PubPol/Econ 541

Class 11

Non-tariff Barriers

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Outline

- Types of NTBs and NTMs
- Quota Analysis
  - Perfect Competition
    - Small country
    - Large country
  - Monopoly
- TRQs
- Other NTBs
- Empirics (Feenstra)

NTBs

- Types of NTBs (Non-tariff barriers)
  - Or NTMs (Non-tariff measures)
    - Quotas
    - TRQs (Tariff-Rate Quotas)
    - VERs (Voluntary Export Restraints)
    - Variable Levy
    - Procurement Requirements
    - Subsidies
    - Local Content Requirements
    - Export Credits
    - Red Tape
    - Standards
    - Customs Valuation Procedures
    - Tax Treatments

NTBs

- ## Also: "Administered Protection"

  - Defined as use of tariffs under procedures that may also have "damping" effect on trade

  - Safeguards tariffs (aka Escape Clause in US)

    - Levied against injurious imports

  - Anti-dumping duties

    - Levied against dumped imports

  - CVDs (Countervailing duties)

    - Levied against subsidized imports

  - US Section 232

    - Levied against imports threatening national security

Pause for Discussion

Questions

- Countries are <u>not</u> allowed under the GATT/WTO to use quotas. How do they get away with it?

- Why is the EU's variable levy legal under the GATT/WTO? And why does Jackson nonetheless object to it?

- How do the welfare effects of a VER compare to those of a tariff?

- Why does a local content requirement raise the price of inputs to producers?

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Quota analysis: Small country

- Assumptions throughout (Same as tariff)
  - Markets perfectly competitive (but later monopoly)
  - Product homogeneous
  - Markets in equilibrium
  - There are no "distortions" (externalities, etc.)
  - Supply and demand curves linear
    - Just for simplicity
  - Model is partial equilibrium
  - Model is static
 - Free and frictionless trade

Small country

- Special assumption for small country case
  - World price is given (country too small to influence it)
  - More correctly: country's supply and demand in that industry too small to influence the world price

Quota under Perfect Competition Small country

- Quota sets a maximum <u>quantity</u> of imports, not price
  - Price must adjust to whatever level reduces excess demand to the permitted quantity
  - If excess demand (i.e., desired imports) is already less than the quota, then quota has no effect. It is not "binding."
    - (That won't be true with imperfect competition, as we'll see)

Small country quota
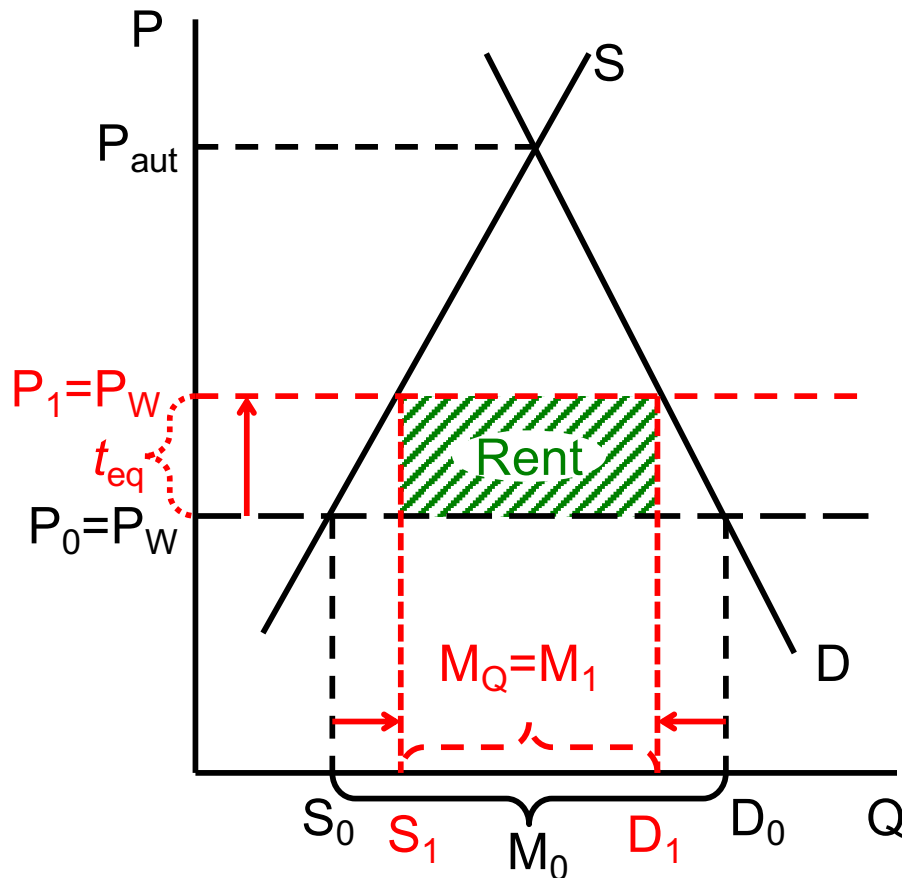
- Effects of a binding quota, starting from free trade
  - Price rises
    - (by t_{eq} = "tariff equivalent of quota")
  - Quantity supplied rises
  - Quantity demanded falls
  - Quantity of imports falls (to M_Q)
  - Tariff revenue?
    - No
    - Instead there is is "quota rent"
 $$t_{eq} \times M_Q$$

Import Quota M_Q

Perfect Competition
Small country

- Who gets the quota rent? Depends on how the rights to import under the quota are allocated
  - First-come, first-served
    - Whoever wins the race to the border
  - Import licenses sold by home government
    - Government revenue, just like tariff
  - Import licenses granted to domestic people or firms
    - They get the rents, which stay in the country
  - Import licenses granted to foreign people, firms, or government
    - Foreigners get the rents

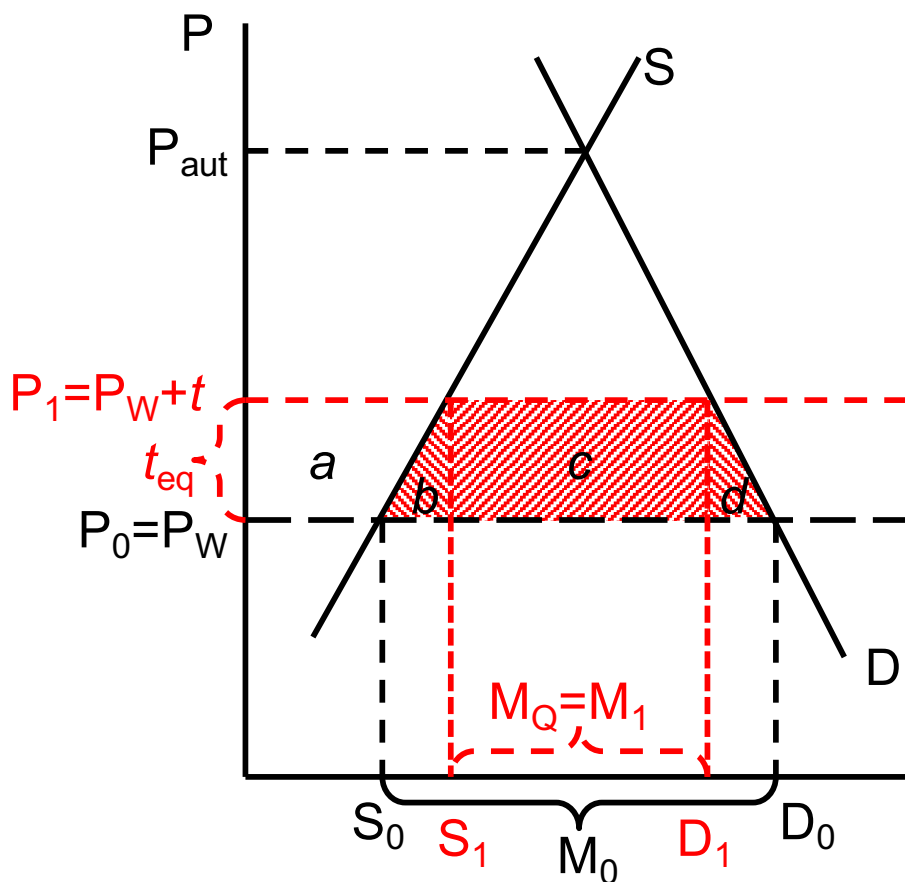Most common

Small country quota, Rents domestic
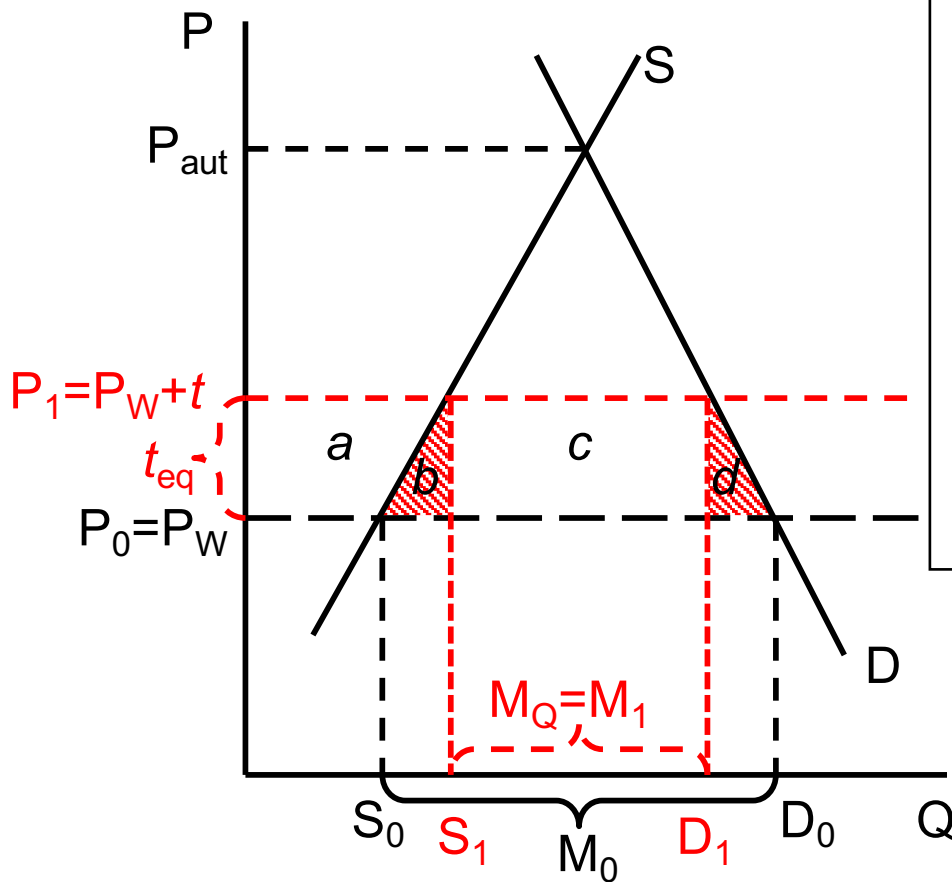
- Welfare effects of a quota, starting from free trade with quota rights <u>domestic</u>
  - Suppliers gain $\quad$ $+a$
  - Demanders Lose $\quad$ $-(a+b+c+d)$
  - Rents $\qquad\qquad$ $+c$

  - Country loses $\qquad$ $-(b+d)$

"Dead Weight Loss" =

(Same as tariff)

Import Quota M_Q

Small country quota, Rents foreign

P

P_{aut}

S

$P_1 = P_W + t$

t_{eq}

a

c

$P_0 = P_W$

b

d

D

$M_Q = M_1$

S_0 S_1 M_0 D_1 D_0 Q

- Welfare effects of a quota, starting from free trade with quota rights <u>foreign</u>

Home:
  - Suppliers gain $+a$
  - <u>Demanders Lose</u> $-(a+b+c+d)$
  - Country loses $-(b+c+d)$

Foreign:
  - Rents $+c$

World: $-(b+d)$

(Worse than tariff for Home)   Import Quota M_Q(Still Dead-weight loss for world)
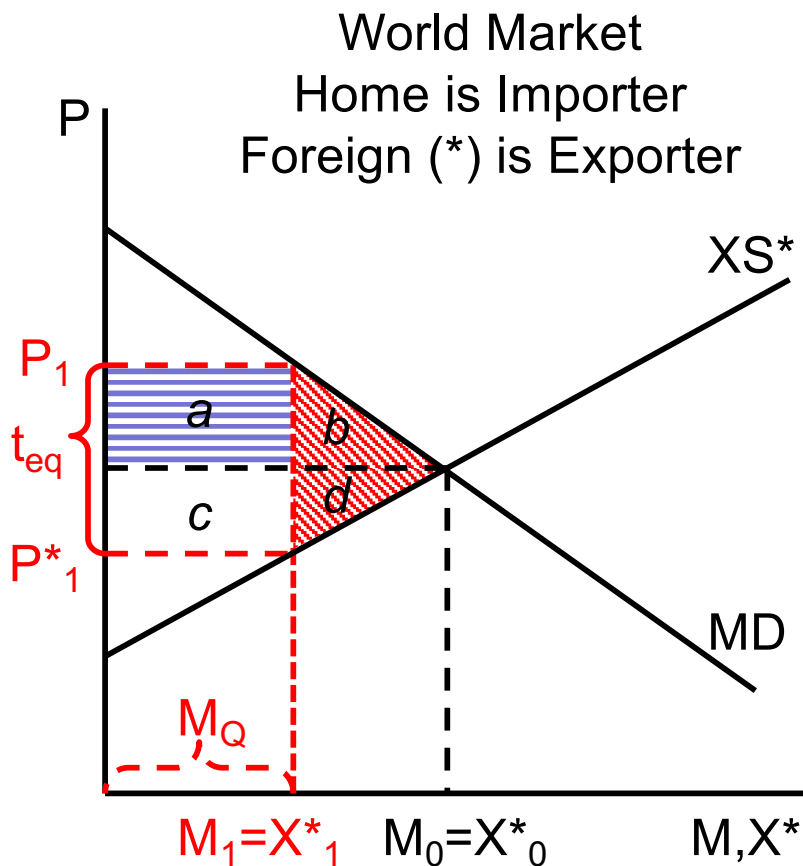
Pause for Discussion

Questions (<u>not</u> asked before)

- If you were a producer, would you prefer being protected with a tariff or a quota?

- If you were a consumer, which would you prefer?

- Why do government tend to give quota rights to foreigners?

- In what ways, aside from the rents, do tariffs and quotas differ?

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Large country quota, Rents foreign

World Market
Home is Importer
Foreign (*) is Exporter

P

XS^*

P_1

t_{eq}

a

b

c

d

P^*_1

MD

M_Q

$M_1 = X^*_1$ $M_0 = X^*_0$ M, X^*

Welfare effects of a large-country quota with rents allocated to foreign

- Home:
  - Private sector (S&D) loses $-(a+b)$
  - Country must lose $-(a+b)$
- Foreign
  - Private sector (S&D) loses $-(c+d)$
  - Quota rents $+(a+c)$
  - Country may gain or lose: $+a-d$
- World loses $-(b+d)$

Now area *a* is a transfer from home to foreign, reflecting an improved terms of trade for foreign.

Pause for Discussion

Questions (<u>not</u> asked before)

- Why does large-country quota with rents to foreigners improve the foreign terms of trade?

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Monopoly, Small Country

- Assumptions
  - Product homogeneous
  - World price is given (country too small to influence it)
  - Home market has only a single producer
    - Firm has increasing marginal cost
    - Without trade, firm is a monopoly
    - With free trade firm has no market power, as it takes world price as given

Monopoly, Small Country

- We'll skip the analysis unless you are interested

- For more, see
  - Skipped slides
  - KOM Appendix to Chapter 9

- We'll go straight the the results

Monopoly in a closed economy
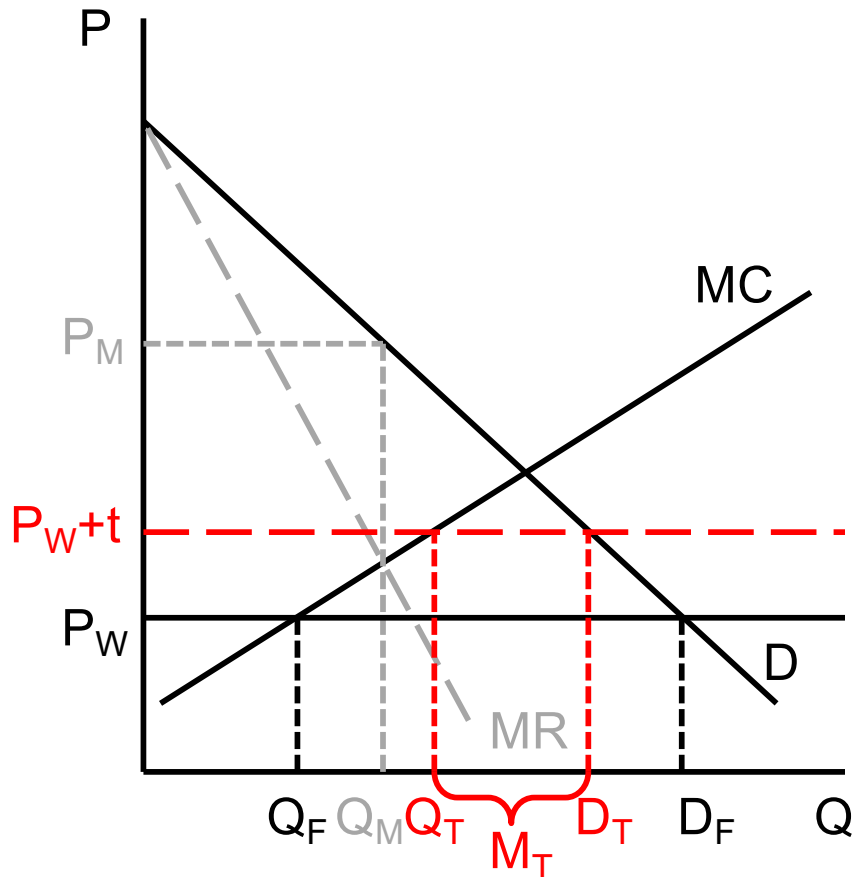
P

P_M

MC

MR

D

Q_M

Q
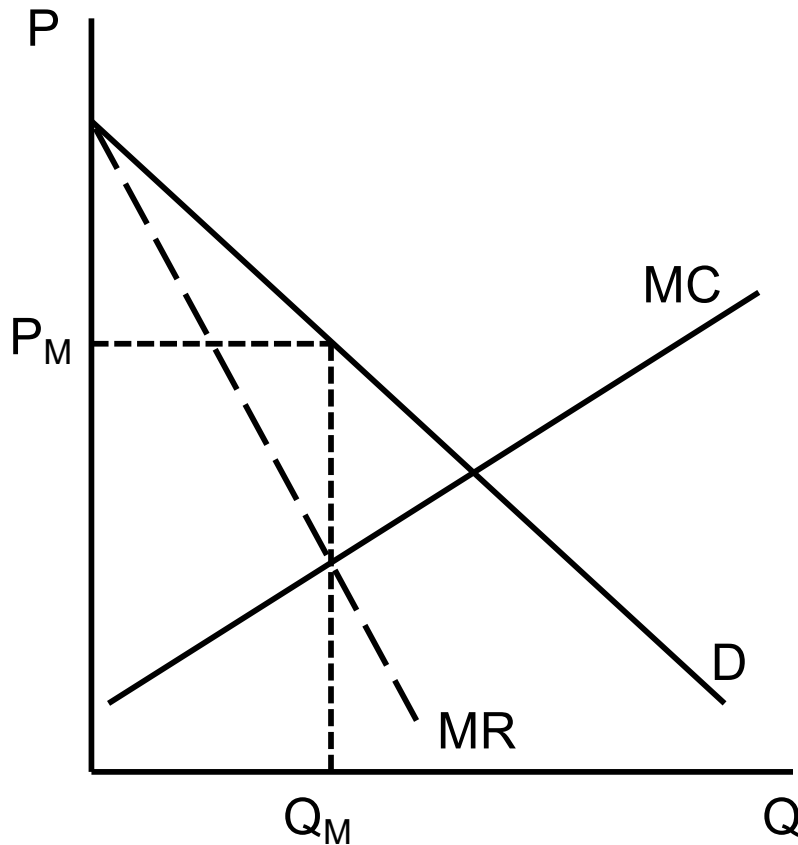
- Recall
  - Monopolist cares about marginal revenue
  - Selects quantity Q_M where MR=MC
  - Then charges the price P_M at which this quantity is demanded

Monopoly in Free Trade
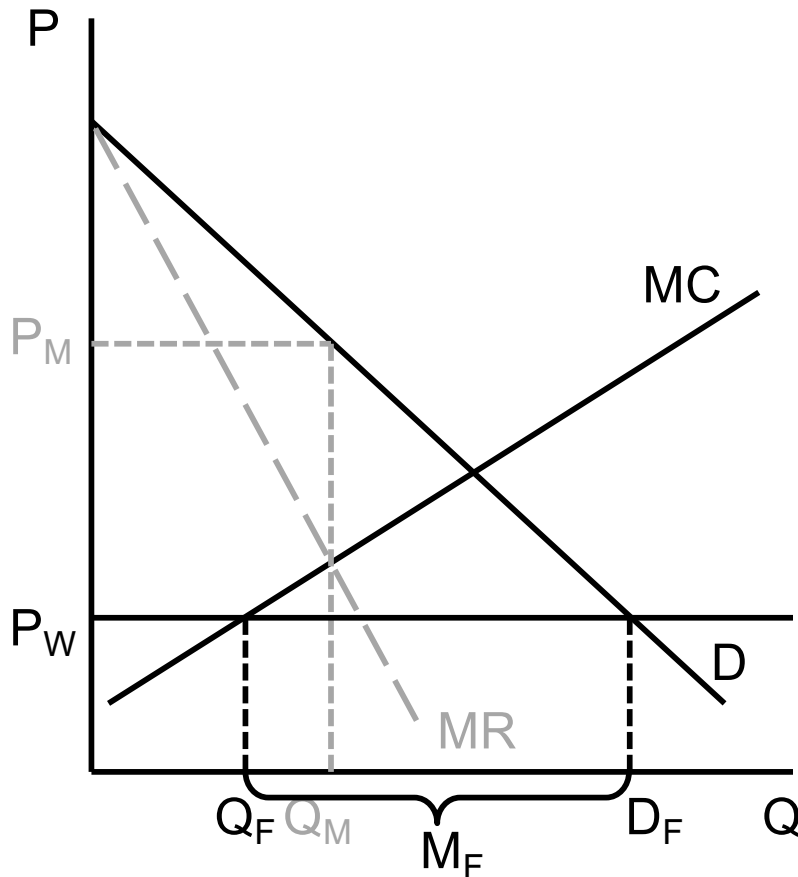
- The firm can't charge above P_W

- It produces Q_F where MC = P_W

- Since $D_F > Q_F$, the country imports

- (Had P_W been enough higher, the firm and country would export.)

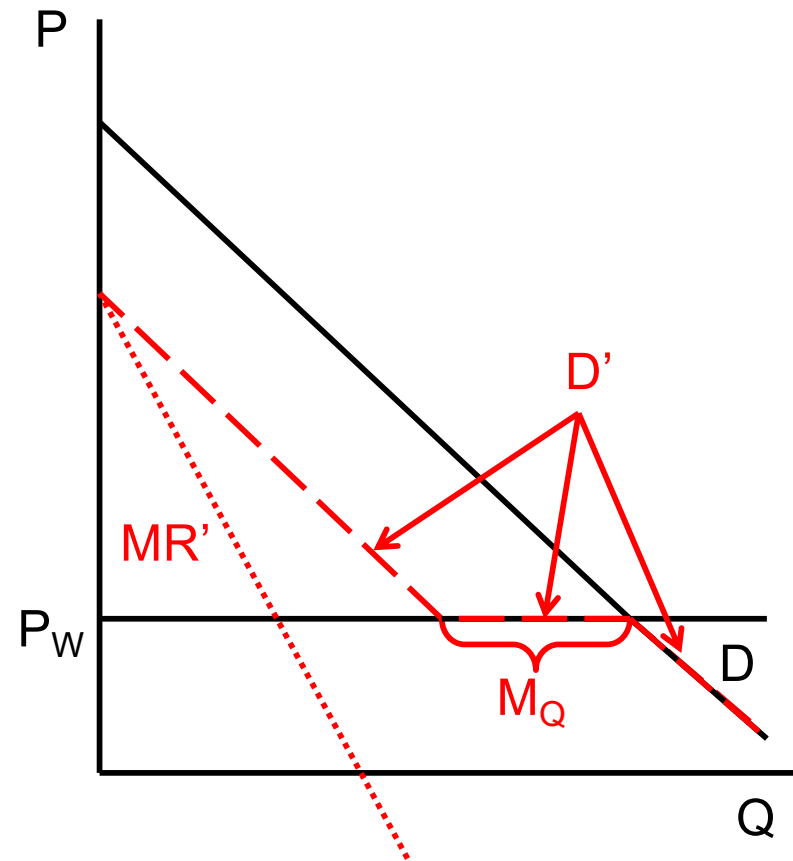# Monopoly with Tariff

- Now the firm can charge up to $P_W + t$, and it will, as long as $P_W + t < P_M$

- It produces Q_T where MC $= P_W + t$

- If $D_T > Q_T$, the country imports M_T

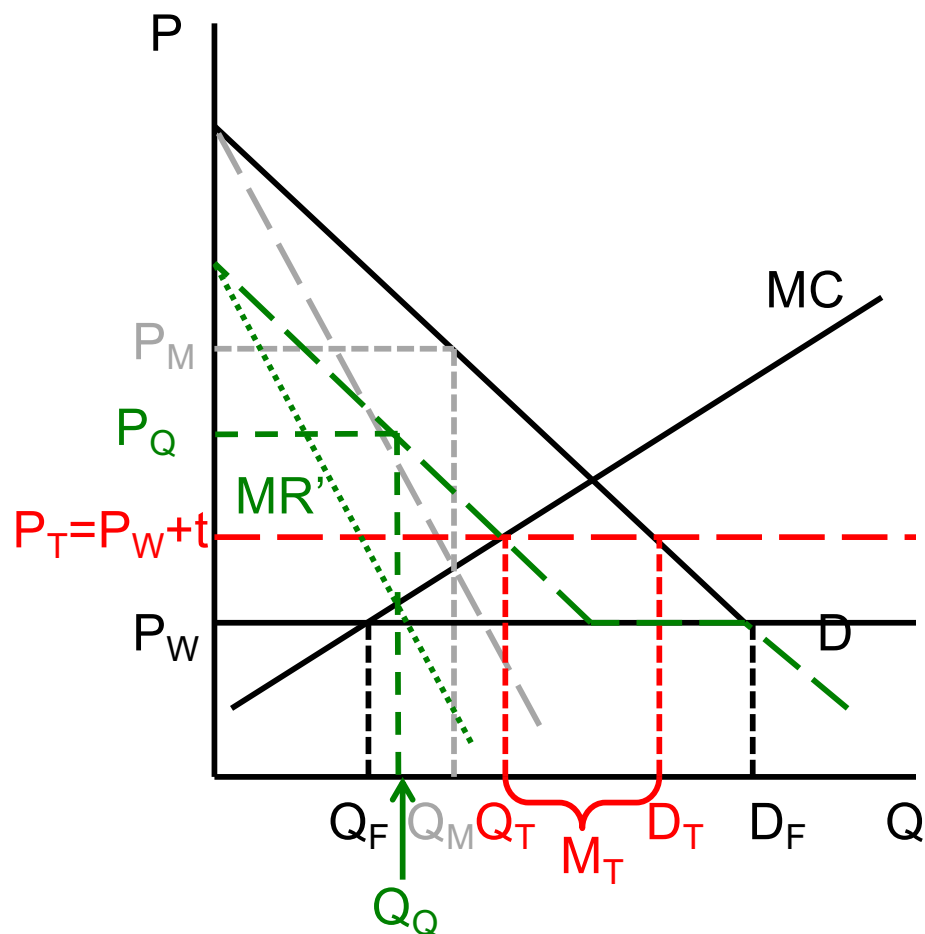- (If t were higher, imports would be zero and we're back to monopoly.)

Monopoly with Quota

- A quota M_Q means that for prices above P_W, demand faced by the monopolist is reduced (shifted left) by M_Q.
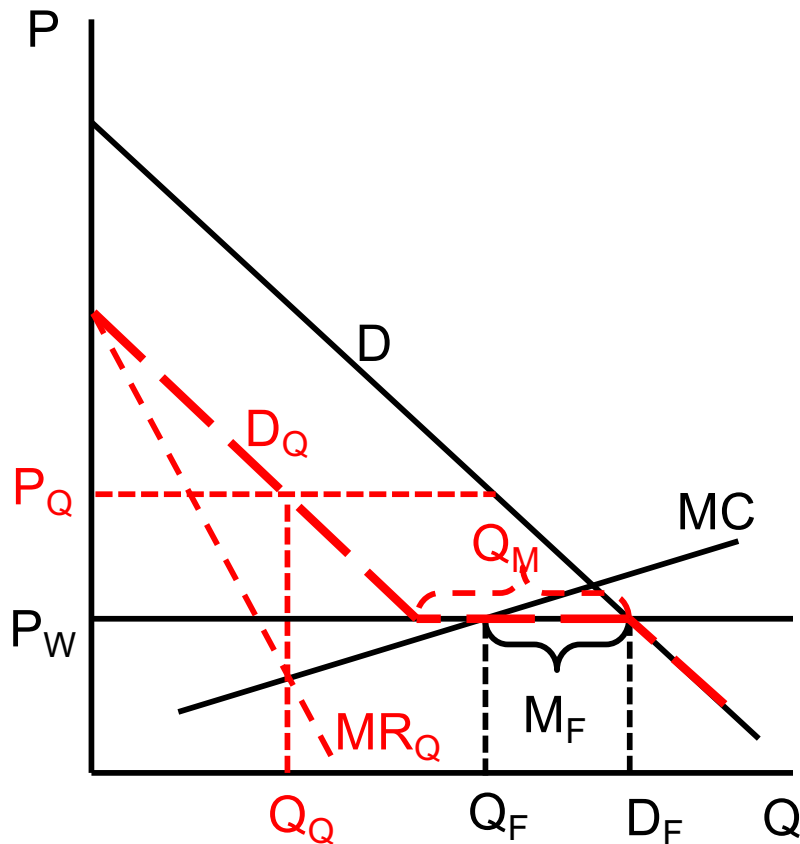
- To D'

- And marginal revenue becomes MR'

Monopoly with Quota: $M_Q = M_T$

- Now the firm can charge a higher price, and it will
- It produces Q_Q where MC = MR'
- and charges price P_Q.
- Result: Imports are the same as under the tariff, but price is higher and quantity lower.
- The quota has given back to the firm some monopoly power.

Non-binding Quota under Monopoly

- Here free trade imports are M_F
- Set quota $Q_M > M_F$
- Demand becomes D_Q
  - Equals D for $P < P_W$
  - Equals $D-Q_M$ for $P > P_W$
- Marginal revenue is MR_Q
- Output (at MR_Q=MC) is Q_Q
- Price is $P_Q > P_W$
- Result: Non-binding quota can raise price under imperfect competition.

Monopoly, Small Country

- Results
  - With perfect competition
    - Quota set equal to imports under tariff raises price by same as tariff
  - With monopoly
    - Quota set equal to imports under tariff raises price by <u>more</u> than the tariff would have
    - Even a quota set to more than free-trade imports (what would be expected to be a "non-binding quota), may raise price.

Pause for Discussion

Questions (<u>not</u> asked before)

- Why does a large country using a quota (with rents given to foreigners) not benefit from an improvement in its terms of trade?

- Why does a monopolist benefit more from a quota than a tariff, if the quantity of imports is the same?

- How can a non-binding quota raise price?
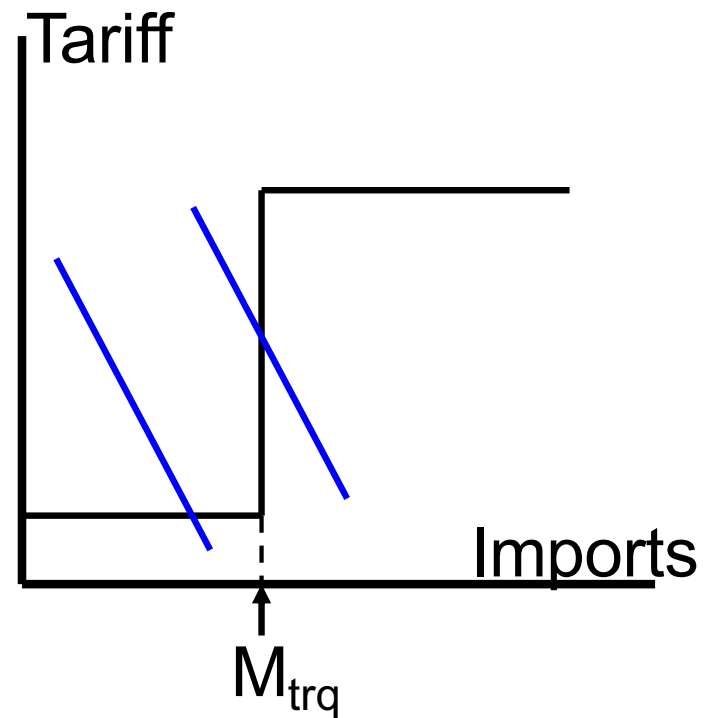
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Tariff-Rate Quotas (TRQs)

- ## Definition

  - Low (or zero) tariff on imports below set quantity, M_{trq}

  - High(er) tariff on imports above M_{trq}

Tariff-Rate Quotas (TRQs)

- Effect is like
  - a low tariff,
  - a quota,
  - or a high tariff,

  depending on levels of supply and demand

Tariff

Imports

M_{trq}

Tariff-Rate Quotas (TRQs)

- Used by
  - US for years on some agricultural products
  - Trump on Korean steel
  - US to settle other trade disagreements
  - See Beattie

Pause for Discussion

Questions on Beattie, "Mind your TRQs"

- Why are TRQs inefficient and harmful?

- Who benefits most from a TRQ, and why?

- What was tariffication? When was it done?

- How was China hurt by TRQs in a case they took to the WTO in 2015?

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Other NTBs: VERs

- Voluntary Export Restraint has <u>exporter</u> limiting exports at request of importing country

- Effect is just like a quota with rents given to foreigners

- Rents go to foreigners

- Foreign country may gain

World Market
Home is Importer
Foreign (*) is Exporter
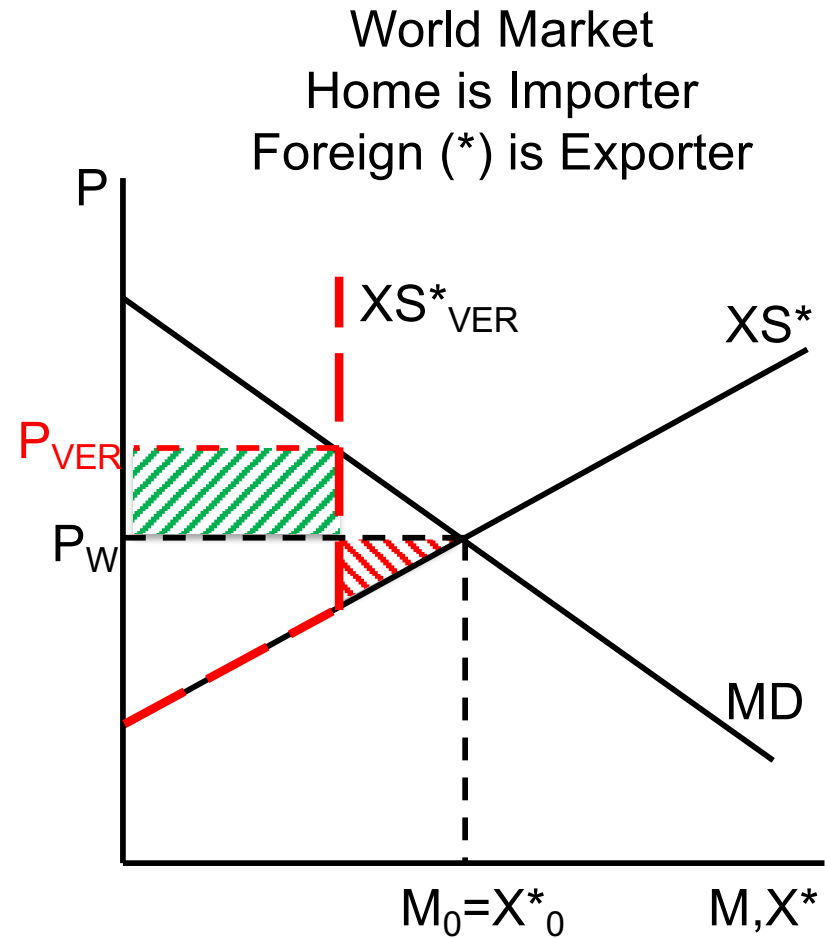
Other NTBs: Variable Levy

- Importer uses a tariff (levy) but changes it to maintain a target domestic price, P^V

- Notice how the size of the levy will change as
  - Demand shifts right or left
  - Supply shifts right or left

- Welfare effects are all exactly like a simple tarif.

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Foreign (*) is Exporter
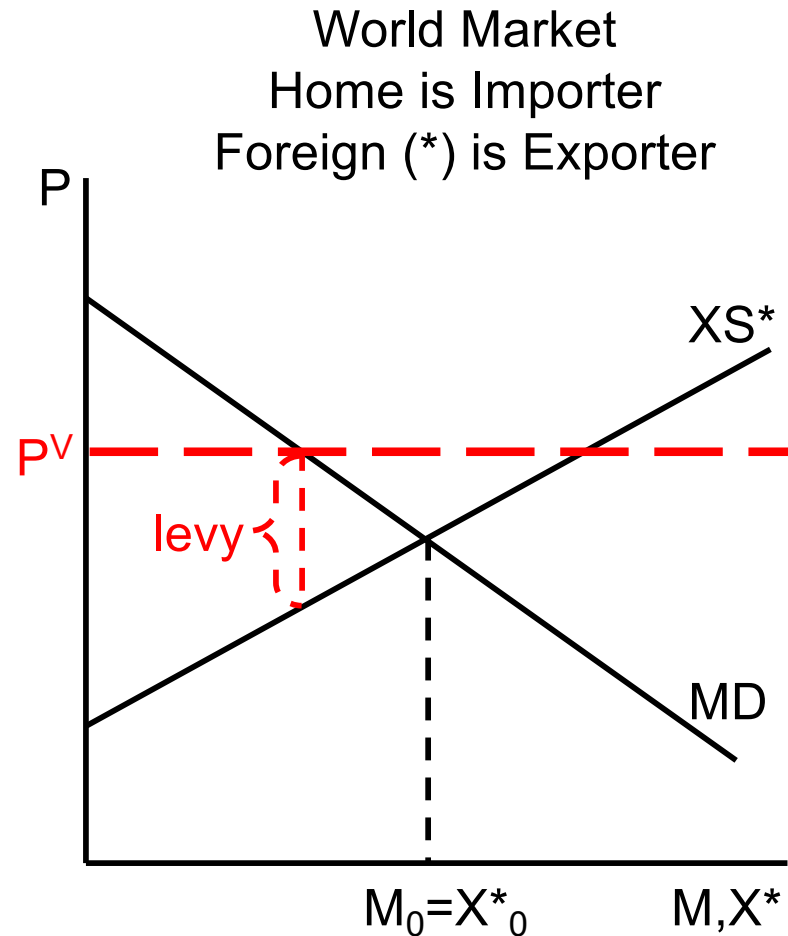
Other NTBs: Procurement Requirements

- Government limits its own purchases of import

- If government buys less than home production, then no effect, as private buyers just import more

- If government buys all home production, then
  - Home price rises (to government)
  - Foreign price falls (to private importers)

- Home buyers and sellers both gain but government loses more.

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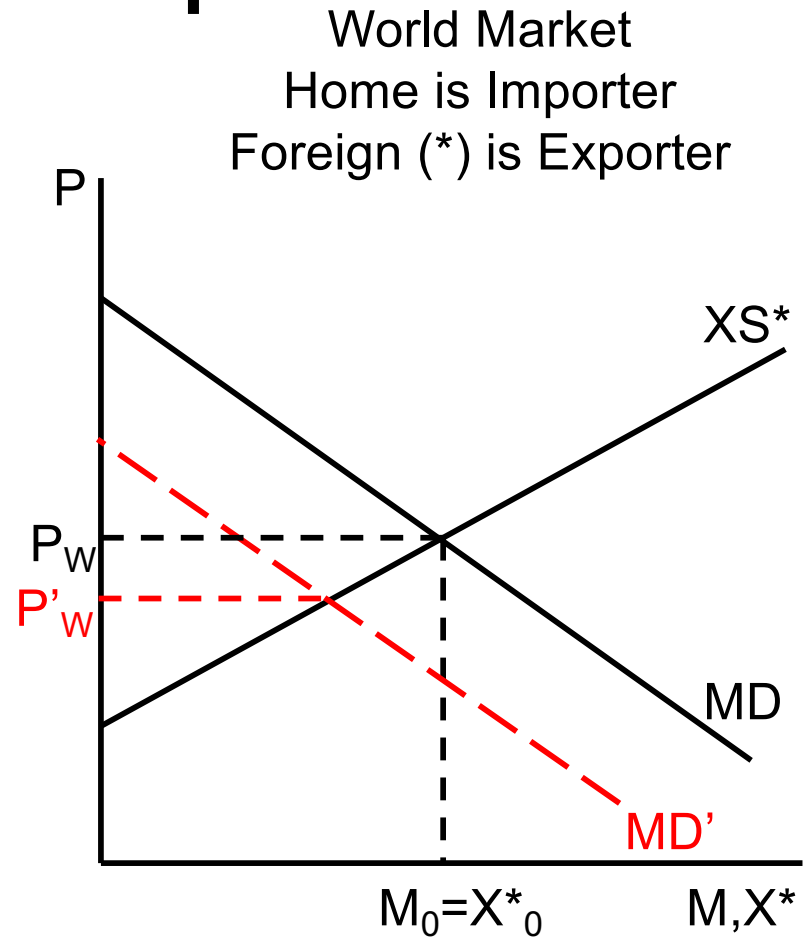
Other NTMs: Export Subsidy

- (We'll see more detail in last class, Dec 8)

- Export subsidy gives $s to for each unit exported, so exporters get a higher price than foreign buyers pay

- Like large-country tariff, it
  - Raises home price
  - Helps suppliers
  - Hurts demanders

- Unlike large-country tariff, it
  - Costs the government
  - Cannot benefit country

- (That last may change with imperfect competition.)

World Market
Home is Exporter
Foreign (*) is Importer
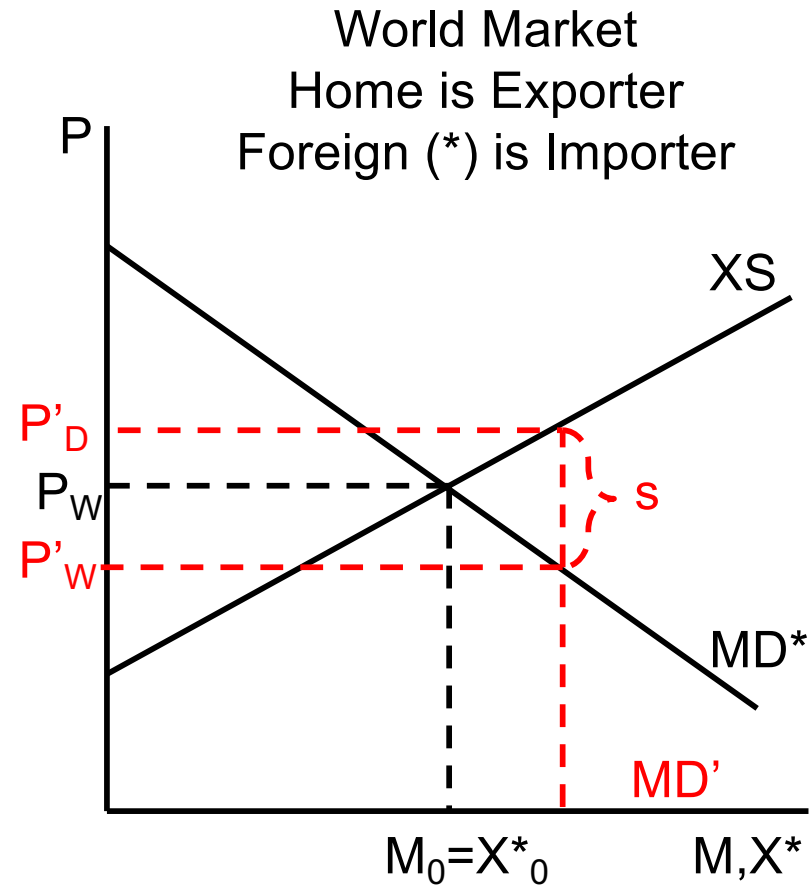
Pause for Discussion

Questions

- Suppose we are a small country and that foreign producers of imports to our country become more efficient, so that their costs fall. How will the effects of this change on the price and quantity of imports differ depending on whether we restrict imports with
  - A tariff
  - A quota
  - A VER
  - A variable levy
  - A government procurement regulation

- If the import demand curve shifts to the right, how will a variable levy, a tariff, and a quota respond differently?

Questions on Export Subsidy

- Why is a tariff needed to accompany an export subsidy?

- Why does an export subsidy raise the price of the good inside the exporting country?

- Can an export subsidy benefit the country that uses it (in the perfectly competitive model of the text)? Why or why not?

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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.)

The Size of These Effects

- See Feenstra

  – For 1985, U.S. average <u>tariffs</u> caused dead-weight loss (DWL) for U.S. of
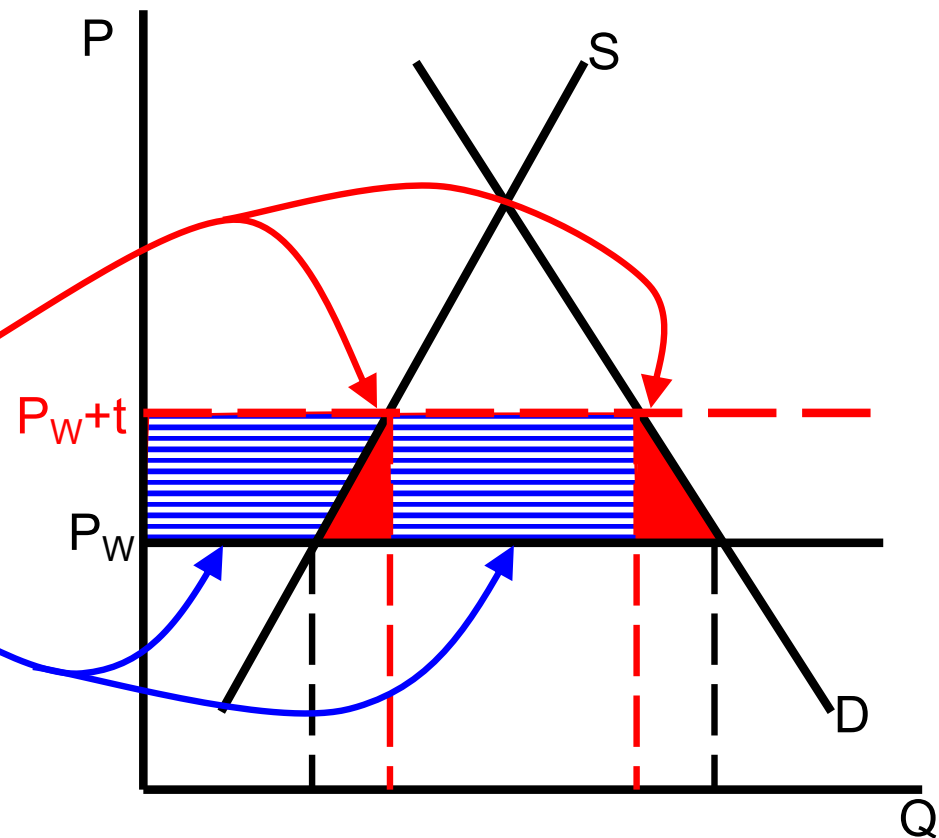
DWL = $1.2-3.4 billion per year

  – Sounds like a lot! But U.S. 1985 GDP was $4,181 b. So

DWL = 0.03% of GDP

  TINY!

The Size of These Effects

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

Table 1

Annual Cost of U.S. Import Protection

(billion dollars, years around 1985)

	U.S. Deadweight Loss (B + D)	Quota Rents (C or C + E)	Foreign Dead-Weight Loss (F)
Automobiles	0.2–1.2[a,b]	2.2–7.9[a,c]	0–3[d]
Dairy	1.4[b]	0.25[c]	0.02[e]
Steel	0.1–0.3[a,b]	0.7–2.0[a,c]	0.1[f]
Sugar	0.1[b]	0.4–1.3[c,g]	0.2[g]
Textiles & Apparel	4.9–5.9[a,b]	4.0–6.1[a,c]	4–15.5[h]
Average Tariffs	1.2 – 3.4[i]	0	n.a.
Total*	7.9–12.3	7.3–17.3	4.3–18.8

*In dairy the quota rents are earned by U.S. importers, and so are not included in the total.
n.a.—not available
Sources:

a de Melo and Tarr (1990)
b Hufbauer, Berliner and Elliott (1986)
c Bergsten et al (1987, Table 3.3)
d Feenstra (1988)
e Anderson (1985)

f Boorstein (1987)
g Leu, Schmitz and Knutson (1987)
h Trela and Whalley (1988, 1990, 1991)
i Rousslang and Tokarick (1991)

Pause for Discussion

Questions on Feenstra, "How Costly Is Protectionism?"

- How much more do consumers lose from protection than the country loses? Who gets the difference?

- If foreign firms respond to a quota by "upgrading" their product, how can that be bad?

- Why might foreign firms respond to protection by investing in the U.S., and what are the welfare effects if they do?

Questions on *Economist*, "Buying local"

- Why is buying local seen as "sensible – wholesome even"?

- Why does the *Economist*

- Is the use of buy-local rules becoming more common?

- What are some examples of these rules that have been used? article disagree?