Intra-Industry Trade

- The Falvey's model

- Two countries, two factors (K, L) model
- countries have different factors endowment

$$\frac{K}{L} > \frac{K^*}{L^*} \rightarrow w > w^*; R < R^*$$

- In each country there is an industry that produces a continuum of goods with different quality α
- quality may vary between (min) $\underline{\alpha} < \alpha < \bar{\alpha}$ (max)
- quality increases with the capital labour ratio K/L
- consumers prefer high quality goods but are constraint by their income

- the production cost of a good with a quality index α is

$$\pi(\alpha) = w + \alpha R$$

$$\pi^*(\alpha) = w^* + \alpha R^*$$

- Since $$\frac{K}{L} > \frac{K^*}{L^*}$$

- country 1 (Home) has a comparative advantage in high quality goods production (and vice-versa)

- A good of quality α_1 exists for which cost of production is the same in the two countries

$$\pi\left(\alpha_1\right) - \pi^*\left(\alpha_1\right) = 0$$

- Recalling that $\pi(\alpha) = w + \alpha R$

$$\pi^*(\alpha) = w^* + \alpha R^*$$

- we get

$$w + \alpha_1 R - w^* - \alpha_1 R^* = 0$$

$$\alpha_1\left(R - R^*\right) = w^* - w$$

$$\alpha_1 = \frac{w - w^*}{R^* - R}$$

- In general, in the case of any other good, we have that

$$\pi(\alpha) - \pi^*(\alpha) = w + \alpha R - w^* - \alpha R^*$$

$$\pi(\alpha) - \pi^*(\alpha) = \left(w - w^*\right) - \alpha\left(R^* - R\right)$$

- since $\alpha_1 = \dfrac{w - w^*}{R^* - R} \rightarrow R^* - R = \dfrac{w - w^*}{\alpha_1}$

- we may write the former formula as

$$\pi(\alpha) - \pi^*(\alpha) = \left(w - w^*\right) - \alpha \frac{w - w^*}{\alpha_1}$$

$$\pi(\alpha) - \pi^*(\alpha) = \left(w - w^*\right)\left(1 - \frac{\alpha}{\alpha_1}\right)$$

- finally, we get

$$\pi(\alpha) - \pi^*(\alpha) = \frac{w - w^*}{\alpha_1}(\alpha_1 - \alpha)$$

- but since $\dfrac{w - w^*}{\alpha_1} > o$ if $\alpha_1 > \alpha$ then

$$\pi(\alpha) - \pi^*(\alpha) > 0 \rightarrow \pi(\alpha) > \pi^*(\alpha)$$

- foreign country has a comparative advantage in goods with quality lower than α_1 .
- On the other side, if $\alpha_1 < \alpha$ than Home has a comparative advantage in production of goods with higher quality than α_1. In fact

$$\pi(\alpha) - \pi^*(\alpha) < 0 \rightarrow \pi(\alpha) < \pi^*(\alpha)$$

FINAL REMARK:

the above results depends upon the assumption that good quality increases as the capital-labour ratio increases

The introduction of human capital in the model does not alter the results