

Representing International Equilibrium with Offer Curves

For most purposes, analyzing international equilibrium in terms of relative supply and demand is the simplest and most useful technique. In some circumstances, however, it is useful to analyze trade in a diagram that shows directly what each country ships to the other. A diagram that does this is the *offer curve* diagram.

Deriving a Country's Offer Curve

In Figure 6-3 of *International Economics* and *International Trade* we showed how to determine a country's production and consumption given the relative price P_C/P_F . Trade is the difference between production and consumption. In an offer curve diagram, we show directly the trade flows that correspond to any given relative price. On one axis of Figure 1 we show the country's exports ($Q_C - D_C$), on the other its imports ($D_F - Q_F$). Point T in Figure 1 corresponds to the situation shown in Figure 6-3 (production at Q , consumption at D). Since

$$(D_F - Q_F) = (Q_C - D_C) \times (P_C/P_F),$$

the slope of the line from the origin of Figure 1 to T is equal to P_C/P_F . T is Home's offer at the assumed relative price: At that price, Home residents are willing to trade $(Q_C - D_C)$ units of cloth for $(D_F - Q_F)$ units of food.

By calculating Home's offer at different relative prices, we trace out Home's offer curve (Figure 2). We saw in Figure 6-4 of *International Economics* and *International Trade* that as P_C/P_F rises, Q_C rises, Q_F falls, D_F rises, and D_C may rise or fall. Desired $(Q_C - D_C)$ and $(D_F - Q_F)$, however, both normally rise if income effects are not too strong. In Figure 2, T^1 is the offer corresponding to Q^1 , D^1 in Figure 6-4; T^2 the

FIGURE 1
Home's Desired Trade at a Given Relative Price

At the relative price corresponding to the slope of the line from the origin, Home makes the offer to trade $Q_C - D_C$ units of cloth for $D_F - Q_F$ units of food.

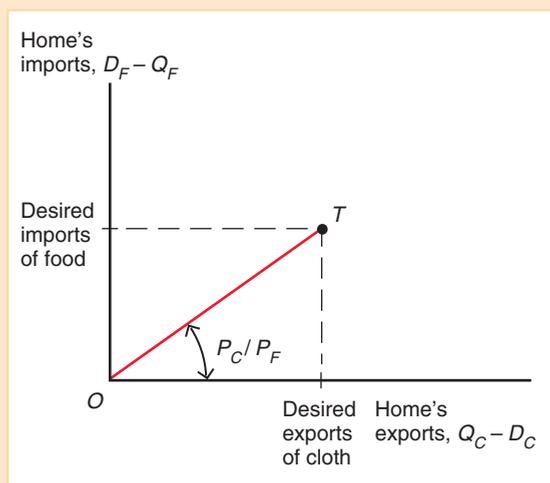
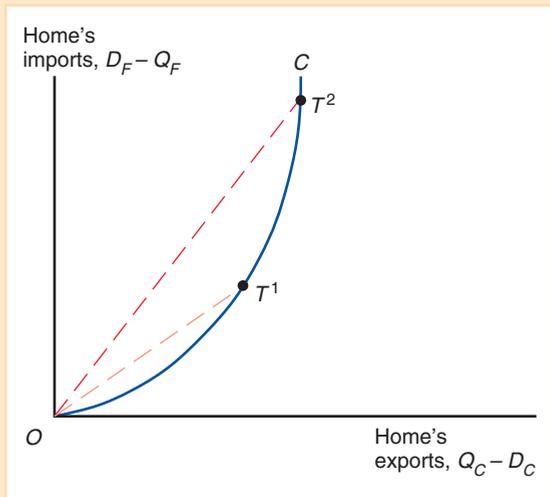


FIGURE 2

Home's Offer Curve

The offer curve is generated by tracing out how Home's offer varies as the relative price of cloth is changed.



offer corresponding to Q^2, D^2 . By finding Home's offer at many prices, we trace out the Home offer curve OC .

Foreign's offer curve OF may be traced out in the same way (Figure 3). On the vertical axis we plot $(Q_F^* - D_F^*)$, Foreign's desired exports of food, while on the horizontal axis we plot $(D_C^* - Q_C^*)$, desired imports of cloth. The lower P_C/P_F is, the more food Foreign will want to export and the more cloth it will want to import.

International Equilibrium

In equilibrium it must be true that $(Q_C - D_C) = (D_C^* - Q_C^*)$ and also that $(D_F - Q_F) = (Q_F^* - D_F^*)$. That is, world supply and demand must be equal for both cloth and food. Given these equivalences, we can plot the Home and Foreign offer

FIGURE 3

Foreign's Offer Curve

Foreign's offer curve shows how that country's desired imports of cloth and exports of food vary with the relative price.

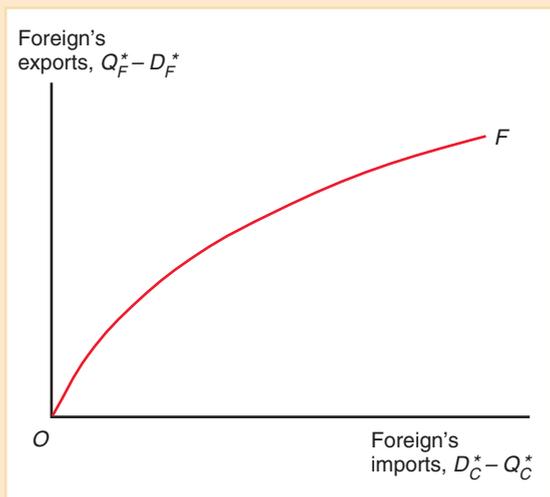
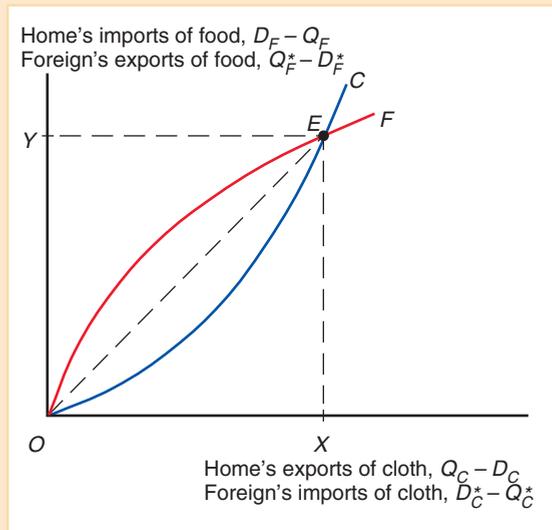


FIGURE 4
Offer Curve Equilibrium

World equilibrium is where the Home and Foreign offer curves intersect.



curves on the same diagram (Figure 4). Equilibrium is at the point where the Home and Foreign offer curves cross. At the equilibrium point E , the relative price of cloth is equal to the slope of OE . Home's exports of cloth, which equal Foreign's imports, are OX . Foreign's exports of food, which equal Home's imports, are OY .

This representation of international equilibrium helps us see that equilibrium is in fact *general* equilibrium, in which supply and demand are equalized in both markets at the same time.