SOLUTION
MID-TERM 2, 2012 W
LONG QUESTION.

THE H·O TRADE MODEL:

HOME — axes Q_S (vertical), Q_C (horizontal); PPF_H; point A_H; $\overline{Q_{SH}}$, Q_{SH}^{AU} on vertical axis; Q_{CH}^{AU}, $\overline{Q_{CH}}$ on horizontal axis; slope $= -\dfrac{P_{CH}^{AU}}{P_{SH}^{AU}}$

FOREIGN — axes Q_S (vertical), Q_C (horizontal); PPF_F; point A_F; $\overline{Q_{SF}}$, Q_{SF}^{AU} on vertical axis; Q_{CF}^{AU}, $\overline{Q_{CF}}$ on horizontal axis; slope $= -\dfrac{P_{CF}^{AU}}{P_{SF}^{AU}}$
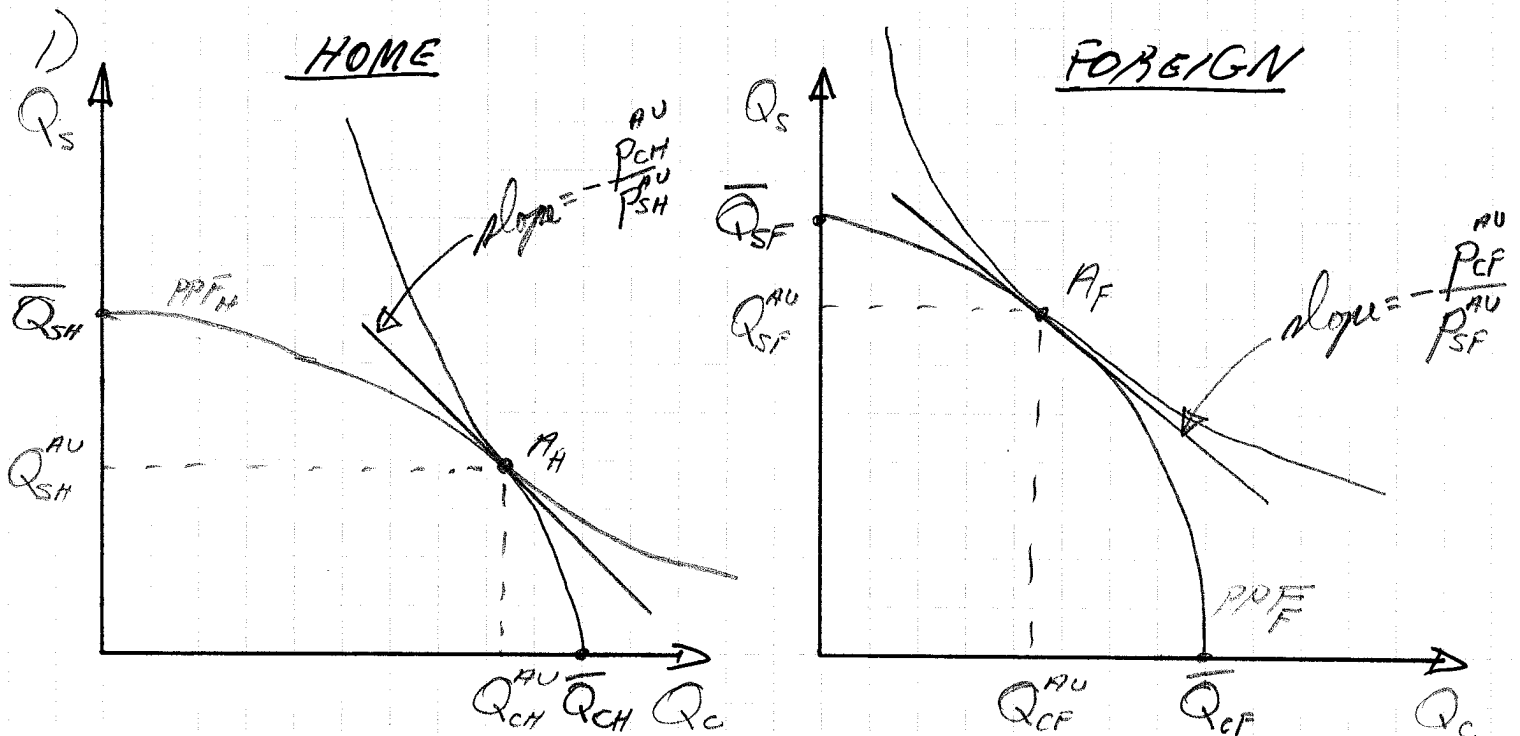
The PPFs reflect the fact that Home is **better endowed** to produce computers than Foreign, and conversely for shoes. We have

$$\overline{Q_{CH}} > \overline{Q_{CF}} \quad \text{and} \quad \overline{Q_{SH}} < \overline{Q_{SF}}.$$

In the autarkic equilibrium, Home will produce more computers and less shoes than Foreign. As a result, the relative price of computers will be lower at Home than Foreign.

$$\frac{P_{CH}^{AU}}{P_{SH}^{AU}} < \frac{P_{CF}^{AU}}{P_{SF}^{AU}}.$$

2) Since computer prices are lower at Home than at Foreign under autarky, we expect that under trade, Home will export computers and import shoes. The opposite holds for Foreign.

3)

HOME

FOREIGN

$$\text{slope} = -\frac{P_C^T}{P_S^T}$$
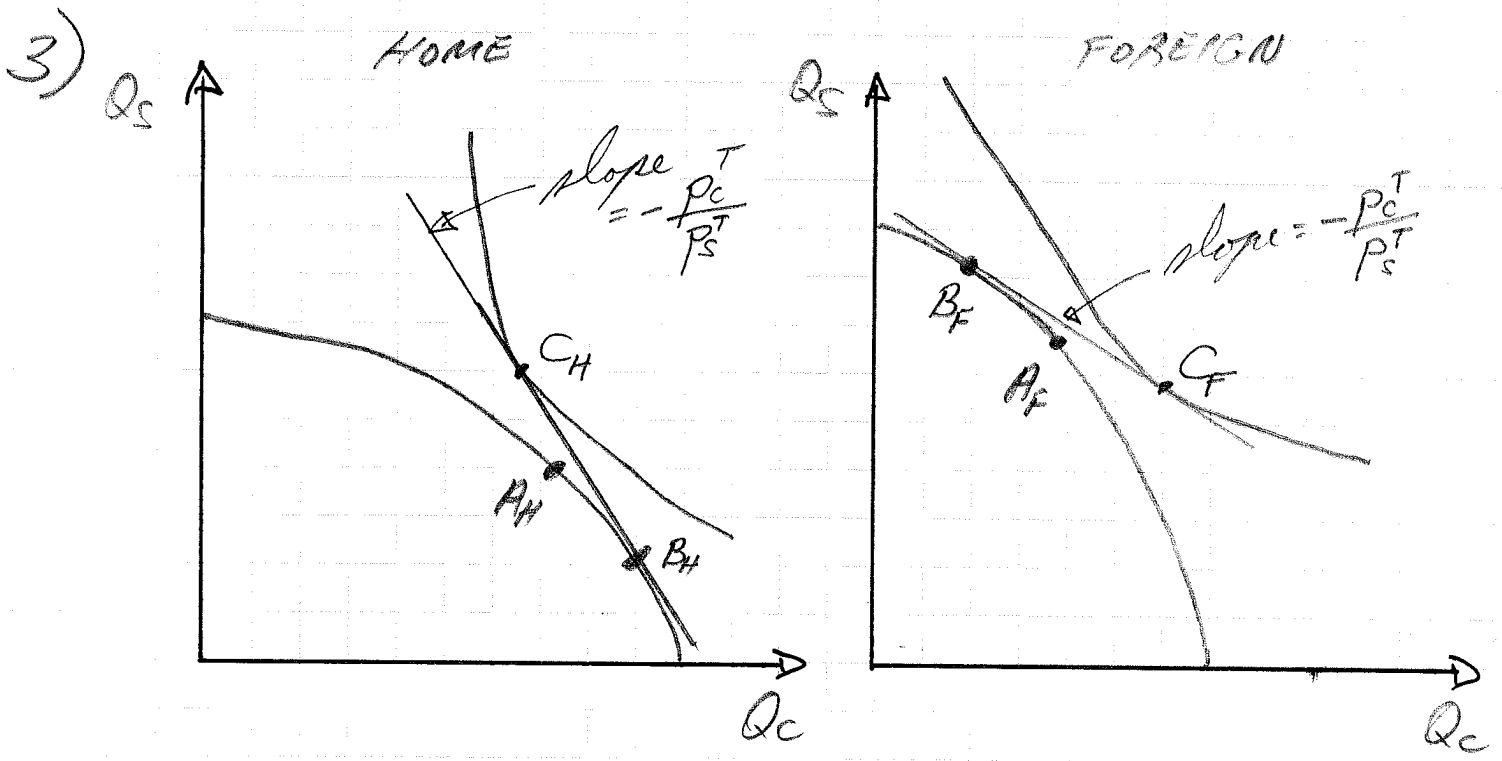
Under trade, the relative price of computers increases at Home and decreases at Foreign.
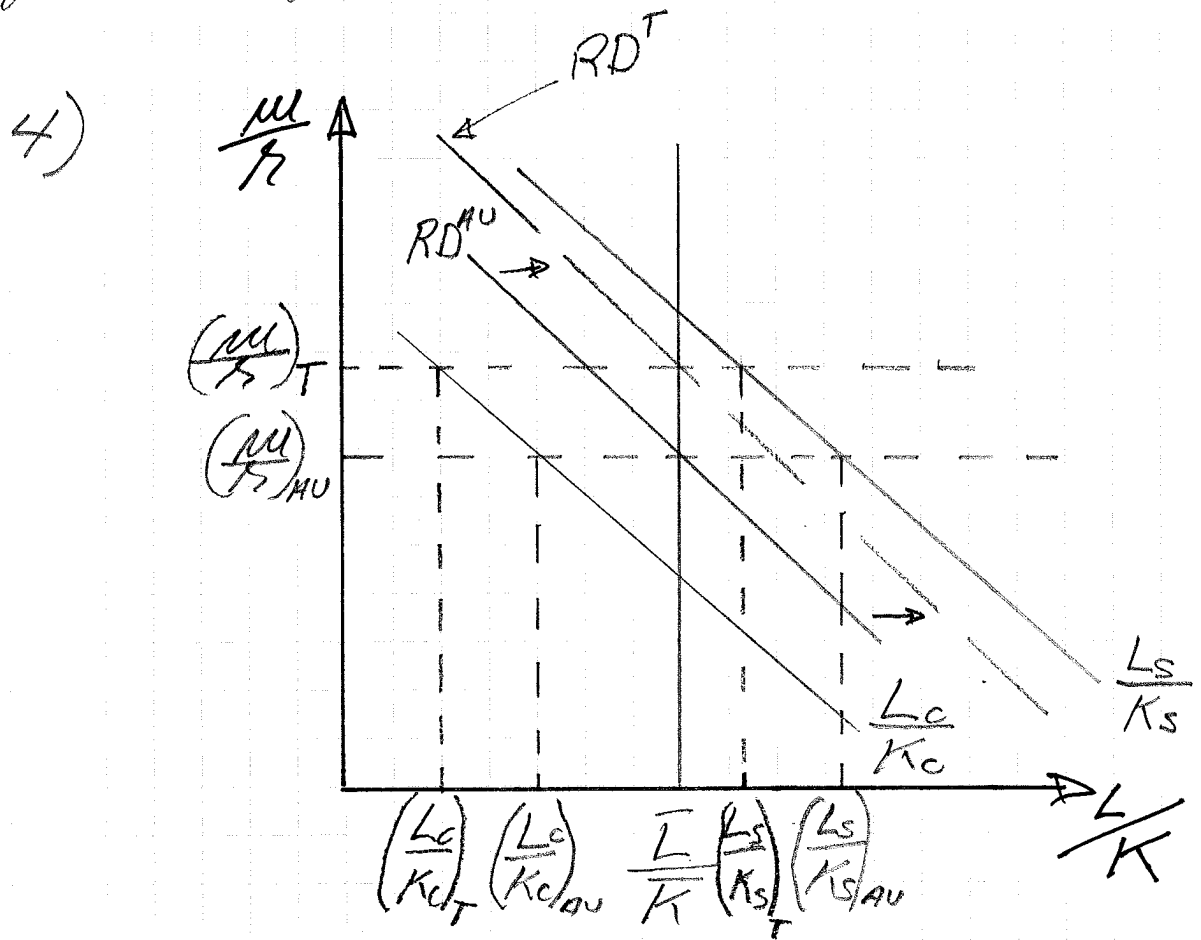
This leads to further specialization in computer production at Home (B_H) and in shoes at Foreign (B_F).

We have:

$$\frac{P_{CH}^{AU}}{P_{SH}^{AU}} < \frac{P_C^T}{P_S^T} < \frac{P_{CF}^{AU}}{P_{SF}^{AU}}$$

at the higher computer trade price, Home consumes at point CH, which corresponds to a higher welfare level than under autarky. The same holds for Foreign.

We thus have overall trade gains for both countries.

4)

$$\frac{\overline{L}}{K} = \frac{L_c + L_s}{K} = \underbrace{\frac{L_c}{K_c}\frac{K_c}{K} + \frac{L_s}{K_s}\frac{K_s}{K}}_{RD}$$

$\frac{L_c}{K_c}$ is the relative demand for labor

in the computer sector, and similarly for $\frac{L_S}{K_S}$ in the shoe sector.

RD_{AU} denotes the overall relative demand for labor under autarky. It is a weighted average of each sector's relative demands.

Since the relative demand must be equal to the relative supply $\frac{\bar{L}}{\bar{K}}$, the equilibrium relative wage, and factor demands per sector, are given by $\left(\frac{w}{r}\right)_{AU}$, $\left(\frac{L_C}{K_C}\right)_{AU}$ and $\left(\frac{L_S}{K_S}\right)_{AU}$.

REMARK: $\frac{L_S}{K_S} > \frac{L_C}{K_C}$ reflects the fact that the shoe sector is more labor intensive.

Under trade, production of shoes in Foreign expands. This implies that $\left(\frac{K_S}{K}\right)_{AU} < \left(\frac{K_S}{K}\right)_{T}$

and $\left(\frac{K_C}{K}\right)_{AU} > \left(\frac{K_C}{K}\right)_{T}$.

Consequently, $RD^T > RD^{AU}$, i.e., the overall relative demand curve shifts right under trade. This causes the relative wage to increase and, thus, the equilibrium labor/capital ratios decrease in <u>each sector</u>.

$$\Delta^- L/K \Rightarrow \Delta^+ MPL \text{ and } \Delta^- MPK.$$

Since $w = P \cdot MPL$ and $r = P \cdot MPK$, we conclude that in Foreign, trade causes an increase in the real wage and a decrease in the real rental rate.