5D. Domestic Monopoly

Assume there is domestic monopoly in the market for good 1.

\[ \pi(Y_1) = p_1(Y_1)Y_1 - c(Y_1). \]  

(1)

FOC:

\[ p_1 + Y_1 p_1'(Y_1) - c'(Y_1) = 0. \]

With the domestic monopoly, the Heckscher-Ohlin Model can be modified to describe a closed economy.

\[ g_1(w, r) \equiv wa_{L1} + ra_{K1} = p_1(1 - 1/\eta), \]

\[ g_2(w, r) \equiv wa_{L2} + ra_{K2} = p_2. \]  

(2)

Recall \( \eta \) cannot be treated as constant.

If the markets are perfectly competitive,

\[ \frac{U_1}{U_2} = \frac{p_1}{p_2} = \frac{g_1(w, r)}{g_2(w, r)}. \]
With monopoly in good 1,

\[
\frac{U_1}{U_2} = \frac{p_1}{p_2} < \frac{p_1(1-1/\eta)}{p_2} = \frac{g_1(w,r)}{g_2(w,r)}.
\]

- For instance, if $\eta = 2$, then

\[
\frac{U_1}{U_2} = \frac{p_1}{p_2} > \frac{1}{2} \frac{p_1}{p_2} = \frac{g_1(w,r)}{g_2(w,r)} = \frac{MC_1}{MC_2}.
\]

- Price would be twice the marginal cost in industry 1, thereby reducing its output.

Production occurs on the PPF.
Gains from Trade = Gains from returning to perfect competition + Gains from Trade (closed $\Rightarrow$ open).

If there was any distortion the domestic market in autarky, FT forces all industries to become competitive. $\Rightarrow$ Gains from trade is greater if there were distortions in autarky.