

# CHAPTER 8

## THE INSTRUMENTS OF TRADE POLICY

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# Impact of protection

- Introduction and motivation

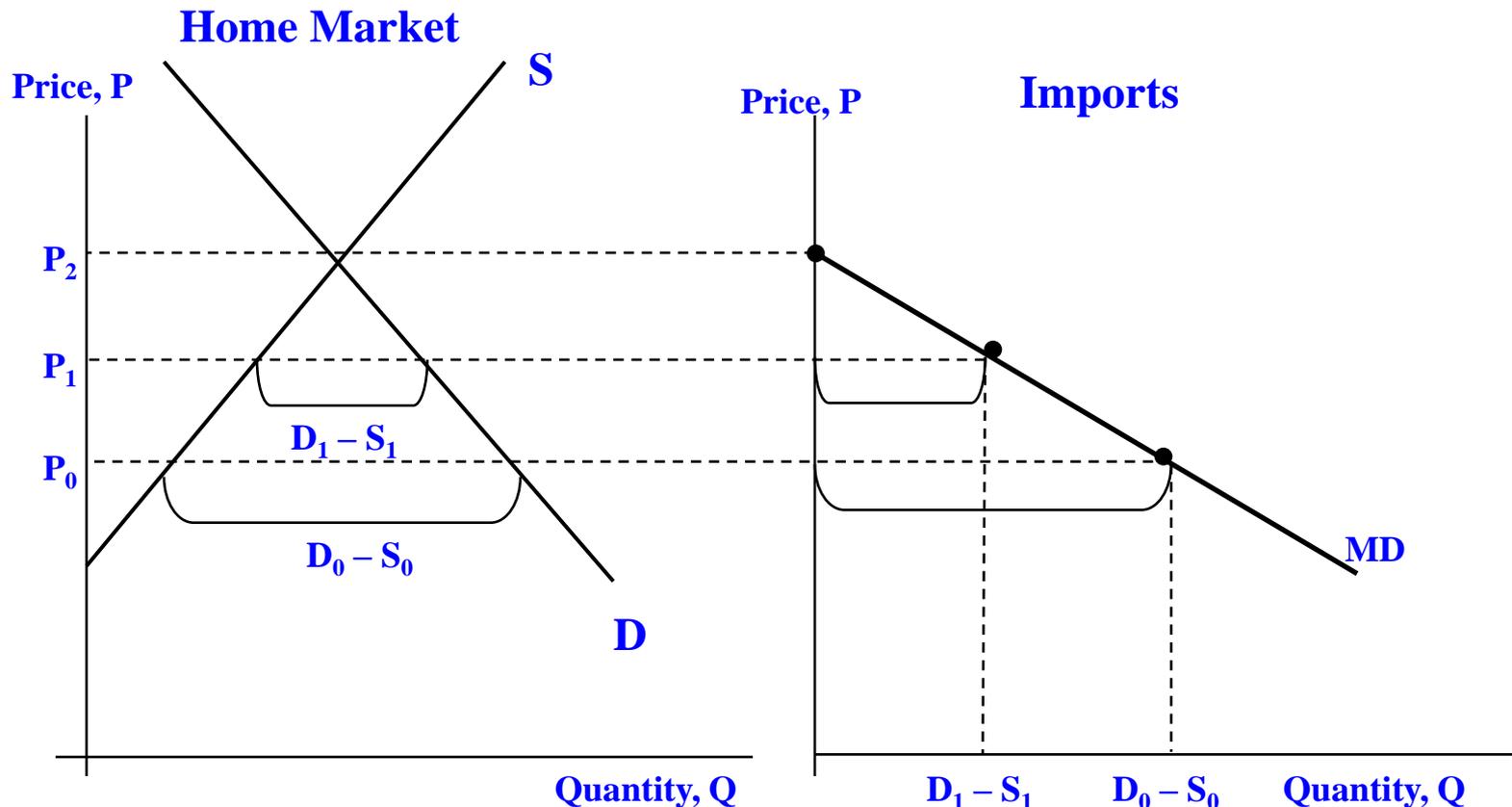
# Preliminaries

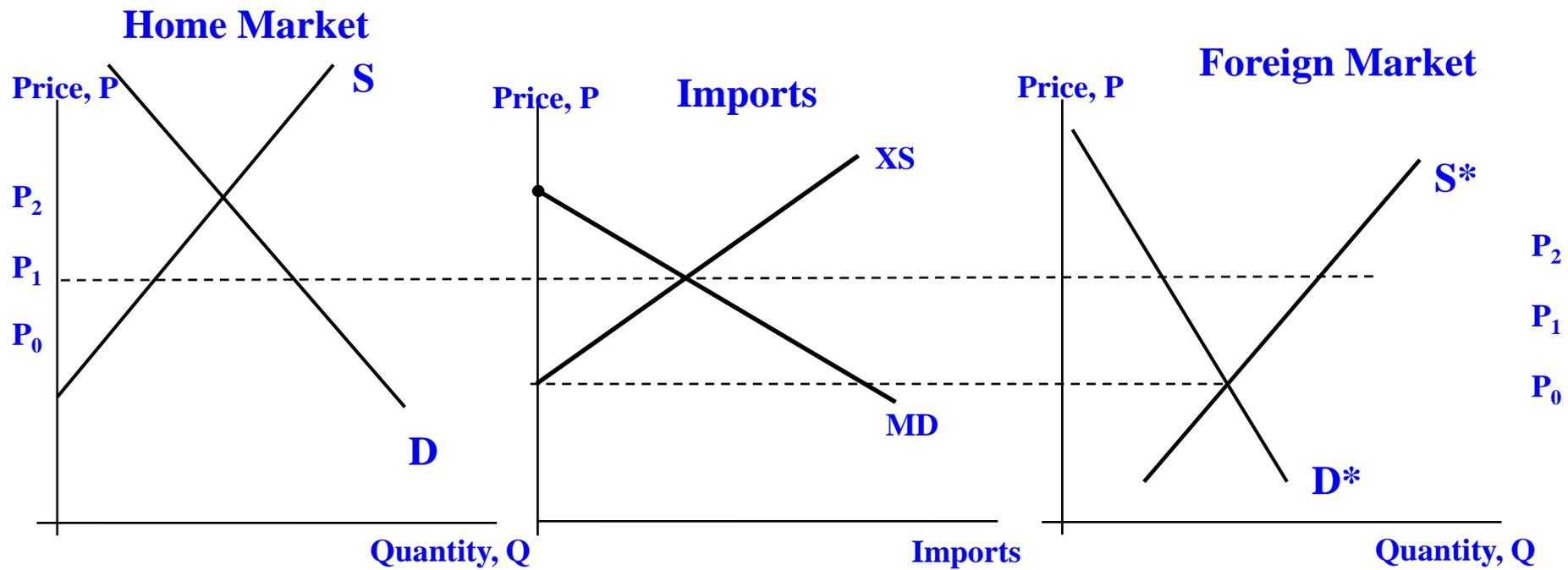
- Introduction to Open Economy Supply & Demand Analysis
- Start with Import Demand Curve
  - This tells us how much a nation would import for any given domestic price.
  - Presumes imports and domestic production are perfect substitutes.
  - Imports equal gap between domestic consumption and domestic production.

# Home's Import Demand

Left panel is std S & D diagram; Right panel is the import D-cur we want to derive.

1. At  $P_0$ , Demand exceeds supply in Home market, hence demand for imports,  $D_0 - S_0$ .
2. Rise in Price to  $P_1$ , reduces Home excess demand, lowers import demand to  $D_1 - S_1$ .
3. Further rise in Price to  $P_2$ , eliminates Excess Demand, reduces import demand to 0.
  - The MD curve plots all the levels of import demand for each price in the Home market.
4. Result is a downward-sloping Import Demand Curve, MD, for Home Country.





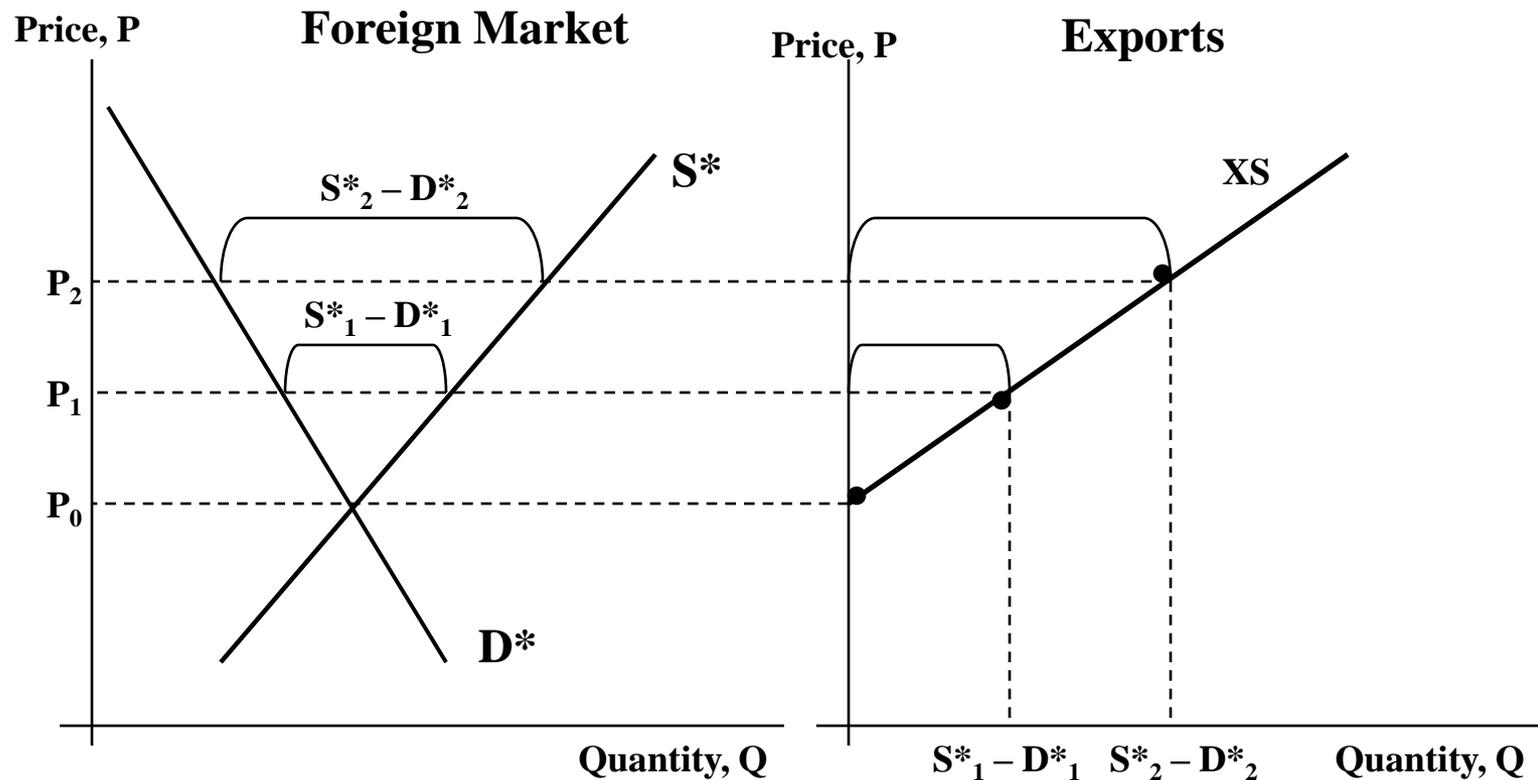
# **XS = MS curve**

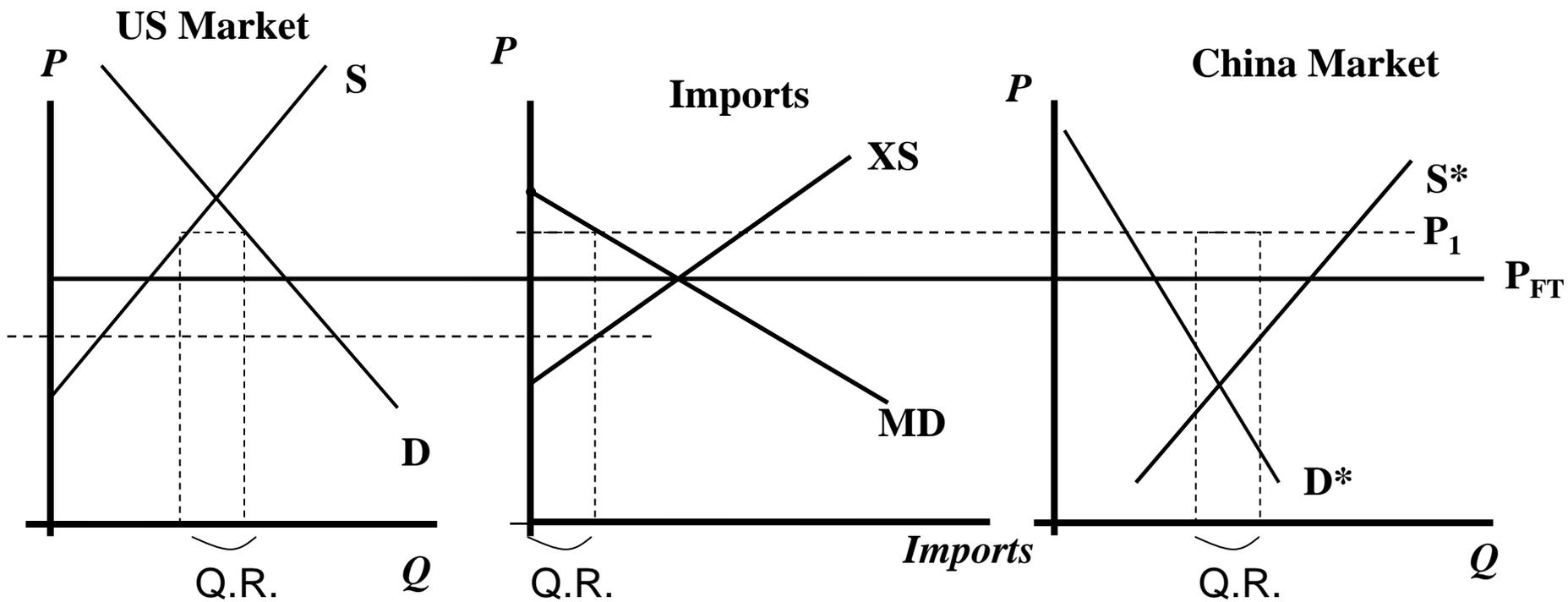
- Do Export Supply Curve = Home's import supply curve.
  - This tells us how much a nation would export for any given domestic price

# Foreign's Export Supply

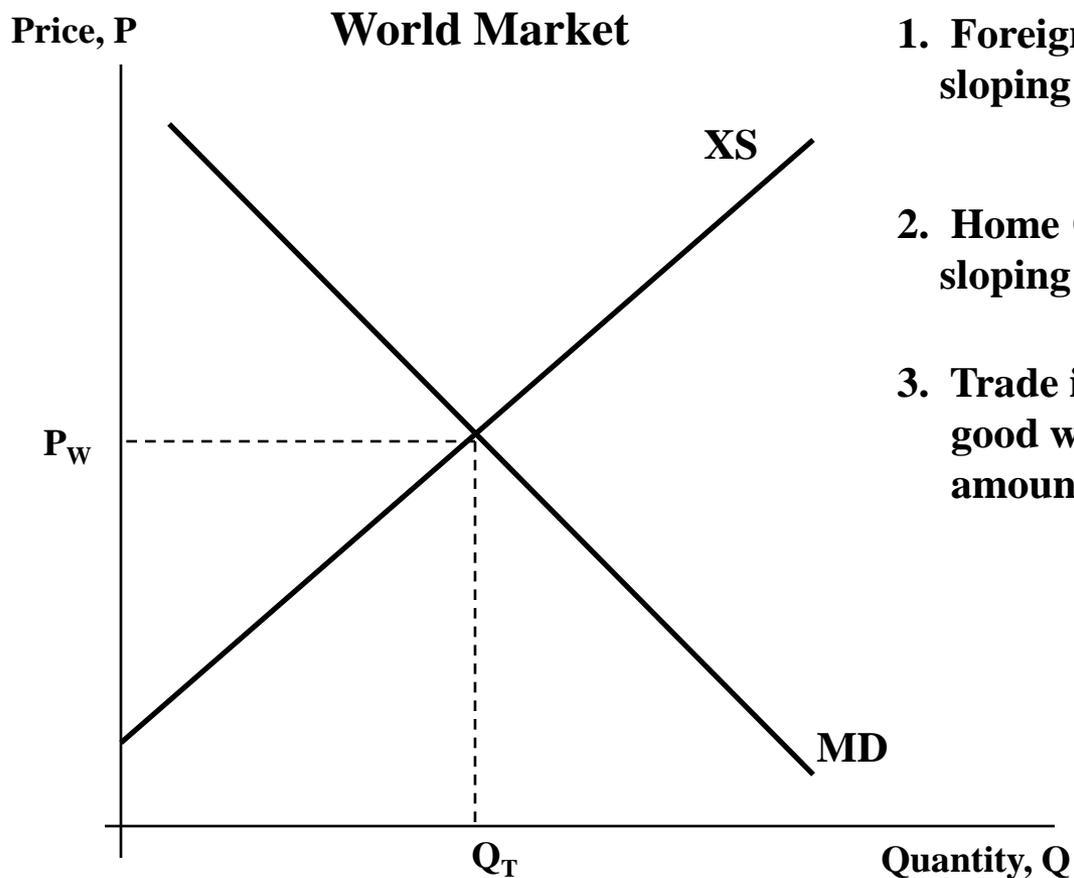
Left panel is std S & D diagram; Right panel is the Export S-cur we want to derive.

1. Can perform similar exercise for Foreign. Quote foreign price in Home currency.
2. At  $P_0$ , Foreign Demand equals Supply so no exports of good are available.
3. As Prices rise, Foreign Demand less than Supply so exports of good are available.
4. Result is an upward-sloping Export Supply Curve, XS, from Foreign country.





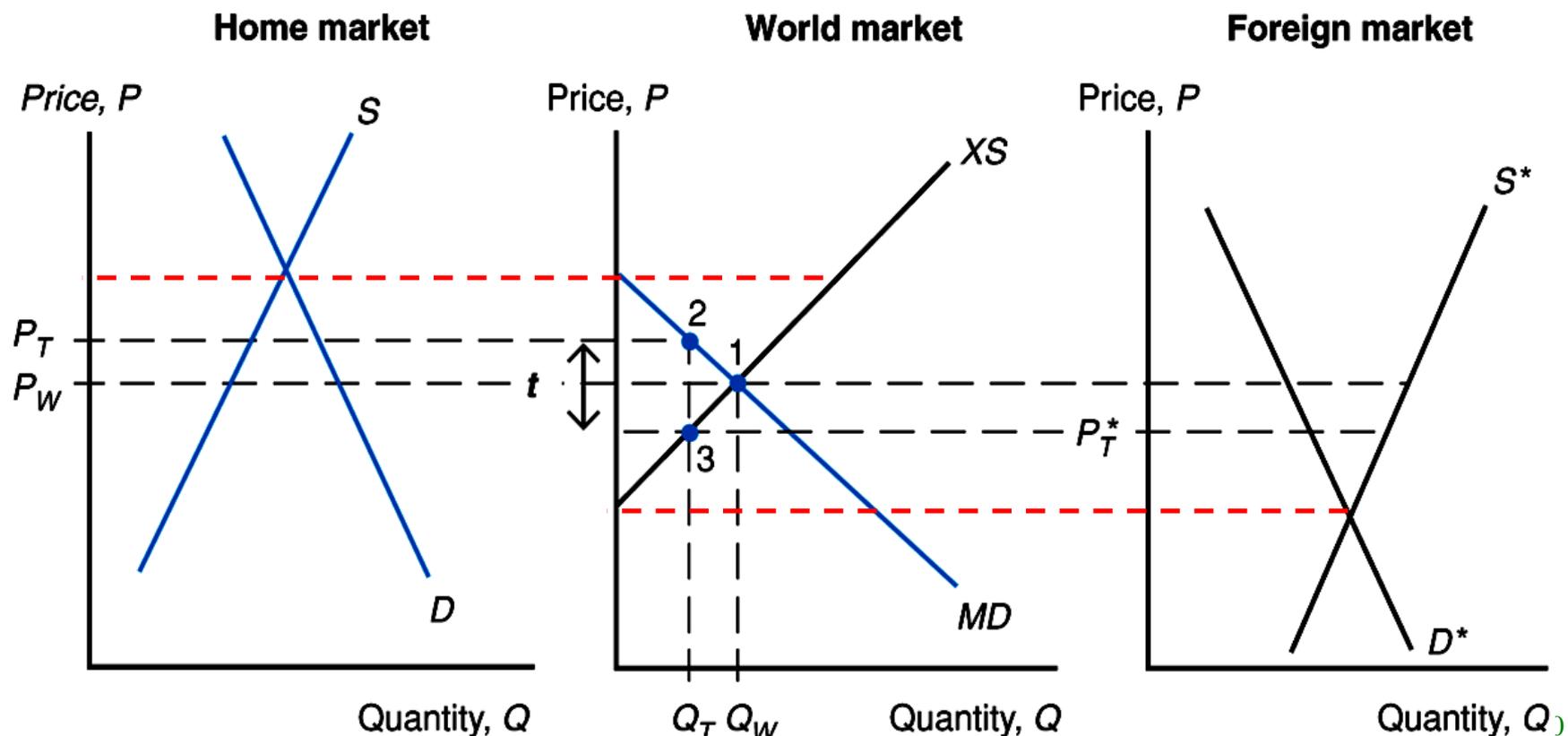
# World Partial Equilibrium



1. Foreign Country has upward-sloping Export Supply Curve, XS.
2. Home Country has downward-sloping Import Demand, MD.
3. Trade is in equilibrium for the good when world price =  $P_W$  and amount of good traded =  $Q_T$ .

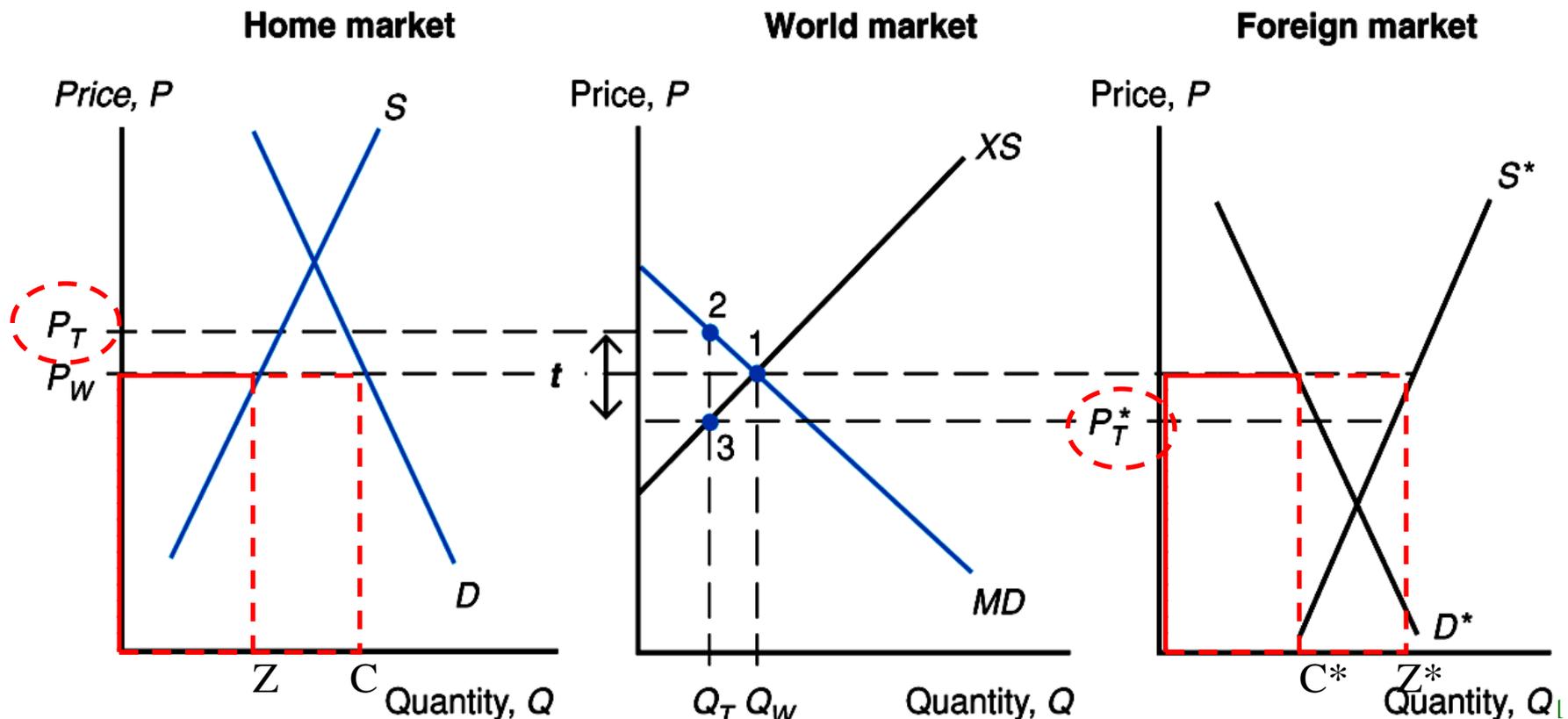
# The 3-panel diagram

- Combining the 3 diagrams lets us see the international price and the price in both importer and exporter markets.
- The FT price is  $P_W$ , defined by point 1.



# Tariff: Positive effects

- A tariff drives a ‘wedge’ between the price in the exporters market and the price in the importer’s market.  $P_{\text{importer}} = P_{\text{exporter}} + T$ , where  $T$  is the tariff (specific tariff, not ad valorem)
  - (Discuss: Specific vs. ad valorem)
- $T$  lowers imports=exports; raises price in Home & lowers it in Foreign

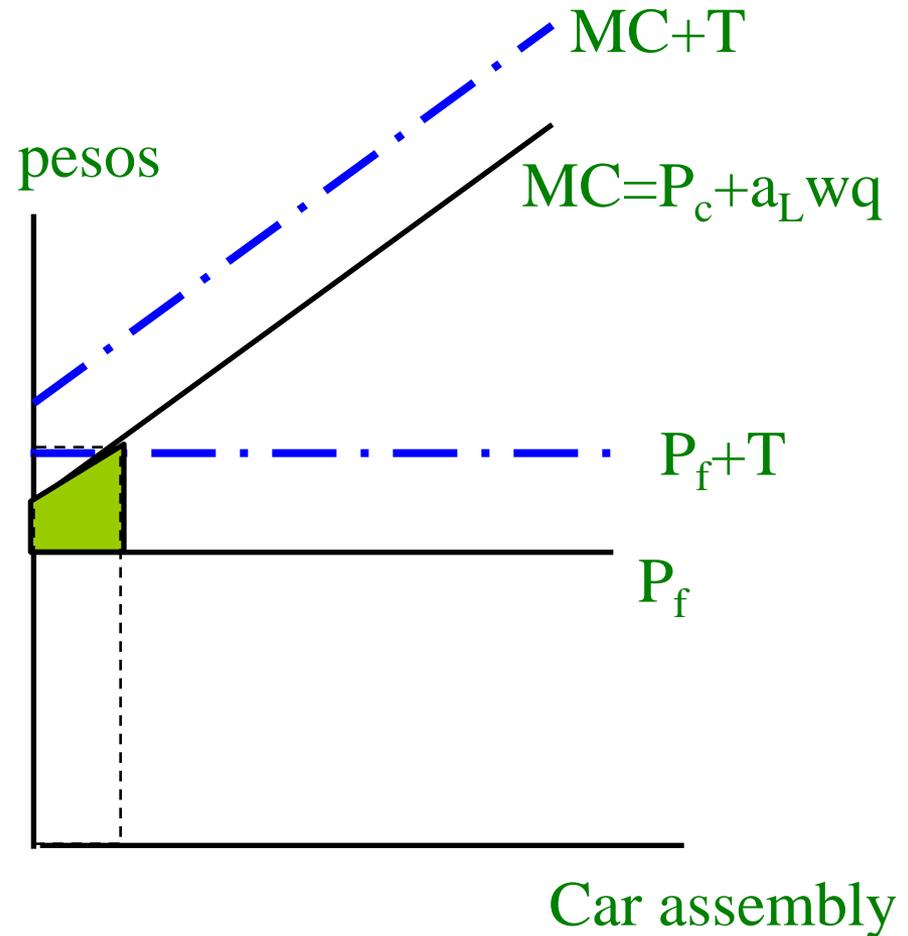


# Measuring Amount of Protection

- ASIDE on measuring tariffs
- “Height of the average tariff” is a measure of how much price interference exists in country’s tariff schedule.
- Unweighted Average Nominal Tariff rate:
  - Does not take into account relative importance of each good. Tends to overstate true height of average tariff.
- Weighted Average Nominal Tariff rate:
  - Each good’s tariff is weighted by the importance of the good in the bundle of imports. Tends to be biased downwards.
- Prohibitive Nominal Tariff rate:
  - Tariff rate so high it prevents imports from coming into country.
- Effective Rate of Protection (ERP):
  - A way to capture impact of escalating tariffs by stage of production (common in many nations).
    - Example: auto assembly.

# ERP: A simple example

- Consider industry in Argentina assembling car kits into final cars.
  - $P_c$  is price of components (kits),  $P_f$  is price of final car. Both at world prices (no protection)
- Policy option 1; same  $T$  on kits and cars. (still no production)
- Policy option 2:  $T$  on cars and  $T=0$  on kits. (negative value added at world prices).
  - Can think of this as same  $T$  on both, but production subsidy of  $T$  to assembly activity.
- NB: effective rate of protection afforded to assembly is much greater than tariff on final good suggests.



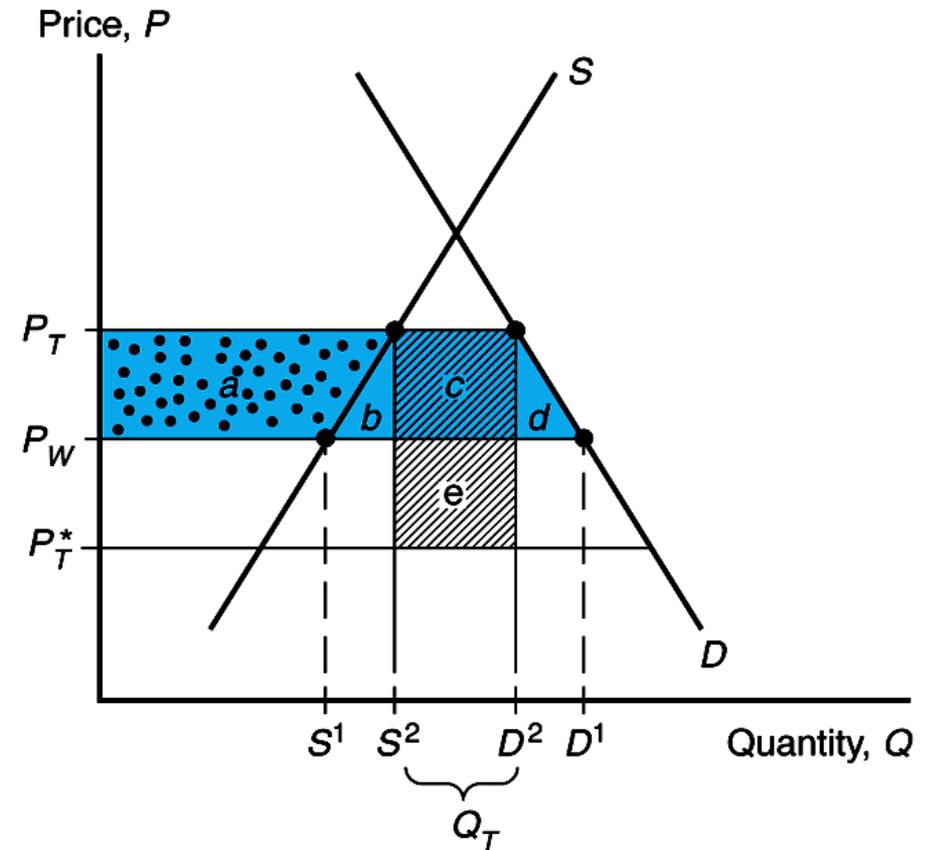
# Nominal (t) and Effective (g) Tariff rates

	U.S.		E.U.		Japan	
<b>Rates as of 1984</b>	<b>t</b>	<b>g</b>	<b>t</b>	<b>g</b>	<b>t</b>	<b>g</b>
Agriculture/Forestry/Fish	1.8	1.9	4.9	4.1	18.4	21.4
Food/beverages/tobacco	4.7	10.2	10.1	17.8	<b>25.4</b>	<b>50.3</b>
Wearing Apparel	<b>22.7</b>	<b>43.3</b>	<b>13.4</b>	<b>19.3</b>	<b>13.8</b>	<b>42.2</b>
Footwear	8.8	15.4	<b>11.6</b>	<b>20.1</b>	<b>15.7</b>	<b>50.0</b>
Furniture & Fixtures	4.1	5.5	5.6	11.3	5.1	10.3
Chemicals	2.4	3.7	8.0	11.7	4.8	6.4
Glass & Glass Products	6.2	9.8	7.7	12.2	5.1	8.1
Iron & Steel	3.6	6.2	4.7	11.6	2.8	4.3
Electrical machinery	4.4	6.3	7.9	10.8	4.3	6.7
<b>Simple Average Tariff</b>	<b>4.7</b>	<b>7.8</b>	<b>6.1</b>	<b>8.7</b>	<b>6.1</b>	<b>10.0</b>

Source: Deardorf & Stern, *The Effects of the Tokyo Round and the Structure of Protection*

# Tariff: Welfare effects (Home)

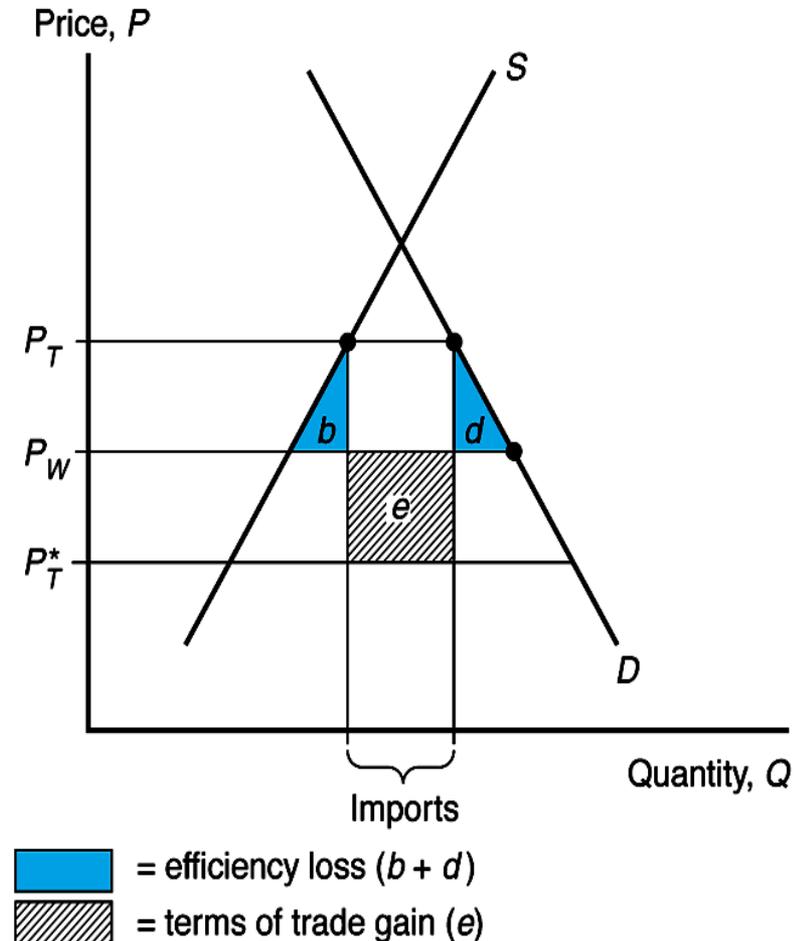
- NB: Home now has 2 prices:
  - Domestic price that Home firms & cons'rs see.
  - Border price that the nation actually pays to foreigners.
  - Gap is the T; paid to Home govt
- The domestic price rise:
  - harms cons'rs by blue area
  - Helps firms by spotted blue area
- The govt collects tariff revenue equal to imports times T; the shaded area.
- Politics of protection:
  - Often winners (firms) from protection are better organised than the losers (cons'rs).



-  = consumer loss ( $a + b + c + d$ )
-  = producer gain ( $a$ )
-  = government revenue gain ( $c + e$ )

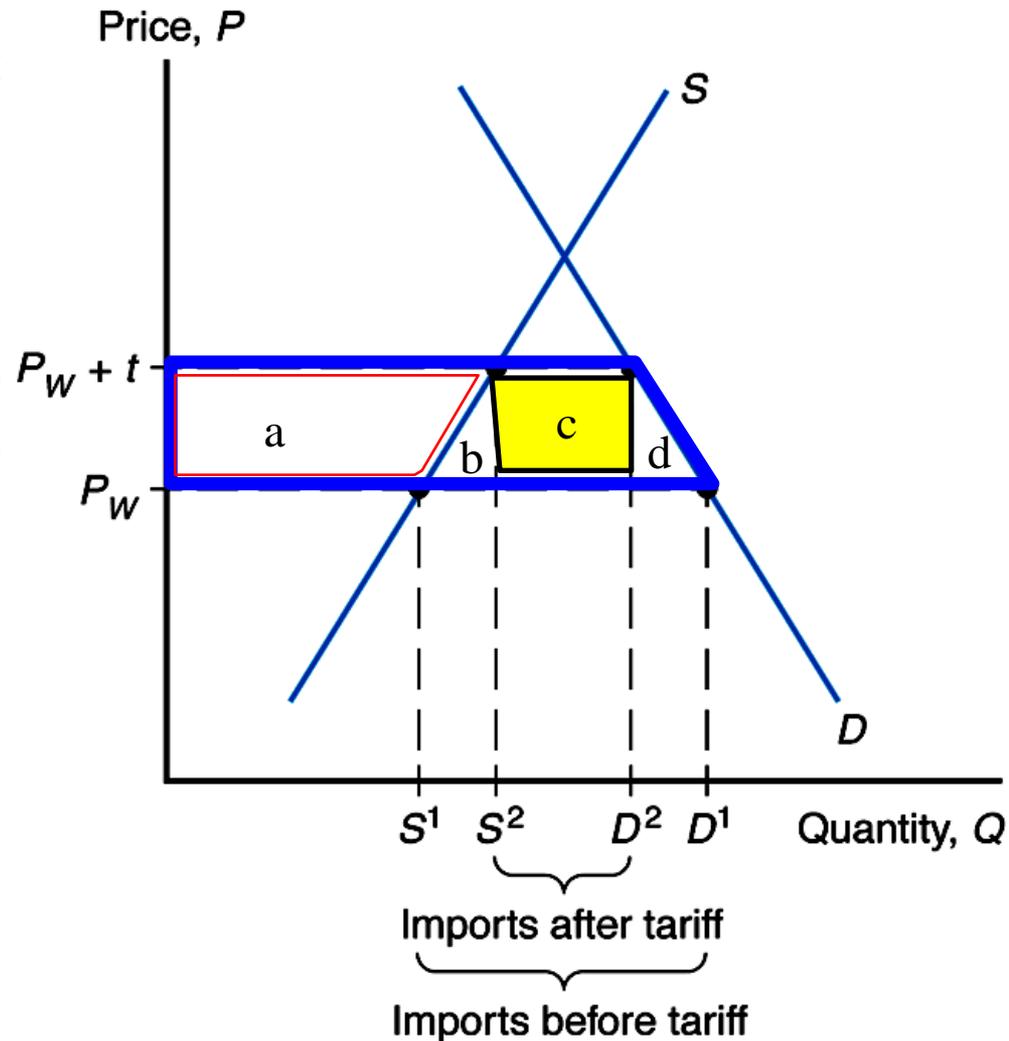
# Tariff: Net effects (Home)

- DWL
  - The loss to domestic consumers that is not offset by gains to firms or govt revenue are  $b+d$
  - Called ‘dead weight loss’, or Harberger triangles.
  - Efficiency loss.
- ToT gain.
  - Home gets its imports for less and this is a gain for nation as a whole.
  - The direct source of this ToT gain is that the govt is, in effect, passing some of the tax burden on to foreigners. (incidence).



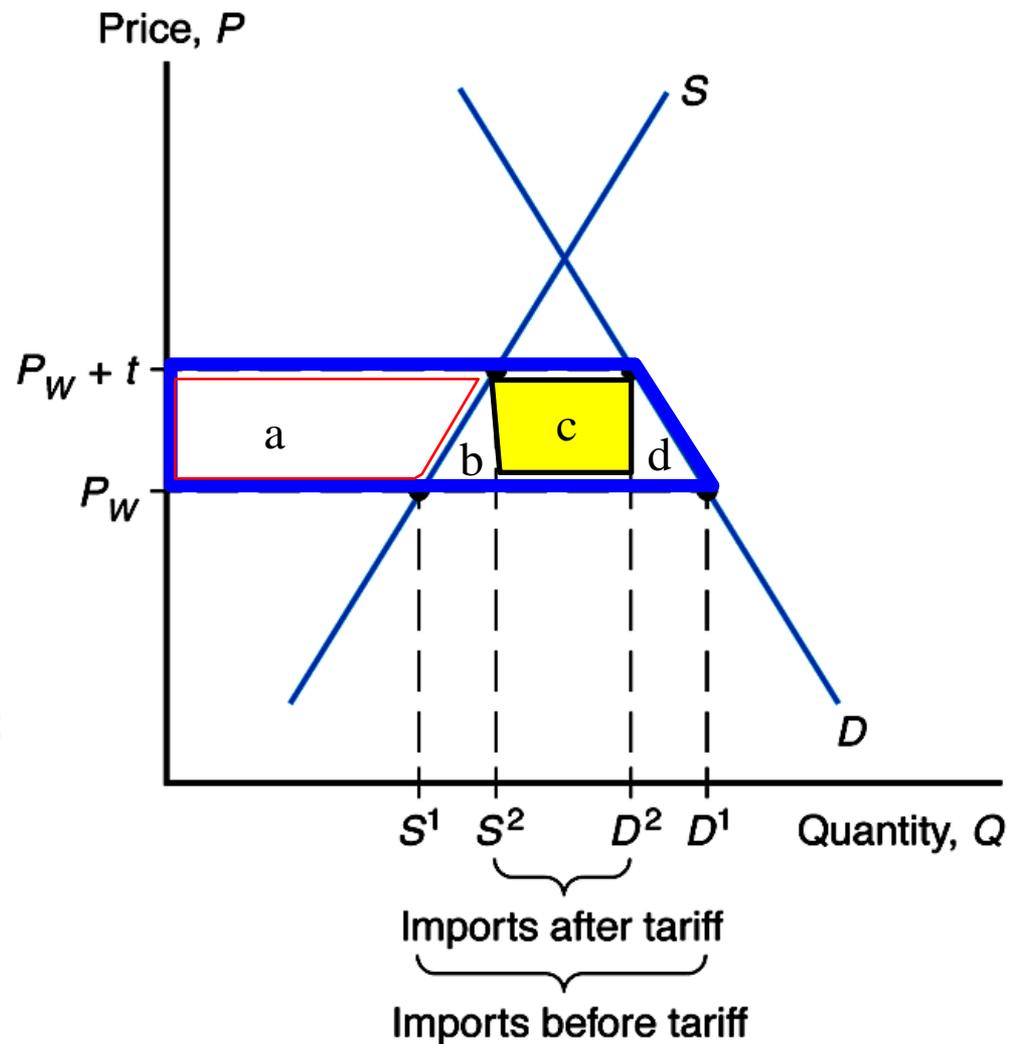
# Tariff: Small country fiction

- Positive effects
  - $P_w$  is world (doesn't change due to small country assumption)
  - $P_w + t$  is the domestic price
    - Why? Consumers can buy as much as they like at  $P_w + t$ , so no one would pay more.
    - Domestic charge this price since no one would pay more and no reason to charge less, i.e. they met the price of the import competition.
- Consumption drops  $D1$  to  $D2$ .
- Dom. Prod'n rises  $S1$  to  $S2$ .
- Govt collects revenue.



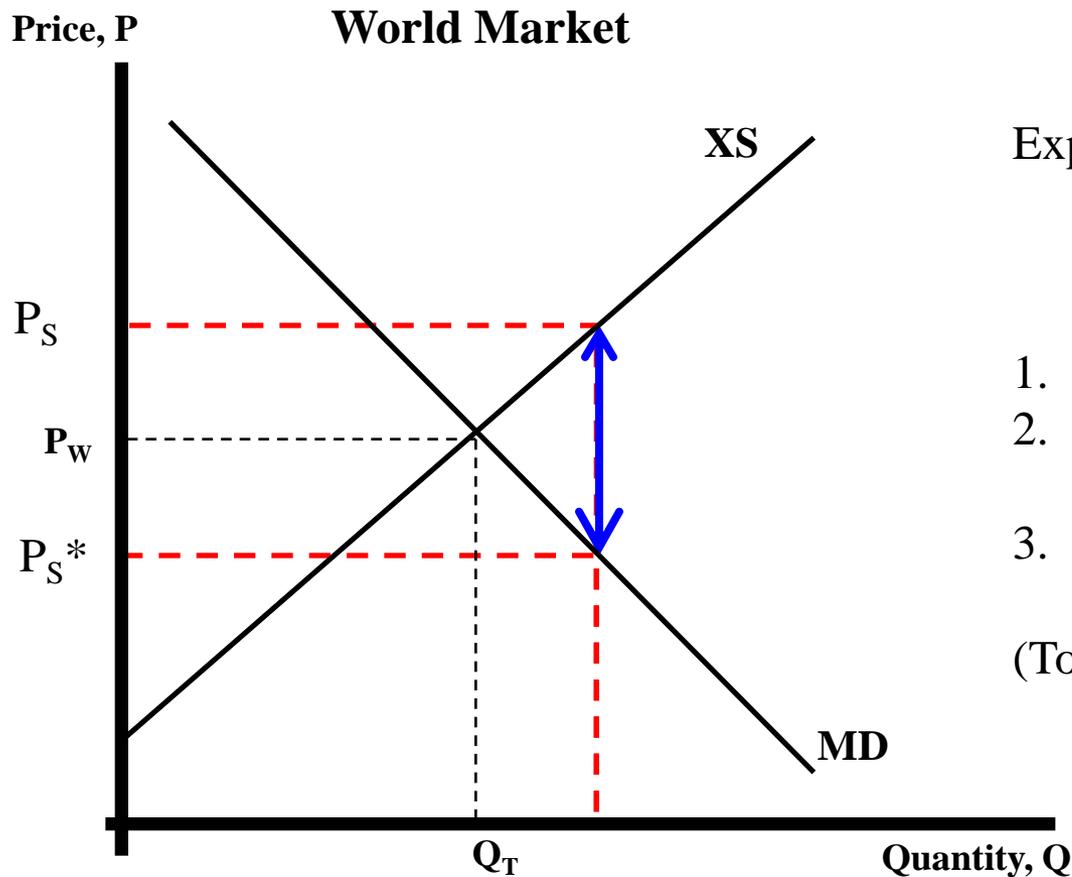
# Tariff: Small country fiction

- The ToT effect maybe relatively small for small countries.
  - In reality, this depends upon the product. Switzerland is small for oil but big for, say, watches, banks & drug companies.
  - A Swiss tariff on cars would be partially absorbed by foreign car producers
    - This is a ToT effect
- Nevertheless, small country fiction is a useful abstraction.
  - Eliminates ToT effects & thus makes T unambiguously bad for Home. (undergrads).
- Positive effects: dom.  $P \uparrow$  for both prod'rs & cons'rs,  $M \downarrow$ .
- $\Delta CS = -(a+b+c+d)$ ;
- $\Delta PS = a$ ;  $\Delta Rev = c$ . Net is negative =  $-b-d$ .



# Export subsidy

- What happens when Home subsidizes the export of its good?
- Subsidy lowers the world price of the export to  $P_s^*$ , while Home firms see  $P_s^*$  plus the subsidy, i.e.  $P_s$ .

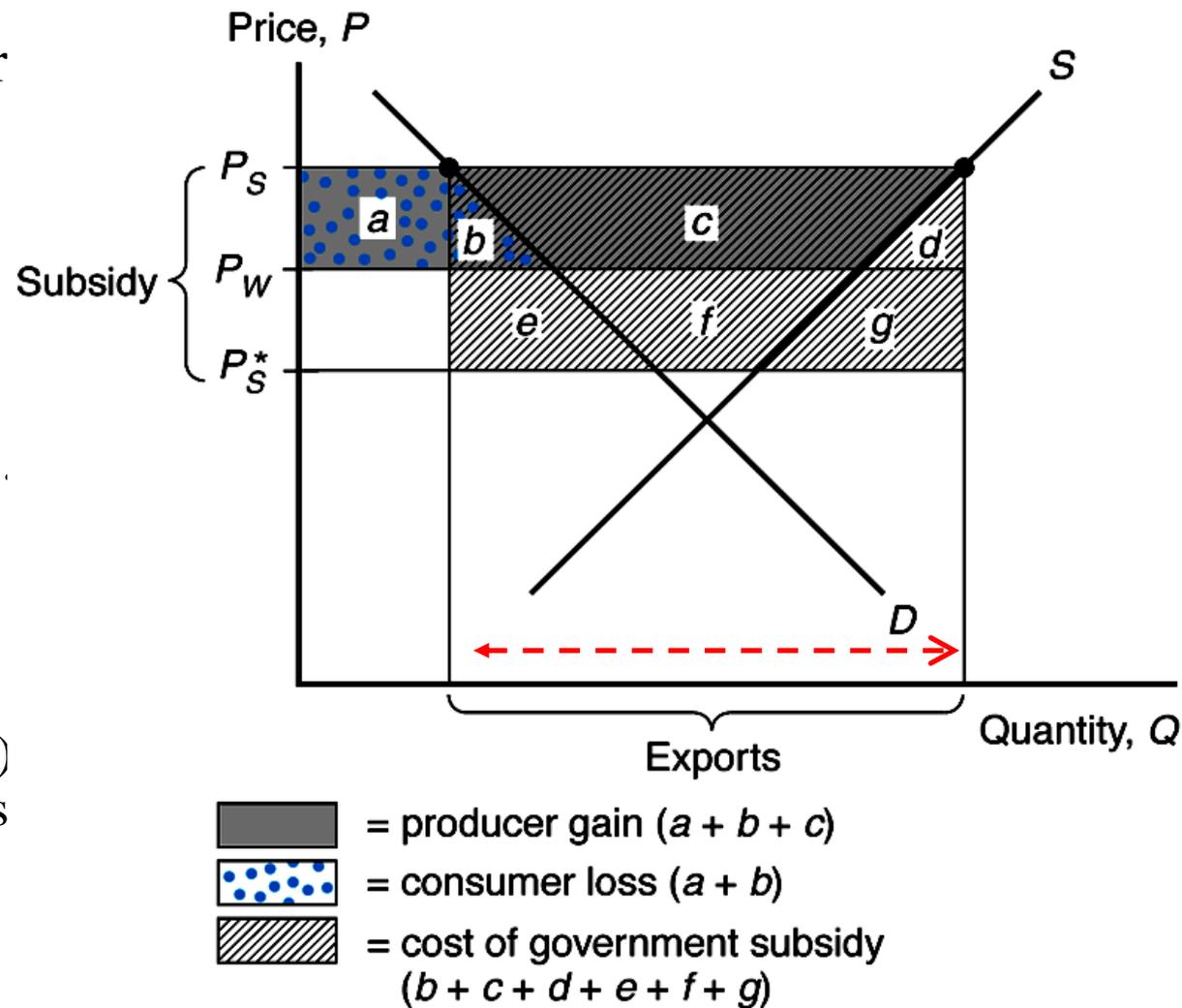


Export subsidy like opposite of a tariff; the price paid by the importer is below the price paid to firms in the exporting nation.

1. Export volume rises
2. Price to importing nation falls.  
(ToT gain for importing nation)
3. Price received by exporting nation falls.  
(ToT loss for exporting nation)

# Export subsidy

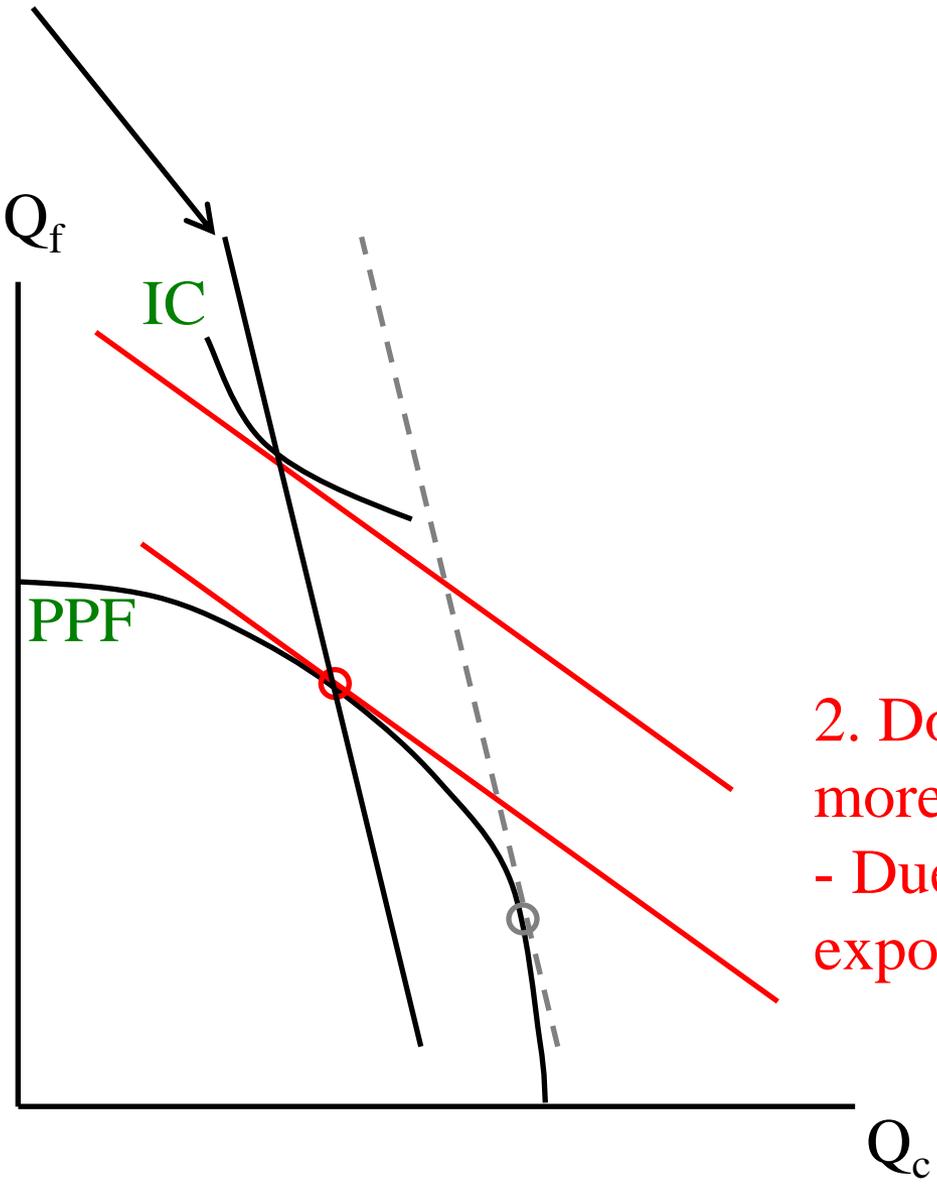
- Subsidy lowers the world price of the export to  $P_s^*$ , while Home firms see  $P_s^*$  plus the subsidy, i.e.  $P_s$ .
- Positive : Domestic Price  $\uparrow$ , dom. Production  $\uparrow$ , exports  $\uparrow$ .
- Home welfare effects:
  - $\Delta CS = -(a+b)$ ,
  - $\Delta PS = +(a+b+c)$ , cost of subsidy =  $b+c+d+e+f+g$ .
  - Net Loss =  $(b+d+e+f+g)$
  - = DWL  $(b+d)$  + ToT loss  $(e+f+g)$
- Discuss political economy of this.
  - EU CAP example.



# Export tax like import tariff, G.E.

- This is called ‘Lerner’s symmetry’.
- The basic point is almost trivial.
- With two goods and only relative prices mattering, the impact on the relative price of raising the numerator is the same as lowering the denominator.
- Import tariff raises the internal price of imports relative to exports.
- Export tax lowers the internal price of exports to imports (since now domestic export firm sell less abroad and more at home, so home price falls).
- In the diagram ...

1. World rel.price = national budget line for imports & exports. Make the small country assumption so we can ignore ToT effects.



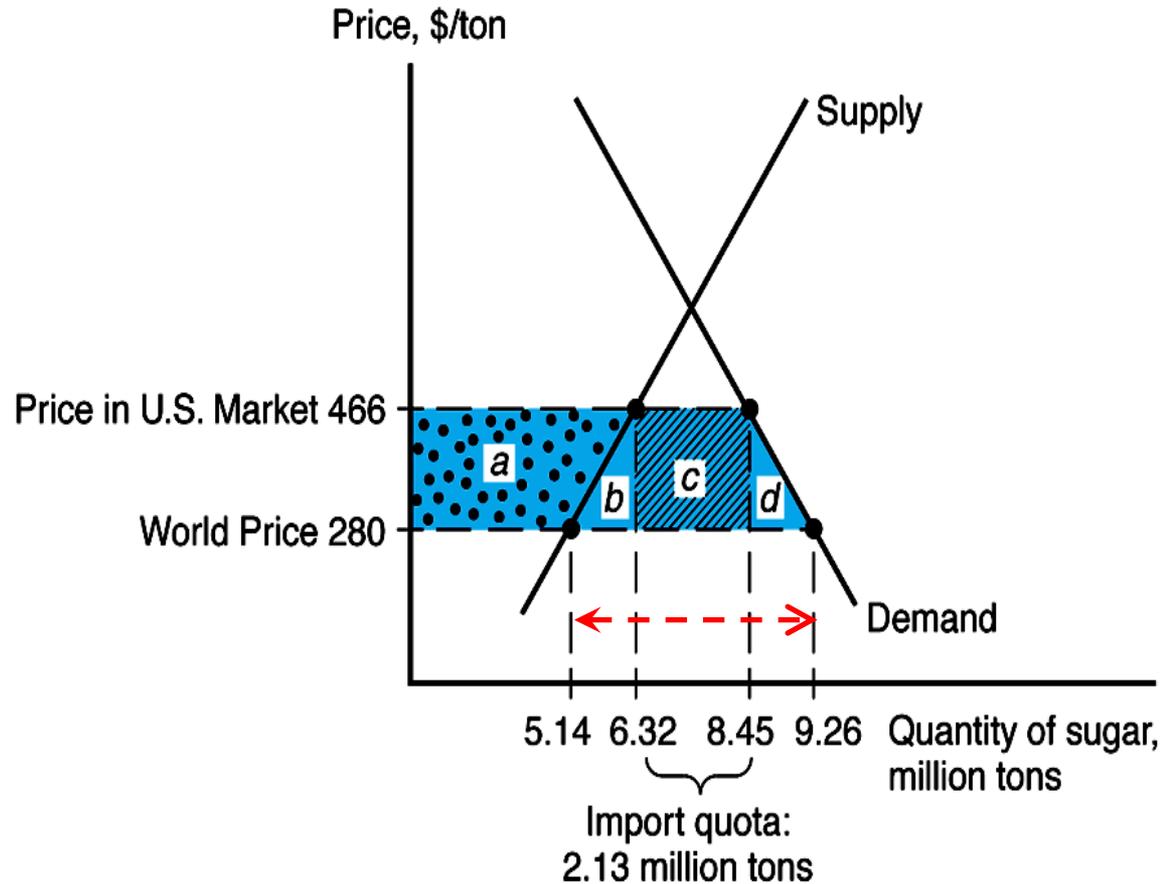
2. Domestic rel.price (imports more expensive, than world price).  
- Due either to import tariff, or export tax

# Non-tariff Barriers (NTBs)

- Bit of history on terminology.
- Most common form of a Non-Tariff Barrier is a QR=quantitative restriction.
  - an import quota is one common QR, it restricts the quantity of good imported.
  - Requiring an import license is a common means of implementing.
- Import Quota
  - Restricts quantity of good imported during a year.
  - Effect is to increase home price of the good over free trade.
  - Market effects identical to a specific tariff (if perfect competition).
    - In fact, any quota can be mimicked by an equivalent tariff, so we often speak of the ‘tariff-equivalent’ of the QR.
  - Welfare effects differ because gov’t does not necessarily receive revenue as under a tariff.
    - ‘Quota rents’= buy low, sell high.
    - Depends who has the rights to the import licenses
      - Govt may gain revenue if auctions off import licenses,
      - otherwise additional revenue received by domestic imports, or foreign exporters.
- Other types of QRs (many illegal now under the WTO; called ‘grey area’ measures under the GATT)
  - Voluntary Export Restraint (VER’s)
    - Foreign supplier “voluntarily” agrees to restrict quantity imported.
    - Usually a political agreement so Home does not look protectionist.
    - Market effects identical to an import quota, but welfare effects differ as foreign firms receive additional profit, Home gov’t receives nothing.
  - VRAs, OMA
- Application: How economic sanctions can make the target regime rich.

# Import quota (small nation fiction)

- Home welfare effects:
  - $\Delta CS = -(a+b+c+d)$ ,
  - $\Delta PS = +(a)$ , quota rents =  $c$ .
  - $DWL = -(b+d)$  if quota rents stay at home and  $-(b+c+d)$  if foreigners get them.
- Policies where foreigners get the rents:
  - VER=Voluntary export restraints, VRA=Voluntary restraint agreement, OMA=orderly marketing arrangements, etc.
- Often rents used to buy off or appease Foreign opposition.
- WTO made most of this ‘illegal’, but ...



-  = consumer loss ( $a + b + c + d$ )
-  = producer gain ( $a$ )
-  = quota rents ( $c$ )

# NTBs & corruption

- Any time imports are constrained, a buy-low-sell-high opportunity arises.
- With a tariff, govt exploits this.
- With NTBs, who knows?
  - Invitation to corruption of domestic govt officials who allocate the import licenses or other control devices, foreign export firms, domestic smugglers, etc.
- Lack of transparency.
  - How much protection is provided?
- Domestic industry prefers due to certainty of import level.