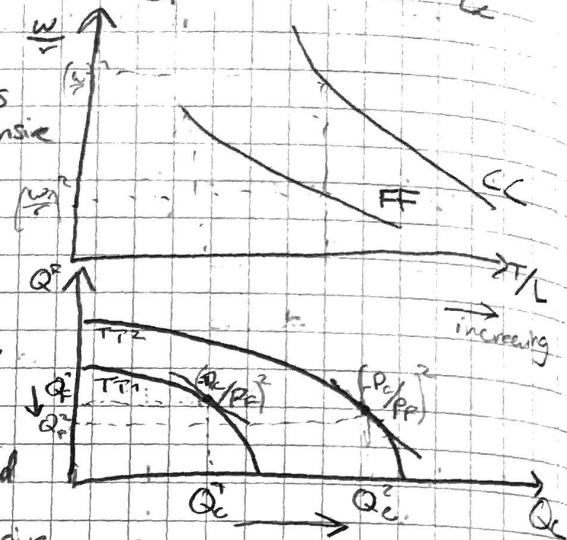


Final Exam: Vincent Wilmet

Q1) Home: $\frac{w}{r} = \frac{(P_C)^2}{(P_F)^2}$ Optimal food: $\frac{\alpha S T_P}{L F}$ cloth: $\frac{2 P_C}{L C}$

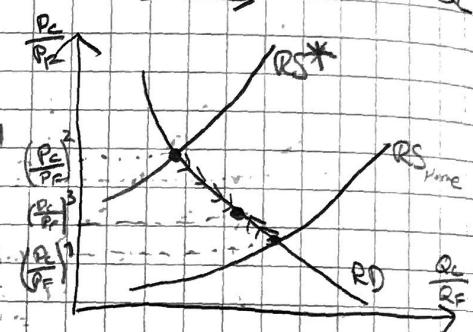
a) From the land-labor ratios given, as well as the plotted relative factor demand curves we can see that cloth is the labor intensive one.

If the endowment of labor increases, this would shift the economy's production possibilities frontier outward from TT' to TT'' , but does so disproportionately in the direction of cloth production, as Rybczynski's Theorem states that more labor favors cloth to the detriment of food.



b) We can infer that since cloth is labor-intensive, Home's PPF relative to Foreign's (denoted *) is shifted more out in the direction of cloth than in the direction of food. Thus, other things equal Home tends to produce a higher ratio of cloth to food.

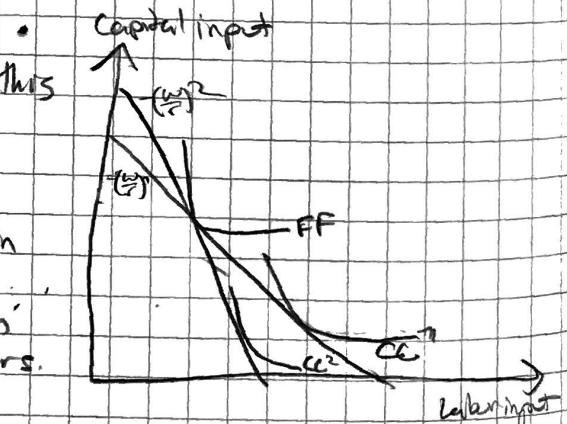
And under free trade we would see a convergence of relative prices, but because the countries differ in their factor abundances, Home will have a larger relative supply than Foreign.



Thus, a new world price would be established somewhere between $(\frac{P_C}{P_F})^*$ and $(\frac{P_C}{P_F})^H$, let's say $(\frac{P_C}{P_F})^3$. Home will export cloth as the relative price of cloth rises in home. Meanwhile, Foreign will export food; the relative price of food increases, which means the relative price of cloth falls.

c) If the relative price of cloth doubles, then this would:

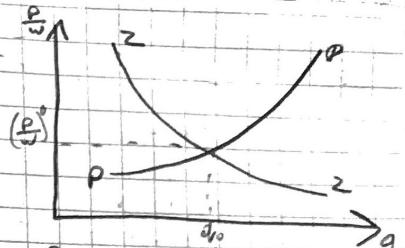
- 1) raise the income of workers relative to capital owners
- 2) raise the ratio of capital to labor service T_L in both sectors
- 3) raise the real income of workers and lower the real income of landowners.



d)

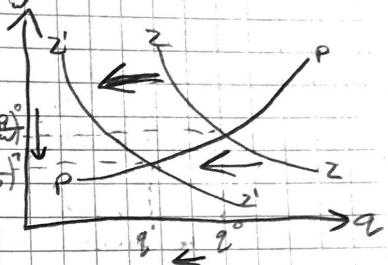
(Q2) a) PP is upward sloping because a higher q^* implies a higher markup

Z_2 is downward sloping because a higher q^* implies a lower average cost



b) True. Trade increases market size, otherwise put, this is equivalent to an increase in the labour force L .

PP is unchanged but Z_2 shift to the left Z_2' . This reduces $\frac{P}{q}$ and lowers q^* . This has a protective effect and increases product variety.



c) Consumers gain from int'l. trade in this model. It allows them to consume more variety and enjoy higher real wages.

This model assumes the law of variety of preferences and increasing returns to scale in production. This means that the market can not be perfectly competitive.

Also we must assume there is a single factor of production in the two identical countries, a single industry with many differentiated varieties and identical technologies across countries and across varieties.

Q3)

- a) The French firms are more productive than the French firms who do not export since in order for their marginal cost + tariff to $c^* + t$ be less the cost of sales, the must have productive IRS/EoS, and are usually larger.

The ones who are able to sell in the foreign market make higher overall profits since they can produce/sell/earn profit domestically and internationally

- b) We know that the firm's unit cost in China is $c + t$, so the optimal export quantity is
- $$Q_x(c) = bS(c^* - c - t)/2$$

Hence only firms with marginal cost $c + t < c^*$ will export, and if tariff size decreased, then all new firms with marginal cost that was between $[c, c + (old - new)]$ can now decide to export to China. This increases the number of firms.

- c) If wage increases in France this causes profits to decrease since marginal cost becomes larger. Thus, the domestic firms with new marginal cost $c_i + new\ wage > c^*$ must exit market since they are no longer profitable. The same applies to int'l firms with $c_i + new\ wage > c^* + t$ must exit the int'l. market, though they can still produce domestically if $c_i + new\ wage \leq c^* + t$.

The consequence for the aggregate productivity of the overall industry is that it will decrease unless it looks for alternative solution (like outsourcing, where any firm with productivity $> \bar{\eta}_0$ should go off shore)

That export

