Trade Policies:
Imperfect competition
EE451

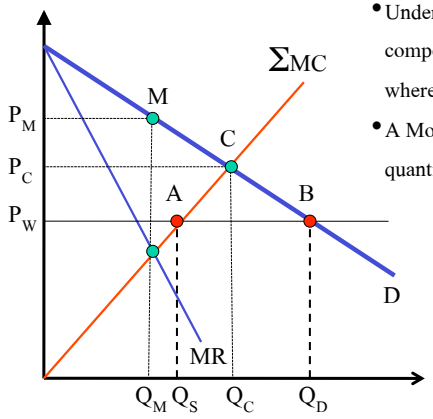
Chayun Tantivasadakarn

Faculty of Economics, Thammasat University

Outline

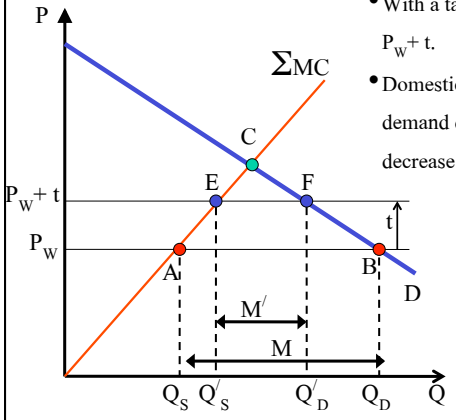
- Tariffs and Quotas with Home Monopoly
  - Free Trade equilibrium
  - Effect of Home Tariff
  - Effect of Home Quota
- Tariff to extract foreign monopoly profit
- Strategic Trade Policy

Home Monopoly with Free Trade



- Under autarky, a perfectly competitive market would produce where $\Sigma MC = D$ giving P_C and Q_C.
- A Monopolist produces at a lower quantity, Q_M, and a higher price, P_M.
- Under free trade, the Monopolist will take fixed world price, P_W, and set it equal to ΣMC at, Q_S. Imports = $Q_D - Q_S$.

Home Monopoly with tariffs



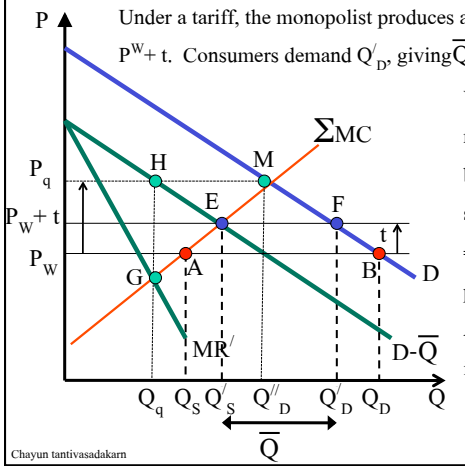
- With a tariff, price increases from t to $P_W + t$.
- Domestic output increases to Q'_S and demand decreases to Q'_D. Imports decrease from M to M′.
- The welfare effects are the same as the perfectly competitive case.

Home Monopoly with quotas

- Replace a tariff with an equivalent quota.
- The quota will end up with higher prices for Home consumers since it allows the monopolist to keep its market power, which we know leads to higher prices.
- This is another reason why the WTO has encouraged countries to replace quotas with tariffs.

Home Monopoly with quotas

Under a tariff, the monopolist produces at E, selling Q'_S, charging $P^W + t$. Consumers demand Q'_D, giving $\overline{Q}$ imports.



With a quota, the monopolist's demand shifts in by the size of the quota. It sets quantity where new $MR' = \Sigma MC$, at G and Q_q, with price from new demand, P_q. At P_q, demand is Q''_D, giving imports of $\overline{Q}$, same as tariff.

Home Monopoly with quotas

- We choose a quota that will give us the same import as the tariff, $\overline{Q}$.
- The effective demand curve facing the Home monopolist under the quota is now the old demand curve, D, minus the quota, $\overline{Q}$.
- Because the monopolist know that imports cannot increase, a quota gives it the ability to adjust the price without the competition from abroad.
- The monopolist will choose its profit-maximizing price along D-$\overline{Q}$.

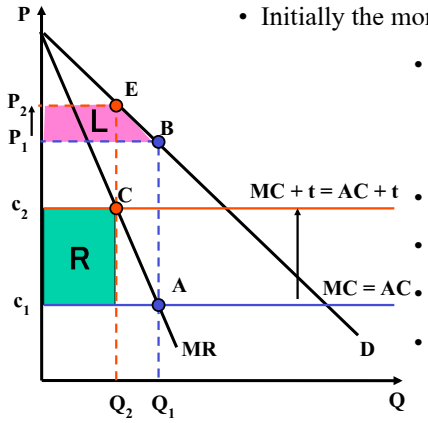
Home Monopoly with quotas

- With the new demand, we can derive a new marginal revenue, MR'.
- $MR' = MC$ at point G with a ouput Q_q and a price of P_q.
- Even though the quota allows the same amount of imports as a tariff, the price is higher: $P_q > P_W + t$ and the output is lower: $Q_q < Q'_S$.
- In fact the output can be even lower than the autarky's.

Home Monopoly with quotas

- Since price rises more with a quota than a tariff, the loss in consumer surplus under a quota will be larger.
- The higher price benefits the monopolist. The quota rents are measured by the difference between P_q and P_W times the imports.
- The quota rents are higher than the tax revenue would be under a tariff.
- The quota rents may be wasted on rent-seeking activities.

Tariff to extract foreign monopoly profit



- Initially the monopoly firm sells Q_1 at P_1.
- With the tariff, MC rises to MC + t, the firm sells Q_2 at P_2.
- $\Delta CS = -L$
- $\Delta GR = R$
- Net = R - L > 0
- Profit is shifted to Home but the world welfare declines.

Strategic Trade Policy

- The Infant Industry Argument for protection: With economies of scale, some industry may need temporary protection to nurture it to be a mature one.
  - How to identify the right "infant".
  - A production subsidy may be more efficient than a tariff.
  - What if the "infant" never wants to "grow up"

Strategic Trade Policy: Game theoretical approach

- Suppose Boeing and Airbus are deciding to launch a new type of airplane.

Boeing \ *Air Bus*	Enter	Not Enter
Enter	-5 , -5	**100** , **0**
Not Enter	**0** , **95**	0 , 0

- Two Nash equilibria: "Not Enter","Enter" = (0,95) and "Enter","Not Enter" = (100,0)

Strategic Trade Policy: Game theoretical approach

- Suppose the Airbus's government pays a subsidy of $25 Billion if Airbus enters, the new payoff matrix is

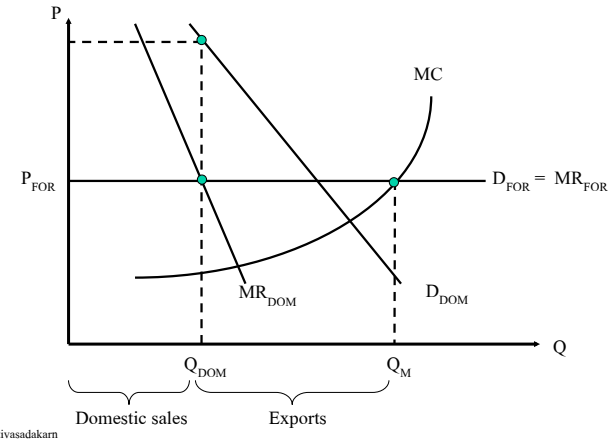
Boeing \ Air Bus	Enter	Not Enter
Enter	-5 , **20**	**100**, 0
Not Enter	**0**, **120**	0 , 0

- There is only one Nash equilibrium: "Not Enter","Enter" = (0,120)

Dumping

- A monopolist can use price discrimination by selling the same product abroad cheaper than the one in its own market.
- Necessary conditions for price discrimination
  - have some market power
  - be able to identify the different consumers with different price elasticities and charge different prices
  - be able to prevent arbitrage
- Maximize profit when $MR_{DOM} = MR_{FOR} = MC$

Dumping



Policy Response to Dumping

- An imported product is being dumped if its price is below the price that the exporter charges in its own local market.
- If the exporter's local price is not available, then dumping is determined by comparing the import price to:
  - A price charged for the product in a third market, or
  - The exporter's average costs of production

Policy Response to Dumping

- Anti-dumping Duty
  - The amount of the antidumping duty is calculated as the difference between the exporter's local price and the "dumped" price in the importing country.
  - The purpose of the duty is to raise the price of the dumped good and protect domestic producers.
  - The fact that the higher price also raises prices for domestic consumers and causes a deadweight loss for the importing country is not taken into account when deciding on whether or not to apply the tariff.

Policy Response to Dumping

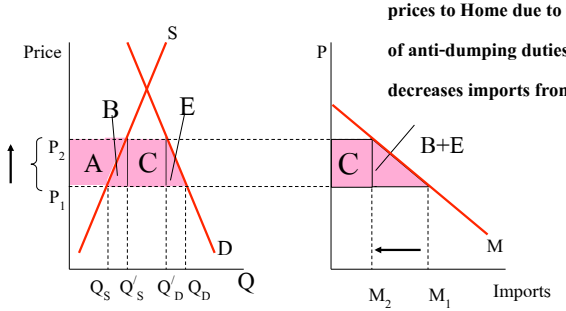
- Calculation of Antidumping Duty
  - To see why firms increase prices before an antidumping duty is applied we need to see how the duty is calculated.
  - The duty is based on the Foreign firm's local price.
  - For example, if the local price is $10 and the export price to Home is $6, the antidumping duty is $4—the difference in the local price and the export price.
  - This method creates an incentive for the Foreign firm to raise its export price even before the tariff is applied so the duty will be lower.

Policy Response to Dumping

- Calculation of Antidumping Duty
  - So using our same example, if they charge an export price of $8 instead of $6 but keep the local price at $10, the duty is now only $2.
  - A price of $10, would avoid the duty all together.
  - This increase in the import price results in a terms-of-trade loss for the Home country.

Policy Response to Dumping

Foreign exporters increase their prices to Home due to the *threat* of anti-dumping duties, which decreases imports from M_1 to M_2.



(a) Home market **(b) Import market**

Policy Response to Dumping

- Welfare changes: as price rises from P_1 to P_2

  $\Delta PS = A$

  $\Delta CS = -[A + B + C + E]$

- If no duty, then no revenue to the Home government.
- B + C + E is now the deadweight loss which is higher than the tariff.

Policy Response to Dumping

- The loss of C is the extra costs associated with the threat of an antidumping duty.
- The fact that Foreign firms will raise their prices to reduce the potential duty gives Home firms an incentive to charge Foreign firms with dumping, even if none is occurring.
- Just the threat of dumping is often enough for Foreign firms to raise prices and therefore reduce competition in the market for that good.
- These incentives lead to excessive filings of antidumping and countervailing duty cases.