University of Bamberg

Theory and Politics of European Integration

Lecture 3: Economics of Trade and Preferential Trade Liberalization

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Last Lecture

- **Decisionmaking**
  - Efficient Allocation of Tasks
  - Subsidarity
  - Theory of Fiscal Federalism
  - “Three Pillar” structure of EU
  - Voting rules
  - Treaty of Nice
  - Constitutional Treaty
  - Efficiency of Decisionsmarking: Ability to Act
    + Passage Probability and Blocking Coalitions
  - Power Distribution
    + Power to break: the Normalized Banzhaf Index (NBI)
  - Fairness of Decisionmaking: The Square Root Rule

Last Lecture (cont.)

- **EU Institutions**
  - Facts: income heterogeneity and trade links
  - EU law: Rome Treaty and other Treaties
  - The “Big-5” Institutions:
    + European Council
    + Council of Ministers
    + European Commission
    + EU Parliament
    + EU Court of Justice
  - Budget
    + structure of expenditure
    + funding and net contributions by members

Today's Lecture - Overview

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- **Microeconomics of Trade and Tariffs**
  - Preliminaries: Marginal Supply and Demand Analysis
  - Consumer and Producer Surplus, Welfare Analysis
  - Import Demand and Supply Curve
  - Trade Volume and Border Price Effects
  - Workhorse model: MS-MD Diagram
  - MFN Tariff Analysis
- **Preferential Trade Liberalisation**
  - Preferential Trade Area Diagram
  - Discriminatory trade liberalisation
  - Welfare analysis of Custom Unions
  - Frictional trade barriers

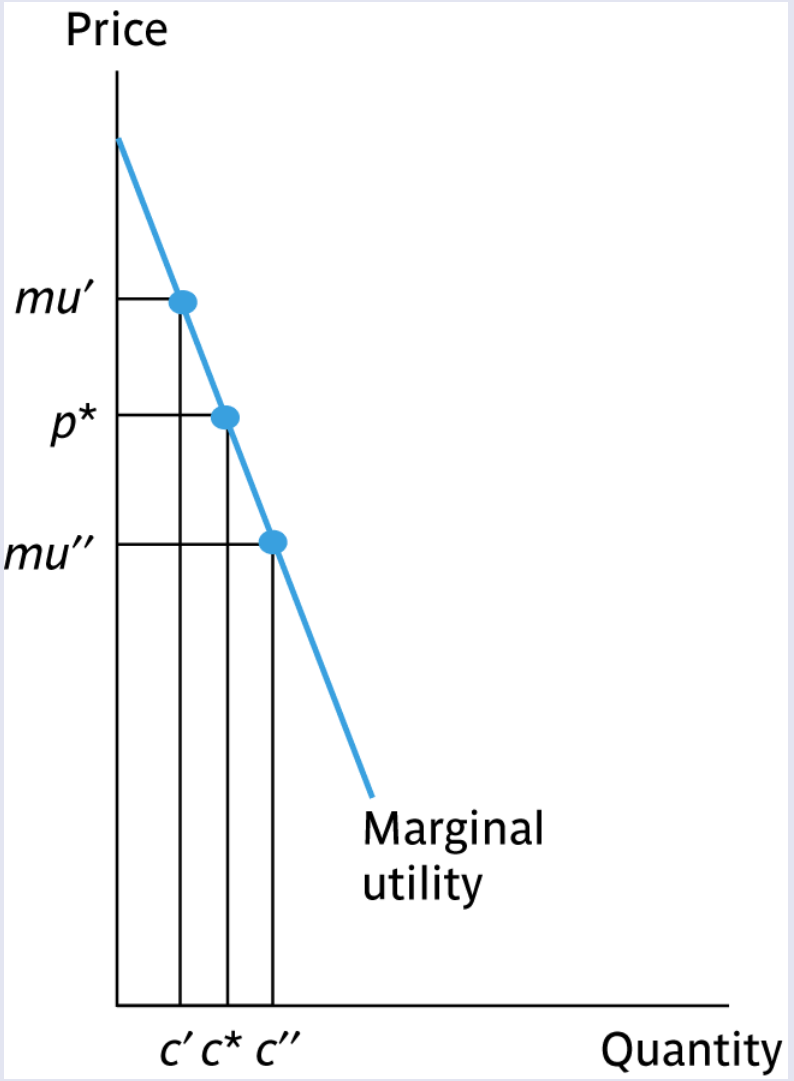
Today's Reading

- **Microeconomics of Trade and Tariffs**
  - Baldwin & Wyplosz (2009/12) “The Economics of European Integration”, McGraw-Hill, Ch 4.
- **Preferential Trade Liberalisation**
  - Baldwin & Wyplosz (2009/12) “The Economics of European Integration”, McGraw-Hill, Ch 5.

Microeconomics of Trade and Tariffs

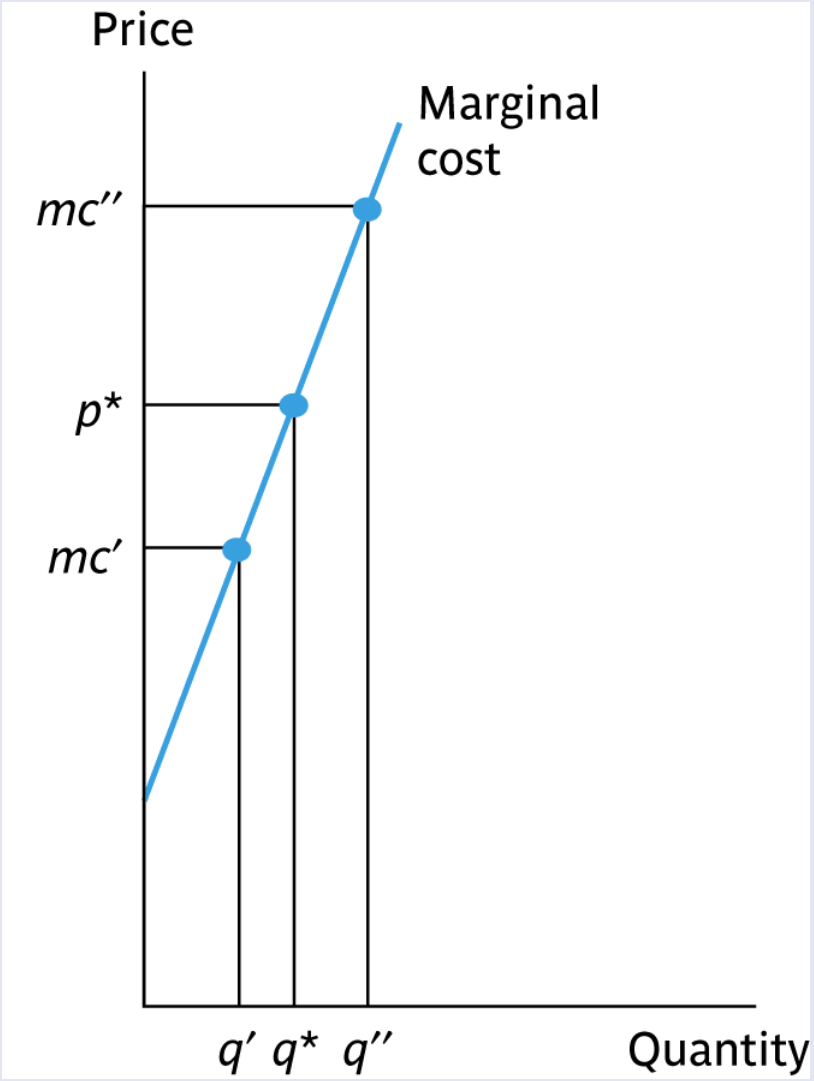
Preliminaries I: supply and demand

- Demand curve shows how much consumers would buy of a particular good at any particular price.
- It is based on optimization exercise: would one more unit be worth (marginal utility) its price?
- Market demand is aggregated (horizontal sum) over all consumers' demand curves.



Preliminaries I: supply and demand

- Supply curve shows how much firms would offer to the market at a given price.
- It is based on optimization exercise: would selling one more unit increase profit?
- Market supply is aggregated (horizontal sum) over all firms' supply curves.



Welfare analysis: consumer and producer surplus

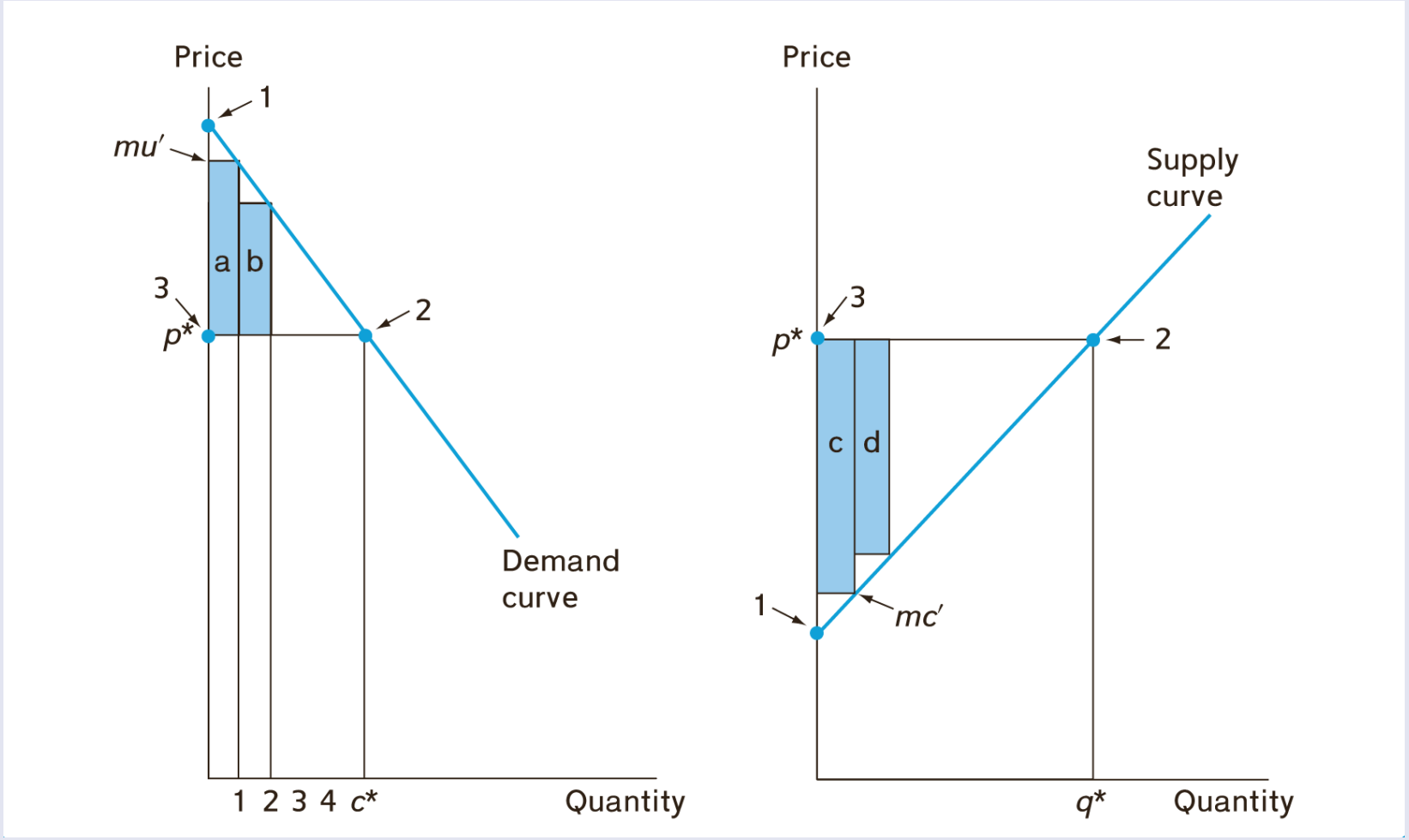
- Since demand curve is based on marginal utility and supply curve is based on marginal cost, they can be used to show how consumers and firms are affected by price changes.

- Difference between marginal utility of a unit and price paid shows the surplus consumers obtain from being able to buy c* units at p*. If units are finely defined, consumer surplus is the triangle between demand curve and price paid.

- Difference between marginal cost of a unit and price received shows the surplus producers obtains from being able to sell c* units at p*. If units are finely defined, producer surplus is the triangle between marginal cost curve and price received.

- Notice that a price rise increases producer surplus and decreases consumer surplus. A price drop does the opposite.

Welfare analysis: consumer and producer surplus

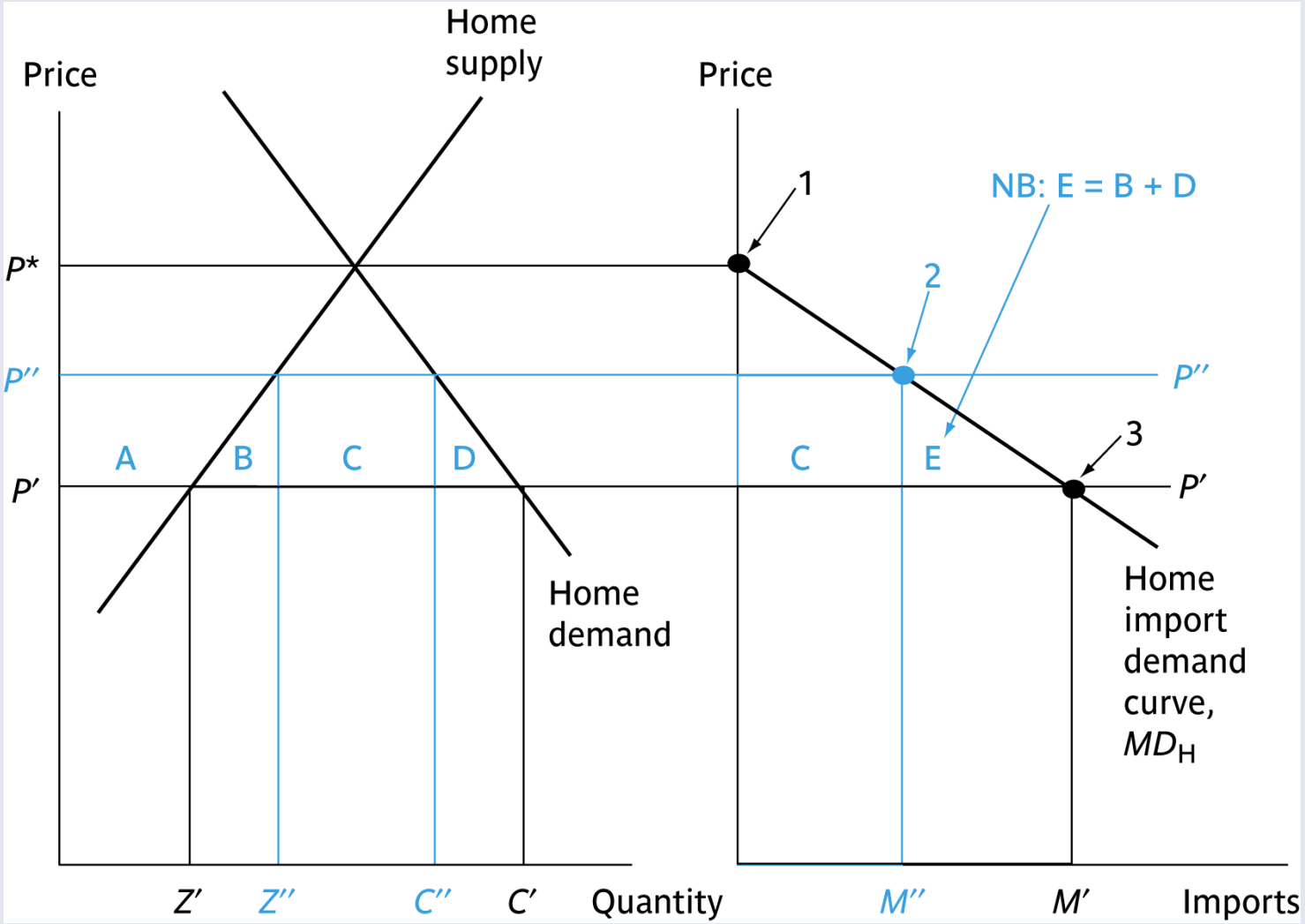


Preliminaries II: import demand curve

- Open-economy supply and demand diagram: essential for studying European economic integration.

- Import demand curve:
  - it represents how much a nation would import for any given domestic price;
  - it presumes imports and domestic production are perfect substitutes;
  - imports equal the gap between domestic consumption and domestic production.

Preliminaries II: import demand curve

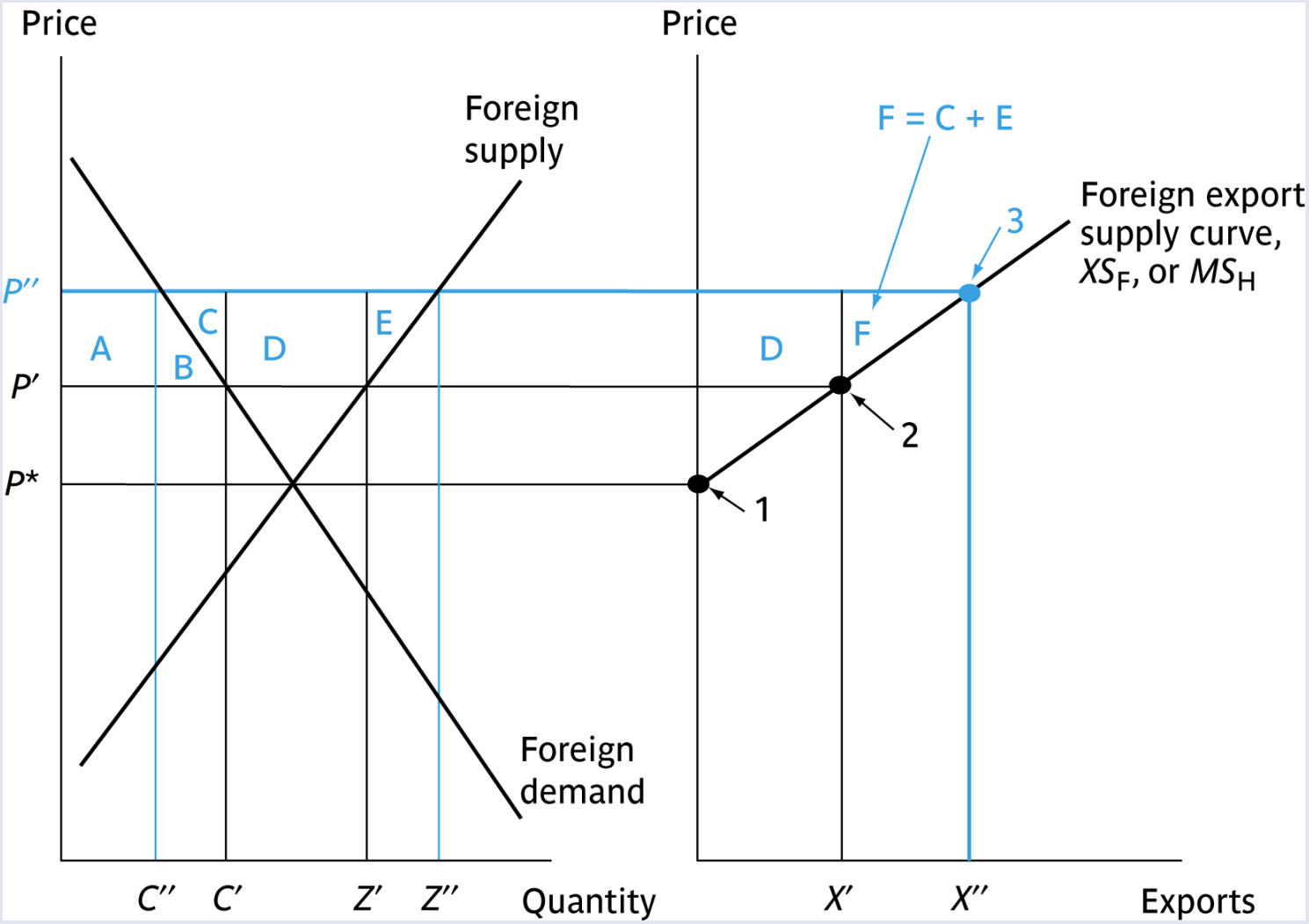


Preliminaries II: import demand curve

- What happens if price increases from P′ to P″? The previous graph shows that:
  - consumer surplus decreases by A + B + C + D;
  - producer surplus increases by A;
  - country net loss is B + C + D = C + E.

- Notice that:
  - area C is the **border price effect** = higher price for imported units;
  - area E (= B + D) is the **import volume effect** = loss from drop in imports.

Preliminaries II: export supply curve



Preliminaries II: export supply curve

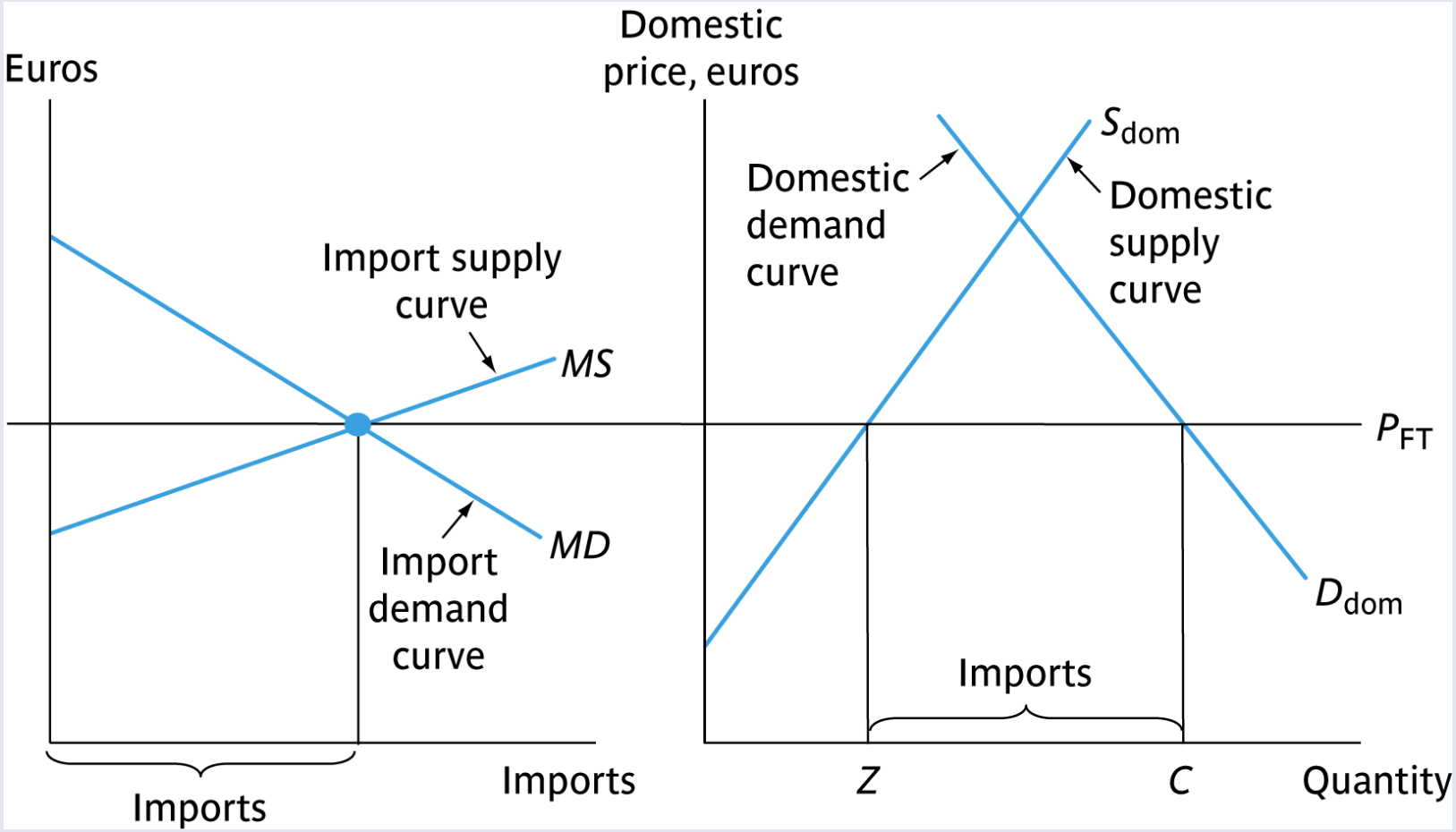
- Export supply curve (from foreign countries) = import supply curve: it represents how much foreign countries would export for any given domestic price.

- What happens if export price increases from P′ to P″? The following graph shows that:
  - consumer surplus decreases by A + B;
  - producer surplus of foreign firms increases by A + B + C + D + E;
  - foreign country net gain is C + D + E = D + F.

- Notice that:
  - area D is the **border price effect** = higher price for exported units;
  - area F (= C + E) is the **trade volume effect** = gain from increase in exports.

The workhorse diagram: MD-MS

Import supply curve and import demand curve allow us to find equilibrium price and quantity of imports.

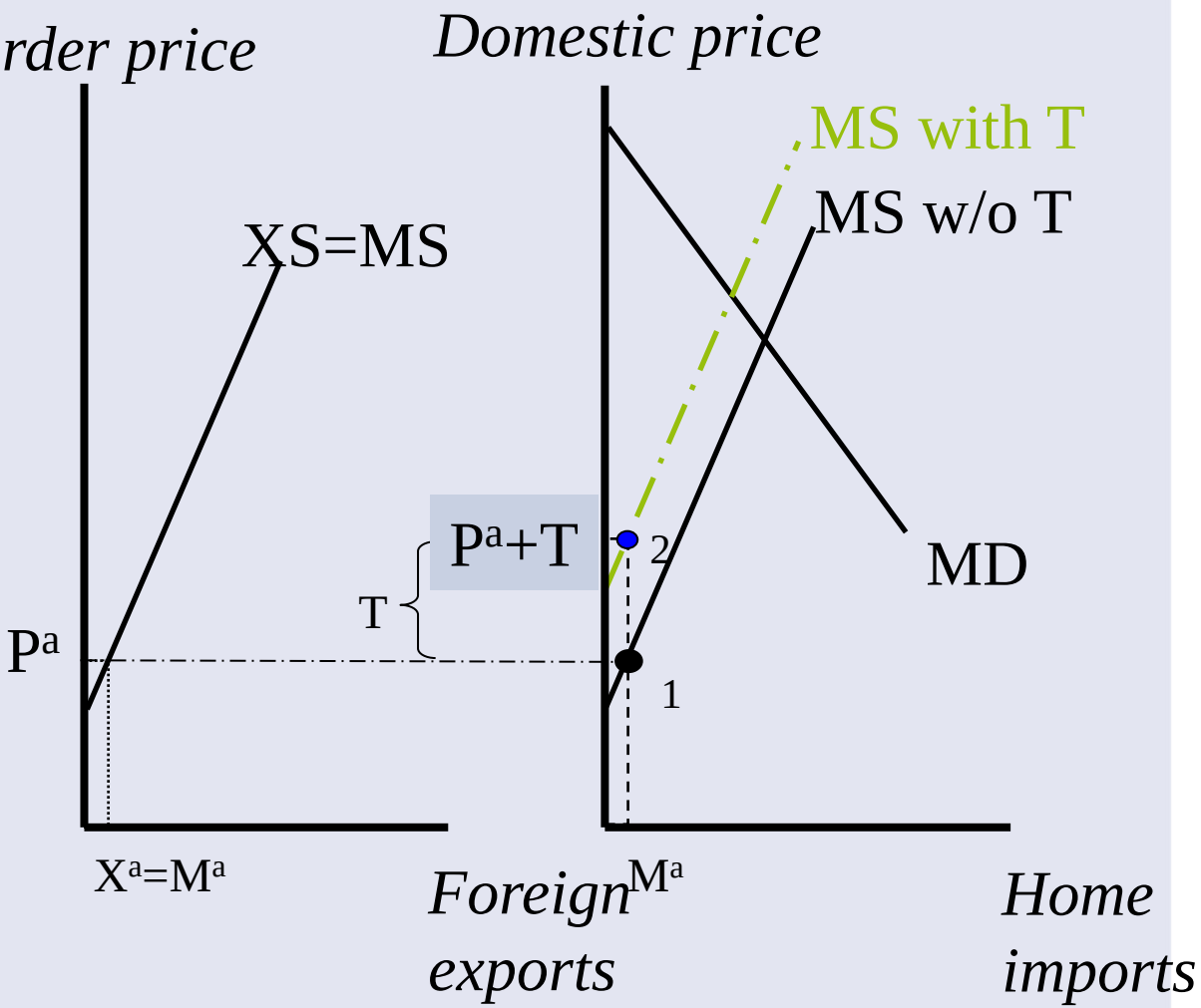


MFN Tariff Analysis

- What is the effect of the introduction of a tariff of T euros per unit?
- 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.
- Work out how the tariff changes the MD–MS diagram:
  - introduction of tariff has no effect on MD;
  - introduction of tariff shifts MS curve up by T: exporters would need a domestic price that is T higher to offer the same exports since they earn the domestic price minus T.

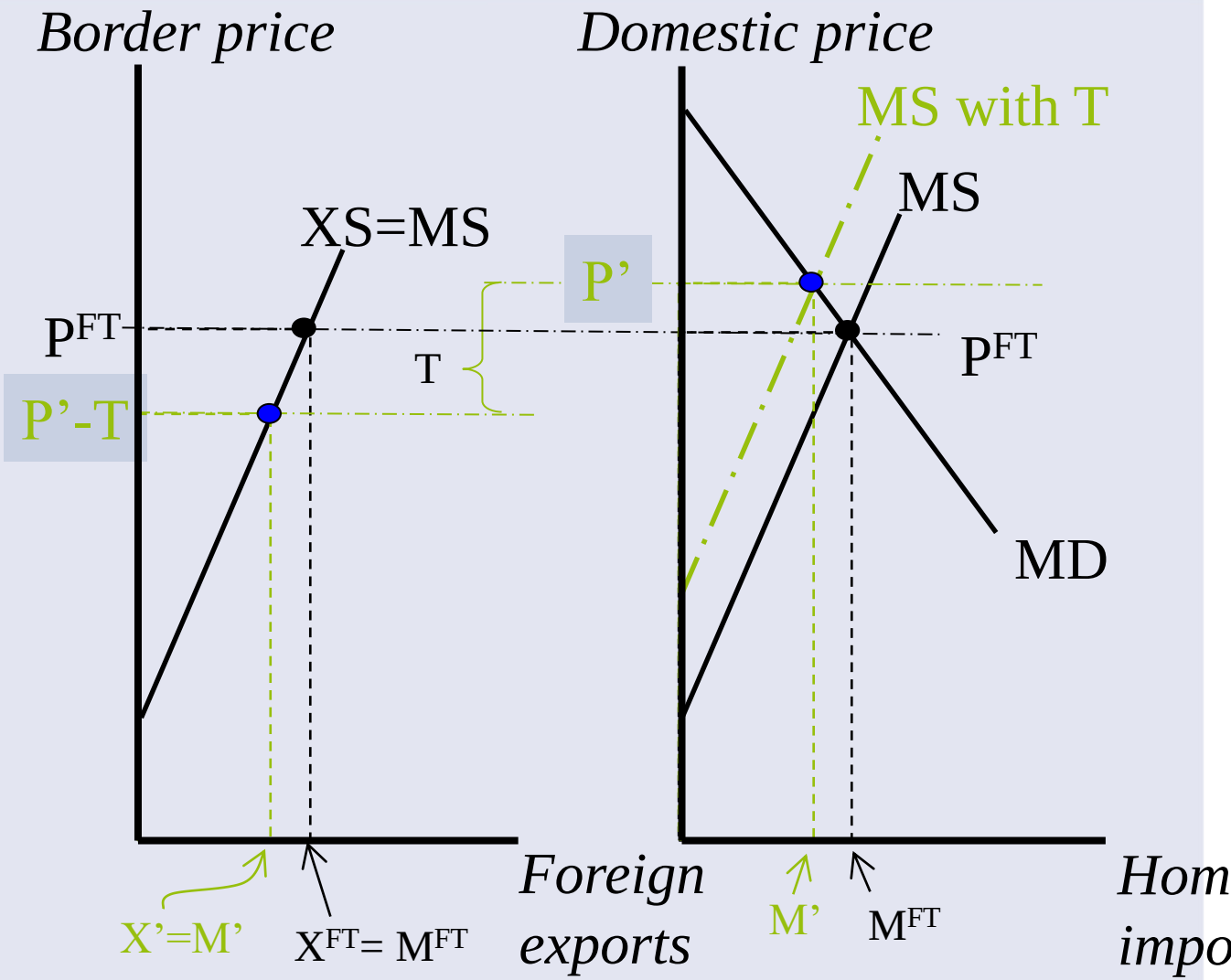
MFN Tariff Analysis

- 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 before tariff
  - Answer is P^a+T, so Foreigners would see a price of P^a after tariff



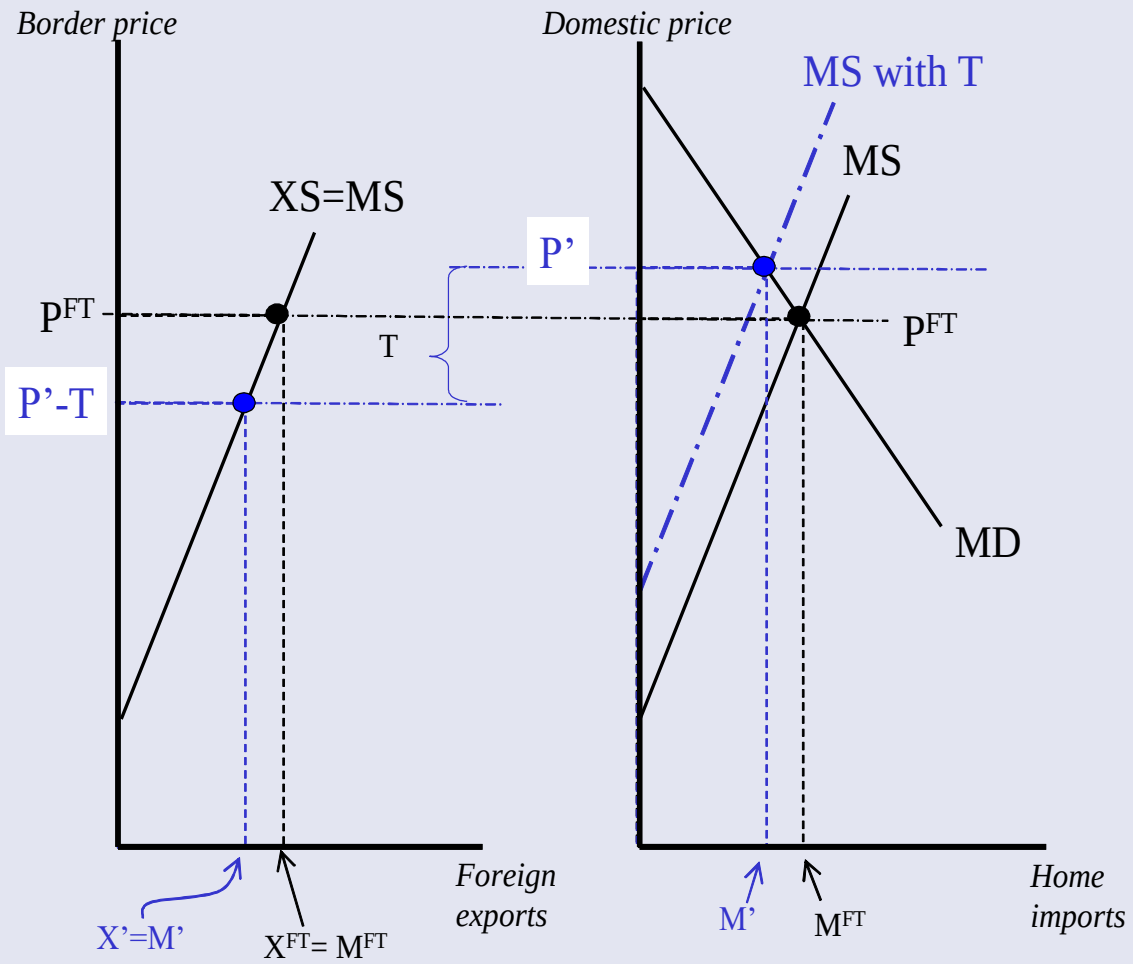
MFN Tariff Analysis

- 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.



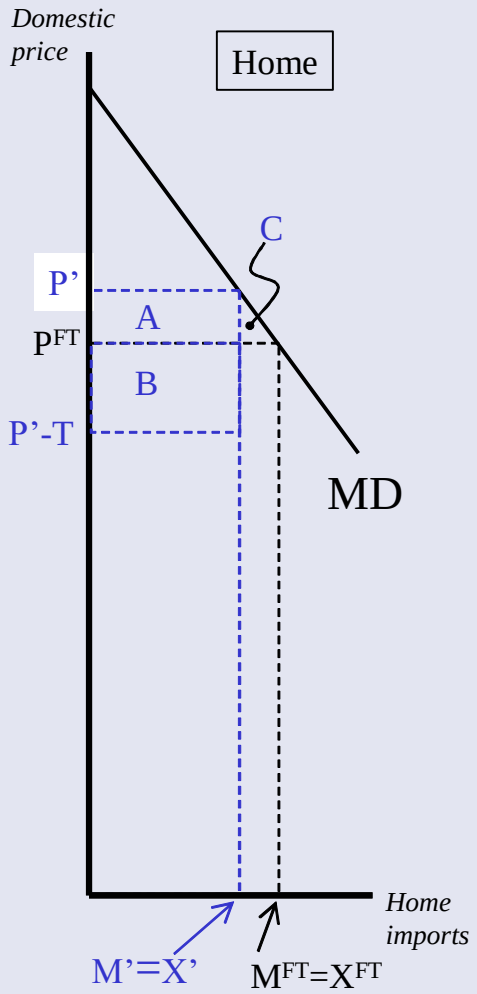
Price and Quantity Effects of a MFN tariff

- 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.



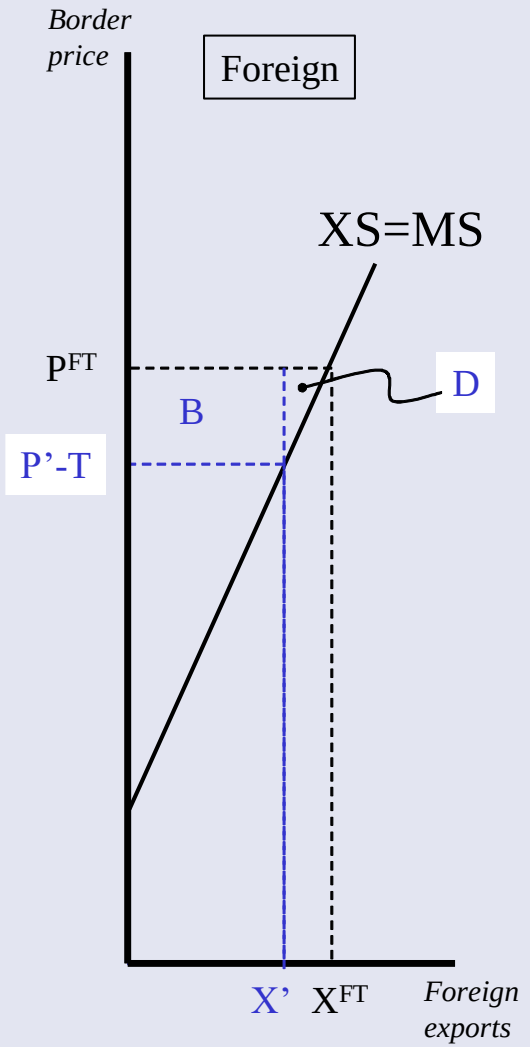
Welfare Effects: Home

- 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 = B-C.
- 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).



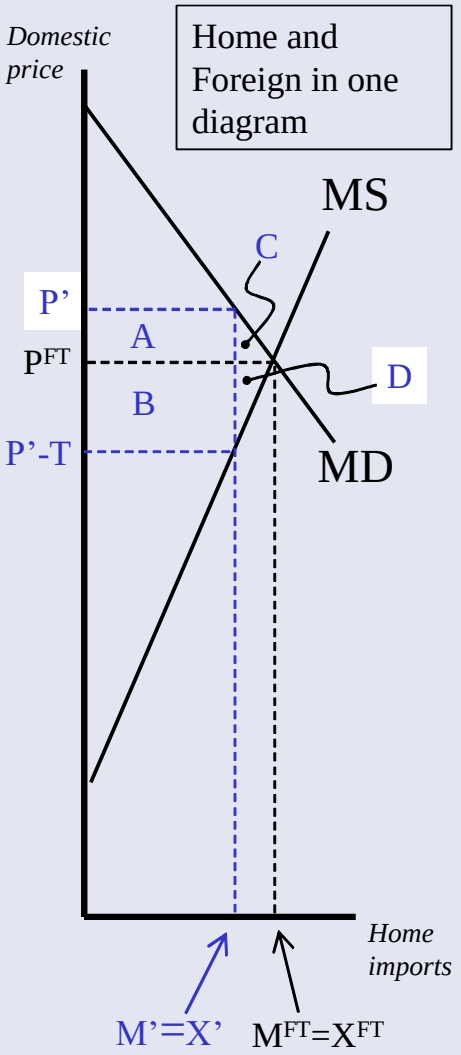
Welfare Effects: Foreign

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

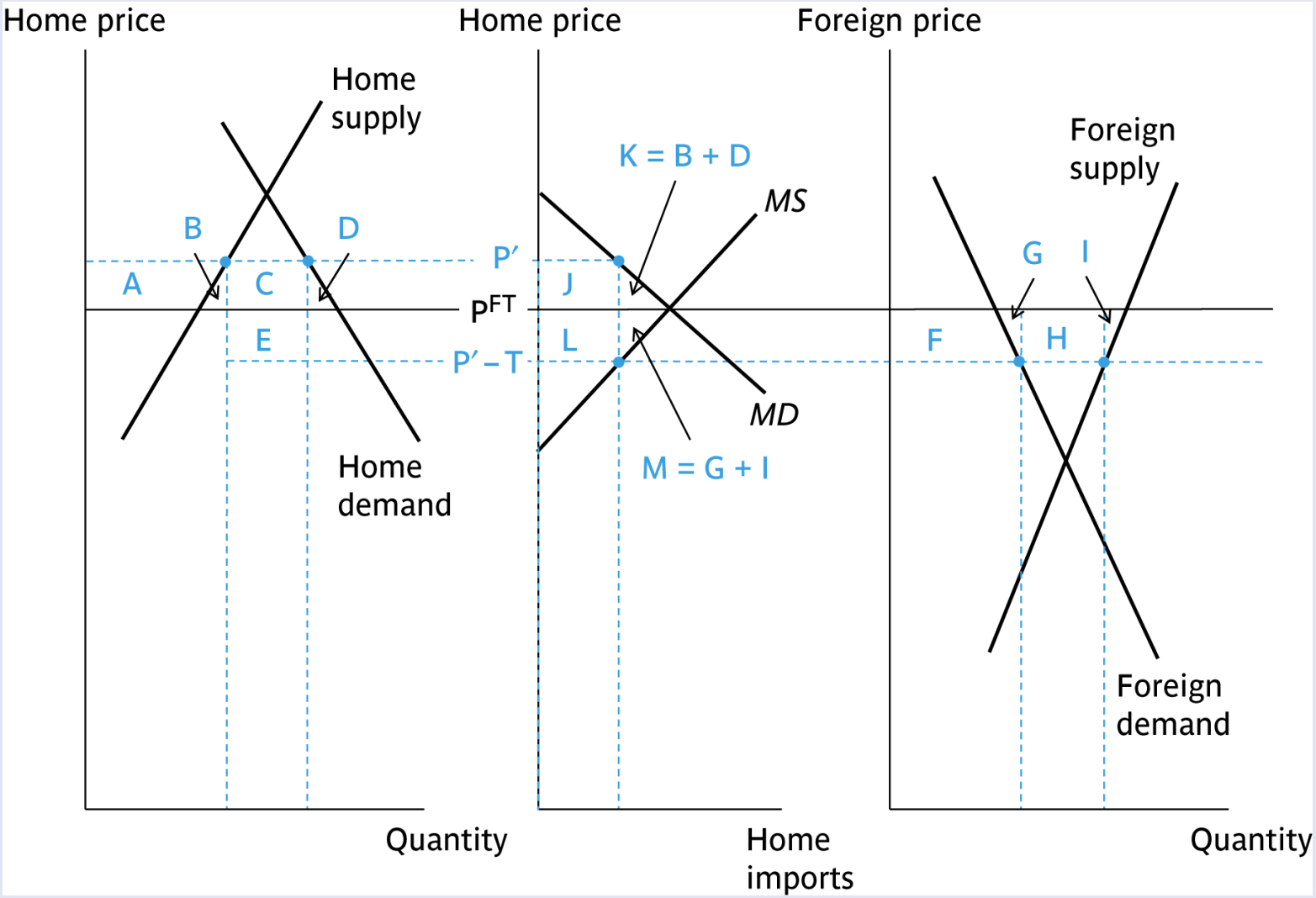


Welfare Effects: Useful Compression

- 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 –(B+D).
  - 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.



Welfare effects of a tariff



Welfare effects of a tariff

- The MFN tariff raises the Home price of the good (to *P′*) while lowering the border price (to P′ − T):
  - Home consumers lose A + B + C + D;
  - Home producers gain A;
  - Home government gains tariff revenue C + E;
  - net Home welfare effect is E − B − D, positive or negative depending upon the size of the tariff;

- Foreign country welfare effects:
  - Foreign consumers gain F;
  - Foreign firms lose F + G + H + I;
  - net Foreign welfare effects is −G − H − I (negative regardless of the tariff's size).

Tariffs as a tax on foreigners

- A tariff might make the Home country better or worse off: there are two parts of Home's net welfare impact, namely L − K;
  - area L is the border price effect (i.e., gain from paying less for imports);
  - area K is the trade volume effect (i.e., impact of lowering imports);

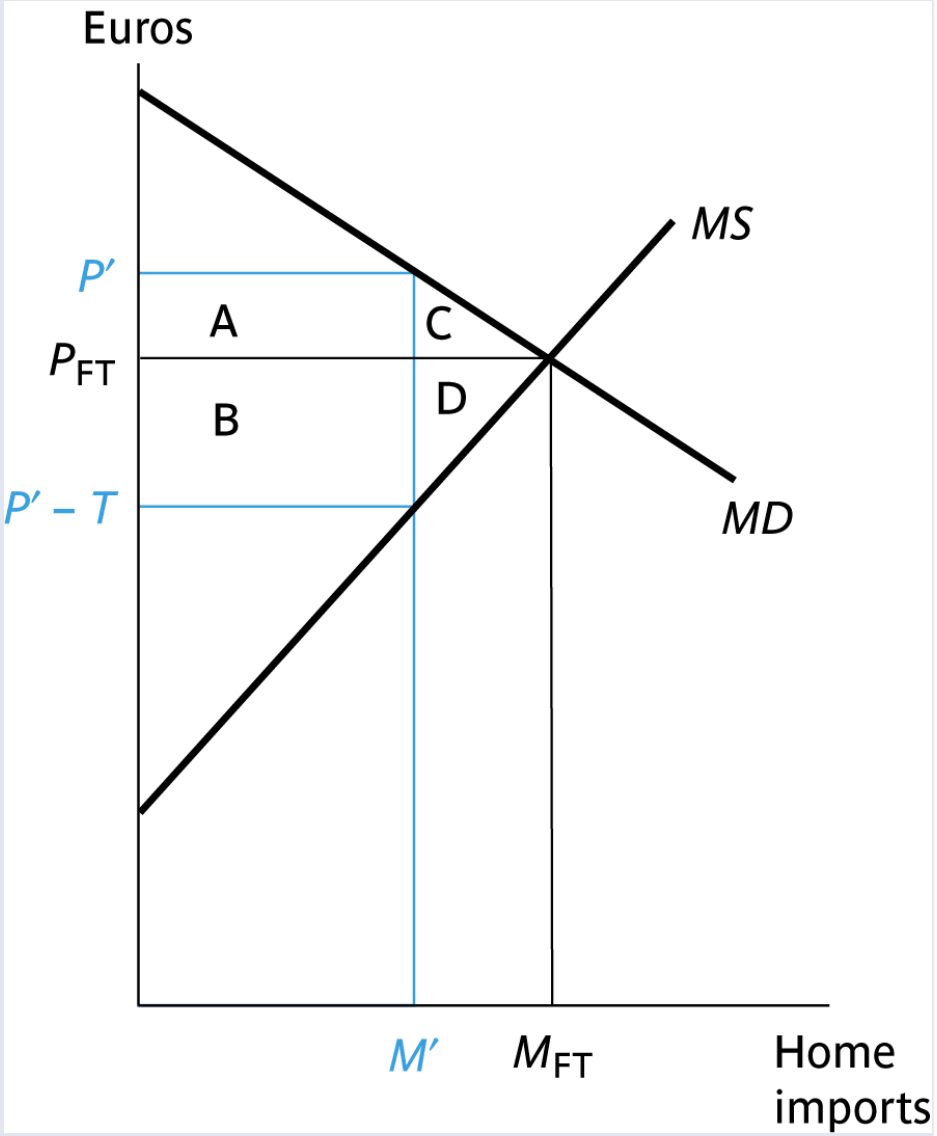
- In other words, area L represents Home's gain from taxing foreigners while area K represents an efficiency loss from the tariff. If T raises Home welfare, the tariff allows the Home government to indirectly tax foreigners enough to offset the tariff's inefficiency effects on the Home economy.

A Typology of Trade Barriers

- **Domestically caputured rents (DCR)**
  - **Tariffs**
  - **Quotas + licences to domestic holders**
    - + **quota drives wedge between foreign and domestic price**
    - + **licence holder exploits price wedge**
- **Foreign captured rents (FCR)**
  - **‚Price undertaking' (generates rents to foreign firms)**
  - **quotas and distribution of licences to foreign holders**
- **Frictional barriers**
  - **technical standards, health and safety regulation**
  - **e.g. Cassis Dijon (‚Kir') case**

Types of protection

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



Sources of competitiveness differences

- Example of comparative Advantage:

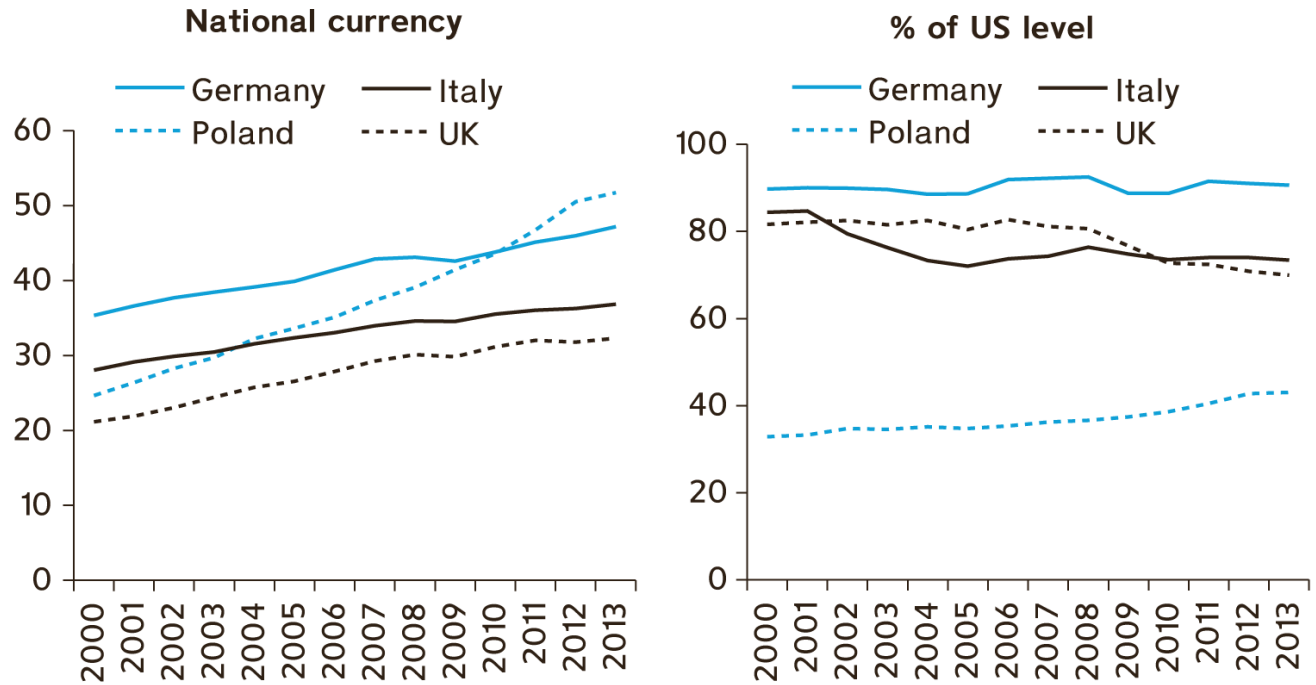
Table 4.1 Example of sector-by-sector competitiveness

	Hours needed in:		Wages (local currency)		Exchange rate	Wages in euros		Prices in euros		Price ratio
	UK	Italy	UK (GBP)	Italy (EUR)	EUR per GBP	UK	Italy	UK	Italy	Italy/ UK
Electric fan	7	20	5	12	2	10	7	70	140	2.000
Espresso machine	10	13	5	12	2	10	7	100	91	0.910
Jet engine	1300	3000	5	12	2	10	7	13,000	21,000	1.615
Designer silverware	23	15	5	12	2	10	7	230	105	0.457

Sources of competitiveness differences

- Diverging labour productivity:

Figure 4.9 Labour productivity measures: the UK, Germany, Italy and Poland



Source: OECD online data, http://stats.oecd.org/

Sources of competitiveness differences

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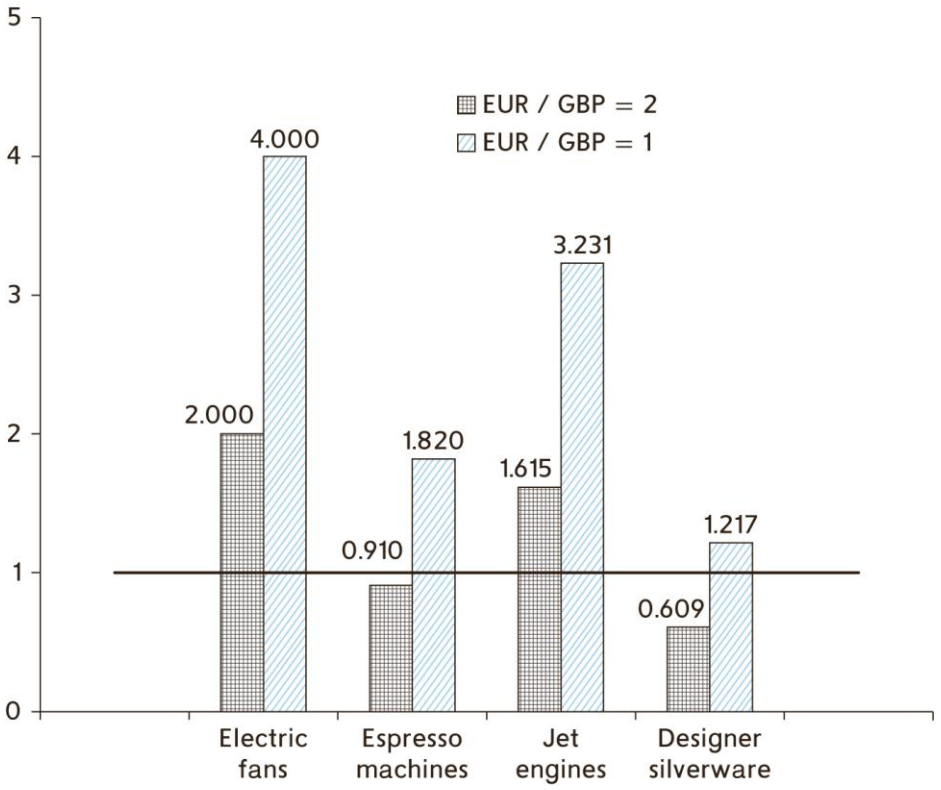
$$\frac{\text{Italian price}}{\text{UK price}} = \frac{\text{Italian hours needed}}{\text{UK hours needed}} \times \frac{\text{Italian wage (€)}}{\text{UK wage (£)}} \times \frac{1}{\text{€'s per £}}$$

Figure 4.10 Illustration of the relative wage that balances competitiveness



Memorize

- **The Microeconomics of Trade and Tariffs**
  - Basic Tools
  - Demand and Supply
  - Import Demand Curve
  - Export Supply Curve
  - Welfare Analysis
  - The Gains from Trade
  - Welfare Analysis of MFN Tariffs
  - Typology of welfare barriers: DCR, FCR, frictional barriers

Preferential Trade Liberalisation

Today's Reading

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- **Preferential Trade Liberalisation**
  - Baldwin & Wyplosz (2009/12) “The Economics of European Integration”, McGraw-Hill, Ch 5.

Analysis of unilateral discriminatory liberalization

- → Only 3 basic elements needed to understand preferential liberalization:

- **'Smith's certitude'** by Adam Smith: foreign firms gain (i.e., higher price and more exports) when tariffs against them are eliminated;

- **'Haberler's spillover**' by Gottfried Haberler: third nations – those excluded from the preferences – must lose;

- **'Viner's ambiguity'** by Jacob Viner: preferential liberalization might harm the preference-giving nation because: discriminatory liberalization is both 'liberalization' – which removes some price wedges and thus tends to improve economic efficiency and Home welfare – and 'discrimination' – which introduces new price wedges and thus tends to harm efficiency and welfare.

The PTA Diagram

Studying European integrations – e.g. EEC's customs union – which were discriminatory, i.e. preferential requires:

- at least three countries
  - at least two integrating nations
  - at least one excluded nation.
- Ability to track domestic and international consequences of liberalisation

Must MD-MS diagram to allow for two sources of imports.

Assumptions:

- No increasing returns to scale
- Perfect competition
- But: No small country assumption which allows tracking effects on third countries

The PTA Diagram: Free Trade Equilibrium

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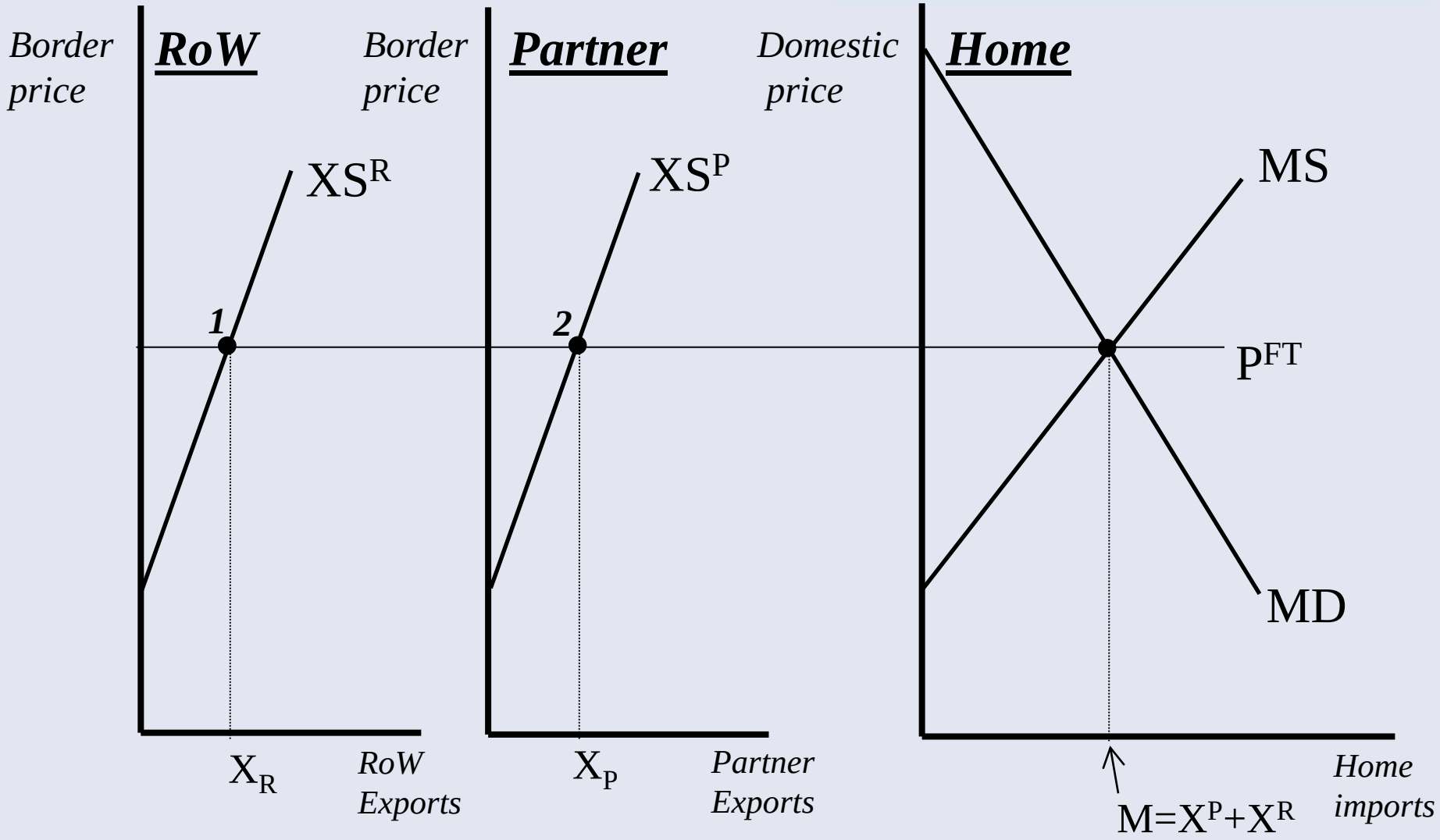
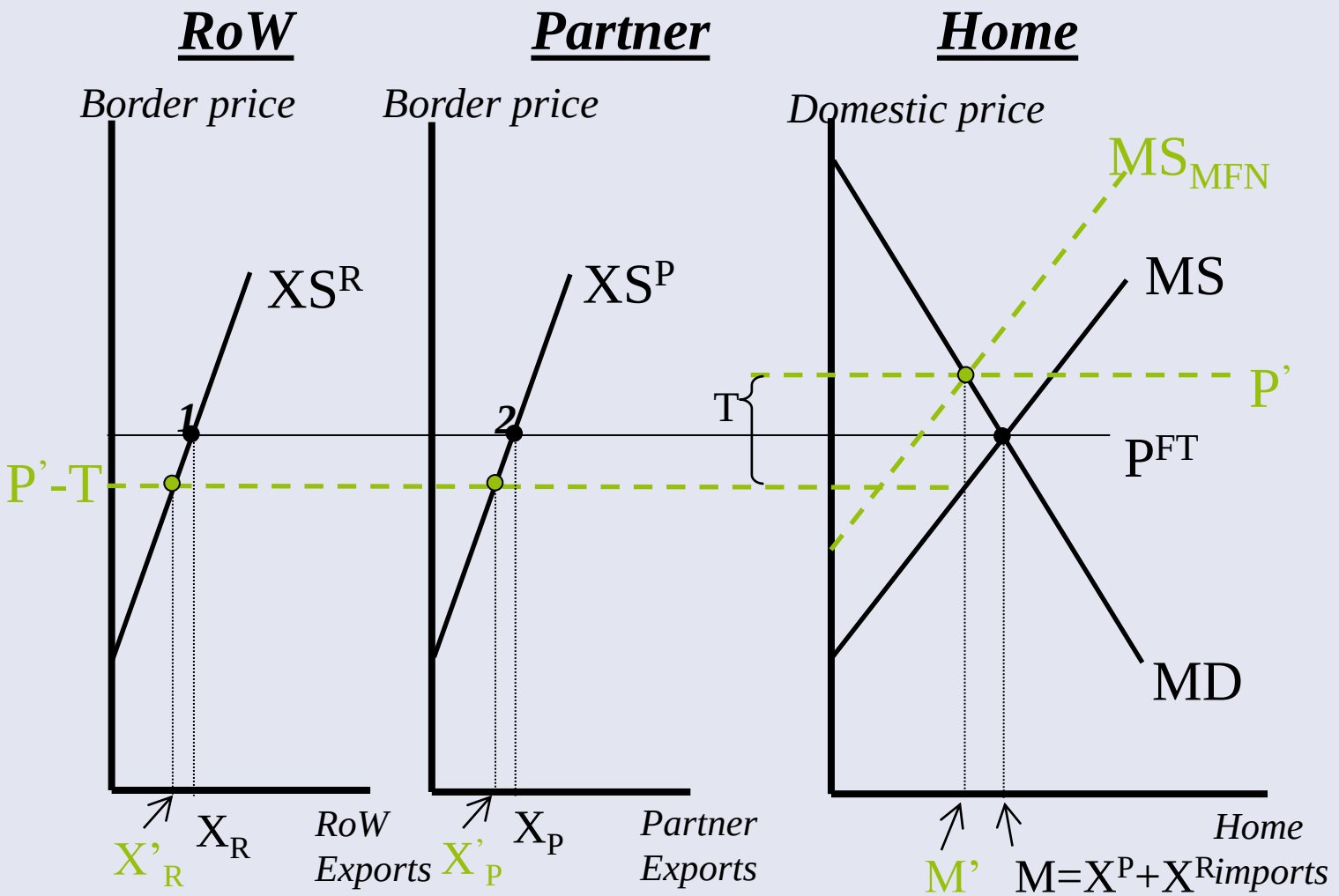


The PTA Diagram: MFN Tariff Equilibrium



Discriminatory, Unilateral Liberalization

To build up to analysis of real-world policy changes (e.g. customs union):

- Consider Home removes T on imports only from Partner

1st step is to construct the new MS curve

- The liberalisation shifts up MS (as with MFN liberalisation) but not as far since only on half of imports
  - Shifts up MS to half way between MS (free trade) and MS (MFN T), but
- More complex, kinked MS curve with PTA

Uniform MFN Tariff

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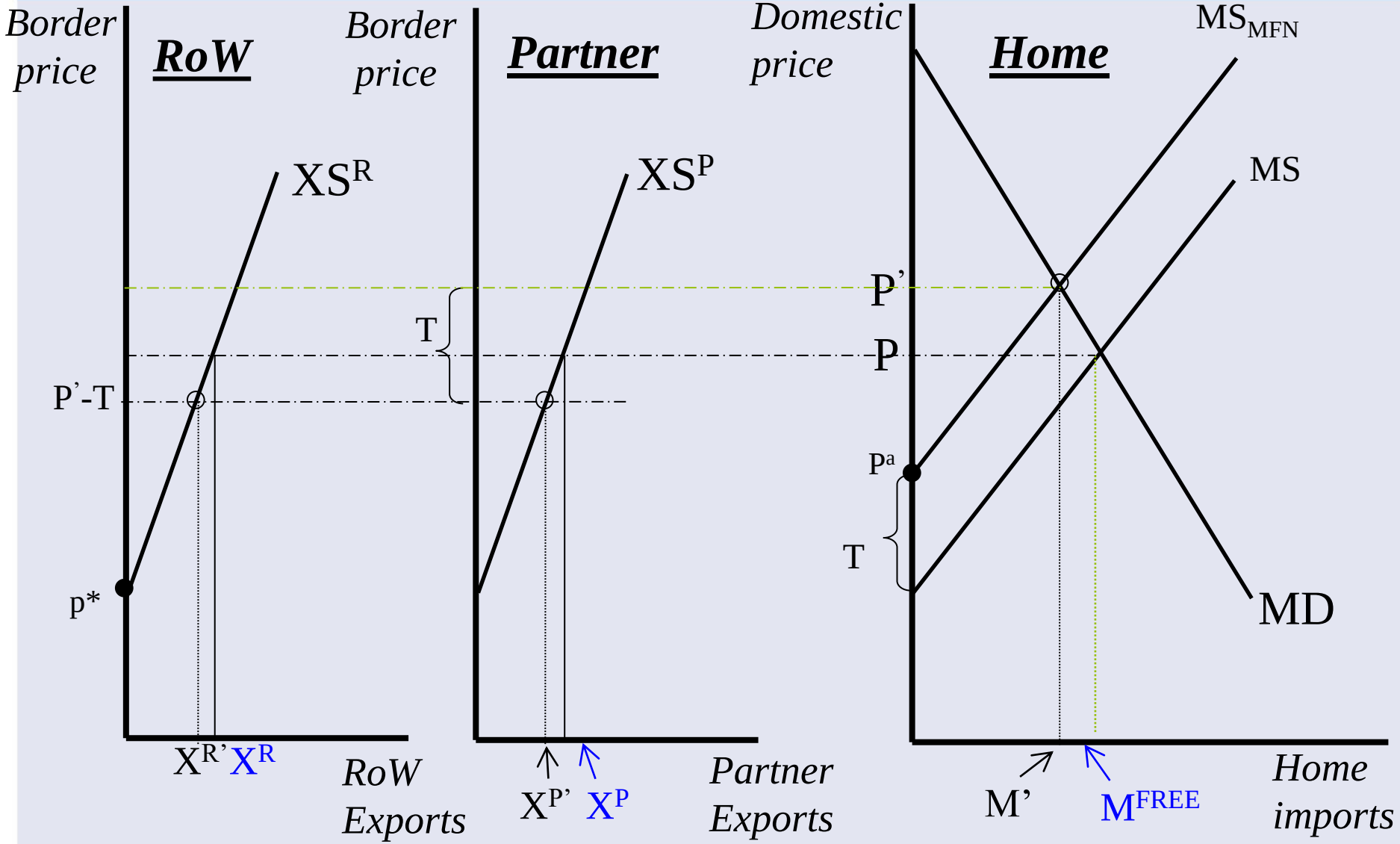

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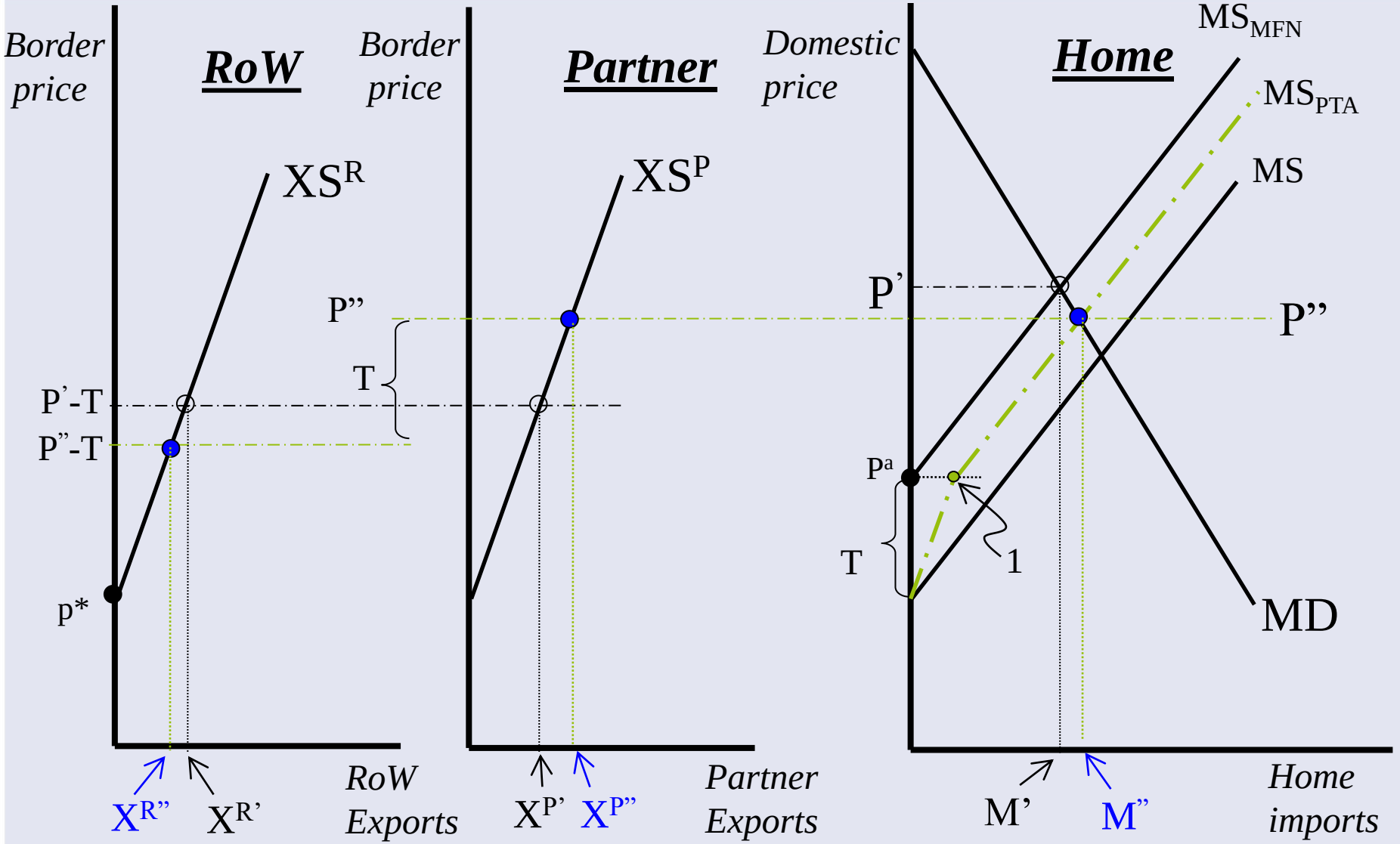
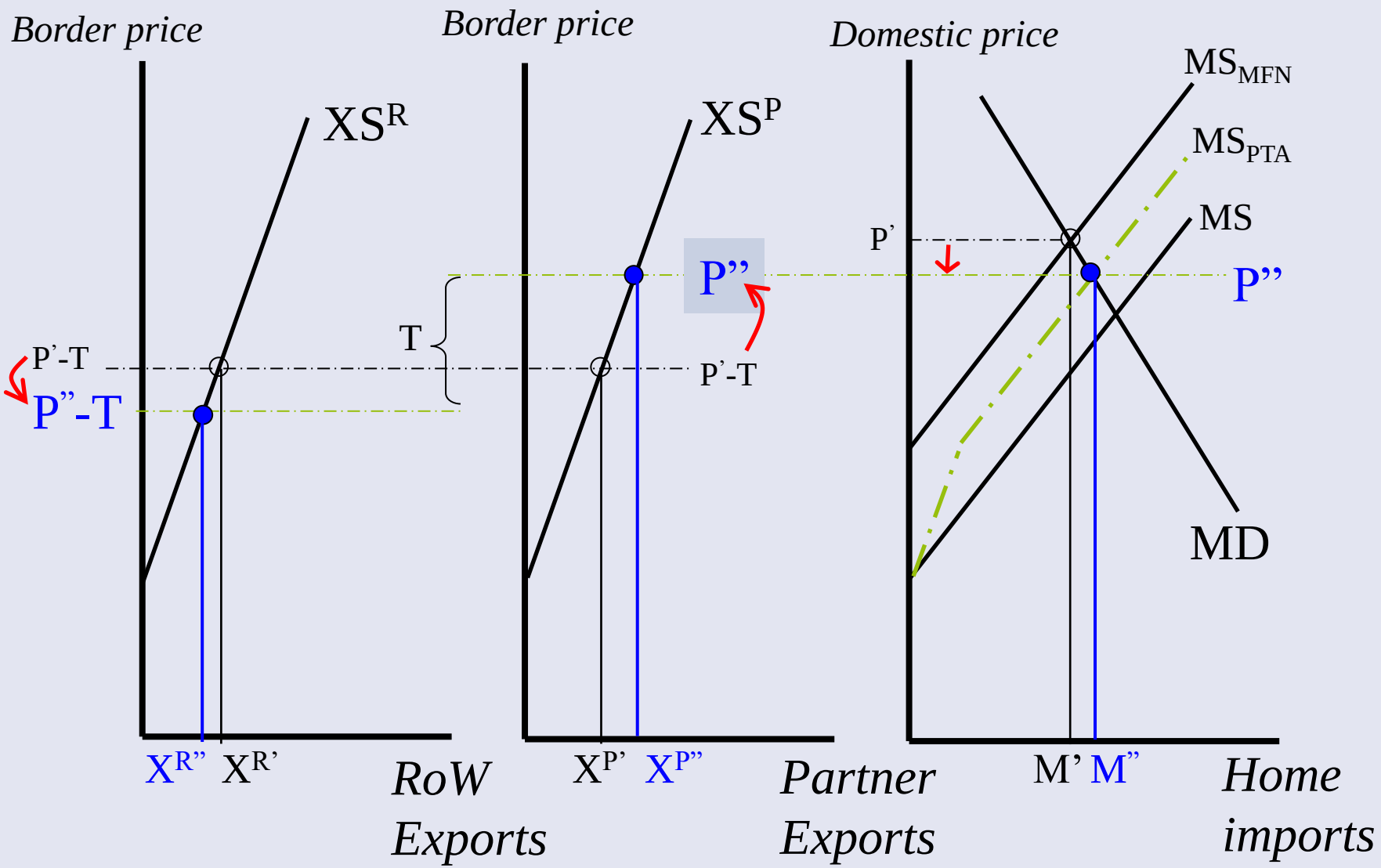


Domestic Price and Border Price Changes



Domestic Price and Border Price Changes

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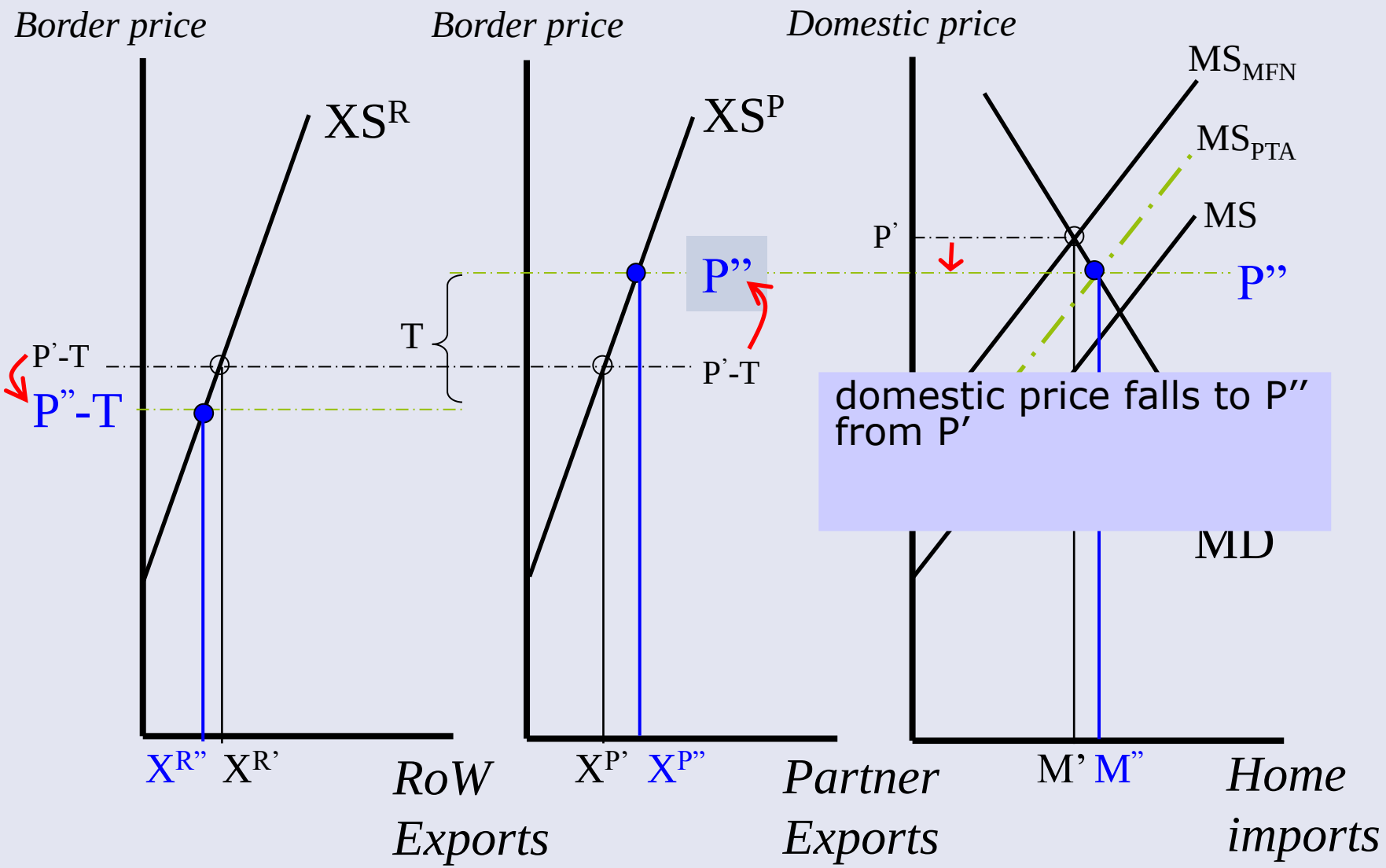

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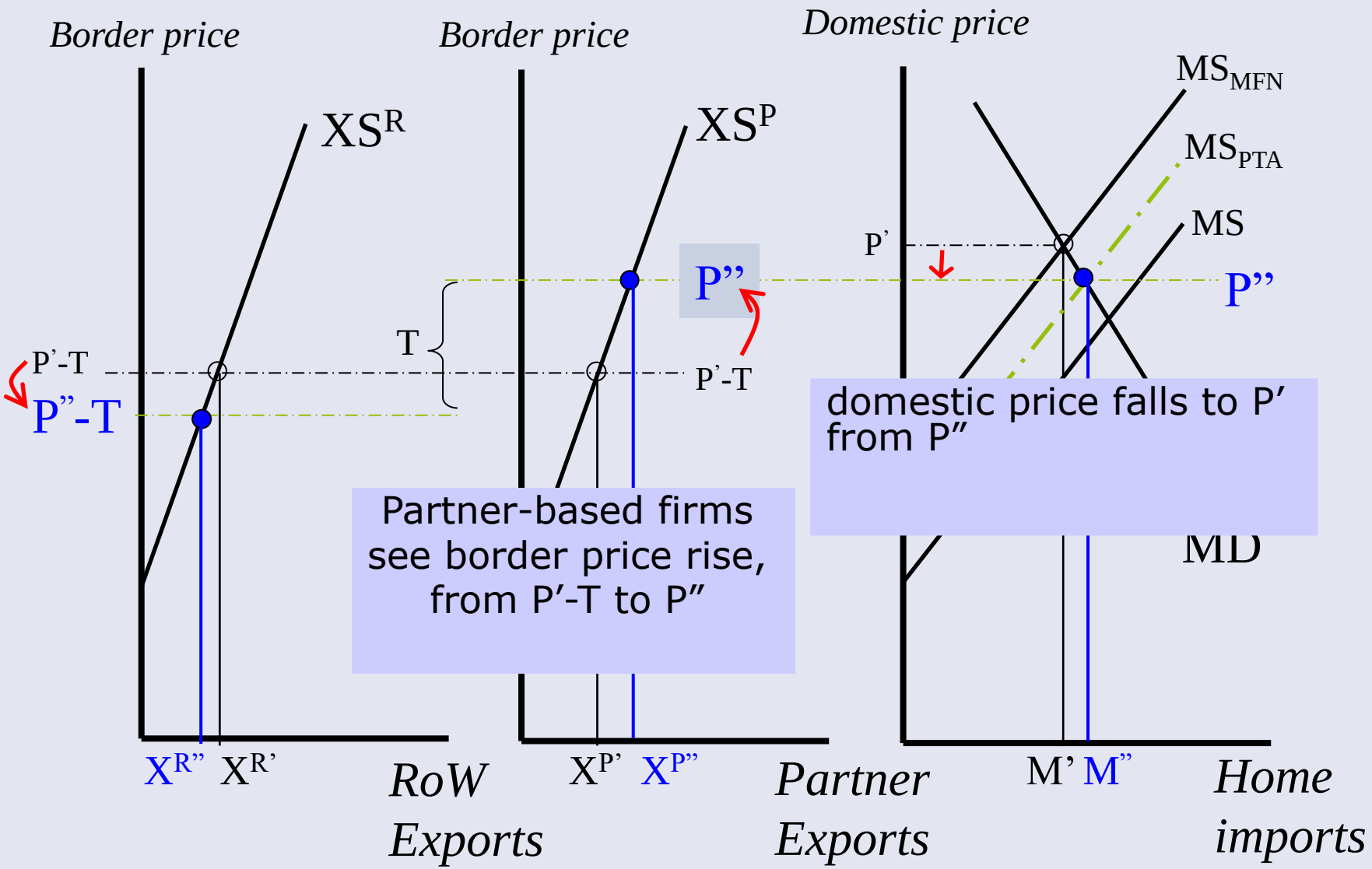

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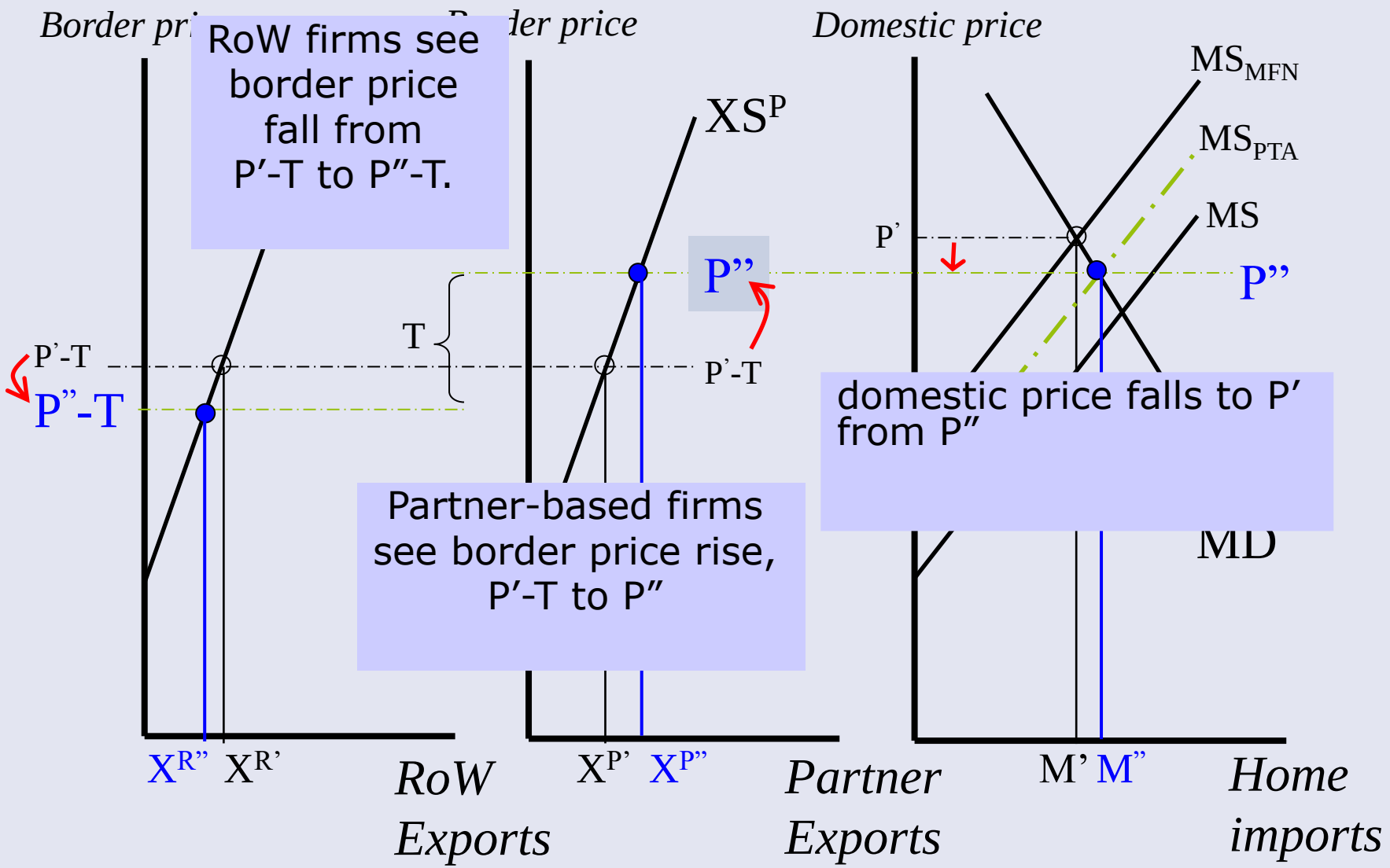
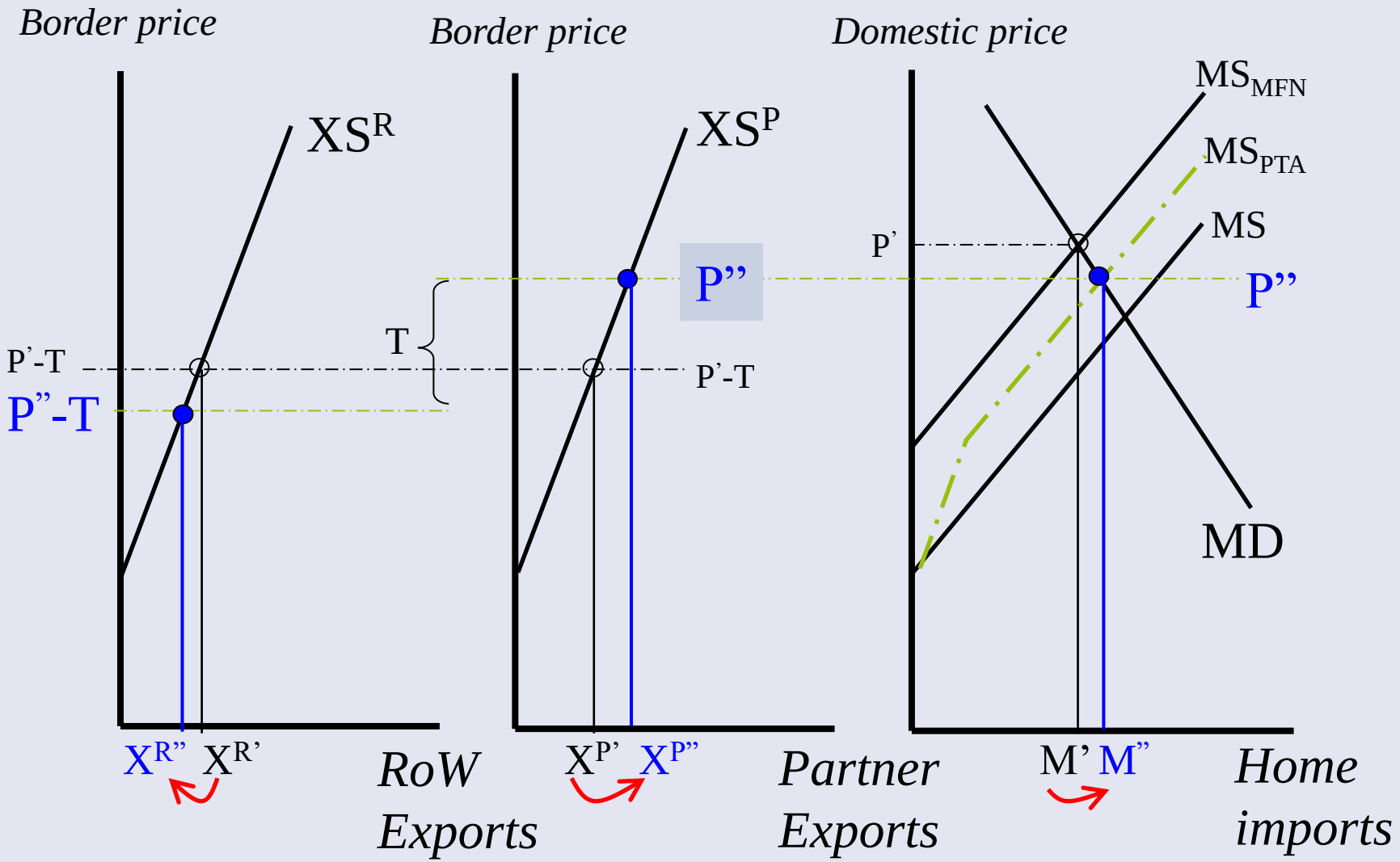


Quantity Changes: Supply Switching



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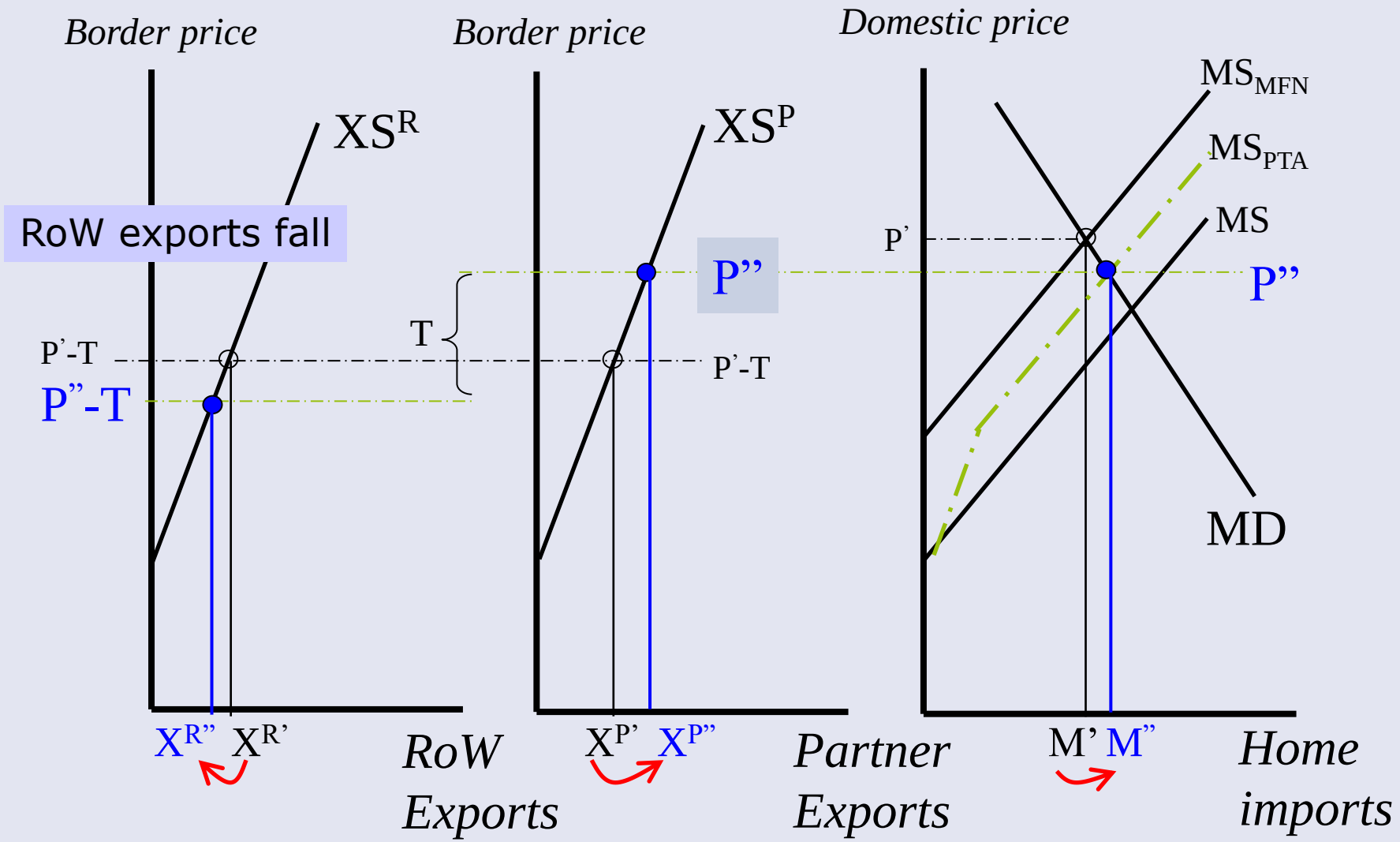

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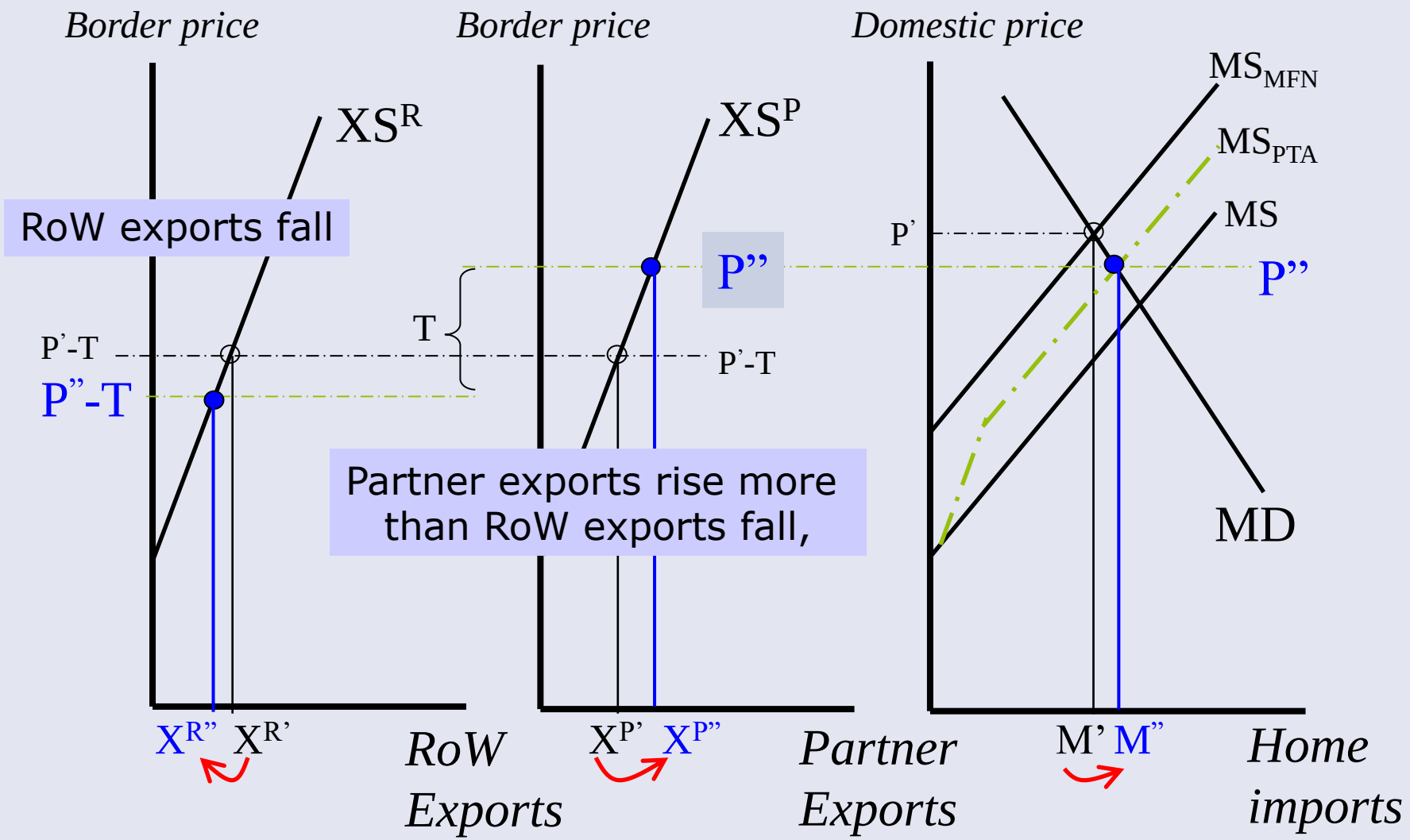

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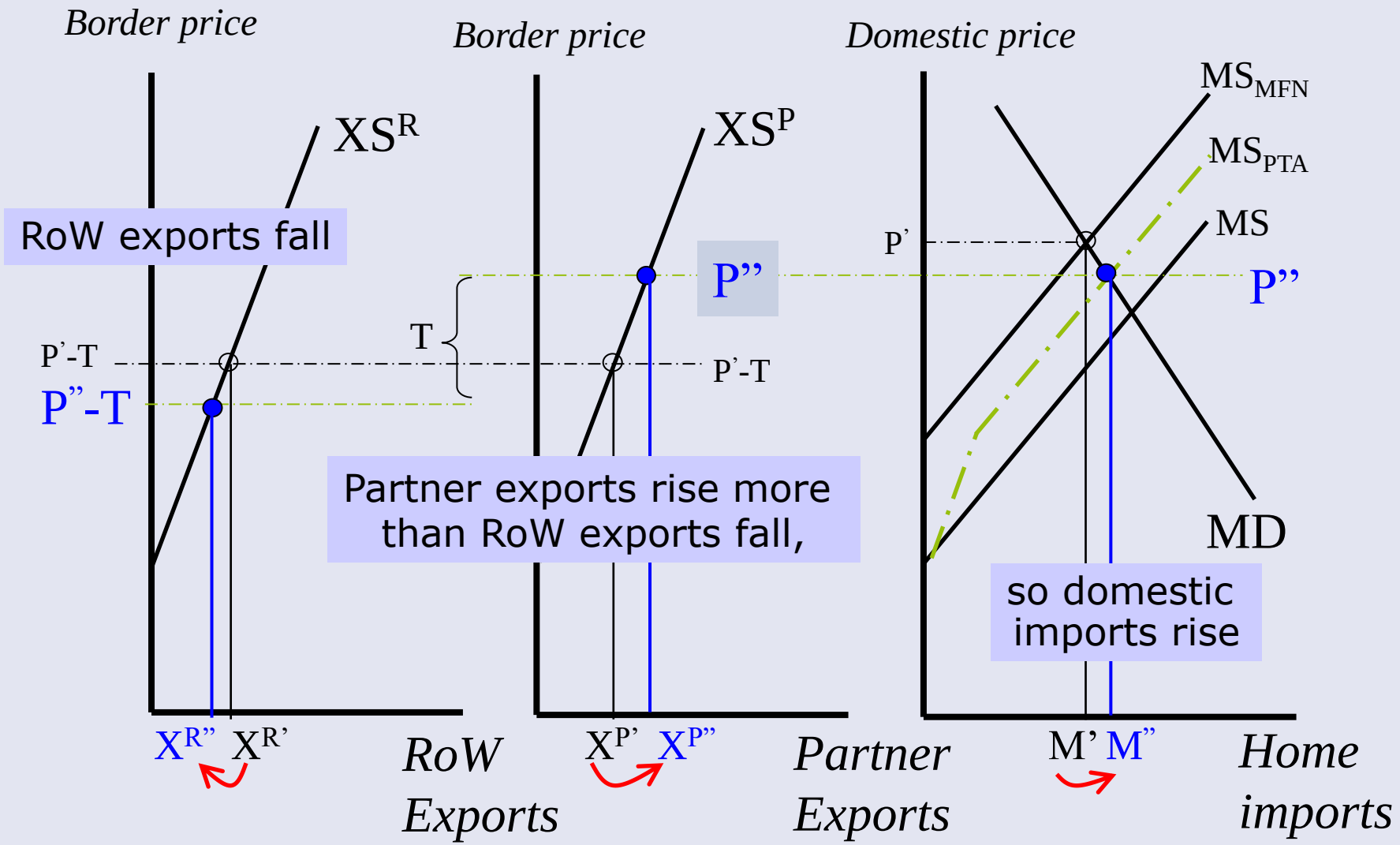
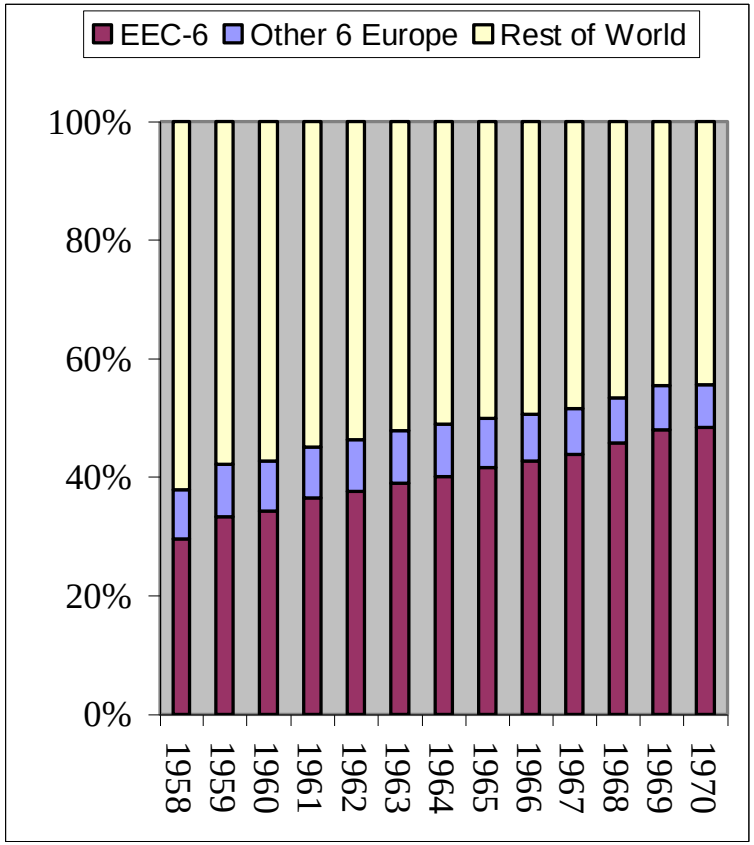
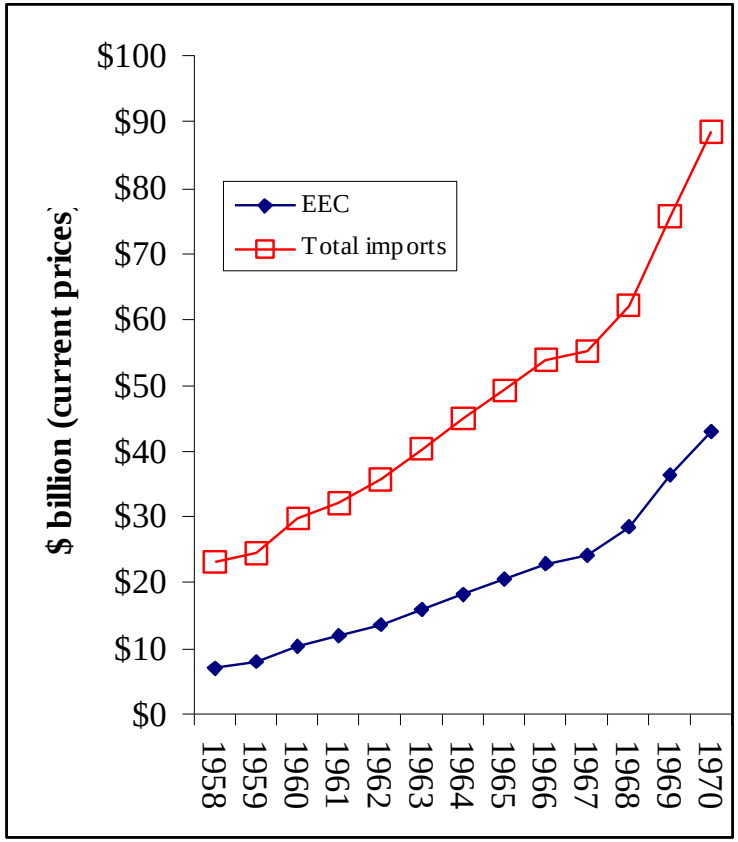


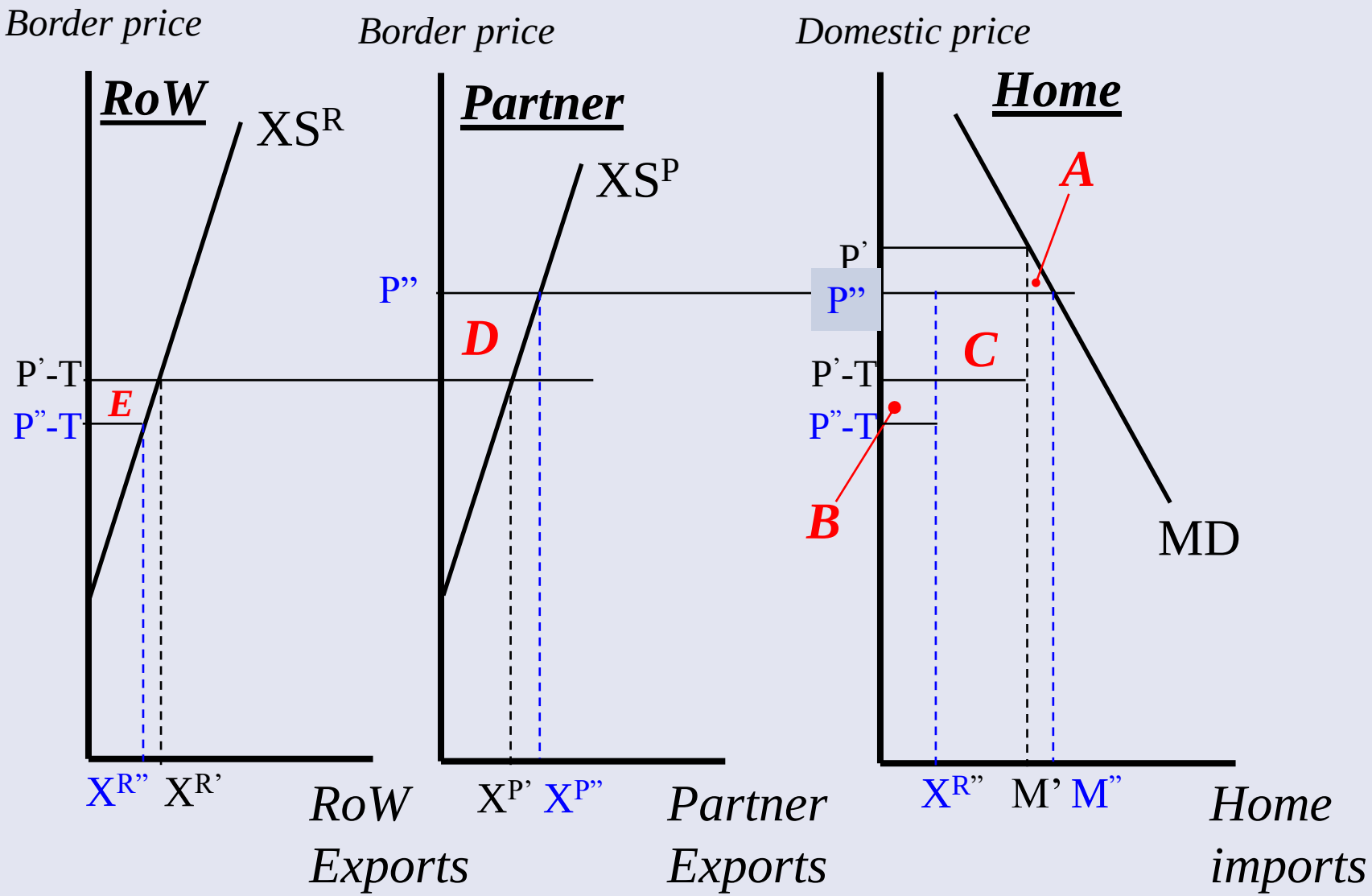
Impact of Customs Union formation





Note: Left panel shows share of EEC6's import from the three regions. Other Euro-6 are the 6 countries that joined the EU by the mid 1980s, UK, Ireland, Denmark, Spain, Portugal and Greece.
Source: Table 5, External Trade and Balance of Payments, Statistical Yearbook, Recapitulation, 1958-1991,

Welfare Effects



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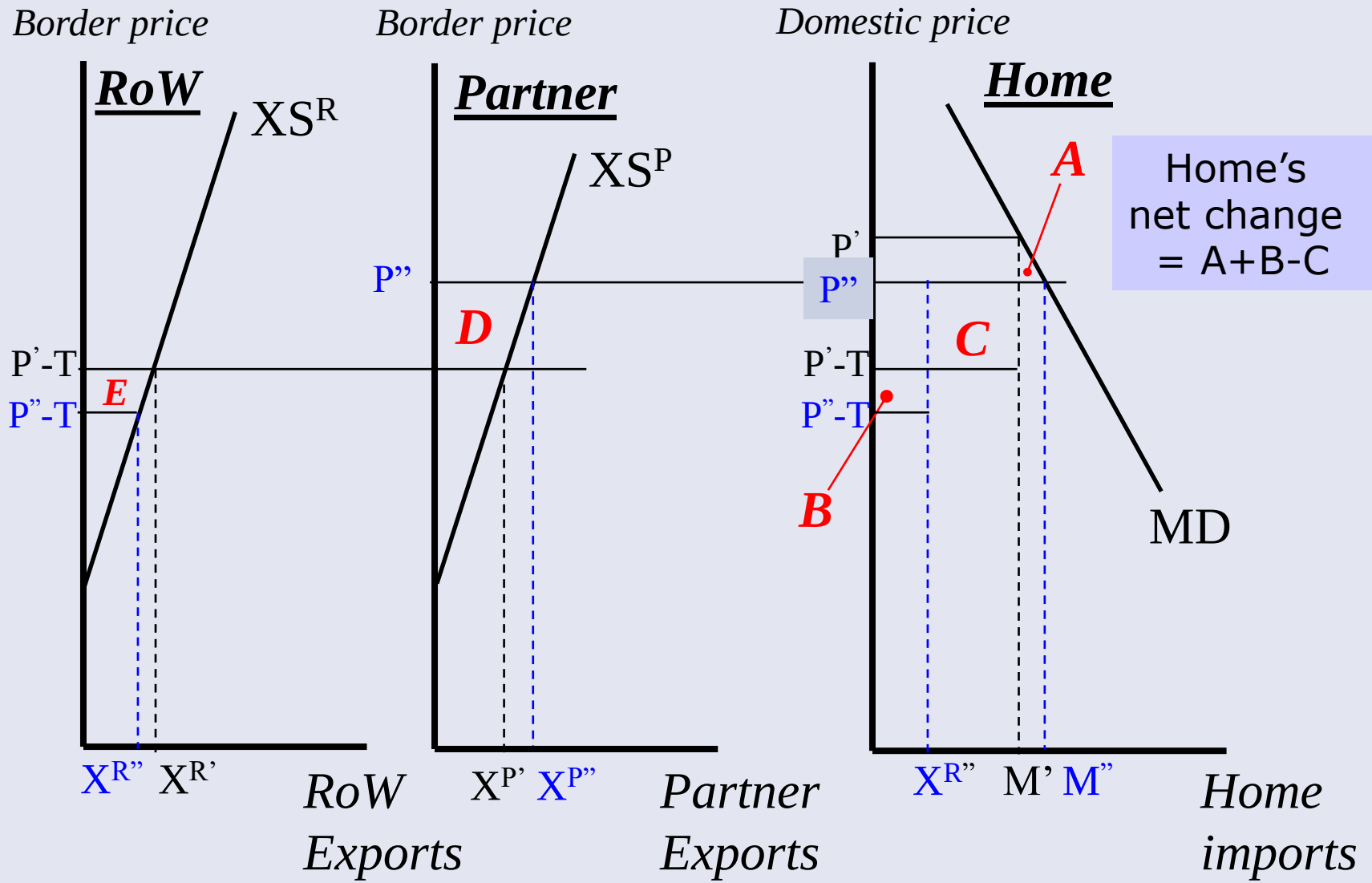

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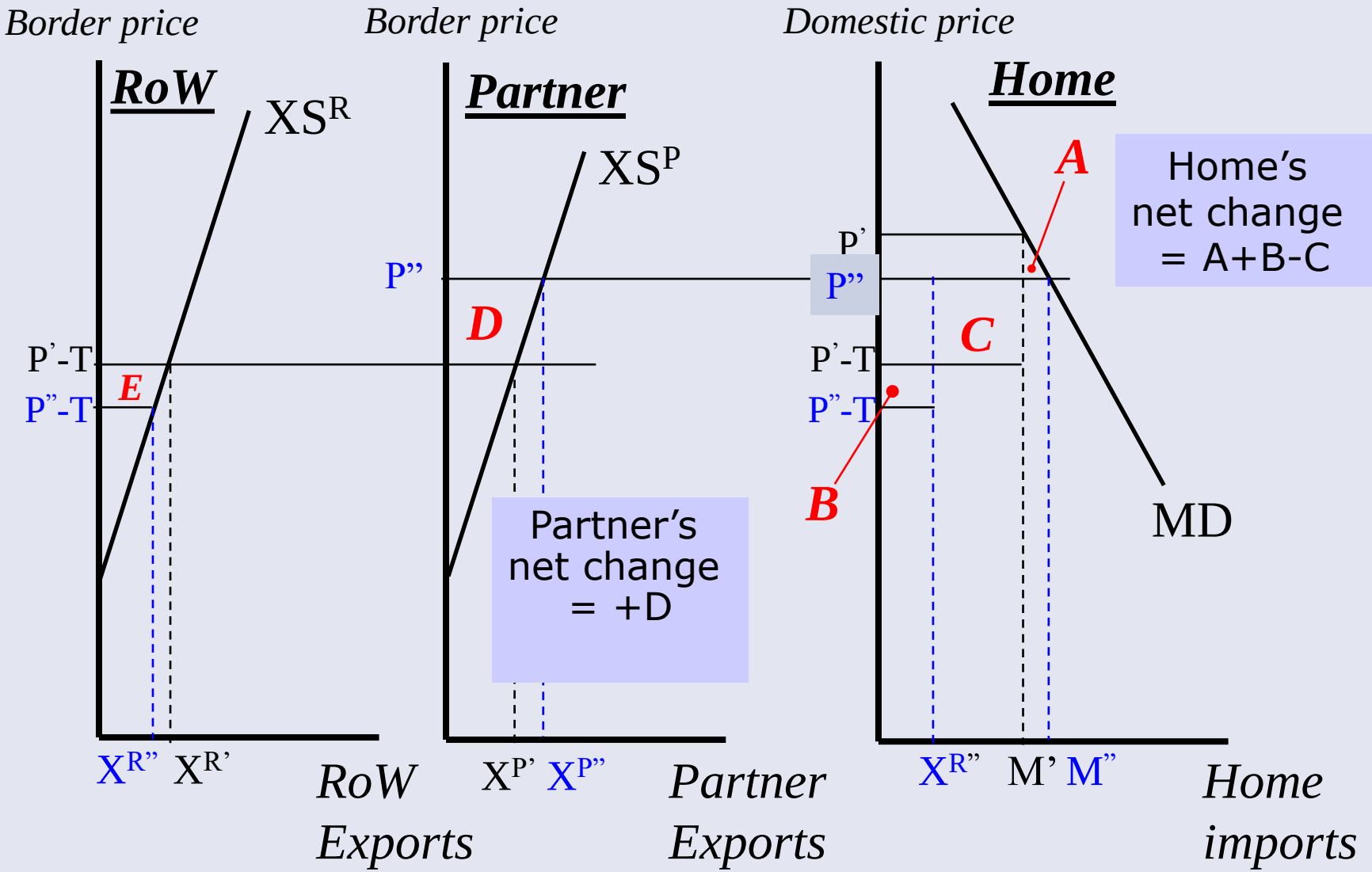

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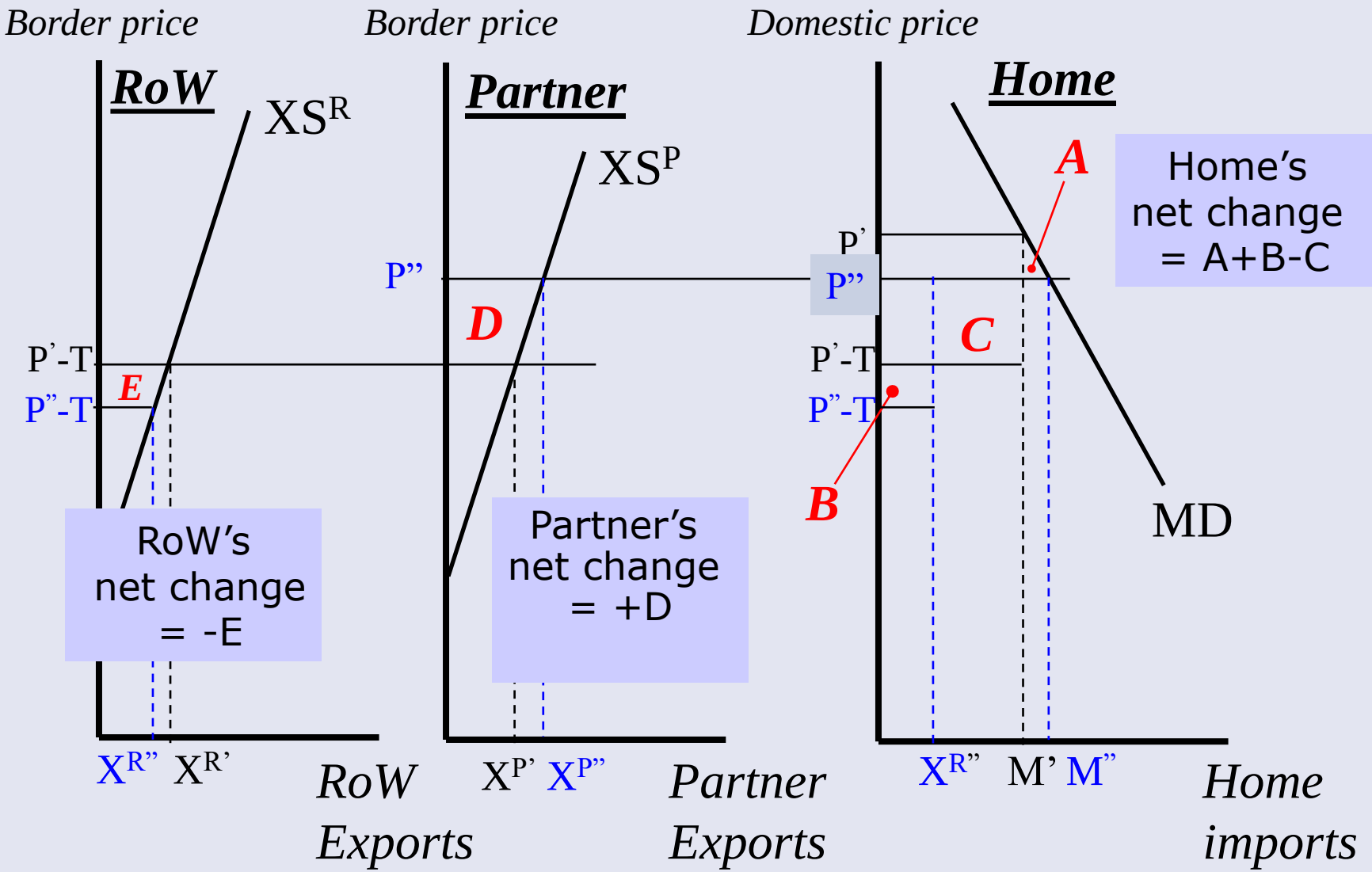
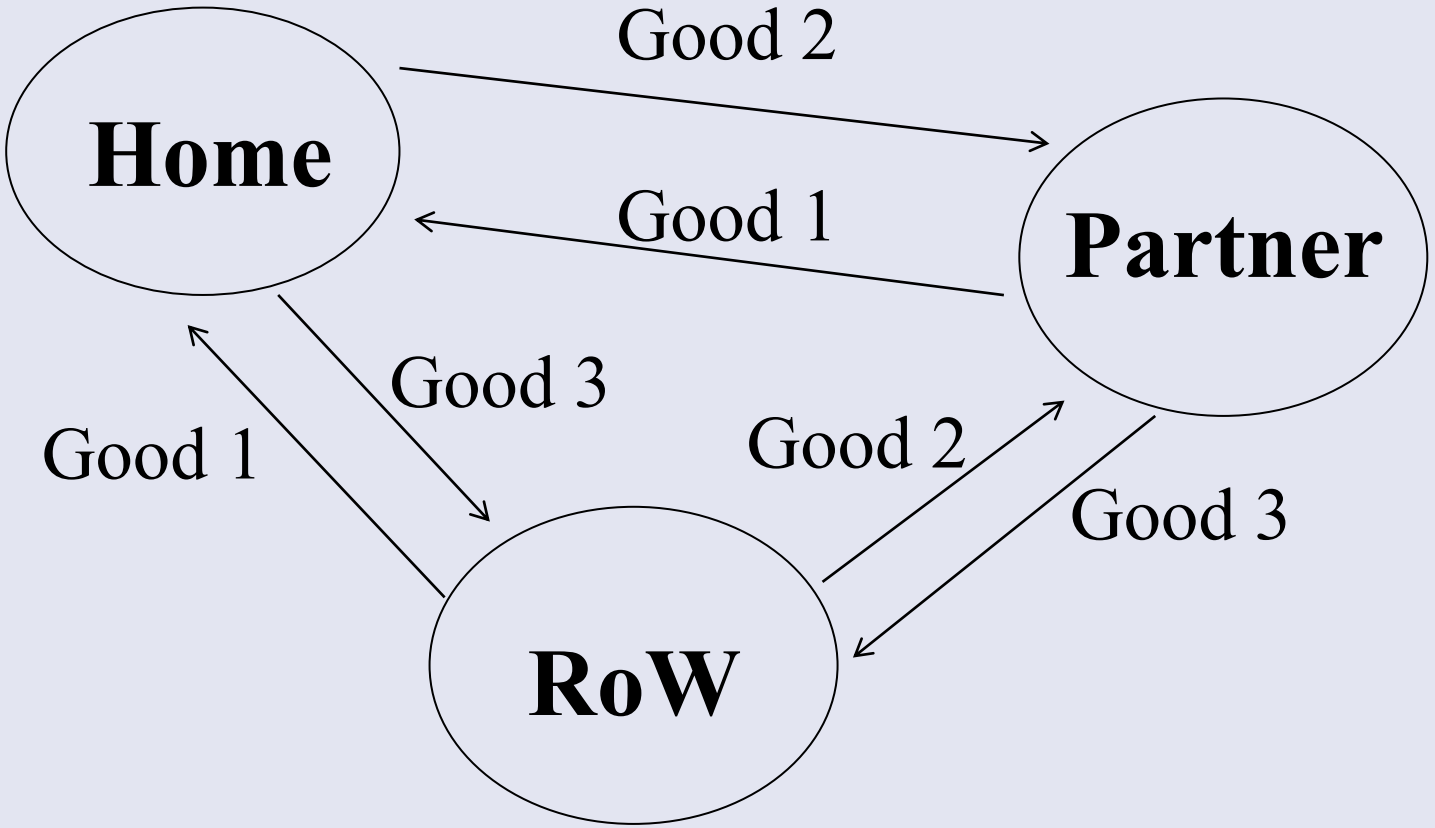


Analysis of a Customs Union

- FTA vs Customs Unions
  - Given symmetry 3-nation set up, FTA between Home and Partner is automatically a customs union
    - Home-Partner CU has Common External Tariff (CET) equal to T
  - in the real world, things are more complicated

- Analysis is simply a matter of recombining results from the unilateral preferential case
  - In market for good 1, analysis is identical
  - In market for good 2, Home plays the role of Partner
  - In market for good 2, Partner plays role of Home

Symmetric three good case



Analysis of a customs union

- Price and quantity effects:
  - impact of Home's discriminatory liberalization is as seen before;
  - impact of Partner's discriminatory liberalization of imports of good 2 from Home can also be seen using the same diagram but with change in perspective :

  → price of good 2 in Partner falls from *P′* to *P″* but border price for Home exporters when they sell good 2 to Partner rises from P′ – T to P″. No change to domestic prices in RoW since they did not liberalize, but RoW exporters face a lower border price for their exports to Partner.

- Welfare effects: a matter of adding up effects that have been illustrated before.

Welfare Effects of a Customs Union

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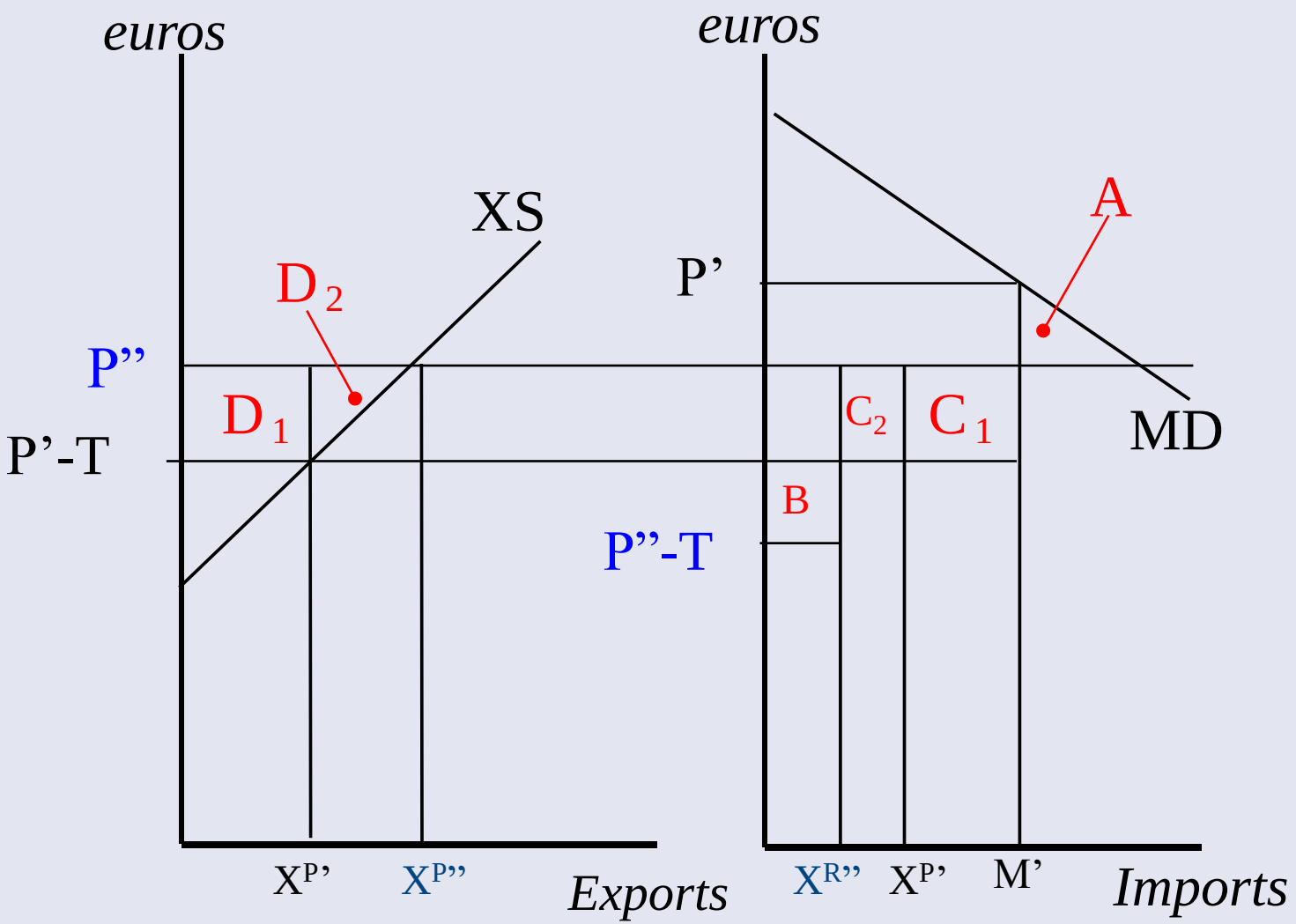
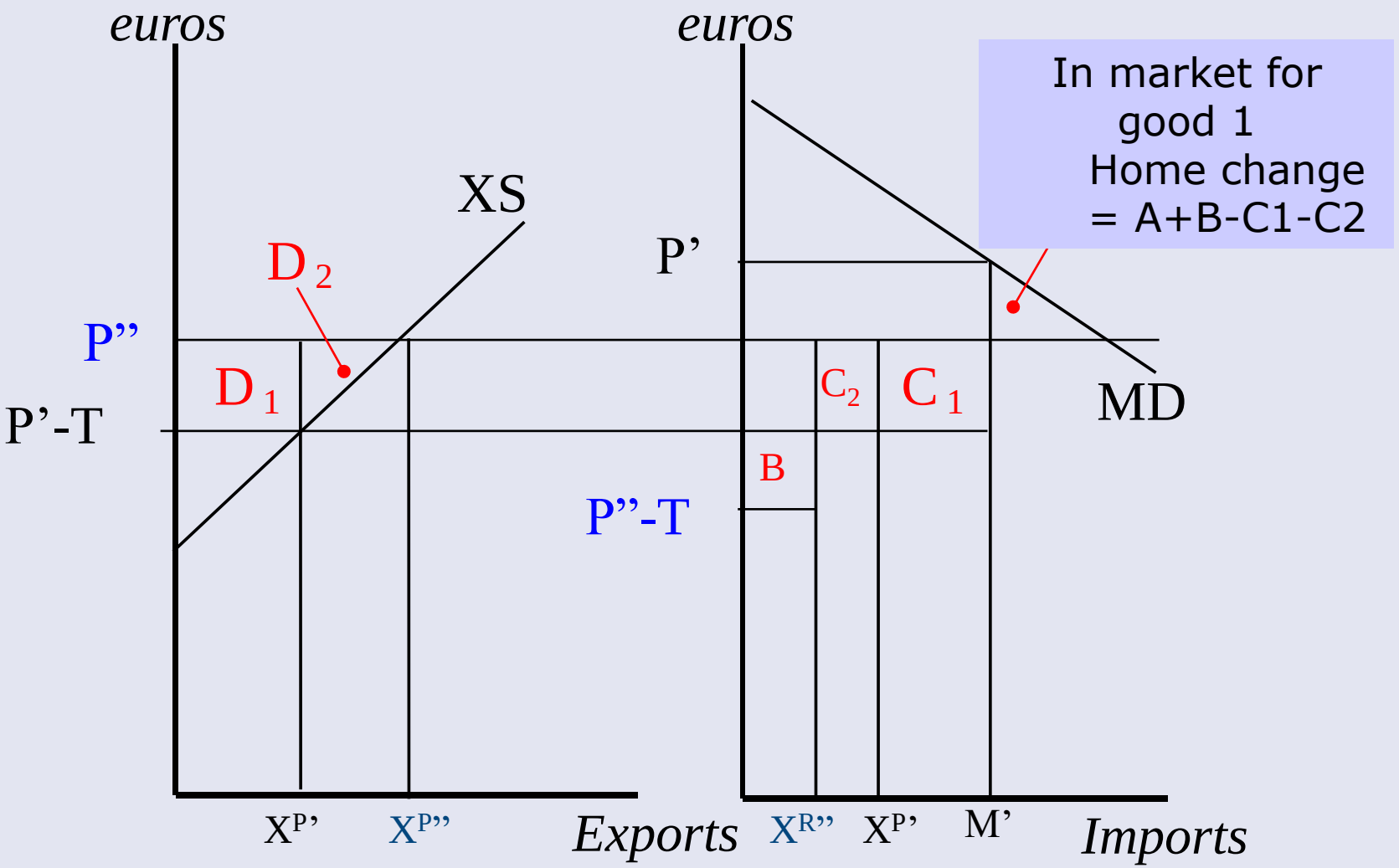
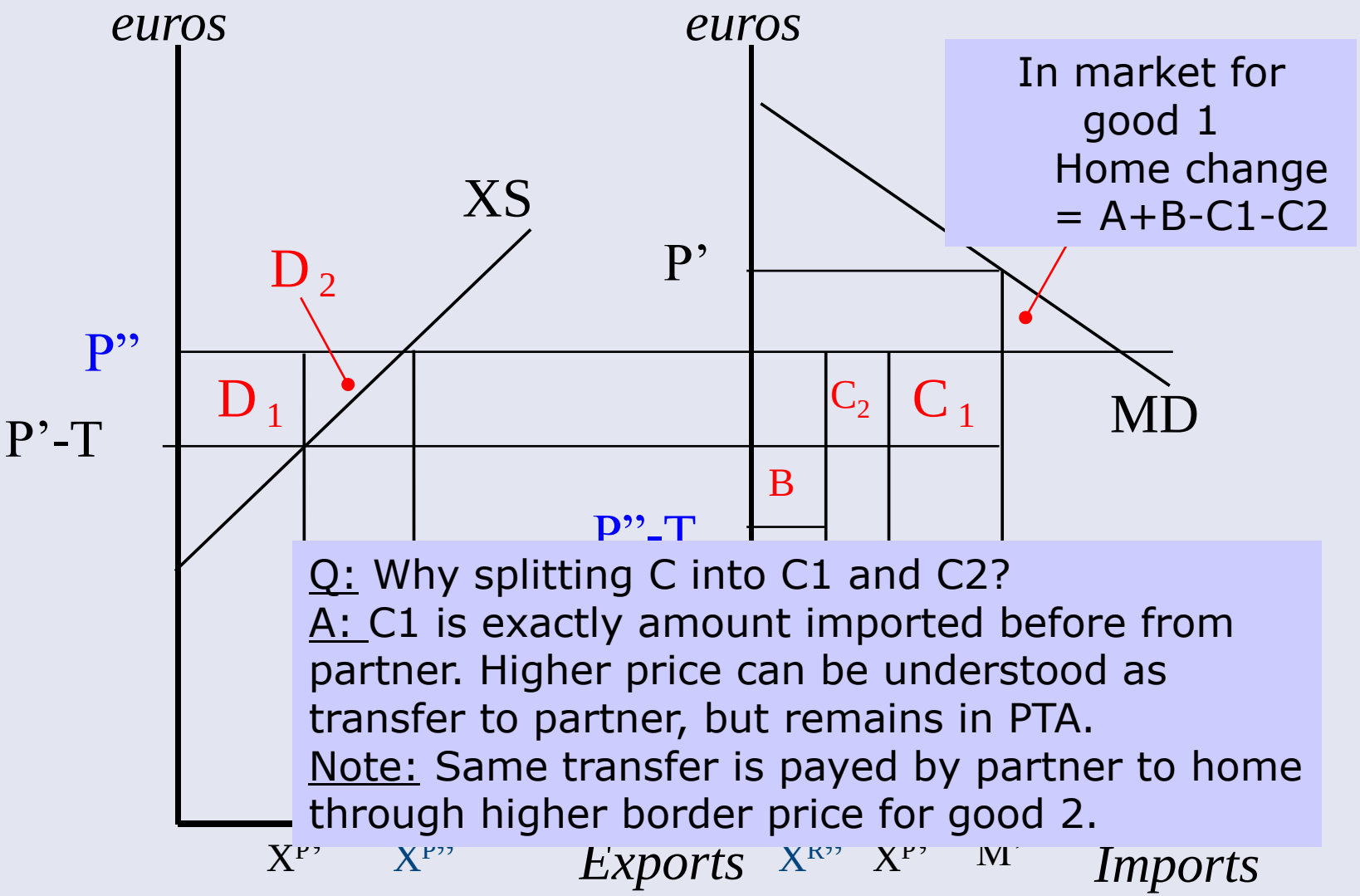


Welfare Effects of a Customs Union



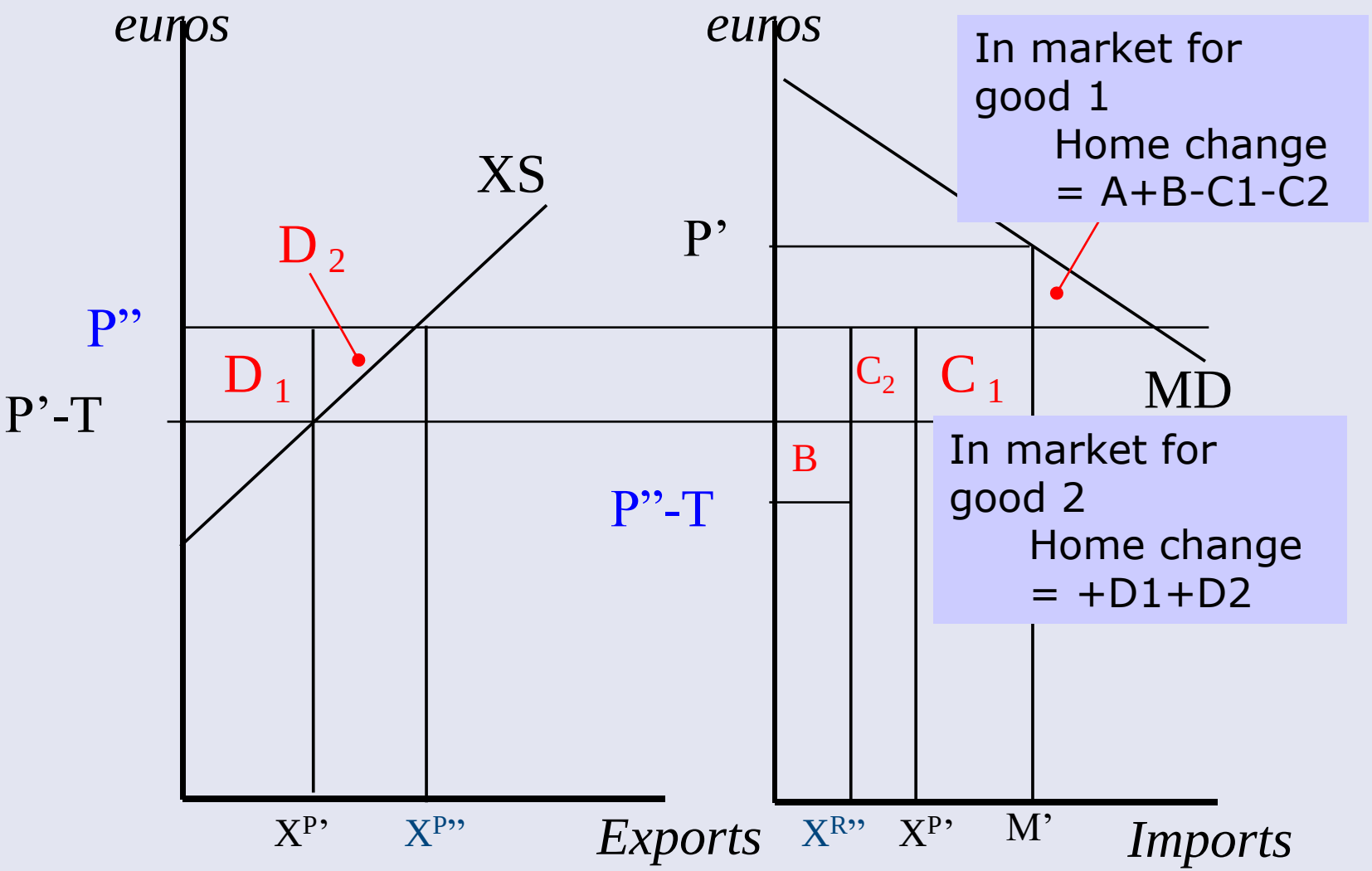
Welfare Effects of a Customs Union



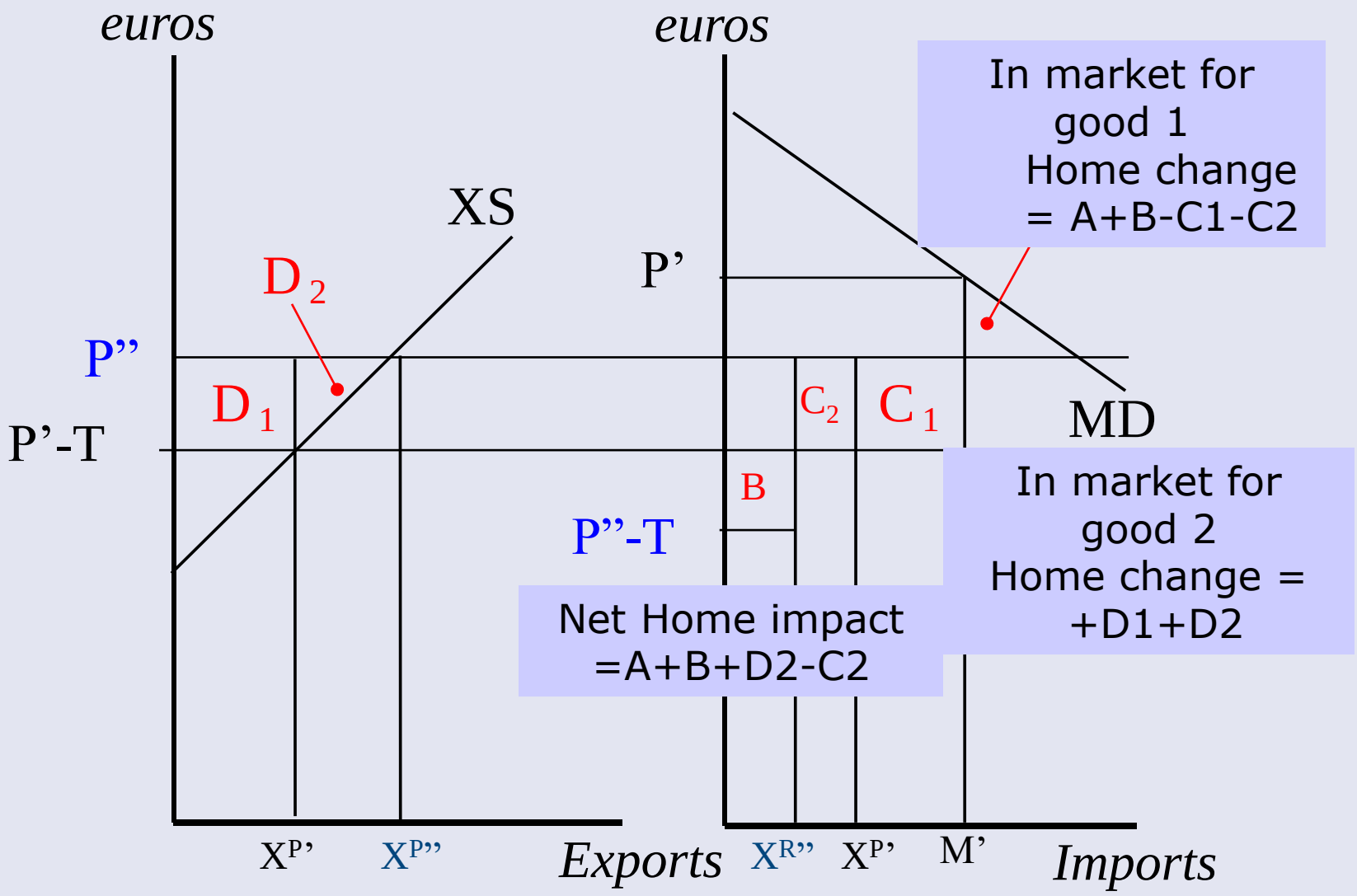
Q: Why splitting C into C1 and C2?
A: C1 is exactly amount imported before from partner. Higher price can be understood as transfer to partner, but remains in PTA.
Note: Same transfer is payed by partner to home through higher border price for good 2.

Welfare Effects of a Customs Union

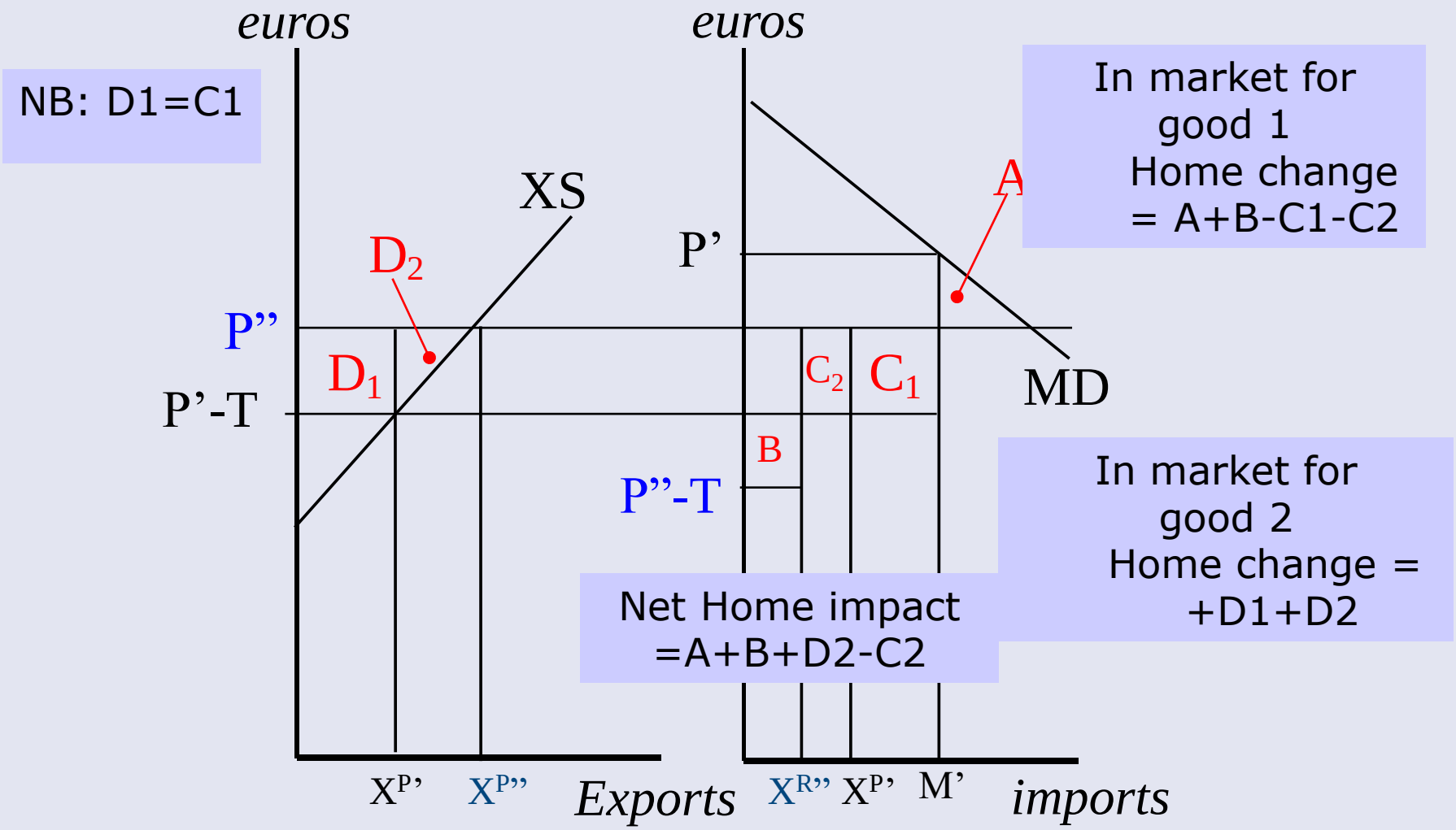
University of Bamberg



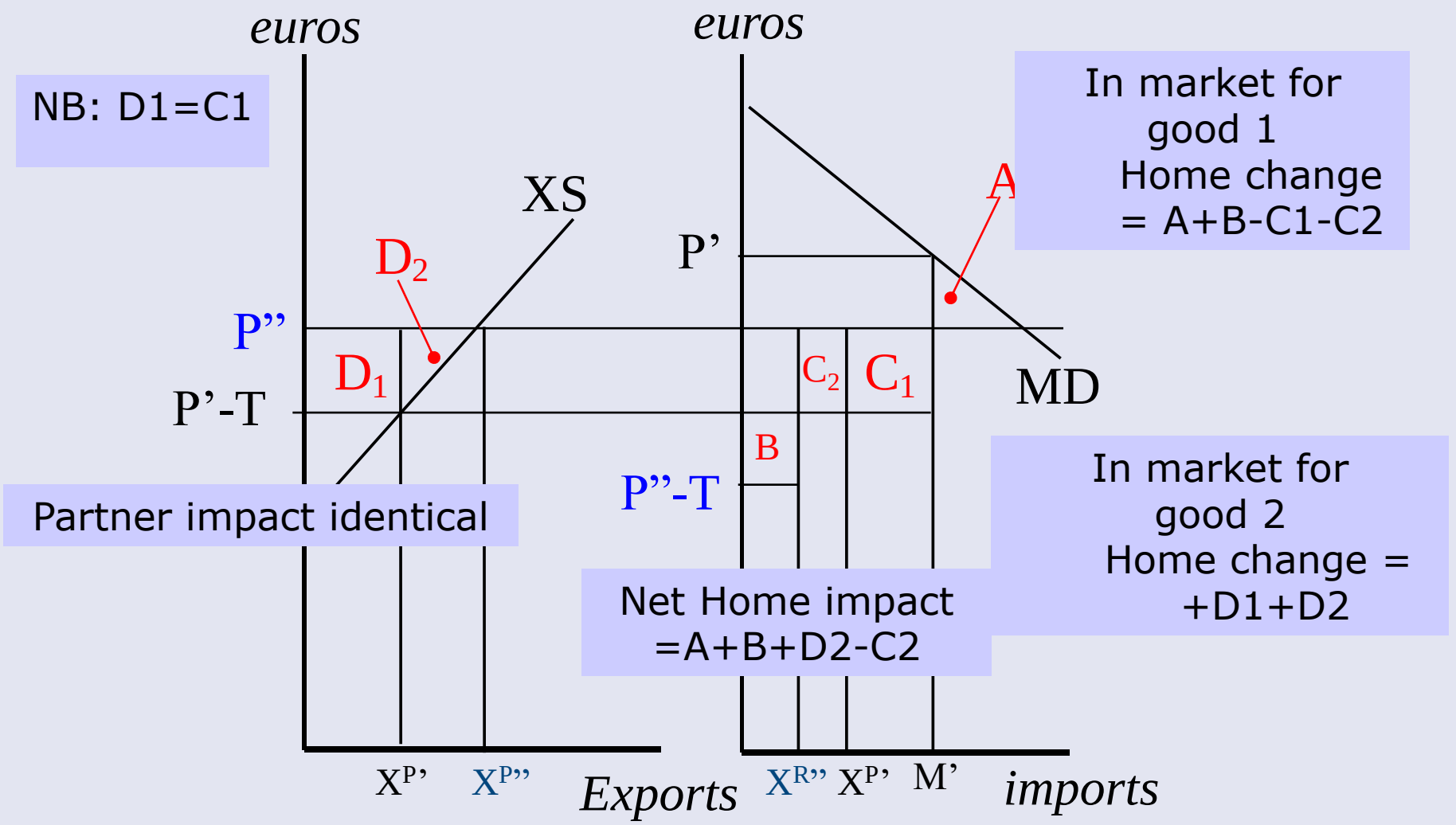
Welfare Effects of a Customs Union



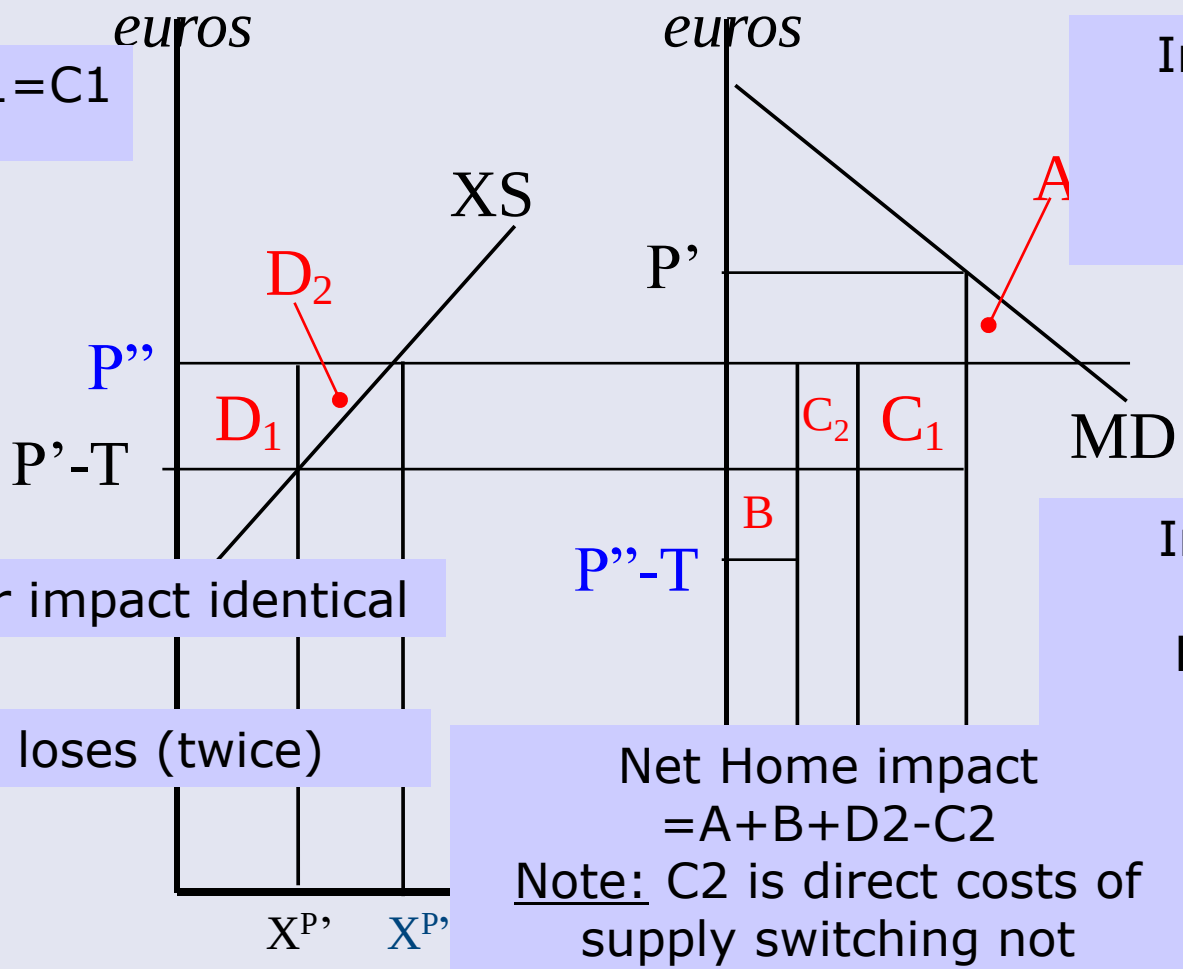
Welfare Effects of a Customs Union



Welfare Effects of a Customs Union



Welfare Effects of a Customs Union



NB: D1=C1

In market for good 1 Home change = A+B-C1-C2

Partner impact identical

RoW loses (twice)

In market for good 2 Home change = +D1+D2

Net Home impact =A+B+D2-C2

Note: C2 is direct costs of supply switching not compensated by exports to partner

Frictional Barrier Preferential Trade Liberalisation

In market for good 1
- Home change = A+F

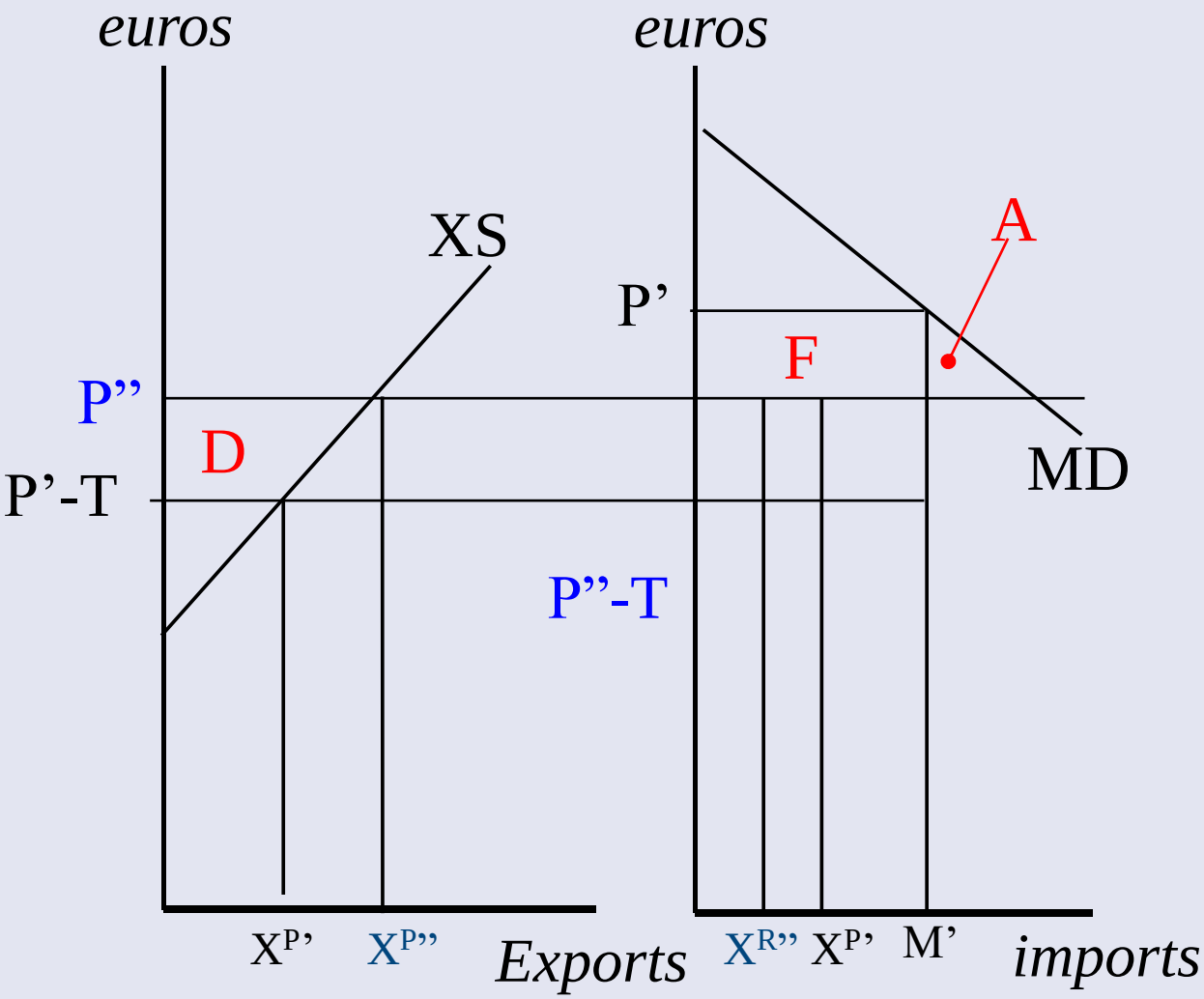
In market for good 2
- Home change = +D

Net Home impact =A+F+D
- unambiguous positive

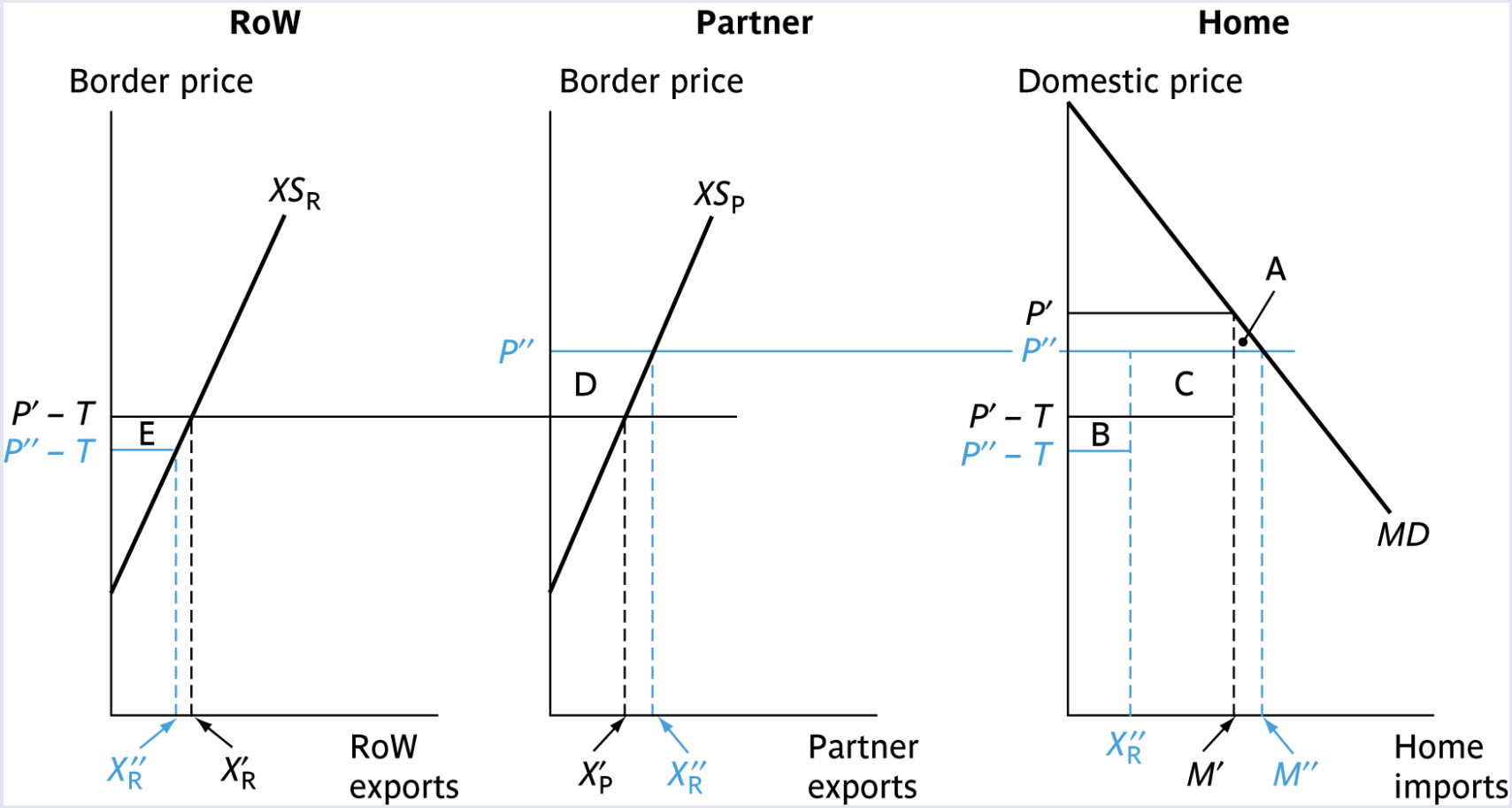
Partner gains same

RoW loses

T = tariff equivalent of frictional barrier



Analysis of a customs union



Customs Union vs. FTA

- FTA like CU but no Common External Tariff
  - Opens door to ‘tariff cheats’,
    - goods from RoW destined for Home market enter via Partner if Partner has lower external tariff, called ‘trade deflection’
  - Solution is ‘rules of origin’ meant to establish where a good was made.
    - Problems: Difficult and expensive to administer, especially as world get more integrated
    - Rules often become vehicle for disguised protection
- Despite the origin-problem in FTAs, almost all preferential trade arrangements in world are FTAs.
  - CU’s require some political integration
    - Must agree on common external tariff and how to change it, including anti-dumping duties, etc.

WTO Rules

- A basic principle of the WTO/GATT is non-discrimination in application of tariffs
- FTAs and CUs violate this principle
- Article 24 permits FTAs and CUs subject to conditions:
  - Substantially all trade must be covered
    - Cannot pick and choose products
  - Intra-bloc tariffs must go to zero within reasonable period
  - If CU, the CET must not on average be higher than the external tariffs of the CU members were before
    - In EEC's CU this meant France and Italy lowered their tariffs, Benelux nations raised theirs
      (German tariffs were about at the average anyway)

NEXT LECTURE

- **December 14, 2020**
- **Benefitting from a larger Market: Market Size and Scale Effects**
- **EU Trade and Competition Policies**
- **Reading:**
  - Baldwin & Wyplosz (2015) “The Economics of European Integration”, McGraw-Hill, Ch. 6, 11, 12.