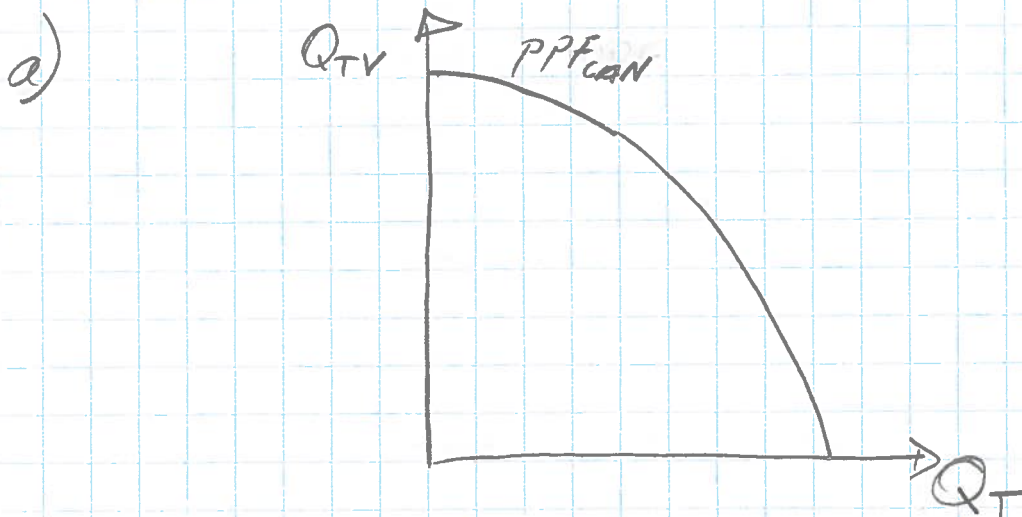


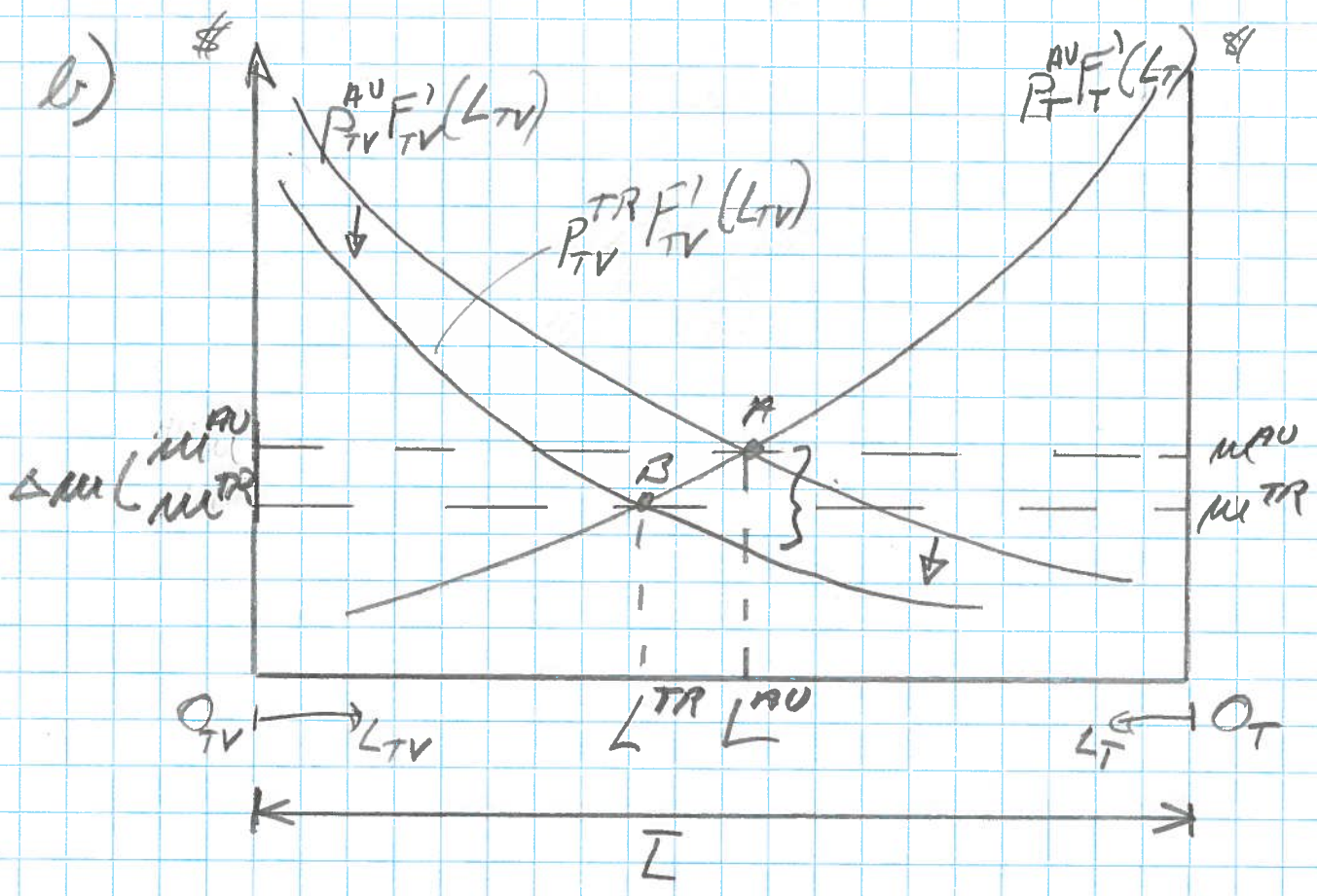
#1) Trade with specific factors

The concavity of the PPF reflects the fact that as the quantity of timber being produced increases, the opportunity cost of an extra unit of timber increases in terms of TVs, and conversely.

This is due to the decreasing returns to labor in each sector. Indeed, the opportunity cost of producing one more unit of timber is equal to the ratio of marginal products, i.e.

$$OC_T = \frac{F'_{TV}(L_{TV})}{F'_T(L_T)}$$

As L_T increases and L_{TV} decreases, decreasing marginal products imply that OC_T increases.



As can be seen from the above graphic, the nominal wage drops from m^AU to m^TR following the drop in P_{TV} with trade.

Since $P_T^{AU} = P_T^{TR}$, the real wage drops in terms of timber with trade.

As for the real wage in terms of TVs, we have

$$\frac{\Delta m}{m^AU} < \frac{\Delta (P_{TV}^AU F'_TV(L^{AU}))}{P_{TV}^AU F'_TV(L^{AU})} = \frac{\Delta P_{TV}}{P_{TV}^AU}$$

since $m^AU = P_{TV}^AU F'_TV(L^{AU})$ and $\Delta m < \Delta (P_{TV}^AU F'_TV(L^{AU}))$

hence, the proportional drop in TV prices is larger than that of wages and consequently, the real wage increases with trade in terms of TVs.

In sum, we cannot tell whether workers are made better off by trade. It would be the case if they tended to spend much more on TVs than timber.

c) As explained above, we cannot tell a priori whether workers will oppose free trade.

As for capital owners, assuming a competitive capital rental market, we have:

$$r = P_{TV} MPK \Rightarrow \frac{r}{P_{TV}} = MPK.$$

Since $L_{TV}^{TR} < L_{TV}^{AU}$, we have $MPK^{TR} < MPK^{AU}$.

Hence: $\frac{r^{TR}}{P_{TV}^{TR}} < \frac{r^{AU}}{P_{TV}^{AU}}$ and thus $\frac{r^{TR}}{P_T^{TR}} < \frac{r^{AU}}{P_T^{AU}}$.

(The latter inequality is due to the fact that $P_{TV}^{TR} < P_{TV}^{AU}$ and $P_T^{TR} = P_T^{AU}$.)

Capital owners are thus made strictly more off with trade and are therefore expected to oppose trade.

As for land owners, assuming a competitive land rental market implies (q = land rental rate):

$$q = P_T MPT \Rightarrow \frac{q}{P_T} = MPT.$$

$$L_T^{TR} > L_T^{AU} \Rightarrow MPT^{TR} > MPT^{AU}.$$

$$\Rightarrow \frac{q_{TR}^{TR}}{p_T^{TR}} > \frac{q_{AU}^{AU}}{p_T^{AU}} \quad \text{and} \quad \frac{q_{TR}^{TR}}{p_{TV}^{TR}} > \frac{q_{AU}^{AU}}{p_{TV}^{AU}}.$$

Hence, land owners are made strictly better off with trade since the land rental rate increases in terms of both goods.

#2] The H-O theorem states that a country will export the good for which production uses intensively the factor of production which it has in abundance, and import the other.

Since it is natural to assume that Canada is capital-abundant compared to India and that the production of cars is capital-intensive compared to sweaters, then Canada will export cars and import sweaters.