ECON1002 Intro. Macro.

Week 4 Tutorial

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1. Early Feedback Task

- If there is a clash, apply for Special Consideration

2. Practice Problems

- Question 3 from Tutorial 2
- Question 1 - 3 from Tutorial 3 (1&2)

3. For each of the following scenarios, use supply demand analysis to predict the resulting changes in the real interest rate, national savings and investment.

a. Parliament passes a 10 percent investment tax credit. Under this program, for every $100 that a firm spends on new capital equipment, it receives an extra $10 in tax refunds from the government.

This encourages investment, so investment goes up, driving up the real interest rate and saving

b. A reduction in military spending moves the government's budget from deficit into surplus.

Government moves from deficit to surplus means that public and national savings goes up, which drives down the real interest rate but more investment.

c. The government raises taxes on corporate profits. Other tax changes are also made, such that the government's deficit remains unchanged.

National savings remains unchanged, but investments decreases. So real interest rate decreases.

d. Concerns about job security raise precautionary saving.

Private savings go up, driving up national saving and drive down real interest rate, which results in an increase in investments.

1. Production data for Bob's Bicycle Factory are as follows:Calculate the change in the 'cost-of-eating' index between 2000 and 2001.

Number of Workers	Bike Assembles per day
1	10
2	18
3	24
4	28
5	30

Other than wages, Bob has costs of $100 (for parts and so on) for each bike assembled.

A. Bikes sell for $130 each. Find the marginal product and the value of marginal product for each worker (don't forget about Bob's cost of parts)

Number of Worker	Total Production	Marginal Production	VMP/L = V x MP/L = W
1	10	10	300
2	18	18 -10 = 8	240
3	24	24 -18 = 6	180
4	28	28 - 24 = 4	120
5	30	30 - 28 = 2	60

$V = P - C = 130 - 100 = \$30$

B. Make a table showing Bob's demand curve for labour

C. Repeat part (b) for the case in which bikes sell for $140 each.

Number of Worker	Total Production	Marginal Production	VMP/L = V x MP/L = W
1	10	10	400
2	18	18 -10 = 8	320
3	24	24 -18 = 6	240
4	28	28 - 24 = 4	160
5	30	30 - 28 = 2	80

$V = P - C = 140 - 100 = \$40$

D. Repeat part (b) for the case in which worker productivity increases by 50 percent. Bikes sell for $130 each.

Number of Worker	MP' = 1.5 x MP	VMP/L = $30 x MP/L = W
1	15	450
2	12	360
3	9	270
4	6	180
5	3	90

2. An economy with no foreign trade produces sweaters and dresses. There are 14 workers in the sweater industry and 26 workers in the dress industry. The marginal product of workers in the sweater industry, measured in sweaters produced per day, is 20 – NS, where NS is the number of workers employed in the sweater industry. The marginal product of workers in the dress industry, measured in dresses produced per day, is 30 – ND, where ND is the number of workers employed in the dress industry.

A. Initially, sweaters sell for $40 apiece and dresses are $60 apiece. Find the equilibrium wage in each Industry.

For sweater industry

$P_s = 40 \quad N_s = 14 \quad MP_s = 20 - N_s = 6$

$W_s = VMP_s = P_s \times MP_s = 40 \times 6 = \$240$

For dress industry

$P_D = 60 \quad N_D = 26 \quad MP_D = 30 - N_D = 4$

$W_D = VMP_D = P_D \times MP_D = 60 \times 4 = \$240$

B. The economy opens up to trade. Foreign demand for domestically produced sweaters is strong, raising the price of sweaters to $50 each. But foreign competition reduces demand for domestically produced dresses so that they now sell for $50 each. Assuming that workers cannot move between industries, what are wages in each industry now? Who has been hurt and who has been helped by the opening up to trade?

$W_s = VMP_s = P'_s \times MP_s = 50 \times 6 = \$340$

$W_D = VMP_D = P'_D \times MP_D = 60 \times 4 = \$200$

C. Now suppose that workers can move freely from one industry to the other, and will always move to the industry that pays the higher wage. In the long run, how many of the 40 workers in the economy will be in each industry? What wages will they receive? In the long run, are domestic workers hurt or helped by the opening up to foreign trade? Assume that sweaters and dresses continue to sell for $50.

Workers will migrate from dress to sweater.

The expression for labor is then

$$N_S + N_D = 40 \implies N_D = 40 - N_S$$

$$MP_S = 20 - N_S$$
$$MP_D = 30 - (30 - N_S) = -10 + N_S$$

Workers will migrate until

$$W_S = W_D$$
$$VMP_S = VMP_D$$
$$P_S \cdot MP_S = P_D \cdot MP_D$$
$$50(20 - N_S) = 50(-10 + N_S)$$

$$\implies 20 + 10 = N_S + N_S \implies 30 = 2N_S$$

$$N_S = 15, N_D = 40 - 15 = 25$$

Verify this with wage

$$W_S = 50(20 - 15) = 250$$
$$W_D = 50(30 - 25) = 250$$

which is the **equilibrium wage**

3. For each of the following scenarios, state whether the unemployment is frictional, structural, or cyclical. Justify your answer.

A. Ted lost his job when the steel mill closed down. He lacks the skills to work in another industry and so has been unemployed over a year.

Structural = skill mismatch + jobs unavailable in one's field

B. Alice was laid off from her job at the auto plant because the recession reduced the demand for cars. She expects to get her job back when the economy picks up.

Cyclical = due to business cycle

C. Lance is an unskilled worker who works for local moving companies during their busy seasons. The rest of the year he is unemployed.

Structural

D. Tao looked for a job for six weeks after finishing college. He turned down a couple of offers because they didn't let him use the skills he had acquired in university, but now he has a job in the area that he trained for.

Frictional = skill mismatch + jobs available in one's field

E. Karen, a software engineer, lost her job when the start-up company she was working for went bankrupt. She interviewed at five companies before accepting a new job in another firm in the same industry.

Frictional