

Macro II/Aussenwirtschaft

Lecture Slides No 1

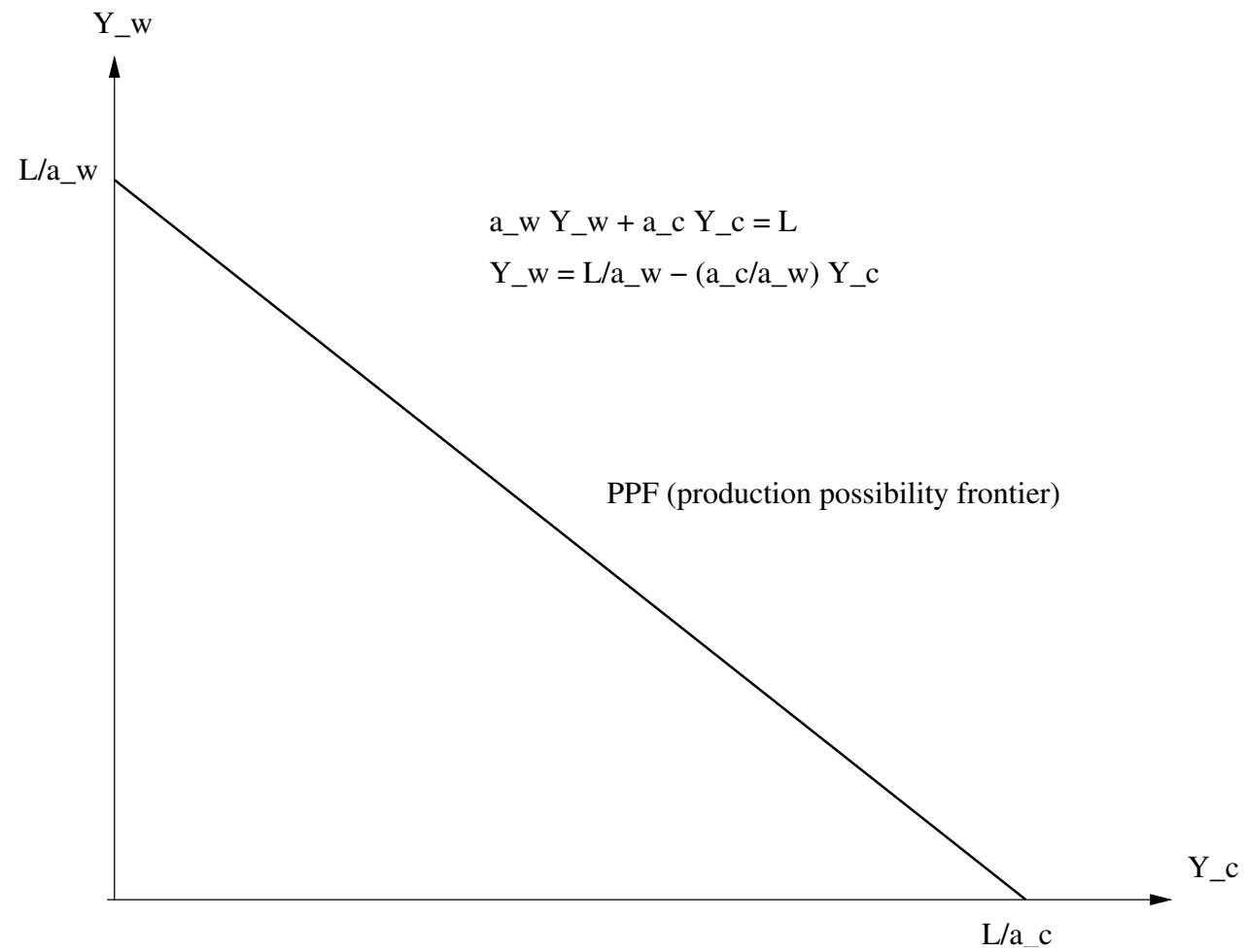
Gerald Willmann
April 2020

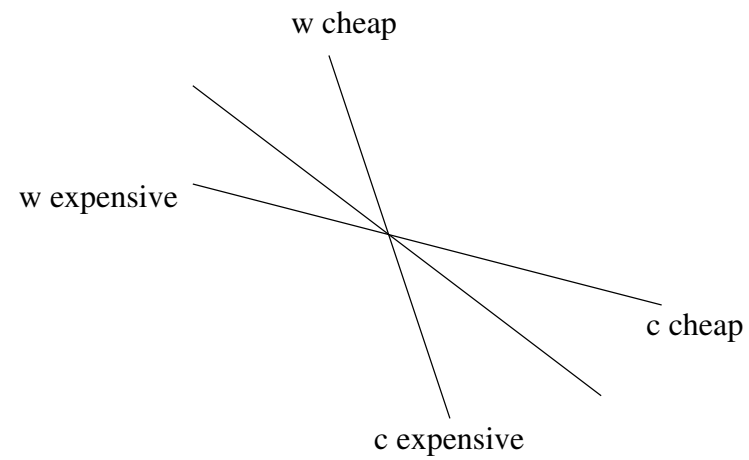
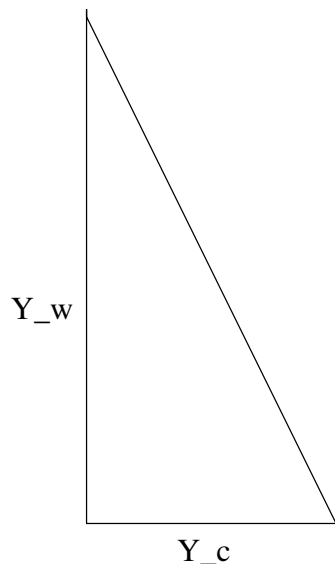
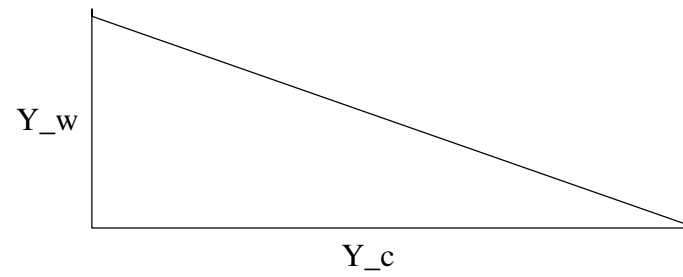
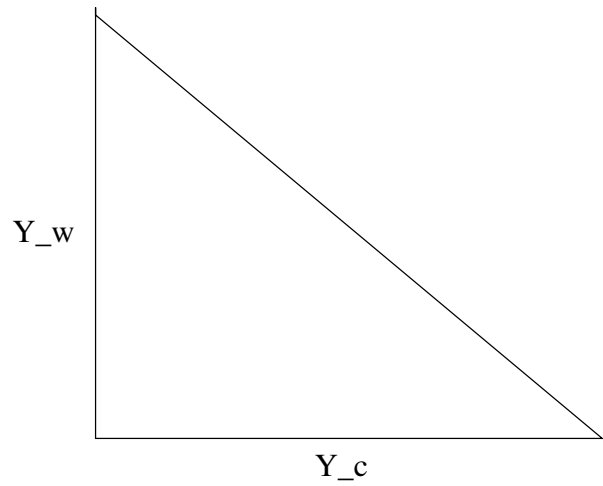
Classical/neo-classical (old) trade theories

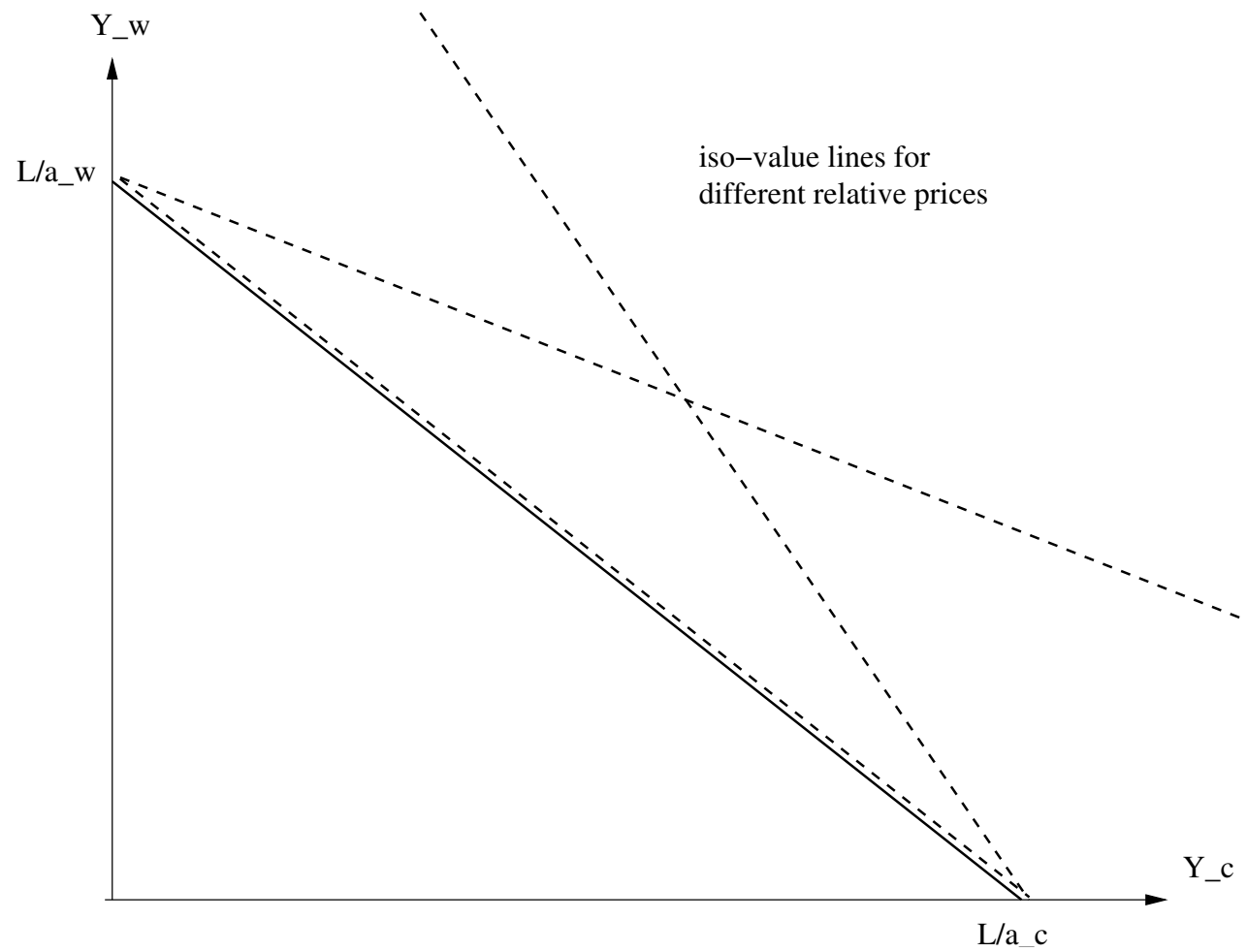
- explain trade as the result of differences across countries
- Ricardo (1772–1823) explains trade as the result of differences in technology
- he lived pre industrial revolution, i.e. before labor could be substituted by machines
- Heckscher/Ohlin (neo-classical) will explain trade as result of relative endowment differences
- central concept: comparative advantage

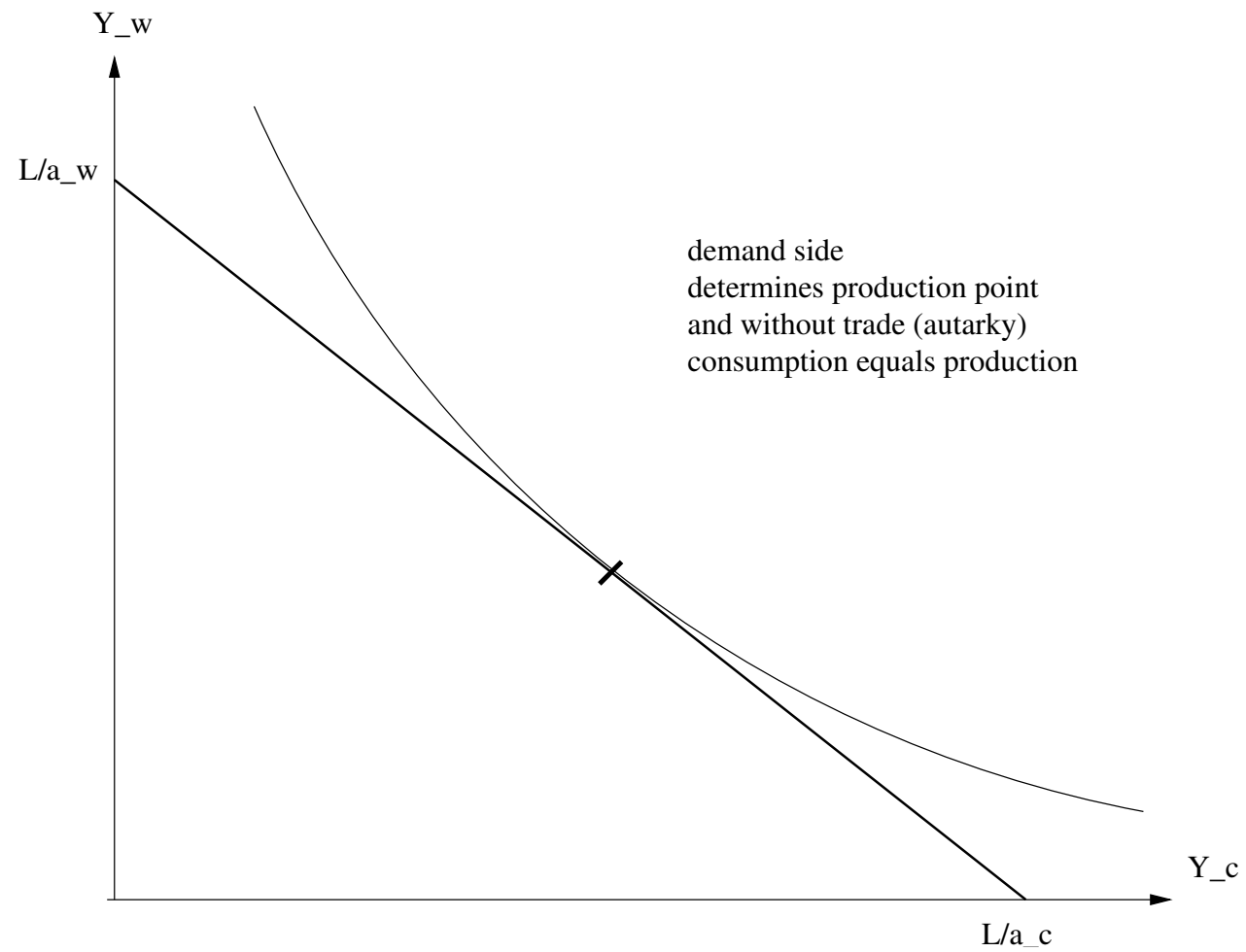
Setup of the Ricardo model:

- 1 input factor: labor, denoted by L
- 2 countries: home and foreign (or RoW, for rest of the world), with labor forces L and L^* respectively
- 2 sectors: wine (w) and clothes (c) (Ricardo's example)
- linear production technology described by unit input requirements: a_w and a_c
- formally: $a_w Y_w = L_w$ and $a_c Y_c = L_c$
- resource constraint: $L_w + L_c \leq L$

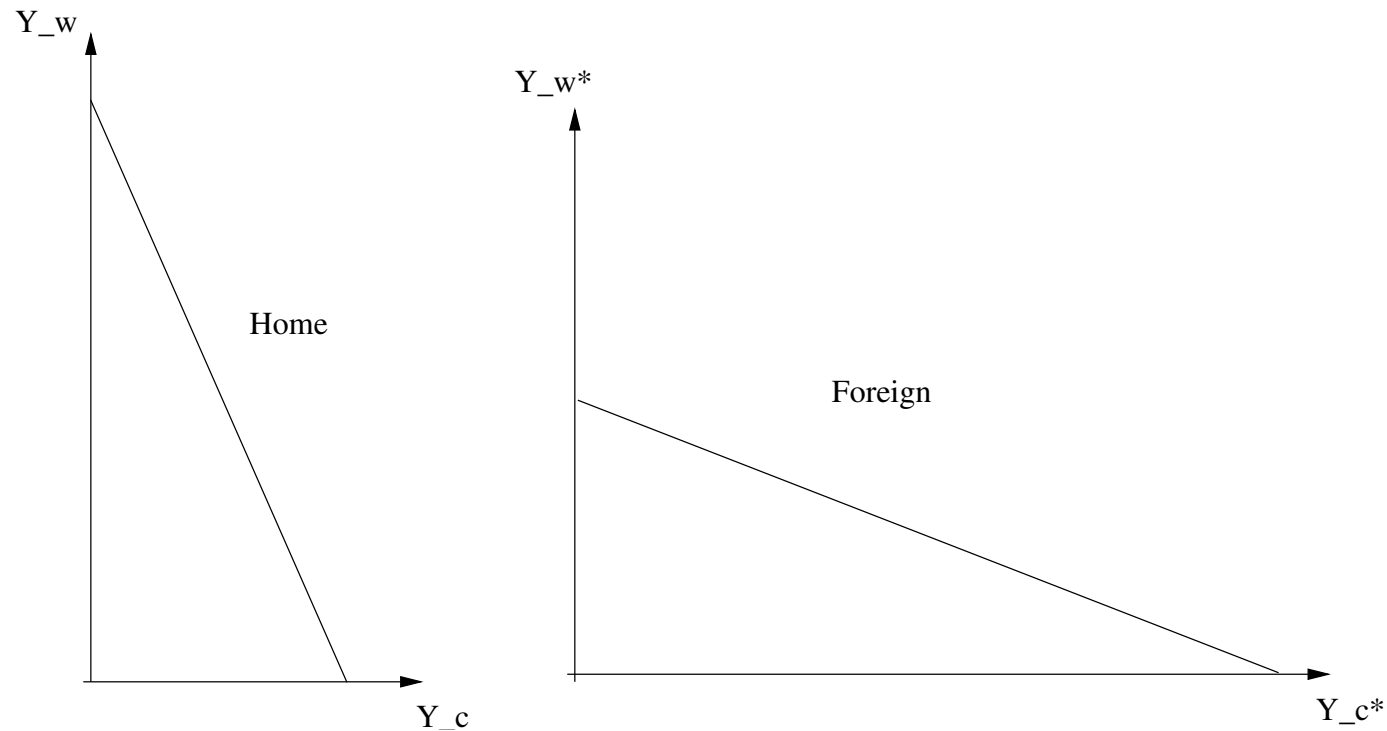






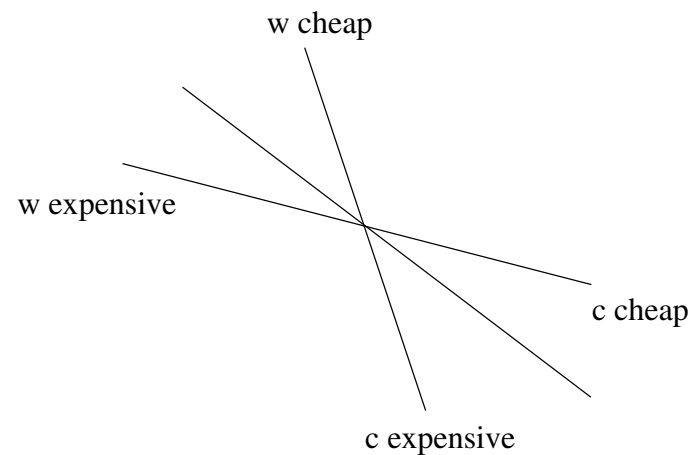


Now, let's have two (different) countries trade with each other



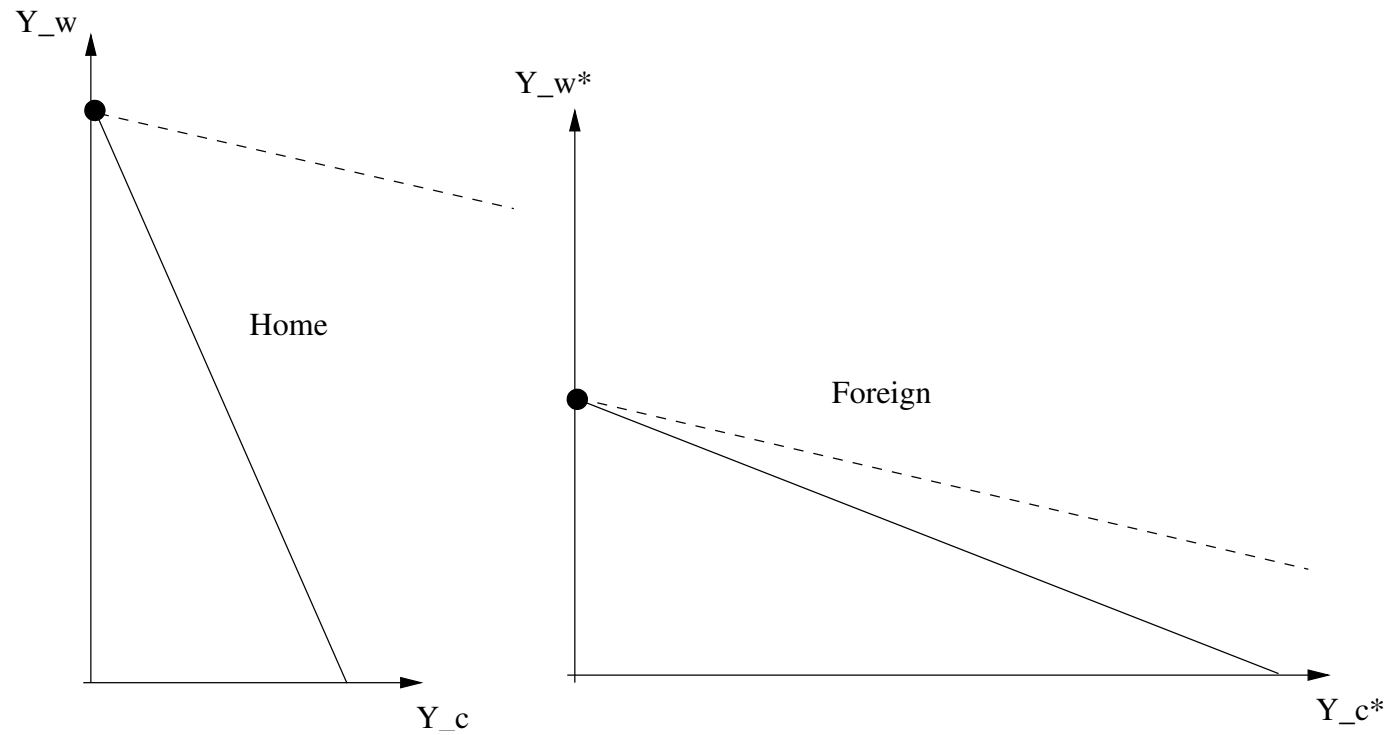
Home relatively more productive in W, foreign in C, i.e. $(a_c/a_w) > (a_c^*/a_w^*)$

We want to figure out how relative global supply, $(Y_c + Y_c^*) / (Y_w + Y_w^*)$ depends on the relative price $p = p_c / p_w$



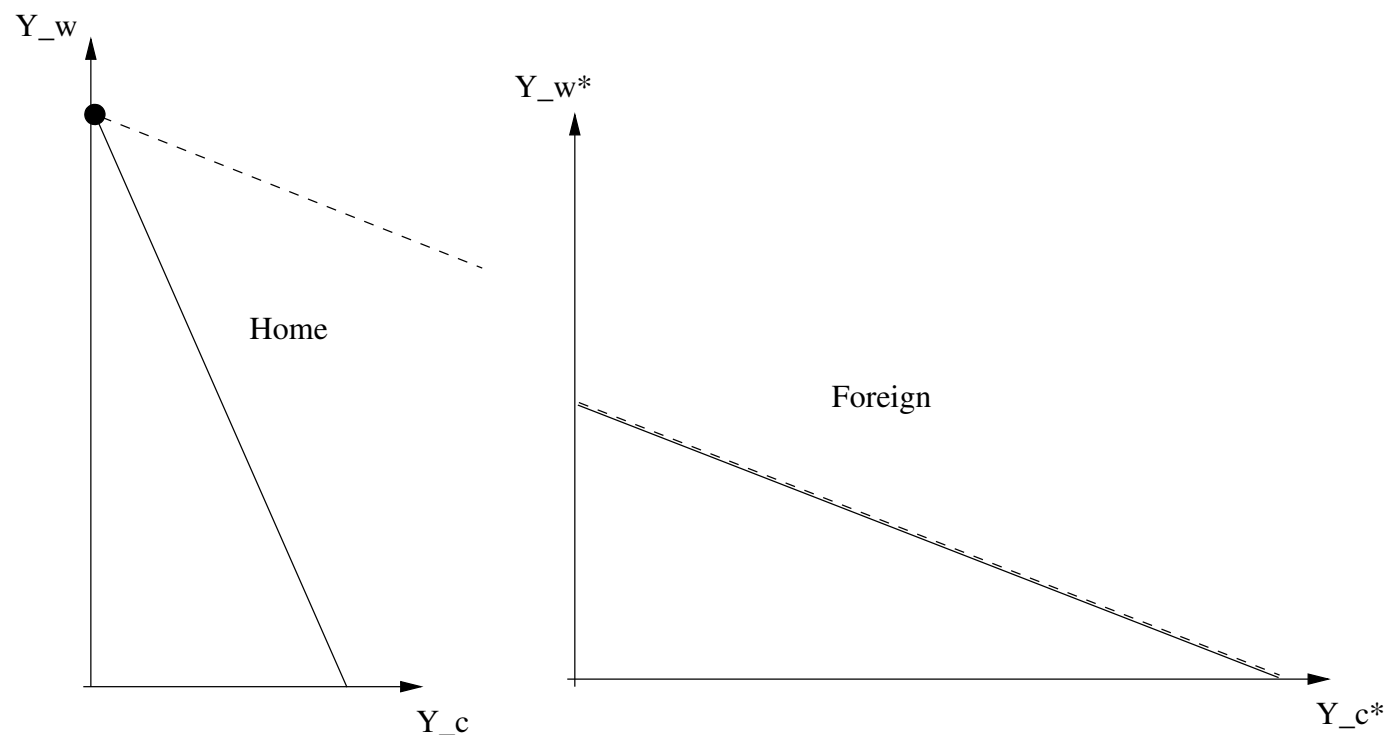
start from a low p (shallow slope), and then increase p , i.e. turn the price slope clockwise

very low p



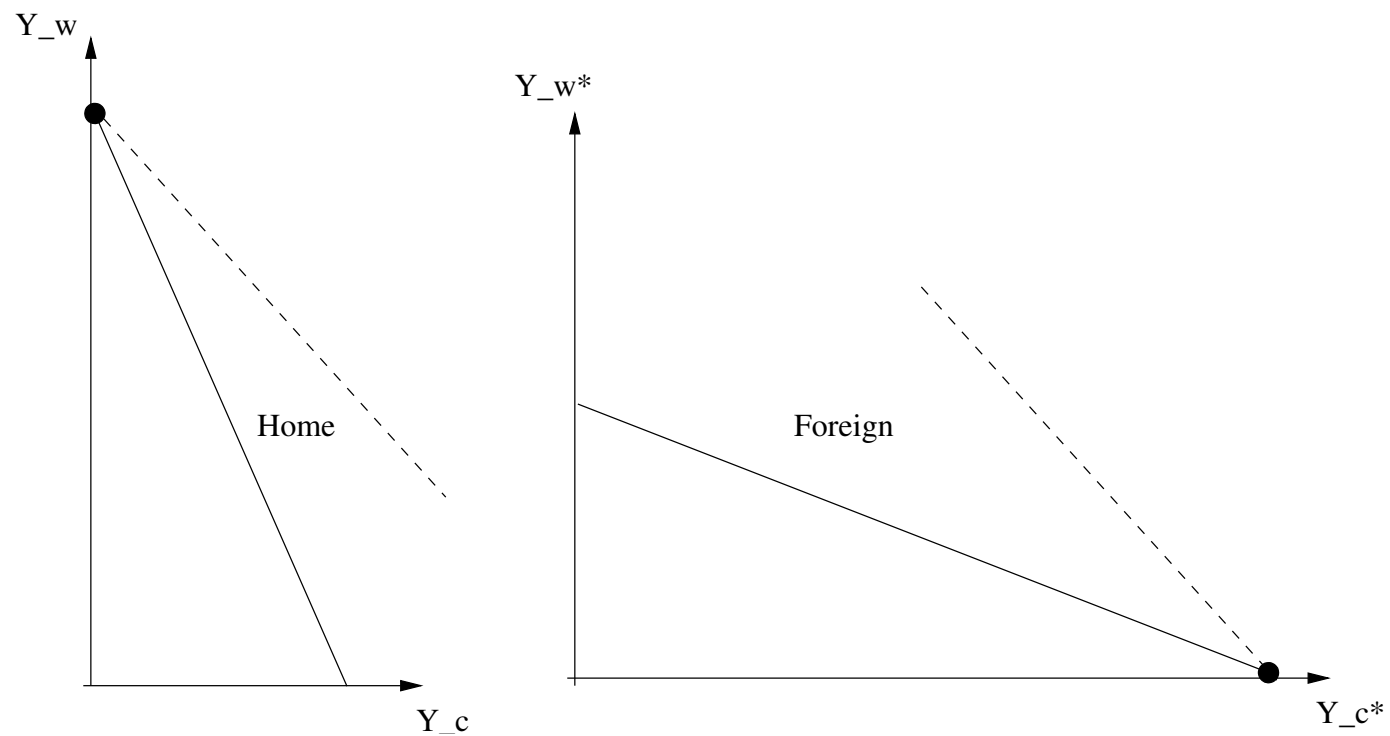
Home produces only wine, foreign as well

low p , corresponding to slope of foreign's PPF



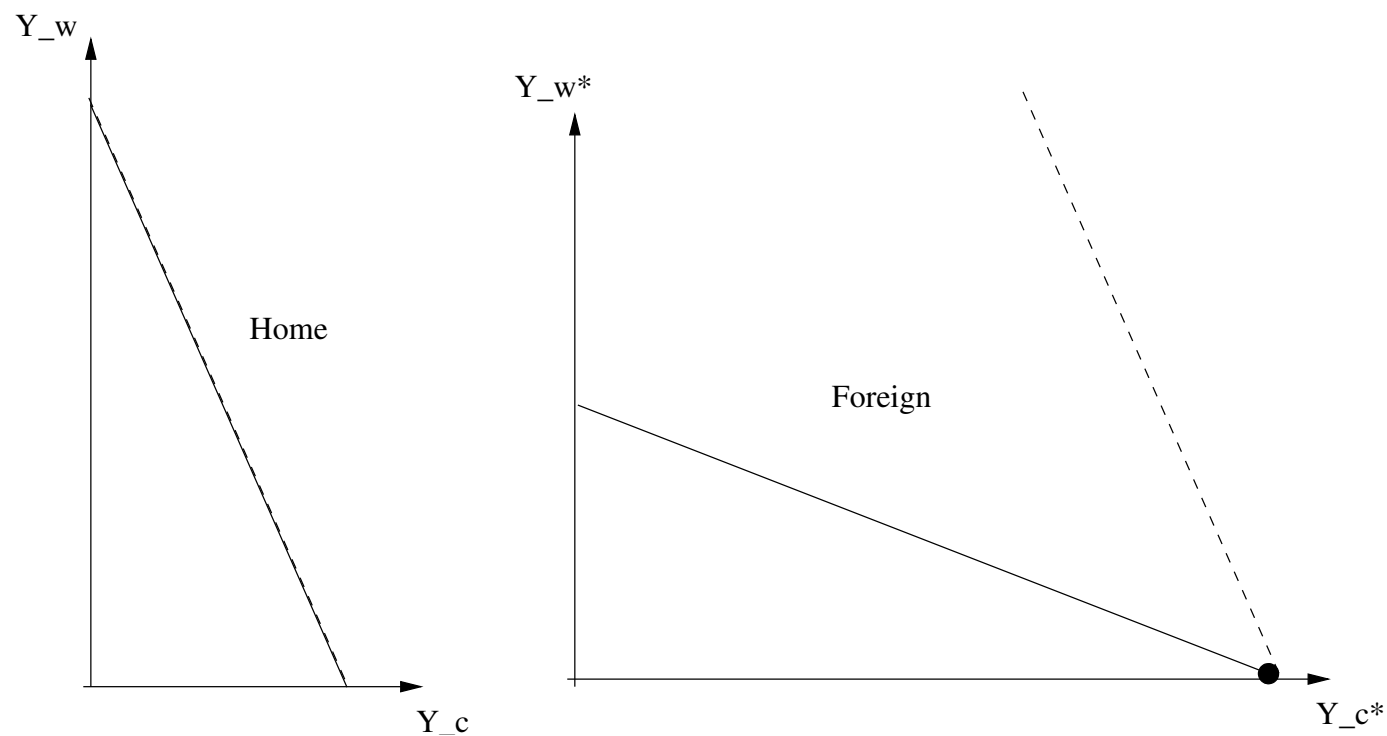
Home produces only wine, foreign indifferent between all points on its PPF

medium p , between slopes of home's and foreign's PPFs



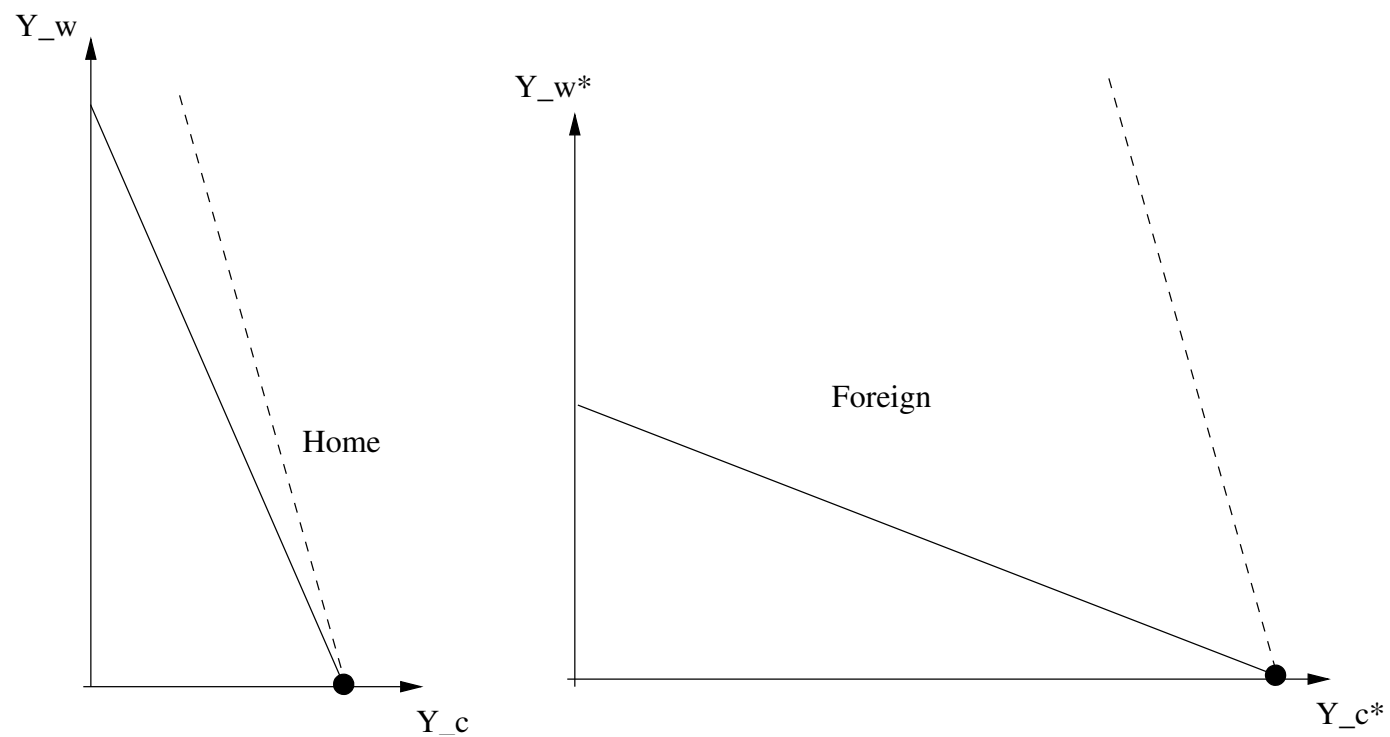
Home produces only wine, foreign only clothes

high p , corresponding to slope of home's PPF

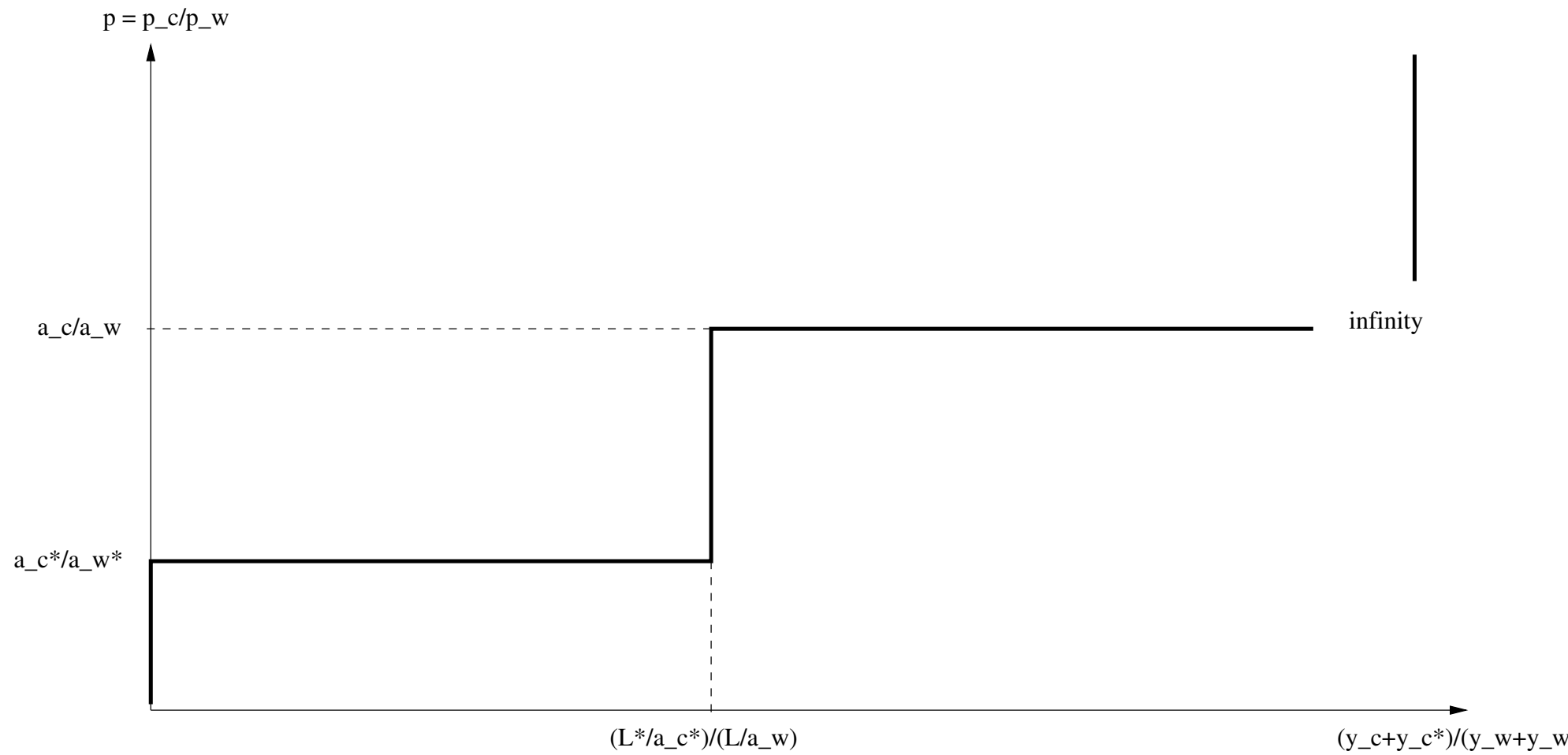


Home indifferent between all points on its PPF, foreign produces only clothes

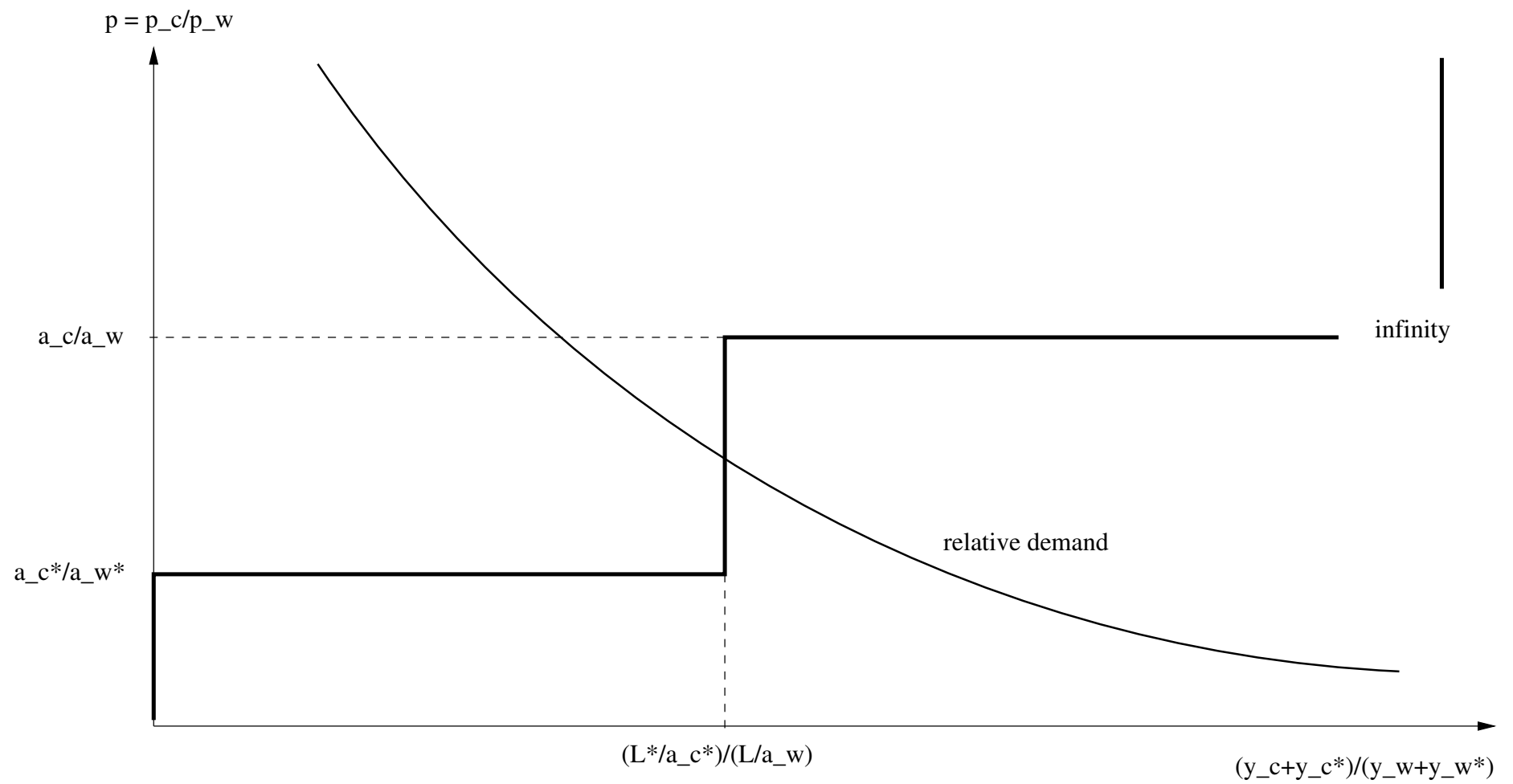
very high p



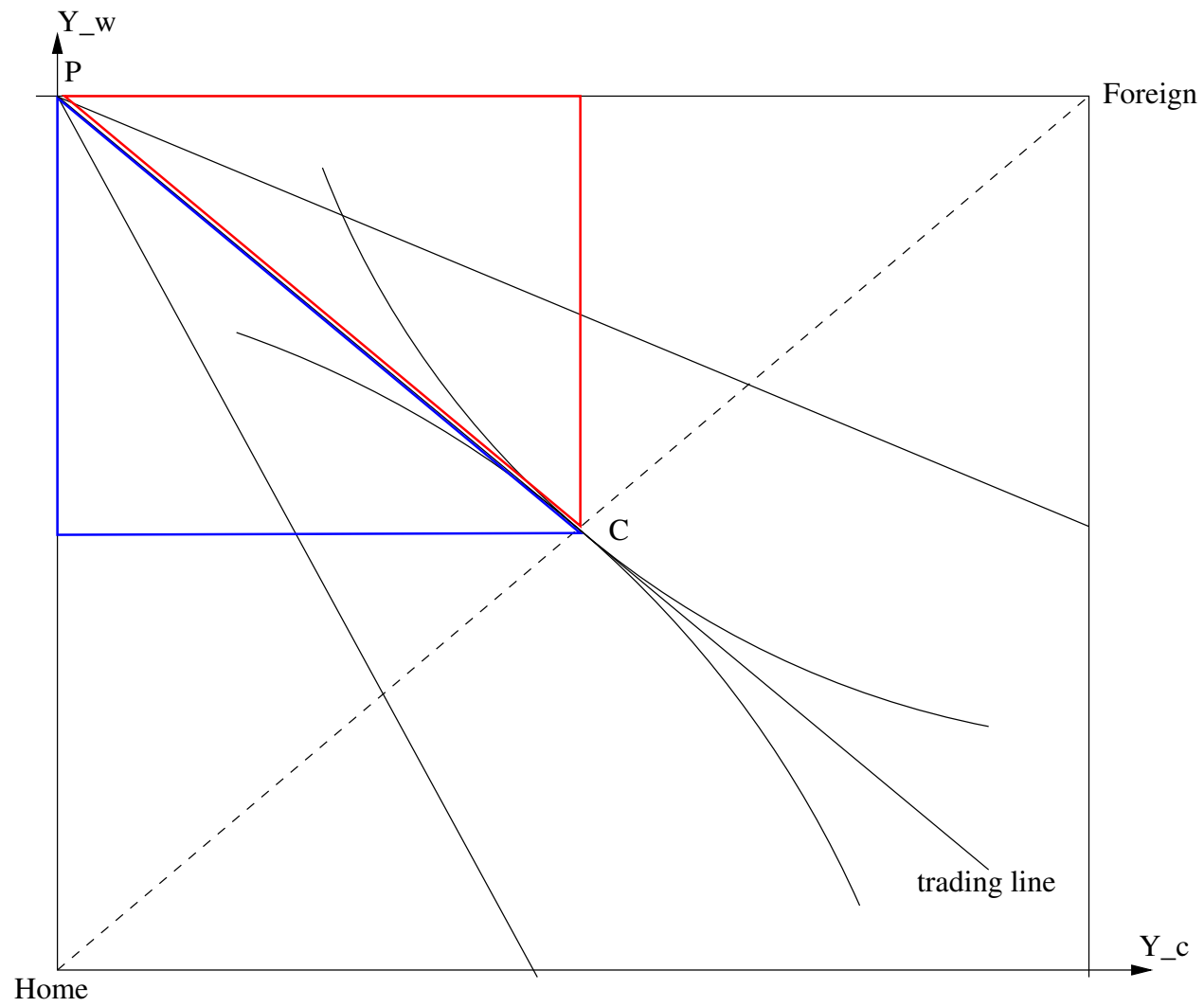
Home produces only clothes, foreign as well



- we have global relative supply
- let's add global relative demand
- for concreteness, suppose Cobb-Douglas
- $U = Y_w Y_c$, so $MRS = MU_c / MU_w = Y_w / Y_c$
- optimality condition: $MRS = p$
- so $p = Y_w / Y_c = 1 / (Y_c / Y_w)$
- relative demand takes the functional form of $1/x$

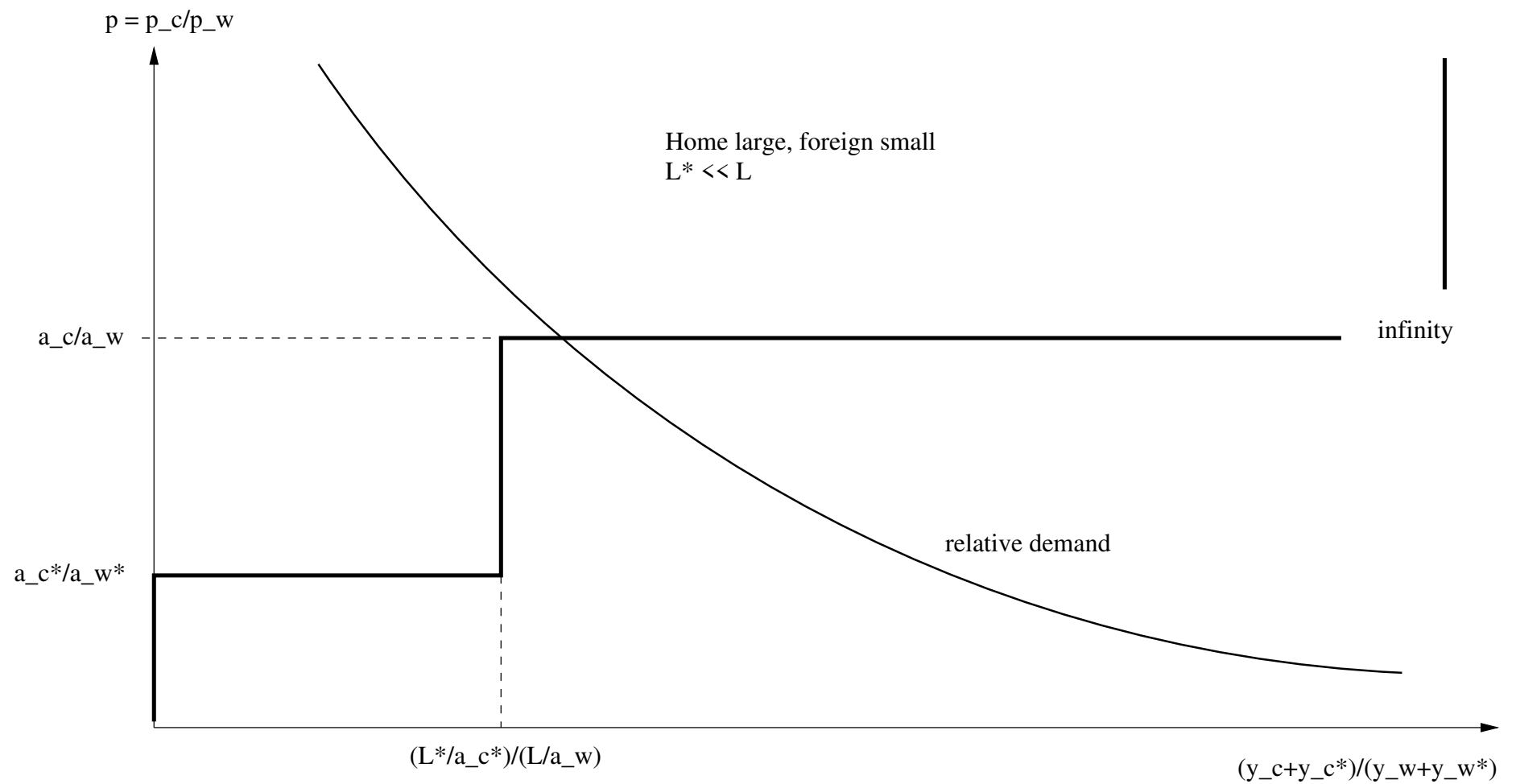


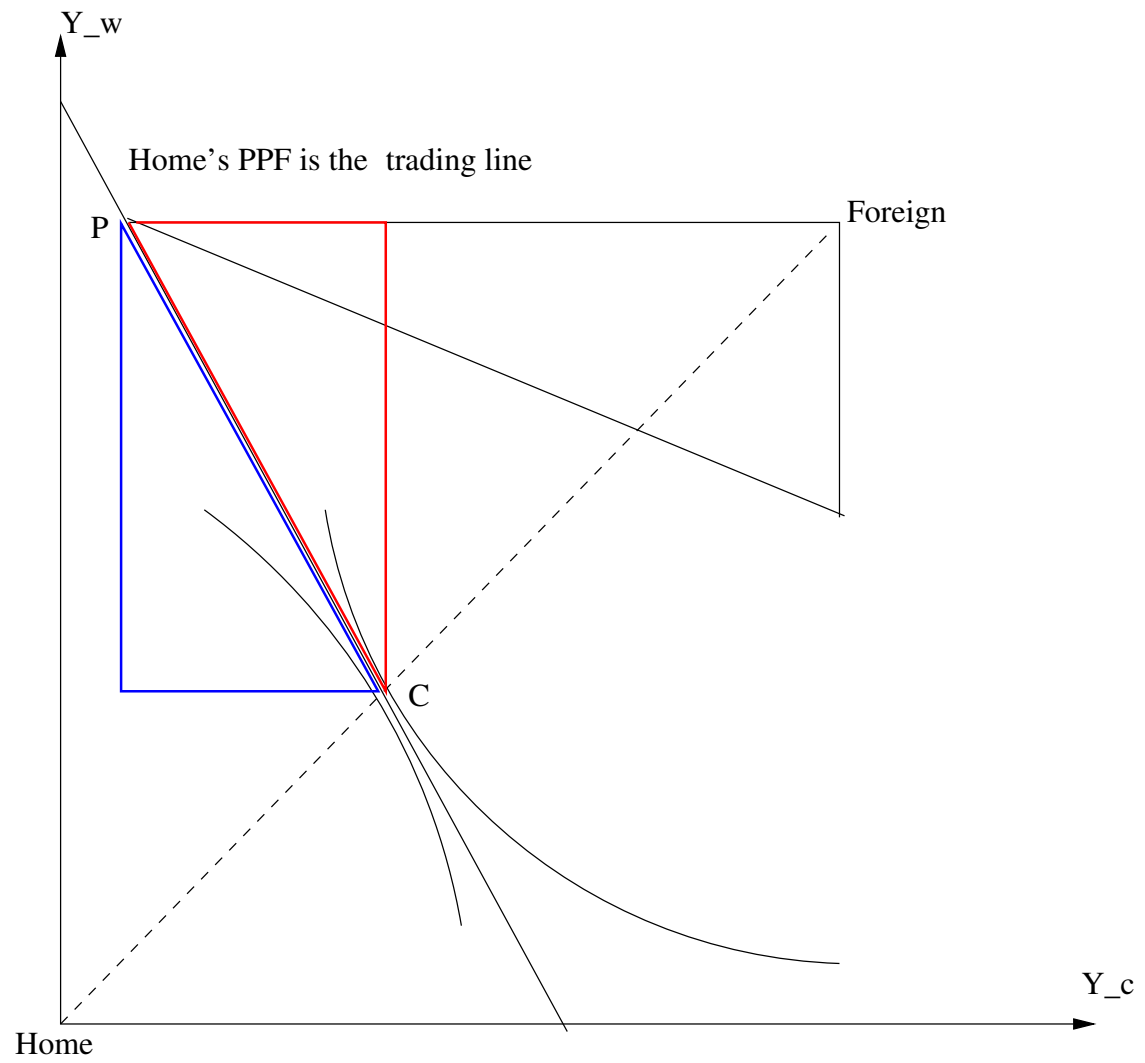
- Equilibrium where demand intersects supply
- vertical part of relative supply schedule
- both countries completely specialized
- producing (only) the product where they have comparative advantage
- importing the other commodity from their trading partner
- does not imply they have absolute advantage, as one country could be less productive in both sectors



Gains from trade

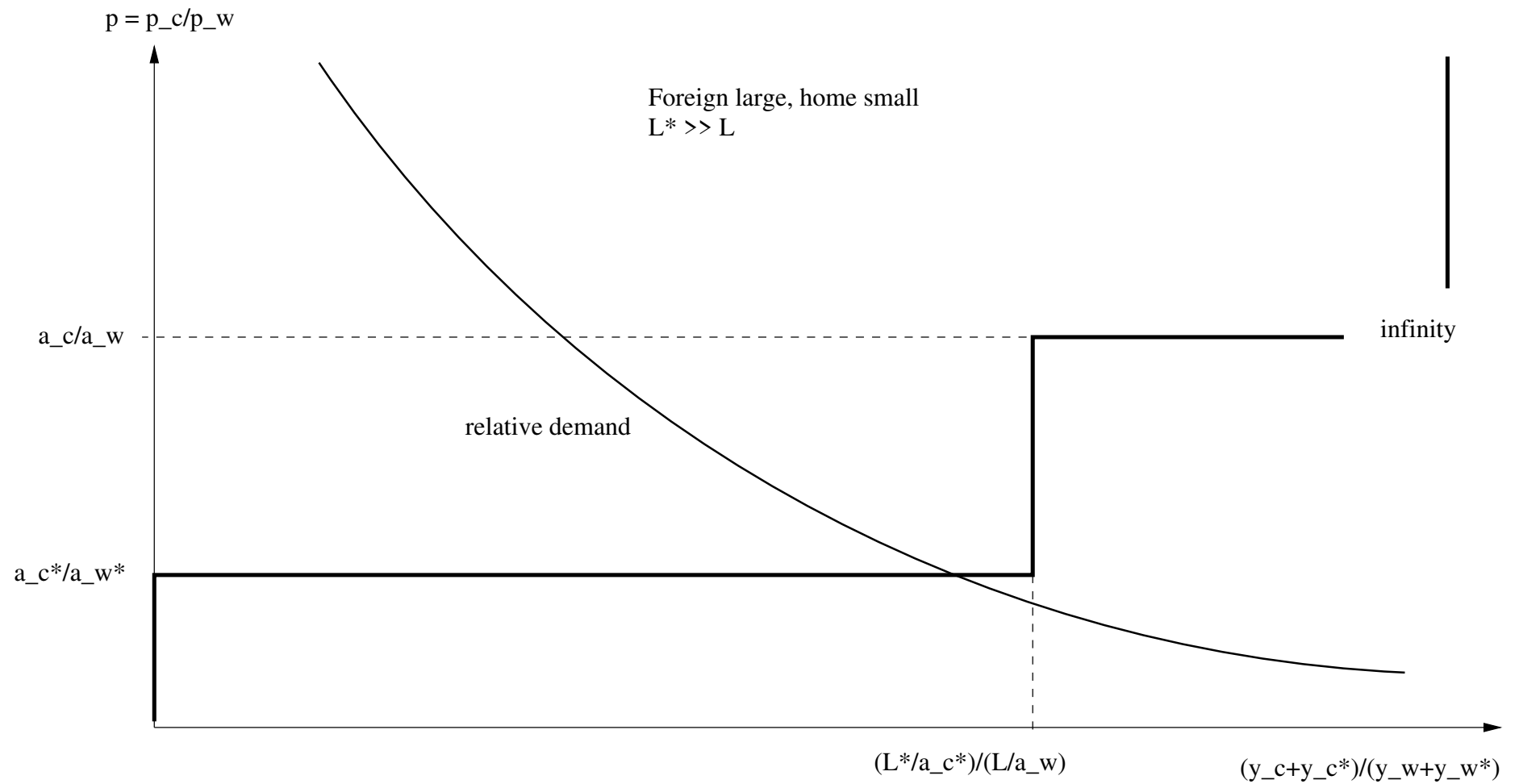
- both countries gain from trade
- as they consume outside of their PPF
- trade is like having a superior production technology
- even a country less productive in both sectors gains from trade
- as there is always comparative advantage — unless their relative productivities are equal which is highly unlikely





Differences in size

- large country dominates world price
- sounds good, but implies no gains
- small country gains maximally from trade
- different type of equilibria
- only small country completely specialized
- large country stays diversified
- still, both produce commodity where they have comparative advantage



Absolute productivity matters

- in any equilibrium: $a_c/a_w \geq p = p_c/p_w \geq a_c^*/a_w^*$
- both produce where they have comparative advantage
- home produces w, so $p_w = wage \times a_w$
- foreign produces c, so $p_c = wage^* \times a_c^*$ (note $p_c^* = p_c$ under free trade)
- plugging in: $a_c/a_w \geq (wage^* \times a_c^*)/(wage \times a_w) \geq a_c^*/a_w^*$
- so $a_c/a_c^* \geq wage^*/wage \geq a_w/a_w^*$
- absolute advantage in both implies higher wage