UNIT 9

ANSWERS TO EXERCISES

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EXERCISE 9.1 EMPLOYMENT, UNEMPLOYMENT AND PARTICIPATION

1. Visit the ILO's website and use the ILOSTAT Database to calculate the employment, unemployment, and participation rates for two economies of your choice.
2. Describe the differences in these two countries' data and compare them with Spain and Norway. Choose a visual representation of the data (for example, using the graph function of your spreadsheet software) and explain your choice.
3. After studying this unit, use the model of the labour market to suggest possible reasons for the differences in unemployment rates in these countries. You may need to find out more about the two countries' labour markets.

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Answer

1. Examples chosen are Germany and Slovakia, 2014.

	Slovakia	Germany
Employment rate (%)	51.5	57.4
Unemployment rate (%)	13.2	5.0
Participation rate (%)	59.4	60.4

2. The participation rates are very similar in both countries. Employment rate is 5.9 percentage points higher in Germany, while the unemployment rate is almost three times lower in Germany than Slovakia. Norway has lower unemployment and higher participation than both countries, though Germany's labour market statistics are far closer to Norway's than Slovakia's. Slovakia on the other hand has an unemployment rate that is closer to that of Spain (16%) and it also has a very similar participation rate.

3. Having read the unit, it is clear that there are likely to be complex causes for observed differences in the unemployment rates between Germany and Slovakia. For example, the data are for a single year and in Section 9.7 we learned that the level of aggregate demand for goods and services in the economy will affect the extent of cyclical unemployment. It would be necessary to investigate whether this could be part of the explanation for the difference.

   In terms of equilibrium unemployment, the model directs attention to the role of unemployment benefits, trade unions (bargaining and voice

effects), the extent of competition in markets for goods and services, and factors determining productivity.

Discussion of labour markets in Germany refer to factors including the following. In Germany, they have built strong connections between education and employment (particularly in vocational training through apprenticeships). The effect on productivity could be represented by an upward shift of the price-setting curve.

Furthermore, Germany introduced other reforms in 2003-5 (called the Hartz reforms) to increase flexibility of the labour market—some of the changes (e.g. reduction in unemployment benefits) would have the effect of shifting the wage curve down. These factors may have contributed to lower unemployment levels relative to Slovakia but much more detailed study of the two labour markets would be necessary before firm conclusions could be drawn As an example, the data in Figure 9.22 show that Slovakia has relatively low union coverage of wage agreements whereas in Germany coverage is more than twice as high. The model of union wage setting predicts higher equilibrium unemployment. However, as we saw in Section 9.10 on the union voice effect, more collaborative relationships between unions and employers as seems to be the case in Germany can help shift the wage-setting curve down, tending to reduce equilibrium unemployment.

EXERCISE 9.2 SHIFTS IN THE WAGE-SETTING CURVE

1. Referring back to Unit 6, provide a brief explanation of the shift in the wage-setting curve for each row in the table below, using a diagram to show the best response function and the wage-setting curve. For the second and third rows, give an example from a real-world workplace.
2. Explain why a rise in the unemployment rate shifts the best response function but not the wage-setting curve.

Change	**Shifts the wage-setting curve**
Decrease in unemployment benefit	Down
A monitoring device to detect shirking	Down
A decrease in the disutility of working	Down

Answer

1. *Decrease in unemployment benefit:* In this case, the reservation wage of individuals will fall, shifting the best response curve to the left. Workers will put in a higher level of effort at every wage. Firms can therefore offer lower wages at every level of employment to secure the same level of effort as before. Thus, the wage curve shifts downwards.

   A monitoring device to detect shirking: Workers will now believe there is a higher probability that any shirking will be detected and since they worry about losing their jobs if they are caught shirking, this has the effect of increasing effort at every wage level. . The best-response curve of the workers rotates upwards, pivoted at the horizontal axis intercept, indicating that more effort is supplied at every wage. As with the previous case, firms are now able to offer lower wages at every

level of employment to secure the same effort as before, so the wage curve shifts downwards. An example of such a monitoring device is the real-time tracking using GPS of the location of truck drivers employed by a haulage company.

A decrease in the disutility of working: This is a case where workers are willing to supply more effort at every wage (perhaps because working conditions have improved such as the provision of a more attractive office environment (e.g. at Google and other tech companies)). In this case, they would be content with a lower wage than before to supply the same effort. Thus, the wage curve is now lower, because firms can offer lower wages at every level of employment in the economy.

2. A rise in the unemployment rate shifts the best response function because it reduces the reservation wage (workers face longer periods in unemployment if they lose their jobs). But this case is not diagrammatically the same as the case discussed in 1(a) above, because employment is measured on the horizontal axis of the wage curve diagram. In 1(a), we represented a lower wage per unit of effort but kept the employment level fixed. In the current case we are representing a lower wage per unit of effort but reducing the level of employment. So we are moving along the wage curve. Indeed, this exercise is how we derived the wage curve in Figure 9.5.

3. Thus, the unemployment rate is an endogenous variable in the diagram. A rise in the unemployment rate therefore means that the same level of effort as before is measured by moving leftwards and downwards in the diagram. In other words, we move along the wage curve rather than shifting it.

EXERCISE 9.3 THE PRICE-SETTING CURVE

In your own words and using a diagram like Figure 9.8, explain why prices would fall and employment would increase if the economy were at point C in Figure 9.10 (the opposite of what happens at point A).

Answer

At a point such as C in Figure 9.8, the firm is not profit-maximizing because its price is too high given demand (or competitive) conditions as shown by the demand curve. By lowering its price and producing more it would be able to move to a higher isoprofit curve at point B. In other words, its markup is too high relative to the profit-maximizing markup. Since the real wage is determined by the price level in the economy, the high prices mean that the real wage in the economy is too low relative to the profit-maximizing real wage shown by the horizontal line in Figure 9.10. We are therefore below this line. The fact that output is lower than profit maximizing levels (again shown in Figure 9.8 at point C relative to B) means that employment is lower than the Nash equilibrium level.

Thus, firms begin to lower their markup and increase production. This raises employment (we move to the right in Figure 9.10) and it starts to raise the real wage (we move upwards in Figure 9.10). Eventually we move to the equilibrium at point B in both diagrams.

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EXERCISE 9.4 IS THIS REALLY A NASH EQUILIBRIUM?

In this model, the unemployed are no different from the employed (except for their bad luck). Imagine you are an employer, and one of the unemployed comes to you and promises to work at the same effort level as your current workers but at slightly lower wage.

1. How would you reply?
2. Does your reply help explain why unemployment must exist in a Nash equilibrium?

Answer

1. This is how I would reason through the offer made by the unemployed worker: If I employ you at a wage below that of the other workers, then once given the job, your behaviour will be as shown by the best response function. Just like the other identical workers, I cannot monitor your effort perfectly. This means that unless I pay you the wage shown by the best response function, you will shirk and I will be disappointed. Thinking this through, it is not in my interest to accept your offer to work at a lower wage.

2. The answer to (1) suggests that the firm is doing the best it can, given the effort levels being supplied at the current wage. Similarly, workers are supplying the exact level of effort that is compatible with the going wage. This is a Nash equilibrium.

EXERCISE 9.5 WAGES AND AGGREGATE DEMAND

We saw that if an economy has low aggregate demand with high cyclical unemployment, then automatic adjustment back to equilibrium could occur through a process of wage and price cuts. Imagine you are a worker and you see that many workers have lost their jobs while other workers are having their wages cut.

1. How might this affect your spending and saving decisions?
2. How might this affect adjustment back to equilibrium?

Answer

1. This scenario is likely to make people cautious because of the risk of losing income or even jobs. In such a situation, one might expect more saving in case such eventualities occur. In addition, falling prices may lead to postponement of spending in the hope of better prices later. Demand curves may shift to the left across the economy as a result of lower spending.

2. This reduction in spending would reinforce the low aggregate demand and slow down or halt any adjustment back to the Nash equilibrium.

EXERCISE 9.6 IMMIGRATION OF ENTREPRENEURS

Suppose that some of the immigrants to the country decide to set up businesses, rather than become employees. Explain how you expect this to affect the wage-setting curve, the price-setting curve, and the labour market equilibrium.

Answer

In the case where immigrants were added to the labour force, we saw that the wage curve shifted downwards and the labour force increased. In this question, assume instead that all of the immigrants choose to set up businesses. The number of firms in the economy would increase and this would raise the level of competition. The markup, which depends on the level of competition, would fall. A lower profit-maximising markup would shift the price-setting curve upwards and increase the equilibrium real wage. The new equilibrium would involve a movement along the existing wage curve with a higher real wage and lower unemployment.

However, if some of the immigrants were workers, then the wage curve would also shift downwards because the threat of job loss is greater. The net effect on wages and employment would therefore depend on the relative strengths of the effect on competition (which increases employment, output, and real wages) and a larger labour supply, which pushes the wage down.