

The Economics of European Integration



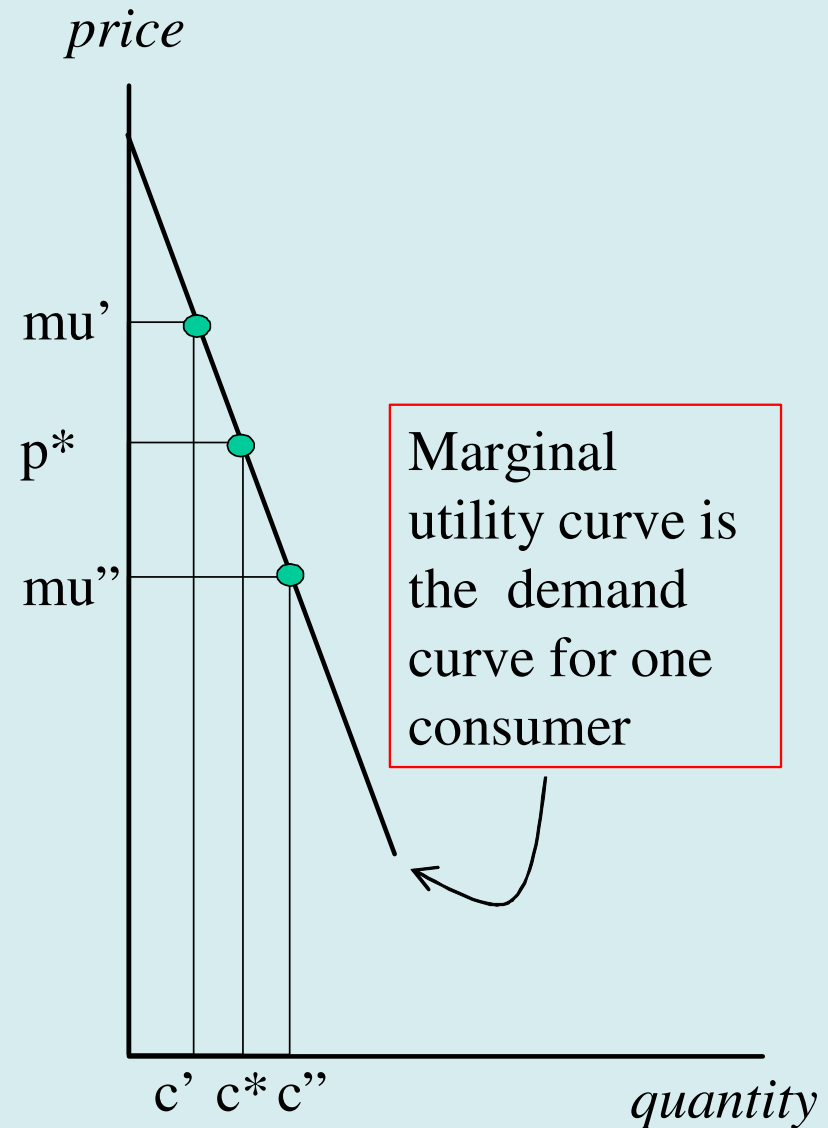
Chapter 4

Essential Micro Tools



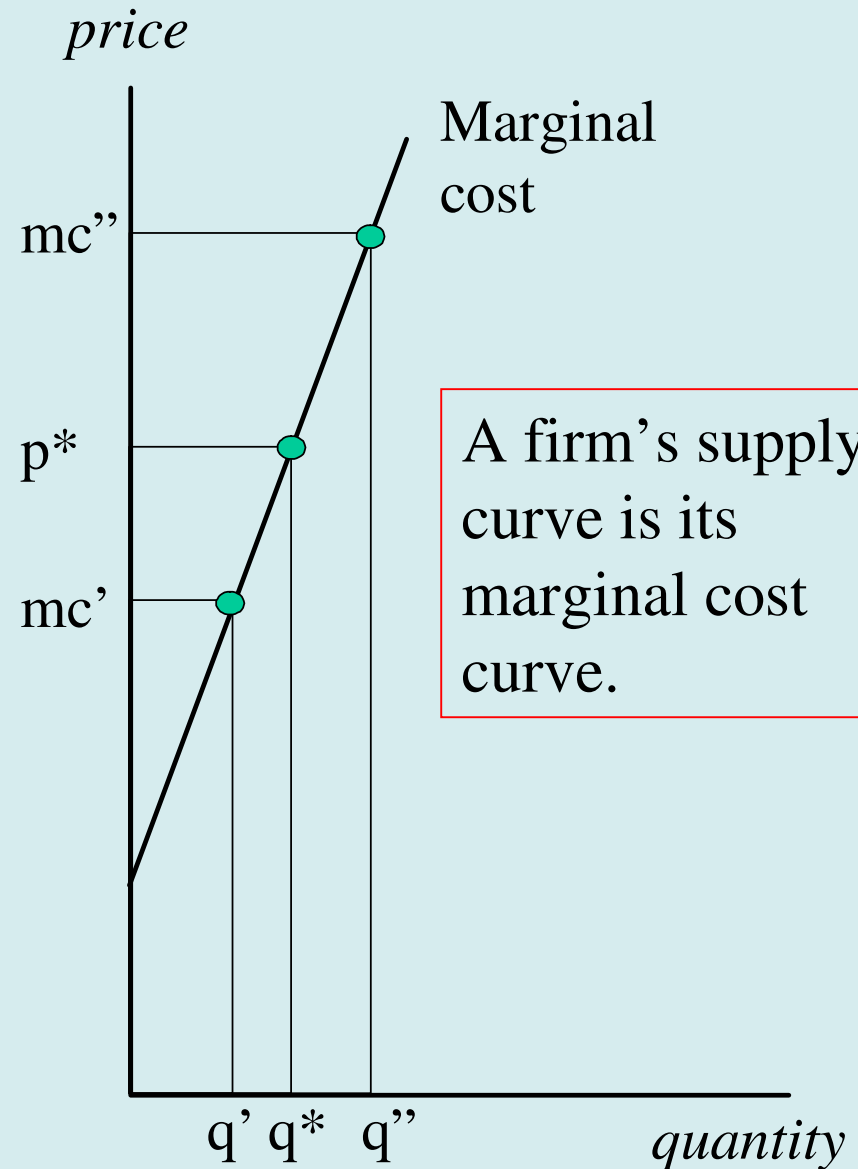
Preliminaries I

- Demand curve shows how much consumers would buy of a particular good at any particular price.
- It is based on optimisation exercise:
 - Would one more be worth price?
- Market demand is aggregated over all consumers' demand curves.
 - Horizontal sum.



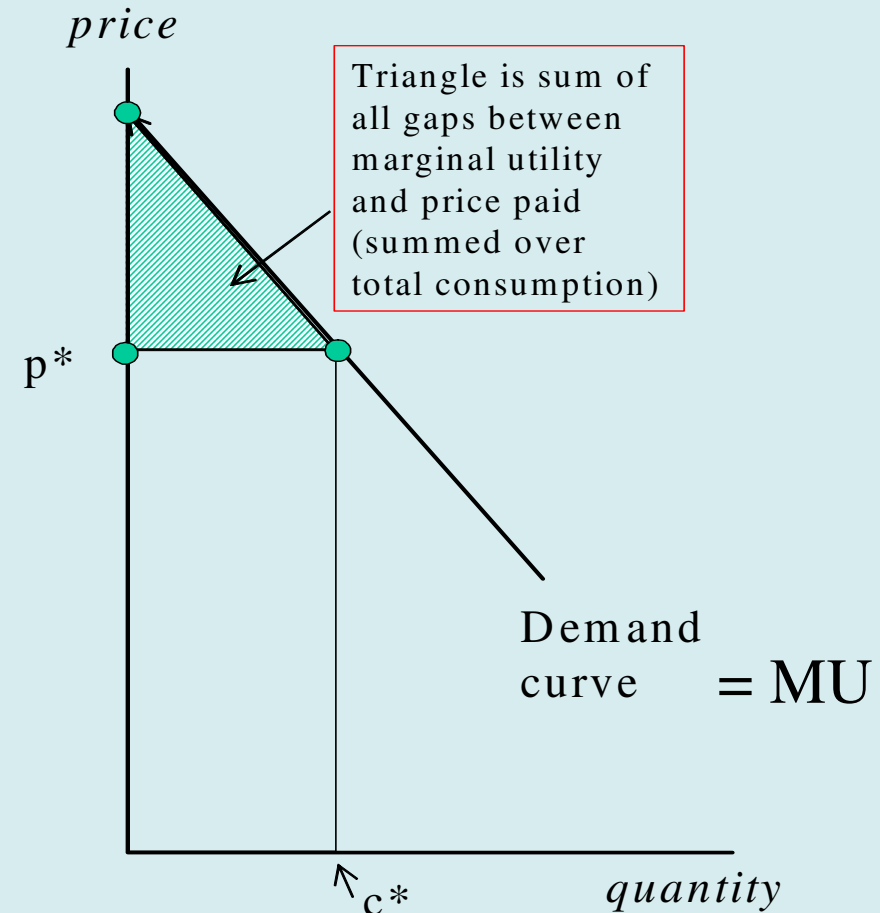
Preliminaries I

- Supply curve shows how much firms would offer to the market at a given price.
- Based on optimisation:
 - Would selling one more unit at price increase profit?
- Market supply is aggregated over all firms.
 - Horizontal sum.



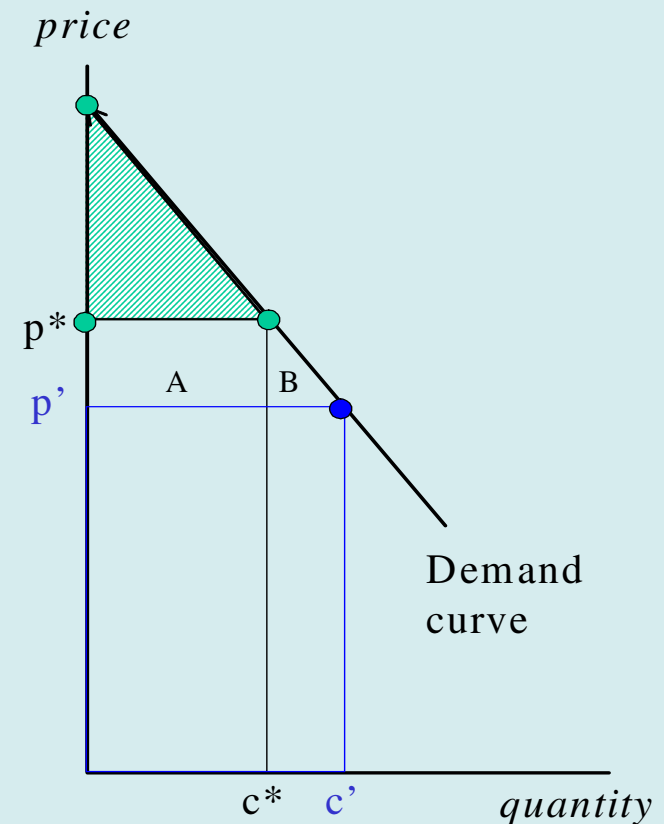
Welfare analysis: consumer surplus

- Since demand curve based on marginal utility, it can be used to show how consumers' well-being (welfare) is affected by changes in the price.
- Gap between marginal utility of a unit and price paid shows 'surplus' from being able to buy c^* at p^* .



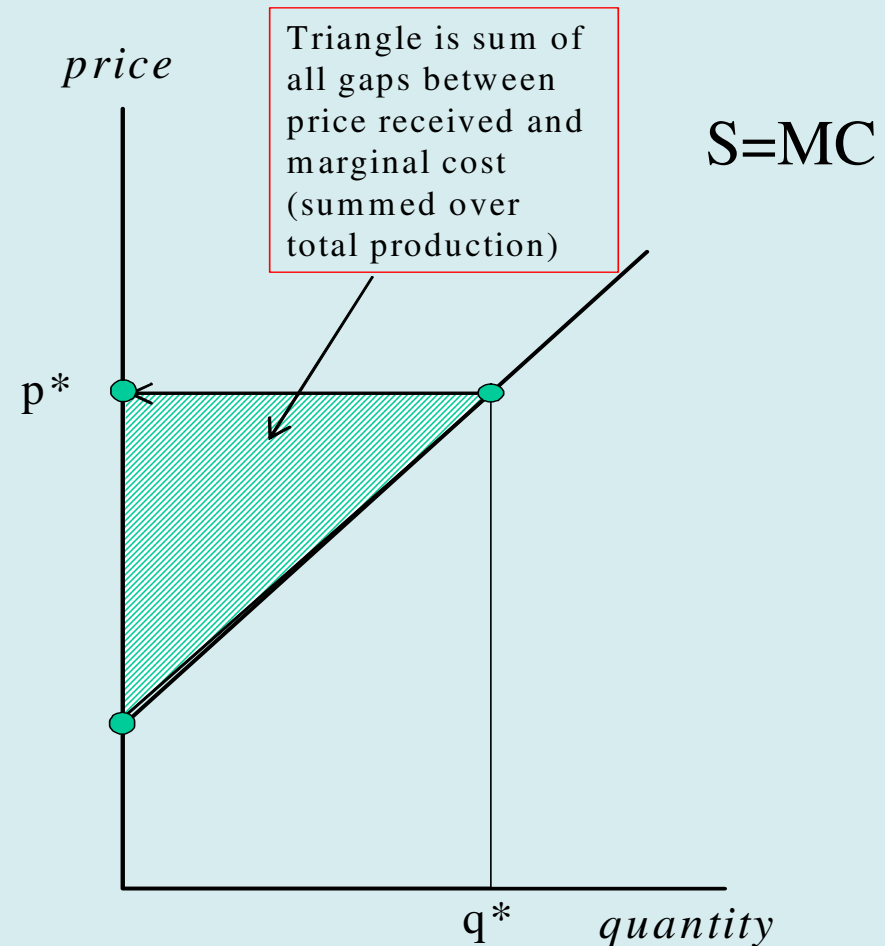
Welfare analysis: consumer surplus

- If the price falls:
 - Consumers obviously better off.
 - Consumer surplus change quantifies this intuition.
- Consumer surplus rise, 2 parts:
 - Pay less for units consumed at old price; measure of this = area A.
 - $A = \text{Price drop times old consumption.}$
 - Gain surplus on the new units consumed (those from c^* to c'); measure of this = area B.
 - $B = \text{sum of all new gaps between marginal utility and price}$



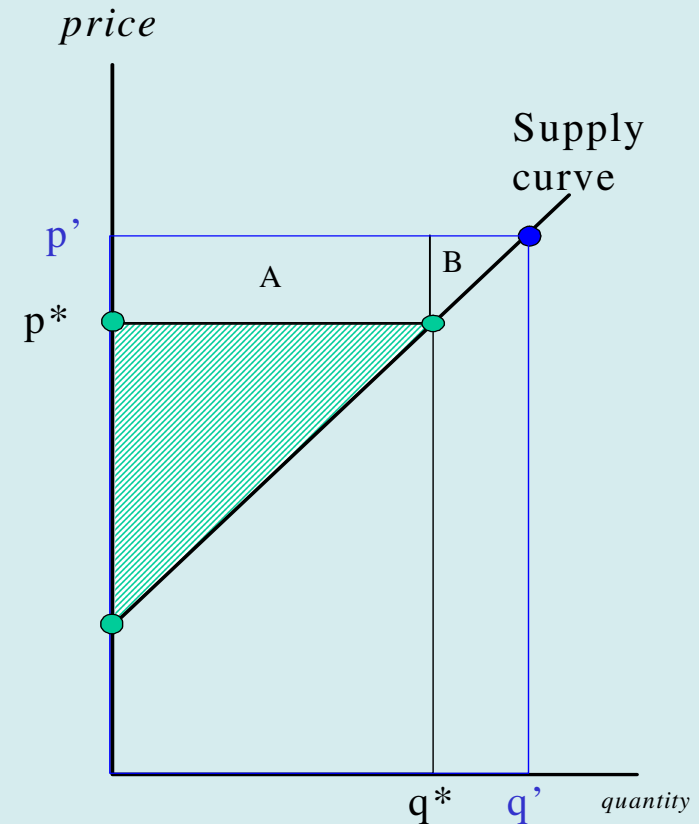
Welfare analysis: producer surplus

- Since supply curve based on marginal cost, it can be used to show how producers' well-being (welfare) is affected by changes in the price.
- Gap between marginal cost of a unit and price received shows 'surplus' from being able to sell q^* at p^* .



Welfare analysis: producer surplus

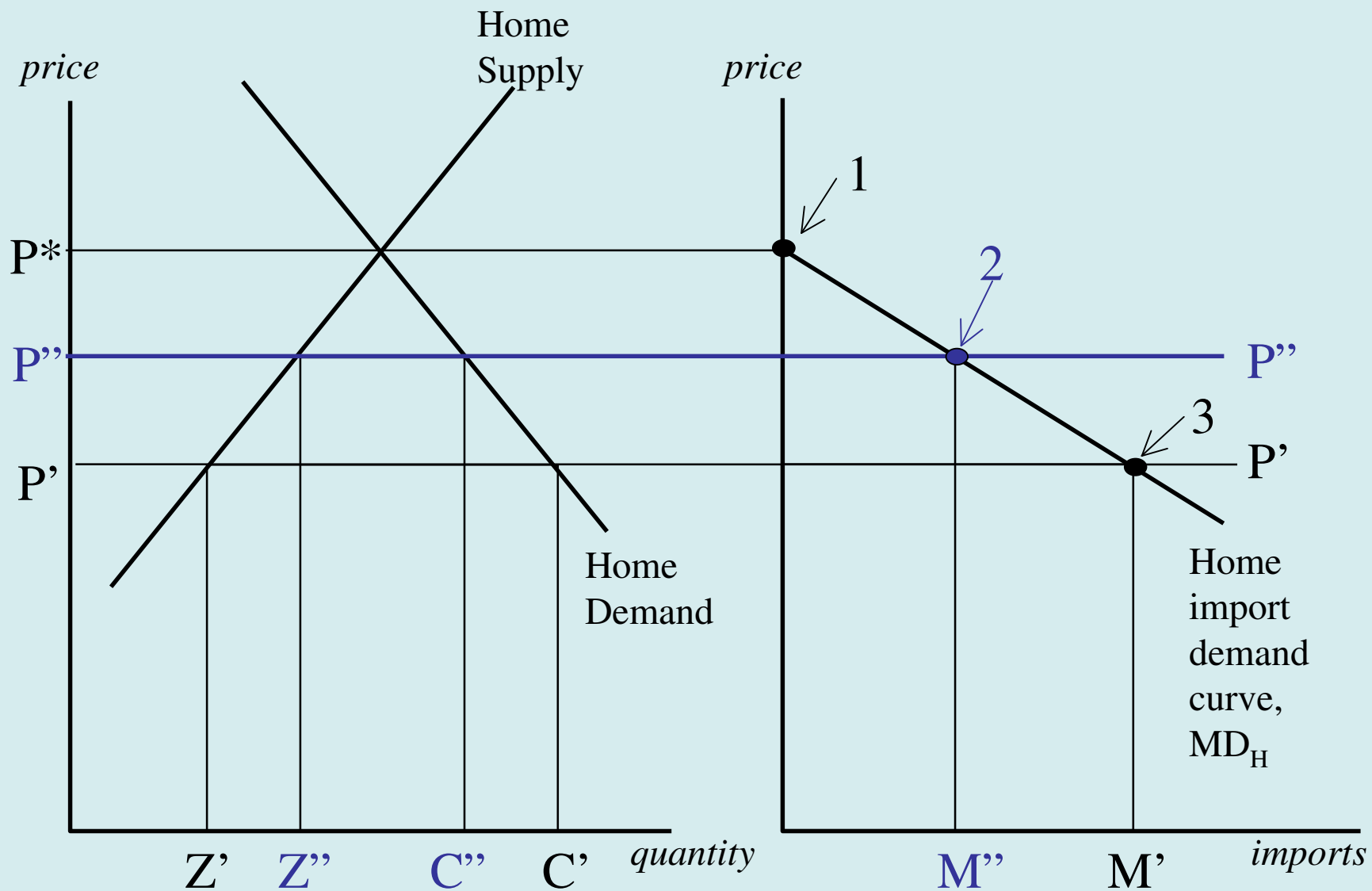
- If the price rises:
 - producers obviously better off.
 - Producer surplus change quantifies this intuition.
- producer surplus rise, 2 parts:
 - Get more for units sold at old price; measure of this = area A.
 - $A = \text{Price rise times old production.}$
 - Gain surplus on the new units sold (those from q^* to q').
 - measure of this = area B.
 - $B = \text{sum of all new gaps between marginal cost and price.}$



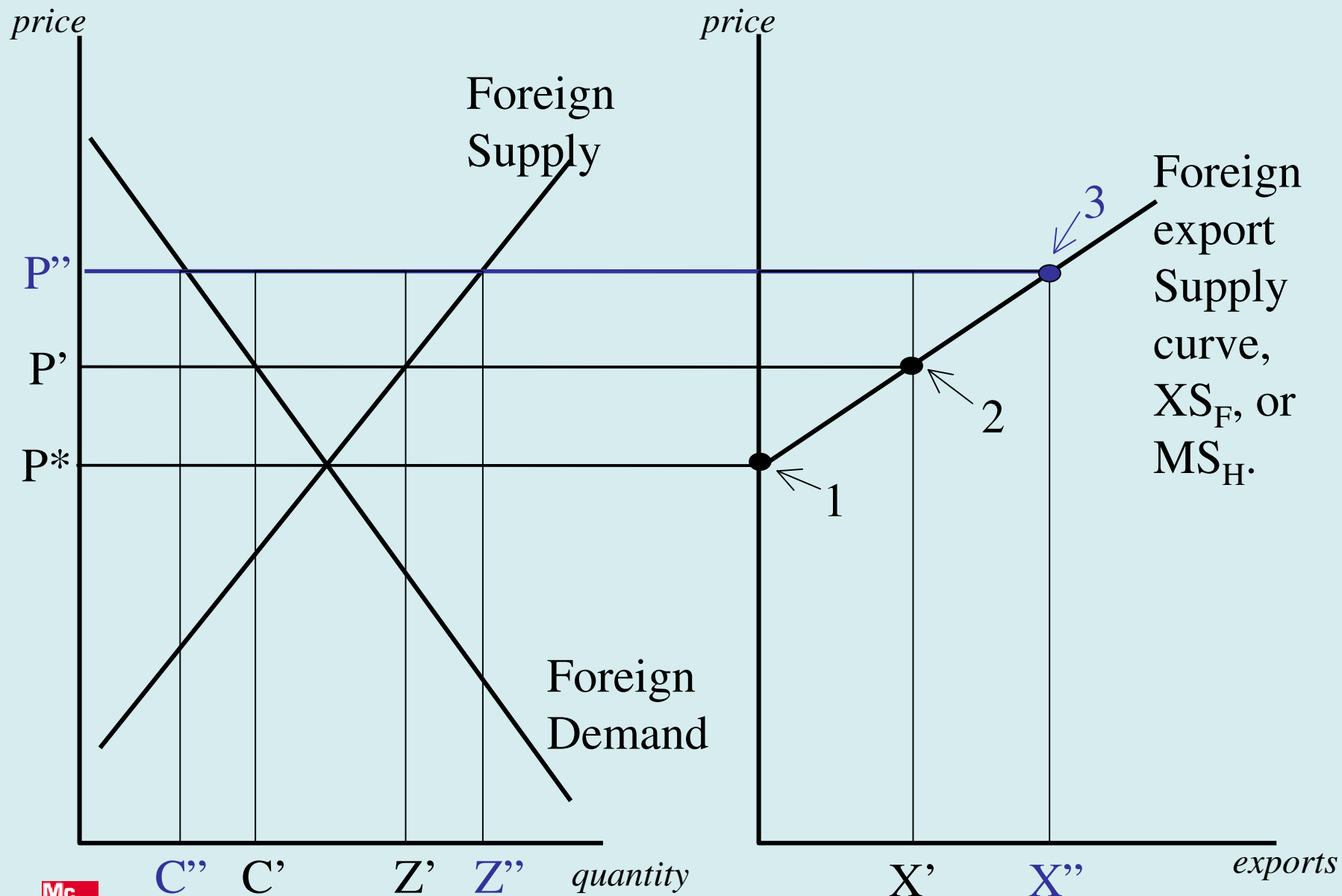
Preliminaries II

- Introduction to Open Economy Supply & Demand Analysis.
- Start with Import Demand Curve.
 - This tells us how much a nation would import for any given domestic price.
 - Presumes imports and domestic production are perfect substitutes.
 - Imports equal gap between domestic consumption and domestic production.

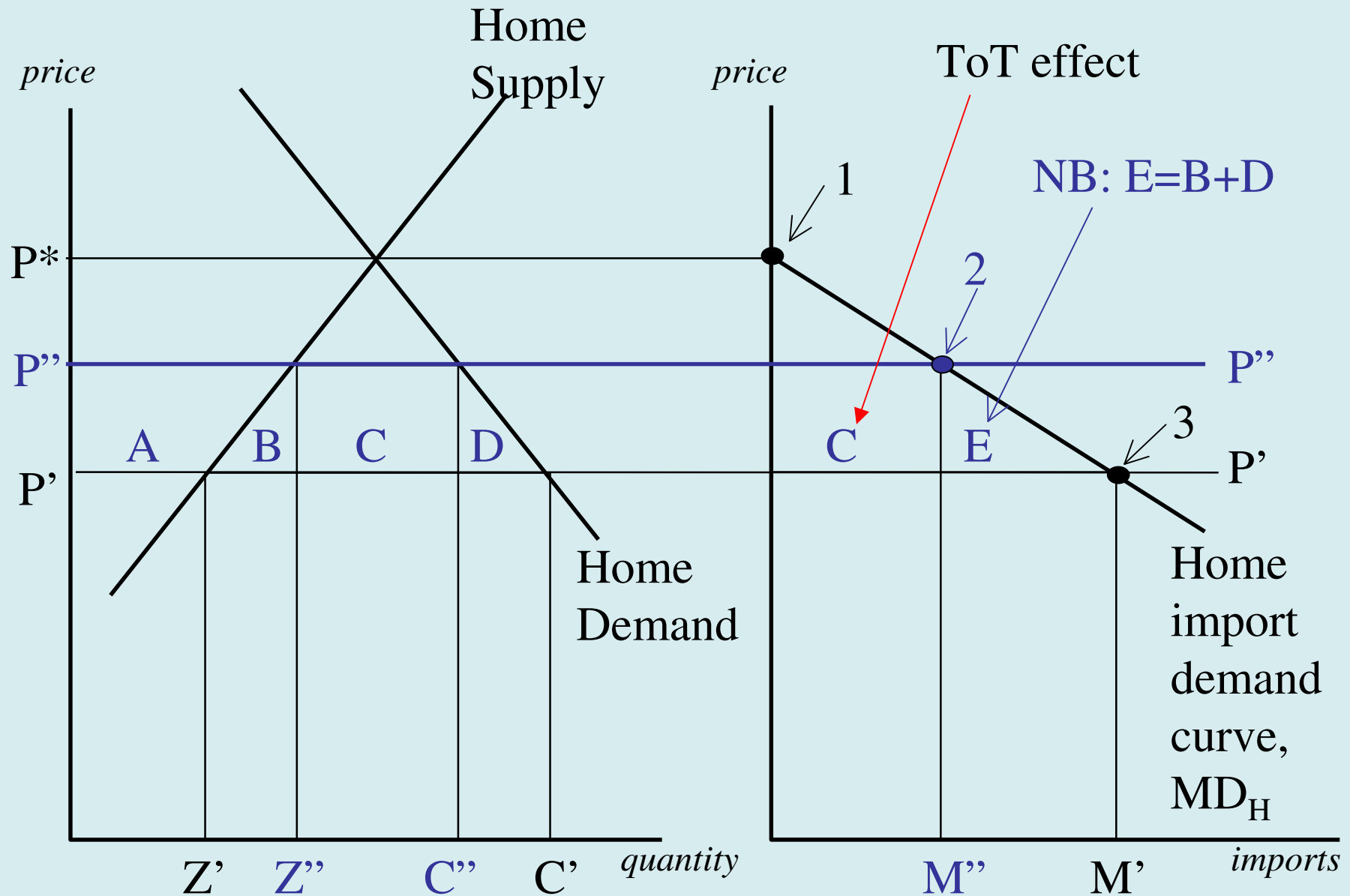
Import demand curve (MD)



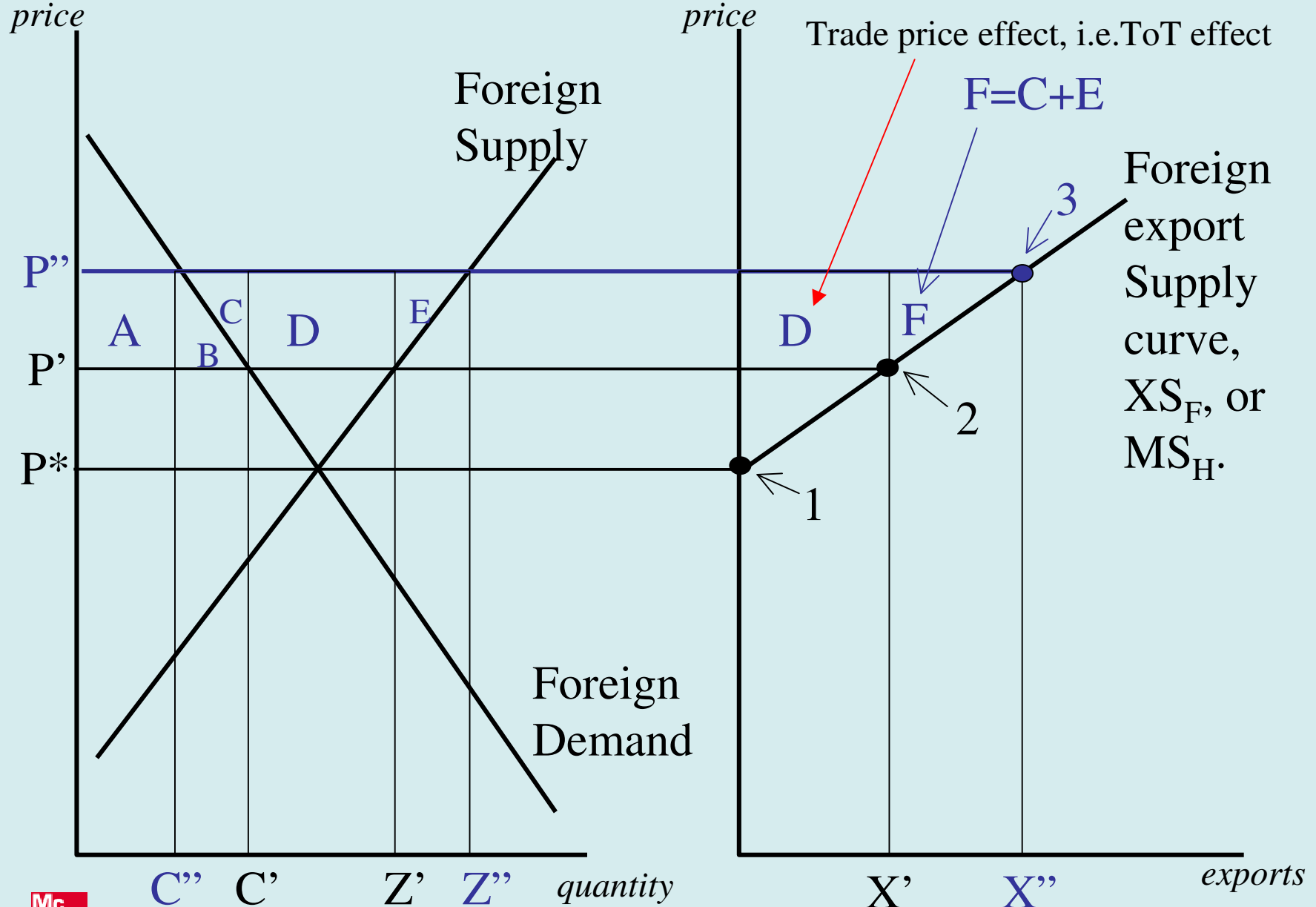
Import supply curve (MS)



Welfare & Import demand curve

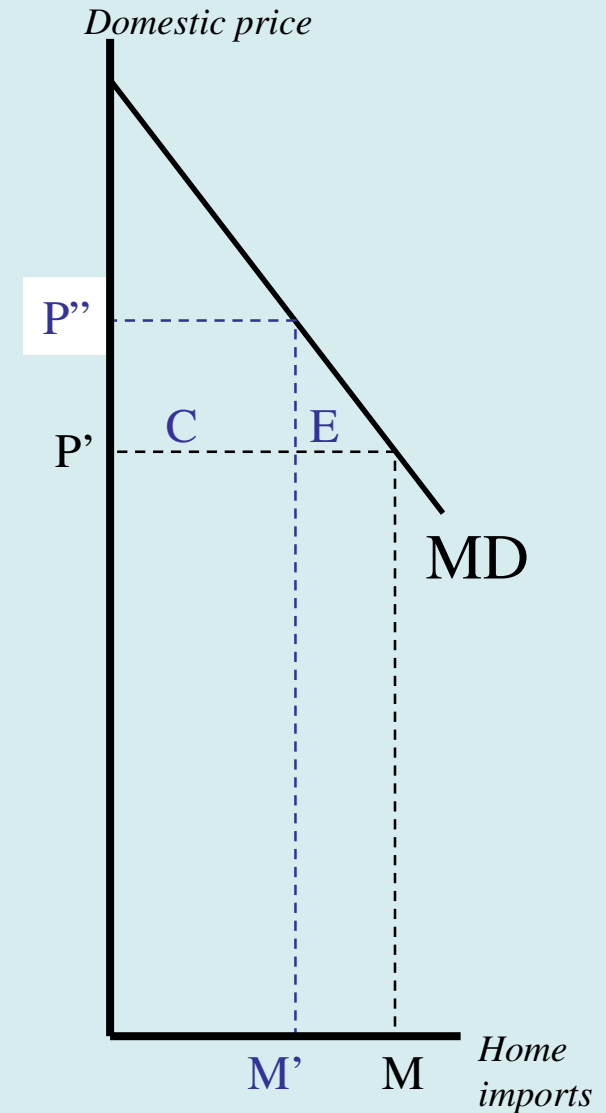


Welfare & Import supply curve



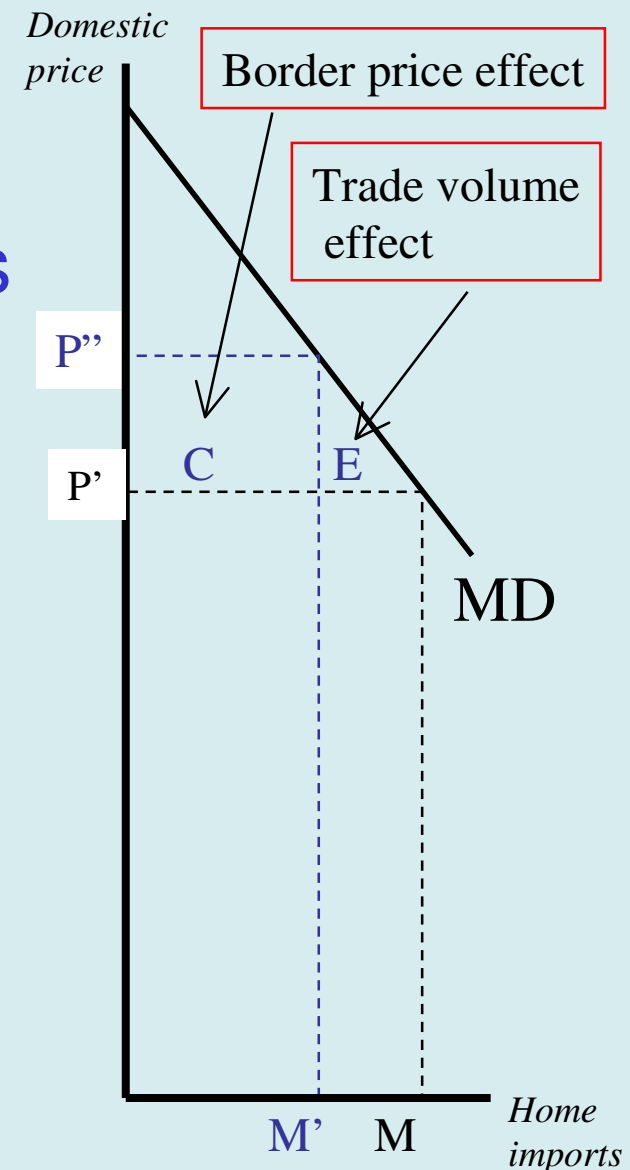
Trade volume effect & border price effect

- Decomposing Home loss from price rise, P' to P'' .
 - Area C: Home pays more for units imported at the old price.
 - Area C is the size of this loss.
 - Home loses from importing less at P'' .
 - area E measures loss.
 - marginal value of first lost unit is the height of the MD curve at M' , but Home paid P' for it before, so net loss is gap, P' to MD.
 - adding up all the gaps gives area E.



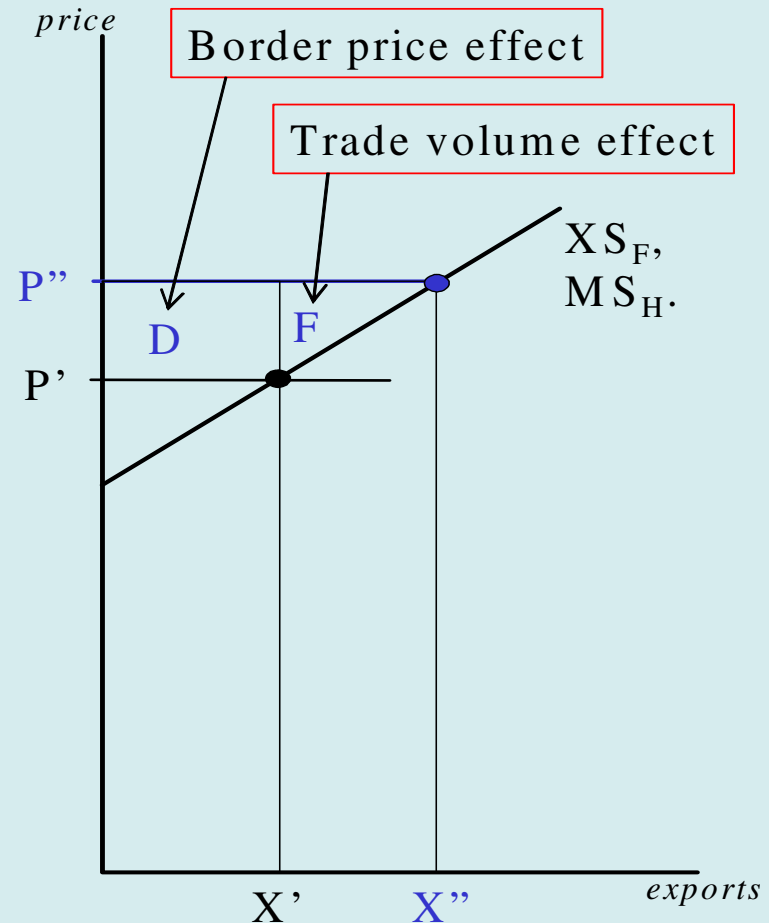
Trade volume effect & border price effect

- Systematic net welfare analysis using the price and quantity effects:
- “border price effect” (area C), and the “import volume effect” (area E).
 - Very useful in more complex diagrams.



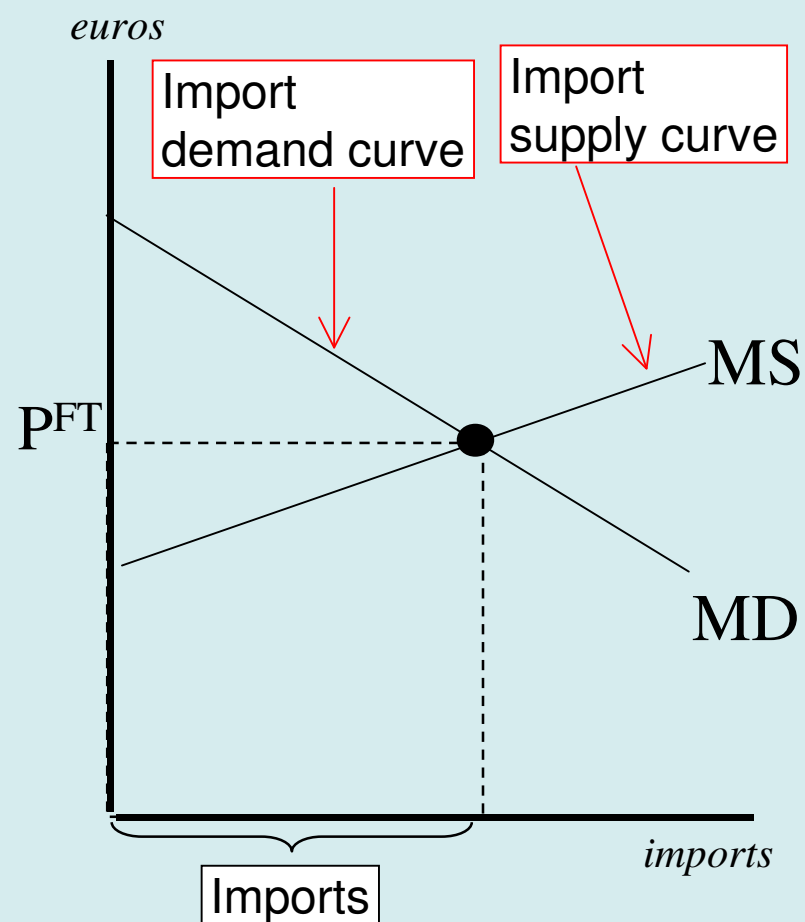
Trade volume effect & border price effect

- Can do same for Foreign gain rise, P' to P'' .
 - Foreign gains from getting a higher price for the goods it sold before at P' (border price effect), area D.
 - And gains from selling more (trade volume effect), area F.



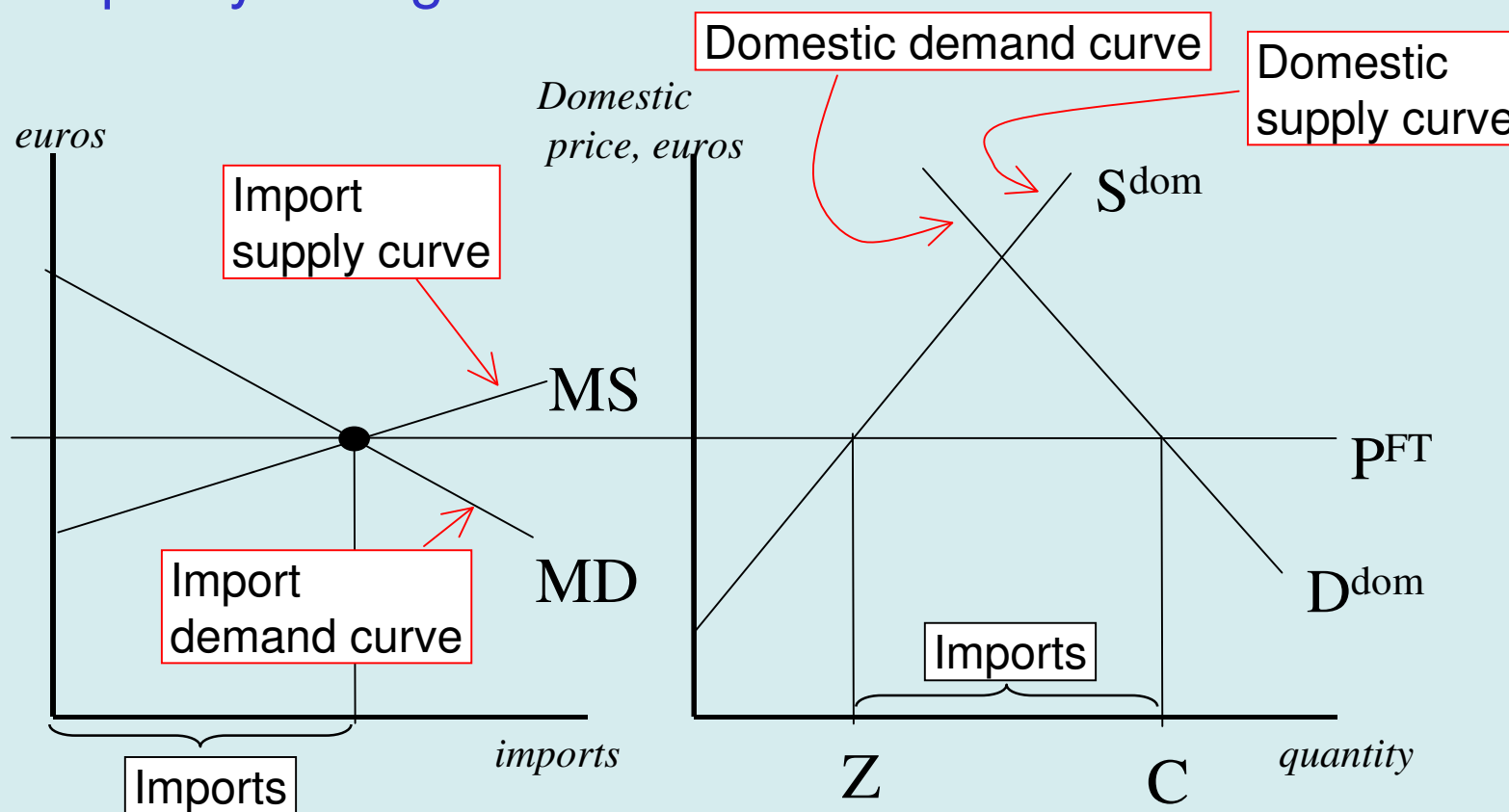
The Workhorse: MD-MS Diagram

- Diagram very useful.
 - easy identification of price and volume effects of a trade policy change.
- Welfare change likewise easy.



MD-MS + open econ. supply & demand

- MD-MS diagram can be usefully teamed with open economy supply and demand diagram.
- Permits tracking domestic & international consequences of a trade policy change.

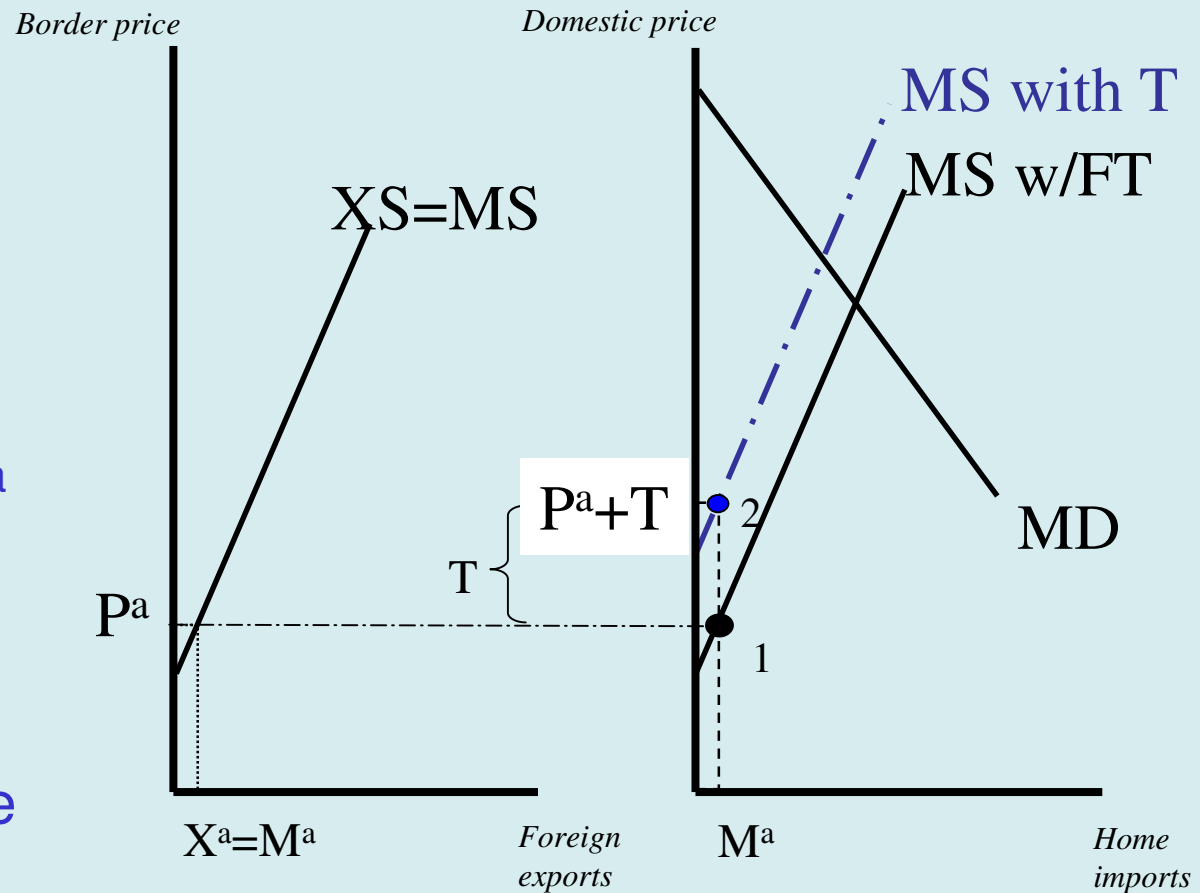


MFN Tariff Analysis

- 1st step: determine how tariff changes prices and quantities.
 - suppose tariff imposed equals T euros per unit.
 - Small country ‘fiction’.
- Tariff shifts MS curve up by T .
 - Exporters would need a domestic price that is T higher to offer the same exports.
 - Because they earn the domestic price minus T .

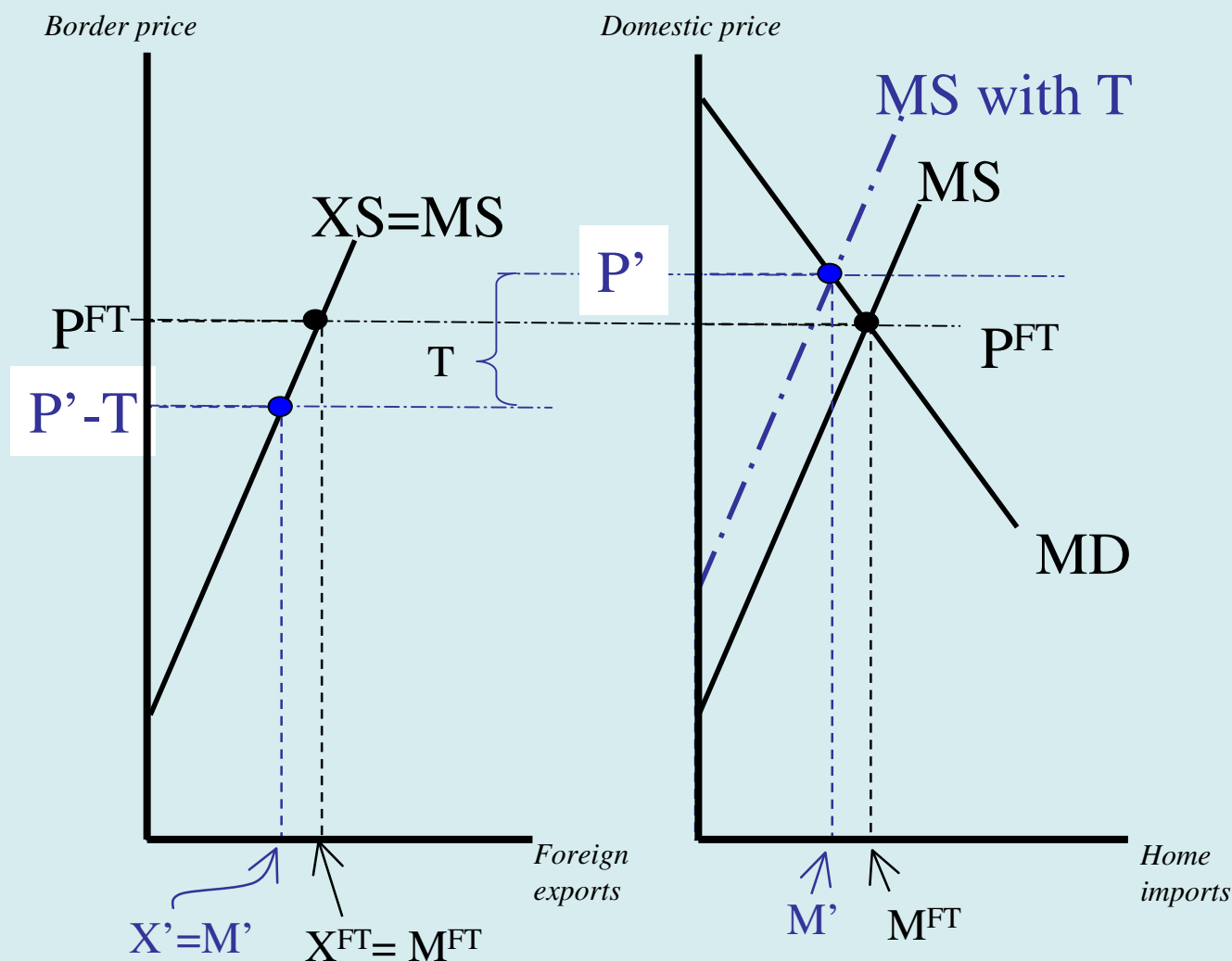
MFN Tariff Analysis

- For example, how high would domestic price have to be in Home for Foreigners to offer to export M^a to Home?
 - Answer is $P^a + T$, so Foreigners would see a price of P^a .



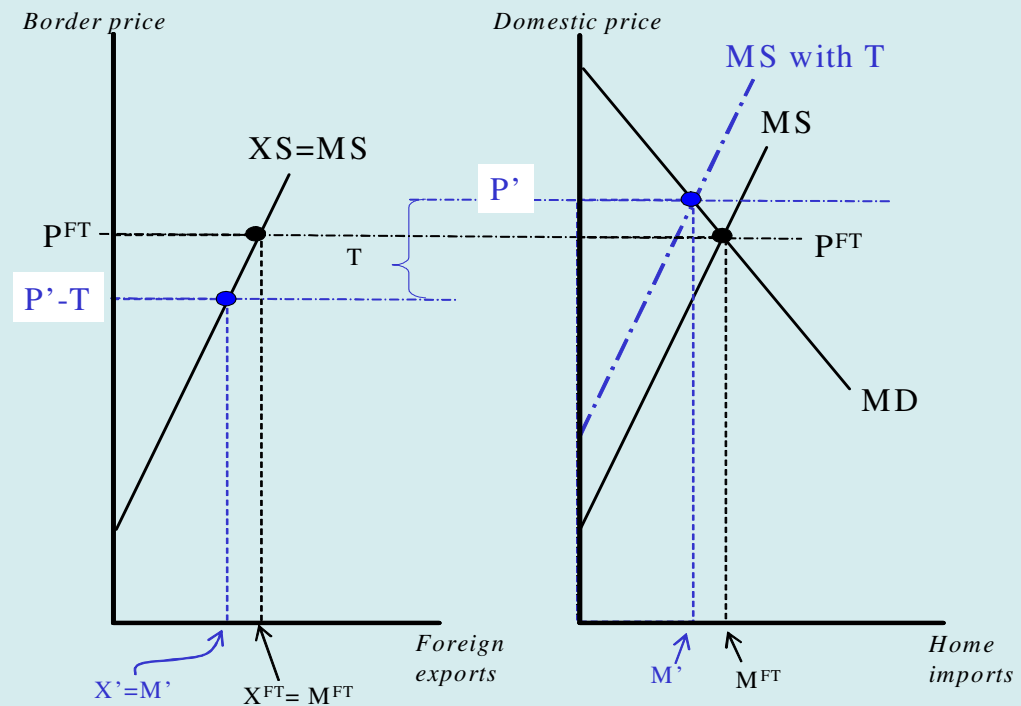
MFN Tariff Analysis

- New equilibrium in Home ($MD=MS$ with T) is with P' and M' .
- Domestic price now differs from border price (price exporters receive).
- P' vs $P'-T$.



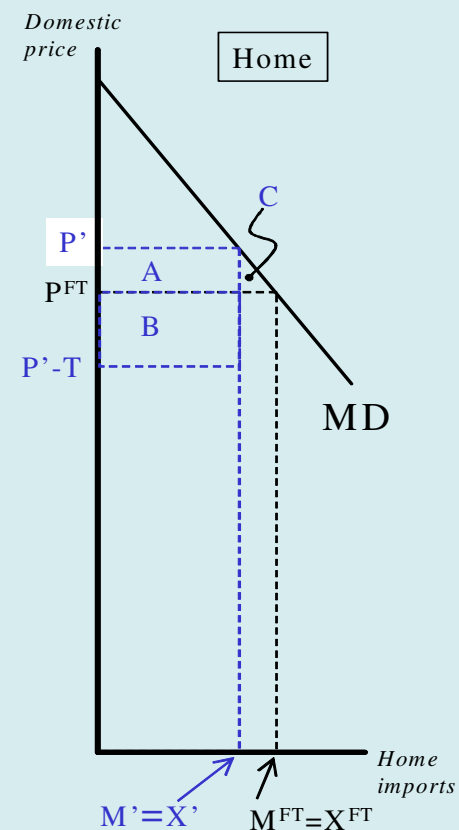
Positive effects

- Domestic price rises.
- Border price falls.
- Imports fall.
- Can't see in diagram:
 - Domestic consumption falls.
 - domestic production rises.
 - Foreign consumption rises.
 - Foreign production falls.
- Could get this in diagram by adding open economy S & D diagram to right.



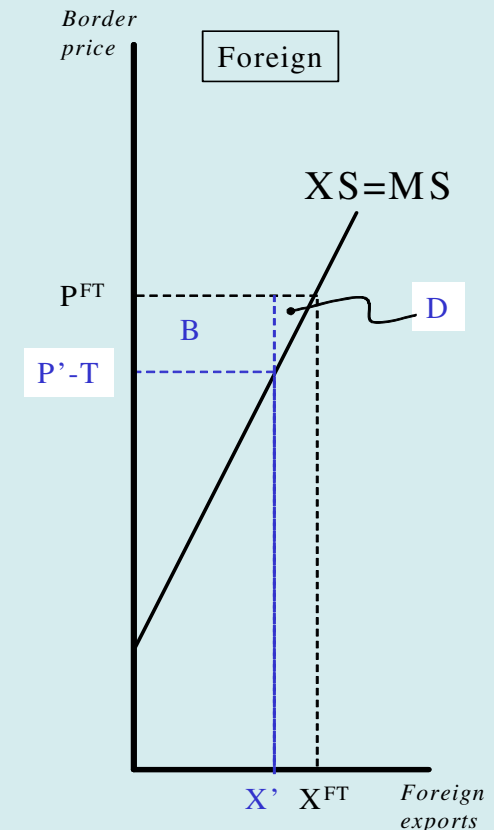
Welfare effects: Home

- Drop in imports creates loss equal area C. (Trade volume effect).
- Drop in border price creates gain equal to area B. (Border price effect, i.e. ToT effect).
- Net effect on Home = $-C+B$.
- ALTERNATIVELY:
 - Private surplus change (sum of change in producer and consumer surplus) equal to minus $A+C$.
 - Increase in tariff revenue equal to $+A+B$.
- Same net effect, $B-C$ (but less intuition).



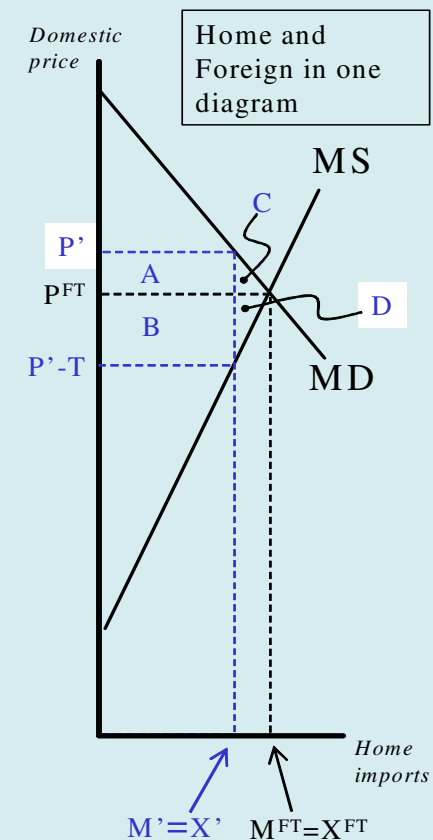
Welfare effects: Foreign

- Drop in exports creates loss equal area D
 - (Trade volume effect).
- Drop in border price creates loss equal to area B.
 - (Border price effect, a.k.a., ToT effect).
- Net effect on Foreign = $-D-B$.
- ALTERNATIVELY:
 - Private surplus change (sum of change in producer and consumer surplus) equal to minus $-D-B$.
 - Same net effect, $B-C$ (but less intuition).



Welfare effects: useful compression

- In cases of more complex policy changes useful to do Home and Foreign welfare changes in one diagram.
- MS-MD diagram allows this:
 - Home net welfare change is $-C+B$.
 - Foreign net welfare change is $-D-B$.
 - World welfare change is $-D-C$.
- NB: if Home gains ($-C+B > 0$) it is because it exploits foreigners by 'making' them to pay part of the tariff (i.e. area B).
- Notice similarity with standard tax analysis.

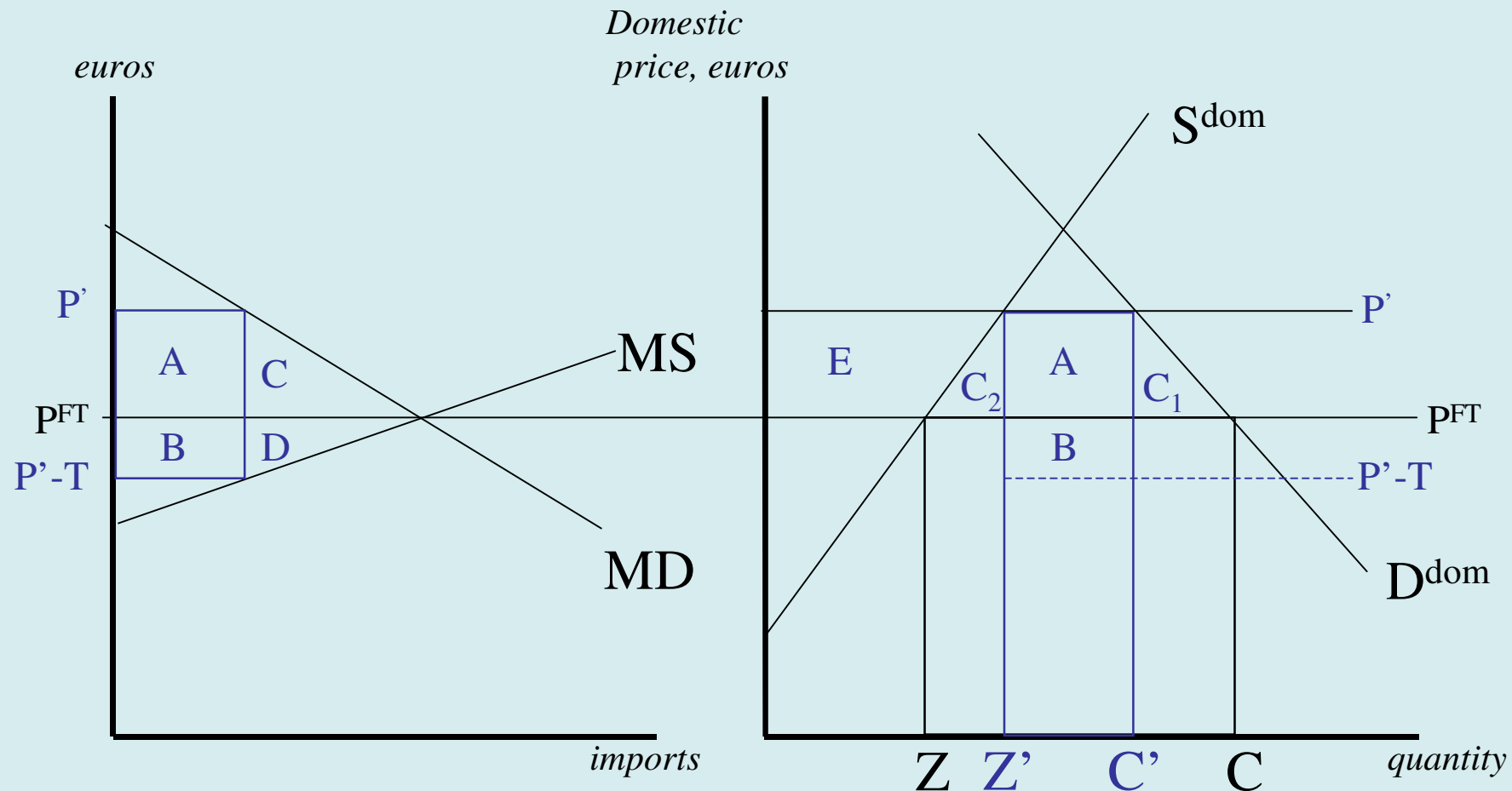


Distributional consequences: Home

- Trade protection imposed mainly due to politically considerations raised by distributional consequences.
- Thus important for some purposes to see domestic consequences of trade policy change.
- For this, add the open economy supply & demand diagram to the right of the MD-MS diagram.
 - MD-MS diagram tells us the price and quantity effects of trade policy change.
 - Open-economy S&D tells us the domestic distributional consequences.

Distributional consequences: Home

- Home consumers lose, area $E+C_2+A+C_1$; Home producers gain E , Home tariff revenue rises by $A+B$.
 - net change = $B-C_2+-C_1$ (this equals $B-C$ in left panel).



A typology for trade barriers

- Many ways to categorise trade barriers.
- A useful 3-way categorisation.
- Focuses on 'rents' i.e. who earns the gap between domestic and border price?
 - DCR (domestically captured rents) e.g. tariff, import licence.
 - FCR (foreign captured rents), price undertakings, export taxes.
 - Frictional (no rents since barriers involve real costs of importing/exporting), e.g.. Swedish wipers on headlights, paper recycling for carton boxes.

A typology for trade barriers

- Net Home welfare changes for:
 - DCR = $B - C$
 - FCR = $-A - C$
 - Frictional = $-A - C$
- Net Foreign welfare changes for:
 - DCR = $-B - D$
 - FCR = $+A - D$
 - Frictional = $-B - D$
- Note: foreign may gain from FCR.

