Problem set 2 - Correction

Globalization- Econ 102

1 Trade protection

1.1 Import restrictions

The Home country is a large importer of steel. To reduce its import of steel, the Home country imposes an import tariff.

1- Will the import tariff raise or reduce the domestic (internal) price of steel in the Home economy?

Increase the price of steel.
2- Will the import tariff raise or reduce the world (external) price of steel?

Because it's a large country, the relative world price of steel will decrease.
3- What is the effect of the tariff on domestic steel production?

Steel production will increase
4- Does the import tariff raise or reduce consumer surplus in the Home economy? Does the tariff raise or reduce producer surplus at Home?

reduce the consumer surplus and increase the producer surplus

Now suppose the Home country is a small importer of steel.

5- Will the import tariff raise or reduce the domestic (internal) price of steel in the Home economy?

increase the domestic price of steel
6- Will the import tariff raise or reduce the world (external) price of steel?

Won't change the world price of steel
7- What is the effect of the tariff on domestic steel production?

Increase the production
8- Does the import tariff raise or reduce consumer surplus in the Home economy? Does the tariff raise or reduce producer surplus at Home?

Reduce consumer's surplus and increase producer's surplus
Finally suppose the Home country is a small importer of steel and it decides to use a quota to restrict steel imports by the same amount as the tariff.

9- Will the quota described above cause the same domestic (internal) price of steel as the tariff does?
Yes, except that the rent won't go to the government but directly to the license holders.

1.2 Arguments for protectionism

Assume a Cournot duopoly setting where there are two firms located in two different countries: Home and Foreign. They both sell planes to another country. The demand curve of planes is $p = 100 - 0.25(x + y)$ where p is the price of planes, x and y the quantity of planes produced by Home and Foreign respectively.

1- The cost functions of both firms are $C(x) = 500 + 25x$ and $C^{'}(y) = 500 + 25y$. What are the reaction functions of the two firms? What is the optimal quantity and price at equilibrium? Draw the two reaction functions in a graph with x on the horizontal axis and y on the vertical axis.

$R1 : y = 300 - 2x$ and $R2 : y = 150 - 0.5x$. $x = y = 100$ and $p = 50$

2- What are the costs and profits of both firms at equilibrium?

$Cost(1) == Cost(2) = 1000$ and $Profit(1) = Profit(2) = 2000$

3- The Home country's government subsidies the firm's exports by allocating a subsidy of $75 per unit produced. What is the new reaction function for the firm in the home country? What are the new equilibrium price and quantity? Display a graphical representation of your answer.

New R_1: $600 - 2x$. New equilibrium: $x = 300$, $y = 0$. $P = 25$

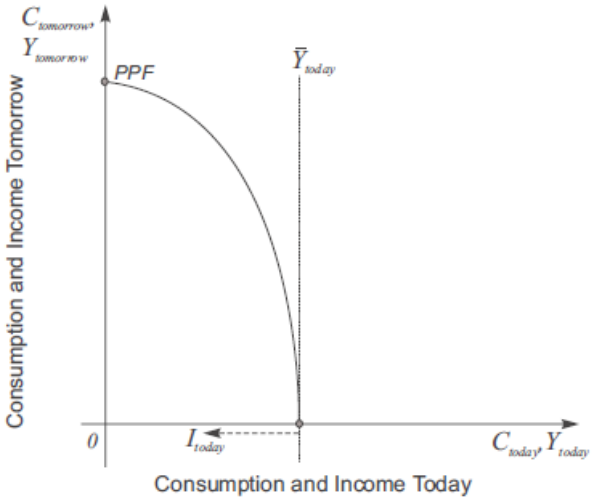
4- Should domestic consumers welcome the subsidy? Should the firm in the Home economy welcome the subsidy? Should the firm in the Foreign country welcome the subsidy?

Consumers should welcome the subsidy because the price is lower. Home country's producers welcome the subsidy because they can produce more, while foreign country's producers don't welcome the subsidy because they can't compete with domestic country any more and are forced to exit the market.

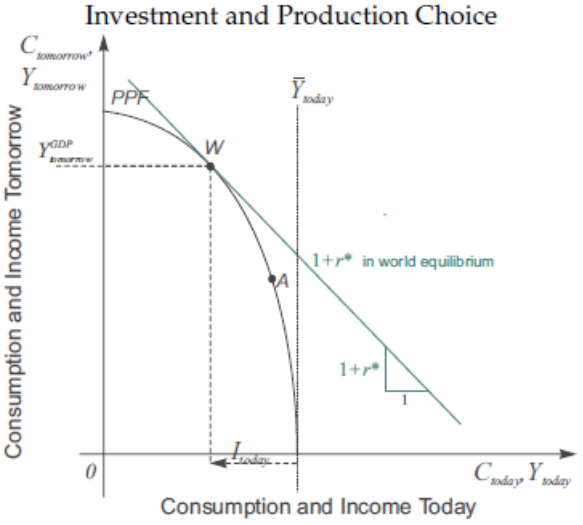
2 Capital Market Integration

Consider the effects of capital market integration.

1. An economy has an endowment of income of Ytoday and invests a positive amount of that income I_1 for future consumption. Draw the economy's intertemporal production possibility frontier and demonstrate today's consumption, today's investment, tomorrow's consumption, and tomorrow's income in a closed economy.



2. Now assume the economy has access to international capital markets at the world interest rate $(1 + r^*)$. What will this do to the economy's consumption and investment decisions? Again, draw the economy's intertemporal production possibility frontier and demonstrate today's consumption, today's investment, tomorrow's consumption, and tomorrow's income in an open economy.



3 Current Account Sustainability

a- Explain how the current account balance differs from the trade balance when there is a net foreign wealth position. Explain why the difference between the current account balance and the trade balance is the same as between GNI and GDP.

$CA = r^*W + TB \rightarrow CA - TB = r^*W$. When there is a net foreign wealth position, the difference between the current account and the trade balance is exactly the foreign wealth position.

$CA = Y_{GNI} - Y_{GDP} = absorption + r * W + TB - (absorption + TB) = r^*W$. Which is exactly the same difference as between the $CA - TB$

b- Prove that a country is creditworthy if it manages to have enough trade balances excess in the future to finance the actual debt.

$$(1 + r^*) W_0 = \sum_{t=0}^{t=T} \left(\frac{1}{1+r^*}\right)^t (C_t + I_t + G_t - Y_t^{GDP})$$

A country is creditworthy if it manages to have enough trade balance excess in the future to finance the actual debt