THE CAUSES OF TRADE

- **Under what circumstances would there be no trade between countries?**
  - ➢ **Identical production technologies**
  - ➢ **Identical factor endowments**
  - ➢ **Constant returns to scale**
  - ➢ **Identical and homogeneous tastes**
  - ➢ **Absence of distortions such as imperfect competition**
- **Relaxing each of these in turn gives a specific cause of trade**

■ Differences in Technology (Ricardo)

Labor is only factor, constant returns to scale, two goods X and Y

$$X = f_x(L_x) \qquad (1)$$

$$Y = f_y(L_y) \qquad (2)$$

$$L = L_x + L_y \qquad (3)$$

(1) and (2) can be re-written:

$$X = \alpha L_x \qquad (4)$$

$$Y = \beta L_y \qquad (5)$$

$\alpha, \beta > 0$ = marginal products ($dX/dL_x = \alpha$, $dY/dL_y = \beta$)

Table 1: Marginal Products

	Home	Foreign
X	$\alpha_h = 20$	$\alpha_f = 30$
Y	$\beta_h = 20$	$\beta_f = 10$

$\alpha_h < \alpha_f$, f has an *absolute advantage* in X

$\beta_h > \beta_f$, h has an *absolute advantage* in Y

Table 2: Marginal Products

	Home	Foreign
X	$\alpha_h = 5$	$\alpha_f = 30$
Y	$\beta_h = 5$	$\beta_f = 10$

$$\beta_h / \alpha_h > \beta_f / \alpha_f \qquad (6)$$

i.e. h has a *comparative advantage* in producing Y, even though f has an *absolute advantage* in producing X and Y ($\alpha_h < \alpha_f$, $\beta_h < \beta_f$)

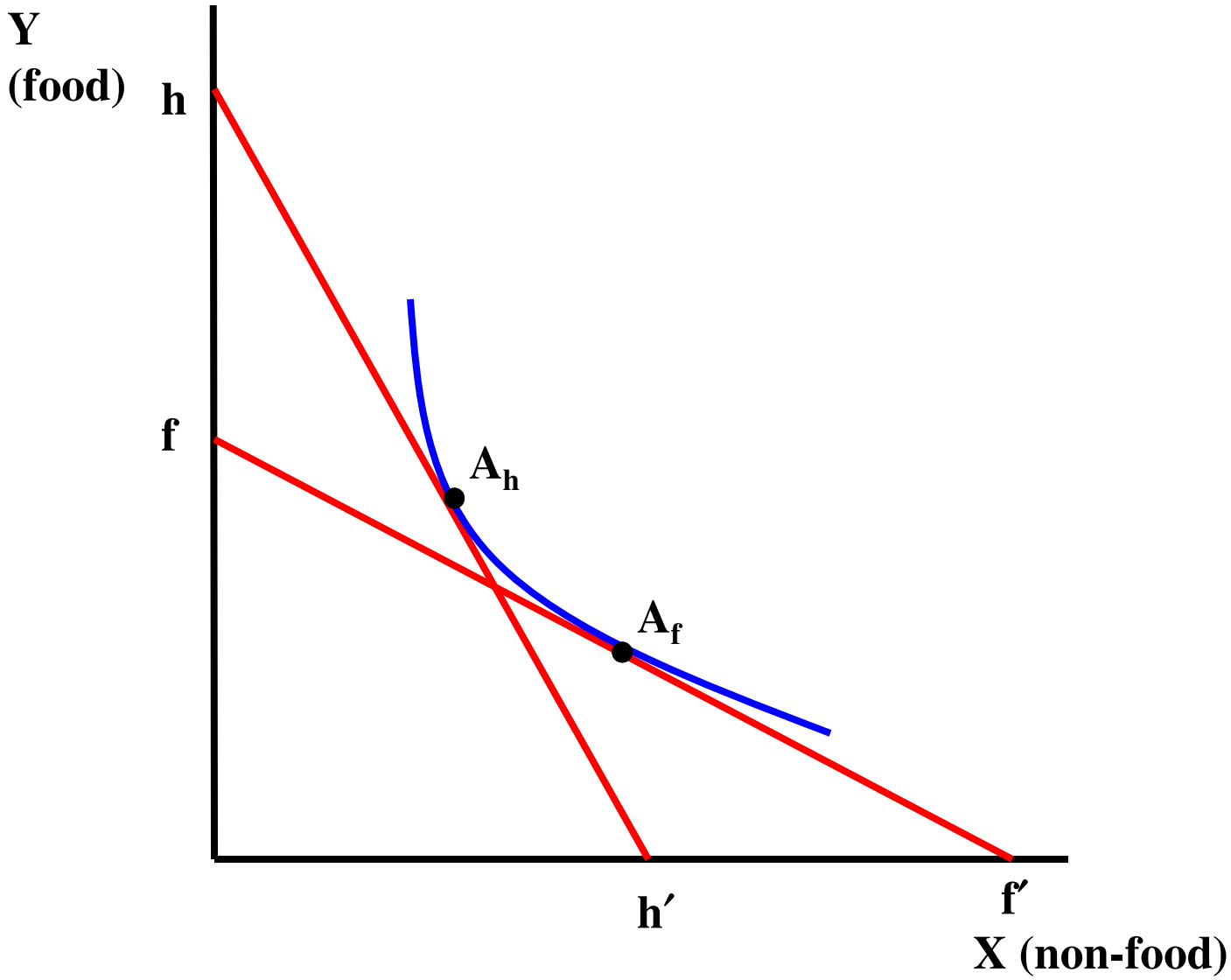
Move 4 workers from X to Y in h

Move 1 worker from Y to X in f

Table 3: Output Changes

	Home	Foreign	Total
X	**-20**	**+30**	**+10**
Y	**+20**	**-10**	**+10**

FIGURE 1: AUTARKY EQUILIBRIA

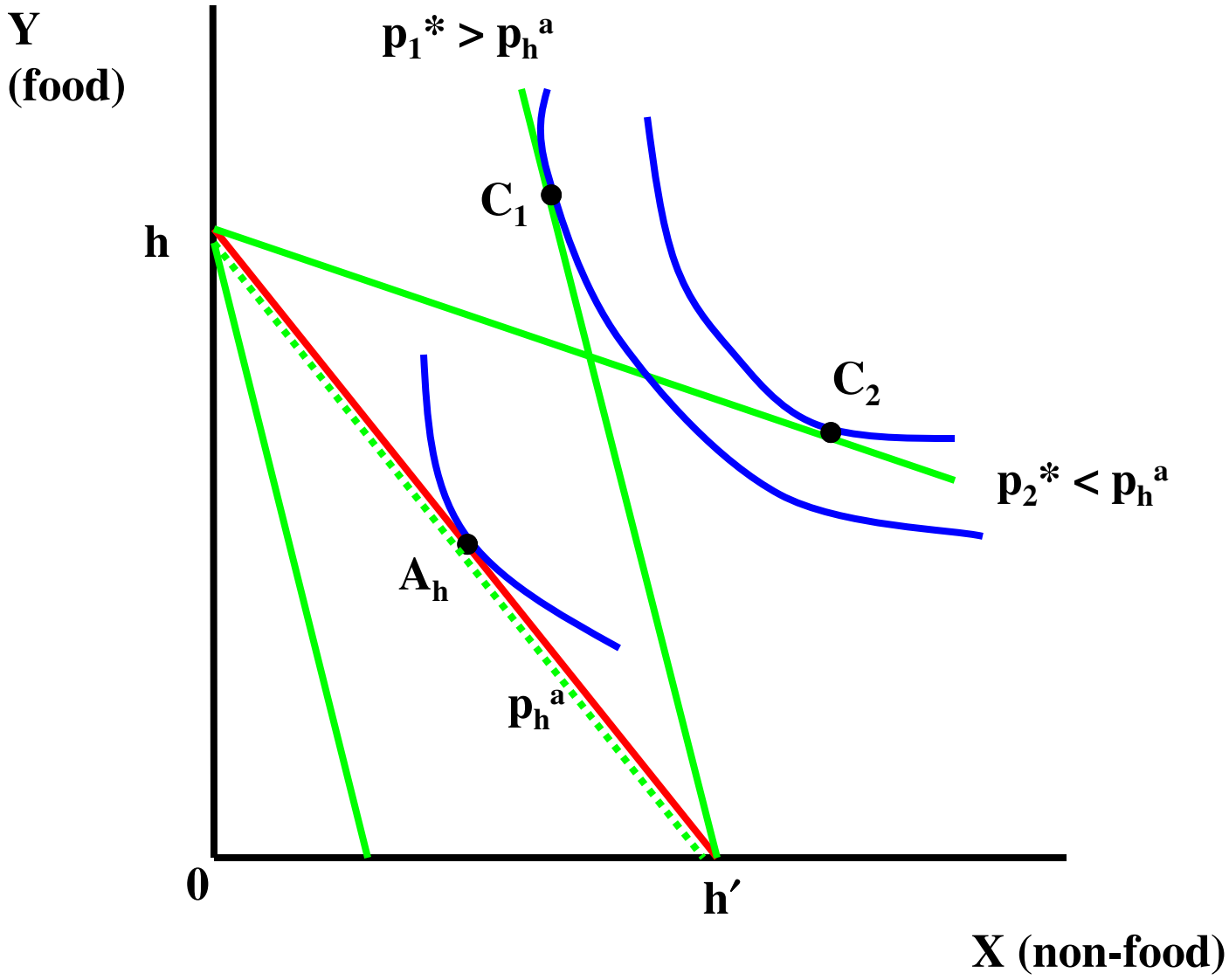


A_h, A_f = autarky equilibria

hh′, ff′ = production frontiers

$$dY^h/dX^h = \beta_h/\alpha_h,\ dY^f/dX^f = \beta_f/\alpha_f \qquad (7)$$

FIGURE 2: HOME COUNTRY EQUILIBRIA

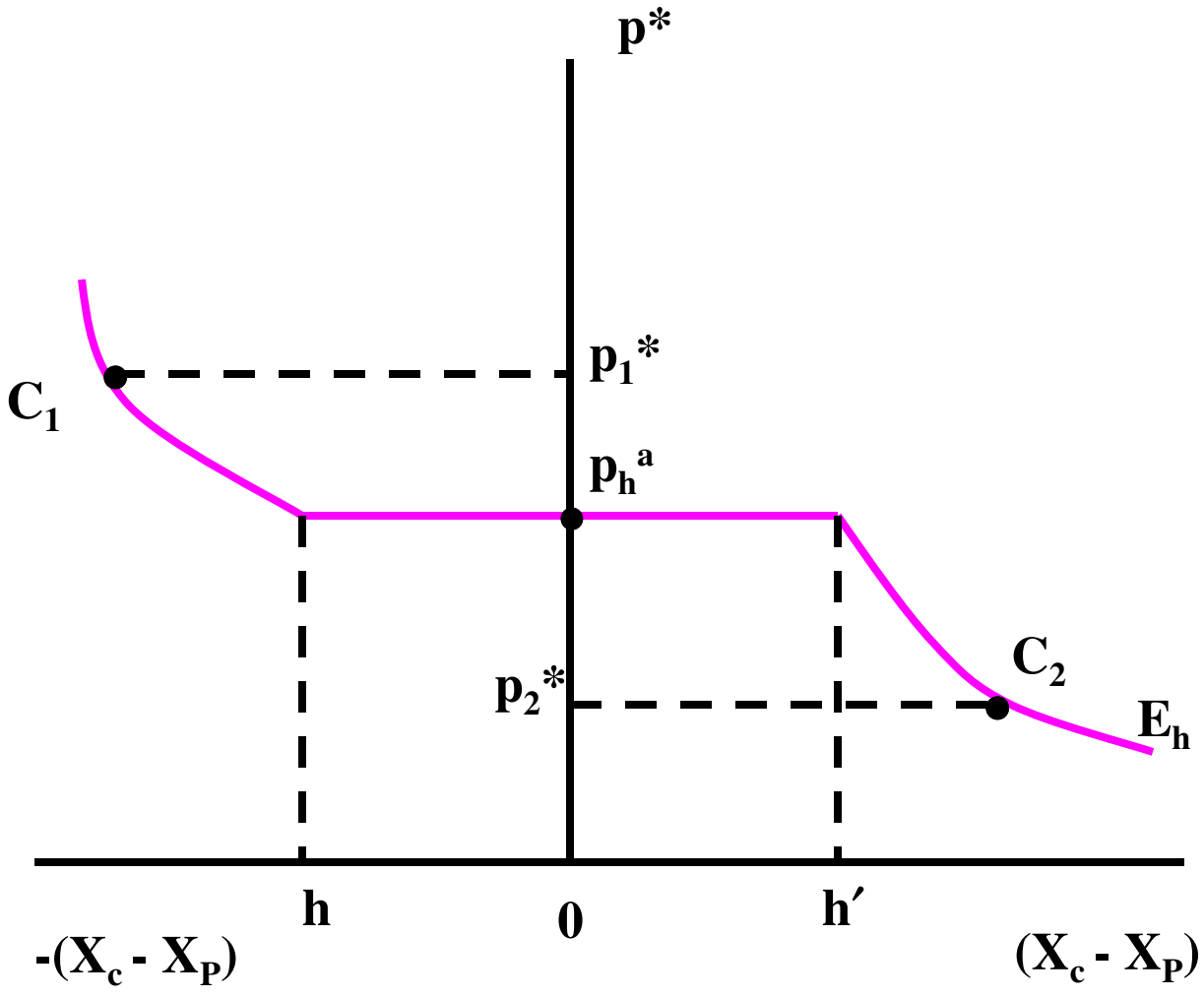


$$p^* = p_x^*/ p_y^* > MRT = \beta_h/\alpha_h \Rightarrow p_x^* \alpha_h > p_y^* \beta_h \qquad (8)$$

$\therefore$ **If** $p^* > p_h^a$**:**

$$p_x^* \alpha_h = w > \beta_h p_y^* \Rightarrow X = \underline{X},\ Y = 0 \qquad (9)$$

FIGURE 3: EXCESS DEMAND IN HOME COUNTRY



If $p^* = p_h^a$, hh' (Figure 3) = $0h'$ (Figure 2)

FIGURE 4: INTERNATIONAL EQUILIBRIUM

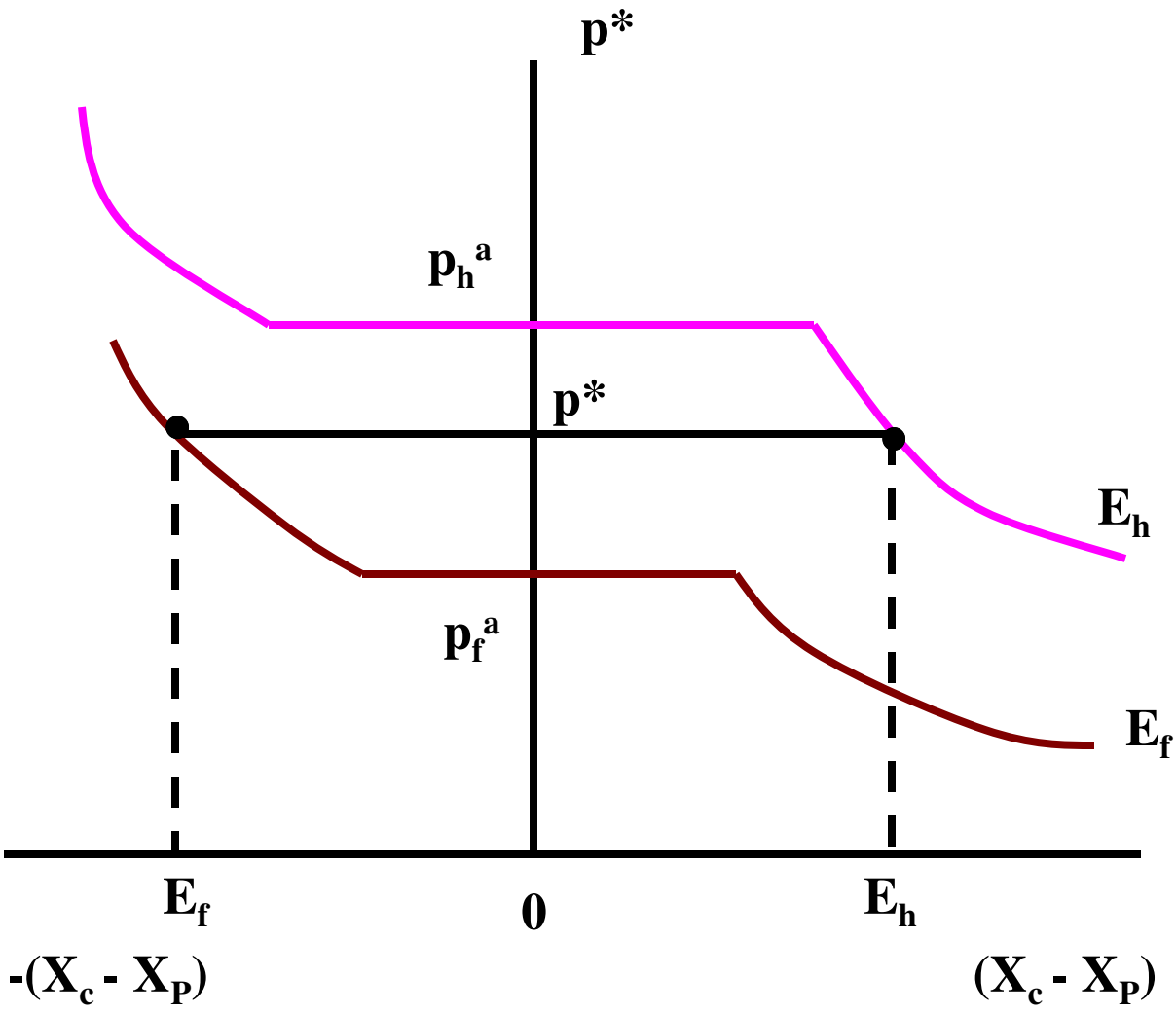


FIGURE 5: TRADING EQUILIBRIA

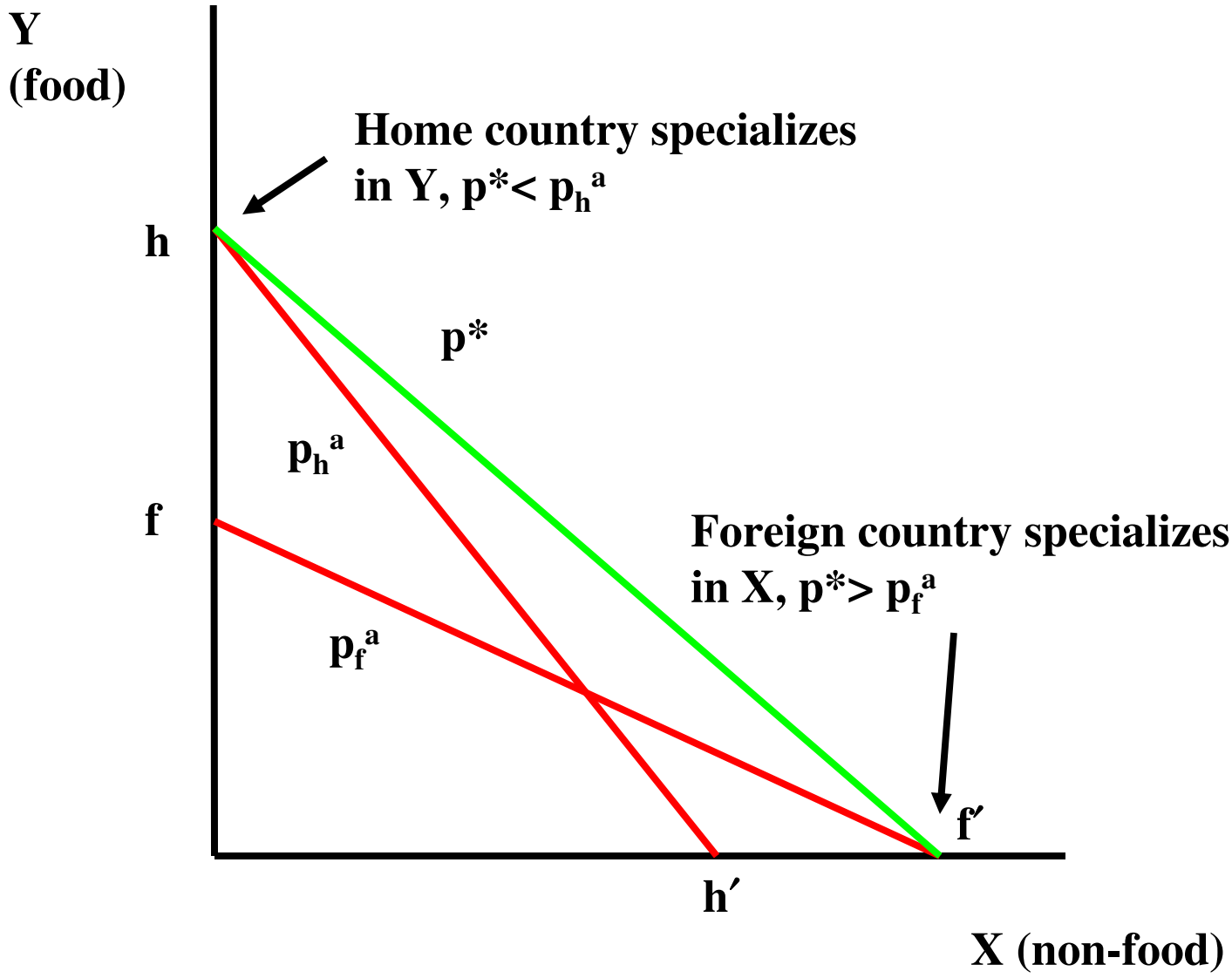


FIGURE 6: INCREASE IN COUNTRY SIZE

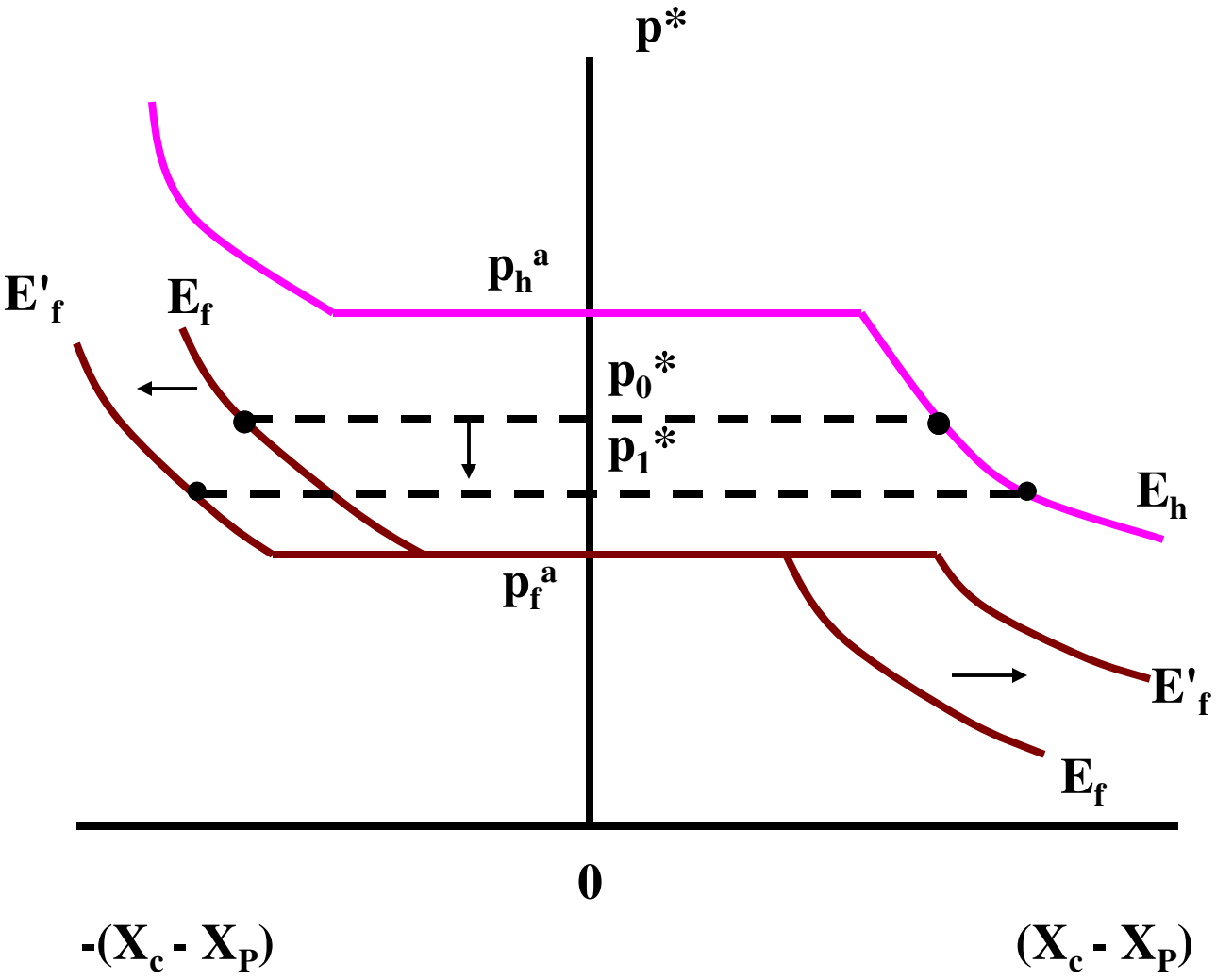


FIGURE 7: LARGE FOREIGN COUNTRY