EC 235

Problem Set 3

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INSTRUCTIONS:

Take your time and go through each problem.

Recall that group work is *strongly encouraged*.

Problem 1

Assume the following wage- and price-setting relations, respectively:

$$W = A \cdot P \cdot z(1-u)$$

$$P = (1+m) \cdot \frac{W}{A}$$

where *A* is labor productivity; *m* is the markup rate; *W* are nominal wages; *P* is the price level; *u* is the unemployment rate; and *z* encapsulates several labor market institutional arrangements (e.g., unemployment insurance, degree of unionization, etc.).

(a) Derive an expression for the equilibrium ("natural") unemployment rate.

(b) Does the equilibrium rate of unemployment move in the same direction as the markup rate? Show it algebraically and intuitively.

(c) Does the equilibrium rate of unemployment move in the same direction as labor market institutional arrangements? Show it algebraically and intuitively.

(d) Derive an expression for equilibrium real wages.

Problem 2

Using graphs, illustrate the following events in the labor market:

(a) An increase in the rate of unionization.

(b) A new policy decreasing real unemployment benefits.

(c) A weakening in antitrust legislation.

(d) An improvement in minimum wage policy followed by an increase in the markup rate.

Problem 3

Assume the following Phillips curve:

$$\pi_t = \pi_t^e + 0.1 - 2u_t$$

(a) Graph this Phillips curve.

(b) What is the natural rate of unemployment? Explain intuitively.

Problem 4

In an IS-LM-PC setting, illustrate the following events and how monetary policy may lead to the medium-run equilibrium:

(a) Generalized strikes organized by workers claiming for higher nominal wages.

(b) A short-run equilibrium position with an overheated labor market and output above its potential level.

(c) A recession with a large negative output gap.

Problem 5

In the interviews listed at our IS-LM-PC lectures, Isabella Weber discusses the recent stance of monetary policy adopted by the Fed and other central banks to tame inflation as causing "double burden" to workers. Reflect on this, also providing intuitive explanations on how and why this might be the case.

Problem 6

The following sentences are either **True** or **False**. If false, provide a brief explanation why.

(a) The price-setting relation is a positive function of unemployment.

(b) From the wage-setting relation, real wages and the unemployment rate move in opposite directions.

(c) In a perfectly competitive market, the markup rate (m) will vary between 0 and 1.

(d) The Phillips curve features a negative association between the growth rate of the price level and the employment rate.

(e) A Phillips curve with adaptive expectations has the change in inflation as its dependent variable.

(f) When inflation expectations are totally based on last period's inflation, expected inflation is not important to determine actual inflation.

(g) The IS-LM-PC model features medium- and long-run equilibrium dynamics.

(h) In an IS-LM-PC setting, fiscal policy shifts the IS and PC curves.

(i) In an IS-LM-PC setting, if institutional factors in the labor market change, the PC curve will shift.

(j) A recession may lead an economy to a "deflation spiral."

Problem 7

For some extra credit on the Final Exam, redo what you did incorrectly in the past mini-tests. Turn in your answers by our last class day (12/08), in paper.