

TOPIC 13

Small Country Trade Model

BIG PICTURE

- Small countries are primarily defined by their inability to affect world prices
- Free trade unambiguously improves national welfare, but there are winners and losers
- Imports typically help consumers; exports typically help producers
- Trade barriers exist to limit imports but come at the cost of national welfare

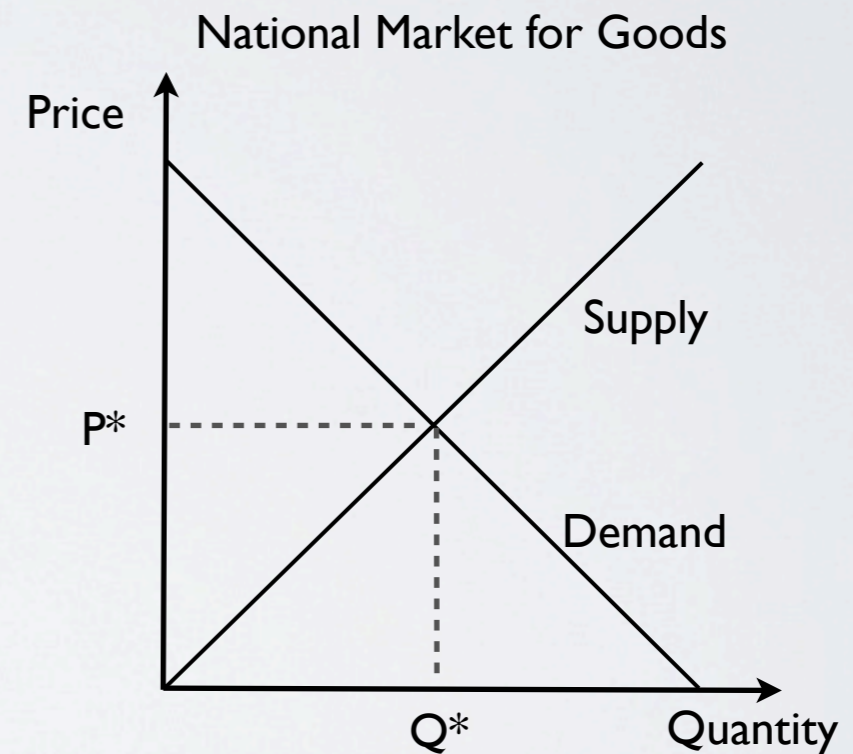
TRADE EQUILIBRIUM

WHAT IS A SMALL COUNTRY?

- Liechtenstein? Sure. Vietnam?
- Our qualifications for a small country
 1. Demand is not great enough to exceed world supply
 - 2. Demand does not affect prices**
 3. Supply is first met by domestic firms and then foreign firms if needed
- The primary difference we are interested in is (2)

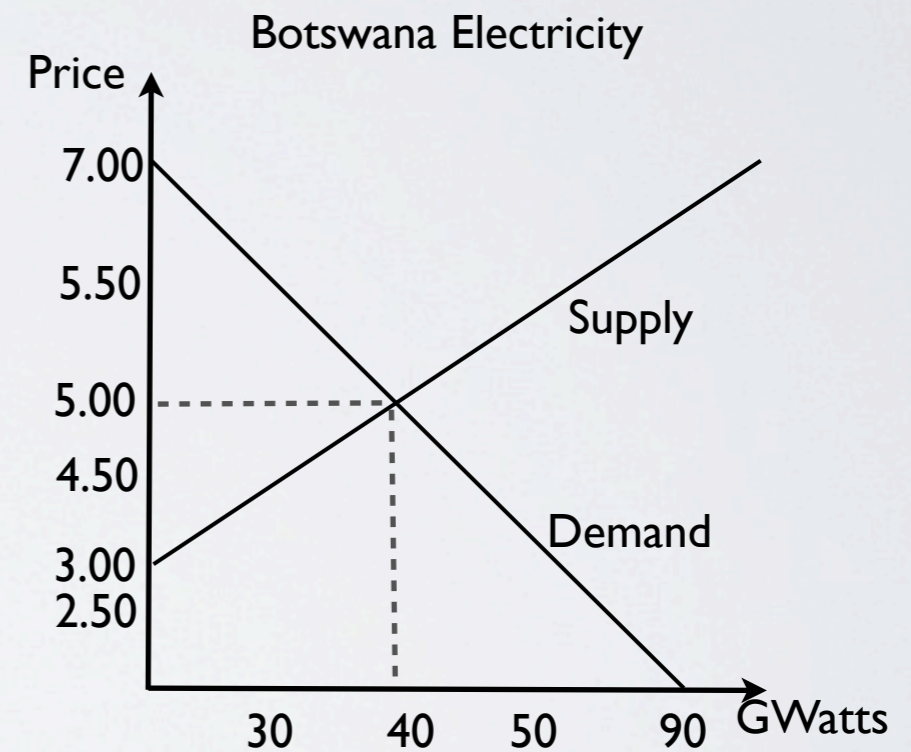
EQUILIBRIUM WITH TRADE

- Typically, we have assumed that equilibrium happens where Supply = Demand
- Not necessarily the case?
- **Exports:** goods and services produced domestically and sold abroad
- **Imports:** Good and services produced abroad and sold domestically



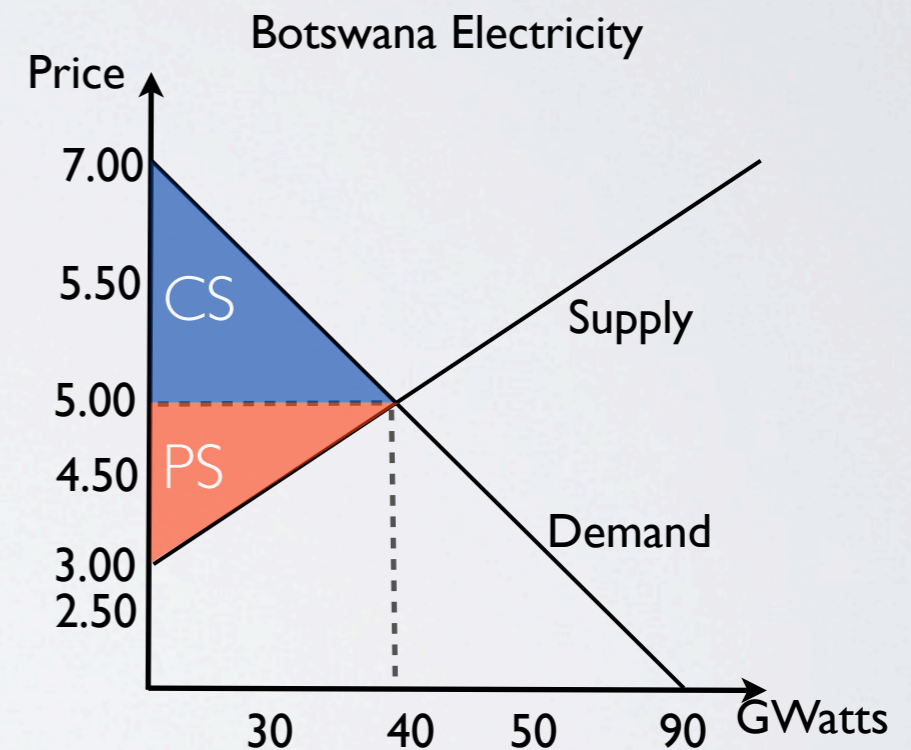
EQUILIBRIUM WITH TRADE

- With trade, if supply $>$ demand, the country is exporting in equilibrium
- Exporting if demand $>$ supply
- Consider Botswana (a small country)



TRADE: BOTSWANA

- Consider autarky, (no trade):
 - What is eq. price? eq. quantity?
 - \$5.00/Gwatt, 40Gwatts
 - What is the consumer surplus?
 - $CS = .5 * (7 - 5) * 40 = 40$
 - Producer surplus?
 - $PS = .5 * (5 - 3) * 40 = 40$
 - Total Surplus = $PS + CS = 80$

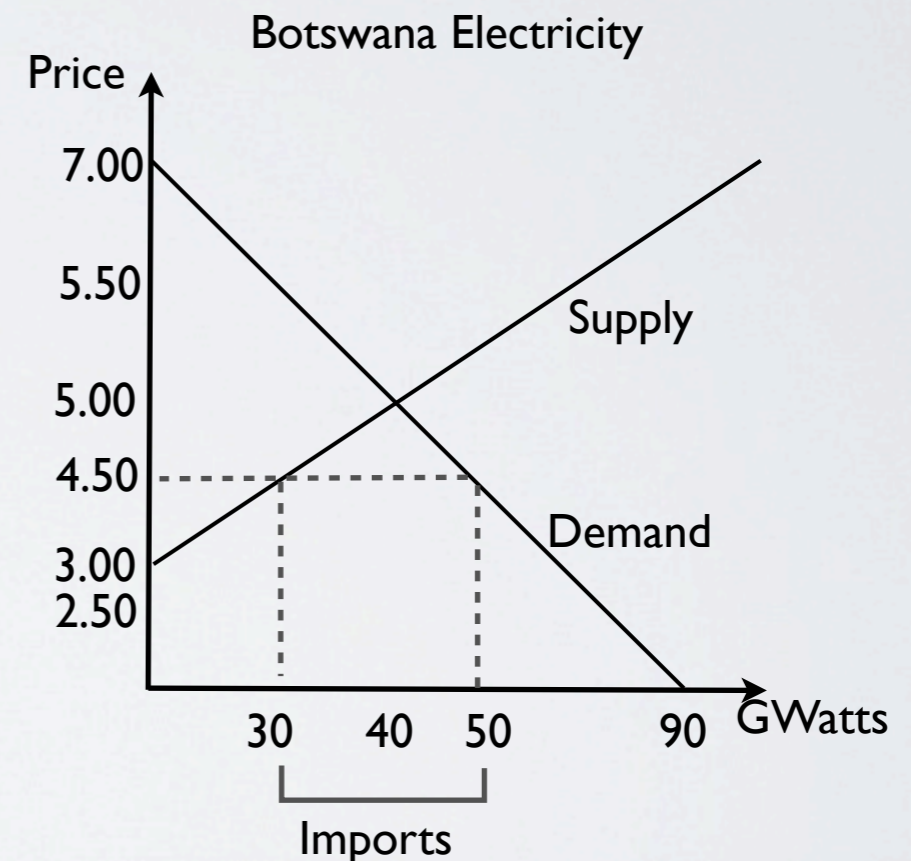


TRADE: BOTSWANA

- In reality, Botswana imports a lot of electricity from South Africa (suppose at price \$4.50 / Gwatt)
 - What price can firms trade now?
 - If they try to sell above \$4.50, no one would buy it
 - No firm would try to sell below \$4.50 if they can sell it for \$4.50
 - So Botswana **takes** the price of \$4.50
- Note that this the small country assumption is critical to this price taking behavior

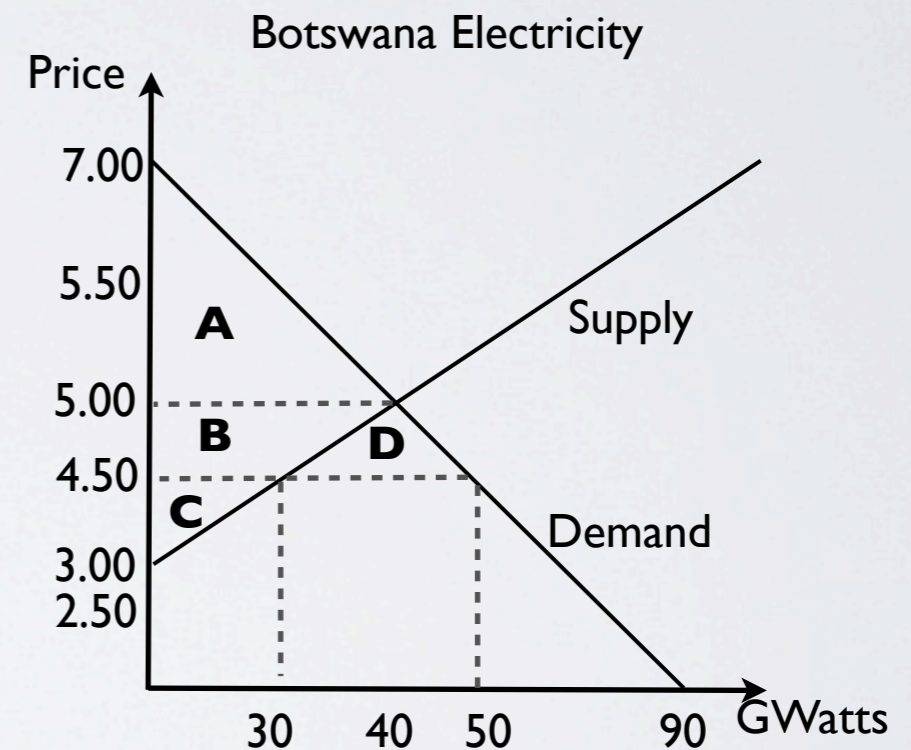
TRADE: BOTSWANA

- Trade equilibrium in Botswana
 - New price is \$4.50 so what are demand and supply?
 - Demand is 50, supply is 30
 - Normally, this would be a **shortage**
- What would be the shortage is covered exactly by **imports**
 - So we import 20 GWatts from South Africa



TRADE: BOTSWANA

- Compare surpluses
 - Before trade: $CS = A$, $PS = B+C$ so $TS = A + B + C$
 - After trade?
 - $CS = A + B + D$, $PS = C$
 - $TS = A + B + C + D$
 - So trade has improved total surplus by D
- Numerically, $CS = 62.5$, $PS = 22.5$, so $TS = 85$, which is an increase of 5

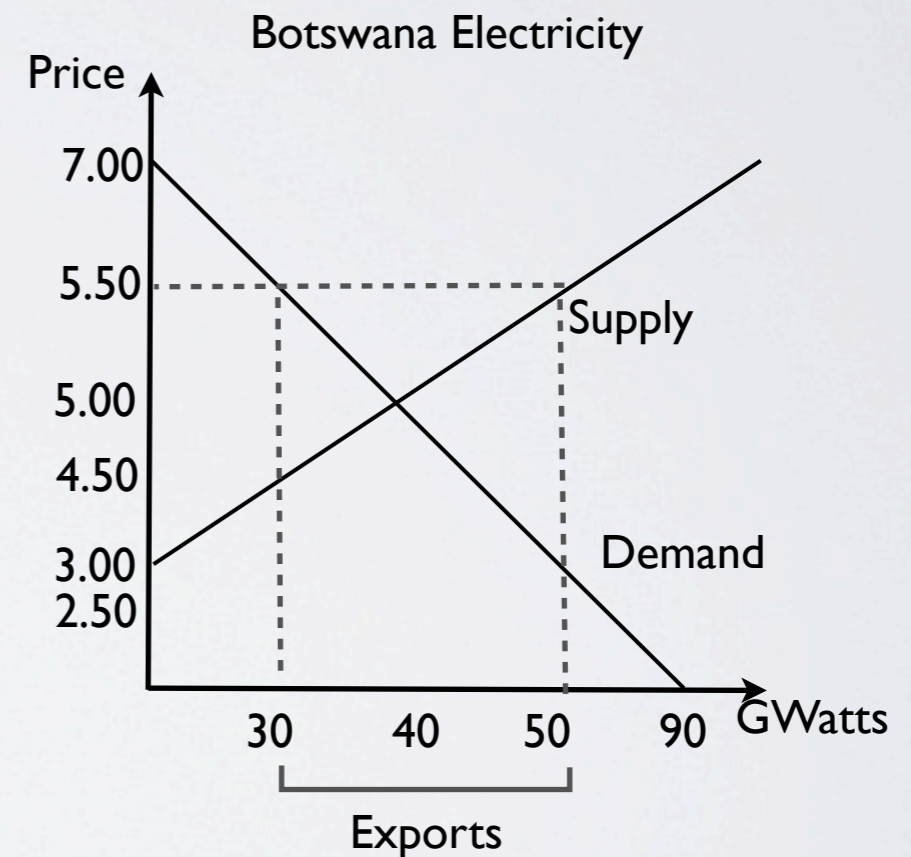


TRADE: BOTSWANA

- So how has trade impacted Botswana?
 - Consumers are better off, producers are worse off, but on the whole Botswana is better off
- *In general*, consumers benefit from an import situation, why?
 - Increased consumption
 - Increased variety (not in our case)
 - Lower costs (here represented by price)
 - Increased competition
 - Enhanced flow of ideas
- So what if the price in South Africa is higher than the autarky equilibrium?

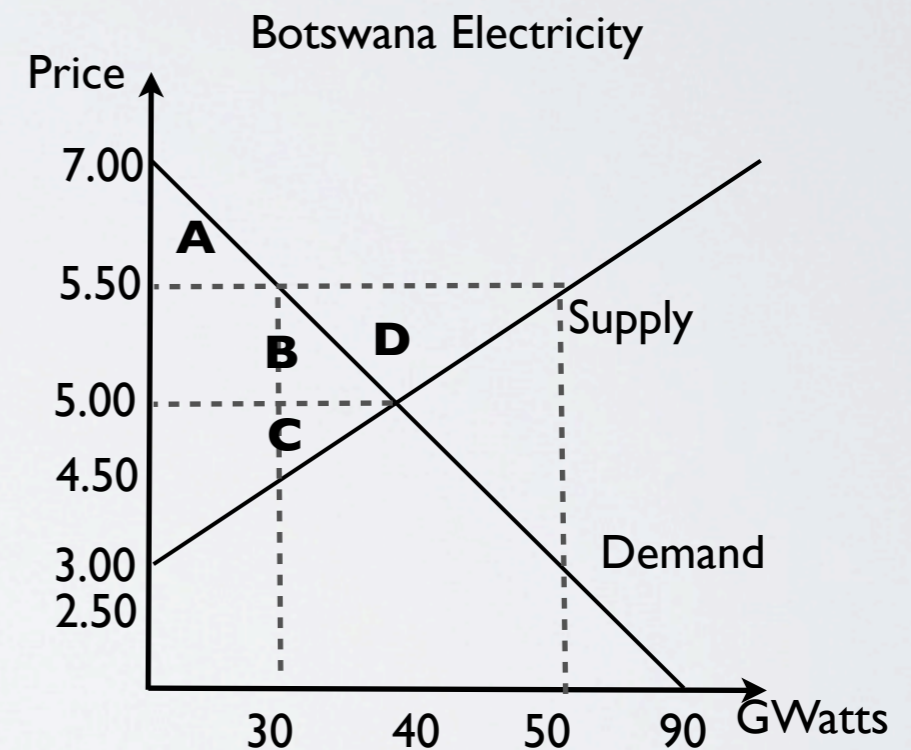
TRADE: EXPORTER

- Suppose the South African price taken is now \$5.50 / GWatt
- Now supply > demand
- Firms can **export the excess supply**
- Who will gain from this trade situation?



TRADE: EXPORTER

- Compare surpluses
 - Before trade: $CS = A$, $PS = B+C$ so $TS = A + B + C$
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 - $CS = A$, $PS = B + C + D$
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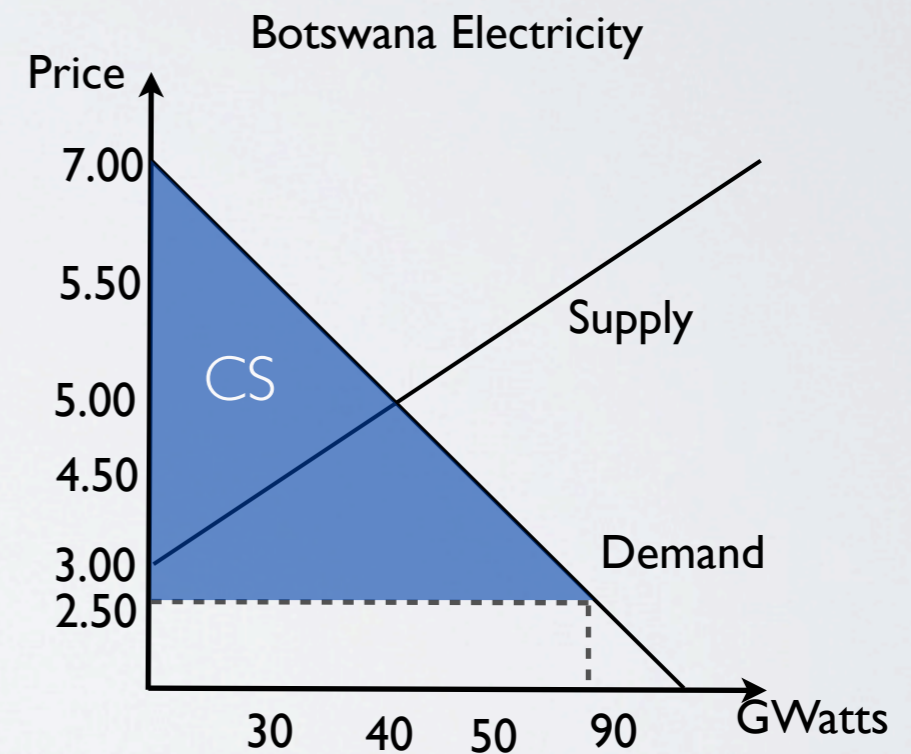


TRADE: EXPORTER

- With the new *higher* price, we have that firms improve (as you might expect) while consumers are worse off
- However, Botswana is again better off than before because of opening to trade
- *In general*, firms are the winners in an export situation

TRADE: CASE 3

- Suppose the South African price taken is now \$2.50 / GWatt
 - $PS = 0$
 - $CS = .5 * (7 - 2.50) * 90 = 202.50$
- Now electricity is so cheap, domestic producers cannot afford to produce
 - Even though suppliers are unable to produce, total welfare is still higher
 - This might be a chance for firms or laborers to lobby for **trade barriers**



TRADE BARRIERS



Embargo Act, 1807

JUSTIFICATIONS FOR BARRIERS

- What are some reasons we might sacrifice a greater national welfare and introduce trade barriers?
 1. Jobs: Imports reduce jobs in that industry (as we saw), but other opportunities might be created in industries that are now exporting
 2. National-security (Hamilton): Some industries might produce resources necessary for national security (oil?), but the interdependence might be exaggerated
 3. Infant-industry (also Hamilton, among others): Young industries need time to become efficient and compete, but protection can also hinder efficiencies