

## Effects of International Trade and Tariffs

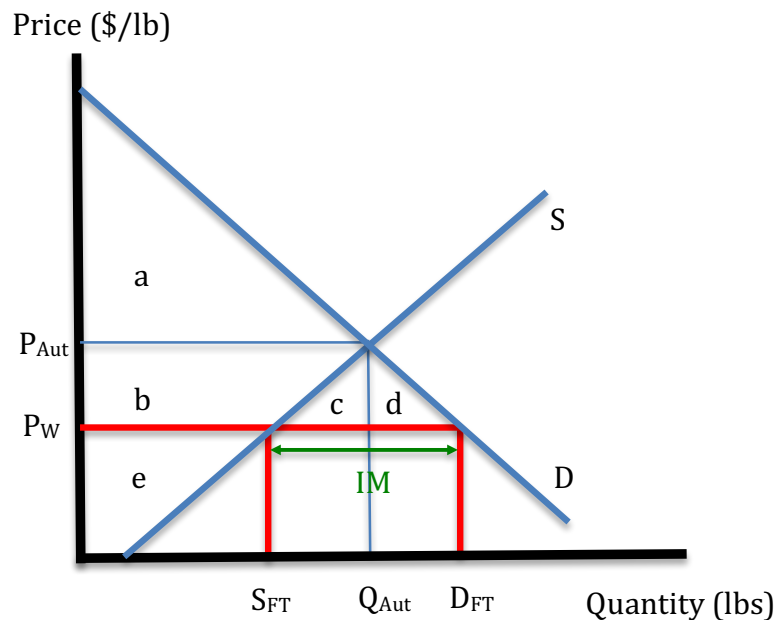
### 1) The Possibility of Trade

- a. A *Closed Economy* is a market or country without international trade
- b. An *Open Economy* is a market or country with international trade
- c. Previous analysis assumes ONE market for a particular good, i.e., a closed economy.
- d. International trade opens up the possibility to link two or more markets together
- e. Comparative advantages in production will cause different prices to prevail for goods between two different markets, IF trade is not allowed.
- f. Differences in prices will cause trade to occur if allowed.

### 2) Depicting a Free Trade Equilibrium

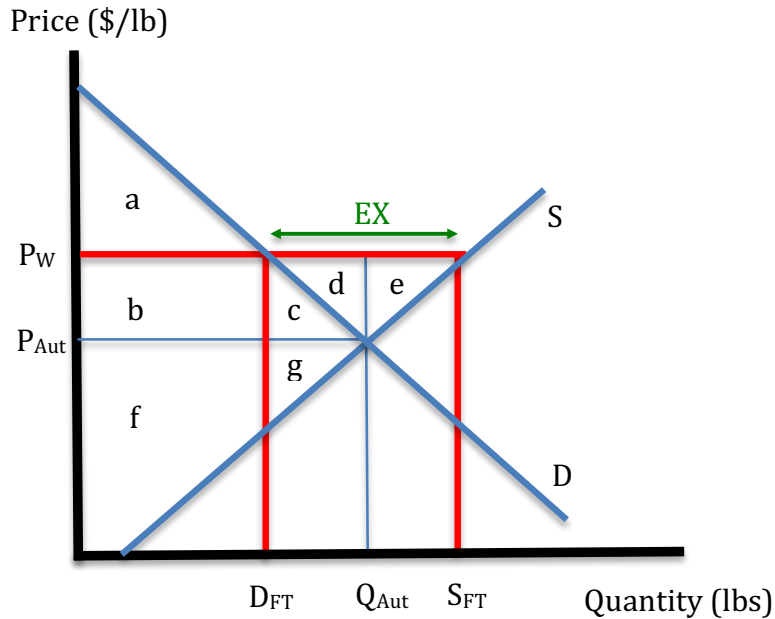
- a. Assume a country is SMALL in a particular market
  - i. Smallness means that the country's participation in the world market is too small to influence the world price
  - ii. For example, if a domestic market trades 10 units of a product each week, but the world market trades 1 million units per week.. then the domestic mkt is too small to affect anything.
  - iii. Small countries take world market prices as given.
  - iv. In contrast, a LARGE country is one whose imports or exports are sufficiently large to affect the world price
    1. Important distinction because national welfare effects differ in large vs small country cases.
    2. Large country cases covered in Econ 2180 and Econ 2181
- b. Two cases to consider
  - i. World market price is lower than Autarky (Autarky means no trade) equilibrium price
    1. Foreign countries have the comparative advantage
    2. Domestic country will import when open to free trade
  - ii. World market price is higher than Autarky equilibrium price
    1. Domestic Country has the comparative advantage
    2. Domestic country will export in free trade
- c. Price and Quantity Effects of Free Trade when the World Price is **lower** than Domestic Price (see Figure)
  - i.  $P_{Aut}$  is the autarky equilibrium price
  - ii.  $Q_{Aut}$  is the autarky equilibrium quantity
  - iii.  $P_W < P_{Aut}$  the price in the rest of the world is lower than at home
  - iv. This looks like a price ceiling except that there is no unsatisfied excess demand. Because it is small, the country can buy as much of the foreign product as it wants at the world price.
  - v. Consumers in this situation motivate trade

1. Rather than buying the more expensive product in autarky, trade will induce them to buy the cheaper foreign good
  2. This occurs because consumers want to raise their utility.
  3. No transport costs are assumed for simplicity
  4. Domestic firms will respond by lowering the price they charge ... and the quantity supplied (moving down along the supply curve).
  5. But lower prices will also induce greater demand
- vi. Free trade equilibrium must satisfy these conditions.
1. Domestic price =  $P_W$
  2. Quantity demanded =  $D_{FT}$ , demand evaluated at the price  $P_W$
  3. Quantity supplied =  $S_{FT}$ , supply evaluated at the price  $P_W$
  4. Imports =  $D_{FT} - S_{FT}$



- vii. Welfare Effects of Moving from Autarky to Free Trade
1. Change in CS = + (b + c + d)
  2. Change in PS = - b
  3. Change in National Welfare = +(c + d)
  4. "c" is a production efficiency gain
  5. "d" is a consumption efficiency gain
- viii. Conclusion
1. Moving to free trade causes a redistribution of income
    - a. Free Trade benefits consumers of the imported products
    - b. Free trade harms the businesses that compete with the imported products. (import-competitors lose)

2. Free trade improves economic efficiency and raises national welfare (the gains exceed the losses)
  3. FREE TRADE IS GOOD!!! (in this case)
- d. Price and Quantity Effects of Free Trade when the World Price is **higher** than Domestic Price (see Figure)
- i.  $P_{Aut}$  is the autarky equilibrium price
  - ii.  $Q_{Aut}$  is the autarky equilibrium quantity
  - iii.  $P_W > P_{Aut}$  the price in the rest of the world is higher than at home
  - iv. Because it is small, the country can sell as much of the product as it wants to the rest of the world at the world price.
  - v. Producers in this situation motivate trade
    1. Rather than selling the product at a lower price at home in autarky, the possibility of trade will induce them to sell abroad at the higher world price
    2. This occurs because producers want to raise profit
    3. No transport costs are assumed for simplicity
    4. Domestic firms will respond by increasing the price they charge ... and the quantity supplied (moving up along the supply curve.
    5. But higher prices will also induce reduced demand
  - vi. Free trade equilibrium must satisfy these conditions.
    1. Domestic price =  $P_W$
    2. Quantity demanded =  $D_{FT}$ , demand evaluated at the price  $P_W$
    3. Quantity supplied =  $S_{FT}$ , supply evaluated at the price  $P_W$
    4. Exports =  $S_{FT} - D_{FT}$
  - vii. Welfare Effects of Moving from Autarky to Free Trade
    1. Change in CS = - (b + c)
    2. Change in PS = + (b + c + d + e)
    3. Change in National Welfare = +(d + e)
    4. "e" is a production efficiency gain
    5. "d" is a consumption efficiency gain



viii. Conclusion

1. Moving to free trade causes a redistribution of income
  - a. Free Trade benefits producers of the exported products
  - b. Free trade harms the home consumers who purchase the products.
2. Free trade improves economic efficiency and raises national welfare (the gains exceed the losses)
3. FREE TRADE IS GOOD!!! (in this case, too)

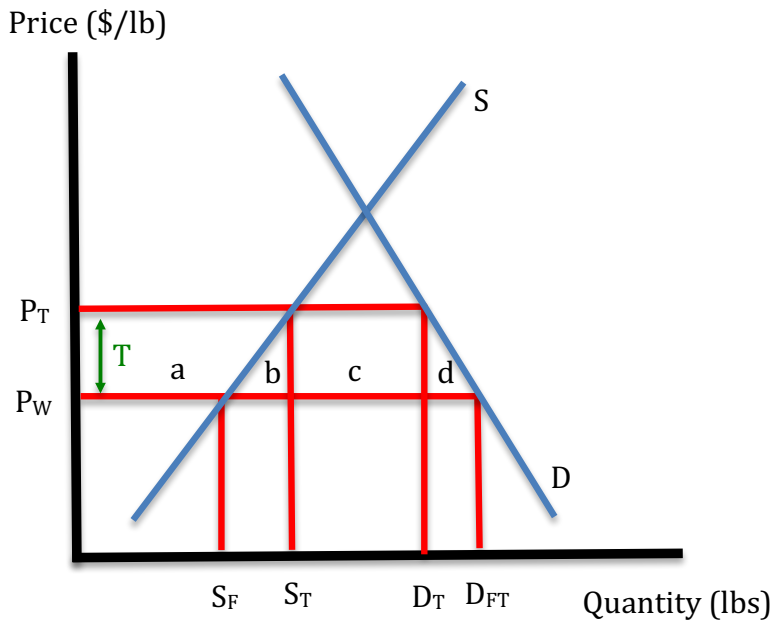
3) Trade benefits Importer and Exporter Countries

- a. Both countries shift towards (but don't specialize) in their comparative advantage goods.
- b. That shift allocates resources more efficiently between countries
- c. More efficient allocation is what generates the efficiency effects leftover in each case above.

4) Effects of an Import Tariff

- a. A Tariff is a tax on imported goods.
  - i. Specific tariff (\$ charge per unit)
  - ii. Ad valorem tariff (% of value)
- b. Collected by customs agents as "goods" enter the country
  - i. Service imports are usually not taxed
  - ii. Services are "invisible"
- c. Import tariffs are easier to collect

- i. Lower administration costs – just put guards at the ports and check to see what comes in.
  - ii. Much easier than sales taxes, income taxes, property taxes, etc.
  - iii. In US, 90% of all federal revenue came from tariff revenue in 1790s.
  - iv. In many less developed countries today, tariffs can still make up as much as 20% of government revenues.
- d. Price and Quantity Effects of a specific tariff by a small country.
- i. A Tariff raises the domestic price for both producers and consumers by the tariff rate
    - 1. If the free trade price were \$8 and a \$3 per unit tariff is implemented then the new producer and consumer price is \$11.
    - 2. If the free trade price were \$1.35 and a \$0.10 per unit tariff is implemented then the new producer and consumer price is \$1.45
  - ii. The higher domestic price reduces demand from  $D_{FT}$  to  $D_T$  and raises domestic supply from  $S_{FT}$  to  $S_T$ .
  - iii. Imports fall from  $(D_{FT} - S_{FT})$  to  $(D_T - S_T)$ .



- e. Welfare Effects of a specific tariff by a small country.
- i. Change in consumer surplus =  $-(a + b + c + d)$
  - ii. Change in Producer Surplus =  $+ a$
  - iii. Tariff Revenue =  $T \times (D_T - S_T) = + c$
  - iv. Change in National Welfare =  $-(b + d)$
  - v. "b" is a production efficiency loss
  - vi. "d" is a consumption efficiency loss
  - vii. b and d together are called deadweight losses

f. Conclusion

- i. Implementing an import tariff causes a redistribution of income
  1. A tariff benefits import-competing producers of the product
  2. A tariff harms the home consumers who purchase (both home and foreign) products.
  3. A tariff raises government revenue that is spent on government beneficiaries.
- ii. To the extent those who lose are unaware or would not choose to accept their loss if known, the tariff amounts to an involuntary transfer. The import competing producers gain at the expense of consumers.
- iii. A tariff reduces economic efficiency and lowers national welfare (the losses exceed the gains)
- iv. PROTECTION IS BAD!!! (in the small country case)