

Macro II/Aussenwirtschaft

Lecture Slides No 6

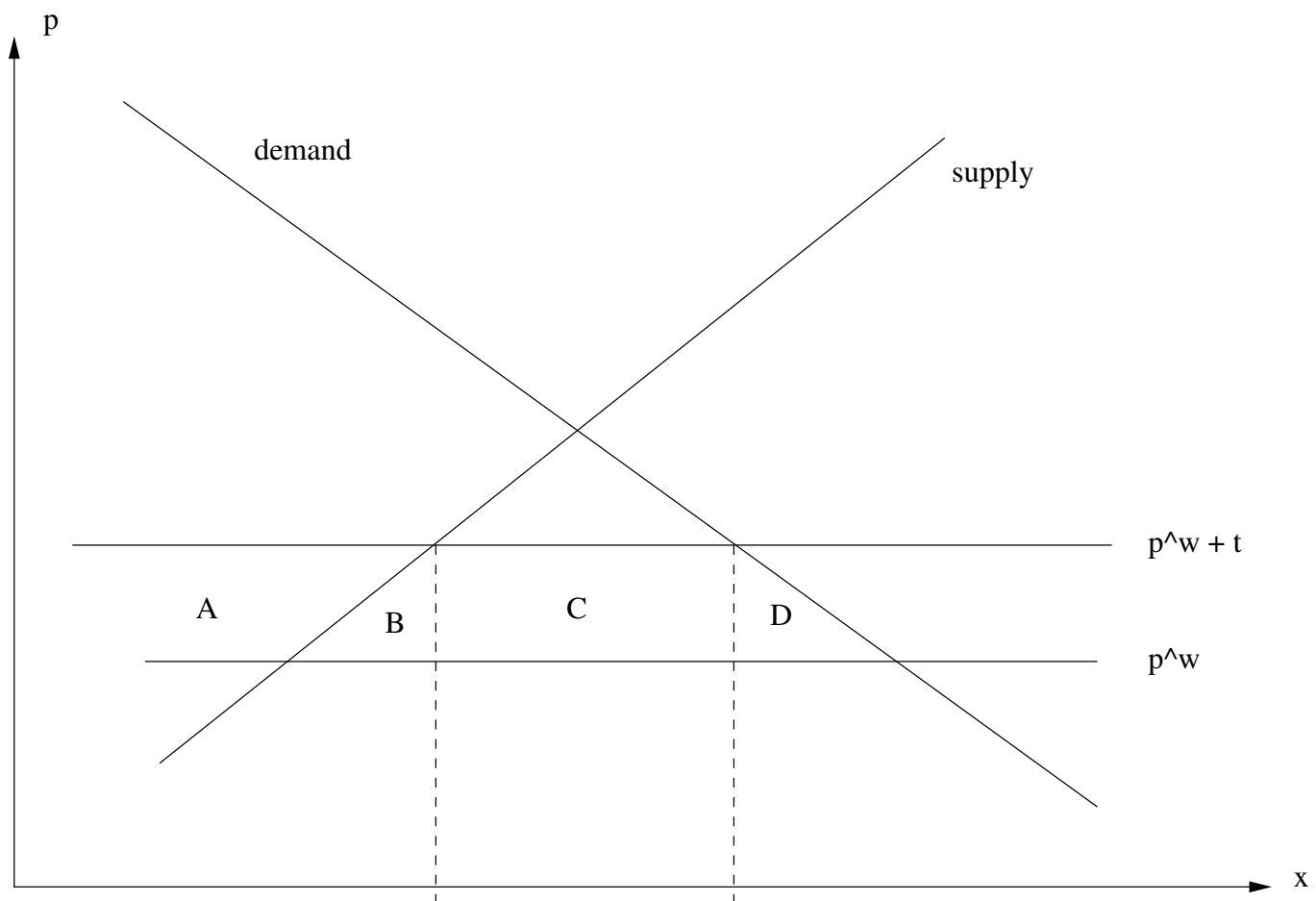
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Trade Policy

- let's start by considering an import tariff
- that's a tax on imports
- revenue collected by the state (EU for us)
- ad valorem vs specific
- specific: fixed amount per unit
- ad valorem: percentage on value

Small vs. Large Country

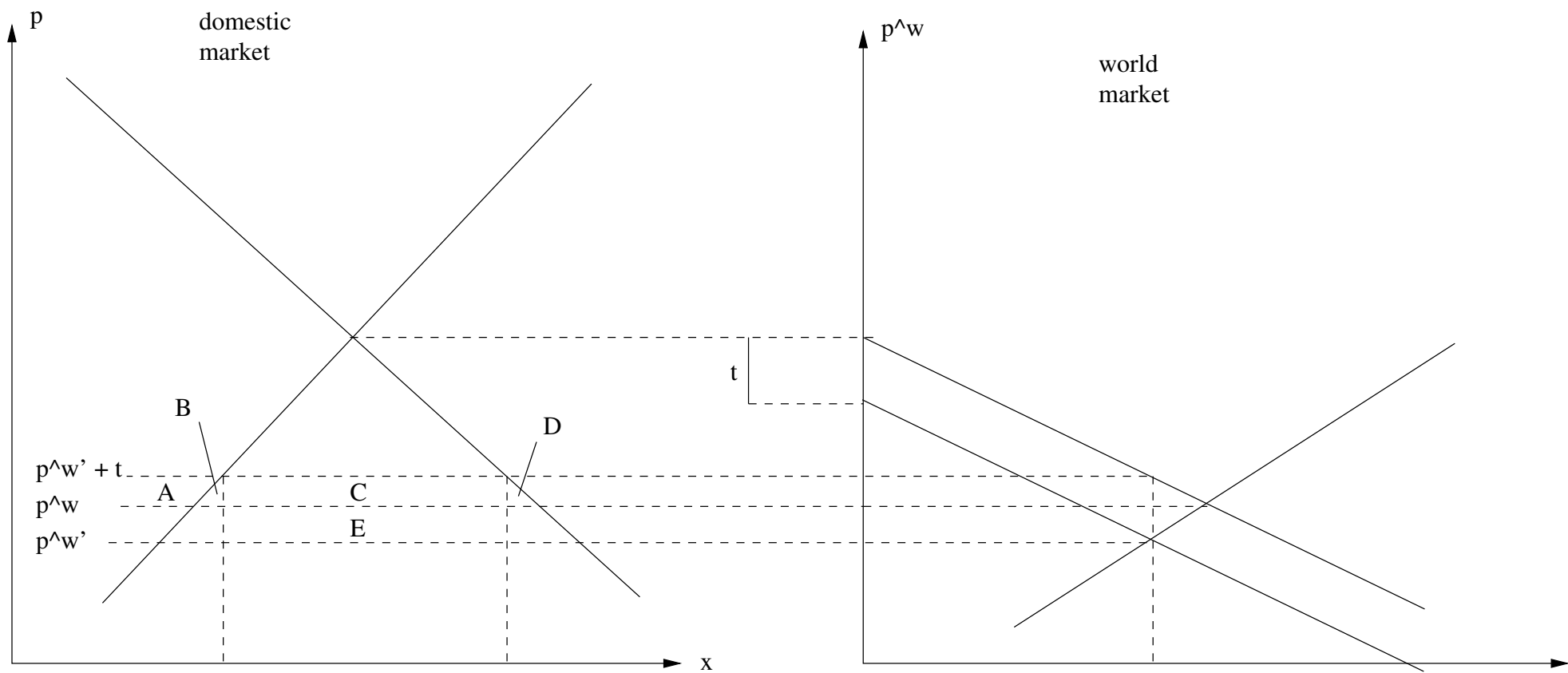
- we will distinguish "small" and "large" country
- small: too small to affect world market price (really infinitesimal)
- large: affects world market price and uses this effect
- both opposite ends of spectrum
- small and large may depend on commodity



Welfare calculation

consumers	-A	-B	-C	-D
producers	+A			
gov't			+C	
		-B		-D

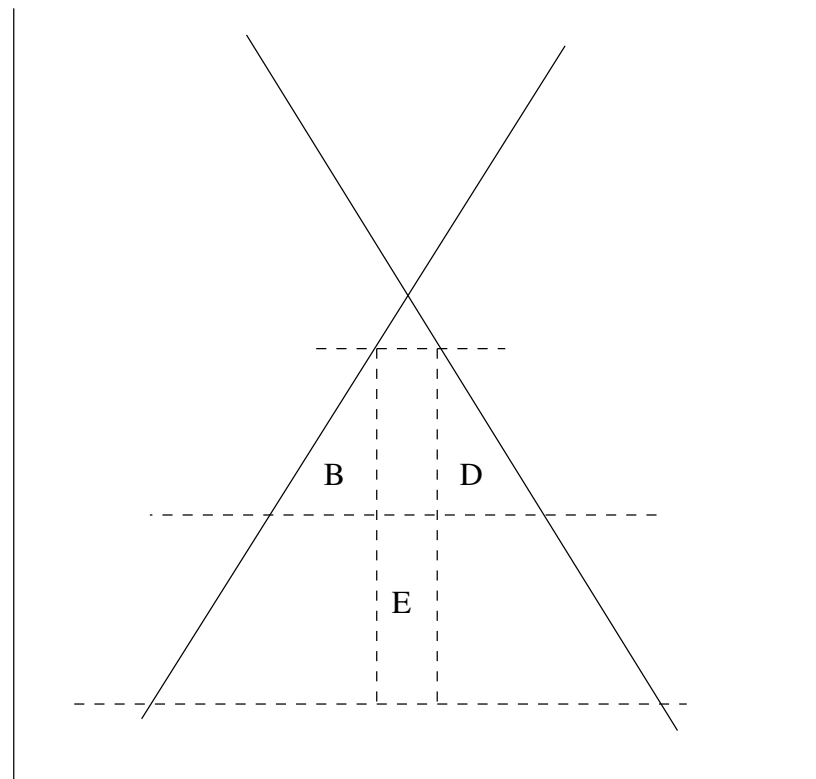
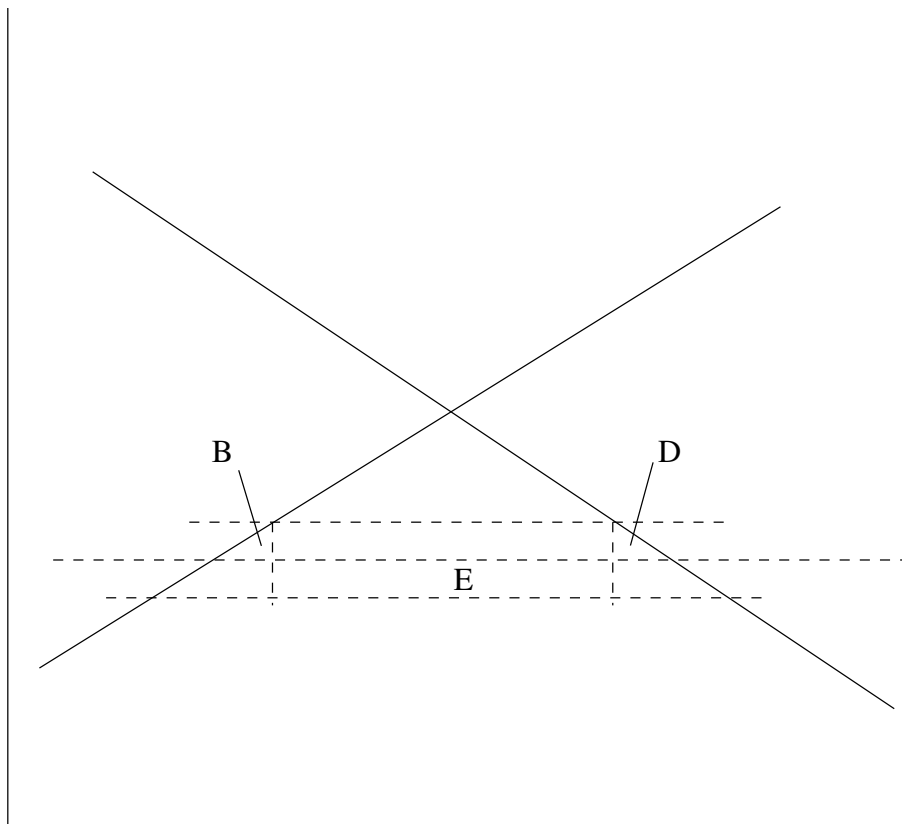
- welfare effect of tariff is negative
- b/c it distorts price mechanism
- B/D known as deadweight loss
- free trade optimal for small country



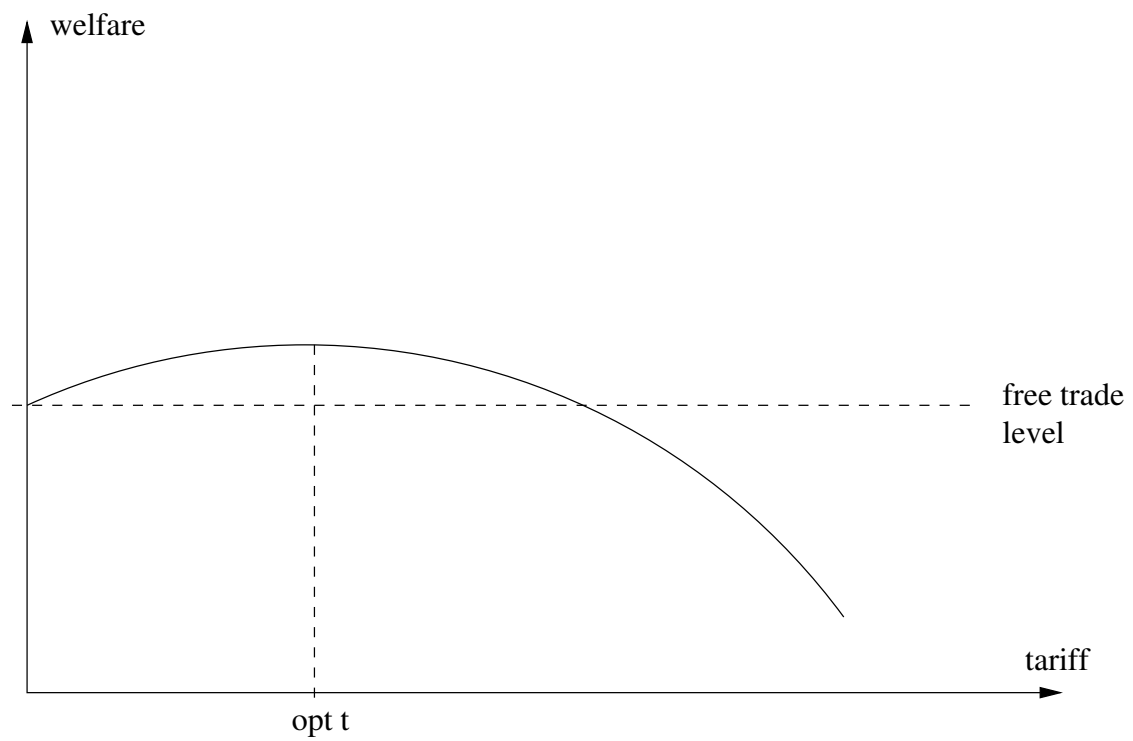
Welfare calculation

consumers	-A	-B	-C	-D	
producers	+A				
gov't			+C		+E
		-B		-D	+E

- 2 opposing effects:
 1. price distortion
 2. terms of trade improvement
- which one larger?

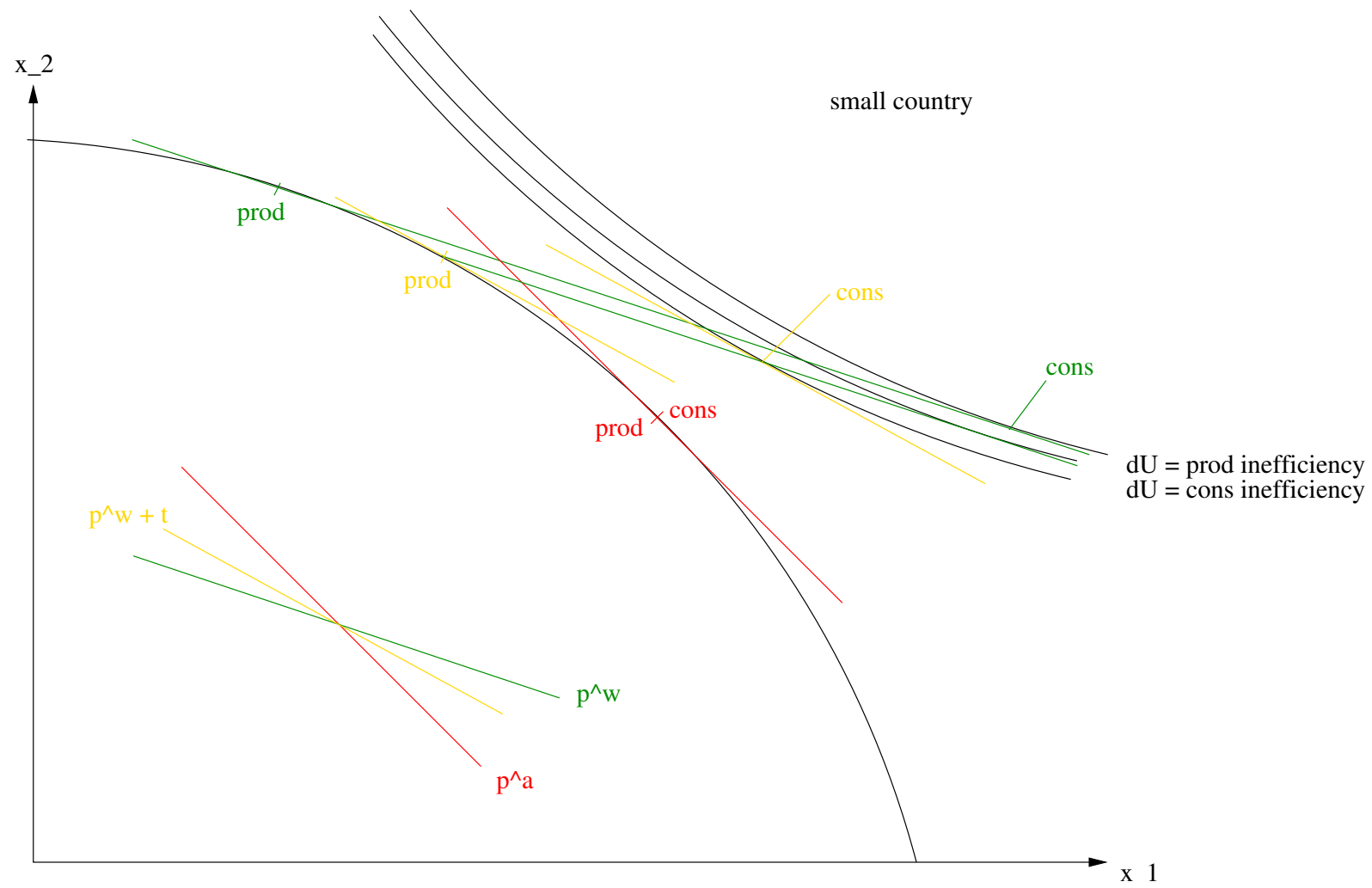


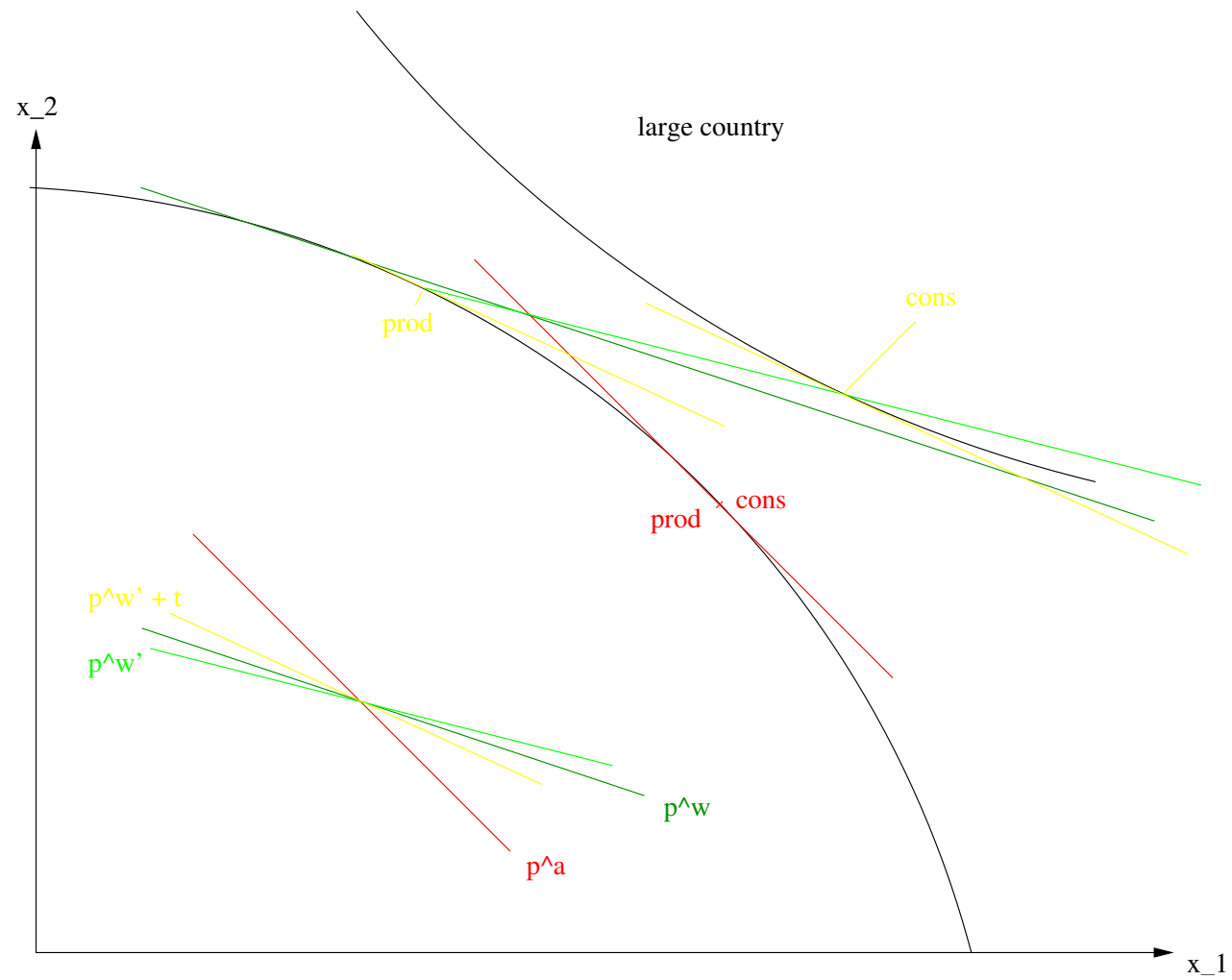
optimal tariff:



General Equilibrium

- so far we have looked at one market/commodity only
- that was partial equilibrium
- now let's move to general equilibrium
- and consider (conceptionally) all goods
- for simplicity we consider only two
- captures what import policy can do to exports





Formal Analysis

- start with quasi-linear utility:

$$U = c_0^h + U^h(c^h), \quad h = 1 \dots H$$

- summing over households gives social welfare:

$$W(p, I) = \sum_{h=1}^H (I^h + U^h(d^h(p)) - p' d^h(p))$$

- only consider one imported good:

$$W(p, I = L + tm + (py - C(y))) \equiv W(t)$$

- note: identical, homoethetic prefs ensure W depends on aggregate income

$$\begin{aligned}
\frac{dW}{dt} &= -d(p)\frac{dp}{dt} + m + \left(t\frac{dm}{dp} + y\right)\frac{dp}{dt} + (p - C'(y))\frac{dy}{dt} \\
&= m\left(1 - \frac{dp}{dt}\right) + t\frac{dm}{p}\frac{dp}{dt} + (p - C'(y))\frac{dy}{dt} \\
&= t\frac{dm}{p}\frac{dp}{dt} - m\frac{dp^*}{dt} + (p - C'(y))\frac{dy}{dt}
\end{aligned}$$

3 terms: distortion, terms of trade, mrkt power inefficiency

small country case

- in this case $dp^*/dt = 0$ (cannot affect world market price)
- hence $dp/dt = 1$, tariff goes entirely into distorting the domestic price
- perfect competition means no mrkt power inefficiency, $p = MC$
- we obtain: $dW/dt = tdm/dp$
- so extremum at $t = 0$
- SOC: $d^2W/dt^2 = dm/dp < 0$, so maximum, free trade optimal

large country case

- dp^*/dt no longer zero
- $\frac{dW}{dt} = t \frac{dm}{dp} \frac{dp}{dt} - m \frac{dp^*}{dt}$
- at $t = 0$, $dW/dt|_{t=0} = -m dp^*/dt > 0$
- setting $dW/dt = 0$, we obtain:

$$\begin{aligned} \frac{t^*}{p^*} &= \left(\frac{dp^*}{dt} \frac{m}{p^*} \right) / \left(\frac{dm}{dp} \frac{dp}{dt} \right) \\ &= \left(\frac{dp^*}{dt} \frac{x}{p^*} \right) / \frac{dx}{dt} = 1 / \left(\frac{dx}{dp^*} \frac{p^*}{x} \right) \end{aligned}$$