

Econ 340

Lecture 5 Tariffs

Announcements

- Q&A Page on Web Site: I've been getting some good questions from you by e-mail. Check it out.

Outline: Tariffs

- What Are They?
- Who Uses Them?
- Effects of Tariffs
 - Small Country Case
 - Effects on quantities and prices
 - Effects on economic welfare
 - Large Country Case
 - Effect on world price
 - Effect on welfare
 - Size of These Effects

What Are Tariffs?

- Tariffs are Taxes on imports
- Two main types
 - Ad valorem: % of value
 - Specific: \$ per unit
- How are they implemented?
 - At the border, by customs officers
 - They determine
 - What good it is
 - What price to use for ad valorem tariffs
 - Customs officers have power that may be abused (e.g., bribery)

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Who Uses Tariffs?

- Virtually all countries
- How big are tariffs?
 - In US, today, average only 2-3%
 - In developing countries, often around 20%
 - Both used to be much higher
 - Some particular tariffs are still much higher

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Who Uses Tariffs?

- Sample US tariffs
 - Cars: 2.5%
 - Trucks: 25%

} That's why minivans are "trucks"

 - Men's cotton shirts 19.7%
 - Women's blouses 26.9%
 - Exports of developing countries:
 - Nepal 13.2%
 - Bangladesh 13.6%

} See Schavey

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Who Uses Tariffs?

- Aside: Schavey, "The Catch-22 of U.S. Trade"
 - US tariffs are much larger against developing countries than against developed countries
 - Who gains and loses?
 - US workers gain, but they have social policies to protect them (unemployment insurance, etc.)
 - Developing country workers lose, and their governments are too poor to help
 - WTO Agreement on Textiles and Clothing (1995) promised to eliminate quotas on these products by 2005, but not tariffs. (It did.)
 - Why "Catch-22"?
 - Can only develop by exporting
 - But if they do, we raise tariffs!

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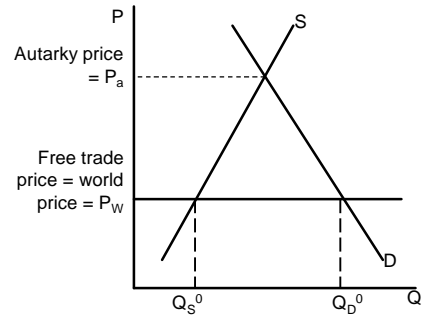
Effects of Tariffs

- Easy to see from supply and demand
- Consider a good whose price would be above the world price without trade
- Will look at two cases:
 - Small country: Too small for its behavior to matter for the world price
 - Large country: Large enough (in market for this good) that its behavior may change world price

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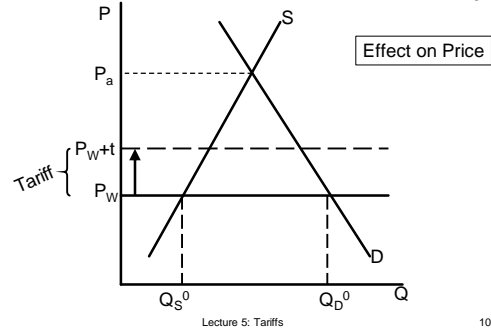
Effects of Tariffs: Small Country



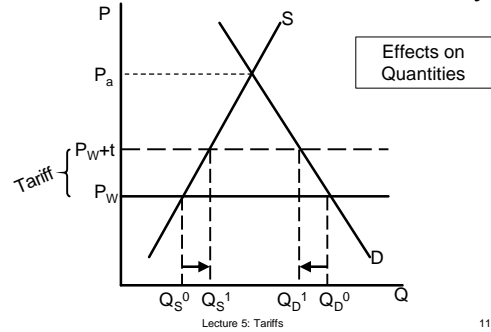
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Effects of Tariffs: Small Country

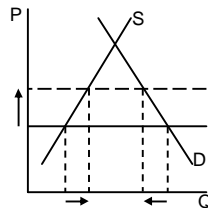


Effects of Tariffs: Small Country



Effects of Tariffs: Small Country

- Thus: what happens due to a tariff:
 - Domestic output rises
(Employment also rises in this industry)
 - Domestic demand falls
 - Domestic price rises
(by full amount of tariff)
 - Imports (=D- S) fall
 - Suppliers gain
 - Demanders lose
 - Gov't gets tariff revenue
 - World sells us less
(but it doesn't lose, because we're too small to notice)



Effects of Tariffs: Small Country

- How much do we gain and lose?
- Use changes in “consumer surplus” and “producer surplus” from Econ 101

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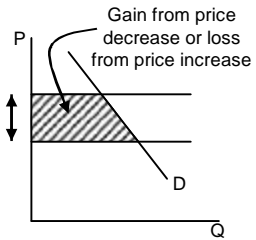
Effects of Tariffs: Small Country

When price changes,

Consumers

- Gain from price decrease
- Lose from price increase
 - By amount equal to area to the left of the demand curve

while...



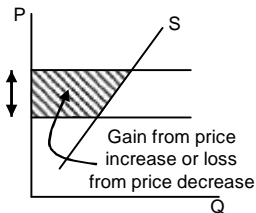
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Effects of Tariffs: Small Country

Producers

- Gain from price increase
- Lose from price decrease
 - By amount equal to area to the left of the supply curve



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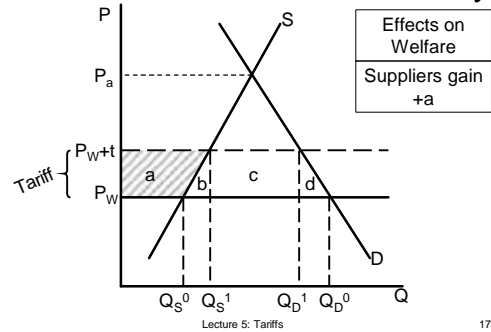
Effects of Tariffs: Small Country

- Apply these to the effects we found for a tariff
- Also note that the government (and thus the taxpayer) of the country gets benefit of tariff revenue

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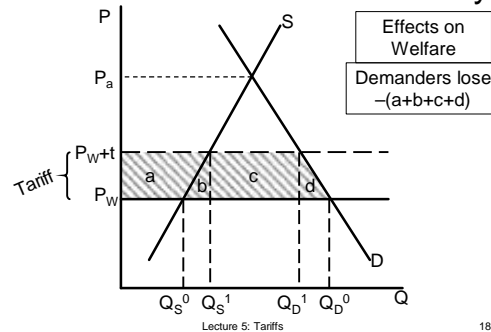
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Effects of Tariffs: Small Country



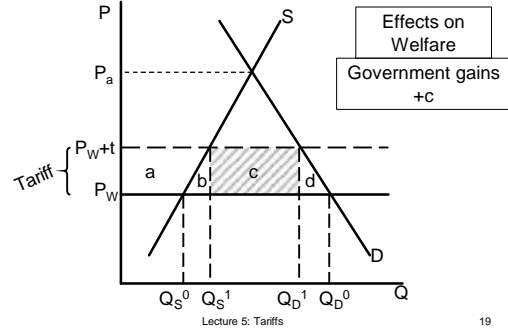
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Effects of Tariffs: Small Country



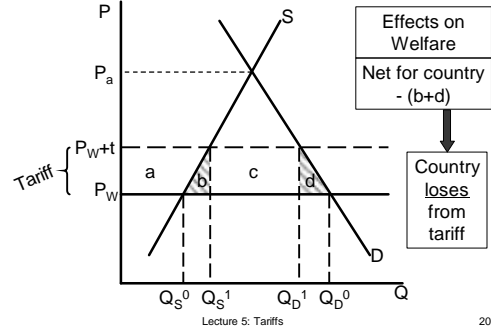
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Effects of Tariffs: Small Country



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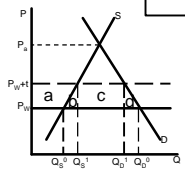
Effects of Tariffs: Small Country



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Effects of Tariffs: Small Country

- Summary:
- Suppliers gain +a
 - Demanders lose - (a+b+c+d)
 - Government gains +c
 - Net effect on country Loss = - (b+d)

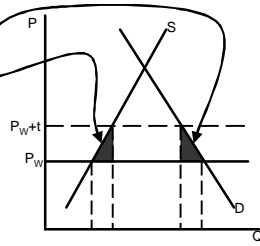


"Dead Weight Loss"

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Effects of Tariffs: Small Country

- Dead Weight Loss
- Why?
- Because demanders and suppliers both are led by the tariff to behave as if the good's value were P_W+t , when in fact the country can buy or sell it for P_W .

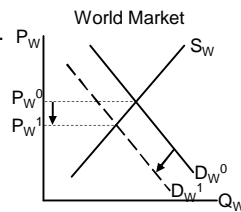


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Effects of Tariffs: Large Country

- If the country is not small, but large, then
 - when it reduces its imports of the good from the world market
 - the world price will fall.
- Why?
 - Because, with less import demand from large country, world demand shifts left.



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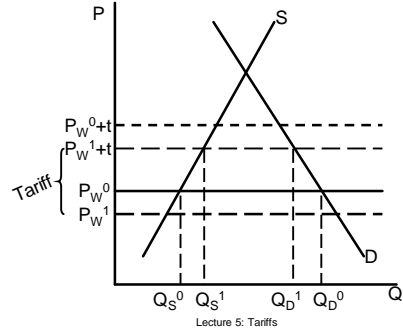
Effects of Tariffs: Large Country

- Results due to fall in world price:
 - Domestic price rises by less than the tariff
 - Compared to the same tariff in a small country
 - Output (and employment) rises by less
 - Thus less benefit to suppliers
 - Demand falls by less
 - Thus less harm to demanders
 - Imports fall by less
 - Tariff revenue is larger

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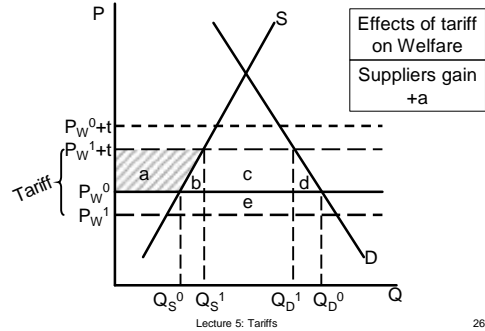
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Effects of Tariffs: Large Country



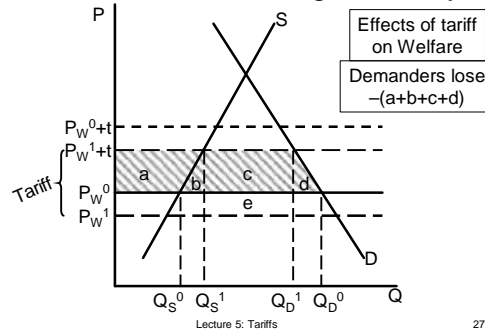
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Effects of Tariffs: Large Country



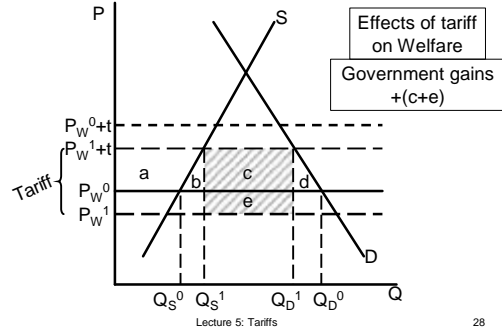
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Effects of Tariffs: Large Country

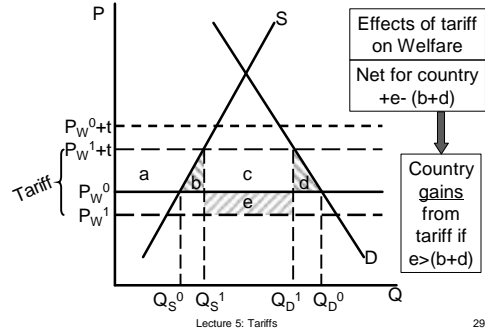


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Effects of Tariffs: Large Country



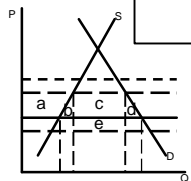
Effects of Tariffs: Large Country



Effects of Tariffs: Large Country

Summary:

• Suppliers gain	+a
• Demanders lose	-(a+b+c+d)
• Government gains	+(c+e)
• Net effect on country	Gain or Loss = $+e- (b+d)$



Effects of Tariffs: Large Country

- This possibility of gain from a tariff goes under several names:
 - The “terms of trade” effect of a tariff
 - The “monopoly” effect of a tariff
 - The “optimal tariff”

Effects of Tariffs: Large Country

- The “Terms of Trade” Effect
 - Definition: $TOT ? \frac{P_{\text{exports}}}{P_{\text{imports}}}$

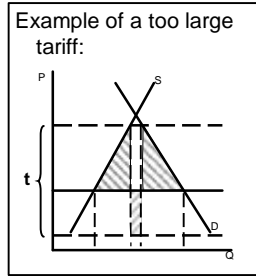
A country’s “Terms of Trade” is the price of its exports relative to its imports
 - If TOT rises, the “terms of trade improves”
 - because the country gets more imports in return for its exports
 - A tariff by a large country drives down the world price of its imports
 - and thus improves its terms of trade

Effects of Tariffs: Large Country

- The “monopoly” effect
 - From Econ 101, a monopoly firm increases its profit by
 - Selling less to the market, and hence
 - Raising its price
 - A large country can increase its welfare by
 - Buying less from the market (via a tariff), and hence
 - Lowering the price of what it buys
 - Note: Large country could also gain by restricting exports, as OPEC has done with oil

Effects of Tariffs: Large Country

- The “optimal tariff”
 - If a large country uses a tariff that is **too large**, it must lose.
 - Thus there is some level of tariff that is optimal



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The Size of These Effects

- See Feenstra
 - Uses analysis like this one to measure effects of protection
 - Sectors with high US protection in 1985:
 - Automobiles
 - Dairy
 - Steel
 - Sugar
 - Textiles and Apparel(All these had quotas and other NTBs as well as tariffs.)

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The Size of These Effects

- See Feenstra
 - For 1985, U.S. average tariffs caused dead-weight loss (DWL) for U.S. of
 $DWL = \$1.2\text{-}3.4 \text{ billion per year}$
 - Sounds like a lot! But U.S. 1985 GDP was \$4181 b. So
 $DWL = 0.03\% \text{ of GDP}$

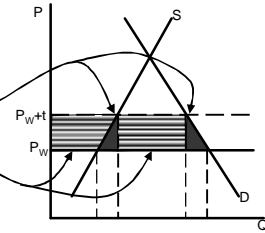
TINY!

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The Size of These Effects

- Why so small?
 - U.S. tariffs are small
 - But note, this is only the DWL
 - The transfer from consumers, to producers and government, is much larger

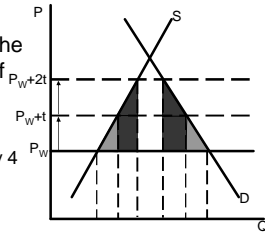


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The Size of These Effects

- Why so small?
 - DWL grows with the square of the tariff
 - Example:
 - Doubling the tariff
 - Multiplies DWL by 4



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Next Time

- Nontariff Barriers
 - Quotas, etc.
 - Subsidies

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