Part 2
International trade policy

Trade Restrictions: Tariffs

Chapter 8

Lecture overview

- Trade policy
- Tariff as a trade policy instrument
- Partial equilibrium analysis of a tariff
- The theory of tariff structure

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TRADE POLICY

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Free trade

- Free trade or trade protectionism
- Free trade
  - A government does not attempt to restrict imports and exports.
  - Does not necessarily imply that a country abandons all control and taxation of imports and exports
  - Laissez-faire: government intervention as little as possible.
  - Adam Smith, David Ricardo…

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Trade protectionism

- Trade protectionism/Government intervention
  - Policy of protecting domestic industries against foreign competition by trade policy instruments
  - Protectionist policies were common in Europe in the 17th–18th centuries under mercantilism.
  - How to protect trade/intervene in trade?

1. **Tariffs**
2. Export subsidies
3. Import quotas
4. Voluntary export restraints (VERs)
5. Antidumping policies
6. Other non-tariff barriers (e.g Administrative policies)

=> Trade policy instruments

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TARIFF

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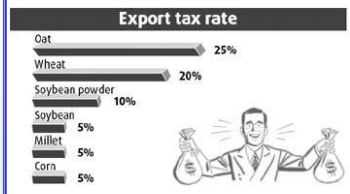
Concept

- A tariff: levied on imports or exports
  - Import tariff: limit imports
  - Export tariff: limit exports. Why?
    - Developed countries: rarely use export tariff
    - Developing countries: commonly use export tariff

Why?

  - Raise prices of imported or exported goods.

China



Vietnam

Goods	Export Tariff (%)
Titanium	20 (10)
Processed metals	7 (5)
Unprocessed metals	15 (10)
Metal scrap	30 (33)
Lead scrap	37 (40)

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Classification

- Classification (by mode of collection)
  - Specific tariffs: a fixed charge for each physical unit of a good imported/exported.
  - Ad valorem tariffs: a fixed percentage of the value of the imported/exported good.
  - Compound tariffs: a combination of an ad valorem and a specific tariff.
- Why do governments impose tariffs?
  - Increase government revenues
  - Provide protection to domestic producers against foreign competitors by increasing the cost of imported foreign goods

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PARTIAL EQUILIBRIUM OF TARIFF

- How does a tariff affect production, consumption, trade and price in a nation?
- Who are winners and losers of a tariff?

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Assumptions

- Nation in the analysis: a **small** nation
  - Tariff will not affect the world price
  - Price taker => must accept the world price
  - E.g: Vietnam – small rice importer
    - http://www.bahooricemills.com/rice-statistics.html
    - http://faostat.fao.org/
- Industry in analysis is small
  - Tariff will not affect the rest of the economy

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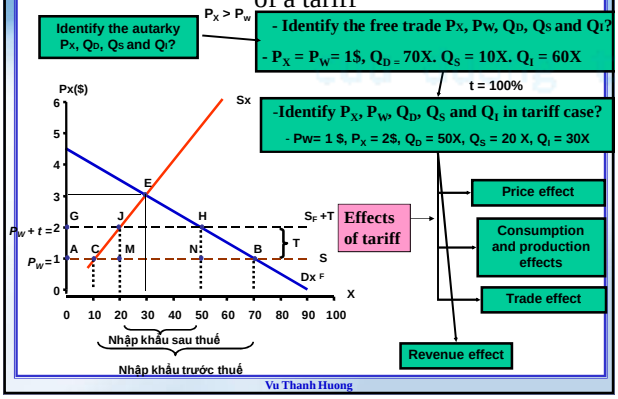
Production, consumption, trade and price effects of a tariff



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Summary of production, consumption, trade and price effects of a tariff

	Autarky	Free trade	Tariff	Effect
Q_S	30	10	20	Decrease
Q_D	30	70	50	Increase
Q_I	0	60	30	Decrease
P_X	3	1	2	Increase

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Social welfare effects of a tariff

- Who are winners and losers of a tariff?
- Consumers' welfare:
  - consumer surplus (CS)
- Producers' welfare:
  - Producer surplus (PS)
- Government:
  - revenue from tariff.

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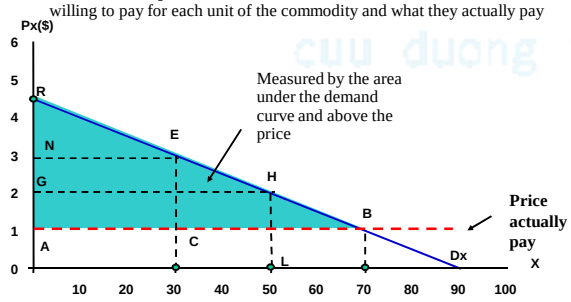
Consumer surplus (CS)

•**Consumer surplus:** the difference between what consumers would be willing to pay for each unit of the commodity and what they actually pay



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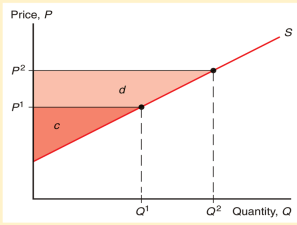
Producer surplus (PS)

Figure 8-8

Geometry of Producer Surplus

Producer surplus is equal to the area above the supply curve and below the price.

Producer surplus measures the amount that a producer gains from a sale by the difference in the price he receives from the price he would have been willing to sell at.



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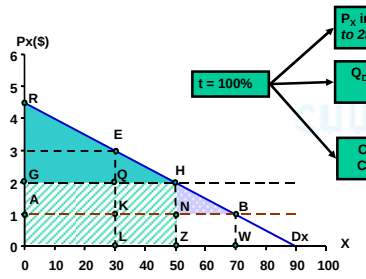
Effects of a tariff on CS



P_X increases from *1$ to 2$*

t = 100%

Q_D decreases from 70X to 50X

CS in free trade? CS in tariff case?

CS decreases by the area *AGHB = 60$.*

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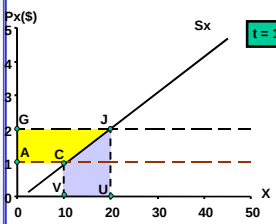
Effects of a tariff on PS



P_X increases from *1$ to 2$*

t = 100%

Q_S increases from 10X to 20X

PS in free trade? PS in tariff case?

PS increases by the area *AGJC = 15$.*

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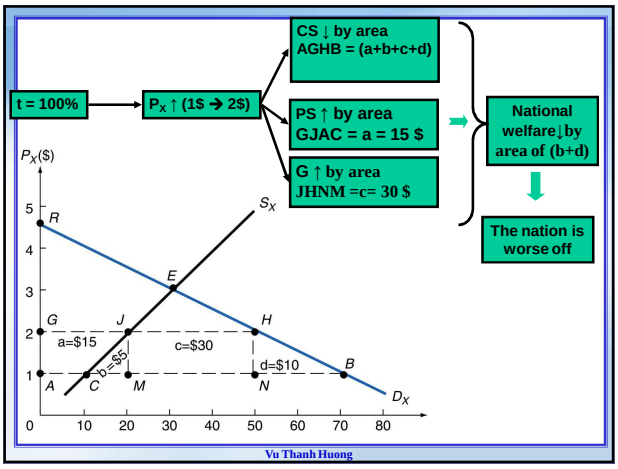

Summary of welfare effects

Question: Who will be losers and winner of a tariff?

- Winners:
  - Government + c
  - Producers + a
- Losers:
  - Consumers - (a+b+c+d)

  ⇒So, tariffs are unambiguously pro-producer and anti-consumer.
- National welfare effects?
  - Small country case: -(b+d)
  - - (b+d) is calssed a deadweight loss
  - b: welfare loss due to production distortion
  - c: welfare loss due to consumption distortion

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The theory of tariff structure

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Concept of Effective rate of protection (EPR)

- Nominal tariff:
  - imposes on final commodity
    http://www.customs.gov.vn/English/Lists/Documents/ViewDetails.aspx?ID=957
  - Important to consumers?
- Effective rate of protection (ERP)
  - new concept (since 1960s)
  - **is calculated on the domestic value added**, or processing that takes place in the nation (compare with tariff)
  - Domestic value added = price of final commodity minus cost of the imported inputs going into production of the commodity
  - Important to producers because it measures how much protection a tariff (or other trade policy) provides domestic producers.

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Example of ERP

Example 1

- The free trade world price of a suit: $100
- Imported Wool value $ 80
- A nominal tariff: 10%
- Calculate ERP and compare with nominal tariff rate?

Answer

- Identify domestic value added
  -The domestic value added = the price of final suit – the cost of imported wool = $100 - $ 80 = $20
- The nominal tariff in USD
  - Tariff imposed on each suit will be $100 * 10% = $ 10 USD => nominal tariff
- Identify ERP
  - ERP = $10/$20 = 50%

=> In essence the government gives the suit industry a much higher degree of protection than 10% nominal tariff.

- Why?

Example of ERP (cont.)

- Nominal tariff rate: 10%
- EPR: 50%
- Any comments?
  - In essence the government gives the suit industry a much higher degree of protection than 10% nominal tariff.
  - Why is EPR higher than nominal tariff rate?
    - No tariff on wool but high tariff on suit => stimulating the domestic production of suit
- ***Whenever the imported input is admitted duty free or lower tariff rate is imposed on imported input than on the final product produced with the imported input, the ERP is higher than the nominal tariff rate.***

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Formular of ERP

- Formula to calculate the rate of effective protection:

$$ERP = \frac{t - a_i t_i}{1 - a_i}$$

- **ERP: the rate of effective protection** to producers of the final commodity
- **t: the nominal tariff** on consumers of the final commodity
- **a_i:** the ratio of the cost of imported input to the price of the final commodity in the absent of tariff
- **t_i:** the nominal tariff on the imported input

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Formular of ERP (cont.)

- Example 1: Consider two cases
  - Nominal tariff imposed on wool imported: 5%
  - Nominal tariff imposed on wool imported: 10%
  - Nominal tariff imposed on wool imported: 20%
  - Calculate EPR in the above three cases?
- Answer: 30%, 10%, - 30%.
- Any comments?

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Generalization and Evaluation of the Theory of Effective Protection

$$ERP = \frac{t - a_i t_i}{1 - a_i}$$

1. If $a_i = 0$, EPR = t
2. Given a_i and t_i, EPR is larger the greater is the value of t
3. Given value of t and t_i, ERP is larger the greater is the value of a_i
4. The value of g >, =, < than t as t_i is <, =, > than t
5. When $a_i t_i$ exceeds t, the rate of effective protection is negative

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Generalization and Evaluation of the Theory of Effective Protection

- **Why the concept of effective protection must be use cautiously:**
  - Partial equilibrium nature
  - Assumptions:
    - Inputs are used in fixed proportions in production
    - The international prices of the commodity and of imported inputs are not affected by tariff
- **Despite shortcomings, the rate of effective protection**
  - Is superior to nominal tariff in estimating the degree of protection actually granted to domestic producers of the import-competing product
  - Played a crucial role during the Uruguay Round trade negotiations

Homework

- Problems 1 – 6 (chapter 8 – IE Textbook)

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Key words

- Trade policy
- Free trade/ Trade protectionisms
- Trade policy instruments
- Tariff/Export tariff/Import tariff
- Ad valorem tariff/Specific tariff/ Compound tariff
- A small nation
- Price taker
- Consumption effect of a tariff
- Production effect of a tariff
- Trade effect of a tariff
- Revenue effect of a tariff
- CS/ Changes in CS in tariff case
- PS/ Changes in PS in tariff case
- Welfare loss due to production distortion/consumption distortion
- Welfare effect of a tariff
- Deadweight loss
- Domestic value added
- Nominal tariff vs ERP

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END OF CHAPTER 8

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