

International Trade

Suppose we know the following about the state of the world. There are two countries, the US and the ROW (rest of the world). Currently, trade between these two countries is prohibited. Suppose the supply and demand curves (numerically) are given below. Ignore the world column for a moment. We call the no-trade situation autarky, or self-sufficiency.

	US		ROW		World	
Price	Q _S	Q _D	Q _S	Q _D	Q _S	Q _D
\$2	1	7	2	8	3	15
\$4	2	6	4	6	6	12
\$5	2.5	5.5	5	5	7.5	10.5
\$6	3	5	6	4	9	9
\$8	4	4	8	2	12	6
\$10	5	3	10	0	15	3

So, before trade is permitted, the (autarky) equilibrium price in the US is found where $Q_S = Q_D$, at $P = \$8$.

Before trade is permitted, the (autarky) world price in the ROW is found where $Q_S = Q_D$, at $P = \$5$.

Now, suppose we were to allow trade. Remember, initially, autarky prices are $P_{US} = \$8$, $P_{ROW} = \$5$.

Would US consumers be excited about hearing the ROW is selling the good for \$5? Yes.

Would US producers be excited about hearing the ROW was charging the low price of \$5? No.

Would ROW consumers be excited about buying from US producers at a price of \$8? No.

Would ROW producers be excited about selling to US consumers for \$8? Yes.

US consumers want to buy from the ROW (its cheaper than the \$8 they'd have to pay here in the US) and the ROW world wants to sell to the US (they can sell the good at a higher price than the \$5 they'll get in the foreign country). Convenient.

So, the US consumers want to import the good from the ROW, while the ROW producers want to export it to us, and this is just what will happen. **If, in autarky, $P_{US} > P_{ROW}$, the US will import the good.** As it will turn out, the world price will settle in somewhere between these two prices. Or stated differently, the free trade price will be between \$5 and \$8.

Aside: Is there something going on in the background as well?

Really, when in autarky, $P_{US} > P_{ROW}$, it would be sensible to think that the ROW has a comparative advantage in the production of this good. Recollect, that the lowest cost producer of a good has a comparative advantage. If the ROW can produce the good for \$5, while the US is producing the good for \$8, the ROW has the comparative advantage in producing this good (I am cheating here a little bit, making an assumption that I don't want to talk about – ask me if you're interested). The ROW will “specialize” in the production of that good, and hence export it to the US (the US imports this good).

Also, somewhere off in the background, there is some other good for which, in autarky, the $P_{US} < P_{ROW}$. Here, the US has a comparative advantage in the production of this good. It will “specialize” in the production of that good, and hence export it to the ROW. The US will export this second good, and import the first good. Trade goes both ways.

How much will the US import? What's the new price?

Now, allow trade. The world supply curve is the horizontal summation of the two supply curves. At a price of \$2, the US producers supply 1 unit, the ROW producers supply 2 units, for a total world supply of

3 units. Repeat this for all of the other prices, and also sum up the demand curves in a similar fashion. The result is in the two columns on the right above. Equilibrium in the world occurs where $Q_S = Q_D$, at $P = \$6$.

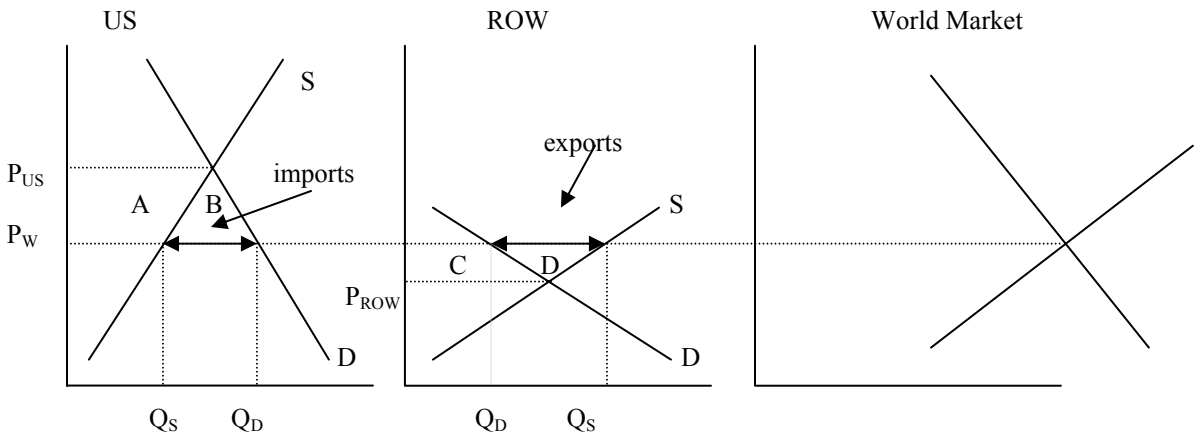
Look at what is happening in the US. At $P = \$6$, US producers supply only 3 units, but US consumers want to purchase 5 units. Where do the extra 2 units come from? We import them from the ROW.

Look at what's happening in the ROW. At $P = \$6$, ROW producers supply 6 units, but ROW consumer only want to purchase 4 units. What do they do with the two extra units? They export them to the US.

And of course, the amount we import is exactly equal to the amount they export (no goods are spontaneously combusting or falling off the boat). This must occur for the price to be an equilibrium price.

Are there gains from international trade?

Answer. Yes. Let's look at it graphically. You could actually graph the figures I have above, but I'll be a bit lazier and draw some pictures with nice demand and supply curves.



So, initially, as in the numerical example above, the autarky price in the US (P_{US}) is higher than the autarky price in the ROW (P_{ROW}). After trade is allowed, the world price lies between the two autarky prices. Let the new price, after trade is allowed, be denoted P_W .

Notice, at P_W , in the US, Q_D is larger than Q_S . This distance between Q_S and Q_D , shown with the double arrows, represents the goods that are imported by the US from the foreign country. If you consume 5, and only produce 3, the other 2 must be coming from the foreigners.

Notice at P_W , in the ROW, Q_S is larger than Q_D . This distance between Q_D and Q_S , shown with the double arrows, represents the goods that are exported by the ROW to the US. If you produce 6, and only consume 4, the other 2 must be exported to the US. I have drawn the dotted line above Q_D very light so I wouldn't divide up area C. You can pencil it in if you like. C is a trapezoid (not a rectangle).

Of course, in equilibrium, the amount the US imports = the amount the ROW exports (nothing falls off the boat). That is, the double arrows are (supposed to be) the same size.

Now, consider what happens to CS and PS in the US and the ROW by allowing free trade

US consumers gain CS of $A + B$
 US producers lose PS of A
 US society as a whole gains B

ROW consumers lose CS of C
 ROW producer gain PS of $C + D$
 ROW society gains D

Thus, as a whole, society gains $B + D$. There are gains from international trade, just like there are gains from any other type of voluntary trade.

So it's good for society, why would anyone oppose this?

Suppose the good we have been talking about is steel. The autarky price in the US is higher than the price in the rest of the world. Would steel producers be in favor of allowing free trade? Certainly not, as they stand to lose producer surplus (profits), they are worse off. But US society as a whole would be better off, because US consumers of steel will be better off, and in fact they gain more than the producers lose. However, the producers may be more apt, for reasons we shall see later, to write a check to their Senator.

What if, in autarky, $P_{US} < P_{ROW}$ instead?

The story works the same way. Here of course, the US exports the good. US consumers will lose, producers will gain (they're exporting), US society still gains, and the world will be better off. (If you just change the labels on the picture above (ROW and US), you've got the picture.

Summary

There are gains from international trade. Trade is good. If trade is good, we should suspect that restricting trade is bad for society. And yet, restrictions of trade, including tariffs and quotas are often seen. We shall next try to figure out why.