Chapter 7 Exercises

Solutions

1. The natural unemployment rate is determined by two factors: the duration and frequency of unemployment. While the duration of unemployment depends primarily on the organization and demographic make-up of the labor force, the availability of unemployment benefits, and the desire of the unemployed to look for better jobs, the frequency of unemployment depends largely on the rate at which new workers enter the work force and on the variability of the demand for labor across different employers.

    a. Increased labor force participation of teenagers would at least initially increase the natural rate of unemployment, since teenagers have a higher frequency of unemployment than older, more experienced workers. However, as more and more teenagers entered the labor force and more good and stable jobs became available to them, the natural rate of unemployment would start to decline again. With more people in the labor force, the supply of labor would be higher and wage rates would be driven down, contributing to wage stagnation.

    b. Changes in aggregate demand generally affect cyclical unemployment rather than frictional unemployment. However, if there were more frequent and more pronounced fluctuations in aggregate demand, firms most likely would offer fewer stable jobs. Thus the frequency of unemployment and the natural rate of unemployment would increase. This would not only lead to a loss in output and an increase in personal hardship, but it would also put more financial strain on the unemployment insurance program.

    c. An increase in unemployment benefits would make it less urgent for the unemployed to find new jobs. They would have the option of looking longer for jobs after being laid off and would be less likely to accept undesirable job offers. As the length of their unemployment increased, workers might begin to look less desirable to potential employers who might believe that they lacked either the motivation or qualifications to work hard for them. Therefore the natural rate of unemployment would increase.

    d. Employers who perceive the minimum wage rate to be above the value of the marginal product of low skilled workers will not hire such workers. The elimination of the minimum wage rate might induce some firms to hire more low-skilled workers, thus decreasing the natural rate of unemployment. However, the wage rate that these low skilled workers were offered might be well below the amount that would ensure an adequate standard of living.

    e. If fluctuation in the composition of aggregate demand increased, workers would have to be shifted from industry to industry more often and this would increase the natural rate of

unemployment. Since skills are not always transferable, resources would have to be devoted to retraining programs.

2.

a. Employers would benefit from a lower minimum wage rate, since they would be able to expand production by hiring labor at a lower cost. Since the nominal minimum wage rate might no longer be above the value of the marginal product of low skilled or inexperienced workers, these workers would be more desirable to employers. Therefore low skilled job seekers would benefit, in particular teenagers and students, who often join the work force in the summer months. They would get jobs more easily and gain valuable work experience that they otherwise might not get. Since more people would be hired and more output would be produced at a lower price, the whole economy would benefit from a lower inflation rate and a lower unemployment rate. However, the overall effect would likely be fairly small.

b. Those workers who had been working at jobs paying the existing minimum wage rate would lose from a decrease in the minimum wage. With a lower minimum wage rate implemented only during the summer months, employers might lay off current workers and replace them with new entrants at a lower cost. Thus the number of displaced workers might increase.

c. Obviously, those who would gain from such a policy measure would support it, that is, teenagers and low skilled workers, but also some firms, particularly those who experience a seasonal increase in the product or service they provide.

3.

a. The aggregate unemployment rate can be calculated by adding the unemployment rates of different groups weighted by their share of the labor force. The data in the problem indicate that teenagers constitute 10% of the labor force. The adult work force (the other 90%) is divided into 35% females and 65% males. Thus we can calculate the overall unemployment rate as:

$u = (0.1)(0.19) + (0.9)[(0.35)(0.06) + (0.65)(0.07)] = 0.019 + (0.9)(0.021 + 0.0455)$

$= 0.019 + 0.05985 = 0.07885 = \textbf{7.9\%.}$

b. If the labor force participation rate of teenagers increases to 15%, the overall unemployment rate changes to:

$u_1 = (0.15)(0.19) + (0.85)[(0.35)(0.06) + (0.65)(0.07)] = 0.0285 + (0.85)(0.021 + 0.0455)$

$= 0.0285 + 0.056525 = 0.085025 =$ **8.5%.**