

Professor Christiano
311, Spring 2000

Second Midterm

IMPORTANT: read the following notes

- You may not use calculators, notes, or aids of any kind.
- Note the points each question is worth and plan your time accordingly. The total number of points possible is 100, and the number of points per question is indicated in parentheses.
- Explain your answers carefully. Make liberal use of diagrams.
- Write neatly and label all diagrams. We cannot give you credit if we cannot read your answer.
- Write your name and TA section on each blue book.

Here are the equations of the basic AS-AD model, which you may want to use in working on this exam.

$$\begin{aligned} \text{Price setting} & : P = (1 + \mu)W \\ \text{Wage setting} & : W = P^e F(u, z) \\ \text{Unemployment-Output Link} & : u = 1 - Y/L \end{aligned}$$

$$\begin{aligned} C^d & = c_0 + c_1(Y - T), \\ I^d & = \bar{I} - bi, \end{aligned}$$

$$\begin{aligned} G^d & = \bar{G}, \\ T & = \bar{T}, \\ M^d & = P \times Y \times L(i), \\ L(i) & = \bar{L} - c_2i, \\ M^s & = \bar{M}, \end{aligned}$$

where $c_0, c_1, b, c_2 > 0$ and $c_1 < 1$. Also, F is a decreasing function of u , and z captures other influences on the bargaining power of workers. A superscript d means ‘desired’. No superscript on a variable means actual.

The IS-LM model is the version of this model where we ignore the price and wage setting equations, and P is assumed to be determined exogenously. The Keynesian Cross model also ignores the money market and assumes i is determined exogenously.

1. Suppose there is an improvement in a country’s unemployment insurance system.
 - (a) explain the impact this has on the natural rate of unemployment (i.e., where the unemployment rate ends up in the medium run). Also, explain the impact, in the medium run, on the real wage received by workers (the real wage is the number of goods that the dollar wage can buy, i.e., W/P .) Explain carefully, using graphs.
 - (b) suppose that the improvement in the country’s unemployment insurance system is coupled with vigorous anti-trust legislation, which reduces the monopoly power of corporations. Explain carefully, the impact of this on your answer to part a of this question.
2. Suppose there is a rise in the non-wage costs of production (say, there is an oil shock).
 - (a) What are the short and medium-run impact of this on consumption, investment, output, unemployment (natural and actual), interest rates and the price level (both actual and expected). Explain carefully, how the economy moves over time. If a given variable moves, explain what force is acting on it to do so.

- (b) Suppose the monetary authority wants to move the economy to the new natural rate of unemployment in the short run. Should it adopt an expansionary or a contractionary monetary policy? Explain carefully, using graphs.
3. Explain carefully how flexibility in prices and the interest rate help cushion the economy's response to shocks in aggregate demand (i.e., c_0 , \bar{I} , \bar{G}).
 4. Suppose people come to believe that prices will rise soon (i.e., P^e goes up). Explain how this might put pressure on the Fed to increase the money supply and, in effect, validate those expectations.