

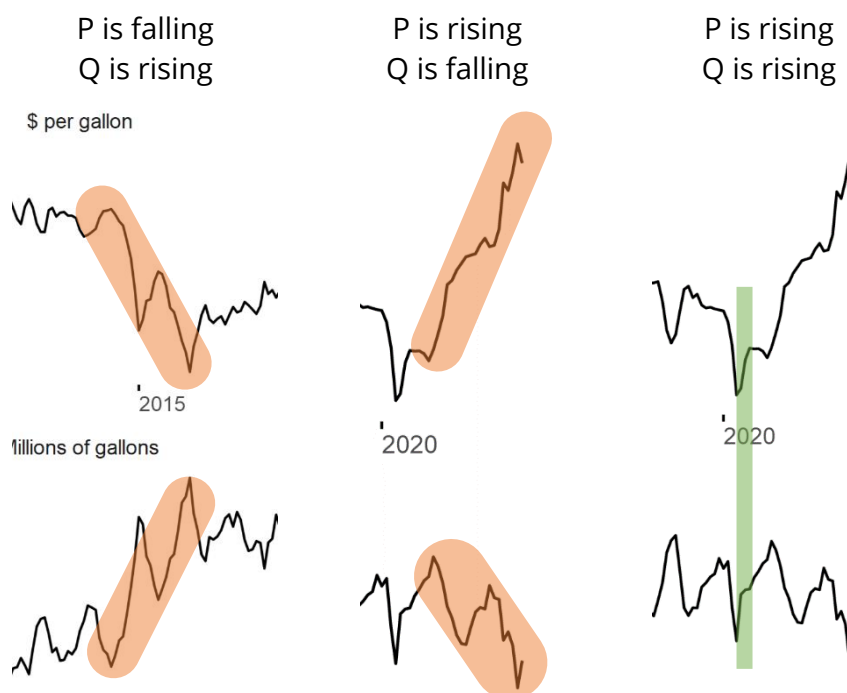
Worksheet 2022-09-27: Hints and solutions

Use these hints and solutions *after* you have tried the problems.

Question 1

Step 1

Pick some time over which just one thing happens with Q and just one thing happens with P. You can describe average trends over a long time or a very brief window of time. Write down what happens with P and Q. These facts about P and Q are what you are trying to explain. Here are some examples:



Initially, I recommend not picking a time over which one of the variables changes and the other does not because the explanations tend to be more complicated. You can try these cases after you understand the concepts. Do not pick a time over which P falls and then rises because you will need two different explanations for those two trends.

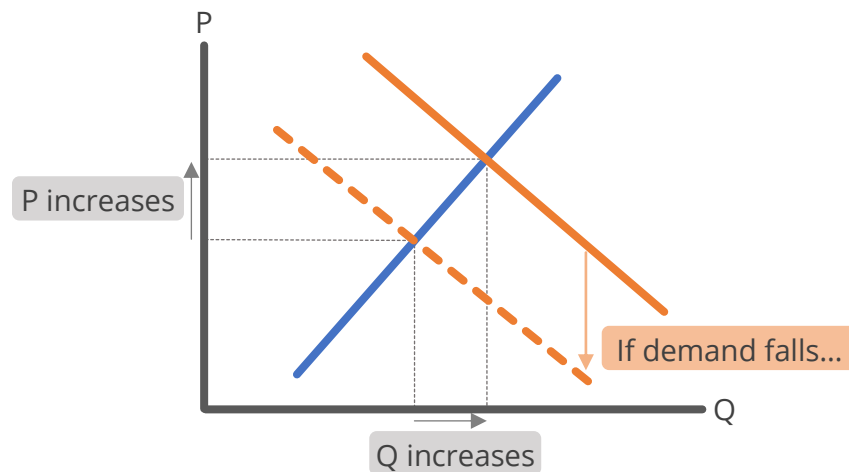
Step 2

Draw a graph of supply and demand (S&D). This does not require looking at the graph in the worksheet. Label everything in your S&D graph. Afterward, check your work by looking at the text or other sources. If anything is incorrect, you need to study that aspect of S&D.

After you have a correct S&D graph, try shifting one of the curves. Just pick one and pick a direction. Then see what happens with P & Q as a result of the shift. Do the changes in P and Q match the changes you are trying to explain? If so, you now have an explanation for the data. If not, try different shifts until you find one that can explain the data. Note that if your data include P not changing or Q not changing while the other variable changes, then you will need to combine shifts of both S & D to explain those patterns.

Example: you are trying to explain why P and Q both fell

Initial solution: You draw a graph with D falling and find that falling demand with constant supply can explain the data:



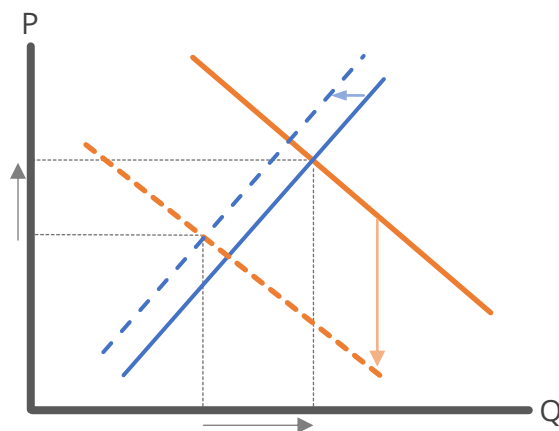
Step 3

Hooray! You have identified a shift in S or D that can explain the data. But you are not quite done. **What can we conclude about the other curve?** Let's use the same example as in step 2.

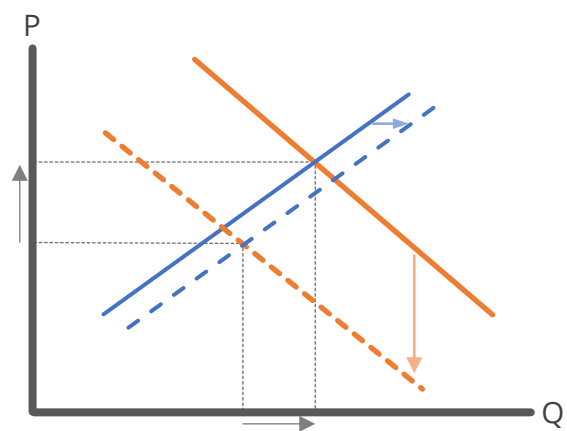
Key question: Is this the only S & D graph that could explain the data (changes in P & Q)?

Answer: Nope. Here are two more:

Demand decreases a lot and
supply decreases a little



Demand decreases a lot and
supply increases a little



In other words, the data (falling P and Q) are consistent with three possible scenarios. We know demand increased, but supply could have increased, decreased, or stayed the same. However, the effect of the demand shift is larger than the effect of any supply shift. If it were not, then P and Q would move in opposite directions.