TRADE POLICIES: TARIFFS AND QUOTAS

CLASSIFICATION OF POLICIES

Price-type: import tariffs, export taxes and subsidies
Quantity-type: quotas, “voluntary” restraint and “orderly” marketing arrangements
Other: licensing, product regulation, administrative

CLASSIFICATION OF EFFECTS

Allocation and efficiency: counter market failures, reduce dead-weight losses
Distribution: across persons or groups in a country, across countries

CLASSIFICATION OF MARKETS

Perfectly competitive, various types of imperfect competition

CLASSIFICATION OF ANALYSES

Positive economics: calculation of incidence, allocative and distributive effects
Normative economics: policy design and recommendation
Positive political economy: political processes of policymaking & their outcomes

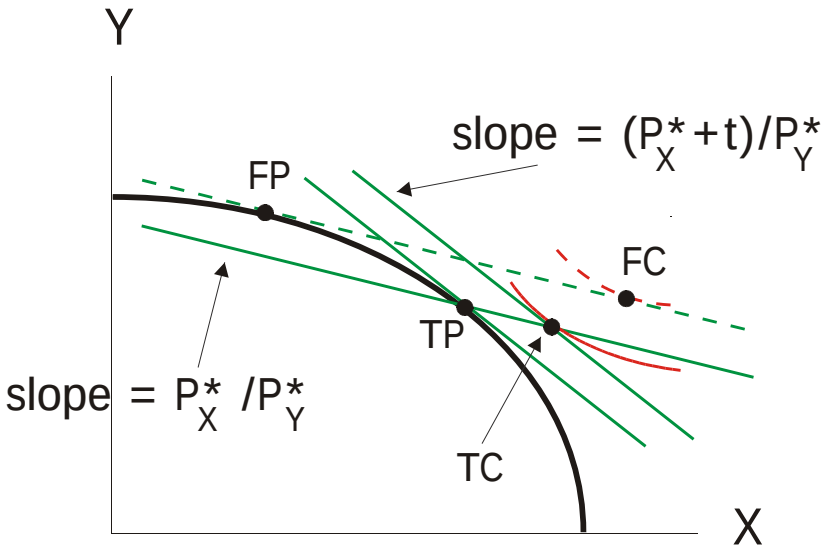
IMPORT TARIFFS: RESPONSE TO A GIVEN WORLD PRICE

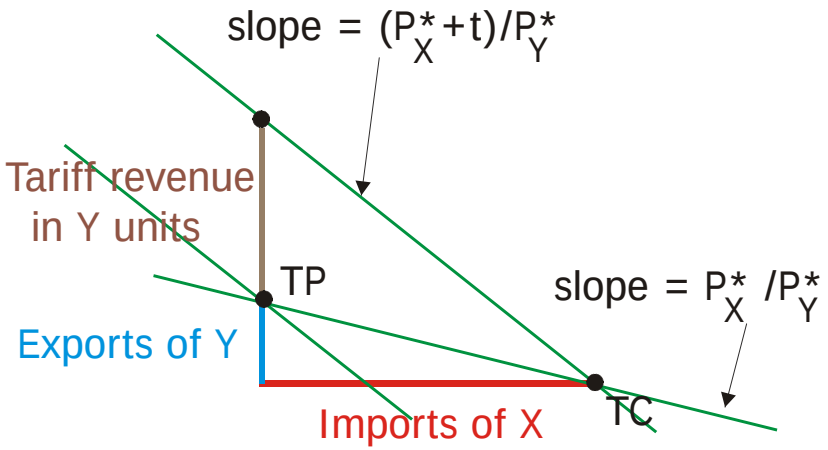
Suppose home country imports X
Free trade: produce at FP, consume at FC

Specific (per unit of quantity) tariff t

Home relative price $(P^*_X + t)/P^*_Y$
Production shifts to TP
  quantity of X produced increases
Trade at world prices along
 trade balance constraint
Consume at TC, quantity of X
 decreases: substitution effect,
 also income effect for normal X
Domestic budget line includes
 tariff revenue; see detail figure

If world price is actually constant
 (small country case), then in the
 aggregate, country is worse off.





QUICK REMINDER OF TAX INCIDENCE ANALYSIS

Specific (per unit quantity) tax t

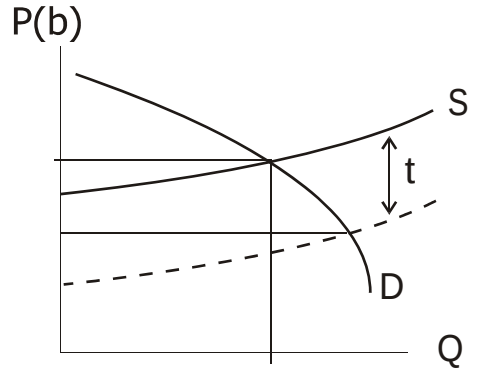
DO ONE, AND ONLY ONE, OF

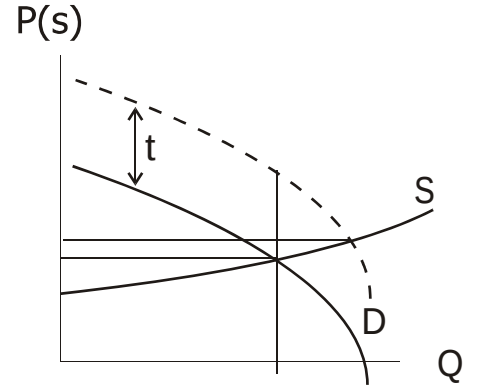
[1] raise supply curve vertically parallel by t
so vertical axis shows price buyers pay

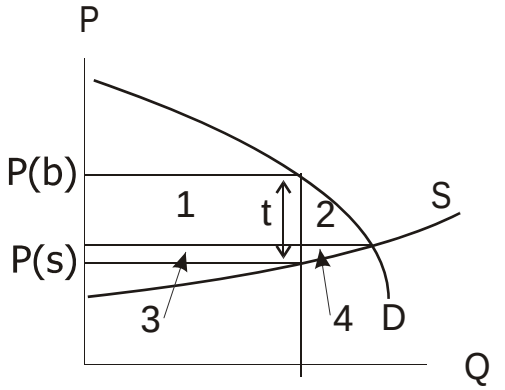
[2] lower demand curve vertically parallel by t
so vertical axis shows price sellers receive

[3] find quantity where price buyers pay P(b)
exceeds price sellers receive P(s) by t

Consumer surplus loss = areas 1 + 2
Producer surplus loss = areas 3 + 4
Tax revenue = areas 1 + 2
Net loss from tax = areas 3 + 4
Regard 2 as consumption-side dead-weight loss
4 as production-side DWL





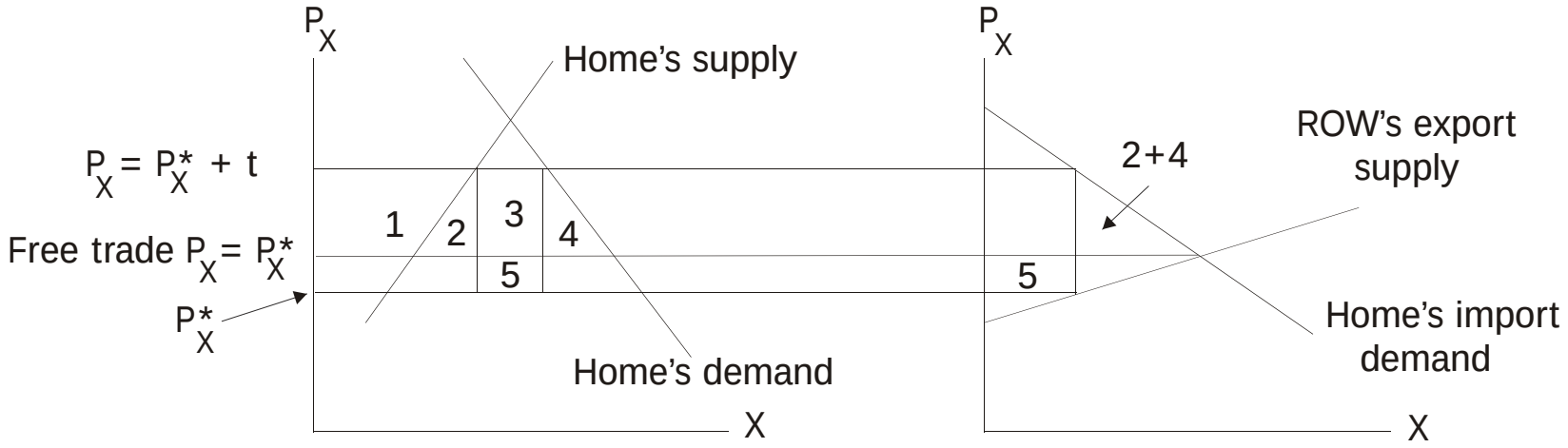


IMPORT TARIFFS: ENDOGENOUS WORLD PRICE, PARTIAL EQUILIBRIUM

A tariff is a tax on imports, so can analyze its effects in the import-export market
Right hand panel shows the general case with normal slopes:

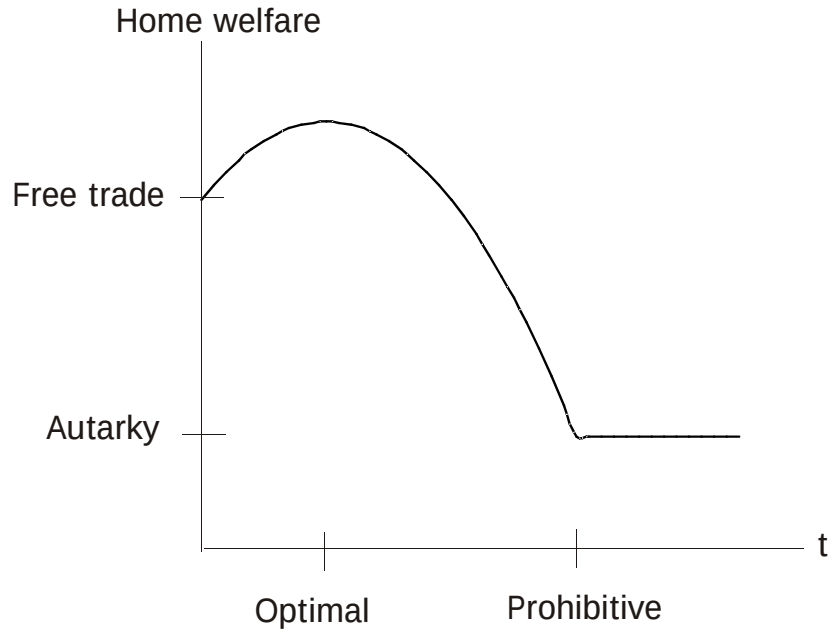
Home price = World price + t: $P_X = P_X^* + t$. When t imposed, P_X^* falls, P_X rises.
Effects are in inverse proportion to slopes of curves.

If small country, ROW export supply perfectly elastic, so P_X^* unchanged, P_X up by t



Left side panel shows home's supply, demand. These give welfare effects of tariff:
Consumer surplus loss = areas 1 + 2 + 3 + 4
Producer surplus gain = area 1; Tariff revenue gain = areas 3 + 5
Net loss = areas 2 (production-side DWL) + 4 (consumption-side DWL)
– 5 (terms of trade (TOT) gain)

For a small country, area 5 is zero; free trade is optimal
For a country facing an upward-sloping foreign export supply curve,
monopsony power can be exploited with an import tariff
(Any individual citizen would be too small a trader to do this privately)
But eventually welfare declines as the tariff rate increases
Finally imports fall to zero (tariff becomes prohibitive);
welfare falls to the autarky level



Can show that Optimal tariff
= 1 / (price elasticity of
ROW's export supply)
Just like formula for a
monopolist's profit-maximizing
markup of price over marg. cost

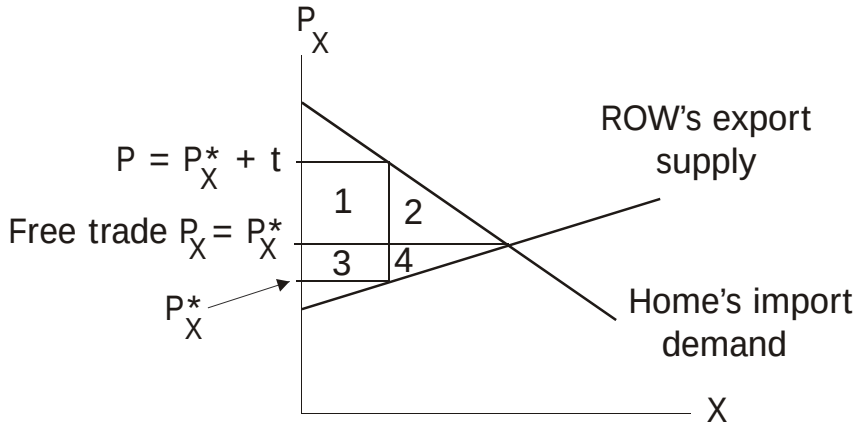
Similarly an exporting country with
national monopoly power should
levy an optimal export tax

Export subsidy worsens terms of trade, cannot be optimal in this context;
need oligopoly (strategic trade policy), or political economy explanation

SOME POLITICAL ECONOMY OF TARIFFS

Tariff revenue will initially increase as t increases beyond the socially optimal level
Producer surplus in the import-competing industry always increases as t increases
In general equilibrium analysis, distribution effects on factor incomes
depend on factor intensity, specificity etc.
For example, in Heckscher-Ohlin model, factor used relatively more intensively
in the import-competing industry gains from tariff
Political process of tariff-setting depends on these considerations

Even the tariff optimal for home country
generates global welfare loss
Home surplus loss = areas 1+2
tariff revenue = 1 + 3
Home net loss = 2 – 3
Foreign surplus loss = 3 + 4
World loss = 2 + 4, standard DWL



Tariff-setting is a prisoners' dilemma
All countries can benefit from cooperative agreement to restrain tariffs
This is the motivation for institutions like WTO

AD VALOREM TARIFFS

These are levied per unit value, not per unit quantity

Therefore home price P_X and ROW price P^*_X related by $P_X = (1+t)\, P^*_X$

If markets are competitive, can equivalently use specific T or ad valorem t tariffs

with appropriate rate correspondence: $T = t\, P^*_X$

LERNER'S SYMMETRY THEOREM

Consider county that imports good X

If it levies ad valorem import tariff at rate t

$P_X = (1+t)\, P^*_X$, $P_Y = P^*_Y$; Relative price $P_X / P_Y = (1+t)\, P^*_X / P^*_Y$

If if levies ad valorem export tax at rate t

$P_X = P^*_X$, $P^*_Y = (1+t)\, P_Y$; Relative price $P_X / P_Y = (1+t)\, P^*_X / P^*_Y$

So the two policies are equivalent in all their

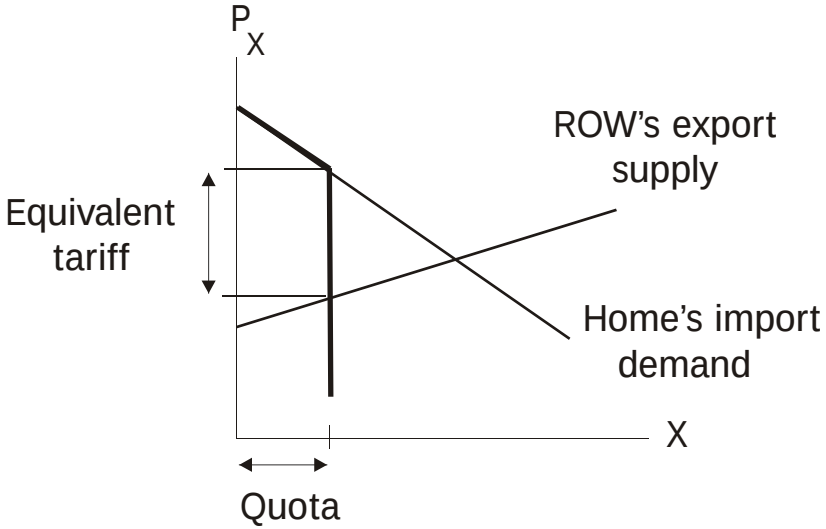
resource allocation and income distribution effects!

Intuition: taxing imports makes it more attractive to produce those goods at home;

that diverts resources from export sectors and so discourages exports.

IMPORT QUOTA

This truncates home's import demand curve
  Shown as thick kinked line in figure



An equivalent allocative effect
  could be obtained using a tariff
  equal to the vertical gap between
   import demand and export supply
   curves at the quota quantity.
Difference: government gets tariff
  revenue, who gets the rent or
  scarcity value of the quota
  depends on how it is allotted.
If quota is competitively auctioned, the bid will equal the tariff revenue.
Sometimes rent is given to foreign exporting firms (e.g. voluntary export restraint)
  to "bribe" them into accepting the restriction (not complain to WTO)

If domestic producers have market power, then import quota gives them
      more power, because they face a less elastic demand curve
      (Will do this in precept)

OTHER EFFECTS OF QUOTAS

Quality-upgrading:

Quotas are imposed on categories that contain economically distinct subcategories
  e.g. quota on autos aggregates compact, family sedan, sports cars, …
The equivalent tariff (scarcity value or shadow price of the quota)
  is like a specific tax that applies equally to all of the subcategories
Therefore it raises the domestic price of all of them by equal absolute amounts:
  the proportional increase is highest for the lower-value subcategories
Example: Pre-quota Subcompact car $15,000, Full-sized $30,000
  Equivalent tariff $5,000, raises these to $20,000 and $35,000
  The relative price drops from 2.0 to 1.75
Result: mix of imports within the large category shifts
  toward the higher-end subcategories: this is “quality upgrading”
Example: US quota (actually implemented as VER) on Japanese autos in 1981

“Quality upgrading” sounds good but is actually a distortion:
  Makes the lower-value products unavailable to those who would prefer them:
    the poor, the single and students in the case of autos.

Slippage:

Quotas are often imposed selectively on a subset of exporters
Others not subject to the quota then start or expand their exports
  This makes the policy less effective in its aim of reducing imports
  Newcomers are higher-cost producers (else they would have been in before)
    so our cost of imports rises (this is like “trade diversion” - to appear)

Quotas have to be imposed on well-defined “standard classifications” of goods
  Then imports of close substitutes outside these SIC codes expand
If definition of the category is too broad, unintended goods can be caught:
  Worst example: Kosher frozen pizzas from Israel caught
    in quota intended to protect US sugar producers!

Quotas are often assigned to countries on the basis of their past exports to us
  This keeps out efficient new suppliers; we pay higher cost