Cowen & Tabarrok, chapter 13

1. Sort the following shocks into real shocks or aggregate demand shocks. Remember that “shocks” include both good and bad events.

<table>
<thead>
<tr>
<th>Shock Event</th>
<th>Aggregate Demand Shock</th>
<th>Real Shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>A fall in the price of oil</td>
<td>☺</td>
<td></td>
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<tr>
<td>A rise in consumer optimism</td>
<td>☺</td>
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<tr>
<td>A hurricane that destroys factories in Florida</td>
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<tr>
<td>Good weather that creates a bumper crop of California oranges</td>
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<tr>
<td>A rise in sales taxes</td>
<td>☺</td>
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<tr>
<td>Foreigners watch fewer U.S.-made movies</td>
<td>☺</td>
<td></td>
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<tr>
<td>Fear</td>
<td>☺</td>
<td></td>
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<tr>
<td>New inventions occur at a faster pace than usual</td>
<td>☺</td>
<td></td>
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<tr>
<td>A faster money growth rate</td>
<td>☺</td>
<td></td>
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</tbody>
</table>

2. Look at Figure 13.2. Let’s sum up some basic facts about the link between unemployment rates and recessions. Notice that the shaded bars indicate periods of recession, and wider bars mean longer recessions.

a. How many recessions have there been since World War II? 11

b. Since World War II, how many recessions had unemployment rates of over 10%? 1

c. Often, the unemployment rate seems to hit its peak after the recession ends: The economy goes back to growing while the unemployment rate rises for a while. As the figure shows, the recessions of 1990 and 2001 have been clear examples of such “jobless recoveries.”

Approximately how many times did the unemployment rate peak after the recession ended? Seven—but any number from 5 to 8 would be reasonable. “Most of the time” captures the main idea.

3. Look at Figure 13.5. When inflation rises, does the Solow growth rate rise, fall, or remain unchanged? It remains unchanged.
4. Are “real shocks” negative shocks, by definition?
No: Real shocks can be positive (inventions, falling oil prices, eliminating price controls) as well.

5. When negative real shocks hit, what typically happens to the Solow growth curve: Does it shift left, shift right, or stay in the same place? It shifts left.

6. As Figure 13.1 implies, for the United States, the Solow growth curve has on average been approximately 3% real growth per year. If a negative real shock hits, shifting it by 2 percentage points, what will happen to real growth: Will it be positive or negative? Would you call the resulting economic conditions a recession?

Real growth will $3\% - 2\% = 1\%$, which is still positive. This is actually an important point: You can have an “economic slowdown” from a bad shock while continuing to grow. Economic pundits focus on “recessions” when the level of output “recedes,” but students should also be concerned about “slowdowns” when the growth of output “recedes” below the average level.

7. Consider the figure below. In this relatively unsuccessful economy, the Solow growth rate is 1% per year:

   a. Calculate the value of X in this economy. (Hint: Use the quantity theory.)
   b. If spending growth were 15% in this economy, what would the inflation rate be in the long run, assuming the Solow growth rate stays fixed?

   ![Inflation graph]

   a. There are two ways of solving this problem. Since the SRAS and AD curves meet at X, we know that expected inflation is equal to actual inflation at that point, and since expected inflation is 6%, then actual inflation X must also be 6%. The second way to solve this problem is to remember that according to the quantity theory, \( \Delta M/M + \Delta v/V \) is equal to inflation plus real output growth, and at the point indicated on the graph, real growth = 1% and \( \Delta M/M + \Delta v/V = 7\% \). So $7\% = 1\% + \text{inflation}$, which means inflation = 6%.

   b. Inflation would rise to 14%. This is because $15\% = \text{inflation} + 1\%$.
8. a. The short-run aggregate supply (SRAS) curve is very predictable. When inflation is greater than people expect, SRAS eventually shifts \((\text{choose one: up or down?})\) over the next year or so, and when inflation is less than people expect, SRAS eventually shifts (up or down?) over the next year or so.

b. Here’s another, equally valid way to look at the SRAS curve: When real GDP growth is above the Solow growth rate, SRAS eventually shifts \((\text{choose one: right or left?})\) over the next year or so, and when real GDP growth is below the Solow growth rate, SRAS eventually shifts \((\text{choose one: right or left?})\) over the next year or so.

c. Explain why the two ways of looking at the SRAS curve are equivalent.

a. Up, down
b. Left, right
c. As a matter of logic when the SRAS curve shifts up, it also shifts to the left and vice versa. And when the SRAS shifts down, it also shifts to the right and vice versa. In terms of the economics, when inflation is greater than expected, the real growth rate is greater than the Solow rate. As prices become more flexible, the SRAS curve shifts to move us back toward equilibrium. If we think in terms of inflation, then the SRAS curve shifts up as unexpected inflation becomes expected inflation. If we think in terms of real growth, then the SRAS curve shifts to the left as real growth moves back toward the Solow rate.

Similarly, when inflation is less than expected, the real growth rate is below the Solow rate. As prices become more flexible, the SRAS curve shifts to move us back toward equilibrium. If we think in terms of inflation, then the SRAS curve shifts down as the unexpected lower rate of inflation becomes expected. If we think in terms of real growth, then the SRAS curve shifts to the right as real growth moves back toward the Solow rate.