International Economics

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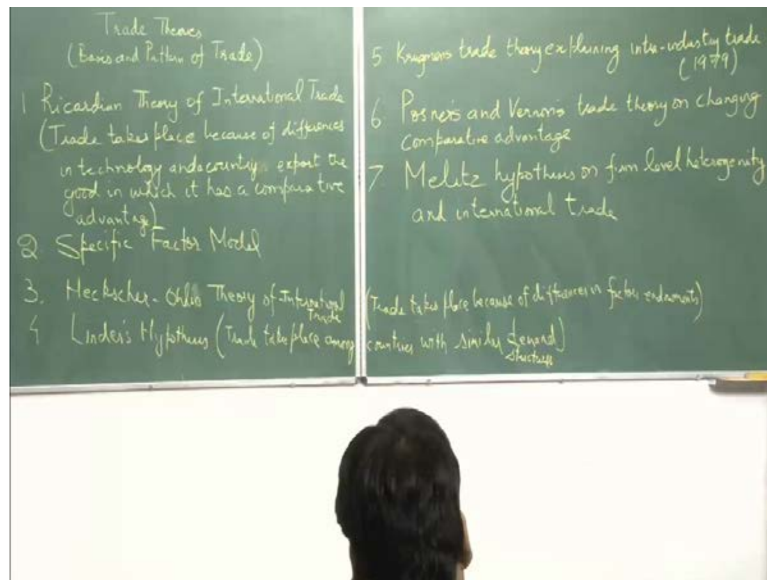

Good afternoon. Today we are going to start with our last section of this course on international trade that is trade theories. These trade theories will explain what is the basis of international trade and the pattern of trade. Now, the various theories starting from the Ricardian theory of international trade, which says that trade takes place because of differences in technology and it assumes that countries have similar factor endowment similar demand structure, everything is similar except that the technologies are different and the country which exports the good is the one, which has a comparative advantage.

So, I will explain the term comparative advantage and absolute advantage in a moment, but let me elucidate the other trade theories, one is the specific factor model wherein you would study trade taking place in goods, wherein a good uses intensively certain factors and uses some common factors. Then you have the Heckscher-Ohlin, the famous one the Heckscher-Ohlin theory of international trade, where the trade takes place because of differences in factor endowments. So, Heckscher's work way back in 1919's followed by

his student's work in 1933 on intraregional trade all from Sweden university of Lund. They are the ones who said that trade takes place because of differences in factor endowments.

So, technology they assume to be same, similar demand structure everything similar except that the factor endowments differ across countries. Then you have the Linder's hypothesis which says that the trade takes place among countries with similar demand structures and then you have the Krugman's trade theory explaining trade and goods with similar factor intensities and this trade takes place because of economies of scale and product differentiation. Then in the sixty's there were another trade theories given by Posner and Vernon, on the changing comparative advantage and international trade and then the latest one by Melitz which talks of firm level heterogeneity and international trade.

So, all theories except seven are talking of country's trade while only Melitz talks of the reasons where firms cell select themselves and be part of the cell select themselves and the part of the export and the trade structure of the country. So, I will start with the basic Ricardian theory of international trade which says that trade takes place because of differences in technology and the country exports the good in which it has comparative advantage.

Now, this term comparative advantage is sometimes misunderstood by many people including professional economists, journalists and if you see, flip the newspapers and all, when you read something, you, it seems that people are not clear on what it means by this concept of comparative advantage. Now, one needs to distinguish between comparative advantage and absolute advantage. Absolute advantage is a country will have an absolute advantage. If it can produce the goods efficiently would mean that if it takes less number of hours to produce that particular good in comparison with the with the other country, then you say that this particular country has an absolute advantage in producing that particular good .

So, the mercantilists felt in the twelfth and the thirteenth century, people had this type of thing in their mind, that exports are good and imports are bad. What they were saying was that if say, Portugal is efficient in producing say or if the Britisher's are efficient in producing say, cloth and wine and they have an absolute advantage in the production of

both the goods. People at that time would predict that there will be no trade of Britain with the other countries because it was suppose to produce goods efficiently. Ricardo changed that particular concept that countries even though it has an absolute advantage in the production of both the goods it will still trade with the country which has an absolute disadvantage in the production of all the goods.

Now, this is something that you have to understand. So, if there is China and Germany and the Chinese have an absolute disadvantage in the production of all the goods in comparison to Germany, you will still find that China will export certain goods to Germany. Or if you are comparing US and United Kingdom and you find that UK has an absolute disadvantage in the production of all the goods in comparison to US, there will be some goods in which Britain will export that particular good to the US.

So, then the concept of comparative advantage came which uses the concept of opportunity cost. Opportunity cost is the cost foregone. So, if you are comparing two goods which are say cloth and wine you need to work out the opportunity cost of producing cloth vs. wine and if some country has a lower opportunity cost of producing that particular good then you say that that particular country has a comparative advantage in the production of that particular good.

So, you see all these myths flowing all over that countries which are less efficient in producing goods. That means, they have an absolute disadvantage in producing goods. The myth goes that they are the ones who will be the losers, they have to pull up their socks, they are the ones who will face intense competition from outside.

Now, you will see this in the newspapers, you will see it in the political speeches that there is one country which has been, which has an absolute disadvantage in the production of all the goods it is this country. who has to pull up their socks, will have to do something about it and then only it will be able to face the stiff competition from outside. What they are not aware is something which Ricardo was saying right from the time that he gave this theory is the concept of comparative advantage.

So, you may have an absolute disadvantage in the production of all the goods, but you may have a comparative advantage in the production of one particular good and once you have comparative advantage it means that you can produce a good at a lower relative

price and therefore, you would be able to export the good at a relatively higher price and import the good at a lower relatively price.

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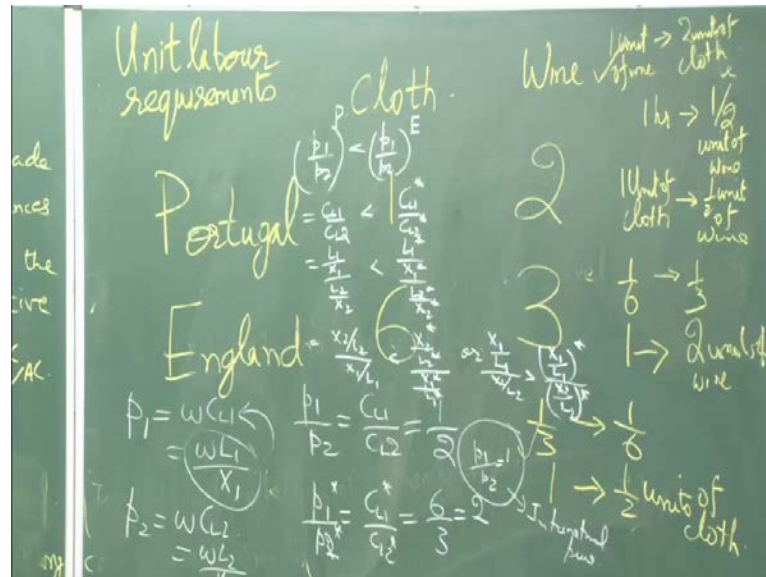

So, I will go to the board and give you this example to explain this concept of absolute advantage and comparative advantage. So, you have this two countries and this gives the now, these are the unit labor requirements and you have these two countries Portugal and England. So, it takes an hour to produce one unit of cloth in Portugal, it takes 2 hours of labor time to produce one unit of wine in Portugal. England, it takes 6 hours to produce one unit of cloth, 3 hours to produce one unit of wine in England. I could have interchanged the countries, I could have put that country England there, Portugal here.

But what is very clear is that, Portugal has an absolute advantage in the production of both cloth and wine. So, why because it takes 1 hour to produce 1unit of cloth here. It takes 6 hours to produce 1 unit of cloth in England. It takes 2 hours to produce 1 unit of wine here in Portugal. It takes 3 hours to produce 1 unit of cloth in England.

Now, the mercantilist had this impression in mind and many people have this impression that if you look at this type of production structure, there cannot be any trade taking place between Portugal and England. Why because, Portugal has an absolute advantage and they are the ones who will consider exports to be good, imports to be bad because they are efficient in producing both the goods. So, Portugal has an absolute advantage in production of cloth because it can produce cloth with less units of labour. Portugal has an

absolute advantage in the production of wine because it takes less of labour to produce one unit of wine.

Now, what Ricardo said was that you need to work out the opportunity cost of producing 1 unit of cloth in terms of wine. Now, to work out this opportunity cost what you need to work out is that two it takes 2 hours to produce 1 unit of wine. So, in 1 hour you will be able to produce half unit of wine. So, then to produce 1 unit of cloth, here you have to forego half unit of wine in Portugal.

That is the opportunity cost what is the opportunity cost here. 6 hours will produce 1 unit of cloth. So, in one hour you will produce 1 by 6 units of cloth. In 1 hour you will produce 1 by 3 units of wine. So, to produce 1 unit of cloth here, you have to forego 2 units of wine in England. 1 by 3 divided by 1 by 6. So, 6 goes up. So, you get 2 units of wine. So, the opportunity cost of producing 1 unit of cloth is only half a unit of wine here and it is 2 units of wine in England. This means, if this country has a lower opportunity cost, it means that it has a comparative advantage in the production of cloth. This England has a comparative disadvantage in the production of cloth.

So, Portugal will export cloth from here. Now, if you had to work out the opportunity cost of producing wine, here it would be 1 by 3 units of wine means 1 by 6 units of cloth you have to forego. So, to produce 1 unit of wine, you have to forego half units of cloth and here if you have to produce 1 unit of wine then you have to forego 2 units of cloth. Did you get this point?

So, then England produces wine at a lower opportunity cost, Portugal produces wine at a higher opportunity cost. So, in summary Portugal has a comparative advantage in the production of cloth. So, it will export cloth. England has opportunity cost in producing wine. So, it will export wine. So, Portugal is exporting cloth importing wine England is exporting wine and importing cloth. Now, in more formal way of defining this is to express it in terms of relative prices. When you say, comparative advantage it means that you can produce a good at a lower relative prices and those relative prices depict opportunity cost.

So, recall that if it as a perfect competition in the long run, the prices are equal to the average cost and the this economy which Ricardo is defining, you only have one factor of production which is labour. So, if there are two goods which are produced and prices

are equal to average cost. So, p1 is equal to w c l 1, where c l 1 is unit labour requirement in the first industry and p2 is w c l 2, which is w l 2 by x 2, prices are equal to the average cost.

So, p1 is w c l 1, p 2 is w c l 2. So, p 1 by p 2works out to be c l 1 by c l 2. So, if you have to work out the relative prices in Portugal, it will work out to be c l 1 by c l 2 amount of labour required to produce 1 unit of first good c l 1, c l 2 amount of labour required to produce 1 unit of wine which is good 2. So, if you work this out, see what you get, you get, half and half is nothing, but the opportunity cost of producing cloth, remembers this. So, the relative prices depict the opportunity cost of producing good, one in context of good two.

Can you work out p 1 by p 2 in England, c l 1 star, c l 2 star p 1, star p 2 star this would be equal to 6 by 3, which is equal to 2, this was the opportunity cost of producing cloth in respect of wine in England, which works out to be 2. So, then Ricardo said that trade takes place because of a country has a comparative advantage in the production of the good.

So, you can see that Portugal has a role lower relative price of producing good, one which is cloth in comparison with the foreign country. So, comparative advantage means lower relative price. Lower relative price means you have a lower opportunity cost of producing goods.

So, Ricardo..

Sir, here, that Portugal tries to import the wine from England. So, the cost of importing, assuming the labour cost is same in both the countries. So, the cost of importing wine would be higher than the cost of producing the wine itself in Portugal itself. So, will it be profitable for Portugal to produce wine?

Why say for example, if you work out p 2 by p 1,in Portugal it works out to be 2 and if you workout p 2 by p 1 in England it works out to be half right. So, it means that England can produce wine at a lower relative price isn't it. Because p 2 by p 1 here would be lower than p 2 by p 1 in Portugal. So, then you have and comparative advantage in the production of wine, that is England has a comparative advantage in the production of wine.

So, then England will export wine and import cloth and why will it do it, because if the international prices are such that if it gets a higher price for wine then it willdefinitely enter the export market and export that good. Another the gain from trade is that one, it gets a higher export price second, it can import cloth at a lower relative price. So, that is the gains that one. Now, if you are saying that England will import wine then.

Portugal why would Portugal import wine that is because it (( )).

Portugal will import wine because Portugal produces cloth at a lower relative price which is half and the relative price of cloth in England is working out to be two. Now, again think of the gains from trade if the international prices are such that it is between half and two. So, the exporters will jump in because they will get a higher price for cloth and importers will gain because now, they can import wine at a lower cost, right? For example, if the international prices and I will tell you how international prices are determined. Remember international prices wherever the export supply curve intersects the import demand curve that is that is the point where you have the ,where you have the international prices.

So, the international prices if these are autarky prices, international prices you will see, will be anywhere between half and one half and two and. So, for example, if it works out to be p 1 is equal to p 1 by p 2 is equal to 1.

Now, see what happens if this is the international price in for 1 year, 1 hour spent it can produce 1 unit of cloth. So, if it exchanges 1 unit of cloth it will get back 1 unit of wine and compare it with the situation in autarky before trade that it would spend 2 hours to produce 1 unit of wine. So, if it had spent 1 hour it would have only produced half a unit of wine. So, by trade trading 1 unit it is now, getting 1 unit of wine and here in autarky before trade it would have only got half a unit of wine.

So, with trade what happens is that your consumption level goes up you areon a higher end difference curve. So, there are gains from trade and inherent in gains of trade is the fact exporters gain because they get a higher price. Importers gain because they can import the good at a lower price. So, the consumption goes up.

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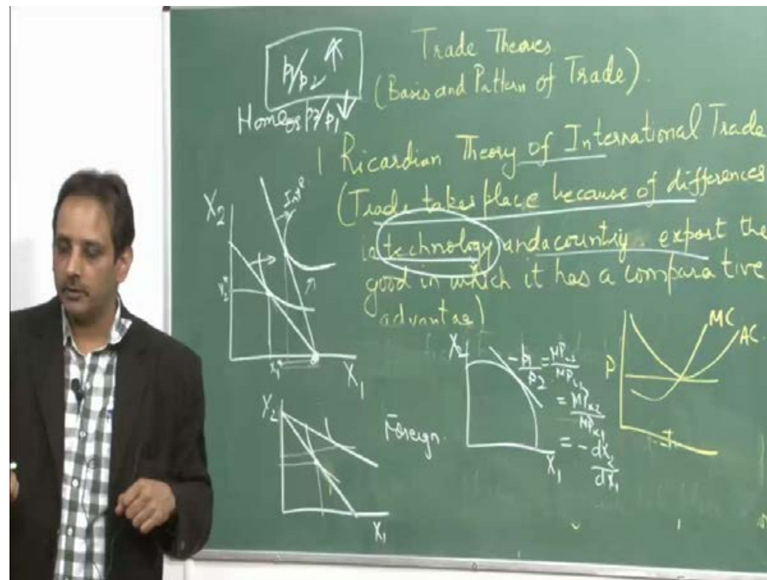

Sir, will it happen that possible, we just end up producing clothes and wine (( )). Absolutely reason being please recall that there is something like a p p production possibility frontier. Do you recall a production possibility frontier x 1 x 2, whose slope is minus p 1 by p 2 and this is equal to M P L 2 M P L 1 M P K 2 by M P K 1 and this works out to be minus d x 2 by d x 1? I will come to it.

So, if you move from left to right to produce more unit of x the slope of this line increases. Why because x one say for example, is a labour intensive good x 2 is a capital intensive good, if you have more production of a labour intensive good you require more units of labour, but those more units of labour are not forthcoming from production of x 2 which is a capital intensive good.

So, the relative wage rates will go up. So, the relative price of this labour intensive good will go up if you increase the production of x 1. Now, this is a scenario where the p p f is concave to the origin, but look at the p p f look at the slope of the p p f in the Ricardian model p 1 by p 2 is c l 1 by c l 2, which is fixed in the Ricardian model.

So, then if it is fixed the slope is fixed, the slope is fix. So, the p p f is like a straight line. So, in autarky before trade you have a situation where you are producing both these goods x 1 star and x 2 star and when I say that when trade trade takes place at price which is the international price and international price has to be different from the

autarky price, if it has to be different. That means, if exporters have to gain then look at the new international price which will be like this will be the international price.

So, if this is the international price you were here in autarky, what will happen in the Ricardian model is that the common point between the new international price and the old autarky price is this. Once trade takes place in the Ricardian model, one country which had a comparative advantage in the production of x 1 will completely specialize in the production of x 1 and it will export this much of x 1 import this much of x 2 to reach an indifference curve which is to the right it willhave higher level of satisfaction because it could import good at a lower price. So, its consumption goes up. So, it is it is on the higher indifference curve.

But in the Ricardian model after trade country specialize in the in the production of that good in which it has a comparative advantage. So, I will be back in explaining this slope of the p p f. I will be back in explaining the gains from trade for both the home and the foreign country. So, look at the autarky prices these are the autarky prices that you have which is equal to c l one by c l 2.

Now, another thing that I wrote, I think by now, it is clear that comparative advantage means that you can produce a good at a lower relative price, but all these theories are. About why do you see a lower relative price? Ricardo says that you have a lower relative price because you have a superior technology that is what Ricardo is saying and how is it reflected it is reflected in this unit labour requirements.

Now, here you see p 1 by p 2 lower then p 1 by p 2 in England. So, this is Portugal this is less than p 1 by p p 2 in England. So, Portugal has a comparative advantage comparative advantage means, lower relative price, but we need to go behind the reason that why it has a lower relative price. Now, if you go behind the reason that you have a lower relative price, you need to work out c l 1 by c l 2 and c l 1 star by c l 2 star what c l 1 its l 1 by x 1 by l 2 by x 2 this is less than l 1 star by x 1 star l 2 star by x 2 star this is equal to x 2 by l 2 by x 1 by l 1 less than x 2 star by l 2 star divided by x 1 star by l 1 star or x 1 by l 1 divided by x 2 by l 2 greater then x 1 by l 1 star x 2 by l 2 star.

Now, look at this you have a lower relative price because the relative productivity of producing good x 1 is greater in Portugal in comparison to England. And that is what Ricardo was interpreting technology to be that if you have a superior technology. That

means, you have you can produce you have a higher relative factor productivity relative factor productivity underlying because otherwise defining technology is difficult. So, that is what Riparian theory is all about trade takes place because of differences in technology this comes with meaning technology means higher relative factor productivity and country exports the good in which it has a comparative advantage.

So, if you can produce a good at a lower relative price you will export good x 1 import good x 2 and second. Why this these are low, because you have a superior technology. Now, when we come to Huckster Ohlin the entire theory will be about why you have a lower relative price. Huckster Ohlin were of the opinion, you have a lower relative price, because you have abundance of say one factor of production, which is that factor of production it is that factor which is intensive in the pit which is intensive in the production of good one.

So, you will see a very neat structure, if you get to read some good books you will see a very neat structure, where you will see a common thread that would be all theories. Which say that a country has a comparative advantage they will go behind the reason. Why you have a comparative advantage? Why you have a lower relative price? Ricardo said you have a lower relative price, because you have superior technology, higher relative factor productivity. Heckscher Ohlin said, because you have abundance of that factor that is why you have a lower relative price. Krugmen was of the opinion that because you have, you can reap economies of scale and you have product differentiation that is the reason that you have lower relative price.

So, you will see a common thread, but every theory is about why you have a lower relative price. So, you would see that all books of trade will start with defining. What will be the relative price in autarky? They will not bring in trade immediately, they will first give you all the tools of international economics then at the end of the chapters they will give you what determines, these relative prices once that is clear then they will bring in trade. So, that is my point here.

Now, coming back to if this is home. So, this is the p p f before trade this is the autarky situation both goods are being produced. Now, the international prices are such that, if p 1 by p 2 goes up if p 1 by p 2 goes up then p 2 by p 1 goes down. So, then see what happens. This is a foreign country this was the home country it completely specialize in

the production of x 1 and because the international prices were such after trade this country will completely specialize in the production of x 1 export this much of good and import this much of good.

In the foreign country, this country will completely specialize in the production of good x 2, because it in x 2 it was a it will have comparative advantage export this much of x 2 and import this much of x 1 and why will the world welfare go up, because it is like producing goods efficiently earlier you were producing both the goods.

Now, you can devote your resources to the production of good in which you have advantage. So, you have higher production of that good. The other country also does the same the world output goes up the world consumption goes up because now, you can import the good at a lower price. So, you can consume more you are on the higher end difference curve. So, the gains are coming because you get a higher export price and you can import the good at a lower price.

Now, technically this gains from trade can be captured by the marginal productivities. Can you let me know, what will be the marginal productivity of cloth in Portugal and remember marginal productivities is the relative prices relative wage rates. Do you recall this? w by p is the m p cloth why? Because remember, that you employ labour till a point where the wages are equal to the v m p l. Do you remember v m p l value of marginal productivity that is the demand curve for labour then you have the supply curve of labour which is w l which is horizontal.

So, wherever demand for labour it cuts the supply of labour that is the amount of labour that you will employ. So, wages will be price into m p l which is p into m p l which is v m p l. So, w by cloth in Portugal is marginal productivity of cloth which is one what is wage by price of wine which is M P M P wine. Can you let me know what will be this? Let us see w by price of cloth, by price of wine. So, w by price of cloth one the international price of cloth by price of wine say for example, is one. In fact, the price is one. So, this is one. So, the marginal productivity of wine is one after trade and before trade half, because two units of labour produce one unit of wine. So, one unit of labour would produce half unit of wine and after trade look at the marginal productivity it is one.

So, technically when you say in the Ricardian model what is the gain? The gain is in terms of the relative wage rates, where the relative the prices are the prices of the imported good and in common man's language. It is like saying, if the international prices are one then, if you had exported 1 unit of cloth, you would have got 1 unit of wine here. If you had produced 1 unit if you have to spend only an hour's time you, would have got half unit of wine that is the gain here in England can you let me know what will be the gain in one hour you produce? One by three units of wine the relative prices international prices is p 1 by p 2 is 1.

So, if you exchange one by 3 unit of wine. You will get back 1 by 3 units of cloth and earlier before trade one by 6 absolutely. So, that is the gain and how would you do technically the marginal productivity. So, you need to find what wages by. So, look at the imported goods imported good is price of cloth in England. So, this is w by price of wine into price of wine by price of cloth price of wine by price of cloth is one wages by price of wine. Which is the marginal productivity is one by three. So, you get one by three and compare it with the with the marginal productivity of cloth in England, it is one by 6 are you getting it is become little bit, I hope you are getting it.

So, another thing can you let me know, what will be the wages in the two countries after trade. Remember after trade both the countries produce the goods in which it has a comparative advantage, can you let me know what will be the wages, again the formula for the wages price into M P L.

So, in Portugal say for example, you have this as the international price. So, you assume that the prices are same dollar 12. So, dollar 2 into the M P Lsay in Portugal one. So, dollar 2 is the wages in Portugal. What will be the wages in England? It will be dollar 12 into the M P L, because now wine is being produced. So, one by three is dollar four ok.

Now, see what is coming out countries. Which had an absolute advantage in the production of good will always have higher wages countries. Which had a comparative risk, let me repeat countries which had an absolute advantage in the production of both. The goods have higher wages country which had a lower absolute advantage has lower wages, but the point is that the country which has a lower wage is still trading it still has a comparative advantage in the production of certain goods.

So, look at the arguments, which go around newspapers, you are the ones which have the lower wages. If you go to the west they will see you, see all this pejoratively they will think you are trading, because you have lower wages never realizing that you have lower wages may be, because of the lower productivity right, but it does not mean that you cannot trade, you will trade the countries. Which have higher wages it does not mean that it will not trade. It will trade, because there is something like a comparative advantage.

So, many things become very clear, because if you see if you understand the factual things which go around you will see UK has an absolute disadvantage in the production of all goods in comparison with US, but you still see that Britain exporting certain goods it does not mean that Britain will stop exporting, because there's something like a comparative advantage. There is something like an opportunity cost. China has an absolute disadvantage in production of all the goods with respect to Germany. It has lower wages in comparison to Germany, but does not mean that the China will not trade, it will have, it will have certain goods it will have a comparative advantage. In production of certain goods in which it will once it has comparative advantage it will export that good.

So, one needs to clear these muddles of ideas which go around where you will see even professional economist going wrong. On all these you have to pull up your socks, you have to do something about it, but even if you have lower if you have an absolute disadvantage in the production of all the goods. You can still trade, because there is something like an concept of comparative advantage, there's something like an opportunity cost.

So, I will stop here, we will continue discussing the other theories. So, the whole idea I mean when we try to put it in the international trade syllabus. They said why you putting the ricardian theory, but there is. So, much that can come out of the ricardian theory. That it can clear certain muddles of ideas which are going around specially after globalization things which float around those things have to be cleared and these this ricardian model clears many things .

So, we will extend this ricardian model, because you can always say what this only has one factor of production. What happens if you have more factors of production? What if

you have a real situation where you have many goods? So, we will talk about that extension in the coming days.

(()) Trade in the situation prices wages in one country lower wages in the other country.

Well remember, here after trade, it is only one production of only one good right after trade. So, I am not saying anything about the wages here I am only talking about the marginal productivities. So, if you why would you think that there will be ? So, I will end up here we will talk about (( )).