

The Gains from Trade: Chapter 5

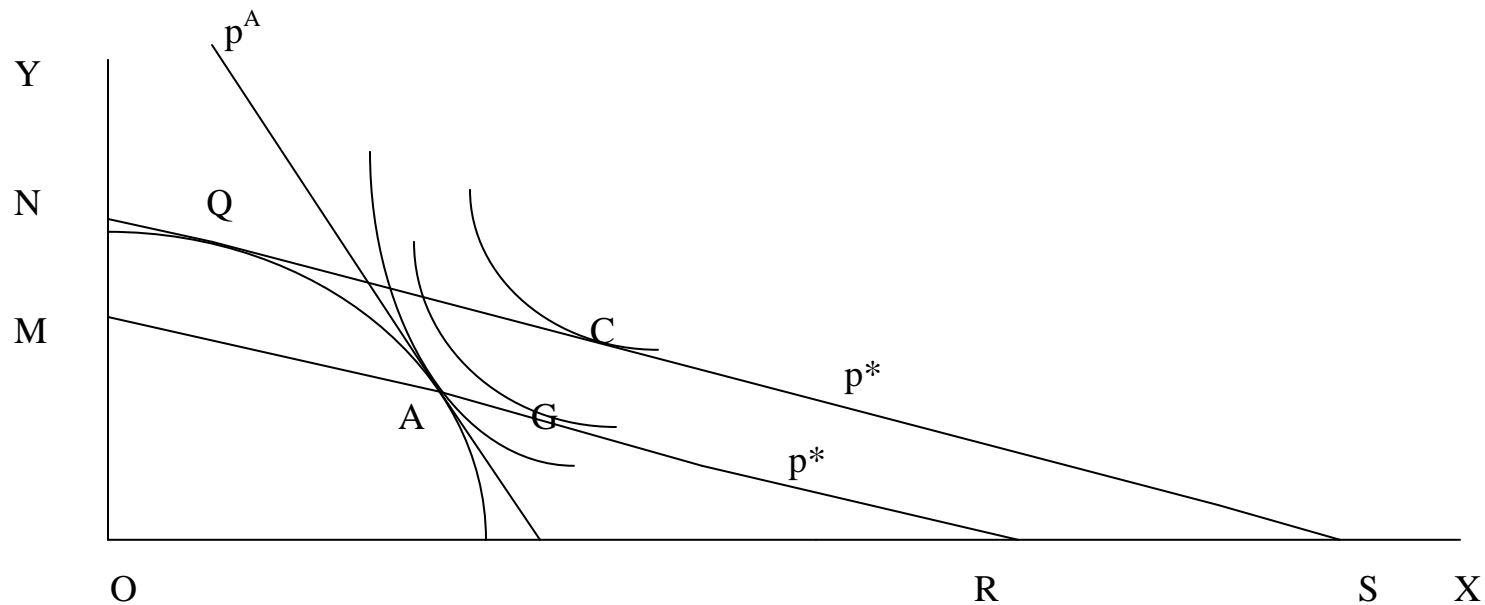
With basic producer and consumer theory and the concept of general equilibrium we can now study a basic proposition from trade theory. In simplest terms these *static* or *allocative* GFT come from the fact that a country that moves from autarky to free trade gets to trade at a price ratio different from the autarky price ratio. And this must make the country better off. This is true for a small country entering trade at a fixed p^* ; it is true for two “large” countries that can affect world prices; it is true for all countries in a many-country world.

Figure 5.1 shows GFT for a country with a straight-line PPF; it fully specializes in X and imports Y. (Show this on an import demand (excess demand) curve).

Figure 5.1 shows GFT for 2 countries where home has CA in X and foreign has CA in Y. Both countries achieve higher welfare through specialization and trade.

We need to break down these allocative gains a bit. Consider this case with a concave PPF.

Autarky at A, free trade prices p^* permit production at Q and consumption at C. Note the overall rise in real GNP is the distance RS measured in X units (or MN in Y units) where we value those gains at p^* .



We distinguish:

Gain from exchange: A to G

Gain from specialization: G to C

Total gains from trade: A to C

GFT Theorem

The graphical demonstration above is enough for me. But we often state the GFT theorem more precisely: *Let there be perfect competition in product and factor markets and no consumption distortions. Then, evaluated at free trade prices, the value of consumption in free trade is higher than the value of consumption in autarky.*

This can be stated as “free trade is revealed to be preferred to autarky” or consumers prefer the free-trade bundle.

Here's a simple proof in goods X and Y (text has multiple goods). We know that market efficiency implies that the value of production in free trade exceeds that of production in autarky:

$$p_x^* X^* + p_y^* Y^* \geq p_x^* X^a + p_y^* Y^a$$

But trade is balanced at p^* , which means the value of production equals value of consumption:

$$p_x^* X^* + p_y^* Y^* = p_x^* D_x^* + p_y^* D_y^*$$

And clearly $X^a = D_x^a$ and $Y^a = D_y^a$

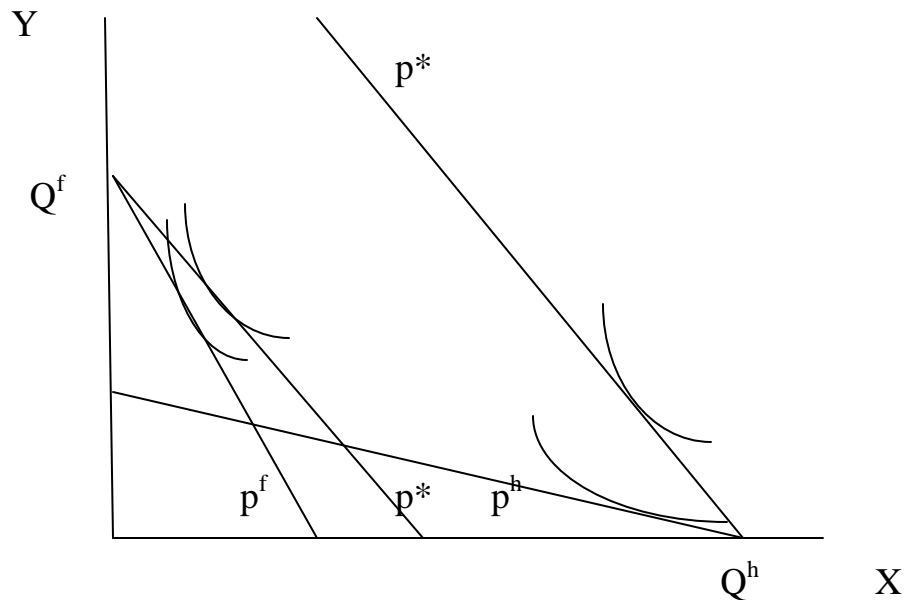
From this it is immediate that $p_x^* D_y^* + p_y^* D_y^* \geq p_x^* D_x^a + p_y^* D_y^a$

So even though there is enough income in free trade to purchase the autarky bundle the economy chose the free trade bundle.

Note what the theorem says: perfect competition and no distortions form a sufficient condition for a country to gain from moving from autarky to free trade. If there are monopolies, distortions and externalities this may not be true. Showing that takes some work and will be done later in the text. But free trade in the presence of such problems may raise or lower welfare compared to autarky; it depends on the circumstances.

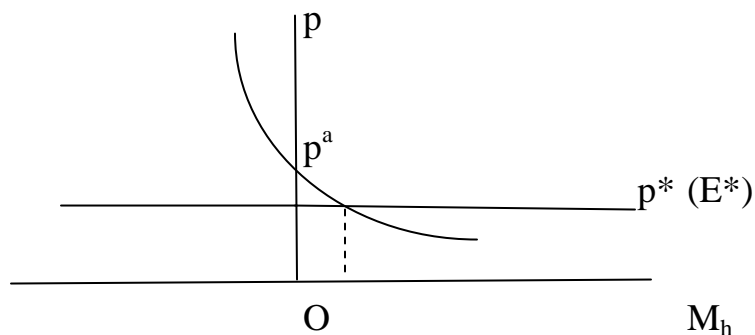
We are also interested in the *distribution* of the gains from trade.

Between countries this is pretty simple. Take 2 countries in autarky and permit them to trade. Then as long as the free-trade price ratio is strictly between their autarky price ratios, both countries gain. But that country with the bigger (percentage) change in its price (terms of trade) will get the larger share of gains. Figure 5.3 is an example. Here is another demonstration with straight-line PPFs:



This is just an informal diagram but it suggests a higher gain in welfare for h than for f. (Try to show that trade is balanced between h and f.) We'll work out a numerical example of this relative GFT in Chapter 7.

Immediate implication: when a small (price-taking) country enters free trade, it enjoys all of the GFT since it is too small to change prices in the rest of the world (ROW). Can easily see this with an import demand curve (here drawn from a concave PPF for the small country). In effect ROW has a perfectly elastic export supply curve at price p^* and h can import as much X and export as much Y as it wants at that price. Home's price ratio changes from p^a to p^* and it gets all the GFT.



The last two points in text chapter 5 are whether everybody inside a country gains, even if there are overall national GFT. In a representative agent model the answer is definitely yes. But otherwise the answer is no. The 2 cases are pretty obvious and the diagrams there are sufficient.

Case One: if people prefer to consume different things the group with a strong preference for the import good gains and that for the export good loses because the import price falls and the export price rises.

Case Two: if people tend to specialize in production or own factor endowments that tend to specialize in production there will be winners and losers from trade. If what you produce (or what your endowment produces) goes down in price you are worse off (lower income) but if it goes up in price you are better off (higher income).

In such cases we invoke the compensation principle: with higher aggregate consumption value the winners can compensate the losers so the latter are no worse off but the winners have additional income for consumption.

Is there empirical evidence that countries gain from trade? Consider the Japanese historical case.

Causes of International Trade: Chapter 6

I'm not actually sure why this is a separate chapter. It makes a very simple point. To analyze the sources of international trade it is convenient to start from a condition in which there would be no trade even if both markets were open. What assumptions would support that outcome?

Sufficient conditions for the “no trade model”: countries must display:

1. Identical CRS production functions.
2. Identical factor endowments (or at least the same relative endowments).
3. Identical and homogeneous tastes.
4. Perfect competition in all markets.
5. No distortions (endogenous or exogenous).

These conditions generate same autarky prices and so no trade would occur.

Trade theories relax these assumptions one by one or in combination.

Start with the Ricardian model, which relaxes number one and permits different technologies.