Elements of Macroeconomics TA Session 9: Assignment 8

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Slides on https://github.com/Haruki-Shibuya/TA

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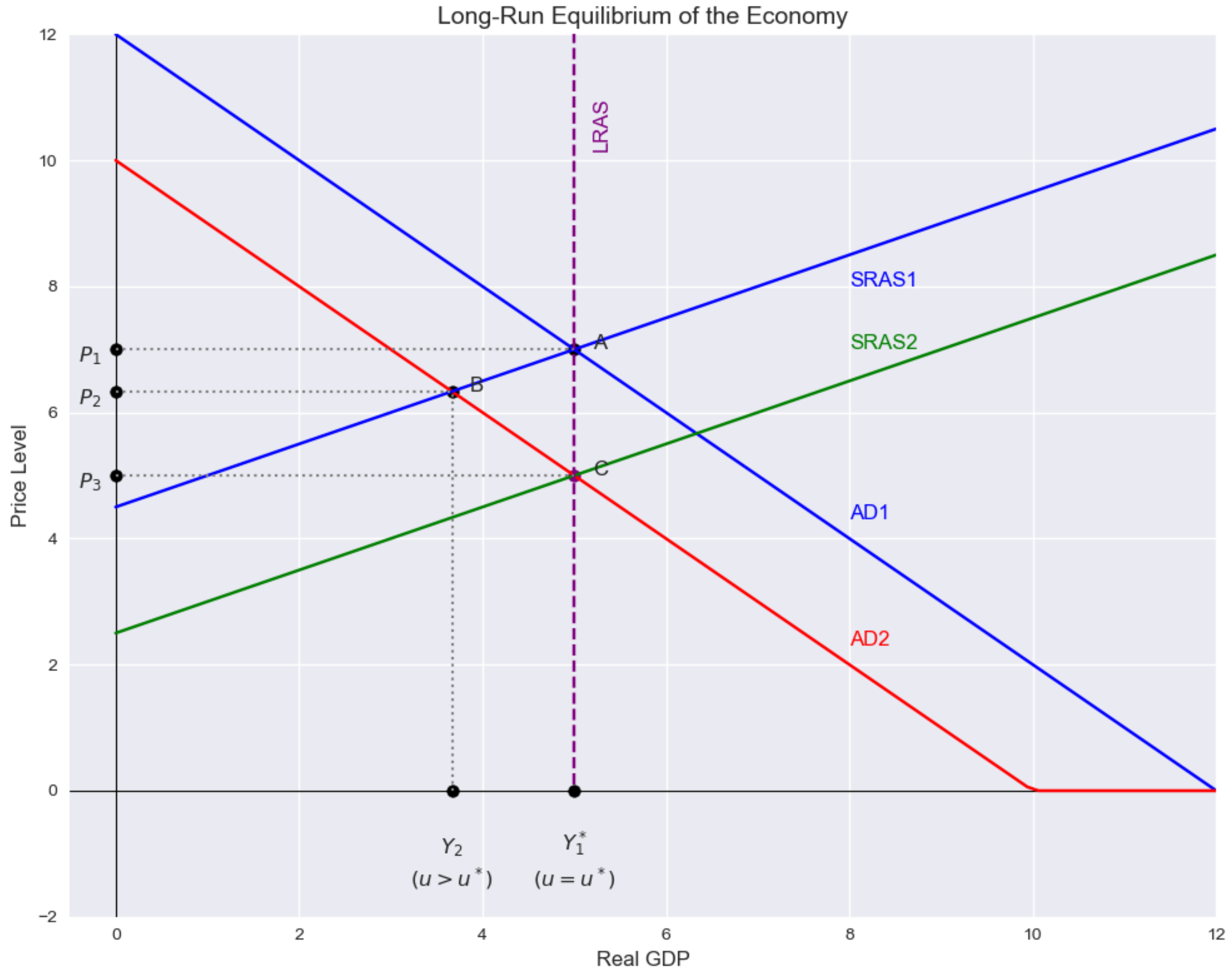
Q1

- Suppose the economy is in a long-run equilibrium.
- a. Draw a diagram to illustrate the state of the economy. Be sure to showaggregate demand, short-run aggregate supply, and long-run aggregate supply.

Q1(a)

- Draw LRAS , SRAS, AD1



Q1(a)

- Recap: why is the quantities produced affected by the price level in the short run (SRAS) but not in the long run (LRAS)?

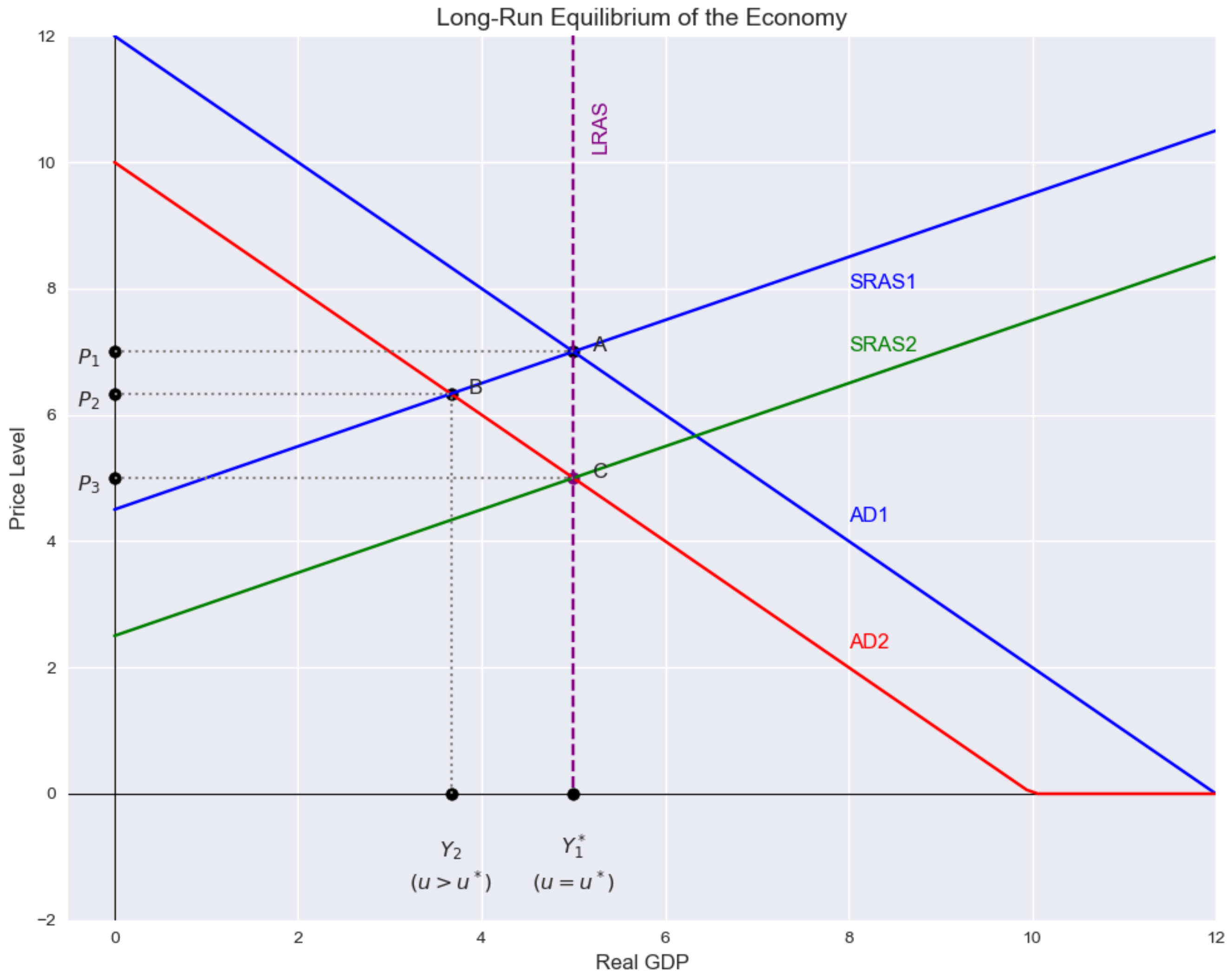
- In the short run, even if the price level changes, input prices (like wages) are slow to adjust
- Hence, more profits by increasing production
- In the long run, if the price level changes, input prices adjust flexibly
- Hence, the price level does not impact production level

Q1(b)

- b. Now suppose that a stock market crash causes aggregate demand to fall. Use your diagram to show what happens to output and the price level in the short run. What happens to the unemployment rate?

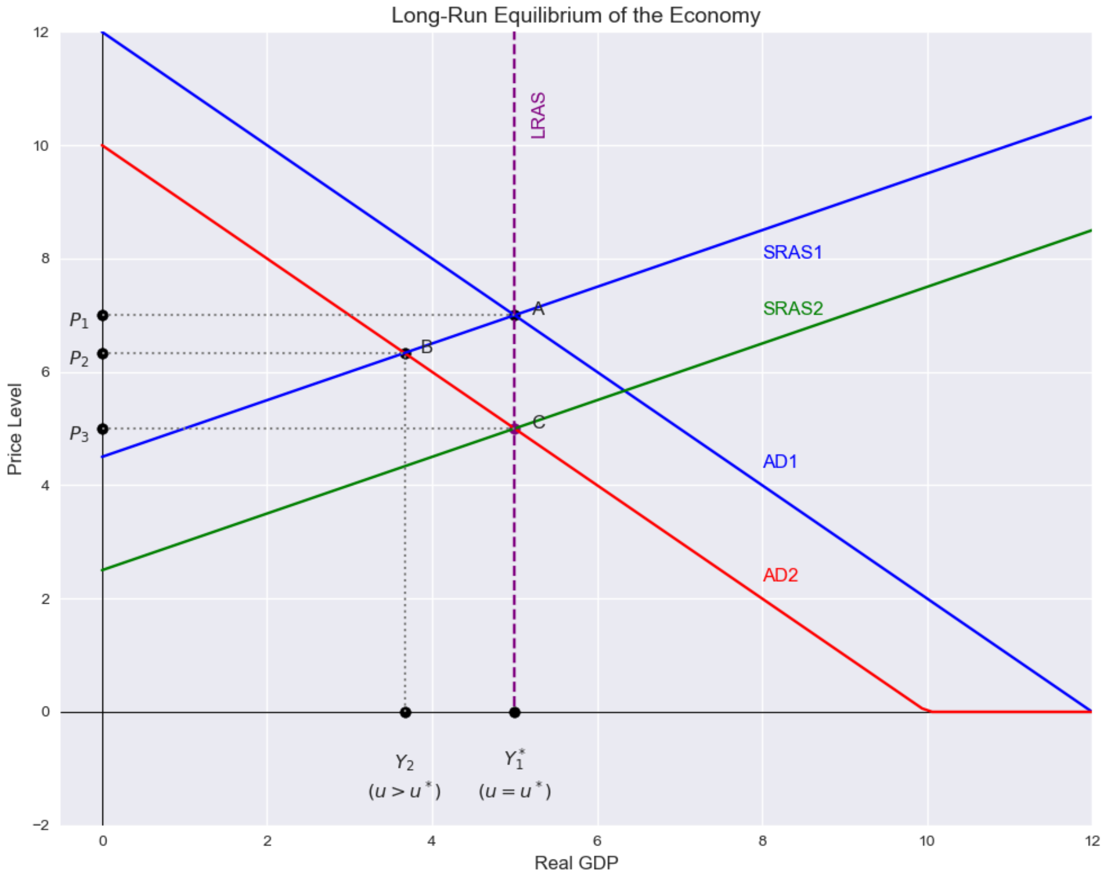
Q1(b)

- Draw SRAS1, AD1, AD2



Q1(b)

- When a stock market crash causes aggregate demand to fall:
- We have AD2 instead of AD1
- \- Price level decreases from P_1 to P_2
- \- Output decreases from Y_1* to Y_2
- \- Unemployment rate increases, rising above the natural rate (u > u*)

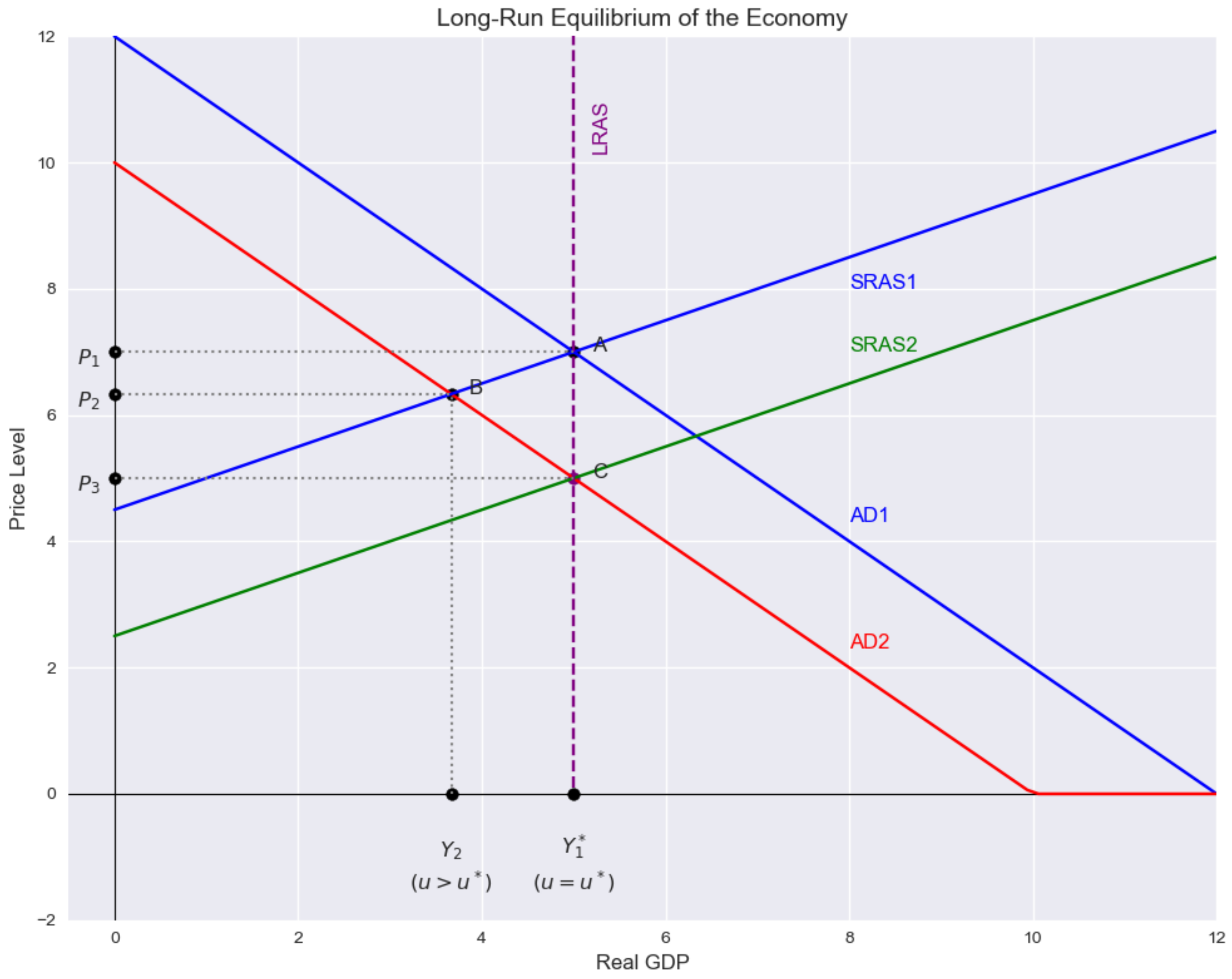


Q1(c)

- c. Use the sticky-wage theory of aggregate supply to explain what will happen to output and the price level in the long run (assuming no change in policy). What role does the expected price level play in this adjustment? Be sure to illustrate your analysis in a graph.

- Output decreases in the short run because of sticky wages, even though the price-level falls and real wages rise, employers are not able to reduce nominal wages. So, they employ less workers, and produce less, leading to a rise in unemployment.
- In the long run, the unemployed accept lower nominal wages to be re-employed. This decreases the cost of production and the short-run aggregate supply increases until a new long-run equilibrium is restored at a lower price level at P3.
- At the short equilibrium at B, the price level falls below expected. In the long run, expectations are adjusted downward hence lower nominal wages lead to a shift in the short-run AS. (SRAS1→SRAS2)

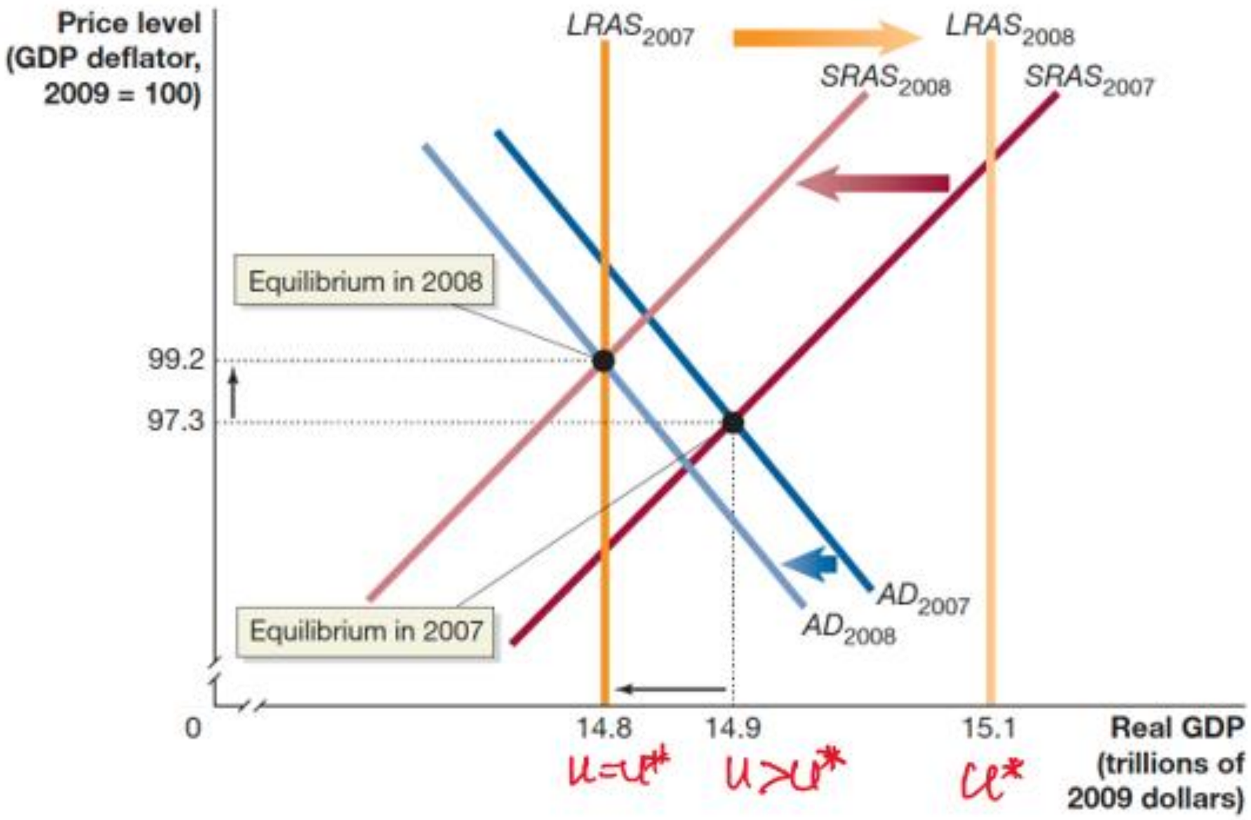
Q1(c)



Long-Run Equilibrium of the Economy
Price Level
Real GDP
LRAS
SRAS1
SRAS2
AD1
AD2
A
B
C
P_1
P_2
P_3
Y_2
$(u > u^*)$
Y_1^*
$(u = u^*)$
12
10
8
6
4
2
0
−2
0
2
4
6
8
10
12

Q2

Question Two



Q2 (a)

- Between 2007 and 2008, the AD curve shifted to the left because of C↓ and I↓, while potential Y increased from \$14.8 tn to \$15.1 tn.
- Because of a sharp increase in oil prices, SRAS shifted to the left.

Q2 (a)

- Real Y decreased from $14.9 tn in 2007 to $14.8 tn in 2008, which was far below potential Y, shown by LRAS2008.
- Because of the decrease in AD, the price level increased only from 97.3 in 2007 to 99.2 in 2008, so the inflation rate for 2008 was only 2.0 percent.

Q2 (a)

- a) Is the unemployment rate in 2008 higher or lower than in 2007? Explain

- $Y_{2007}=Y_{2007}^*$, $Y_{2008}<Y_{2008}^*$
- Implying $u_{2007}=u^*$, $u_{2008}>u^*$
- Hence $u_{2007}<u_{2008}$

Q2(b)

b) What is the inflation rate in 2008?

$$\frac{P_{2008} - P_{2007}}{P_{2007}} \times 100\% = \frac{99.2 - 97.3}{97.3} \times 100\% = 1.95\%$$

Q2(c)

c) What is the growth rate of real GDP in 2008? Explain

$$\frac{14.8-14.9}{14.9}\times 100\% = \frac{-0.1}{14.9}\times 100\% = -0.67\%$$

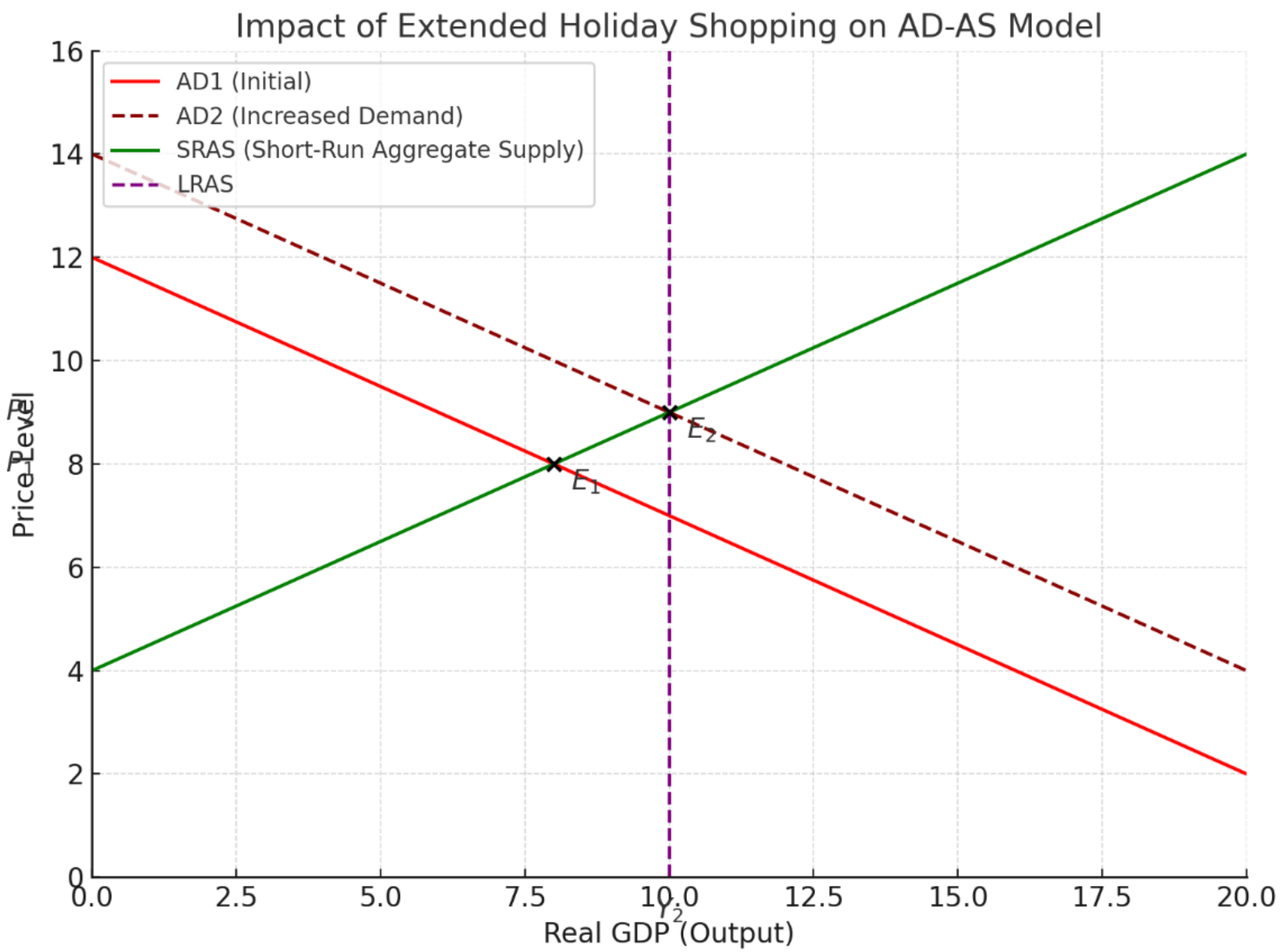
Real GDP shrunk by 0.67%.

Q3(a)

- In 1939, with the U.S. economy not yet fully recovered from the Great Depression, President Roosevelt proclaimed that Thanksgiving would fall a week earlier than usual so that the shopping period before Christmas would be longer. Explain what President Roosevelt might have been trying to achieve, using the model of aggregate demand and aggregate supply.

- The president was expecting AD to increase with the expected holiday shopping period.

Q3(a)


Impact of Extended Holiday Shopping on AD-AS Model
AD1 (Initial)
AD2 (Increased Demand)
SRAS (Short-Run Aggregate Supply)
LRAS
E_1
E_2
Price Level
Real GDP (Output)
0
2
4
6
8
10
12
14
16
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0

Q3(b)

- b) State and explain why each of the following statements is true or false.
- i. “The long-run aggregate-supply curve is vertical because economic forces do not affect long-run aggregate supply.”

- **False.**
  Price fluctuations do not affect real GDP in the long run, but other economic forces do, such as changes in the labor market.

Q3(b)

- b) State and explain why each of the following statements is true or false.
- ii. "Whenever the economy enters a recession, its long-run aggregate-supply curve shifts to the left."

- **False.**
  Even though negative supply shocks characterize a number of recessions in history, recessions do not necessarily lead to a shift in the long-run aggregate supply curve.
  It may lead to a leftward shift in the LRAS curve if the recession persists, leading to a decline in labor force participation rate.