

**Econ 102**  
**Short Run Fluctuation: AS/AD**

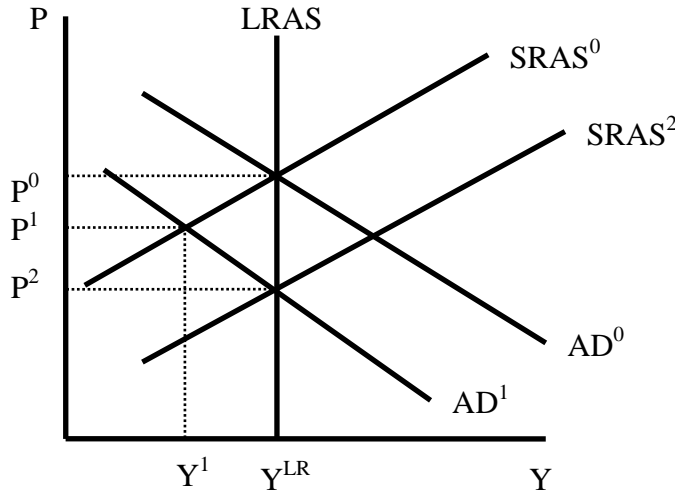
1. Be sure to read your copy of the Wall Street Journal every weekday, looking especially for items related to the material in this course. Find an article in this week's Wall Street Journal or other news source that is relevant to the topic of this homework assignment. Turn it in, or a copy of it, with your assignment, and write a brief summary of it (half a page to a page). Your summary should outline the main points of the article **and** explain why it is relevant to the homework topic, in this case "short run fluctuations."
  
2. Consider an economy that is initially in long run equilibrium. For each of the changes listed below,
  - i. Illustrate the short run change using a short run aggregate supply / aggregate demand (AS/AD) diagram.
  - ii. Note the short-run change in aggregate price level, real income, and unemployment.
  - iii. Illustrate the return to long run equilibrium (assuming that real potential output remains unchanged), and note the final long run impact on the price level.
  
- a. An increase in the private desire to save, given any real interest rate and price level.

*The diagrams for parts a and b are identical and shown below.*

*Explanation for a. The economy starts in long run equilibrium at the intersection of LRAS, SRAS<sup>0</sup> and AD<sup>0</sup>. If consumers are saving more, then they are consuming less. Thus, this causes a leftward shift in AD to AD<sup>1</sup>, and results in a decrease in output and prices and an increase in unemployment. In the long run producers and employees adjust their expectations of prices and wages and aggregate supply adjusts to SRAS<sup>2</sup> to return to long run equilibrium. Note that in the new long run equilibrium the price level (P<sup>2</sup>) is lower than in the old long run equilibrium (P<sup>0</sup>).*

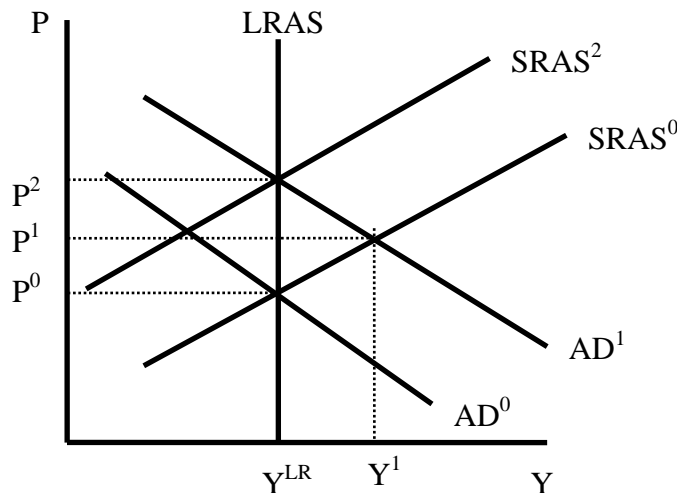
- b. A decrease in the domestic desire to invest in physical capital.

*A decrease in investment spending causes a leftward shift in AD. Answers are the same as part (a).*



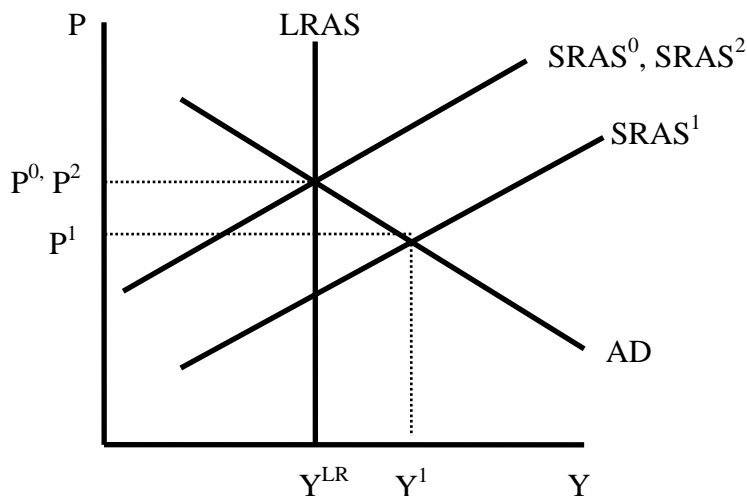
- c. An increase in government purchases of goods.

*The economy starts in long run equilibrium at the intersection of LRAS,  $SRAS^0$  and  $AD^0$ . If government purchases rise then the AD curve shifts to the right to  $AD^1$ , and results in an increase in output and prices and a decrease in unemployment. In the long run producers and employees adjust their expectations of prices and wages and aggregate supply adjusts upward to  $SRAS^2$  to return to long run equilibrium. Note that in the new long run equilibrium the price level ( $P^2$ ) is higher than in the old long run equilibrium ( $P^0$ ).*



- d. An increase in firms' expectations about the relative price of their own output compared to others'.

*The economy starts in long run equilibrium at the intersection of LRAS, SRAS<sup>0</sup> and AD. If firms believe that the price of their output has risen relative to the price of their inputs, then they will increase their supply at any price level. Thus, the SRAS curve shifts to the right (and therefore down) to SRAS<sup>1</sup>. This results in a short-run increase in output and a decrease in the price level and unemployment. In the long run producers and employees adjust their expectations of prices and wages and aggregate supply adjusts back to SRAS<sup>2</sup>, the same as SRAS<sup>0</sup>, restoring the original long run equilibrium.*



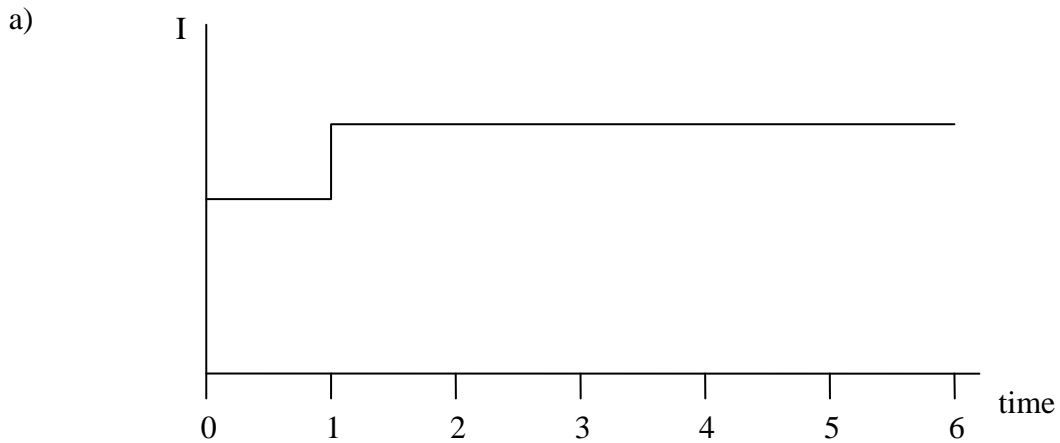
3. Briefly explain the process by which an economy returns to long run equilibrium from a recession in the absence of government involvement.

*In order to understand the mechanism by which the economy returns to long run equilibrium, you must understand why the economy is not always in long run equilibrium. First note that if everyone in the economy knows the relative price of all products and no prices are fixed in the short run, then the economy would always be in long run equilibrium. To get short run fluctuations we need to fix some price or assume that some agents in the economy do not know some relative prices. Mankiw presents three theories: in one, wages are fixed in the short run, in another some producers' prices are fixed in the short run, while in the final theory producers do not know the exact relative prices prevailing in the economy in the short run.*

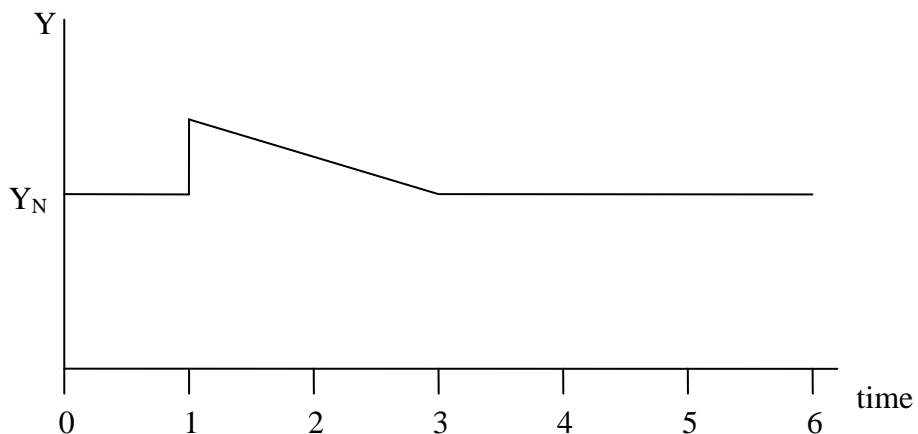
*Note that all these are stories about why the SRAS curve is upward sloping, its position fixed by various sticky wages and prices and by (possibly incorrect) perceptions about prices. Over time, misperceptions are corrected and sticky wages and prices begin to move, causing the SRAS curve to shift. To the right of the LRAS curve, output has been able to rise because actual or perceived prices and wages have not risen fully, but over time they do, and the SRAS curve shifts up. To the left of the LRAS curve, output has fallen because actual or perceived*

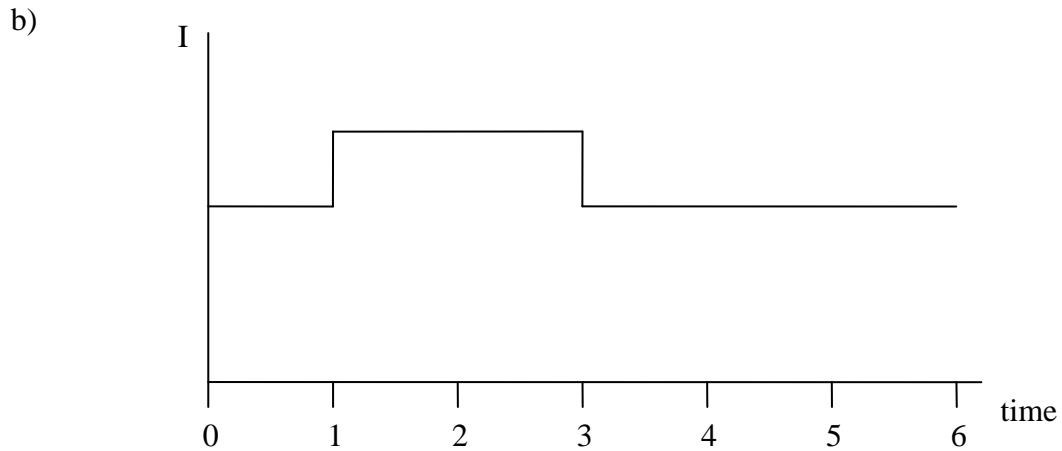
*prices and wages have failed to fall fully, but over time they do, and the SRAS curve shifts down. In both cases, these movements of the SRAS curve cause the economy to move along the AD curve back to long run equilibrium, where the AD curve and LRAS curve intersect. In returning to long run equilibrium it is the SRAS curve that shifts (always).*

4. The graphs below show several paths for how investment in an economy might vary over time. Assume that initially the economy was in a long-run equilibrium at the initial level of investment, that other components of aggregate demand remain constant over time, that the natural rate of output does *not* grow (in spite of this investment), and that it takes exactly 2 years for the economy, if otherwise undisturbed, to adjust from a short-run equilibrium (which is reached immediately) to a long-run equilibrium, which it approaches gradually. Based on those assumptions, draw the path over time of real GDP that should correspond to each of these paths for investment.

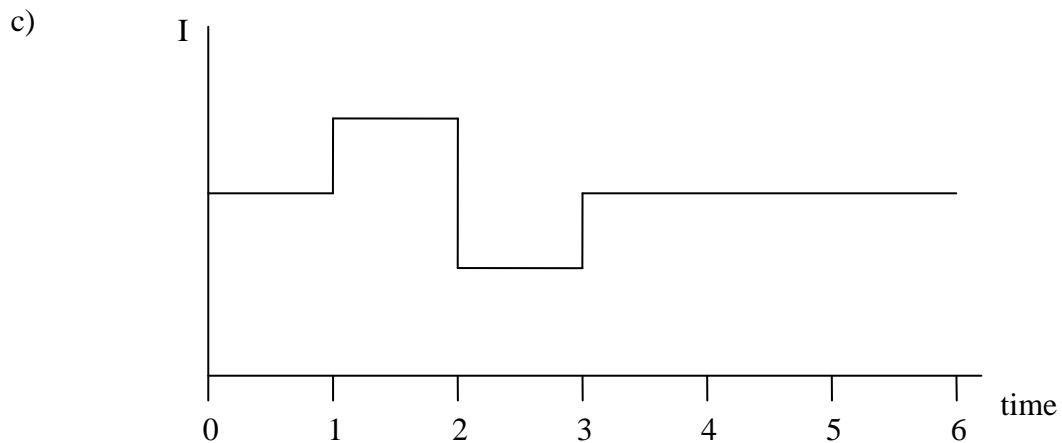
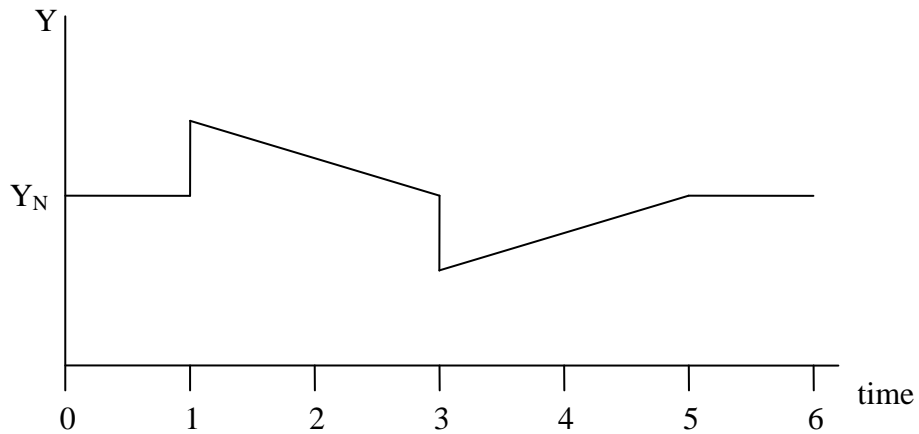


*Here, real GDP,  $Y$ , will respond exactly like it did in question 2(c) above. That is, it rises in the short run, at time 1, and returns over two years to its initial level  $Y_N$ . Thus it follows something like the following simple path:*





*Here, the path of  $I$  is the same as it was in part (a), up to time 3, by which time  $Y$  is back to  $Y_N$ .  $I$  now falls back to its initial level, acting as a new negative shock to aggregate demand, and causing the same sort of short-run contraction of  $Y$  that we saw in question 2(a). So GDP now fall below its long-run level, and then rises back up to it over the next two years.*



*Now we actually have three shocks: the increase in  $I$  at time 1, the larger decrease in  $I$  at time 2, and a final increase in  $I$  at time 3. With each of these shocks,  $Y$  moves in the short run, then begins to move back toward  $Y_N$  over time. But because a new shock happens in 1 year, before  $Y$  can return to  $Y_N$ , the new shock interferes with that adjustment:*

