

EE451

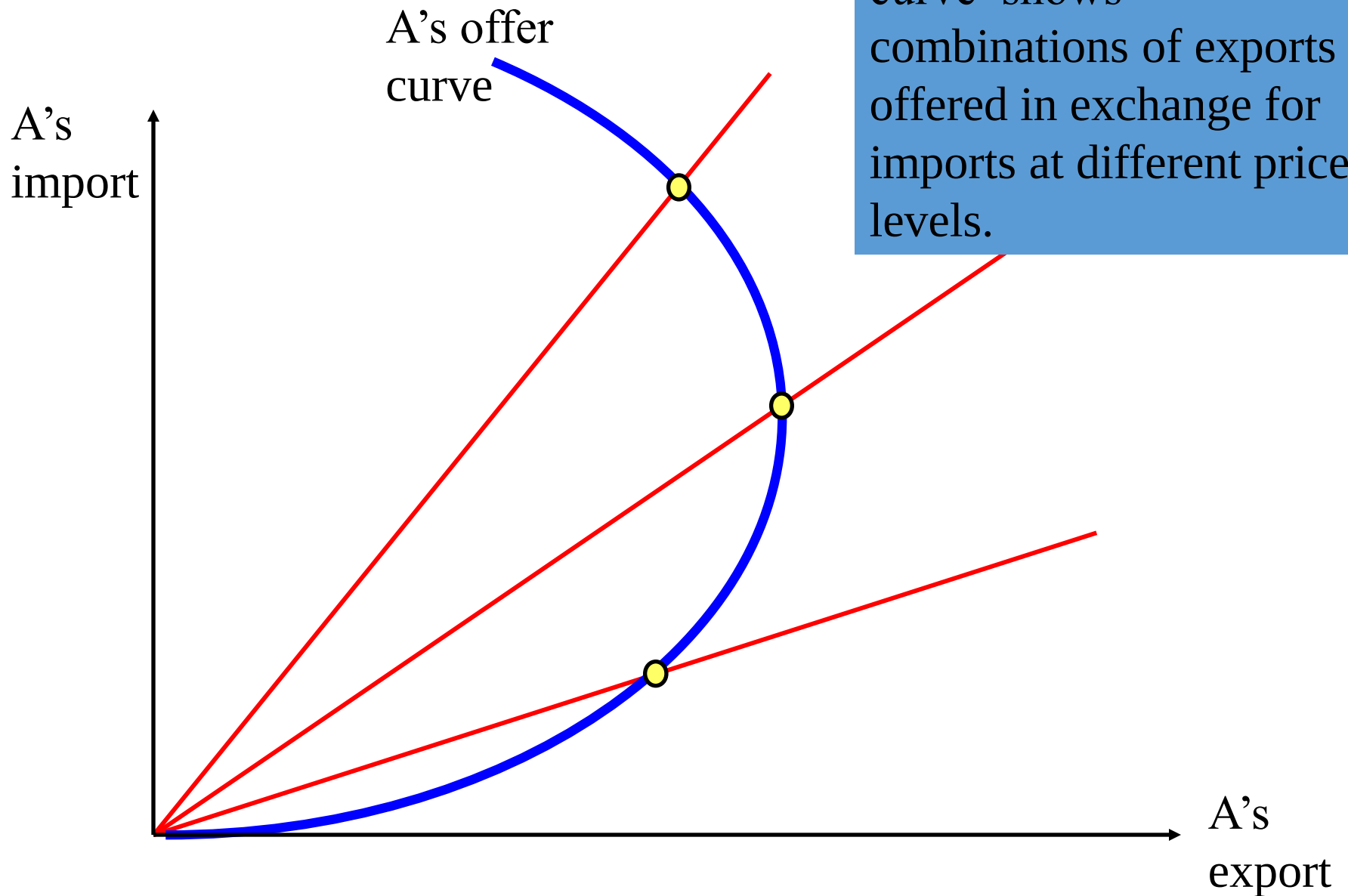
**The Instruments of Trade Policy:
Optimal Tariff**

Tariffs and World Welfare

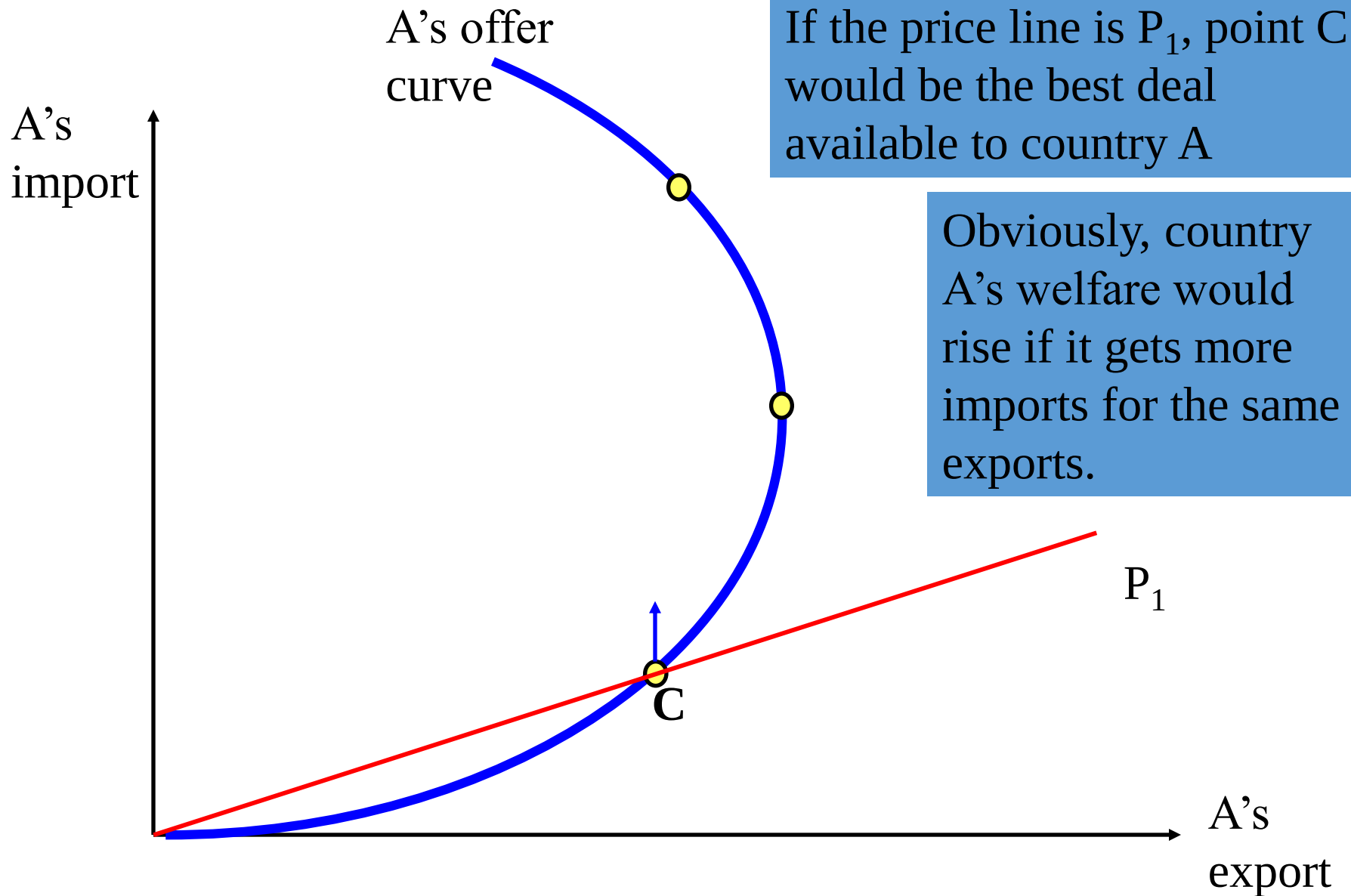
- Tariffs may not prevent.
 - A tariff may fail to protect the home import-competing industry by improving TOT so much that relative domestic price of imported good declines.
- Possibility of retaliation.
 - Gains at cost of partner (beggar-my-neighbour).
 - Retaliation results in further reduction in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

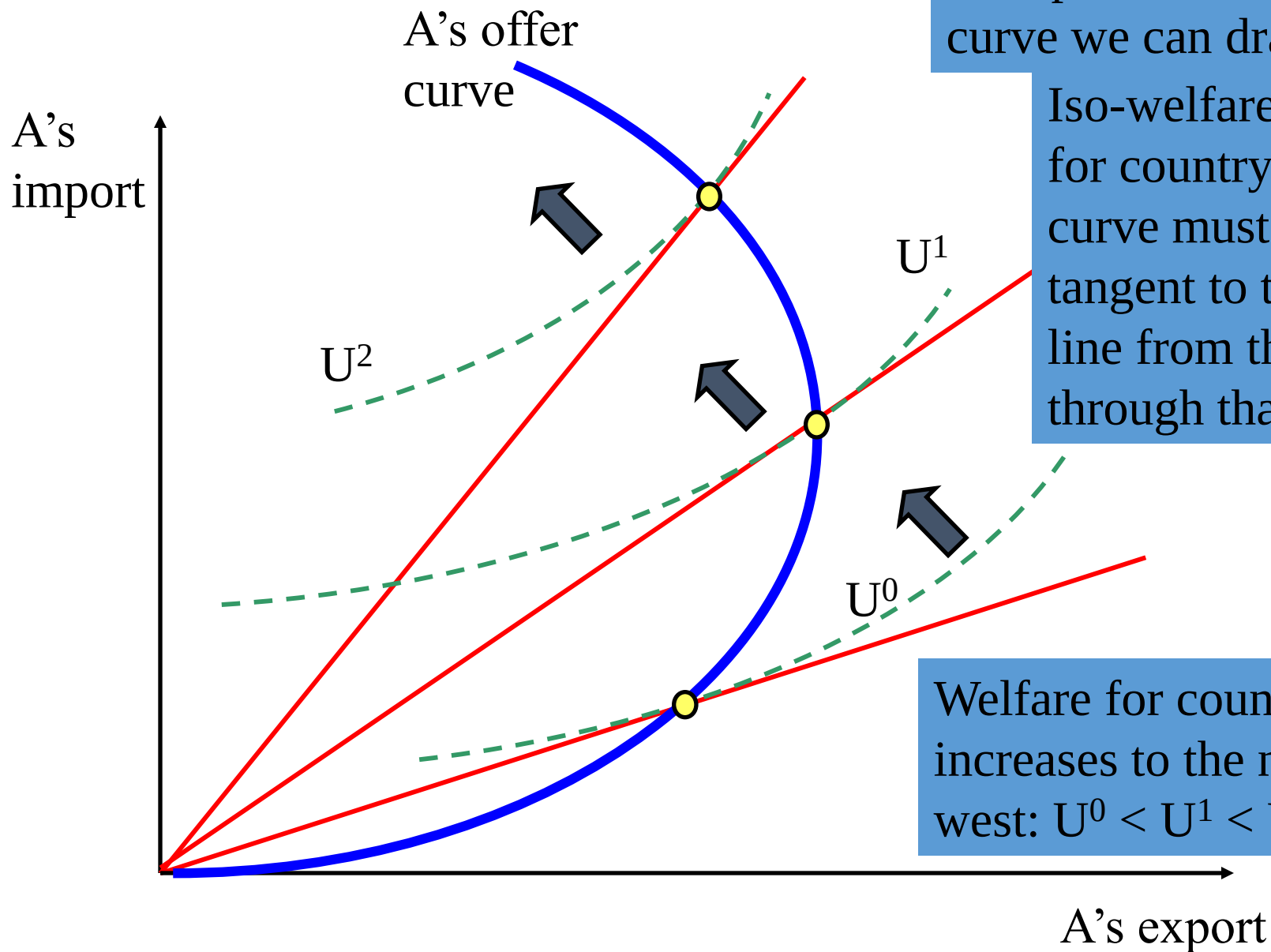
The Optimal Tariff

- 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.



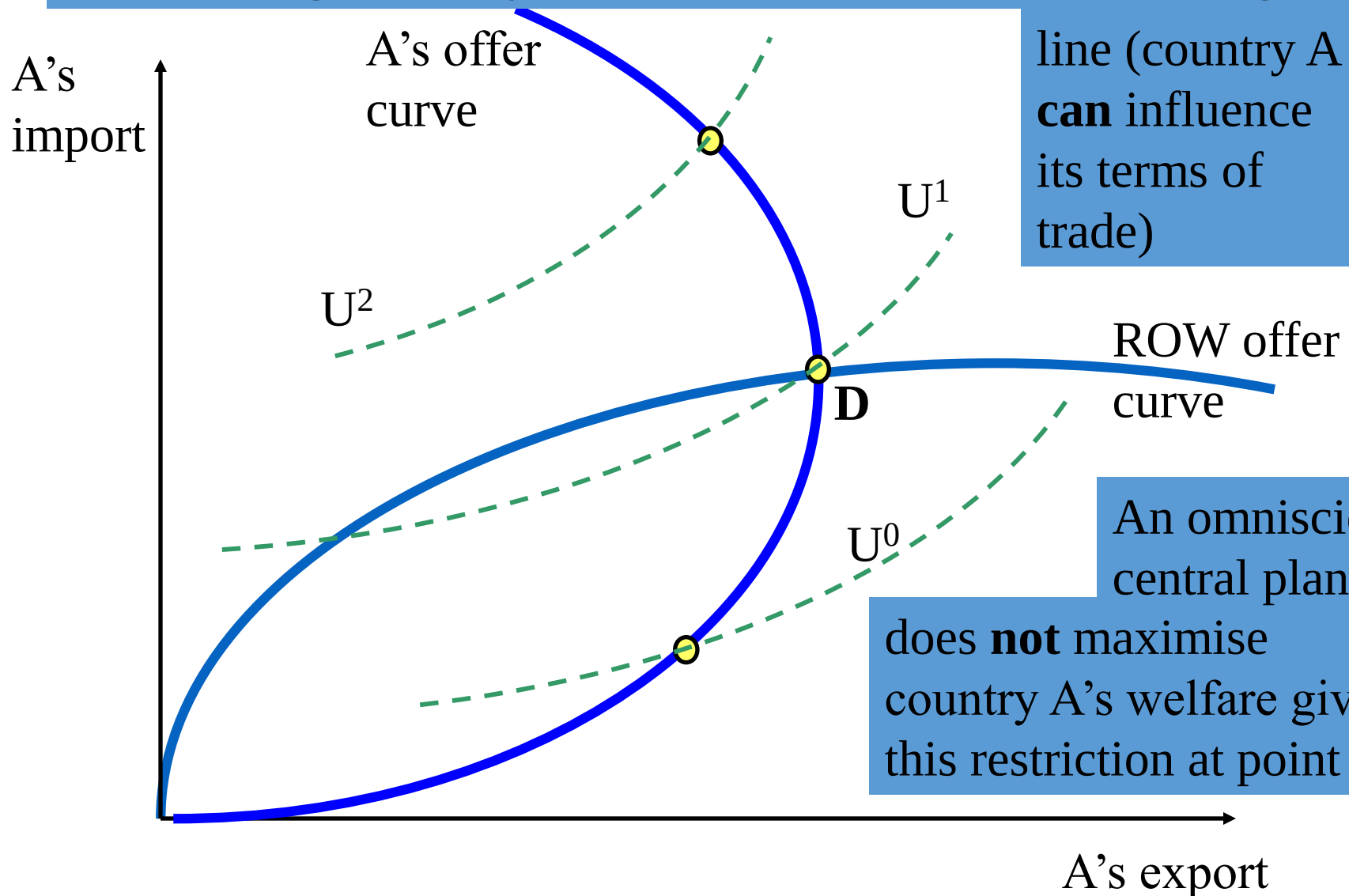


This implies that through each point on the offer curve we can draw an

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: $U^0 < U^1 < U^2$

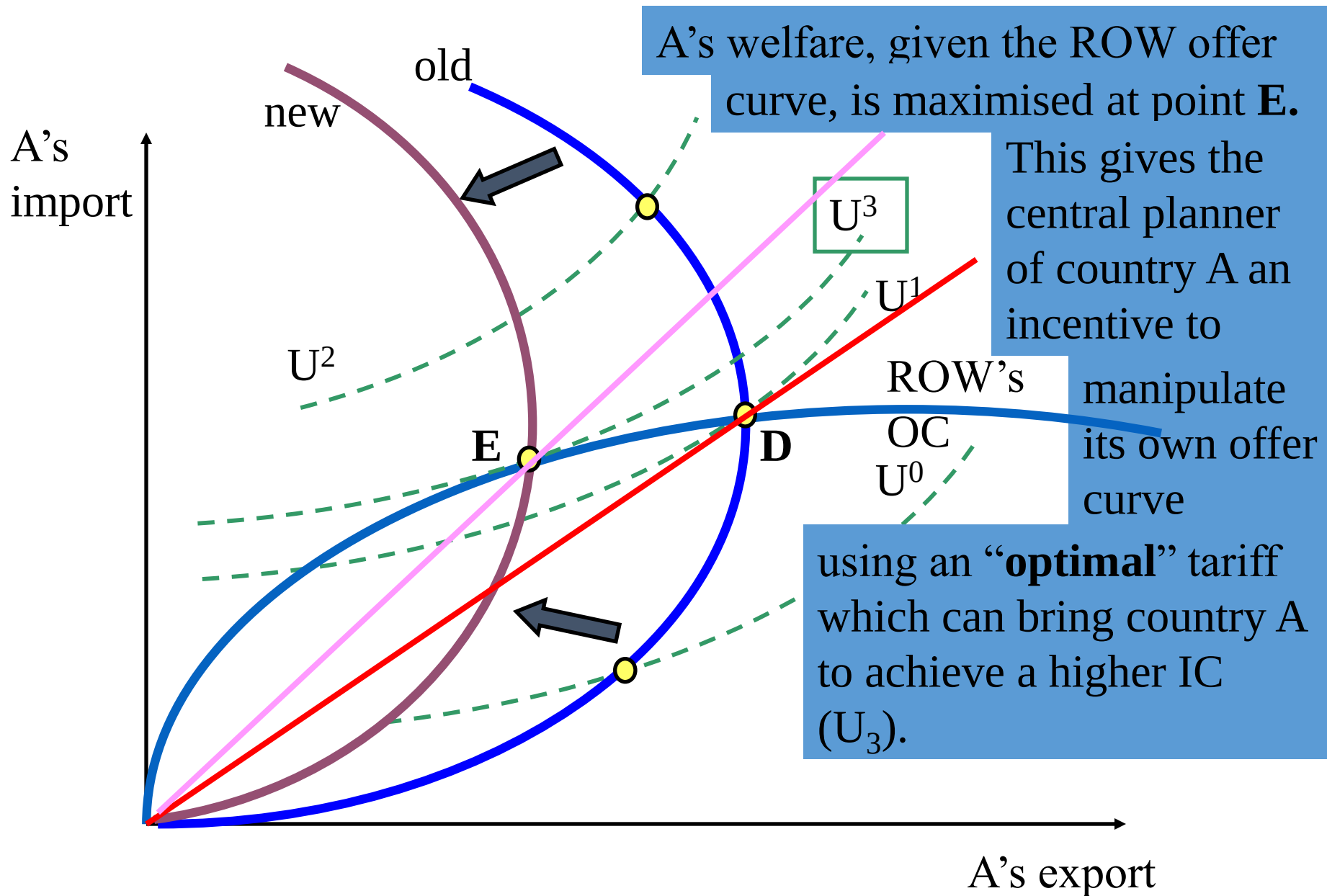
If A is a large country, the ROW offer curve is not a straight line (country A **can** influence its terms of trade)



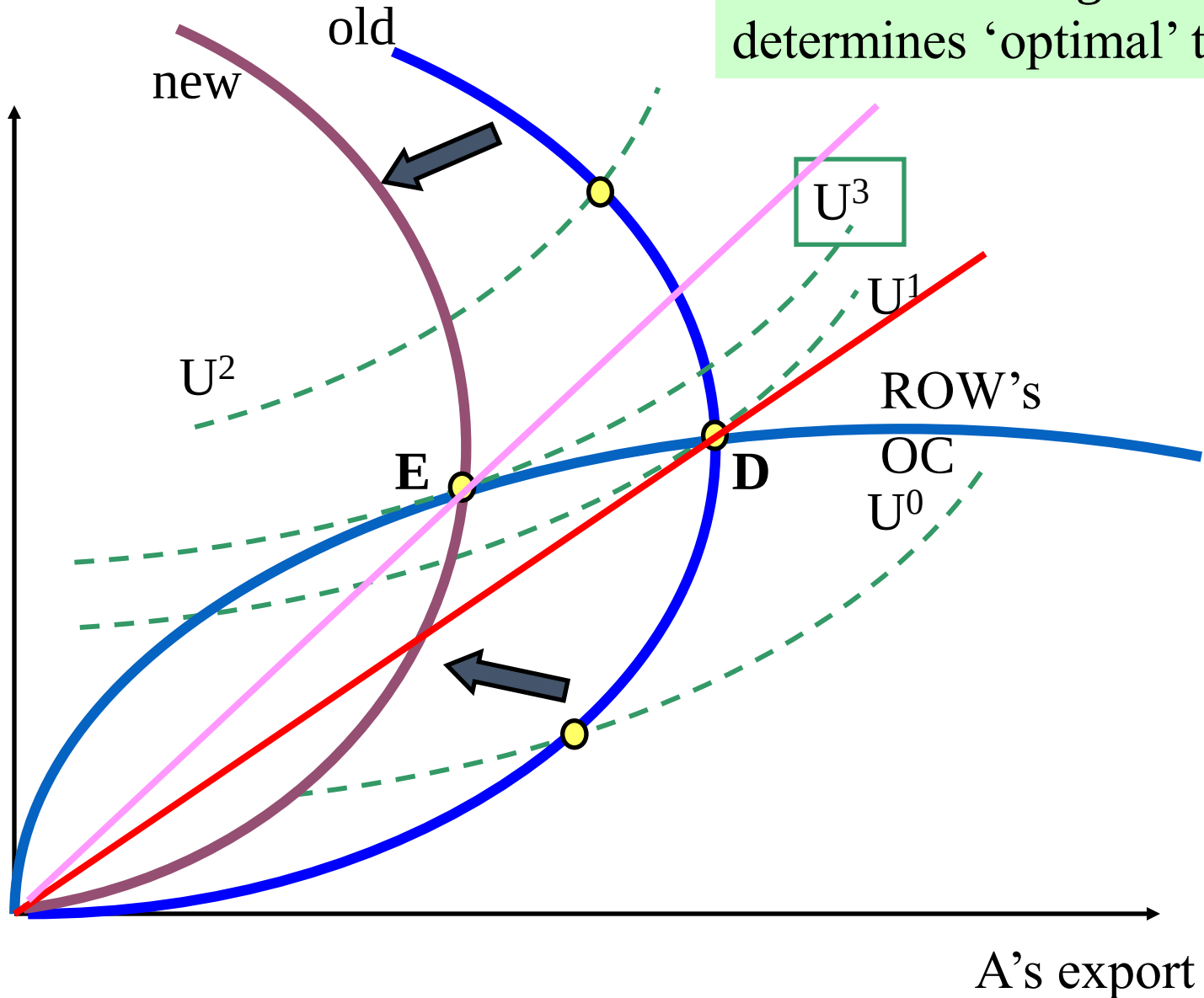
country A **can** influence its terms of trade)

An omniscient central planner

does **not** maximise country A's welfare given this restriction at point **D**

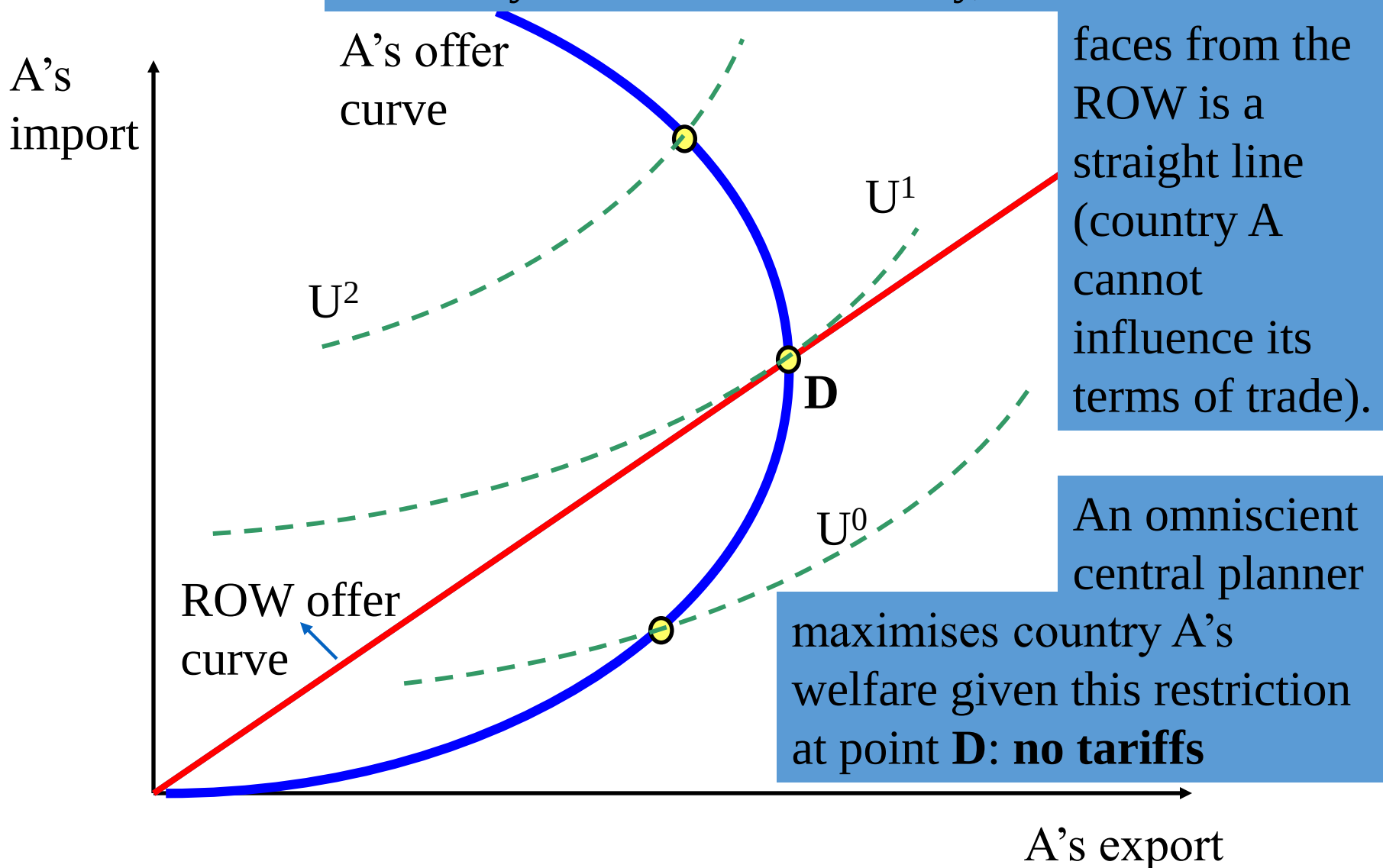


Tangency of trade indifference curve with foreign offer curve determines 'optimal' tariff



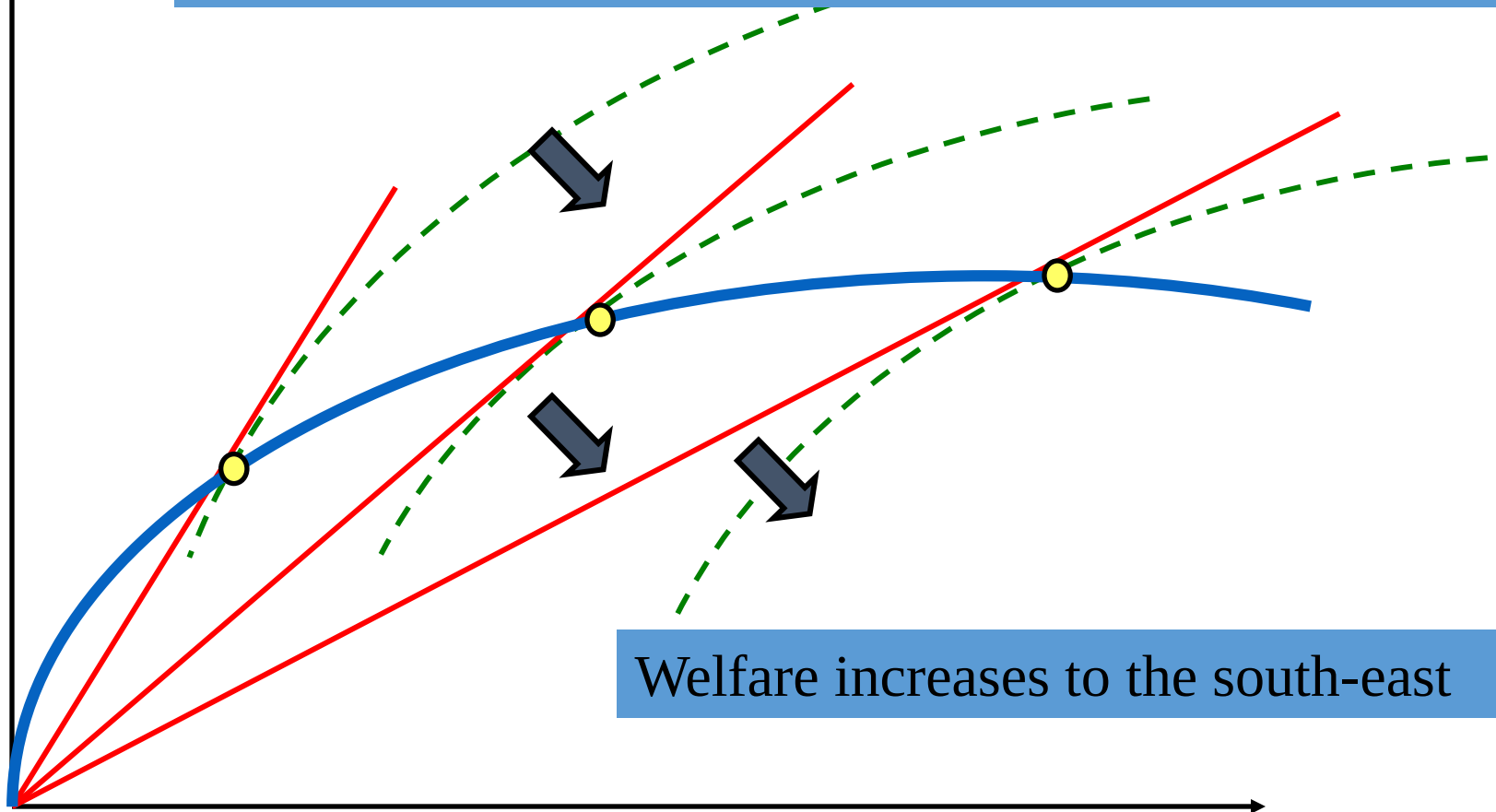
Note for a small country

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).



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.

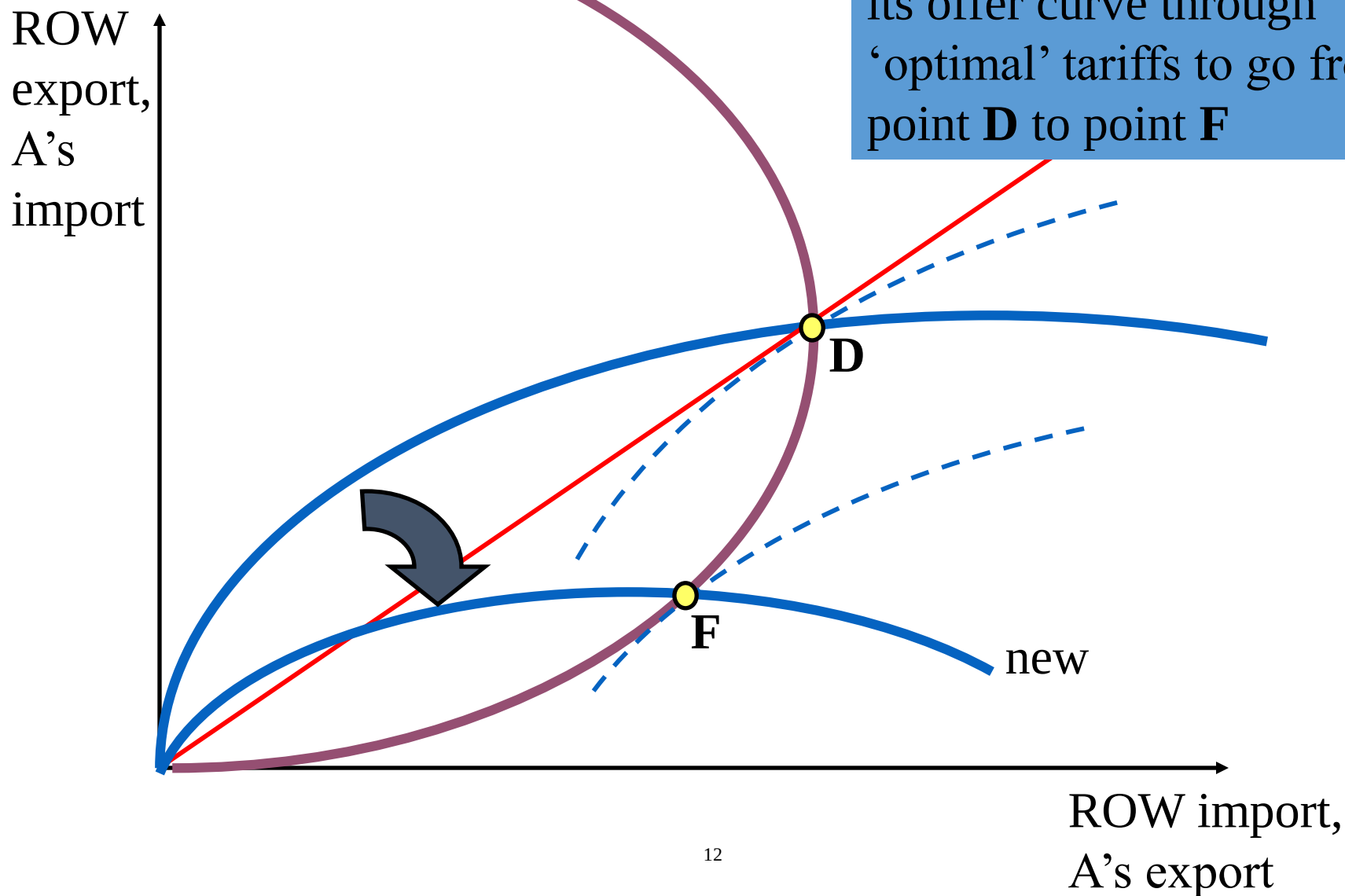
ROW
export



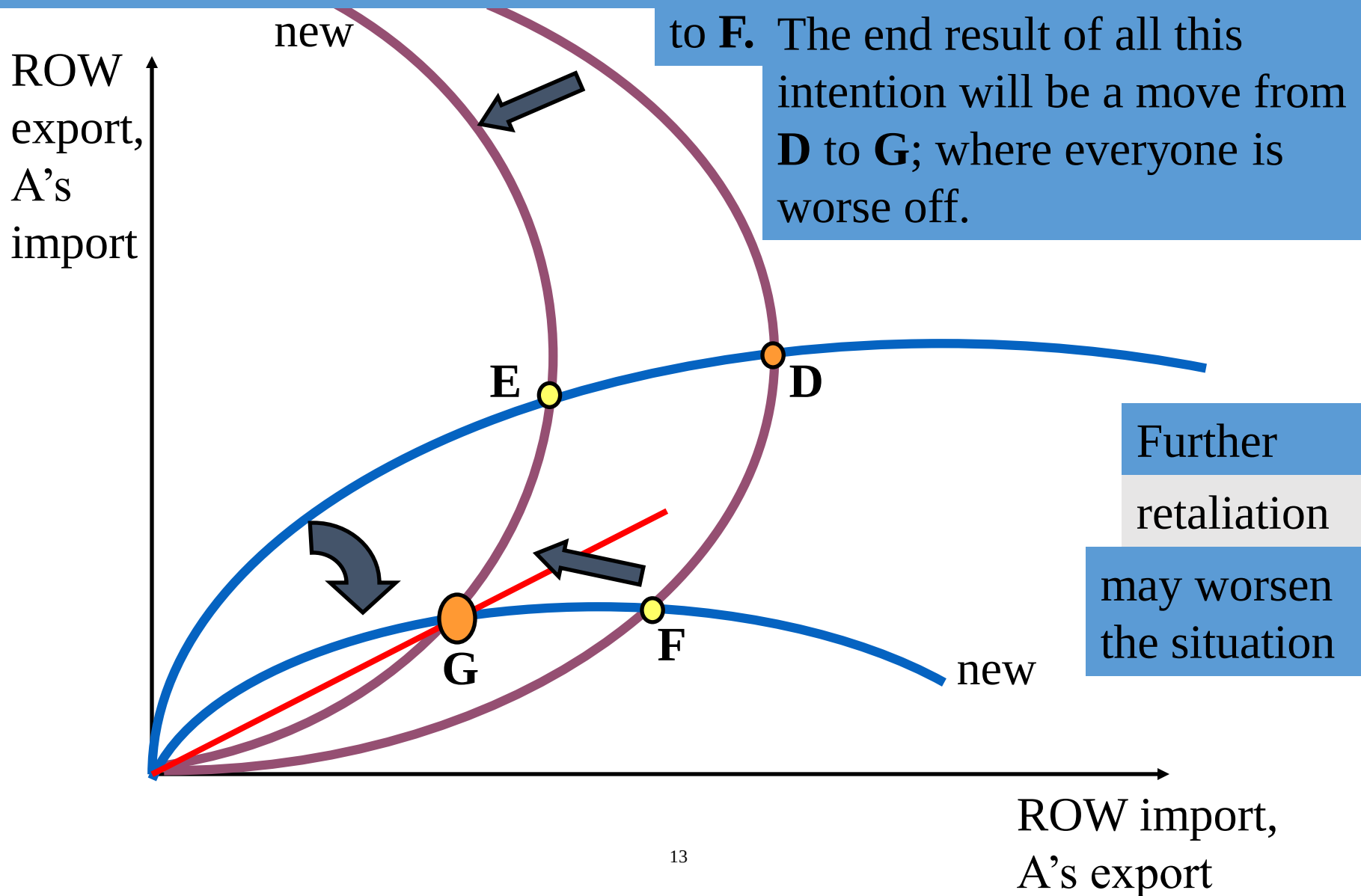
Welfare increases to the south-east

ROW import

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.



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.

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.