

METU

Department of Economics

ECON 102 (1-2): Introduction to Economics II

2024-2025 Spring Semester

PROBLEM SET 7

Q.1

An economy experiences a rise in the unemployment rate from 4% to 6%. According to Okun's Law, every 1 percentage point increase in unemployment leads to a 2% decrease in real GDP compared to potential GDP.

The government introduces a fiscal stimulus package worth \$100 billion to offset the loss in output. If the potential GDP of the economy is \$5 trillion, and the government expenditure multiplier is 1.5,

- a)** Estimate the total output loss due to the rise in unemployment.
- b)** Calculate the expected increase in GDP from the stimulus.
- c)** Will the stimulus fully offset the output loss? Justify your answer with calculations.

Q.2

Define the crowding-out effect. What factors can influence the size of the crowding-out effect? Demonstrate the effect of following on output and the price level in the AD/AS model:

- Complete crowding-out
- Incomplete crowding-out
- Zero or no crowding-out

Q.3

Assume a simple closed economy, with an mpc equal to 0.75. Assume that marginal tax rate is equal to zero. In other words, the tax function only consists of autonomous taxes. The government has passed a balanced budget amendment. The economy goes into a recession, so the government increases government spending by 40 million to try to expand the economy.

- a) Calculate the change in output (ΔY) from the increase in government spending (ΔG).

- b) The balanced budget amendment requires the government to also raise taxes by 40 million. Calculate the change in output (ΔY) from the tax hike.

- c) What is the net effect on output from these two policies? Was there any expansionary effect?

- d) Why is a balanced budget amendment problematic or undesirable?

Q.4

a.) In each of the following cases, classify the person as cyclically, structurally or frictionally unemployed.

- i) Roberto lost his job as an assembly line worker due to the recession.
- ii) Daron lost his job as a welder due to the introduction of robotic welding machines.
- iii) Joan quit her job to find a job better suited to her skills.
- iv) Carmen lost his job as a copywriter in a television channel since web-based advertising has drawn copywriters away from television advertising.
- v) Flor is an interior architect. She is laid off during a recession until the demand for decoration picks up.
- vi) Aaron lost his job in the automotive industry as production in the region shifted to Asian countries.
- vii) Paul quit his job to move to a different city for family reasons.

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b.) Why is the distinction between cyclical and structural unemployment critically important for designing effective fiscal policy?

Q.5

For 2018, the following data for tiny island nation of *Carousel* is given : *money supply* = 600 million; *price level* = 2.5; *velocity of money* = 4. Use the quantity theory of money to answer the following questions

- a. What is the value of real output (income) in 2018?
- b. What is the value of nominal output (income) in 2018?
- c. If real output doubled, by how much would the money supply need to change?
- d. What happens if the money supply increases more rapidly than real output?
- e. If the annual GDP (nominal) growth rate is 8 percent in *Carousel*, by how much will the money supply need to change in 2019?

Q.6

a. According to the quantity theory of money, if the money supply is growing at a rate of 6 percent per year, real GDP is growing at a rate of 3 percent per year, and velocity is constant, what will the inflation rate be? If velocity is increasing 1 percent per year instead of remaining constant, what will the inflation rate be?

b. Suppose that during one period, the velocity of money is constant and during another period, it undergoes fluctuations. During which period will the quantity theory of money be more useful in explaining changes in inflation rate? Briefly explain.

Q.7

In explaining why monetary policy did not pull Japan out of a recession in the early 2000s, an official at the Bank of Japan was quoted as saying that despite “major increases in the money supply,” the money “stay[ed] in banks.” Explain what the official meant by saying that the money stayed in banks. Why would that be a problem? Where does the money go if an expansionary monetary policy is successful?

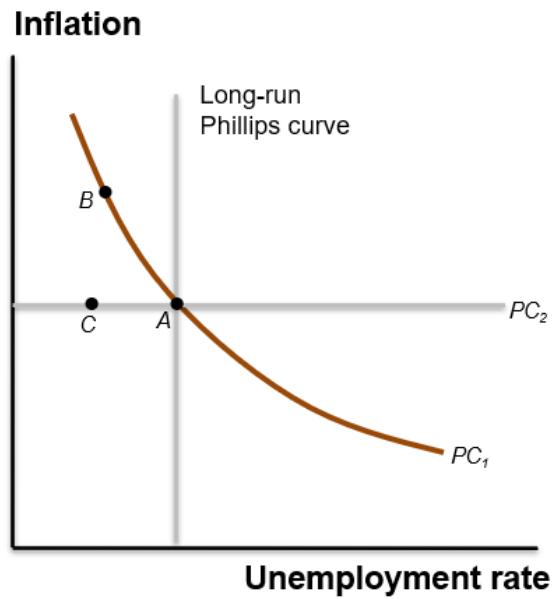
Q.8

Assume that expectations are adaptive. How will the economy adjust to a new long-run equilibrium in response to the following policies? Support your answer with a graph of the Phillips Curve.

i) Expansionary monetary policy

ii) Contractionary monetary policy

Q.9



- a) What does the difference in slope between PC_1 and PC_2 imply about the relationship between unemployment and inflation over time?
- b) Discuss how globalization might contribute to the flattening of the Phillips Curve (or vice versa), referring to both product and labor markets.
- c) If the domestic unemployment rate falls below the natural rate while global goods prices remain low, what might happen to domestic inflation? Justify your answer.
- d) What implications does a flatter Phillips Curve have for fiscal or monetary policymakers aiming to reduce unemployment?

MULTIPLE CHOICE QUESTION

Q1) Which of the following is an objective of fiscal policy?

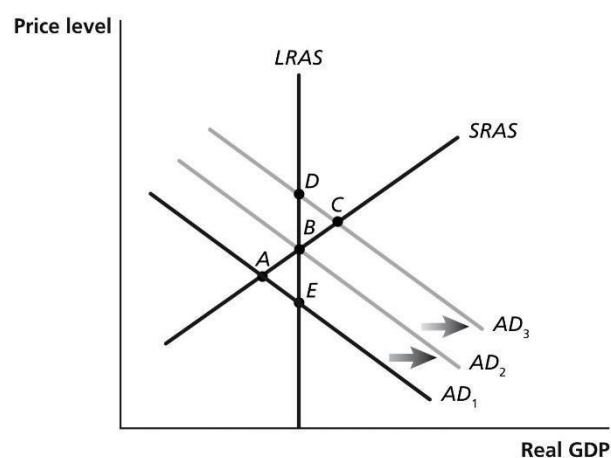
- A) energy independence from Middle East oil
- B) health care coverage for all Turkish people
- C) discovering a cure for Coronavirus
- D) high rates of economic growth

Q2) Automatic stabilizers refer to

- A) the money supply and interest rates that automatically increase or decrease along with the business cycle.
- B) government spending and taxes that automatically increase or decrease along with the business cycle.
- C) changes in the money supply and interest rates that are intended to achieve macroeconomic policy objectives.
- D) changes in federal taxes and purchases that are intended to achieve macroeconomic policy objectives.

Q3) Which of the following would not be considered an automatic stabilizer?

- A) legislation increasing funding for job retraining passed during a recession
- B) decreasing unemployment insurance payments due to decreased jobless during an expansion
- C) rising income tax collections due to rising incomes during an expansion
- D) declining welfare payments due to more persons finding jobs during an expansion



Q4) Refer to the figure above. Suppose the economy is in short-run equilibrium above potential GDP and automatic stabilizers move the economy back to long-run equilibrium. Using the static AD-AS model in the figure above, this would be depicted as a movement from

- A) D to C.
- B) A to E.
- C) C to B.
- D) B to A.
- E) E to A.

Q5) Crowding out refers to a decline in _____ as a result of an increase in _____.

- A) tax revenues; unemployment
- B) government purchases; tax rates
- C) government purchases; private expenditures
- D) private expenditures; government purchases

Q6) An increase in the sensitivity of private investment to changes in the interest rate _____ the government purchases multiplier.

- A) will decrease
- B) will increase
- C) will not change
- D) may increase or may decrease

Q7) If policy makers implement an expansionary fiscal policy but do not take into account the potential for crowding out, the new equilibrium level of GDP is likely to

- A) be at potential GDP.
- B) be above potential GDP.
- C) be below potential GDP.
- D) There is insufficient information given here to draw a conclusion.

Q8) Cyclical unemployment is the result of

- A) a persistent mismatch between the skills and characteristics of workers and the requirements of the jobs.
- B) the search process of matching workers with jobs.
- C) the ups and downs in inflation.
- D) a slowdown in the economy.

Q9) Structural unemployment is the result of

- A) a persistent mismatch between the skills and characteristics of workers and the requirements of the jobs.
- B) the search process of matching workers with jobs.
- C) the ups and downs in inflation.
- D) a slowdown in the economy.

Q10) Frictional unemployment is the result of

- A) a persistent mismatch between the skills and characteristics of workers and the requirements of the jobs.
- B) the search process of matching workers with jobs.
- C) the ups and downs in inflation.
- D) a slowdown in the economy.

Q11) Which of the following policies would reduce structural unemployment?

- A) an increase in the minimum wage
- B) a job retraining program
- C) implementing an unemployment insurance policy
- D) building an online job database that helps workers find jobs

Q12) If the negative GDP gap were equal to 4% of the potential GDP, Okun's law suggests that the actual unemployment rate would exceed the natural rate of unemployment by:

- A) One percentage point
- B) Two percentage points
- C) Three percentage points
- D) Four percentage points

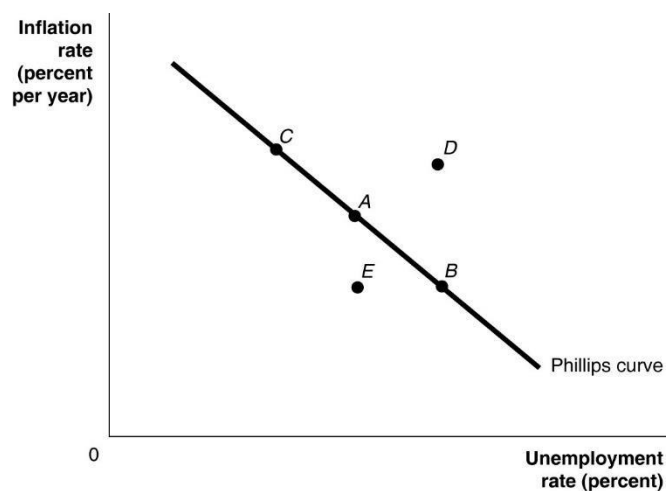
Q13) If the natural rate of unemployment was 6 percent, the current unemployment rate was 10 percent, and the potential GDP was \$4,000 billion, then according to Okun's law the economy would have sacrificed:

- A) \$160 billion in output not produced
- B) \$240 billion in output not produced
- C) \$320 billion in output not produced
- D) \$480 billion in output not produced

Q14) The curve showing the short-run relationship between the unemployment rate and the inflation rate is called

- A) the monetary policy curve.
- B) the Phillips curve.
- C) the Sargent curve.
- D) the unemployment curve.

Please answer the next four questions referring to the figure below.



Q15) What should the Central Bank do if it wants to move from point A to point B?

- A) buy treasury bills
- B) sell treasury bills
- C) lower the discount rate
- D) increase the money supply

Q16) Suppose that the economy is currently at point A. If the Central Bank engaged in contractionary monetary policy, where would the economy end up in the short run?

A) It would remain at point A.

B) point B

C) point C

D) point E

Q17) Suppose that the economy is currently at point A, and the unemployment rate at A is the natural rate. What policy would the Central Bank pursue if it wanted the economy to move to point B in the long run?

A) Buy treasury bills.

B) Sell treasury bills.

C) Raise the discount rate.

D) No policy will move the economy to point B in the long run.

Q18) Suppose that the economy is currently at point A. If the Central Bank engaged in expansionary monetary policy, where would the economy end up in the short run?

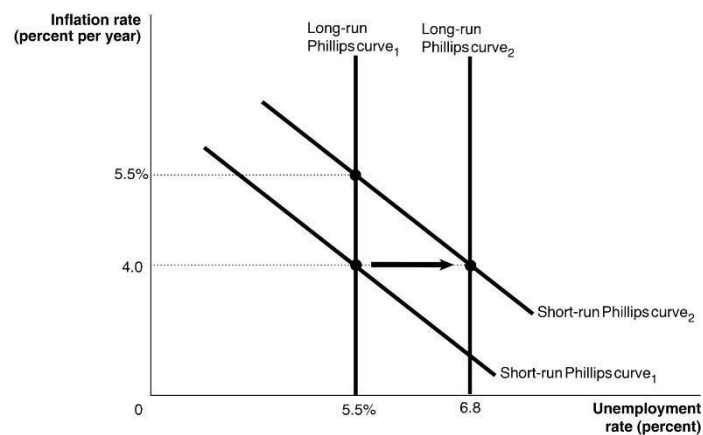
A) It would remain at point A.

B) point B

C) point C

D) point D

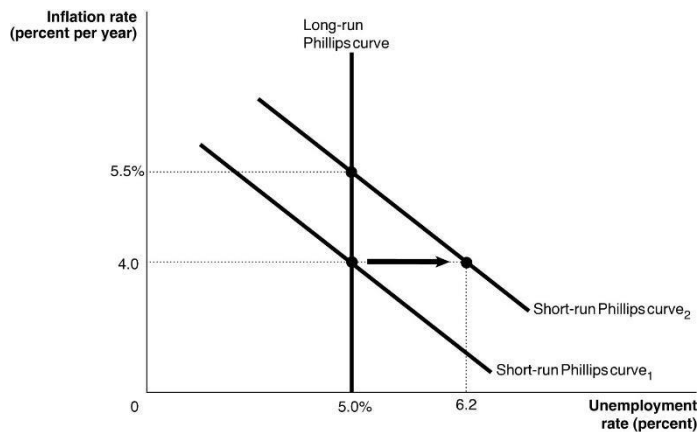
Q19)



Refer to the figure above. The shifts shown in the short-run and long-run Phillips curves between period 1 and period 2 could be explained by

- A) an increase in the expected inflation rate from 4.0 to 5.5 percent.
- B) an increase in the natural rate of unemployment from 5.5 to 6.8 percent.
- C) either an increase in expected inflation from 4.0 to 5.5 percent or an increase in the natural rate of unemployment from 5.5 to 6.8 percent.
- D) None of the above is correct.

Q20)



Refer to the figure above. Consider the shift in the short-run Phillips curves shown in the above graph. This shift may be explained by

- A) an increase in the natural rate of unemployment from 5.0 to 6.2 percent.
- B) an increase in the expected rate of inflation from 4.0 to 5.5 percent.
- C) either an increase in the natural rate of unemployment from 5.0 to 6.2 percent or an increase in the expected rate of inflation from 4.0 to 5.5 percent.
- D) None of the above is correct.

Q21) Employees at the university have negotiated a 5 percent increase in wages for the next year, based on their inflation expectations. If inflation is actually 6 percent over the next year, which of the following will occur?

- A) Unemployment of university employees will rise.
- B) Real wages for university employees will fall.
- C) Inflation will be 5 percent the following year.
- D) The increase in inflation is expected.

Q22) Matthew's real wage in 2014 is \$26.80. If the price level is 104, what is Matt's nominal wage?

- A) \$30.80
- B) \$27.87
- C) \$26.80
- D) \$25.77

Q23) The price level in the economy between 2024 and 2025 rose from 100 to 105. Between 2024 and 2025, the price level rose from 105 to 110.25. How does the short run Phillips curve predict the unemployment rate will change as a result?

- A) The unemployment rate will decrease since inflation decreased.
- B) The unemployment rate will decrease since inflation increased.
- C) The unemployment rate will increase since inflation increased.
- D) The unemployment rate would not change since there is no change in the rate of inflation.

Q24) If people assume that future rates of inflation will follow the pattern of inflation rates in the past, they are said to have

- A) rational expectations.
- B) adaptive expectations.
- C) unstable expectations.
- D) accommodative expectations.

Q25) Which of the following is not a consequence of hyperinflation?

- A) Money's function as a medium of exchange is enhanced.
- B) Money loses value so rapidly that firms and individuals stop holding it.
- C) It causes an economy to suffer slow growth.
- D) The price level grows in excess of hundreds of percentage points per year.

Q26) The quantity theory of money seeks to explain the connection between money and

- A) interest rates.
- B) unemployment.
- C) output.
- D) prices.

Q27) The quantity theory of money implies that the price level will be stable (no inflation or deflation) when the growth rate of the money supply equals

- A) 0.
- B) the growth rate of the price level.
- C) the growth rate of the velocity of money.
- D) the growth rate of real GDP.

Q28) According to the quantity theory of money, deflation will occur if the

- A) money supply is less than real GDP.
- B) money supply is more than real GDP.
- C) money supply grows at a slower rate than real GDP.
- D) money supply grows at a faster rate than real GDP.