Introductory Macroeconomics

Lecture 18: international trade, part two

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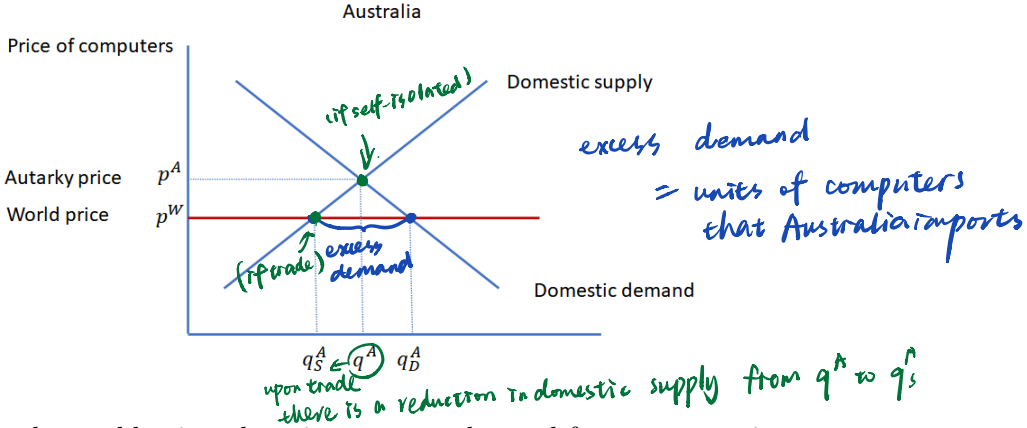
This Lecture

- More on international trade
  - direction of trade: which goods are imported and exported
  - winners and losers from trade
  - effect of protection policies: tariffs
- BOFAH chapter 16

Supply-Demand Analysis: Two-Country World

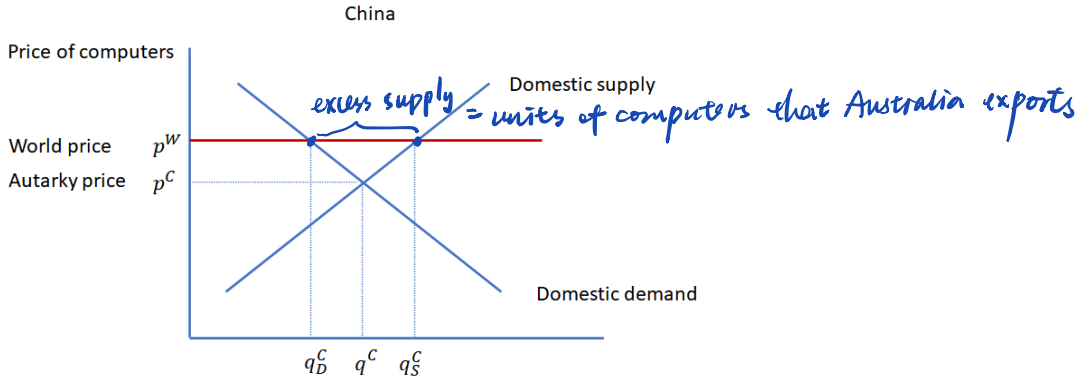
- Assumptions
  - Australia and China produce minerals and computers
  - Australia has a comparative advantage in producing minerals, and China has a comparative advantage in producing computers
  - International price of computers is lower than Australia's autarky price of computers and higher than China's autarky price of computers
  - International price of minerals is higher than Australia's autarky price of minerals and lower than China's autarky price of minerals

Market for Computers in Australia



- At the world price, there is an excess demand for computers in Australia
- $q_D^A - q_S^A$ is the units of computers that Australia imports

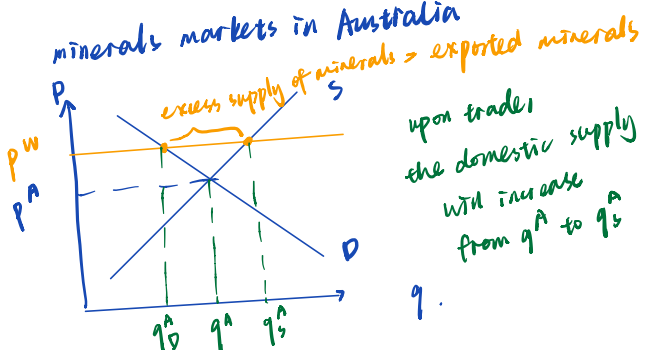
Market for Computers in China

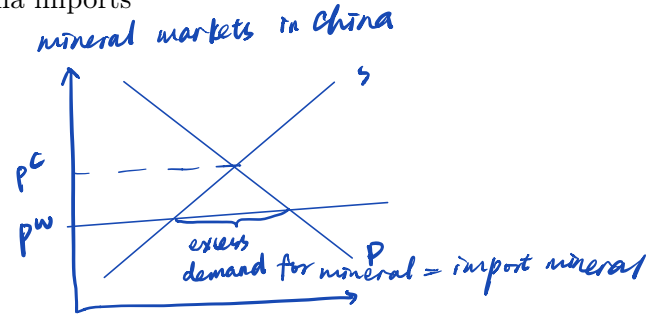


- At the world price, there is an excess supply for computers in China
- $q_S^C - q_D^C$ is the units of computers that China exports

Direction of Trade

- For computers, Australia imports, while China exports
- For minerals, Australia exports, while China imports





Direction of Trade

- Generalising the trade pattern, the direction of trade between countries is such that
  - a country imports a good whose international price is lower than its autarky price (computers in Australia, minerals in China)
  - a country exports a good whose international price is higher than its autarky price (computers in China, minerals in Australia)

Winners and Losers from Trade

- Players in Australia
  - producers (workers) and consumers in the computer market
  - producers (workers) and consumers in the mineral market
- In Australia,
  - trade shifts the production from computer to minerals

upon trade,
computer is less produced and mineral are more produced

Winners from Trade in Australia

- Employed workers (supply side) in mining sectors are better off as they receive a higher price for minerals:
  - from $W = MRPL = P \times MPL$, higher price for minerals means higher nominal wages
- Workers (supply side) that seek for a job in mining sectors are better off as they are more likely to be employed due to increased production of minerals
- Consumers (demand side) of computers are better off as they purchase computers at a world price that is lower than the autarky price

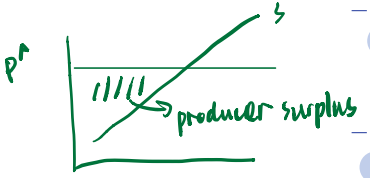
Losers from Trade in Australia

- Employed workers (supply side) in the manufacturing sectors are worse off as they receive a lower price for computers:
  - from $W = MRPL = P \times MPL$, lower price for computers means lower nominal wages
- Some workers (supply side) in manufacturing sectors are worse off as they are laid off due to reduced production of computers
- Consumers (demand side) of minerals are worse off as they purchase minerals at a world price which is higher than the autarky price

Measure of Welfare

welfare is increased upon trade → gain
decreased upon trade → loss

- To quantify the gains of suppliers and consumers, we need a measure of welfare of suppliers and consumers



mpl decrease in labour
eg 1st good → 1 worker
2nd good → 7 1 worker
⇒ upward sloping

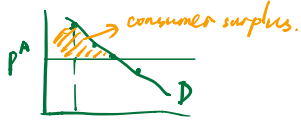
- *consumer surplus* measures the welfare of a consumer and is the difference between the maximum price a consumer is willing to pay and the actual price they do pay

= demand curve

- *producer surplus* measures the welfare of a supplier and is the difference between the actual price and the minimum price that a producer requires

= supply curve

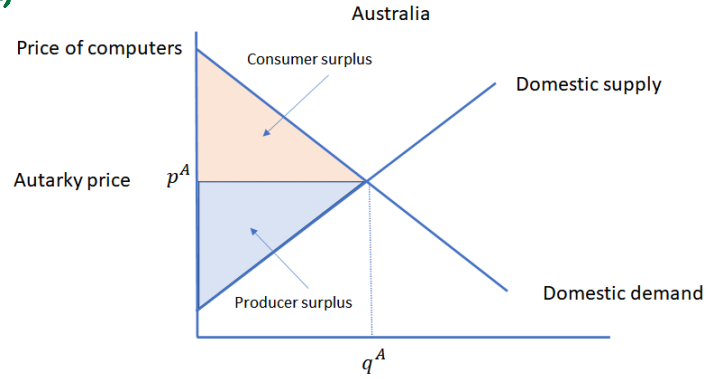
- *economic surplus* is the sum of consumer surplus and producer surplus and measures the welfare of an economy



decrease of marginal benefit ?

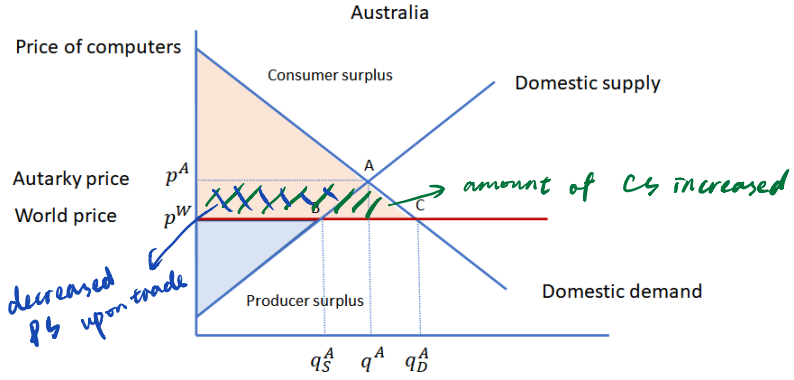
Economic Surplus for Autarky

economic surplus = CS + PS



- CS associated with purchasing q^A units of computers at price p^A
- PS associated with selling q^A units of computers at price p^A

Economic Surplus from Trade



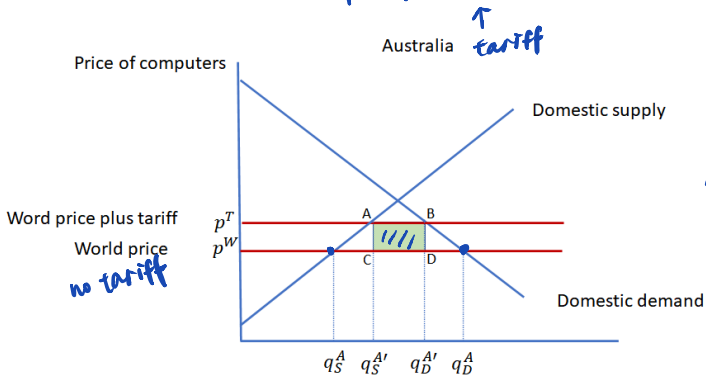
- Economic surplus of Australia from importing computers increases by area ABC
- Producers of computers lose, and consumers of computers win

Protection Policies: Tariffs

- *Tariff*, a tax imposed on imported goods, is a common tool to restrict imports, protecting a certain industry
  - tariff imposed on imported computers raise price of computers sold in Australia
  - tariff reduces the units of imported computers
  - computer producers in Australia are better off as they sell more computers and receive a higher price for them
  - government is better off as it collects tax revenue
  - consumers are worse off as they pay more for their computers
  - economic surplus from the tariff is the sum of consumer surplus, producer plus, and government surplus

Economic Surplus from the Tariff

$p^T = p^W + \tau$ (↑ tariff)



$q_D^{\hat{A}} - q_S^{\hat{A}}$ = imports under no tariff

$q_D^{\hat{A}\prime} - q_S^{\hat{A}\prime}$ = imports under tariffs

⇒ reduced imports

government surplus $= t \times (q_D^{\hat{A}\prime} - q_S^{\hat{A}})$

- Units of imported computers due to the tariff is $q_D^{A\prime} - q_S^{A\prime}$
- Government surplus from the tariff is area ABCD

Next Lecture

- Basics of exchange rates
  - nominal exchange rate
  - real exchange rate
  - theories of nominal exchange rates