Environmental Economics

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EPFL ENAC LEUrE

ENV-471

Master semester 2 or 4

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Basics

SUPPLY

Adobe Stock #267363605

Willingness to pay / to accept

- "Demanders" are willing to buy an item for a maximum price = "willingness to pay"
- "Suppliers" are willing to sell an item for a minimum price = "**willingness to accept**"

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Determinants of willingness to accept (WTA)

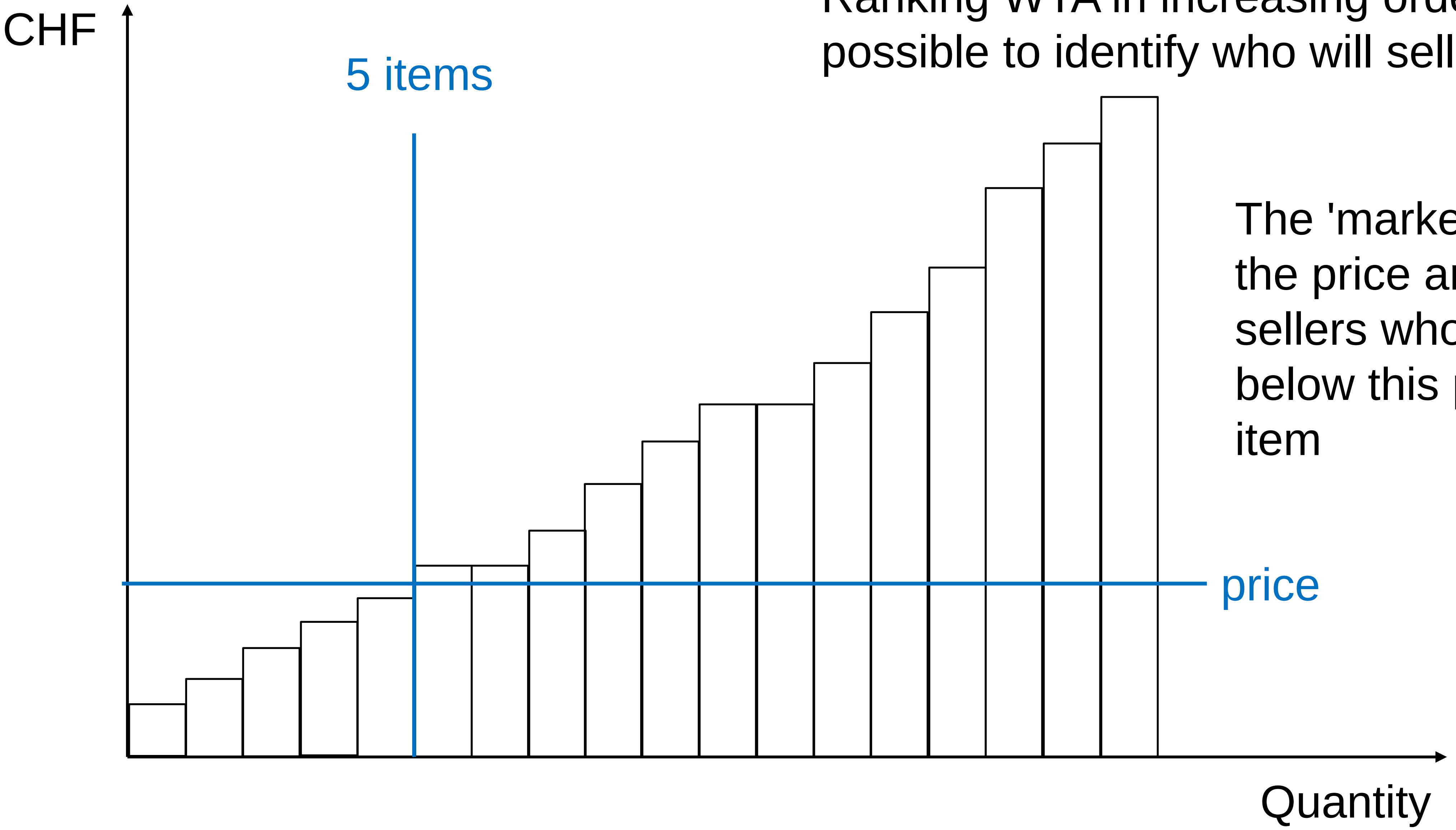
Determinants of willingness to accept
Production conditions: costs of manufacturing, distributing/delivering, cashing in, etc., which depend on salaries, prices of materials and energy, taxes and subsidies, etc.
Alternative options: other buyers, other outlets, later sale (arbitrage). NB: seller could anticipate falling prices…
Desire to conquer a market ('dumping': eliminating competitors by selling below cost)
Financial pressure to sell: financial needs, difficult access to credit
Other pressures to sell, e.g. need to make space in store or stocks

Differences in WTA – who gets to sell?

- Production costs are the most important determinant of WTA
- Producers have different production costs for many reasons:
  - Different production conditions, e.g. farming on soils of different fertility with different climate conditions
  - Different technologies, e.g. electricity generation using coal, oil, gas, hydropower, wind, sun, geothermal, etc.
  - Different locations, e.g. producing steel in Europe or China with different prices for inputs and different regulatory conditions
- On free competitive markets, low-WTA sellers win over high-WTA sellers

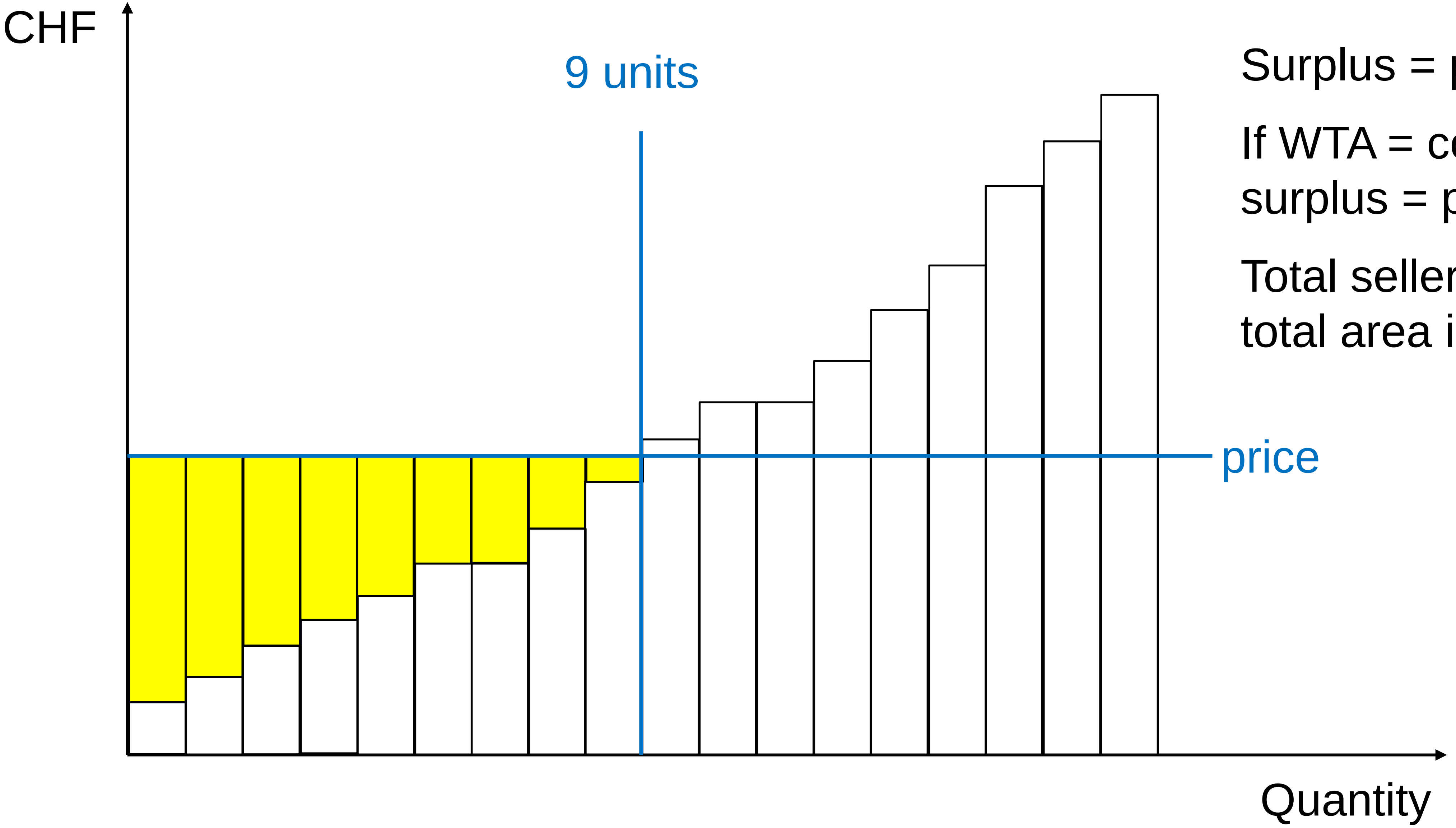
Supply curve

Ranking WTA in increasing order makes it possible to identify who will sell the item(s)



The 'market' determines the price and only those sellers whose WTA is below this price sell the item

Sellers' surplus = profit

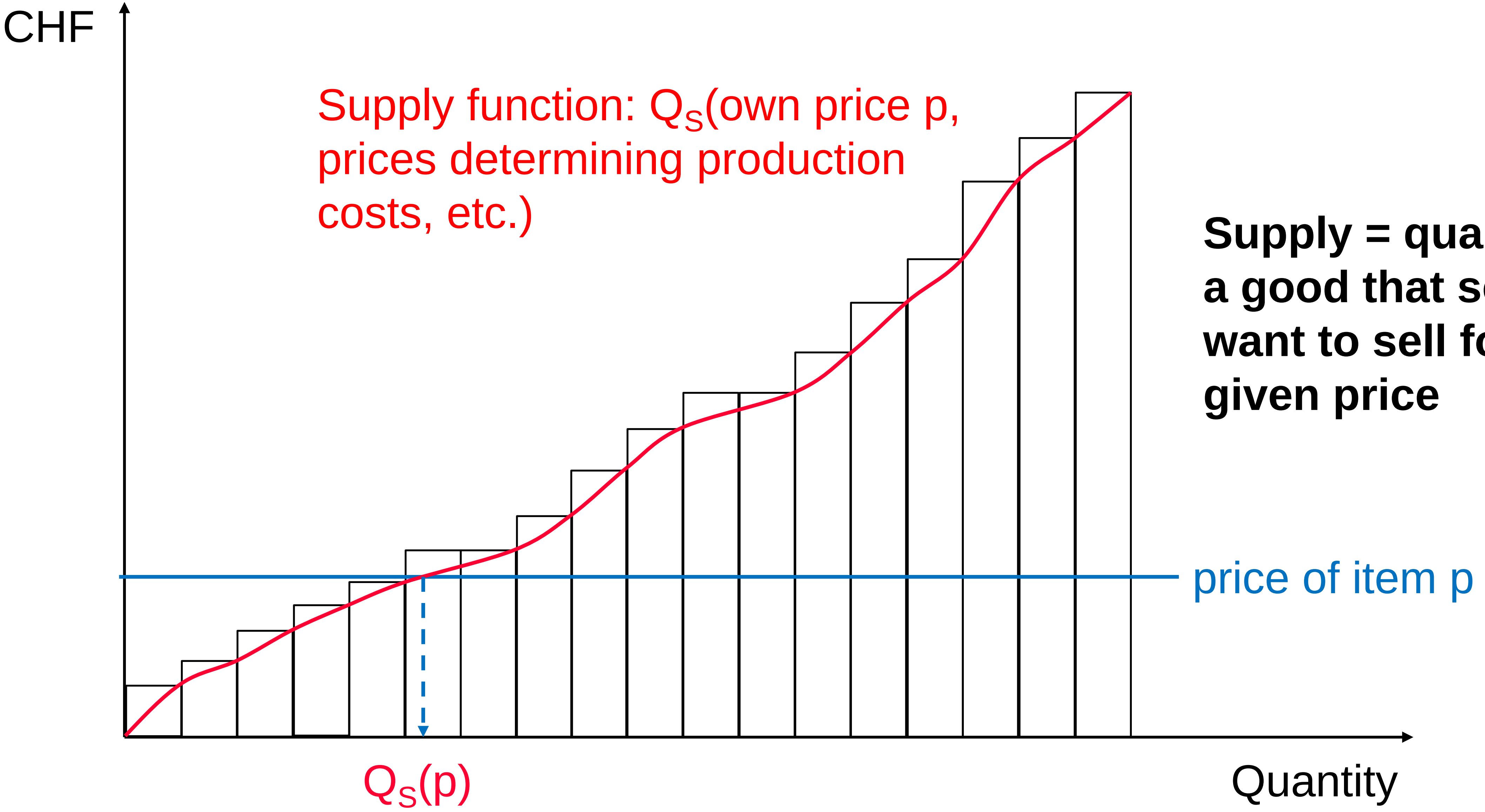


Surplus = price – WTA

If WTA = cost, then surplus = profit

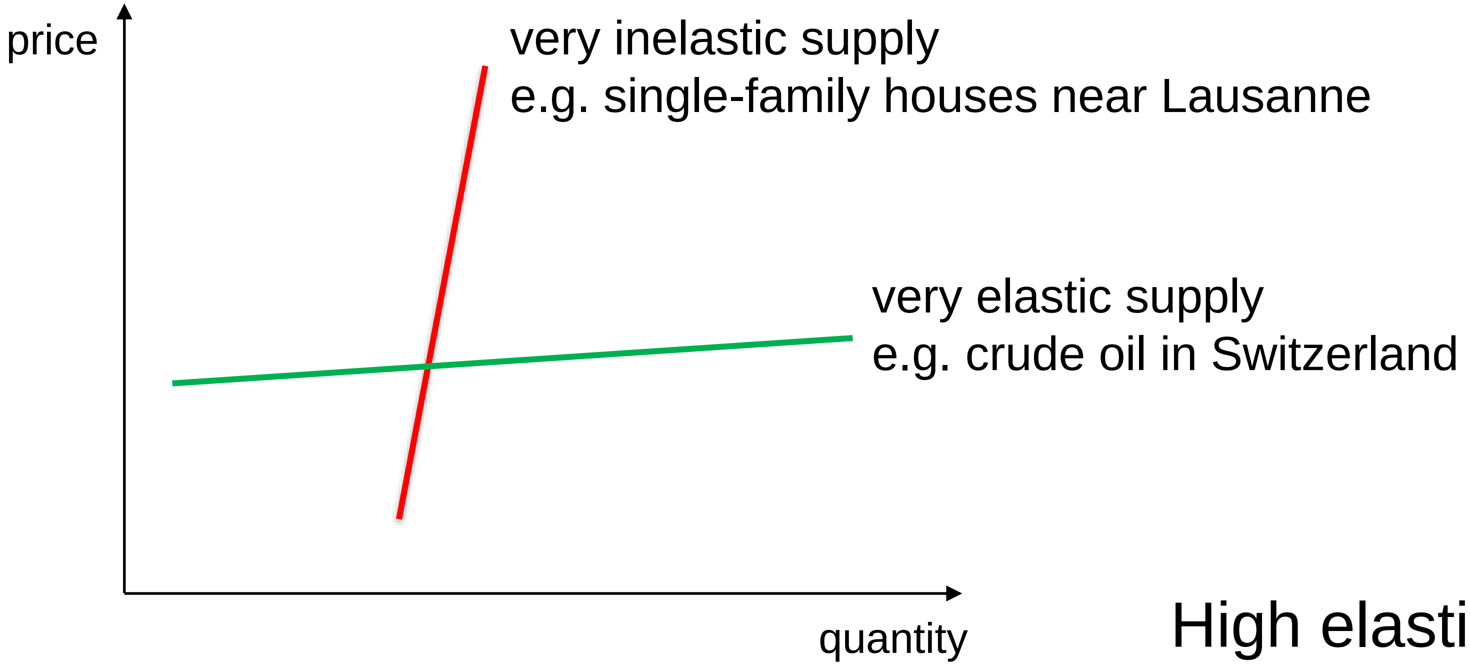
Total sellers' surplus = total area in yellow

Supply function



Supply = quantity of a good that sellers want to sell for a given price

Elasticity of supply



$$\text{elasticity of supply} = \frac{\frac{\partial Q_S}{\partial p}}{\frac{q}{p}}$$

$$\approx \frac{\frac{\mathrm{d}q}{q}}{\frac{\mathrm{d}p}{p}} = \frac{\%change\ q\ supplied}{\%change\ p}$$

High elasticity when

- easy to increase production or provisioning
- a longer time horizon is considered
- many competing sellers

What explains an increase in sales?