Comparative Advantage

1 Absolute and comparative advantage

11 Absolute advantage

A producer (individual, firm or country) has an absolute advantage if he produces a good **at lower cost** than another producer.

12 Comparative advantage

If a producer produces a good he gives up another good, that is the next-best alternative use of the inputs. This alternative use of inputs is the **opportunity cost** of the production.

A **comparative advantage** exists if a producer has **lower opportunity costs** than another producer. He specializes in producing and exporting the good with the comparative advantage.

2 A numerical example
(Mankiw Gregory N.: Principles of economics, 3rd ed., pages 58/59)

Production possibilities of two cities in the country of Baseballia		
	Pairs of Red Socks per Worker per Hour	Pairs of White Socks per Worker per Hour
Boston	3	3
Chicago	2	1

21 Absolute advantage

How much labour input (in minutes) is needed to produce one pair of socks? We assume that money wages as well as other inputs are the same in both cities.

Cost of labour (in minutes)		
	per pair of red socks	per pair of white socks
Boston	$\frac{60 \text{ minutes}}{3 \text{ pairs}} = $ **20** minutes	$\frac{60 \text{ minutes}}{3 \text{ pairs}} = $ **20** minutes
Chicago	$\frac{60 \text{ minutes}}{2 \text{ pairs}} = 30$ minutes	$\frac{60 \text{ minutes}}{1 \text{ pair}} = 60$ minutes

Boston has an **absolute advantage** both in producing red socks and white socks because the socks can be produced at a lower cost (20 minutes < 30 minutes and 20 minutes < 60 minutes). Chicago has an *absolute disadvantage* both in producing red and white socks.

This does not mean that there is no specialization and no trade. To see if specialization and trade are favourable, we have to look at opportunity costs and comparative advantage.

22   Comparative advantage

Opportunity costs

Question: How many pairs of red socks (or white socks) have to be given up to produce a pair of socks of the other colour?

	per pair of **red** socks	per pair of **white** socks
Boston	$\frac{3}{3}$ = 1 pair of *white* socks	$\frac{3}{3}$ = 1 pair of **red** socks
Chicago	$\frac{1}{2}$ = 0.5 pair of *white* socks	$\frac{2}{1}$ = 2 pairs of **red** socks

Boston has lower opportunity costs in producing white socks (1 < 2) and Chicago has lower opportunity costs in producing red socks (0.5 < 1).

Without trade, in Boston the price of 1 pair of red socks would be 1 pair of white socks, whereas in Chicago 1 pair of red socks would be exchanged for 0.5 pair of white socks.

Comparative advantage

Boston has a comparative advantage in the production of white socks (lower opportunity costs than Chicago, because 1 < 2), whereas Chicago has a comparative advantage in the production of red socks (because 0.5 < 1).

Thus, Boston should specialize in producing white socks and exporting them to Chicago and Chicago should specialize in producing red socks and exporting them to Boston.

23   Situation *without* specialization and *without* trade

Assumptions: Production per day 8 hours (4 hours producing red socks and 4 hours producing white socks)

Production per day		
	Pairs of red socks	Pairs of white socks
Boston	4 * 3 = 12	4 * 3 = 12
Chicago	4 * 2 = 8	4 * 1 = 4
sum	20 pairs	16 pairs

24   Situation *with* specialization and *with* trade

Assumptions: Chicago only produces red socks; Boston produces during 6 hours white socks and during 2 hours red socks.

Production per day		
	Pairs of red socks	Pairs of white socks
Boston	2 * 3 = 6	6 * 3 = 18
Chicago	8 * 2 = 16	0
sum	22 pairs	18 pairs

Boston would export white socks to Chicago and import red socks. The socks would be exchanged as follows: 1 pair of red socks would have a price between 0.5 and 1 pair of white socks. The white socks would therefore be priced between 1 and 2 pairs of red socks.

Result: By production according to the comparative advantage and subsequent trade with another producer, more of both goods can be produced and consumed, even if a producer has an absolute advantage in the production of both goods.