# International Trade Notes

International Trade (Royal Melbourne Institute of Technology)

# International Trade Notes

## ECON1086

Chapter 1 – A Second Wave of Globalization

- Globalization is anything that facilitates expanded economic interaction across countries
- Rise of the steamship and the open of the Suez Canal, O' Bourke and Williamson - direct evidence on transport cost and indirect evidence on product prices
- Tariff is a tax on an imported good, this is plotted as, the total revenue collection from tariffs on imports in a given year into the US in a given year divided by the total value of goods imported.
- High tariffs discourage trade.
- Liberalization denotes any reduction in barriers to international transactions that are created by the government.
- The 20th century globalisation, technological advancements reduced international transport costs.
- Containerization is a system of standardized shipping containers that can be used on cars, trucks, trains or ships to pack a shipment without opening the container.
- Firstly, there was a large rise in international trade. Secondly, movement of capital, foreign portfolio investment, where investors can purchase shares of foreign companies or securities. Foreign direct investment when a foreign enterprise expands a productive facility in another country. Outward foreign direct investment has expanded greatly in the 20th century.

**Why is there trade?**

- Firstly, countries differ and there are differences between any two countries, in technology, climate, culture, factor supplies and consumer preferences (Imperfect competition).
- Secondly, increasing returns to scale, meaning that an increase in output results to a less than proportional increase in costs.
- Thirdly, many industries are oligopoly, meaning they are dominated by few large firms.

**Trade Openness**

- The *Openness Index* is calculated as the ratio of country's total trade, the sum of exports plus imports, to the country's gross domestic product. = (Exports + Imports)/(Gross Domestic Product).
- Note 1: GDP is not constant; it varies yearly as it adjusts to economic conditions. GDP does not take into account cost of living and the inflation rate. Nominal values of GDP (or other income measures) from different time periods can differ due to changes in quantities of goods and services and/or changes in general price levels.
- Note 2: Constant prices are a way of measuring the **real** change in output. A year is chosen as the base year. For any subsequent year, the output is measured using the price level of the base year. This excludes any nominal change in output and enables a comparison of the actual goods and services produced.
- A market-economy mostly free from trade barriers and where exports and imports form a large percentage of the GDP. No economy is totally open or closed in terms of trade restrictions, and all governments have varying degrees of control over movements of capital and labour.
- The Degree of openness of an economy determines a government's freedom to pursue economic policies of its choice, and the susceptibility of the country to international economic cycles.

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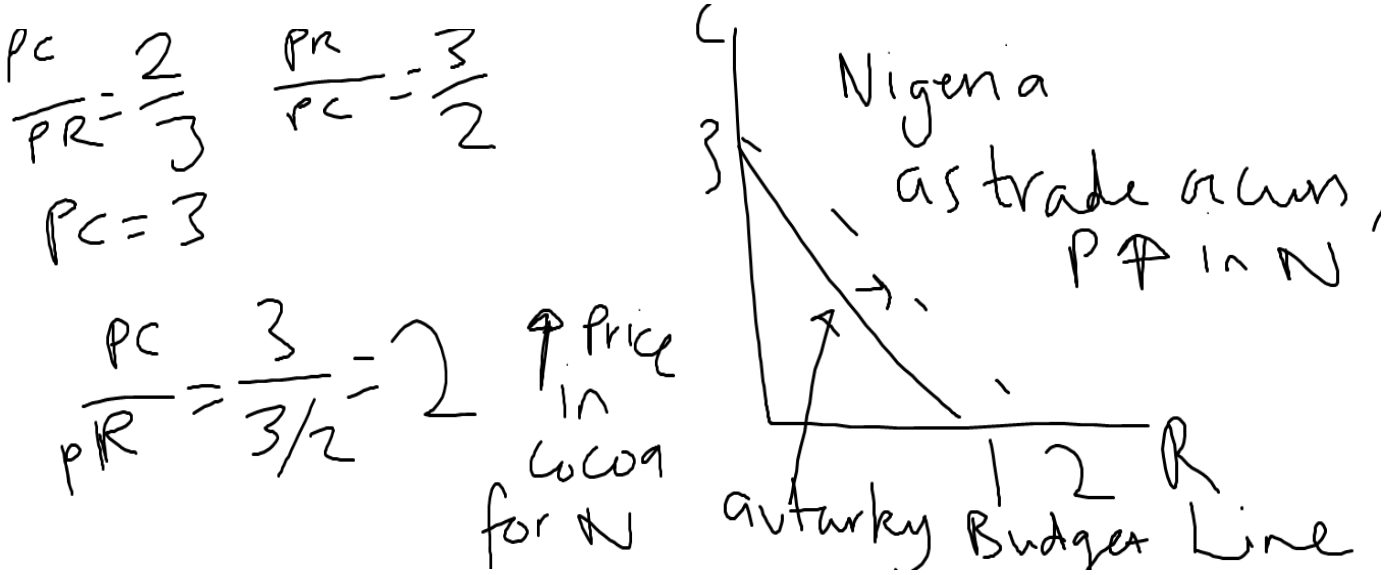
Chapter 2 – Should Nigeria strive for self-sufficiency in food?

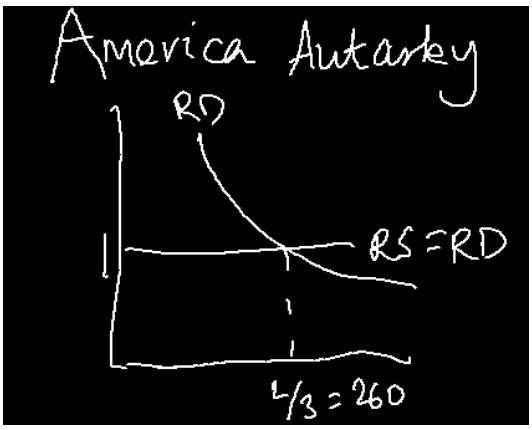
- The Ricardian model focuses on comparative advantage, which arises due to differences in technology or natural resources. The Ricardian model does not directly consider factor endowments, such as the relative amounts of labour and capital within a country.
- The Ricardian model is based on the following assumptions:
  1. Labour is the only primary input to production.
  2. The relative ratios of labour at which the production of one good can be traded off for another differ between countries.
- Use of trade policy to have self-sufficiency – although based on comparative advantage, self sufficiency blocks gains from specialisation. Exporting what is relatively best at producing and importing what is least good at producing.
- A country has absolute advantage in a commodity if its workers are more productive in producing that commodity than workers in another country.
- A country has a comparative advantage if its opportunity cost in producing that commodity is lower than that of the other country.
- Competitive Markets mean that all producers and consumers take prices as given and that prices adjust to clear the markets.

| | COCOA | RICE |
|---|---|---|
| NIGERIA | 390 (3 UNITS OF 130) | 130 (1 UNIT OF 130) |
| U.S. | 260 (2/3 UNIT OF 390) | 260/3 UNIT OF 390) |

- Nigeria can make 3 units of cocoa for 1 unit of rice, and U.S. can make 1 unit of rice for 1 unit of cocoa.
- Nigeria will lose 1/3 rice if they produce cocoa, and lose 3 units of cocoa if they produce rice.
- America will lose 1 unit of rice if they produce cocoa and lose 1 unit of cocoa if they produce rice.
- Nigeria can make 1/3 rice of for 3 units of cocoa and U.S. can make 1 unit of cocoa for one unit of rice.
- On the graph below for cocoa, between 1 and 3 is the relative price where only Nigeria will produce cocoa, below 1 both will ONLY produce cocoa and above 3 both will produce RICE AND COCOA.
- Under autarky, for markets to clear, the amount of each good produced in Nigeria must be the same amount consumed (demand equals supply).




- For any given price we can put together quantity of cloth produced in both countries and divide by the quantity of tobacco produced and obtain world relative supply.
- Hence for relative supply of rice, price produced in America is 260 divided by supply of cocoa which is 360.
- Complete specialisation – only produce one good.

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Chapter 3 – Why do Americans Get their Impalas from Canada?

- Increasing returns to scale is completely separate from comparative advantage,
- Internal IRS: In increases in input by (example) 6%, lead to an increase in output by more than 6%, lowering the average cost
- Fixed costs (such as rent) lead to IRS over a range of output and give the manufacturer an incentive to try and concentrate all production in one location.
- External, national IRS: lf increasing input by 6% increases that firms output by no more than 6%, not increasing the inputs of all firms within the same industry increases all their output by more than 6%.
- If as above "", although worldwide not national, then we have international IRS.
- To decide which strategy to use when trading, you must trade off the effects of IRS (concentrating production in one area) against tariffs and transport costs.

**Why move production to a foreign country?**

1. The unit labour cost of production in a country is very high.

2. The distance between the two countries is low.
3. Tariff charged by the country is low
4. The fixed cost is very high.

- The firm is more likely to serve the foreign market through trade if there are low tariffs, low transport costs and large IRS.

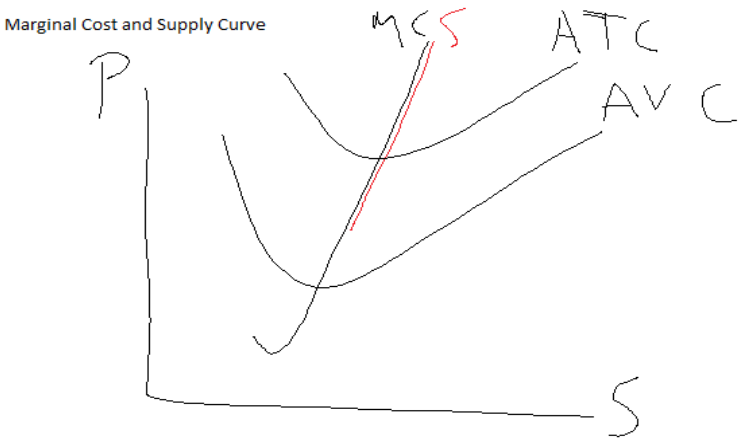
**Melitz effect**

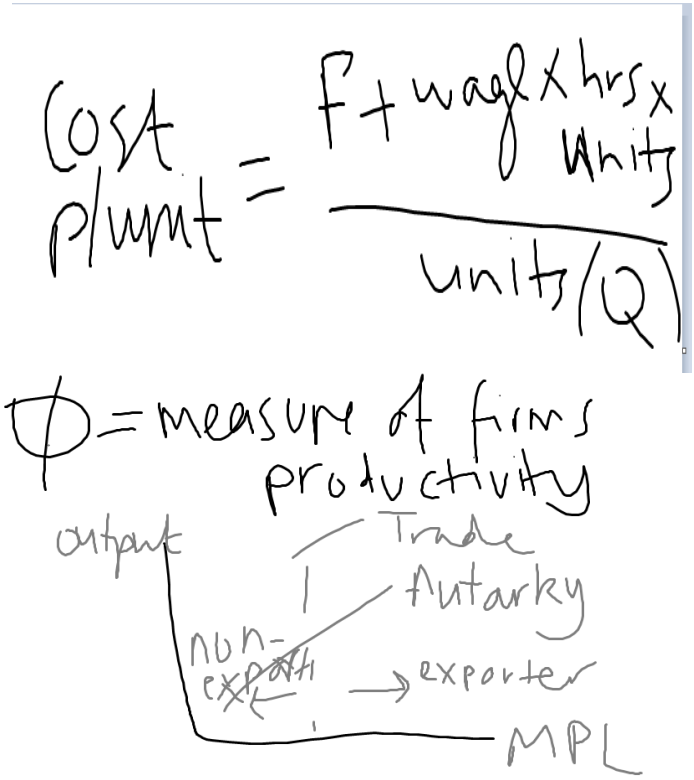
- changing marginal cost. Firms die off and are replaced by new ones, each firm must pay a fixed cost to export produces a unique product that are unchanged.

1. A more efficient firm with a lower marginal cost will produce and sell more. Production on a small scale does not create enough profit to justify the fixed costs.
2. Most efficient firms will have pay the fixed cost required to export when trade opens – only most productive firms will enjoy the offsetting benefits.

**Globalisation raises productivity**

- Autarky is the economic independence or self-sufficiency.

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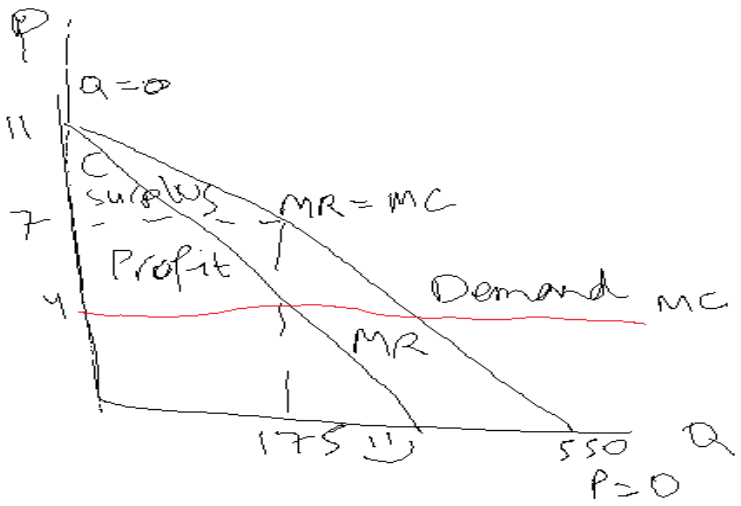
Chapter 4 – Trade and Large corporations: Kodak vs. Fuji

- Oligopoly is a market with producers that are large enough that each has some substantial control over pricing.
- Consumer surplus is an economic measure of consumer benefit, which is calculated by analysing the difference between what consumers are willing and able to pay for a good or service relative to its market price, or what they actually do spend on the good or service. A consumer surplus occurs when the consumer is willing to pay more for a given product than the current market price.




- (Marginal utility is the additional satisfaction a consumer gains from consuming one more unit of a good or service. Marginal utility is an important economic concept because economists use it to determine how much of an item a consumer will buy).

- In American marginal cost is $4 for Kodak, however in Japan it is an extra $2 due to shipping.

**Market Duopoly Assumptions**

1. The two firms choose their quantities in both markets simultaneously.

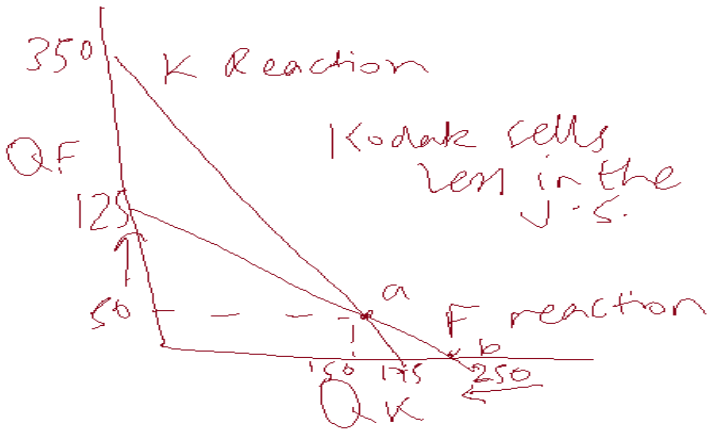
2. Each firm makes a conjecture about how much the other firm will sell in each market.

3. Each firm chooses own quantities in the two markets to maximise its own profits, understanding how that choice will affect product price.

4. Management of both firms is rational.

- Kodak's reaction function in the U.S. market is the function that shows how Kodak's optimal quantity depends on its conjecture of what Fuji's quantity will be.

- Imperfect comp is the situation prevailing in a market in which elements of monopoly allow individual producers or consumers to exercise some control over market prices.

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Chapter 5 – Why does the North want a tariff, and why did the South call it an abomination?

- The early U.S. economy was agricultural and Americans imported virtually all their manufactured goods from Europe, especially England. America exported agricultural commodities and imported manufacturing items.

- America began to impose tariffs for imports from England (around when the war commenced), hence leading to a huge expansion of American manufacturers. The South began to resists tariffs and the Northern manufacturers began to organise more aggressive tariffs.
- In a simple Ricardian model with comparative advantage, the U.S. were exporting tobacco, cotton and other agricultural commodities. With the simple model, if the government done something to benefit one citizen, it would benefit everyone by pushing their budget line outwards.
- Specific factors model is introduced to understand policy and trade. A specific factor model can only be used in one industry. E.g. a medical student cannot repair televisions or do something outside their studies.
- In the specific factors model, labour mobility among industries is possible while capital is assumed to be immobile in the short run. This model can be interpreted as a short-run version of the Heckscher-Ohlin model.
- The Pure specific models is where every factor of production is specific.
- The Richardo/mixed specific model is where we allow one factor to be perfectly mobile.

Cotton (C) –
Capital + labour $f^C$
CRS – $Q^C = f^C(L^C, K^C)$

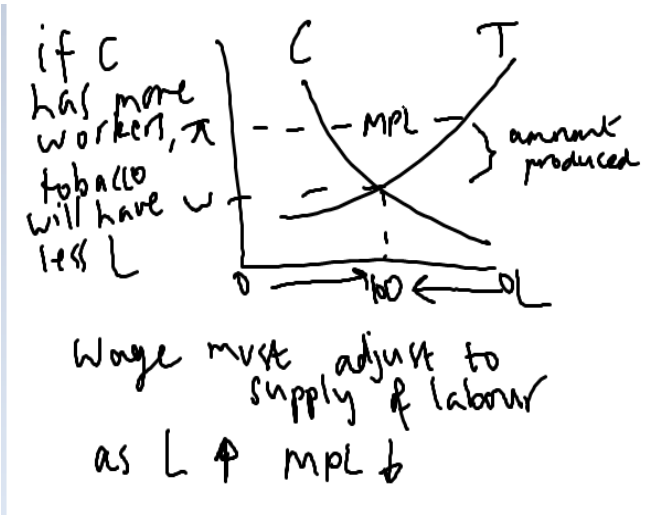
Tobacco (T) Product func
Labour + Land $f^T$
$Q^T = f^T(L^T, A^T)$

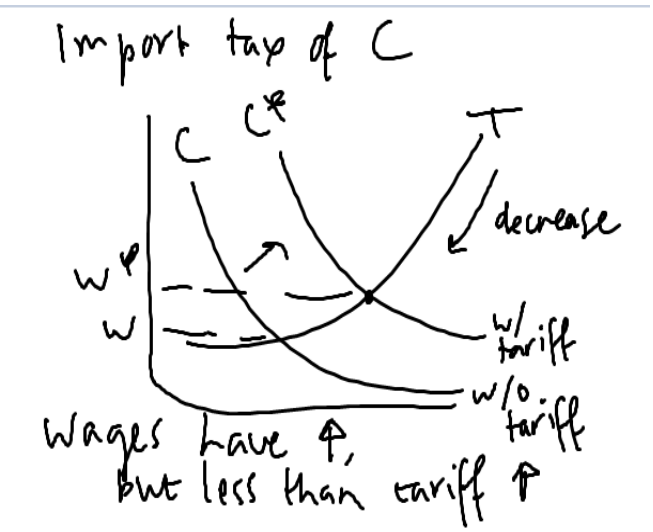
- South: In this model, capital is not useful for producing tobacco and land is not useful for producing cotton and each worker is constrained to work in their industry and moving industries would require a move to another country.
- North: Labour can move freely between employer to employer so that every piece of capital will earn the same return no matter where it is used.
- South (Tobacco) = $A^s$ and $L^s$ and the north (Cotton) = $K^N$ and $L^N$
- These are fixed, and all suppliers of factors, employers and consumers take prices as given and prices adjust to clear the market.
- The optimal choice for labour in the North involves setting the marginal value of product of labour equal to wage north. With constant returns to sale production function, the MPL is determined by the ratio of labour used to the other factor.

$$w^N = p^C MPL^C\left(\frac{L^M}{K^M}\right)$$

if $K^M$ ↑ then → will ↓

- The market will not be in equilibrium until wages adjust so that every manufacturer chooses a labour capital ratio equal to labour over capital.
- The incomes for specific factors will increase as the prices of output for the industry increases to which they are specific (after we realise wages increase by less than prices)
- Due to a 50% tariff on imports of cloth, people would turn to domestic producers however there would not be enough supply for everyone. As a result, domestic producers raise prices and the equilibrium outcome is an increase in the domestic price for cloth. Then the U.S. consumers are indifferent between buying from domestic producers or importing.
- The cloth workers wage would have to increase as a result of the price rise, however, the South's workers wage would not increase and hence their budget line goes inward because they can buy less cloth with the same income.
- Hence people are aligned according to which industry they are in.
- If there was a 50% tariff on exports of tobacco, tobacco farmers would have to pay more to export their goods.
- There would be an excess supply of tobacco in America if the farmers decide not to export anymore, however there are side effects and these are shown in the Lerner symmetry theorem.
- The mixed model 'Ricardo/Viner' model: employers in both sectors must pay the same wage. Each manufacturer will hire workers until the marginal value product of labour equals to wages. Wages then adjust with supply.

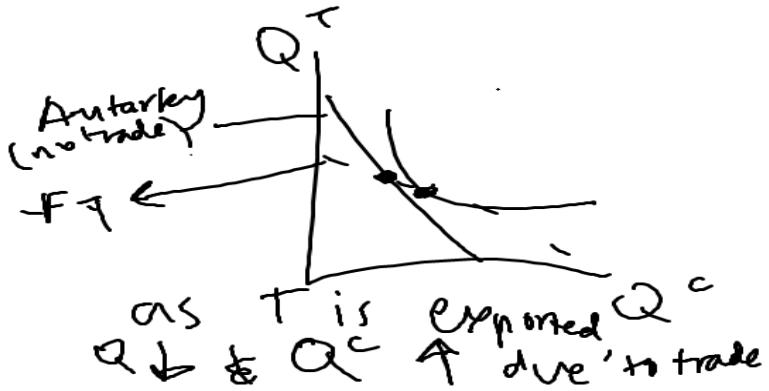



No matter where the tariff is imposed, it will affect everyone because of the mobility of workers across sectors and hence if we all earn the same wage, there will be implications of the tariff.

- If America has a comp advantage in tobacco and Europe in cloth, if the price of cloth increases then labour will shift from tobacco to cloth. As the price of cloth increases and tobacco stays the same, the relative price increases. E.g. 5 cloth/5 tobacco =1 … 10 cloth/5 tobacco = 2
- For any given price we can put together quantity of cloth produced in both countries and divide by the quantity of tobacco produced and obtain world relative supply.
- Trade raises the price of cloth for Europe and decreases it for the U.S.
- In the Ricardian model: trade lowers the relative price of each country's imported good and raises the price of each country's export good (what they have a comparative advantage in)

- Even though trade has downfalls. The gains are so large and they can compensate the losers.
- Each country exports the good they are relatively cheaper in producing under autarky, the relative price of the export good will increase due to trade (hence less supply for locals) yet the import good price will decrease.

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Chapter 6 – Is free trade a rip off for American workers?

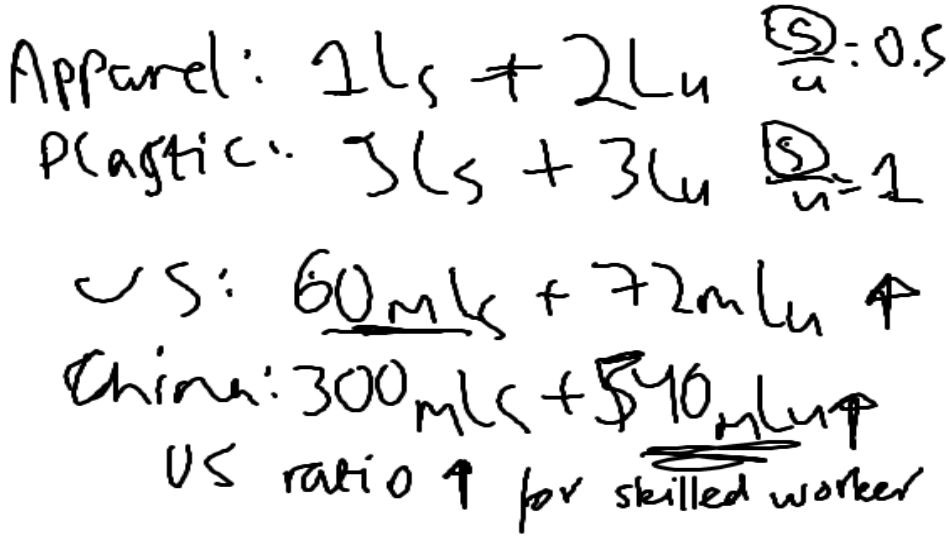
- As real output and wages have increased since 1970, real wages and compensation have stagnated for the last 30 years. Low wages start to go behind as soon as globalisation hit.

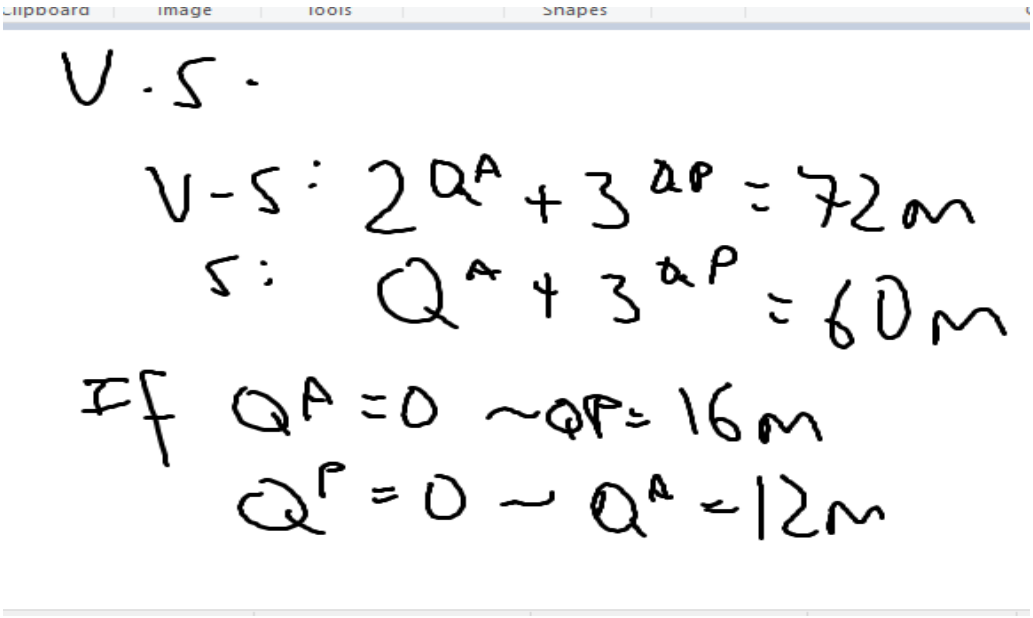
- Heckscher-Ohlin model is a type of comparative advantage model and is a theory of trade based on differences between countries. Differences in relative factor endowments such as land per worker, capital per acre of land.

- The Heckscher–Ohlin model makes the following core assumptions:

1. Labour and capital flow freely between sectors.
2. The amount of labour and capital in two countries differ (difference in endowments)
3. Technology is the same among countries (a long-term assumption)
4. Tastes are the same.

- The Leontief model is a model for the economics of a whole country or region. In the model there are n industries producing n different products such that the input equals the output or, in other words, consumption equals production.






- If the endowment of unskilled labour increases, the unskilled labour resource line would be shifted out, which implies an increase in apparel and a decrease in plastics.
- The drop in plastics output results from the fact of the increase in apparel output refers the transfer of some skilled labour from plastics to apparel to work with new unskilled labour. Given fixed proportions technology this implies a reduction in plastics output.
- In the Rybczynski theorem, holding output prices constant, an increase in the supply of one factor will increase the output of the good that is more intensive in that factor and reduction in the other good. E.g. If there are more skilled workers, more plastic will be made and less apparel.
- Trade of apparel lowers the price in the U.S. but increases it in China. This is because the U.S. is an unskilled labour scarce country and so an unskilled labour intensive good will be scarce and trade equalizes prices across the two countries.

Examples: Skilled Wage 0.6/ Unskilled Wage 0.6 =1

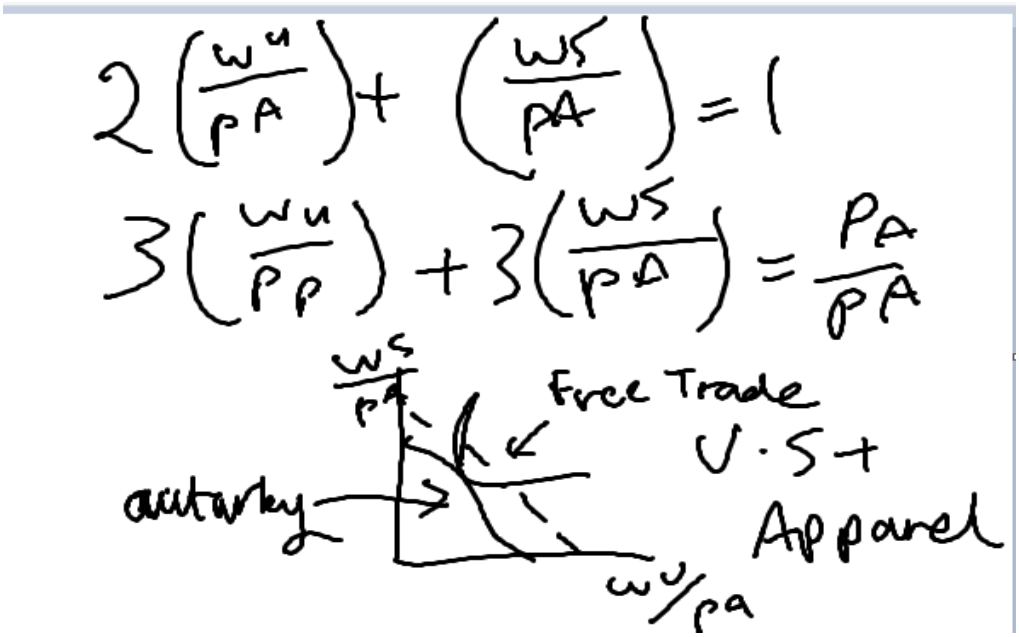
Skilled Wage 0.8 / Unskilled Wage 0.6 = 1.3

Skilled Wage 0.6/ Unskilled Wage 0.8 = 0.75

^^ Lower ratio as unskilled wages increases

- Each country exports the good that is intensive in the factor in which it is abundant.
- The U.S. believes in egalitarian where income is distributed evenly

To derive each worker's budget line, we need each wage divided by the two product prices




Apparel line is steeper than the plastics line because the apparel us labour intensive.

When trade opened up, price of apparel compared to plastic fell which means plastics must rise in price and hence the wages will follow. For the skilled workers in America, there budget line has increased and the unskilled workers wage has decreased as the price of apparel has fallen, creating greater inequality.

- The Stopler-Samuelson theorem: the scarce factor income falls when trade opens up in terms of both goods and the abundant factors income rises in terms of both goods.
- Factor price equalisation is where if both countries produce both goods under free trade, then factor prices will be equalised across countries by trade.

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Chapter 7 – Why doesn't the US Government want to import sugar?

(Sugar is cheaper in Canada due to mass exports despite no sugar canes in the country).

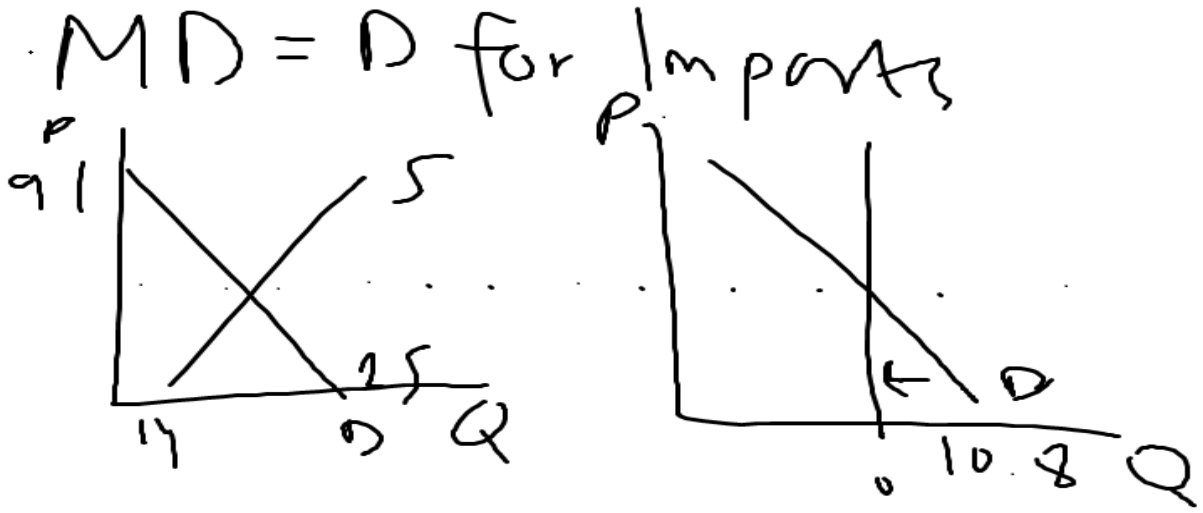
- U.S sugar import restriction take the form of a tariff rate quota. It allows a certain amount of imports at a low tariff rate but assesses a higher tariff on imports about that level.
- Protectionism: protecting domestic producers against foreign competition

**Two main reasons why imports were restricted**

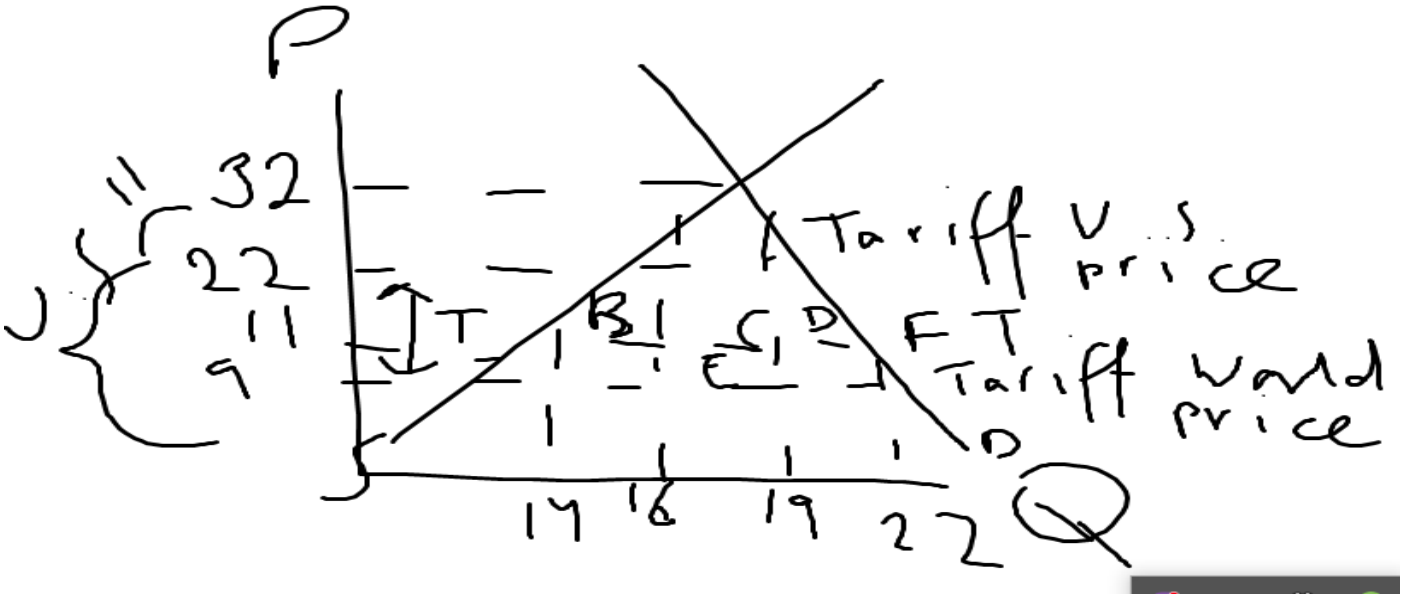
1. It can force the world price of sugar down which can raise real U.S. incomes between U.S. is a net importer of sugar.
2. Import restrictions make Americans as a whole poorer, but benefit some groups within the country that have disproportionate influence on the political process.

- Due to sugar being produced by multiple countries, not just by one, producers are price takers subject to demand of the importers.

For any given price, the difference between U.S quantity demands and the quantity supplied provides the U.S. import demand for sugar and the difference between this is the U.S. import demand curve.




- Rest of the world supply minus rest if the world demand = rest of the work export supply
- With free trade, prices are the same everywhere
- The U.S. tariff has made it harder for foreign competition to enter the market, with a larger fraction of their exports sold to the rest of the world depressing the world price. At the same time the tariff makes sugar more scarce in the U.S.
- Consumer surplus; net benefit of the commodity to consumers and in measured as the area between demand curve and the horizontal line marking the price consumers pay.
- The producer surplus: the net income to sugar producers from sugar production and is measured as the area between the supply curve and the marking producers receive.
- Tariff revenue: amount the government collect.
- Interest group motive: The policy benefits US sugar growers and corn-syrup manufacturers at the expense of everybody else in the country.




(B/C/D (smaller areas) hit by the tariff, not doing well).

B is the producer distortion and C is the consumption distortion and E is the terms of trade benefit

- The producer distortion is the inefficiency from producing too much sugar in the states and accordingly called the productive distortion.
- The consumer distortion is the inefficiency from consuming too little sugar in the U.S.
- If the terms of trade benefit are bigger than the distortions, the U.S. tariff is beneficial to U.S.

- The more elastic (responsive to price) is the export supply, the lower the optimal tariff, because the more elastic is the export supply, the flatter is the rest of the world's export supply curve and the harder it is to manipulate the world price by use of a tariff.
- Due to voluntary export restraints, rest of the world would benefit from the tariff and the U.S. would be made poorer.
- An export subsidy imposed by the exporting country would shift the export supply curve down by the amount of the subsidy. The exporting country would suffer from a consumption and production distortion and in addition a term of trade loss.
- Export subsidy pushes the world price down in the world which is a drawback for the country that exports the good. However, as the world price decreases, due to less supply for the domestic market, the price will go up and hence a domestic seller will be in surplus.
- In equilibrium, the value of this economy's consumption must equal the value of its production when evaluated at world prices. Balance trade is at world prices. A tariff will negatively affect a small economy.
- If there are no intermediate inputs, the nominal rate of protection is equal to the effective rate of protection.

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Chapter 8 – Who are the WTO?

- Any country's trade policy confers a terms if trade externality on other countries
- Nash equilibrium is where each player is maximising his or her payoff
- Nash tariff or non-cooperative tariffs = trade war

E.g. Japan exports tuna, U.S. exports apples.

- If japan raises the price of tuna for the U.S. and hence it becomes cheaper for japan due to more supply, the terms of trade benefit will be the world price ($40) minus the new price for japan ($38) which is $2 however for U.S. it will go from $40 to $42 which leaves a negative

- U.S. tariff benefits the U.S. by improving its own terms of trade and worsening the trades partners position.

- When adding up the net effects on both countries tariffs, the term of trades effect (benefit) cancel out and all is left is the production and consumption distortions

- Prisoner's dilemma: Nash tariff outcome is worse for both countries despite the fact that both countries are behaving rationally.

- Terms of trade externality is better under free trade than under Nash because both countries can be made better off by negotiating free trade.

- Agricultural commodity exporting countries have insisted on a reduction in rich country agricultural producer subsidies as they take all the profits.

- Developing countries want a reduction in rich country use of antidumping actions. Dumping means exporting a product below fair market value.

- If the U.S. impose a tax on consuming tuna to increase apple demand, the U.S. demand curve for tuna will shift to left and hence japan welfare will decrease.

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Chapter 09 - Should Developing country governments use tariffs to jump start growth?

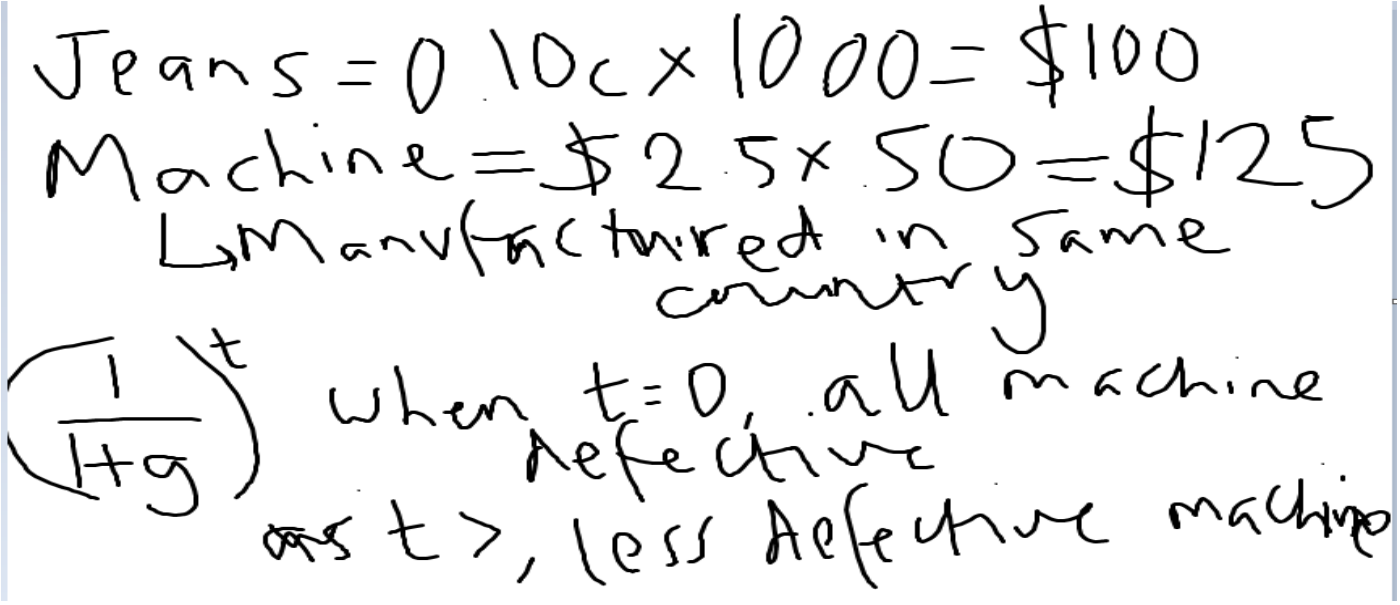
(The Argument: temporary tariffs start economic growth).

- Infant industry protection: temporary protection of an industry in a country which doesn't have a comparative advantage, in the hopes that it will thereby gain a comp. ad in it over time.
- Import substituting industrialization is a strategy of aggressive import restrictions designed to jump start industrial growth by replacing imported manufactures with domestically produced manufactures.
- Tariffs were used aggressively to promote particular targeted industries to which the government gave a high priority.
- Infant industry protection: learning by doing, an increase in productivity in a given economic activity that results from performing that activity over time.
- Due to the bigger income (SHOWN IN GRAPH BELOW) over time, worker will make machine as well as jeans in the country.
- If worker has a constant interest rate, then its optimal for them to choose the job with the highest present discounted value of income.

- Long run benefit needs to be weighted up against the upfront losses from the initial low productivity.

- Even if an economy has a potential long run comparative advantage in an industry because of learning by doing, it isn't always desirable to exploit.

(R= interest rate, G= growth rate)




- Suppose g is low and r is very high, workers choose to do the blue jeans job. There would be no radios produced and then the government decides to impose a tariff on radios. It would raise the domestic price and then the worker would switch to the machine industry because of the higher price.

- If the present discounted value of the worker's income was higher with the blue jeans job this implies the present discounted value of the country's GDP, evaluated at world prices is also higher with the blue jeans job than with the radio job.
- Because the country has a comparative advantage making blue jeans, imposing a tariffs on the imports of radios will create a consumption distortion and then consumers face distorted domestic prices when making their consumption decisions.
- In order to make a case for infant industry protection, one needs to introduce market failure.
- Financial repression: regulations that keep interest rates for bank lending below market clearing levels.
- Asymmetric info in regard to loans, one country knows more than the other.
- Learning spill over occurs when each work benefits from learning from other workers in the industry. The more local machine workers are, the more abundant the learning spill over and gives an increasing return to scale.
- Doubling input and more than doubling output means increasing returns to scale
- Agglomeration externalities: trade can lead to a sharp ride in income if manufacturers are in the same region and hence don't pay for imports or transport, although can lead to a rise in international income inequality

  (Convex shape BELOW is due to increasing returns of scale in the machine industry)

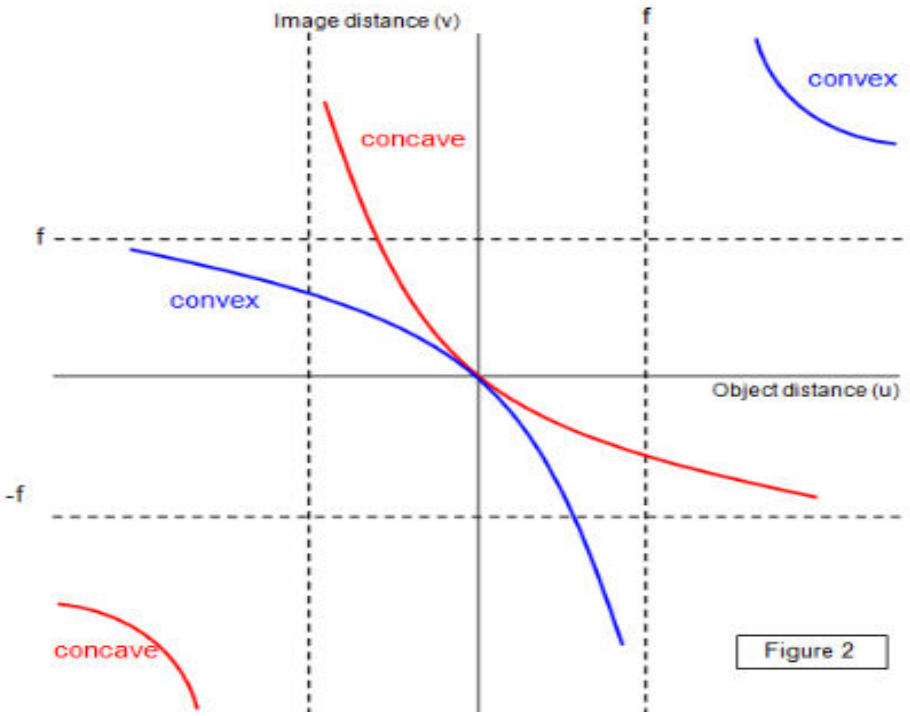
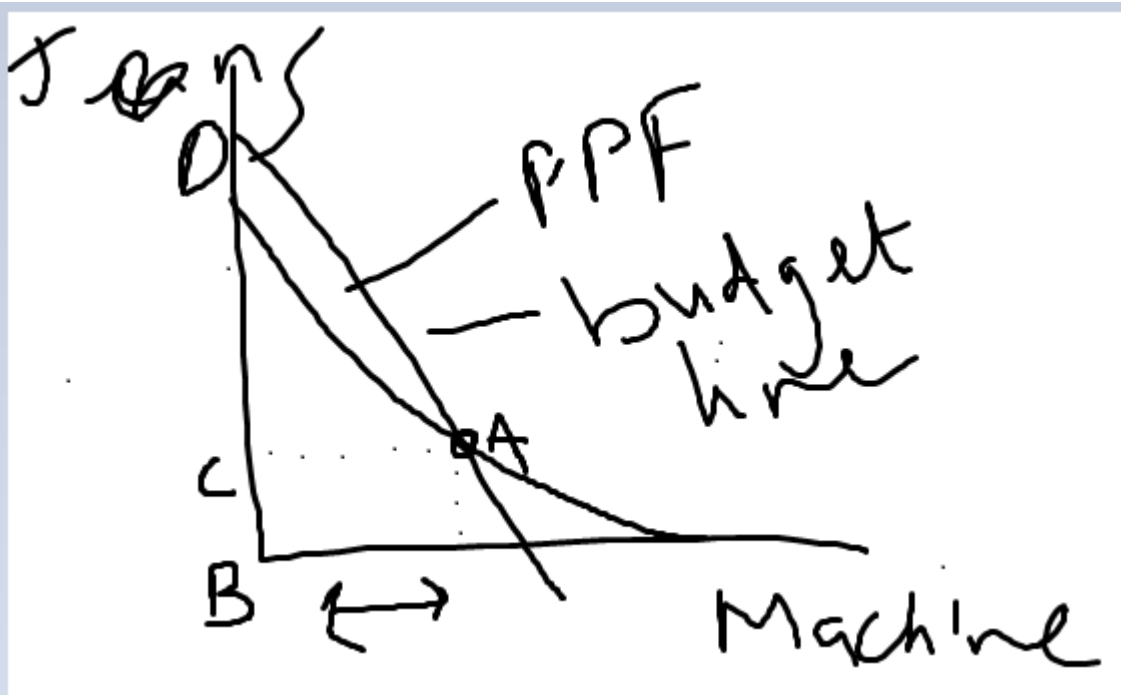



Figure 2




- Distance from A to C is number of machines produced = number of workers making machines times productivity per worker.
- Distance from C to D represents workers who make the machines times their opportunity cost of producing jeans (making machines instead of jeans).
- Distance from B to D is jeans produced
- B to C is jeans produced in equilibrium
- From C to D/ A to C is the ratio of productivity in the jeans industry compared to the machine industry.
- Budget line must take the form of a straight line from the highest point on the production possibilities frontier to the actual production point.
- Weight average tariffs are used.

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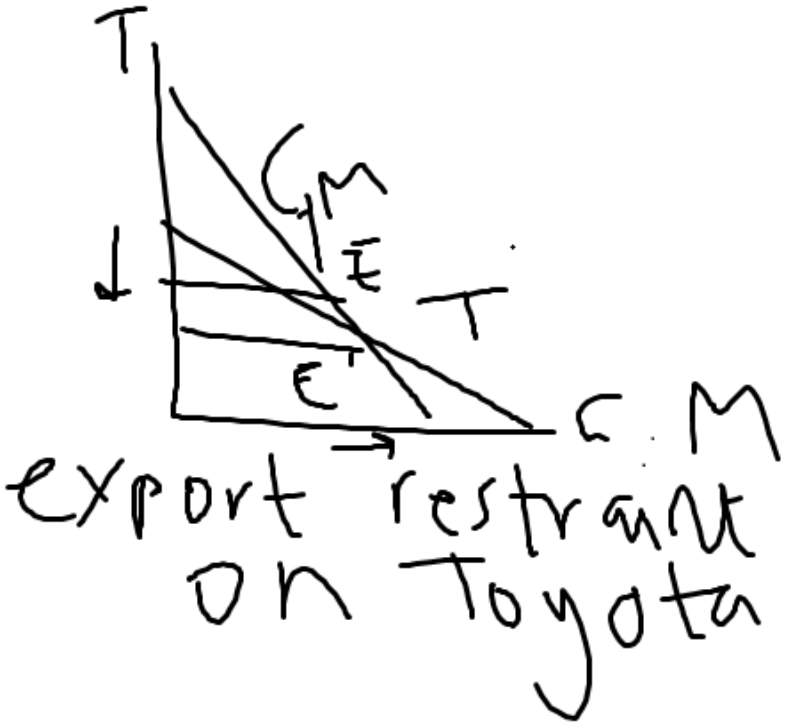
Chapter 10 – Was Ronald Regan Punked by Japanese Automakers (Voluntary export restraints)

**Cournot model**

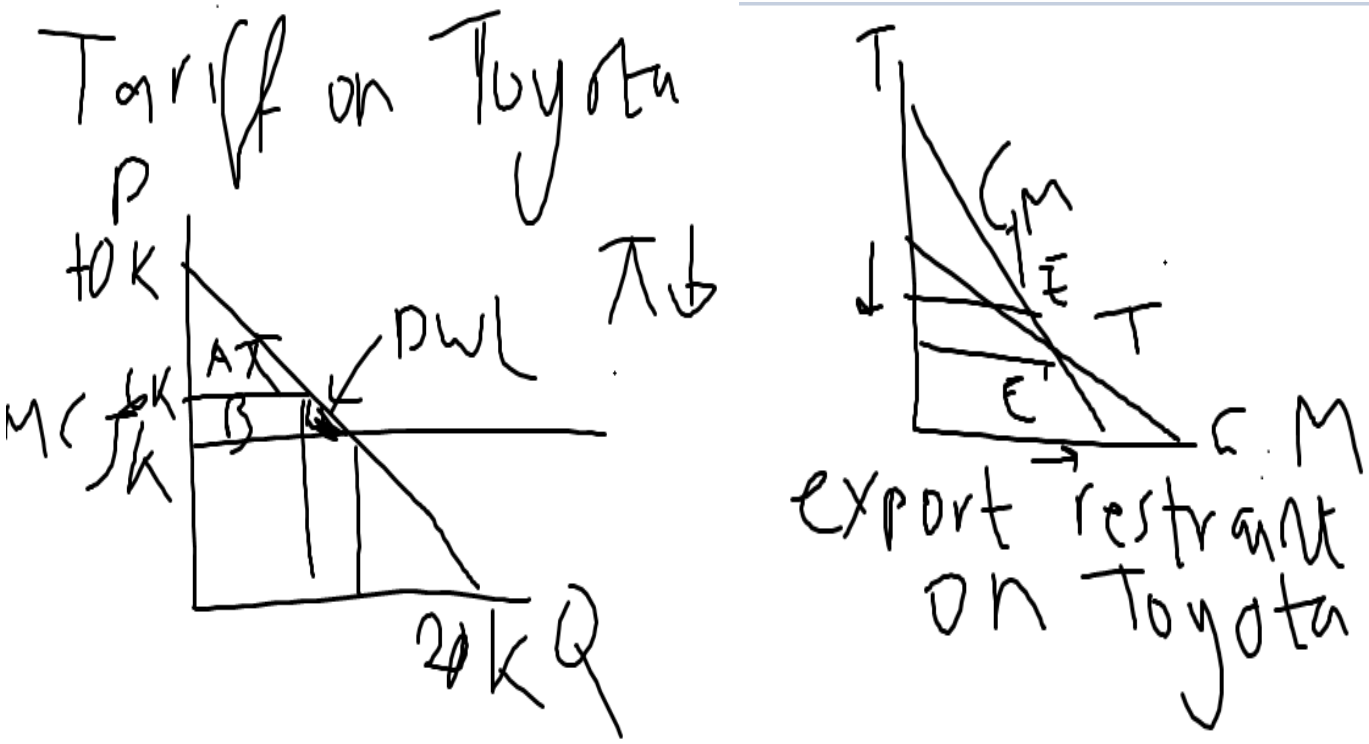
- In equilibrium, both car makers choose the quantity to sell in order to maximise profits, understanding how prices will respond and taking as given what the other firm will choose, splitting the market evenly
- The U.S. restricts Toyota sales below Toyotas free trade quantity. And hence General Motors (GM) will definitely increase sales under this restraint on Toyota. Hence Toyotas profits are lower.
- GMs profits increase as Toyotas marginal cost increases from $5k to $6k and this gives GM more room in the market shifting its residual demand curve to the right and increase price.
- Rent shifting is trade policy that can shift some oligopolistic profits from a foreign firm to its domestic firms
- Rent shifting is at the expense of U.S. consumers who now face higher auto prices. Although U.S. welfare does increase because of the tariff, showing it is possible for a country to be made better off due to a tariff that shifts oligopolistic profits to a domestic firm.

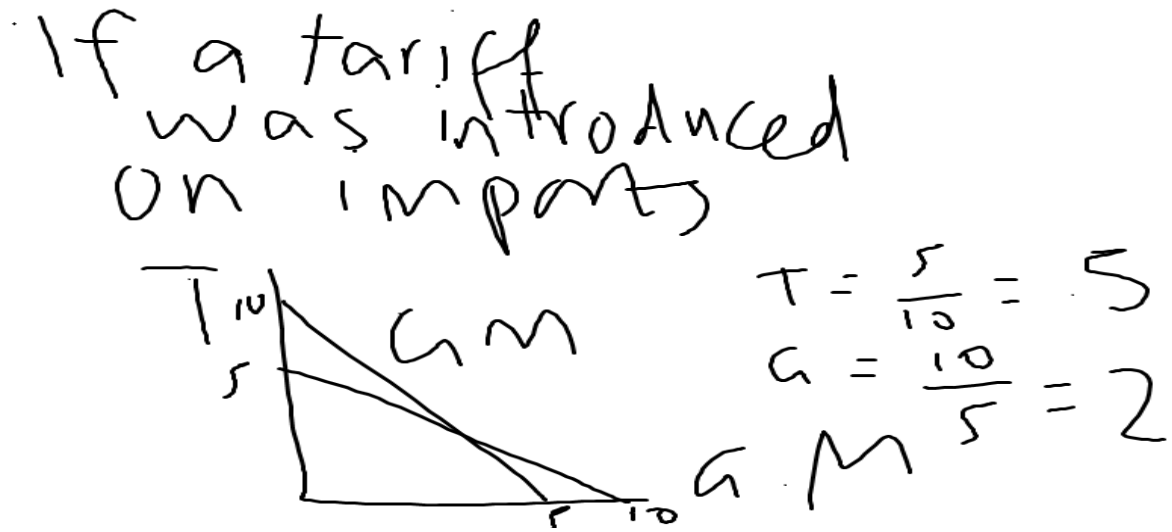
- Export subsidy for GM to export to japan; this would not have any effect on the U.S. market but would affect the market in japan by lowering GM's marginal cost from $5k to $4k. The shift in the GM's reaction function in japan to the right, and as a result GM's profit rises, due to partly shrinking Toyotas competition. The subsidy pushes car prices in japan down as ore is being sold than under free trade. This also raises U.S. welfare due to imperfect competition.
- Overall: BETTER FOR G.M




**Bertrand model**

- If GM were to charger more than the equilibrium price of $5k, it would not lose customers because Toyota cannot increase the number of U.S. customers it serves.
- By weakening competition, this can make firms better off by maximising both profits due to raising its prices. Both firms will randomly choose its prices and under the export restraint, Toyota will want to charge less than GM to sell its full max amount of cars.
- Due to the mark up of prices, GM sells than it would of under free trade.
- It gives GM monopoly power and hence are price makers and hence will reduce output to keep prices higher. Hence benefitting Toyota and hurting GM.
- Overall: BAD FOR U.S.
- Bertrand focuses on price rather than quantity, the lower cost firm will charge a price equal to the cost of the other firm.
- The DWL is the loss due to the tariff on Toyotas car, the $5k to $6k increase is due to the tariff which has no surplus. Due to GM. having a $5k marginal cost (Toyotas is now $6k) then GM will charge just above Toyotas marginal cost. Toyota has no profits to grab.




- Rent shifting only occurs in imperfect competition.
- Under the Cournot model, U.S. welfare does rise.
- Under Bertrand, GM chooses a price for each market rather than quantity.
- To benefit GM. would hurt U.S. social welfare to zero and hence export subsidies can be attractive in Cournot model but not in the Bertrand model one.

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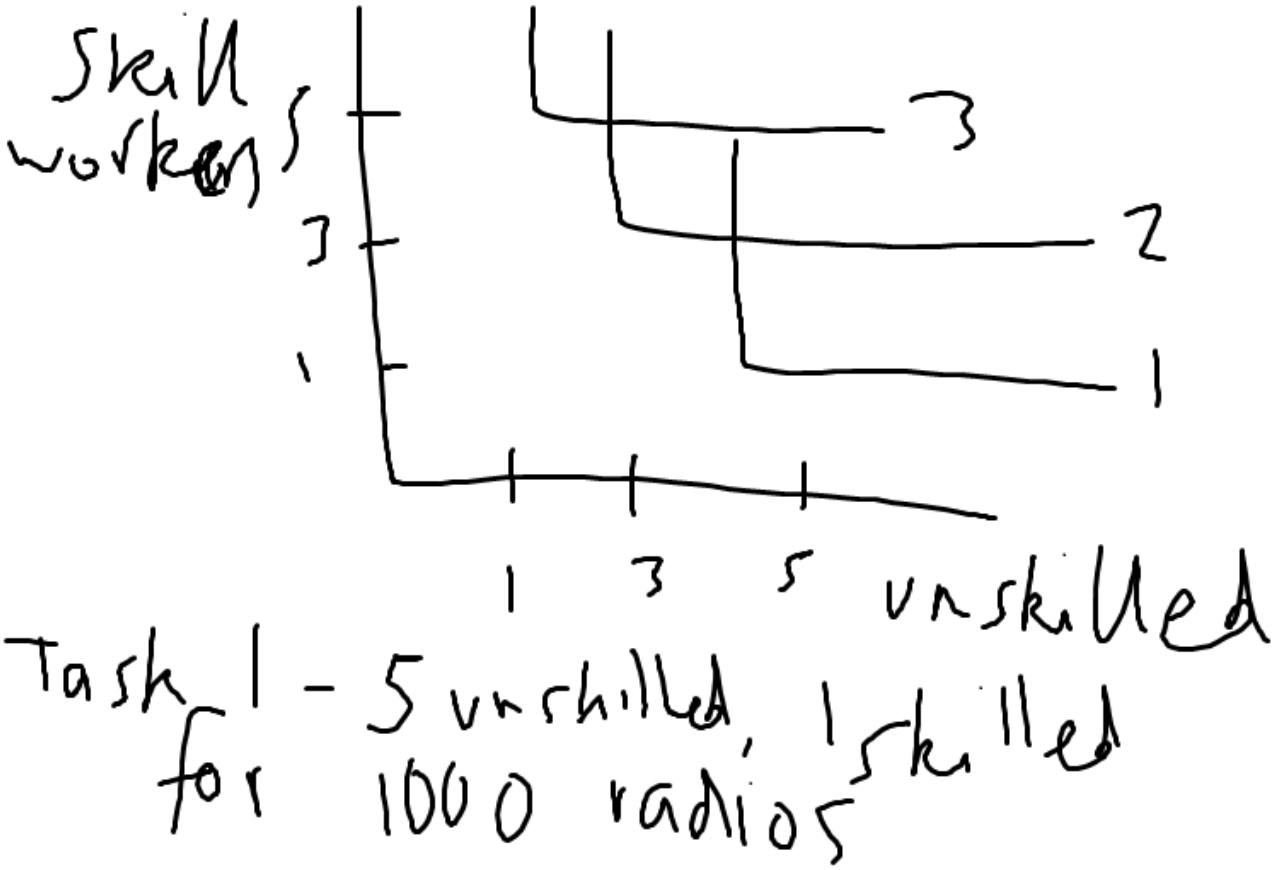
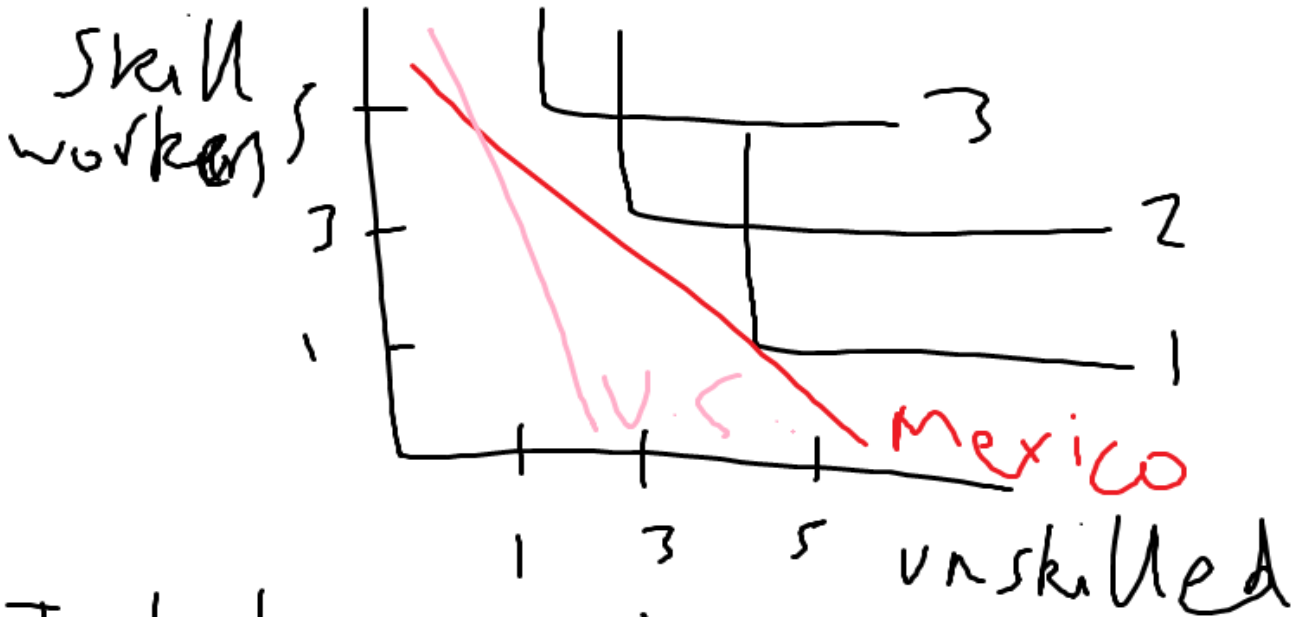
Chapter 11 – Should the iPod be made in the U.S?

- Globalisation of products whereby corporations procure inputs from several countries and allocate tasks across different countries to minimise costs. Offshoring production is the manufacturing of a product offshore and services offshoring is where business services such as call centres are sent offshore.

- Feenstra & Hanson theorem: offshoring allows producers in skilled abundant countries to move their least skill intensive tasks to skill scarce economies. As a result, the skill intensity of work in both economies rise, raising the relative demand for skilled workers and raising the wages for skilled workers in both countries. Hence raising wage inequality everywhere.

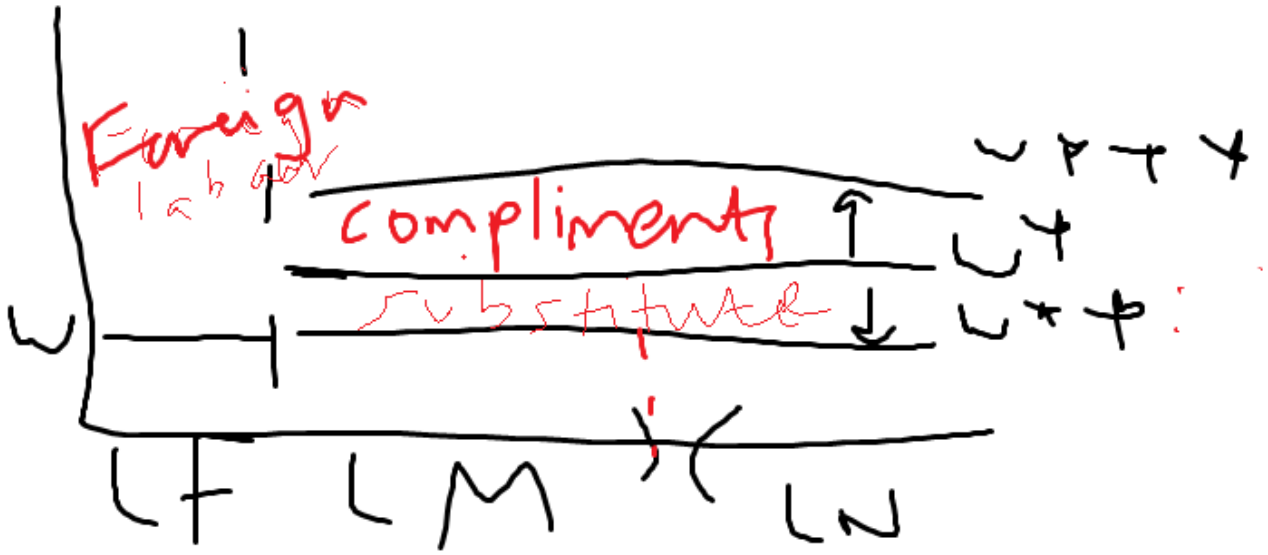



- Task 3 is skilled labour intensive. In each country there is an upward sloping supply curve for skilled labour as a function of the skilled wage and an upward sloping supply curve for unskilled labour as a function of the unskilled wage (as skilled wages go up, so does inequality).




- U.S. has a steeper curve due to more skilled workers than Mexico. Task one and two is better done in Mexico and task 3 is better done in the U.S.

- Equilibrium relative wages are determined by the requirement that the relative supply of skilled labour in each country equal to demand.
- If Mexico performs task 2, it will need a higher amount of skilled labour. The wise in this will mean skilled labour wages will rise and offshoring causes wage inequality and increases the relative supply of skilled labour in both economies.
- With the rise in the demand for Mexican labour, Mexican wage rises could rise by enough that U.S. national income actually falls, in which the U.S. unskilled wages are shrinking and hence inequality also rises. Any rise in Mexico is good for Mexican living standards but not for U.S. terms of trade.
- Grossman and Rossi-Hansberg: the opportunity to offshore some tasks performed by unskilled labour can in effect raise the productivity of unskilled labour, resulting the higher unskilled wages.
- All tasks here are unskilled labour intensive in this case.
- The wage for skilled wages is unchanged. Increase in productivity is passed on as wages.
- As the tasks are sourced to Mexico, the added productivity means GDP has increased there.
- Substitute workers: they substitute/take over home labour.
- Complement workers: they will help home labour/we don't have enough home labour for an industry.




- Compliments help increase domestic income and substitutes from foreign labour will reduce domestic income as it is offshored.
- As globalisation has increases, U.S. nationals have increased domestic workforce just as much as foreign workers, acting more like compliments.
- Harrison and McMillian: foreign workforce was expanded more than domestic workforce overtime.
- If the multinational is hiring abroad to take over some tasks from domestic workers, that can raise or lower demand for domestic labour depending on whether what the foreign labour is being a substitute or compliment to domestic labour.
- A tax on offshoring could improve welfare by improving the offshoring countries terms of trade which means lowering wages in the countries to which the tasks have been outscored.

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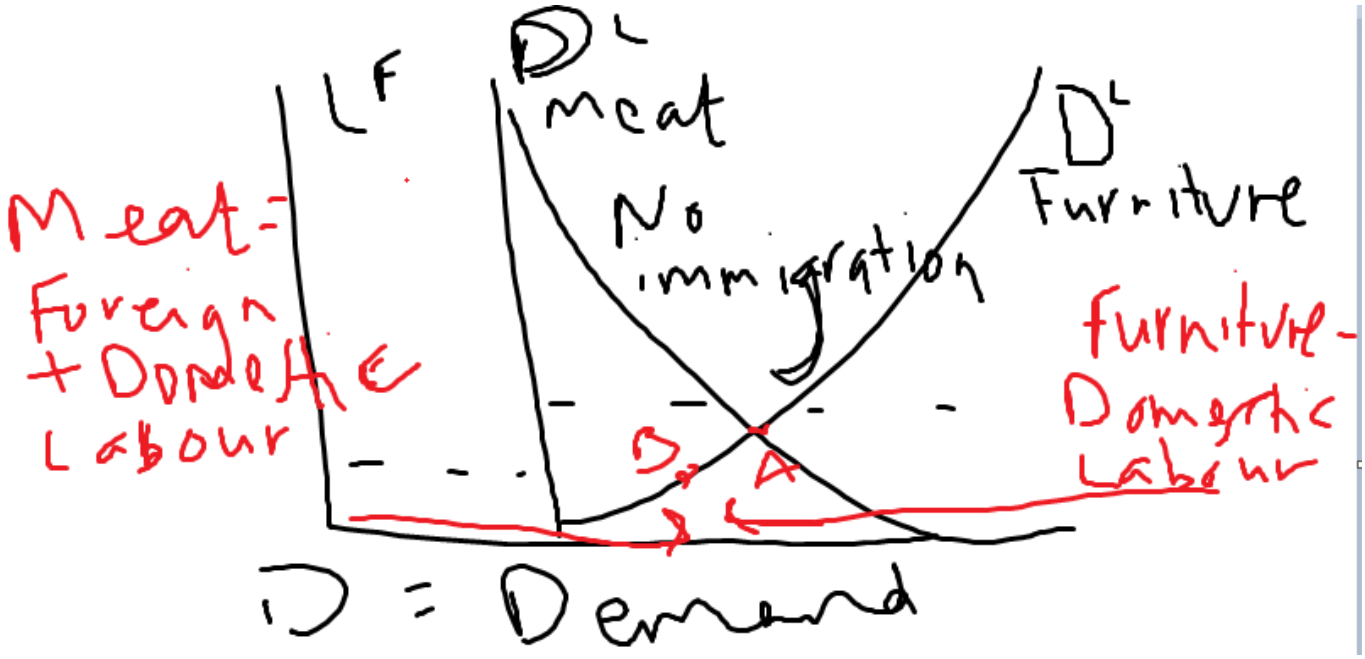
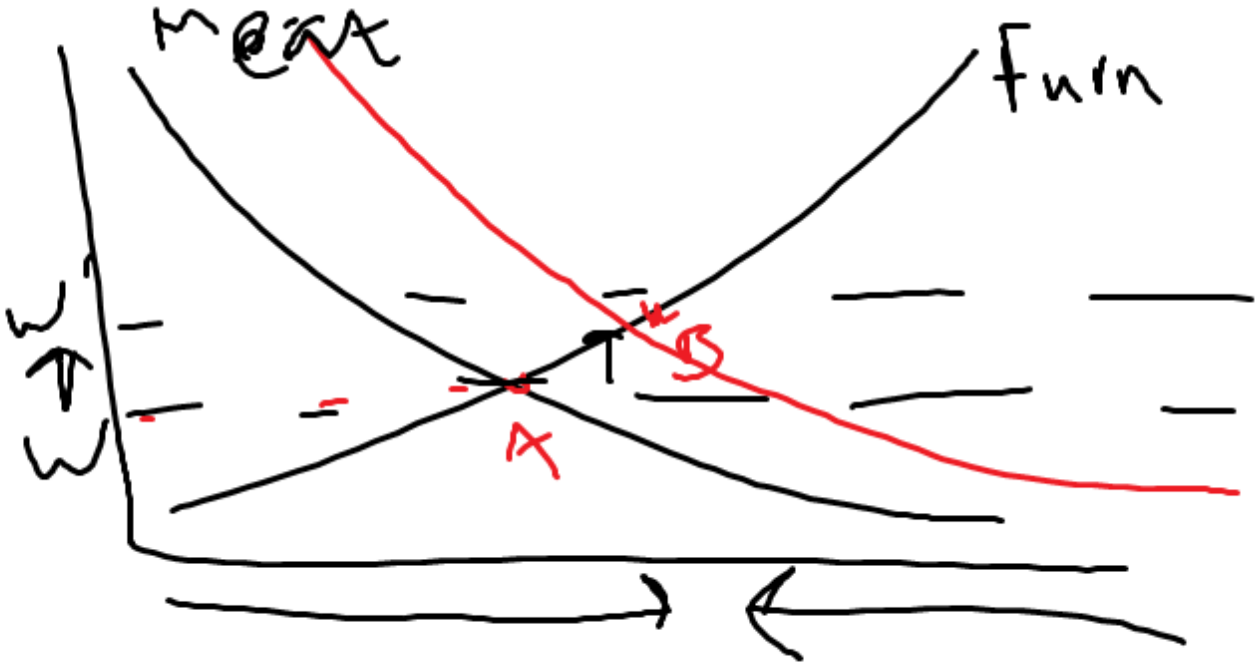
Chapter 12 – Should we build a border fence?

- Equilibrium in the domestic labour market is changed if we allow immigrants to enter in a mixed specific factors model (Ricardo-Viner model) under the assumption that immigrants are indistinguishable from domestic workers.
- Substitute case: Due to increase in immigration that is substituting the meatpacking workers, which moves the demand curve to the far left. Being identical to domestic workers, the immigrants will receive the same wage as domestic workers and the increase in labour supply pushes wages down. Domestic workers are hurt by this.
- Complementary case: suppose that immigrants have a different set of skills compared to domestic workers due to different education levels, etc. then immigrant labour will be a different factor of production and hence the immigrants raises the marginal product of domestic labour. E.g. the immigrants bring a new style of meat packaging, the demand will shift to the right.




- Domestic workers benefit from immigration and this raises the demand for domestic labour, pushing prices up.

- Because they add to the local demand, immigrants can provide for a wider variety of goods and services available locally, making for a livelier local economy.
- Due to free entry, as positive profits are made due to the increased population, then new firms will enter the market which will shift each firms curve back and will lead to a zero profit equilibrium.
- This means the immigrant receiving country will have more products and services than it did before and all workers in this country will be better off as consumers.
- All WORKERS in the immigrant sending country will be worse off.
- GDP and since gone up because of immigration
- As long as the immigrant workers are paid their MVP and as long as it is a decreasing function of the number of immigrant workers, these wage payments will be less than the increase in GDP. This implies net income to the native born population has gone up.

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Chapter 14 – Sweatshops and Child Labour

- Sweatshops are a symptom of poverty rather than a cause of it.
- Main determinant of child labour is simply poverty.
- Sweatshops may actually be a part of the solution, in that any increase in demand for workers in a low-wage labour market will tend to push wages up somewhat.
- Globalisation seems to affect the prevalence of child labour through its effect on household income.
- Households whose income rises tend to reduce their use of child labour, even if globalisation increases their opportunities to use child labour for profit.
- Households whose income falls tend to increase their use of child labour
- If the substitution effect is dominant, globalisation will reduce child labour

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## Chapter Summaries

**Chapter 2** – a key reason for trade between countries is due to comparative advantage. The Ricardian model is based on the differences in production technology between countries. A country has an absolute advantage if its workers are more productive In a good than its trade partners are. Absolute advantage determines the international distribution of income. All countries gain from trade and small countries capture most of the gain.

**Chapter 3** – There are three types of increasing return to scale; internal-external, national-external, international. IRS generated a motivation for international trade, even when no comparative advantage because it creates a reason to concentrate production of each good in one place and serve customers in all locations from that place. If IRS is dominant, it will export. If tariffs and transport costs are dominant it will try and produce in the foreign market. If fixed costs are low enough, entry is free and each firm creates a unique good, that is monopolistic comp, opening up to international trade can have a benefit of improving productivity

Internal economies of scale are firm-specific, or caused internally, while external economies of scale occur based on larger changes outside of the firm. Both types result in declining marginal costs of production; yet, the net effect is the same. External economies of scale are generally described as having an effect on the whole industry.

The Melitz effect is when trade benefits large efficient exporting firms and the least efficient firms that produce for the domestic market drop out.

**Chapter 4 -** Cournot: is a model of imperfect comp in which each firm chooses its quantity taking as what the other firm will choose. Neither country has a cost advantage and there are positive transport costs. Trade lowers profits by forcing them to put prices down, but increases consumer surplus. If transport costs are high

enough, this can mean the benefit to consumers from competition are smaller than the loss in profits. If the products are slightly different, this means a raise in profits and social welfare.

Bertnard: This is an example of imperfect competition as firm chooses price, due to what other firm chooses. In this model, neither country has a cost advantage and there are positive transport costs. The threat of trade has substantial effect in each country, lowering prices and increasing social welfare.

**Chapter 5** – A specific factor is a factor of production that cannot be reallocated from one industry to another. The real income earned by factors specific to an export sector increases with trade liberalization and the real income earned by factors specific to an import competition sector is reduced by trade liberalization. The Lerner theorem shows the effects of an import tariff can be replicated by a tariff on exports.

**Chapter 6** – A model in which trade is driven only by differences in factor endowments across countries, and in which factors are perfectly mobile across industries, is the Hecksher-Ohlin model. Technology and consumer preferences are assumed to be the same, only leaving differences in factor supplies. Exports the good intensive in the factor in which it is relatively abundant. Trade raises the relative price of the good that is intensive in the factor that is relatively abundant in the country. Factor prices are determined by output prices through each industry's zero profit conisation.

Stopler-Sameulson theorem: trade raises the real income of each country's abundant factor and lowers the real income of each country's scarce factor.

**Chapter 7** – In a perfect competitive setting in which trade is driven by comparative advantage, a large country can improve its social welfare by restricting trade imports either by an import tax or quota. The tax pushes the world price of the good down due to more supply and less demand. If the tax is too high, the importing countries social welfare will be lower than under free trade. The terms of trade benefit for the import country is equal to the terms of trade loss in the world, hence social welfare decreases. Optimal tariff is equal to zero.

A VER is a quota which the exporter gets to keep the rent. The export country benefits from this, while social welfare of the importing country falls and this never improves social welfare in the comp advantage world.

**Chapter 8** – Any trade policy imposes a terms of trade externality on other countries. Nash equilibrium in trade policy tends to be inefficient.

Nash equilibrium is where the optimal outcome of a game is one where no player has an incentive to deviate from his chosen strategy after considering an opponent's choice.

**Chapter 9** – Infant industry protection is the temporary protection of an industry from import comp, in the hopes that it will develop and become more productive under protection and be able to survive foreign competition. Learning by doing is cited a reason for this, but on its own doesn't provide protection at all, permanently or temporarily. Learning spill overs that generate external increases in return in an industry leads to market failure so that the industry with the spill overs is smaller than it should be.

If two or more separate industries are beneficial to one another, there can be external economies of scale across the entire group. This is called "agglomeration economies"

Trade protection is not desirable because if a country is small enough, trade will eliminate the industry and provide the country's consumers with cheap imports of the good with spill overs, enhancing welfare.

**Chapter 10** – A VER is good in the case of the Bertrand model because profits are kept high, as prices are kept high. This occurs in imperfect competition.

A cartel (cartel pricing) is an organization created from a formal agreement between a group of producers of a good or service to regulate supply in an effort to regulate or manipulate prices.

This oligopoly allows for the possibility that trade policy can be used to shift foreign profits to domestic profits – the rent shifting move, which gives rise to a strategic trade policy.

**Chapter 11** – Offshoring is outsourcing by dividing up a production process into multiple pieces spread across two or more countries in order to lower costs.

Hanson model: Differences in the skill labour intensity of different productive tasks, an increase in offshoring moves the least skilled intensive task away from the skill abundant country, moving it to a skill scarce country. The relative demand for skilled labour, as well as the relative wage for skilled labour, rises in both countries.

Hansberg model: Offshoring ignores differences in the skill intensity of tasks and focus on an important effect of offshoring – getting tasks done more cheaply. Hence raising domestic unskilled wages by effectively raising the productivity of unskilled domestic workers.

If foreign labour is a substitute for domestic labour, a rise in offshoring could lower domestic employment and lowering domestic wages. If foreign labour is a compliment, a rise in foreign labour.

**Chapter 12** – In both cases of substitution and compliments, GDP net of wage payments to immigrants will be increases by immigration. Aggregate income of the native born will be increased.

**Chapter 14** – Globalisation can increase or decrease the use of child labour. For the ones exporting rice, as the price goes up domestically due to exporting, the farm families will become richer and that income effect will help reduce child labour. However, it will also raise the opportunity cost of the hours spent in leisure, increasing child labour. Child labour falls as income tends to rise. Globalisation tends to raise child labour in import sections and reduce it in export sectors.