14.54 International Trade
— Lecture 20: Trade Policy (I)—
Tariffs

Today's Plan

1. Tariffs, Import Demand, and Export Supply
2. Welfare Consequences of Tariffs

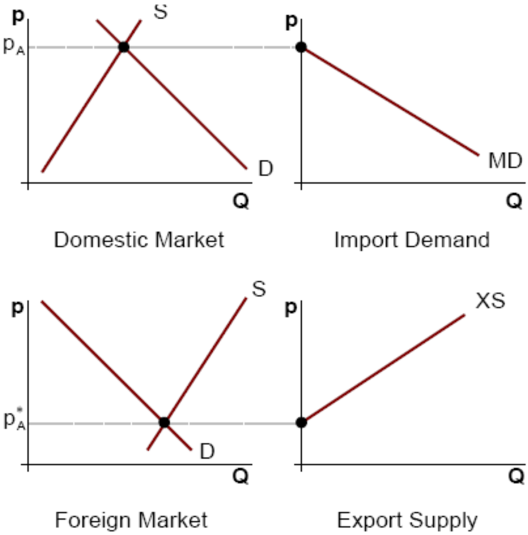
Trade Policy Tools

- Government can use many tools to affect the equilibrium prices of traded goods and the quantities of the traded good produced and consumed
- Most cases of such interventions involve the restriction of imports, but governments also tax or subsidize exports
- The tools of import restriction are:
  1. Tariffs: specific or ad-valorem
  2. Quotas or 'voluntary export restrictions'
  3. Regulations: testing, customs, labeling, domestic content requirement

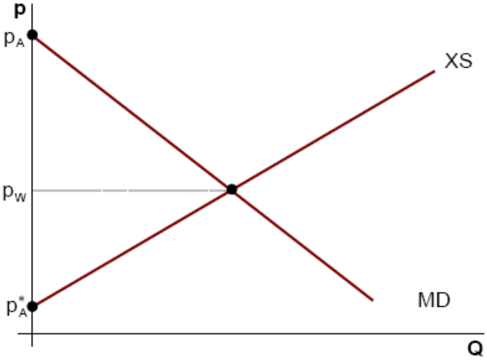
Modeling the Effects of Trade Policy

- In the course so far, we have modeled trade in general equilibrium:
    - Trade affects all sectors in the economy
- Trade policy is most often directed at very specific sectors
- In these cases, it is reasonable to model the effects of trade in partial equilibrium:
    - We assume that the trade policy will have minimal repercussions on economy-wide factor markets and will not induce income effects in consumption
        - Thus, the sector in question must be small relative to the rest of the economy
    - We can then analyze the effects of the trade policy on a particular sector independently from the rest of the economy
        - This involves the standard tools of supply and demand analysis
        - ... which determine the equilibrium prices and outputs for that sector

Import Demand and Export Supply



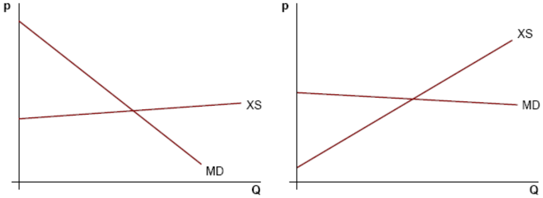
Determination of Equilibrium Trade Price



- Note how p_W must be in between the 2 autarky prices (which still determine the pattern of comparative advantage)

The Effects of Relative Country Size

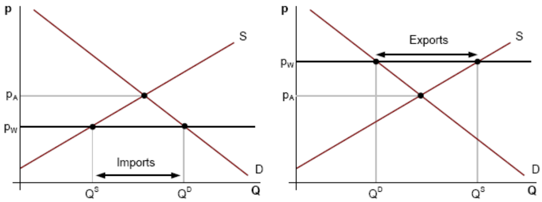
- The relative size of the countries will affect the slopes of the import demand and/or export supply curves:



- As the relative size difference increases further, we obtain (in the limit) the case of the 'small' open economy

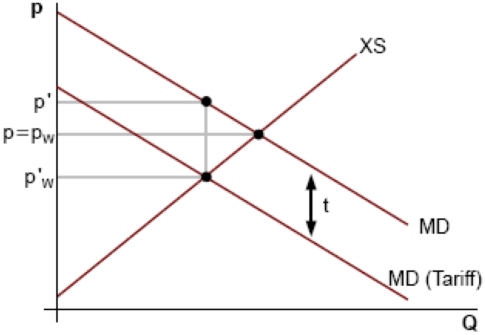
Small Open Economies

- For these economies, we can model domestic supply and demand, along with the exogenous world price



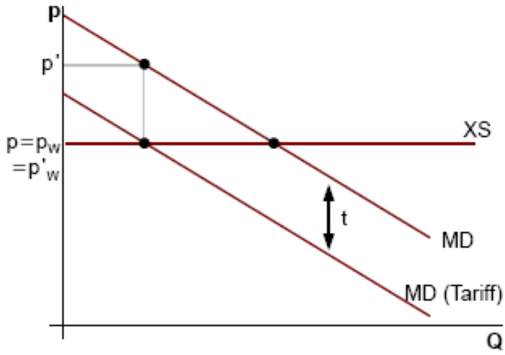
The Effects of an Import Tariff for a Large Country

- A tariff is just a tax on imports (a specific tariff t is assumed):



- The tariff will raise the price of a good above its free trade level (p_W)
  - ... and reduce imports
- It also reduces the world trade price: this is the terms of trade effect
  - ... so the price rises by less than the full amount of the tariff

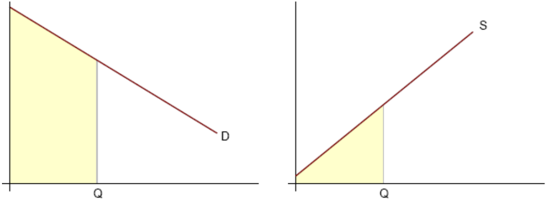
The Effects of an Import Tariff for a Small Country



- The tariff does not affect the world trade price
- The price will rise by the full amount of the tariff

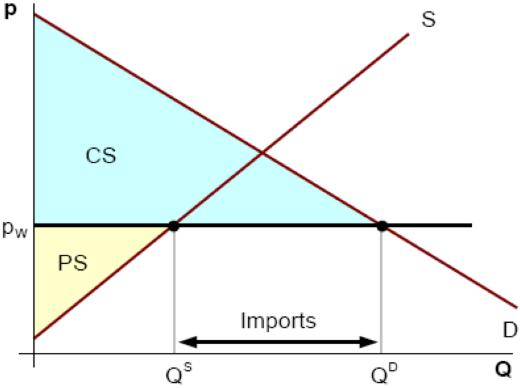
Review of Welfare Analysis in Partial Equilibrium

- Recall that for competitive markets, the demand curve represents the marginal benefit of consumption and the supply curve represents the marginal cost of production

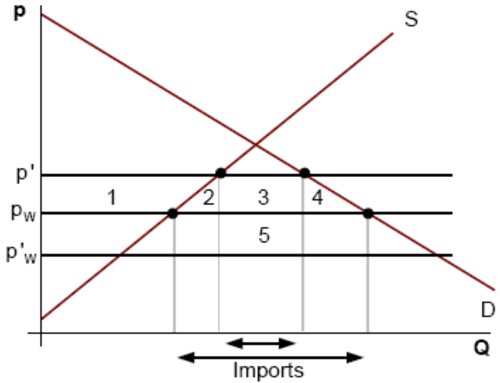


- Consumer surplus represents the net benefit from consumption: $CS = TB - P.Q$
- Producer surplus represents the variable profits from production (without accounting for the fixed costs): $PS = P.Q - TVC$

Welfare Under Free Trade for an Importing Country

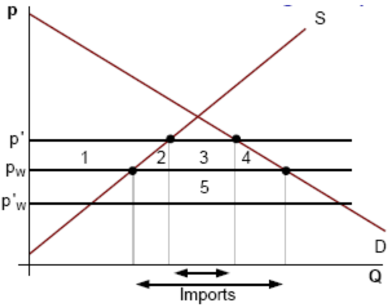


Welfare Effects of a Tariff for a Large Importer



- The tariff will:
  1. Reduce consumer surplus (area 1+2+3+4)
  2. Increase producer surplus (area 1)
  3. Generate tariff revenue (area 3+5)
  4. Resulting in a net welfare gain or loss (area 5-2-4)

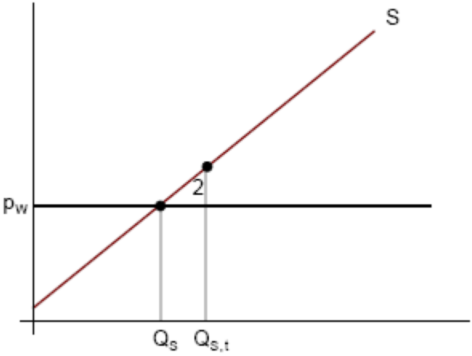
Welfare Effects of a Tariff for a Large Importer (Cont.)



- Note that the division of the tariff revenue between areas 3 and 5 depends on the terms of trade effect of the tariff
  - For a small country, there are no terms of trade effect, and area 5 disappears
    - That area captures a welfare gain from the tariff induced by the improvement in the terms of trade
  - ... and the tariff then can only induce welfare losses (area 2+4)

Tariff Distortions and Welfare

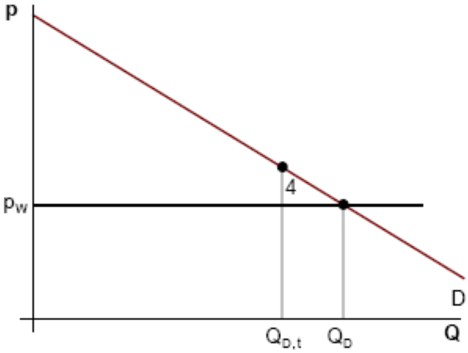
- Area 2 always represents a loss to total welfare. What is generating this loss?



- Area 2 represents the domestic production distortion from the tariff
- Each additional unit of output is produced at a marginal cost above its opportunity cost (the world price p_W)

Tariff Distortions and Welfare (Cont.)

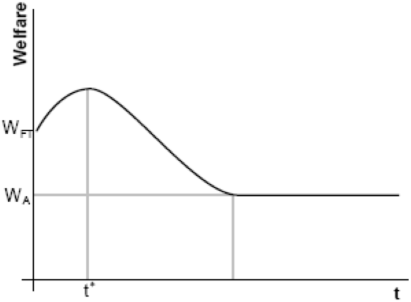
- Area 4 always represents a loss to total welfare. What is generating this loss?



- Area 4 represents the domestic consumption distortion from the tariff
- The marginal benefit of the foregone units consumption are above their opportunity cost (the world price p_W)

Tariffs and Welfare

- For a large economy, what are the net changes in welfare induced by a tariff? i.e. the relative importance of the gain from the terms of trade improvement (lower p_W) and the production/consumption distortions



- For small tariffs, the gain from the terms of trade improvement dominates, but not for larger tariffs
- There is an 'optimal' tariff level t^*
  - The more the foreign export supply to a country is inelastic, the higher the optimal tariff t^*

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