

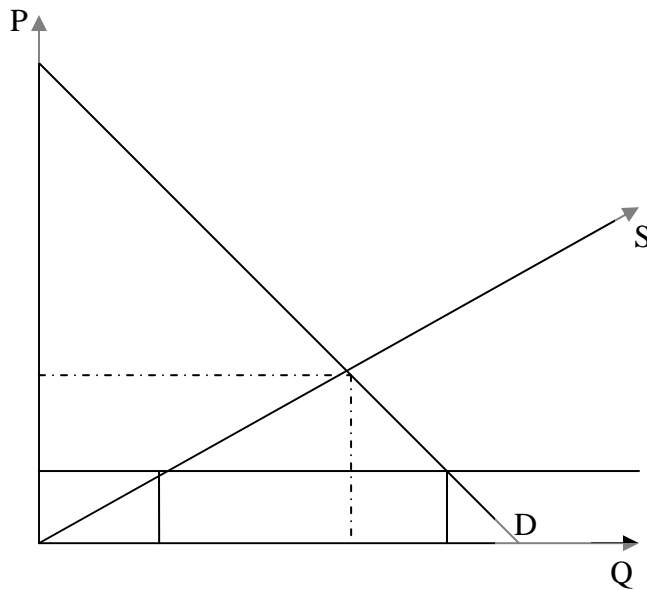
## Supply &amp; Demand: Quotas and Tariffs

Exercise #1: Consider a closed economy with the following supply and demand equations for watches.

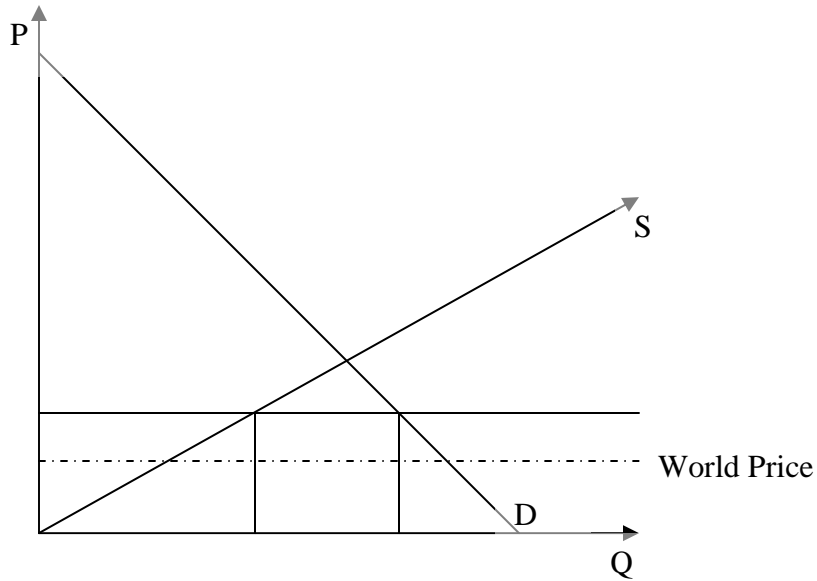
$$\mathbf{D: P = 50 - Q}$$

$$\mathbf{S: Q = 3/2 * P}$$

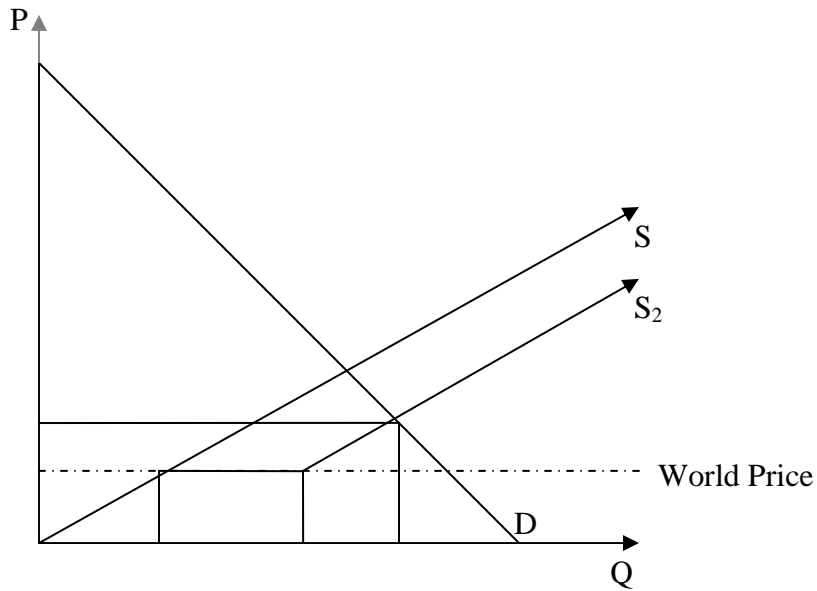
- a) Solve for the equilibrium quantity and price, consumer surplus, producer surplus, and total surplus and graph these below.



- b) Now assume they open for trade, and the world price for watches is \$10. Draw the effect this has on supply and demand above. Determine consumer, producer and total surpluses for this open economy. Also determine the level of imports.
- c) Now, there \$5 tariff on imports, raising the price to \$15. Draw the effect this has on supply and demand below. Determine  $Q_d$ ,  $Q_s$ , and the amount imported. Also determine consumer, producer and total surpluses, along with tariff revenue and deadweight loss.



- d) Now, instead of a tariff, there is a quota, limiting watch imports to 12.5. Draw the effect this has on the supply and demand below. Determine  $Q_d$  and  $Q_s$ . Determine consumer, producer and total surpluses, along with quota rents and deadweight loss.



**GDP:** The total value of all final goods and services produced in the economy during a given year.

- Exercise #2: What is/is not included in the calculation of US GDP?
- Money you spent at restaurants while touring Europe.
  - The cost of Tax Services used in April.
  - The cost of your newly purchased car.

- The cost of tires purchased by the car manufacturer to put on your new car.
- Purchase of your first house from a contractor.
- Purchase of your first house from the previous owner.
- Wages earned by illegal immigrants.
- Wages earned by US citizens while working in Canada.
- A woman living in New York spends a day cleaning her house, saving herself \$100 doing it herself instead of hiring it out.
- An American businessman opens a plant in Japan that produces computers.
- Nick volunteers his time at the animal rescue shelter in Washington, DC.
- An American businessman produces computers in Idaho and sells these computers to consumers in Japan.
- List your own examples.

Exercise #3: The following table lists Nominal GDP, CPI, Real GDP and Population for a country.

Year	Nominal GDP	CPI(2000\$)	Real GDP	Population	Real GDP per Capita
2006	\$3600	120	3000	100	
2007	\$4410	126	3500	125	

- a) What was the growth rate for nominal GDP in 2007?
- b) What was the growth rate for real GDP in 2007?
- c) What was the inflation rate in 2007?
- d) What was the growth rate of real GDP per capita?
- e) What is the difference between Real GDP and Nominal GDP? What measure above represents an individuals' average purchasing power?

Limitations of GDP measures (Pg 171 Krugman)

- A. Based on aggregate output, better to use GDP per capita to compare countries
- B. GDP per capita as a standard of living measure but it ignores distribution of income
- C. Ignores black markets