

Principle of Economics

Application : international trade

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So far we have discussed the supply and demand model and we discussed the looks of the market solution and before discussing supply and demand model we discussed the production possibilities frontier and the benefits of trade between market participants and in this chapter we are combining what we have learned we will use the defining about compared advantages in the production of various commodities between countries and we will use the diagrams from the supply and demand model to show the benefits of trade between different countries in terms of welfare achieved by consumers and producers in each country and then we will look at the welfare effects of government intervention.

So we can say that the effects of free trade can be shown by comparing the domestic price with world price of a commodity and the idea is that the domestic price of a commodity tells us whether the domestic country has a comparative advantage in producing the commodity or disadvantaged disadvantage compared to other countries.

When we're discussing the world price of the commodity, I want you to think that for a particular commodity, each country has its own market can think that for example talk about the market for steel and in each country we have a very similar market with a relatively inelastic supply curve relatively inelastic demand curve for steel, and different countries have the market solution at a little bit of different point.

So different countries have different size or slightly higher or lower supply and demand curves for steel and as a result if countries don't trade with each other, we would find a little bit different market equilibrium in each country.

Now in this chapter we will focus on a particular country with this market supply and demand diagram, and we will study whether this country has an incentive to trade with other countries in the world.

And when we are discussing other countries in the world, we will lump them together, we will discuss the conditions in our domestic economy verses the conditions in worldwide in the rest of the world.

And when we are talking about market price when we are summarizing the information about the production of the commodity in the rest of the world, we should

think that the market price stands for the supply curve of the commodity in all other country except for our domestic country.

So we are here we should recall from chapter four that when we go from individual supply curves and individual demand curves to aggregate supply and demand curves, we add up horizontally how much each consumer can buy by how much each producer can make.

So when we are studying the world market for steel, we are adding up horizontally how much all producers in the whole world can produce together.

So even though each country has a fairly inelastic supply curve, the worldwide market supply curve of steel will be very elastic because we are adding up very many countries together.

And similarly, the worldwide demand curve for steel will also be very elastic because we are adding up many countries, many consumers together.

And at the limit as we add very, very many countries, these two curves will be perfectly elastic, and these two lines will be perfectly horizontal.

Okay? So when we discuss the world price of a commodity, we are thinking that the rest of the world is large and it can be summarized by a horizontal line equal to the perfectly elastic demand curve and perfectly elastic supply curve.

So in this diagram, we're comparing the domestic demand and supply curve to the world supply and demand curve.

And if the equilibrium in a domestic country is below the world price, we would say that our country has a comparative advantage in the production of steel, and as a result of our discussion in chapter 3, we would say that the country with this comparative advantage has an incentive to export some of the commodity to the other rest of the world.

So producers and our economy would want to produce more than they need to satisfy domestic demand.

And in the process, the price in the market would be bid up to the level of the world price, because producers would be more willing to sell their commodity abroad than in the domestic economy.

So now if we compare this solution in the domestic market without trade, and remember, without government intervention, we only have a producer surplus, consumer surplus, so this triangle to the left of the domestic equilibrium is the total surplus.

Now if we allow exports, we would say that now producers can get extra surplus by exporting their commodity.

So now, let's remember that the price just got bid up to the world price to the world level even in the domestic market.

So now producer surplus is this entire triangle, and consumer surplus just fell to this smaller triangle because consumers and the domestic economy now have to pay higher prices, they will buy less units, at higher prices, and we can say that consumers in the domestic economy lose because of free trade, but producers in the domestic economy gain.

And producers in the domestic economy gain buy more than buy how much consumers in the economy lose.

So overall we would say that in the exporting country, total surplus has increased as a result of the trade.

How about importing countries, so in this country, there is a comparative disadvantage to the production of steel and because the domestic equilibrium is above the world price.

And we can notice that with free trade, consumers in this economy gain because their consumer surplus increases by this area B and D, and domestic producers lose because there will producer surplus fell by area B.

We can say that in an importing country, producers lose, consumers win, and consumers win by more than by how much producers lose.

So, here we have shown that both in the exporting country and importing country, total surplus increases.

We say that trade is not zero-sum game both trading partners can gain from trading with each other and when you hear the debate about whether trade should be allowed or not, you should think that this debate is not about a war between countries but this debate is about a disagreement between consumers and producers in a single economy.

If consumers and producers in a single economy could agree with each other how to split the extra gains from exporting or from importing, everybody in the world could be made better off by trading.

So that's the...that's a nice result that we get that trade increases welfare in both kinds of economies and if producers and consumers can agree with each other how to split the extra gains, there would be no question about benefits of free trade agreements.

If this agreement is not possible, sometimes the government decides to restrict trade.

Generally we say that there are two ways to restrict a trade between countries.

One is to impose a tariff which is an attack on imports.

So suppose that a country has a comparative disadvantage in the production of steel, and suppose that this disadvantage is fairly large, and the domestic government fears that if the market price falls from the domestic level to the world level, domestic producers of steel will lose a lot of surplus.

And the government decides to impose a tariff so that if producers from other countries want to import their commodity, they would not be able to...

they would have to pay a fixed amount to the government for every unit imported. So, we can from the discussion in previous chapters, again, if the government introduces a tax, that means that the supply curve, the effective supply curve in the industry increases by the amount of the tax and in the equilibrium with trade we would say that a market price will not fall all the way to the free trade solution but only fall to the solution with the world price plus tariff.

Now we can...let's compare welfare between the free trade solution and solution with tariff.

We can observe that with this effective world price with a tariff, producers in the economy get surplus equal to this triangle here.

So, producer surplus increases from this small triangle to a bigger triangle.

Consumer surplus decreased.

It used to be this large triangle, here.

Now, it becomes reduced to this triangle.

So consumers lose this amount of surplus.

And we can also talk about the surplus received by the government because the government now collects revenue equal to the tax rate times the amount of imports.

So now, when we compare the producer surplus, consumer surplus and the new amount of tax revenues, we will realize that there're two small triangles here which are unaccounted for compared to the free trade solution and tariff solution these two triangles disappear and we would say these two triangles represent the dead weight loss from government intervention.

So, to summarize the results with the tariff on imports are the same as the results of taxes in any kind of the market.

They result in redistribution of welfare the government can choose to give these tariff revenues to either producers or to consumers but there is inefficiency cost because the amount of market activity falls when government intervenes, okay?.

Alternatively, instead of imposing a tariff the government could impose a quota.

Quota is the maximum allowed level of imports so instead of regulating prices using market-based regulation.

The government dictates the maximum amount of imports.

Here, we could say that effectively the supply curve in the market shifts to the right by the amount of the quota, right?.

In this situation, this world price of steel is not important anymore because importers cannot bring in any amount they want.

They are restricted to bring in this much of the commodity.

If we had a low enough price in the domestic economy, importers wouldn't want to import any amount they would choose to sell their output good in other countries but if the price in the domestic economy is at least at this level or higher importers would want to bring the maximum amount of the commodity into the country.

So, domestic supply would effectively shift by the amount of quota to the right and that means that the market equilibrium would now be at the intersection of the domestic demand curve and the increased supply curve and once again we could summarize that with this market price and market quantity consumer surplus would be equal to this triangle so consumer surplus would fall compare to the free-trade solution at this price level producers domestic producers would be producing this amount of output so producer surplus would be this triangle.

That means the producers would get gain from this government intervention.

There would also be this benefit that somebody would receive so here we should think that when the government imposes a quota it can either give out the quota for free to importing companies and importing companies could receive this rectangle as increased profits or the government could sell the licenses to import to the companies and maybe this area could be collected as a revenue just like in the tariff case but either way we would say that the amount of market activity falls compare to the free-trade solution and we have this two triangles that nobody receives compared to the free-trade solution regardless of whether the government uses tariffs or quotas there is inefficiency cost.

The level of market activity falls and some market inefficiency results and here you should think that if the quotas and tariffs are set at particular levels their effects could be identical.

We could get identical reduction in quantity in the market identical increase in the market price and identical dead weight losses and as a final thought on free-trade we could ... let's remember that in this discussion we only talk about monetary benefits of... monetary benefits that consumers and producers receive.

We didn't talk about other sources of happiness such as increased variety of goods.

Hm..we didn't talk..

We assume that supply curve was constant which means that production costs were unchanged but if free trade allows for rules talk about cost later, economies of scale which means lower marginal cost of production as output increases or if free trade results in increased competition and increased sharing of ideas and production technologies.

There could be additional benefits, additional economic benefits of free trade.

Critics a free trade usually raise one of these five arguments and we should think that these are not economic arguments against the trade.

These arguments results from some failures in the markets.

Usually, arguments against the trade are based on the recognition that the welfare gains of (let's say) producers cannot be shared with producers who may have lost some welfare.

So, welfare changes cannot be easily shared between market participants in a single economy and because of this inability to share welfare gains the government chooses to intervene in the market and protect..producers to protect workers or protect the size of domestic economy rather than allow importers to benefits from domestic markets.

So, now we have discussed the welfare properties of market solutions in free markets and in market with the government regulation.

In the next two chapters we will look at some market failures.

Chapter 10 and 11 deal with a positive and negative externalities of production where government intervention can actually increase market welfare and in chapter 15, 16, 17 we will look at market power.

If the competition in the marketplace is not perfect we will say that the government can improve on the free market welfare if it intervenes in the market.