EE451

Chapter 8:
The Instruments of Trade Policy
Part 2

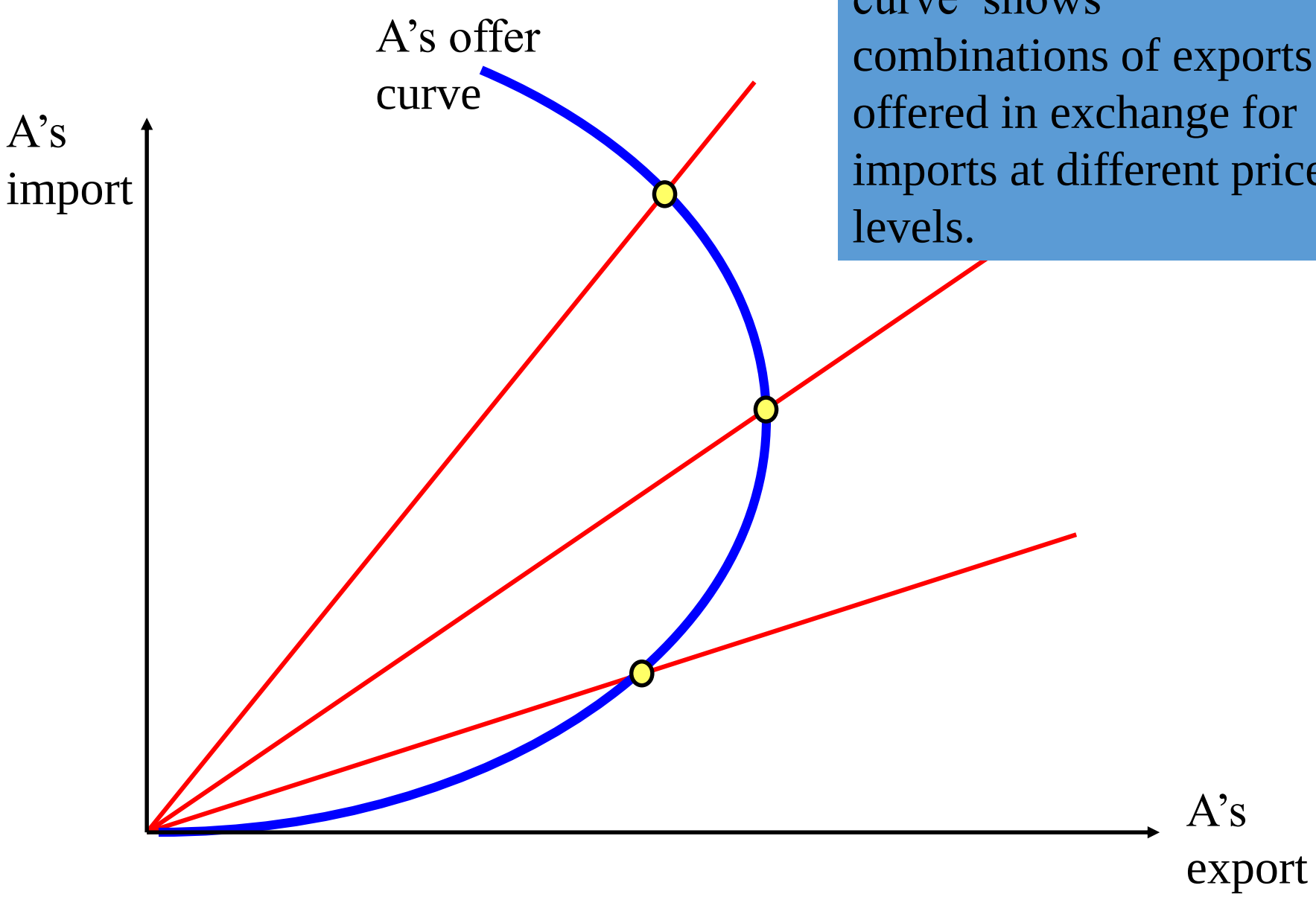
Tariffs and World Welfare

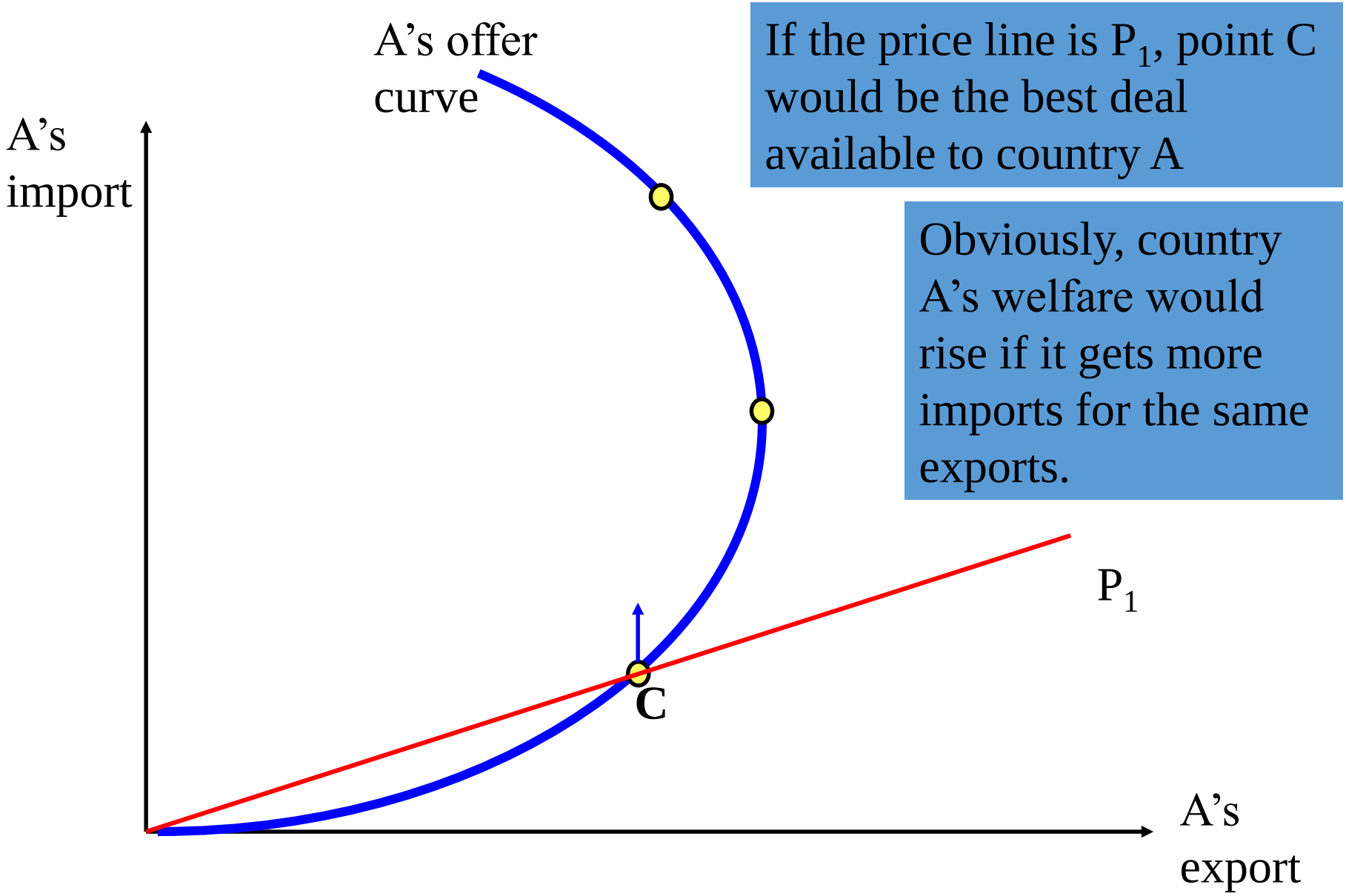
- Tariffs may not prevent.
  - A tariff may fail to protect the home import-competing industry by improving TOT so much that relative domestic price of imported good declines.
- Possibility of retaliation.
  - Gains at cost of partner (beggar-my-neighbour).
  - Retaliation results in further reduction in world welfare.

The Optimal Tariff

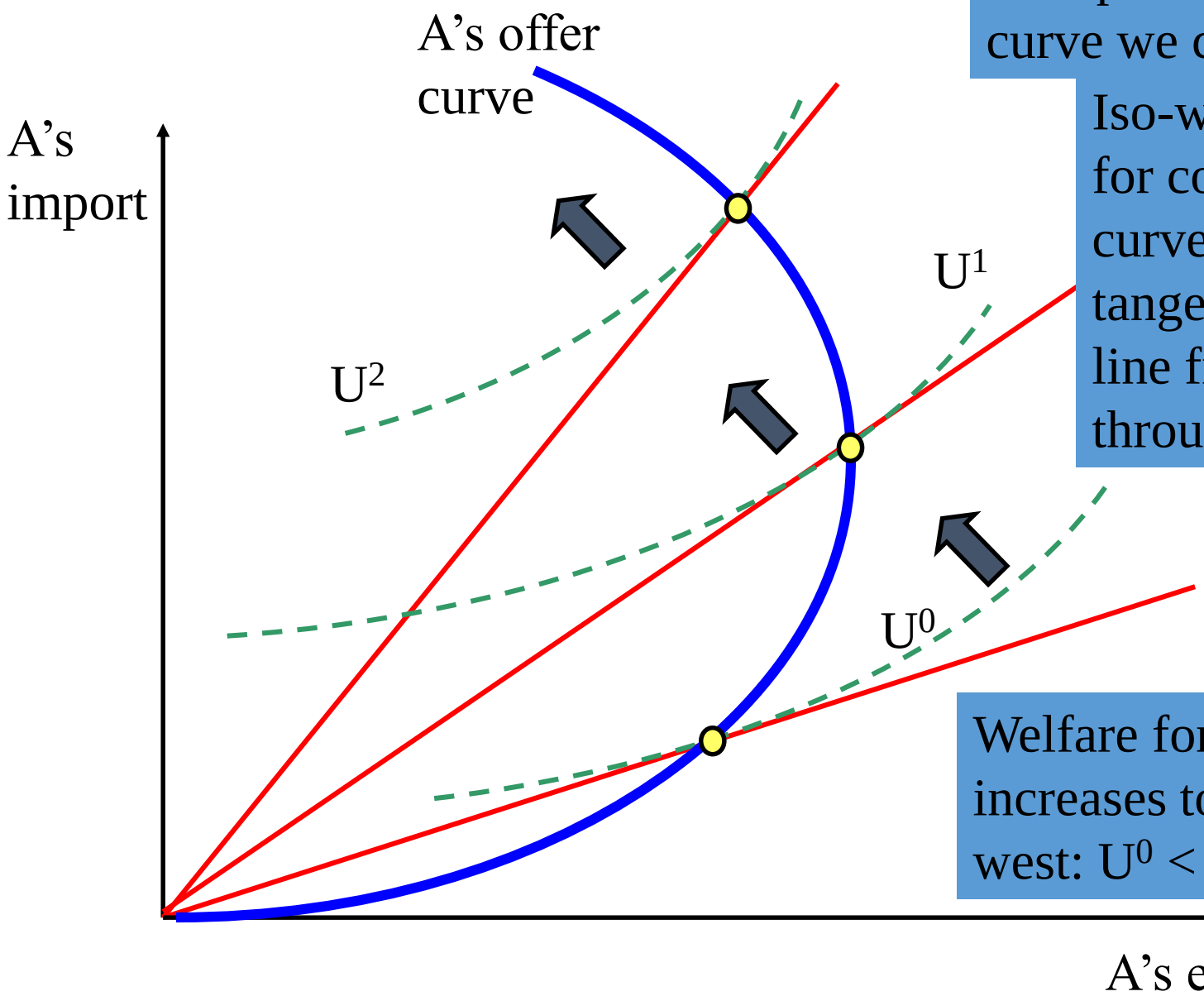
- The rate that maximises the country's welfare.
- It is the rate at which the positive difference between the gain from better prices and the loss from reduced quantity of imports is at a maximum.
  - If the tariff rate > the optimal one, then welfare is below the maximum.

Recall that an ‘offer curve’ shows combinations of exports offered in exchange for imports at different price levels.



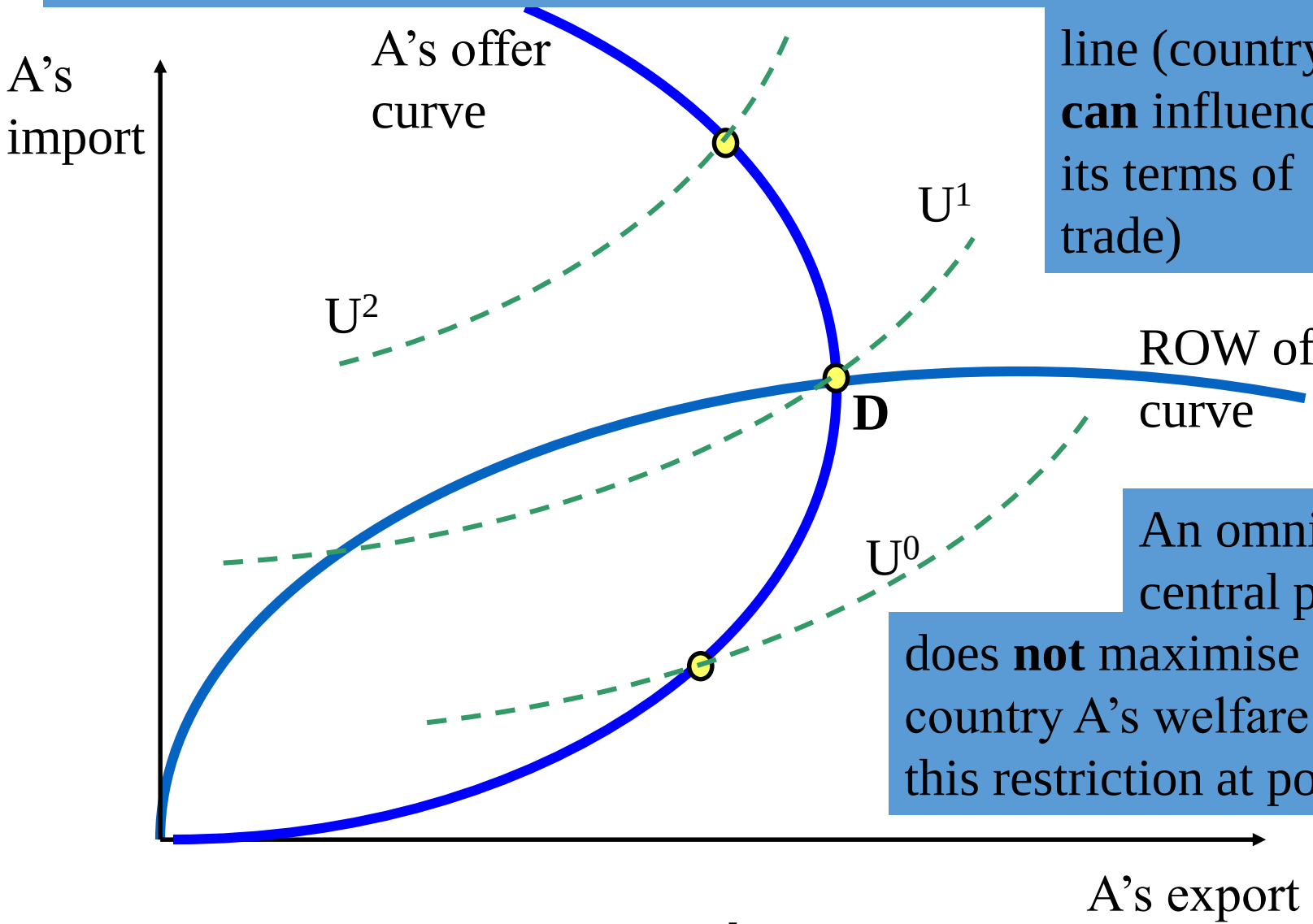

A's offer curve
A's import
If the price line is P_1, point C would be the best deal available to country A
Obviously, country A's welfare would rise if it gets more imports for the same exports.
P_1
C
A's export

This implies that through each point on the offer curve we can draw an Iso-welfare curve for country A. This curve must be tangent to the price line from the origin through that point.

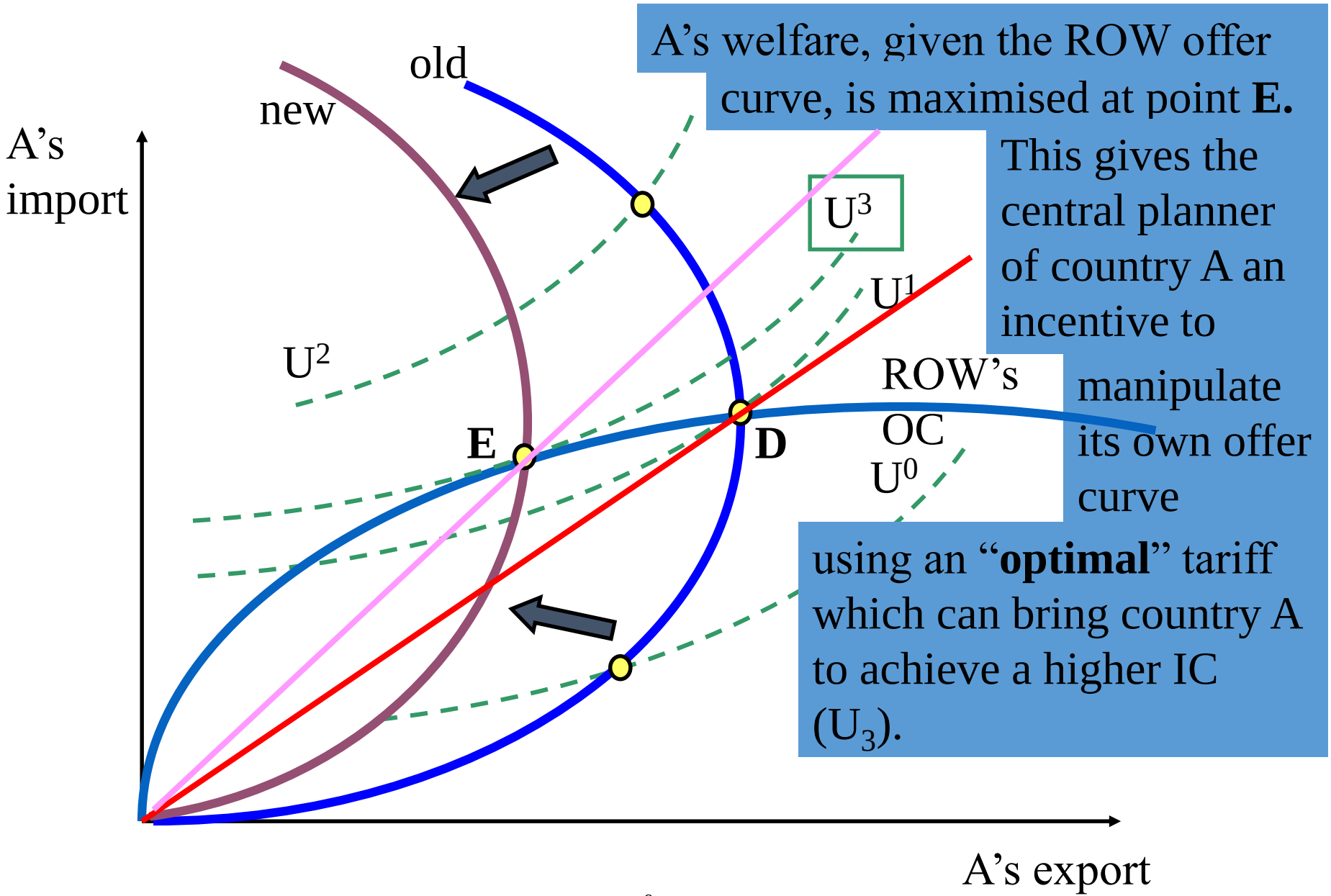


Welfare for country A increases to the north-west: $U^0 < U^1 < U^2$

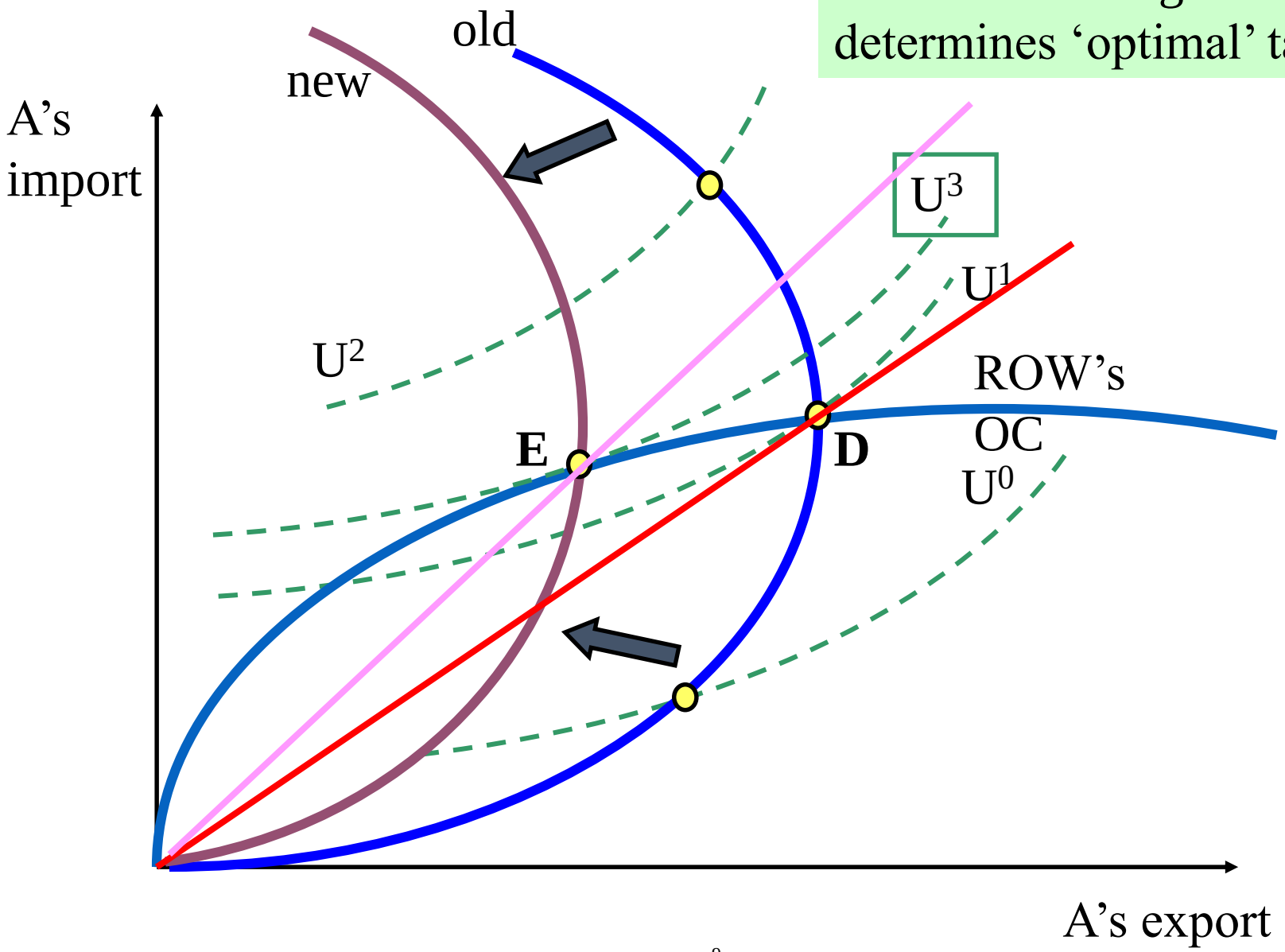
If A is a large country, the ROW offer curve is not a straight line (country A **can** influence its terms of trade)



An omniscient central planner does **not** maximise country A's welfare given this restriction at point **D**

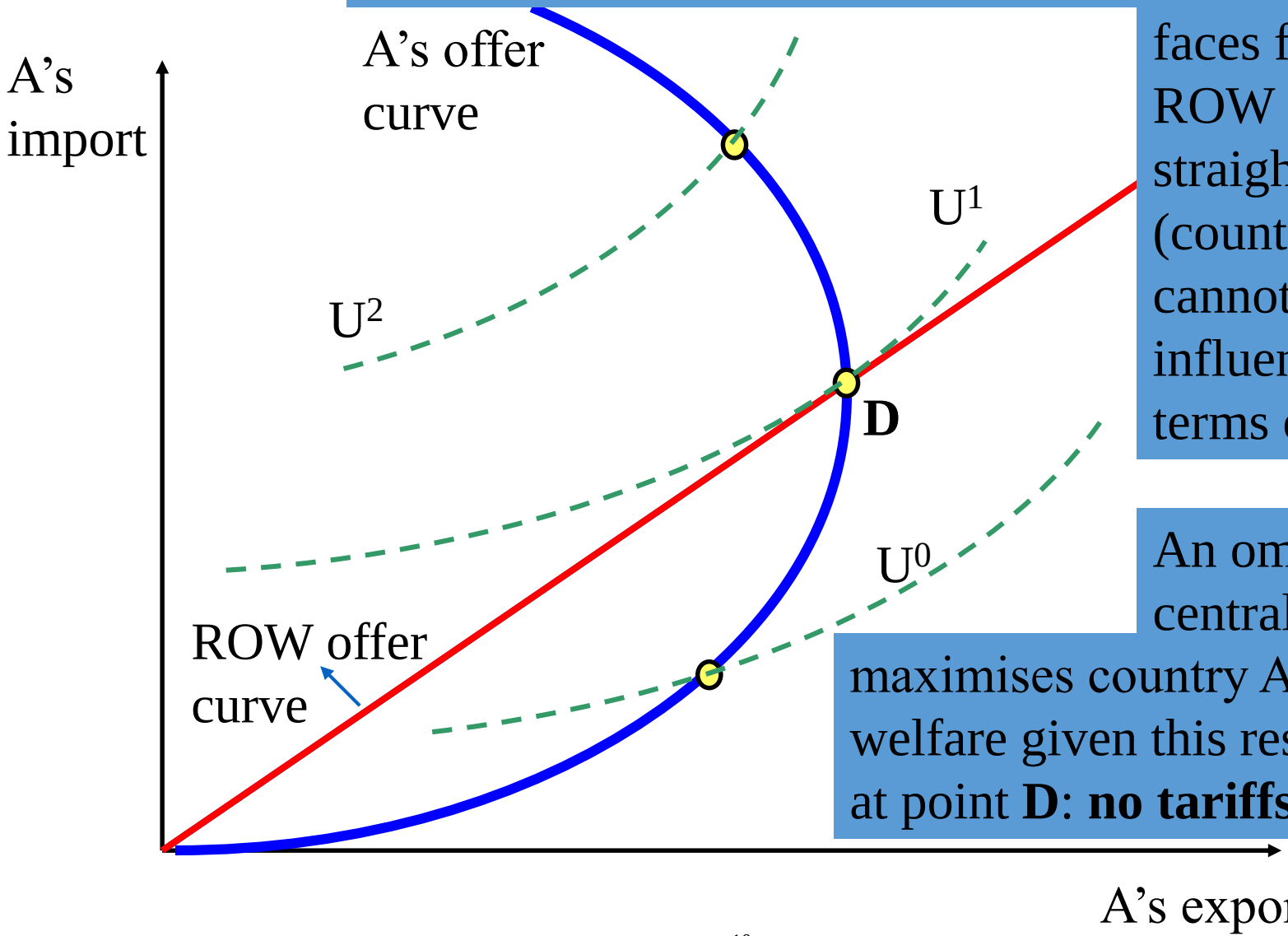

A's welfare, given the ROW offer curve, is maximised at point **E.** This gives the central planner of country A an incentive to manipulate its own offer curve using an "**optimal**" tariff which can bring country A to achieve a higher IC (U_3).
old
new
A's import
A's export
U^3
U^1
U^2
U^0
ROW's OC
E
D

Tangency of trade indifference curve with foreign offer curve determines ‘optimal’ tariff



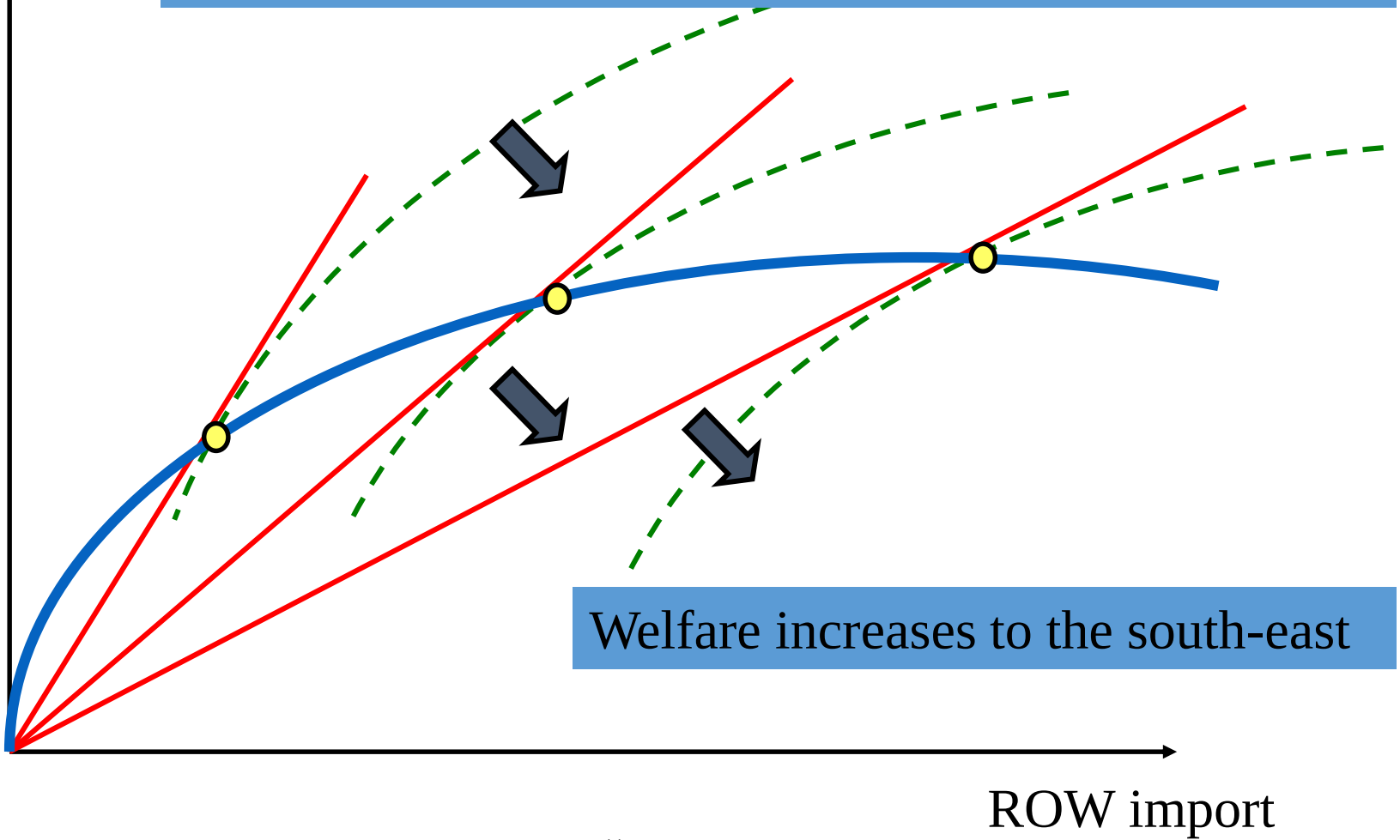
Note for a small country

If country A is a small country, the offer curve it faces from the ROW is a straight line (country A cannot influence its terms of trade).



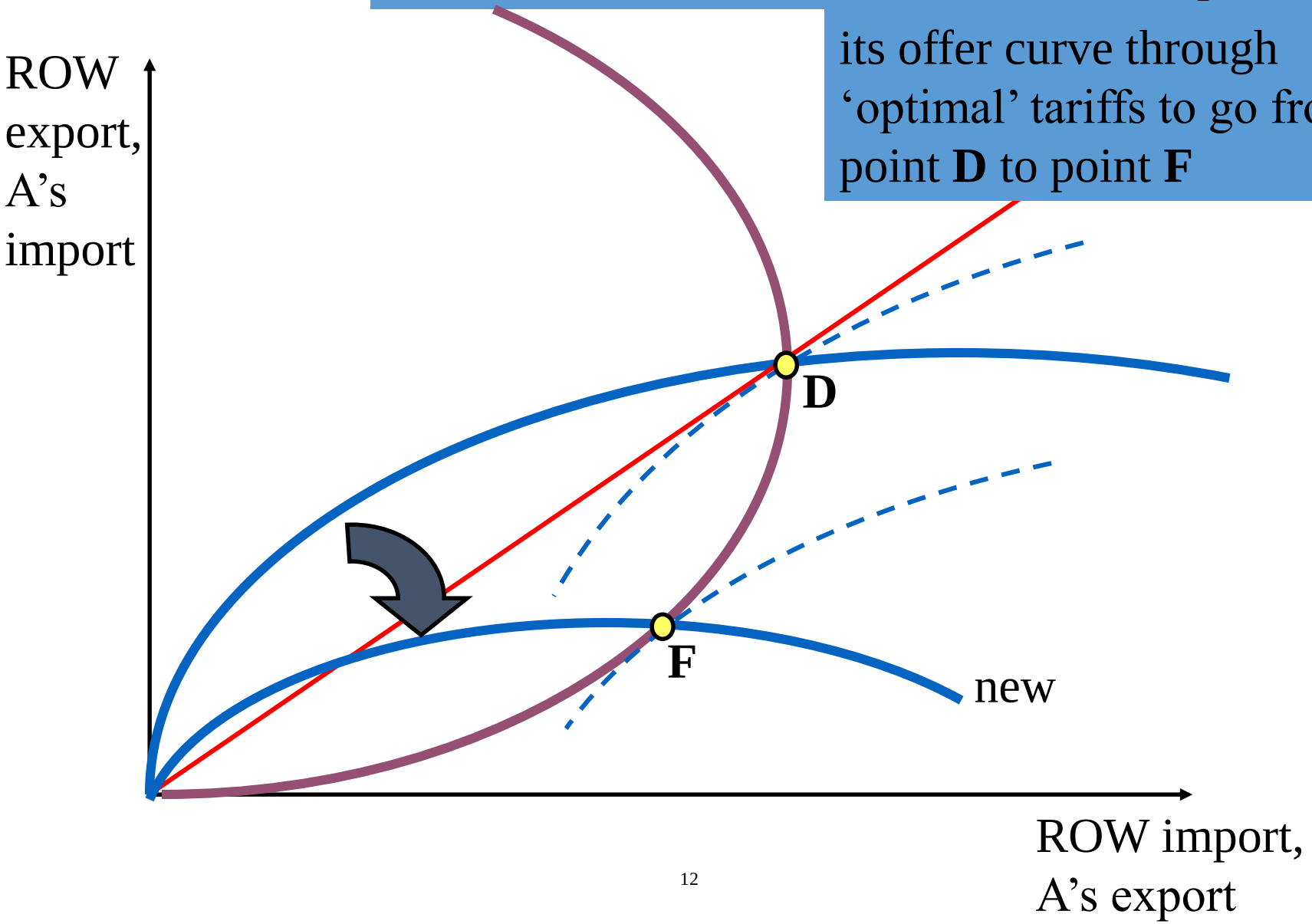
An omniscient central planner maximises country A's welfare given this restriction at point **D**: **no tariffs**

For ROW, however, the situation is reverse
Through each point on the ROW offer curve is an iso-welfare curve tangent to a line through the origin.

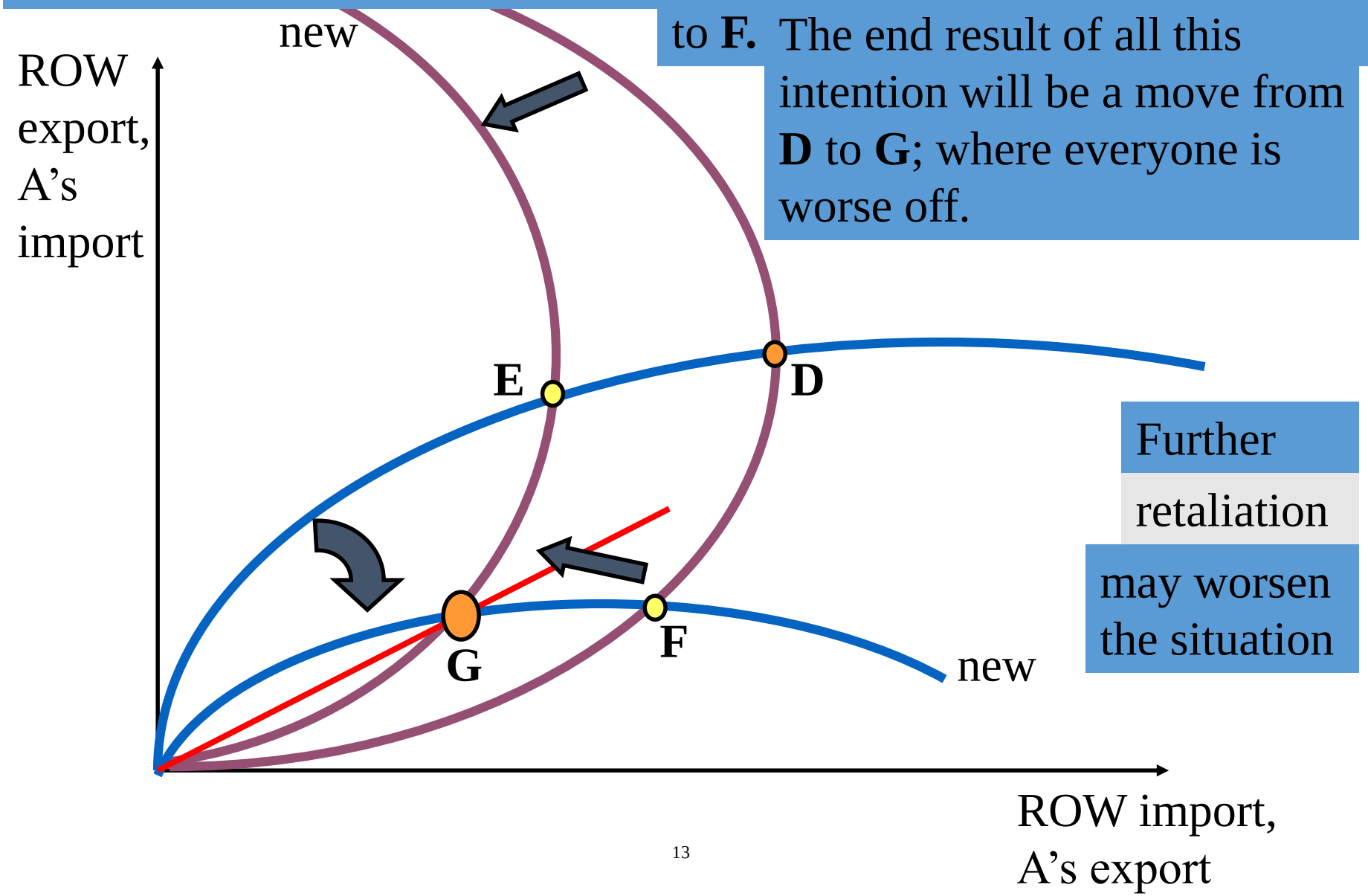


Welfare increases to the south-east

ROW, therefore, has an incentive to manipulate its offer curve through 'optimal' tariffs to go from point **D** to point **F**



If A wants to move from **D** to **E,** while ROW wants to move from **D** to **F.** The end result of all this intention will be a move from **D** to **G**; where everyone is worse off.



Further retaliation may worsen the situation

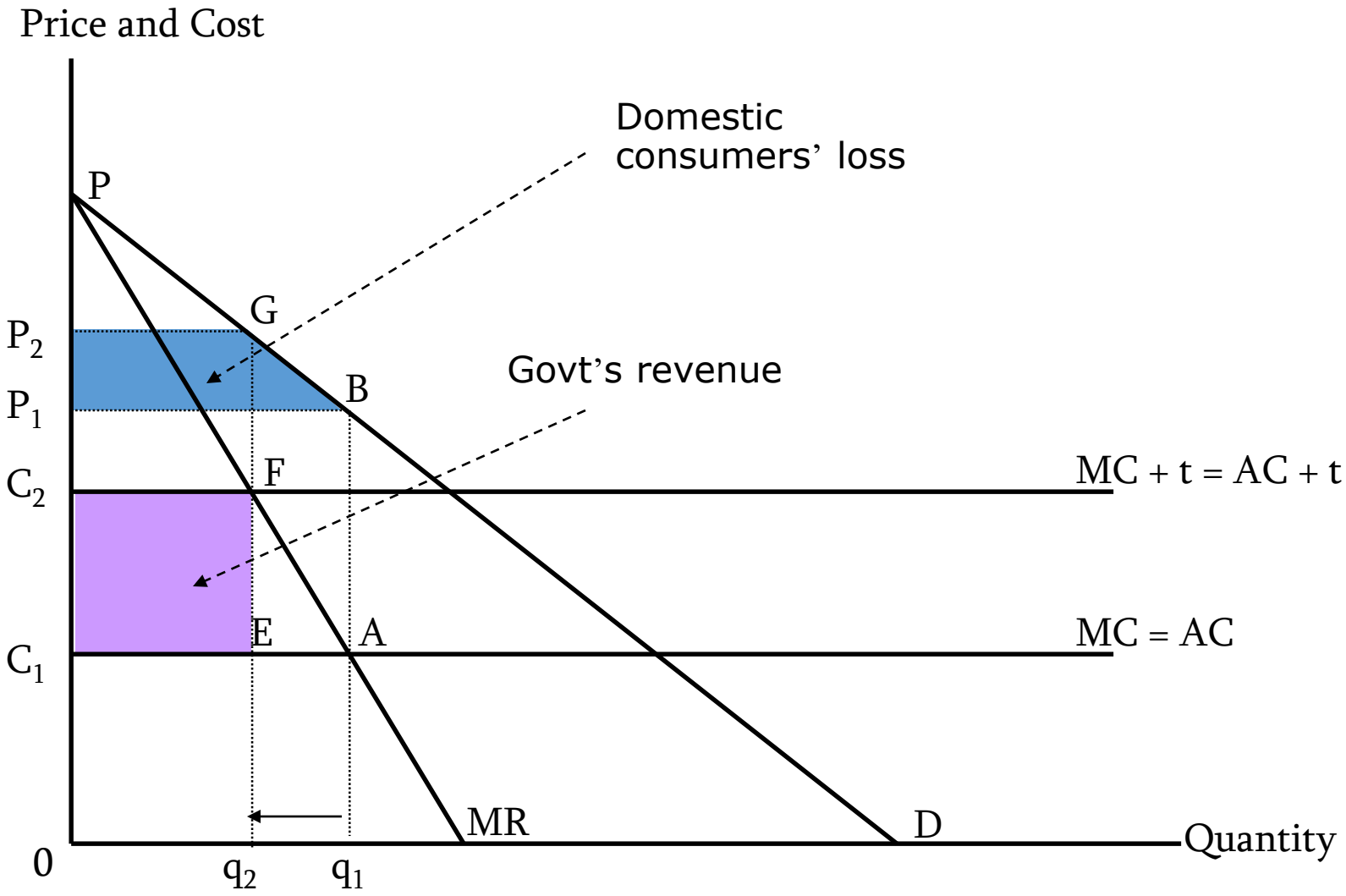
The Optimal Tariff: A Technical Note

$$\left.\begin{aligned} p_B &= \left(1-\frac{1}{\varepsilon_B^d}\right) = p_A \\ p_B &= (1+t_A)p_A \end{aligned}\right\} \Rightarrow t_A^* = \frac{1}{\varepsilon_B^d - 1}$$

Limitation: Extremely difficult to calculate.

A recognition of optimal tariff (t*) implies that TOT improvement does not necessarily mean that welfare will improve for the tariff-imposing country.

Tariff to Extract Foreign Monopoly Profit



Cons

- Tariffs, the distribution of incomes and rent-seeking activities
- The infant industry argument
- Growth, protection and welfare
- Income distribution and domestic saving

Import Quota

- Every quota has an equivalent tariff that produces the same market result.
- However, the welfare implications are not the same.
- No government revenue generated.
- The difference between the international price and domestic price of the import good is an economic quota RENT, which may accrue to
  - The domestic importer/retailer,
  - Or the foreign supplier/ foreign government,
  - Or the home government,
  - Or may be distributed among the three.

Import Quota

- All in all, import quota is worse than tariff
  - DWL + administrative costs.

Subsidy to an import-competing industry

- with an equivalent subsidy, producers are equally as well off as when the tariff was in place.
- However, the welfare effect is different.
  - No loss of consumer surplus.
  - Producers receive subsidy transfer.
  - But the burden of the policy falls on the taxpayers.

Trade Policies Imposed on Exports

- Export Taxes
  - Levied only on home-produced goods that are destined for export and not for domestic consumption
- Export Subsidies
  - Negative export taxes
- All in all, they
  - Interfere market mechanism
  - Distort the pattern of trade from that of CA.
  - Reduce world welfare.

Export Subsidies

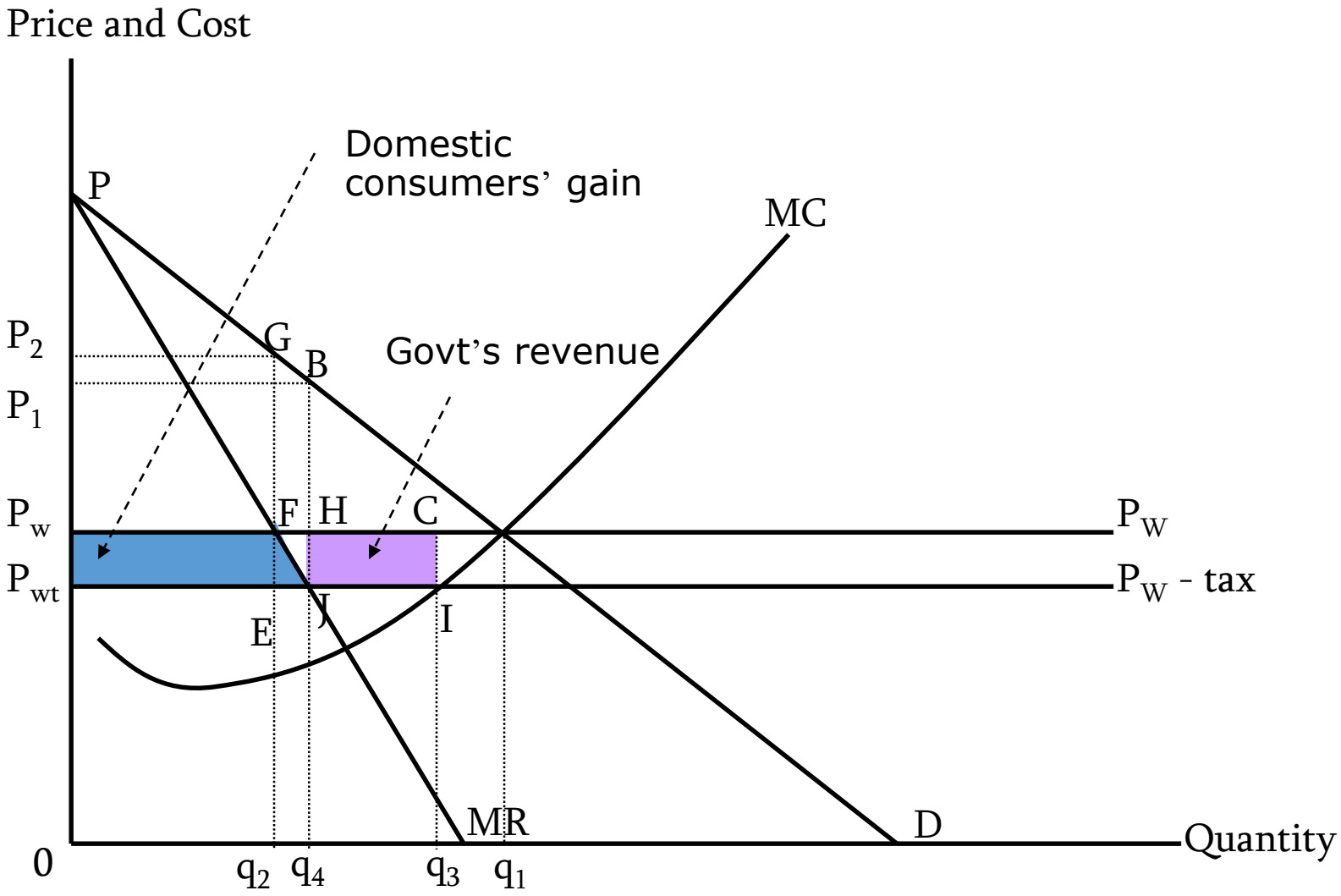
- **Export subsidy**
  - A payment by the government to a firm or individual that ships a good abroad.
  - When the government offers an export subsidy, shippers will export the good up to the point where the domestic price exceeds the foreign price by the amount of the subsidy
  - It can be either specific or ad valorem

Export Subsidies

- An export subsidy raises prices in the exporting country while lowering them in the importing country.
- In addition, and in contrast to a tariff, the export subsidy worsens the terms of trade.
- An export subsidy unambiguously leads to costs that exceed its benefits.

Export Taxes

Export Tax to Extract Profit from a Domestic Monopoly



Export Quota

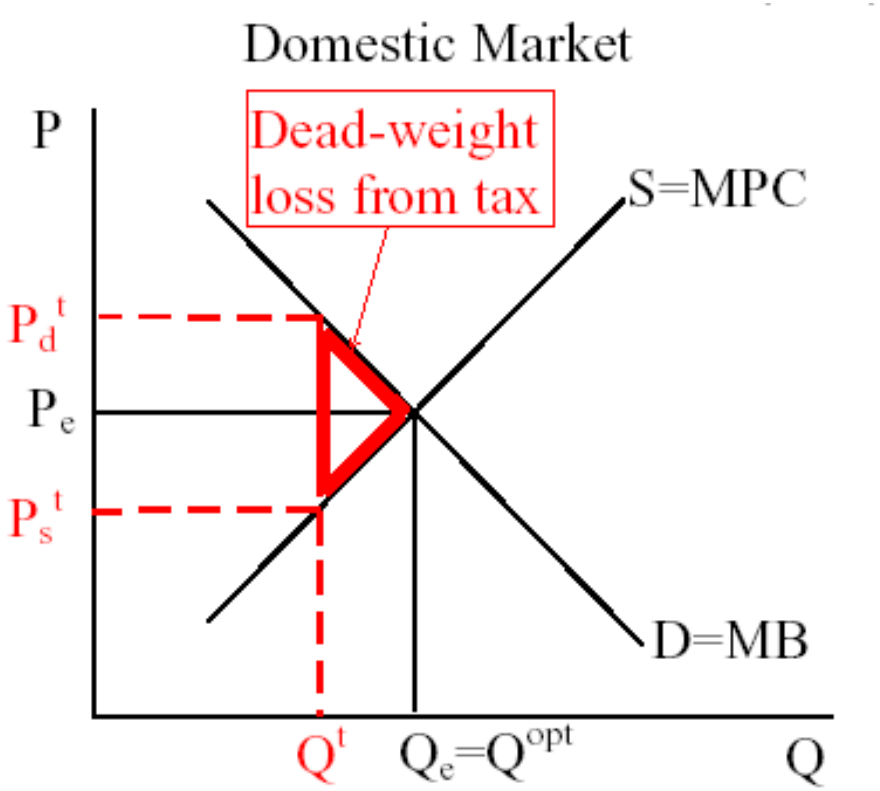
Lessons for Policy

- From the theory, two results:
  - In absence of ‘distortions’
    - Markets work well
    - Intervention hurts
  - In presence of distortions
    - Intervention is needed
    - Theory suggest how to do it.
- Implications for international trade in practice:
  - Free trade is best
  - Distortions should be corrected with domestic policies.
  - Domestic policies need to be calibrated
    - Not too much
    - Not too little

The Simple Analysis of Policy

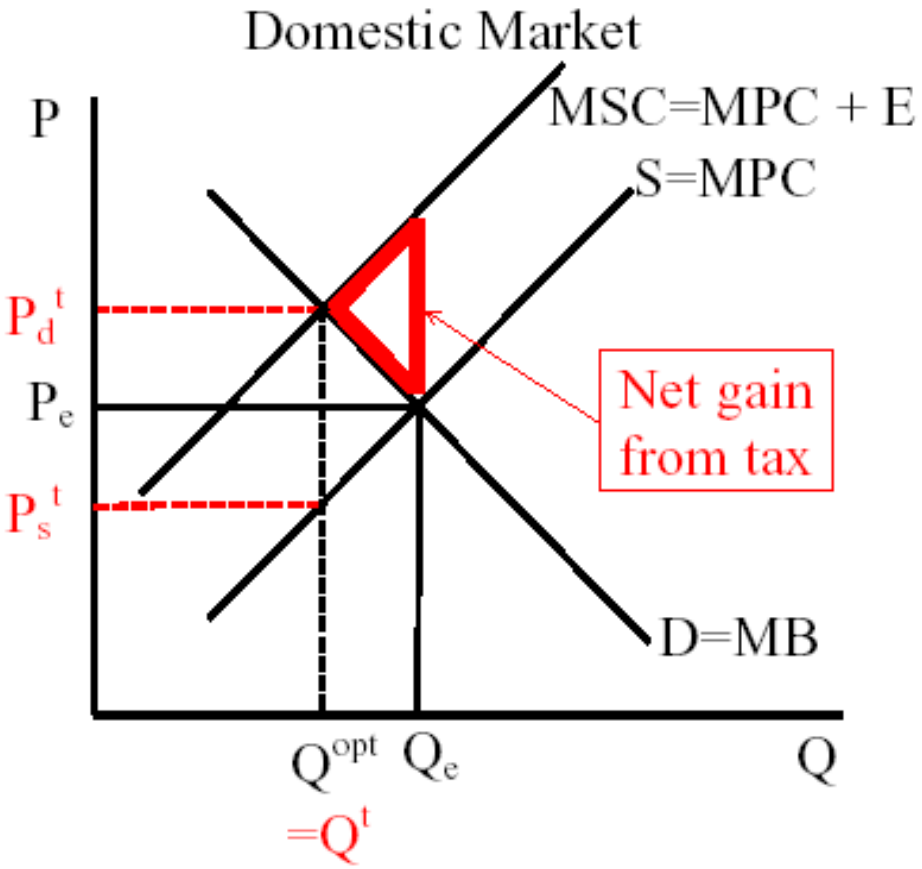
- Situation
  - External social cost arising from production, such as pollution or threat to public safety.
- Policies
  - Tax on production
  - Regulation of quantity produced
- Possible cases to consider
  - No trade, no distortion
  - No trade, with distortion
  - Small open economy, no distortion
  - Large open economy, no distortion
  - Small open economy, with distortion
- Goal
  - Find optimal policies

Case I: No trade, No distortion



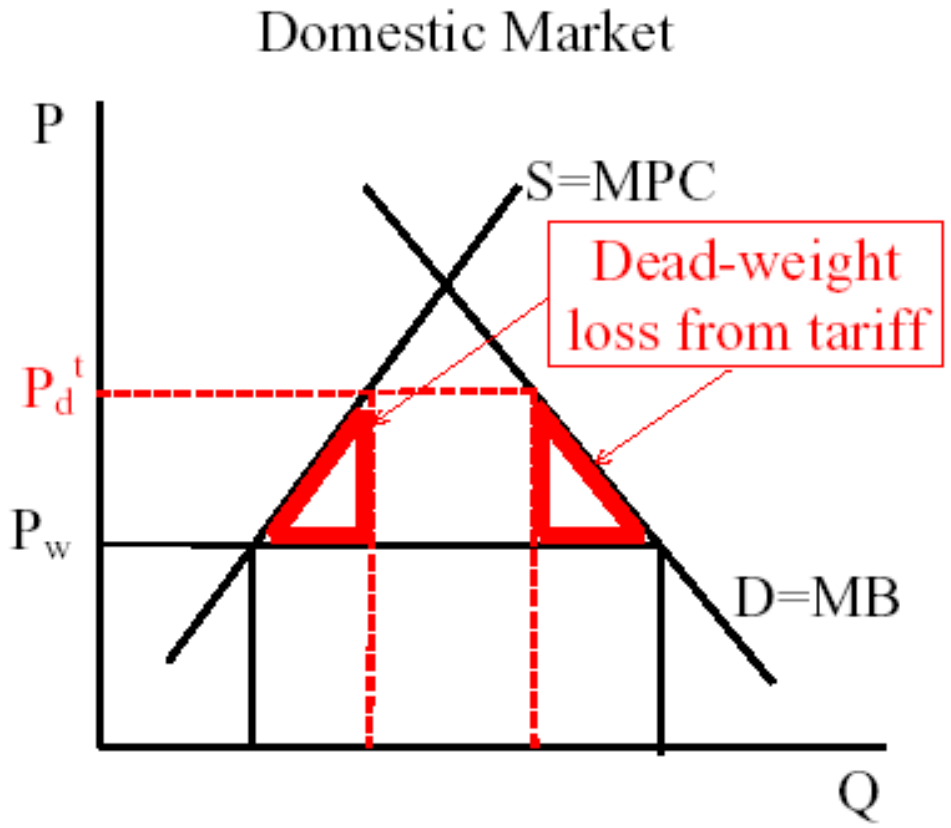
- Market gets it right.
- Tax or regulation causes deadweight loss.

Case II: No trade, With distortion



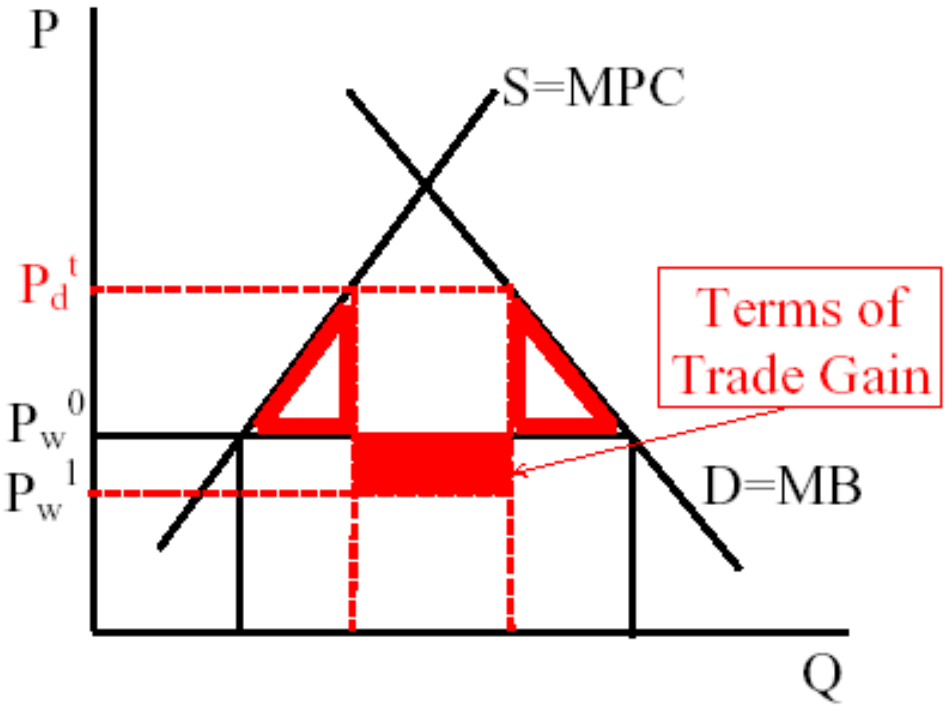
- Market gets it wrong.
- Tax or regulation can offset externalities and get it right. (but problem is producers may not cooperate).

Case III: Small Open Economy, No Distortion



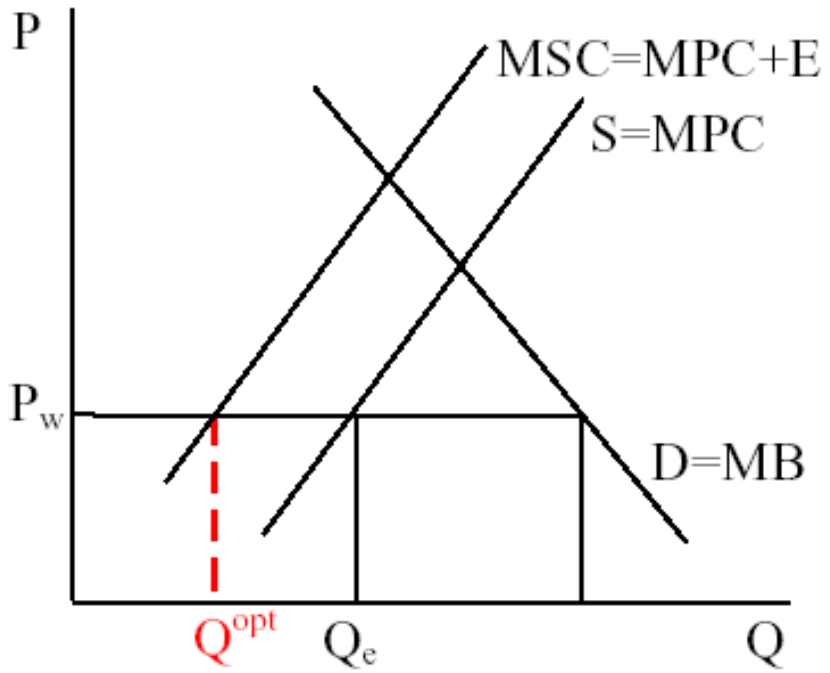
- Free trade gets it right.
- Tariff causes deadweight loss, but note that gains accrue to suppliers.

Case IV: Large Open Economy, No Distortion



- For a large country, a tariff raises the domestic price but lowers the world price from P_w^0 to P_w^1.
- The higher domestic price causes the two triangles of net welfare loss, as in the small-country case, but the lower world price generates also the red triangle of the TOT gain, which is a portion of tariff revenue not offset by consumer loss..
- Therefore, a large country may gain, but at the world's expense.

Case V: Small Open Economy, with Distortion



- Optimal policies: Tax = E, or Regulation of Q = Q_{opt}.
- Now suppliers bear the full burden of tax, get less rent from regulation, perceive trade as unfair, and may form a lobbyist to get some sort of protection, such as a tariff equal to the externality tax.

Further Considerations

- International trade policies and national strategies toward industrial development
- Tariff to promote export through R& D
- Export subsidy in duopoly
  - Reaction function
  - Game theory ➔ a determination of dominant strategy
- Strategic trade policy

Game & Payoff Matrix

Free trade		F	
		Produce	Not produce
H	Produce	(-20,-20)	(200, 0)
	Not produce	(0, 200)	(0, 0)

No certain outcome to this game

Game & Payoff Matrix

Free trade		F	
		Produce	Not produce
H	Produce	(-20,-20)	(200, 0)
	Not produce	(0, 200)	(0, 0)

Subsidy of 50 given to Home.		F	
		Produce	Not produce
H	Produce	(30,-20)	(250, 0)
	Not produce	(0, 200)	(0, 0)

Strategic Government Intervention

- All above frameworks can also be applied to government's decision regarding to the rate of tariff.
- Duopoly/ game framework allows us to take into account the possibility of retaliation.
- Don't forget that the game can be played
  - Cooperatively
  - Non-cooperatively
- Total welfare may be raised if negotiations are successful.

Other Issues

- To what extent is it helpful for domestic policies to be coordinated?
- Will governments act for the best? Possible conflicts between the best for 'a country' and the best for the world exist. Are the incentives confronting governments such that it is in their interest to select policies that will be optimal for the world? Or do they need to be restrained from using policies that will hurt each other?
- From terms of trade effect, to what extent do these price changes matter for policy choice? And how can these affect the work of international institutions?
- Further technical barriers, such as standards, measures mainly directing to trade in services, intellectual property, environment, and labours.