where appropriate.

a) In Rubinstein's Bargaining Model, legislation which does not allow firms to replace workers during a strike will likely result in an equilibrium outcome that is more favourable to the union.

b) Frictional unemployment is optimal.

c) "Unemployment" is not sufficiently well defined that a single measure, such as the official unemployment rate, will capture it appropriately.