Policies and Trade - Part I: Import Tariffs and Quotas

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Tariffs as a Barrier to Trade

- Consensus among economists on benefits of trade
- Critical of policies that either create *barriers* to trade and *distort* international markets
- A *tariff* is classic barrier to trade, i.e., a tax on importing a good or service, usually collected by customs officials at place of entry
- Two types of tariff:
  - *specific* tariff, i.e., $ amount per imported unit
  - *ad valorem* tariff, i.e., % of $ value of imported unit
Tariffs as a Barrier to Trade

- For developed countries, tariffs on non-agricultural products successively reduced post-1945
- 2004, tariff rates averaged 2.5 to 4% on non-agricultural imports into US, Canada, European Union (EU), and Japan
- Average tariff rates higher for most developing countries, e.g., China’s average tariff on non-agricultural imports was 10% in 2004
- Tariff rates on agricultural imports still high, with average rates of 25% (North America), 30% (EU), 34% (Asia-Pacific), and 39% (South America)
Effect of a Tariff: Small Country

\[ P_w + t \]

\[ S_{w+t} \]

\[ S_w \]

\[ D \]

\[ Q_s \]

\[ Q'_s \]

\[ Q'_d \]

\[ Q_d \]
Economic Effects of a Tariff

- Small importer faces flat (perfectly elastic) world supply curve $S_w$, which shifts to $S_w + t$ with a tariff $t$
- Domestic supply increases to $Q_s'$, domestic demand falls to $Q_d'$, and imports fall to $(Q_s' to Q_d')$
- Effect of tariff:
  - loss of consumer surplus $= -(a+b+c+d)$
  - gain in producer surplus $= +(a)$
  - increased variable costs $= -(b)$
  - tariff revenue $= +(c)$
  - “deadweight” loss $= -(d)$
  - overall loss from tariff $= -(b+d)$
Non-Tariff Barriers

- A non-tariff barrier (NTB), is any policy used to reduce imports that is not a simple tariff.
- NTBs can take many forms, e.g., import quotas, voluntary export restraints (VERs), product standards etc.
- Best-known NTB is an import quota, i.e., a limit on amount of imports allowed over a set time period.
- In principle, impact of import quotas is the same as a simple import tariff.
Effect of a Quota: Small Country
Economic Effects of a Quota

- If importer sets quota q at imports of \((Q_S' \text{ to } Q_D')\), supply curve is \((S+q)\), internal price increases to \(P_q\), domestic supply increases to \(Q_S'\), and domestic demand falls to \(Q_D'\)

- Effect of quota:
  - loss of consumer surplus \(= -(a+b+c+d)\)
  - gain in producer surplus \(= +(a)\)
  - increased variable costs \(= -(b)\)
  - quota rents \(= (c)\)
  - “deadweight” loss \(= -(d)\)
  - overall loss from quota \(= ?\)
Economic Effects of a Quota

- Whether or not effects of a quota are equivalent to those of a tariff depends on what happens to the quota rents $(c)$.

- Under a tariff, $(c)$ is tariff revenue, which clearly stays in importing country.

- With a quota, each unit of the good imported is purchased at world price $P_w$ but is sold at internal price $P_q$, so amount of quota rents is $q(P_q - P_w)$.

- Who gets the quota rents is determined by how quota is allocated by government.
Economic Effects of a Quota

Methods of Quota Allocation:

• *Auction* of import licenses – firms bid \( (P_q - P_w) \) in auction, government getting quota rents \( (c) \)

• *Free allocation* of import licenses – firms do not have to pay for license and gain all rents, i.e., redistribution of \( (c) \) from consumers to import license-holders

• *VERs* – exporter agrees to “voluntarily” restrict exports, thereby gaining all quota rents, i.e., all \( (c) \) is lost
Economic Effects of a Quota

Comparing economic effects of tariff and quota:

- **Auction:**\[-(b+d) = -(b+d)\]
- **Free allocation:**\[-(b+d) = -(b+d)\]
- **VERs:**\[-(b+d+c) > -(b+d)\]

For importer, quotas only equivalent to tariffs when import licenses freely allocated or auctioned

With free allocation, some of (c) may be lost through “rent-seeking”

In case of VERs, quota rents (c) lost by importer, but not lost to world
Effect of a Tariff: Large Country
Terms of Trade Effects

- Large importer faces (elastic) supply curve, $S_W$
- With $t$, imports fall to $(Q_S' \text{ to } Q_D')$ or equivalently $Q'$
- Importer deadweight loss is $-(b+d)$, tariff revenue is $(c+e)$, where $e$ is *terms of trade* effect due to world price falling to $P_W'$
- For importer, terms of trade effect outweighs deadweight costs, i.e., $(e) > [(b+d)]$, but exporter loses producer surplus of $-(e+f)$
- Even without retaliation by exporter, world is worse off by global inefficiency of $-\{(b+d) + f\}$