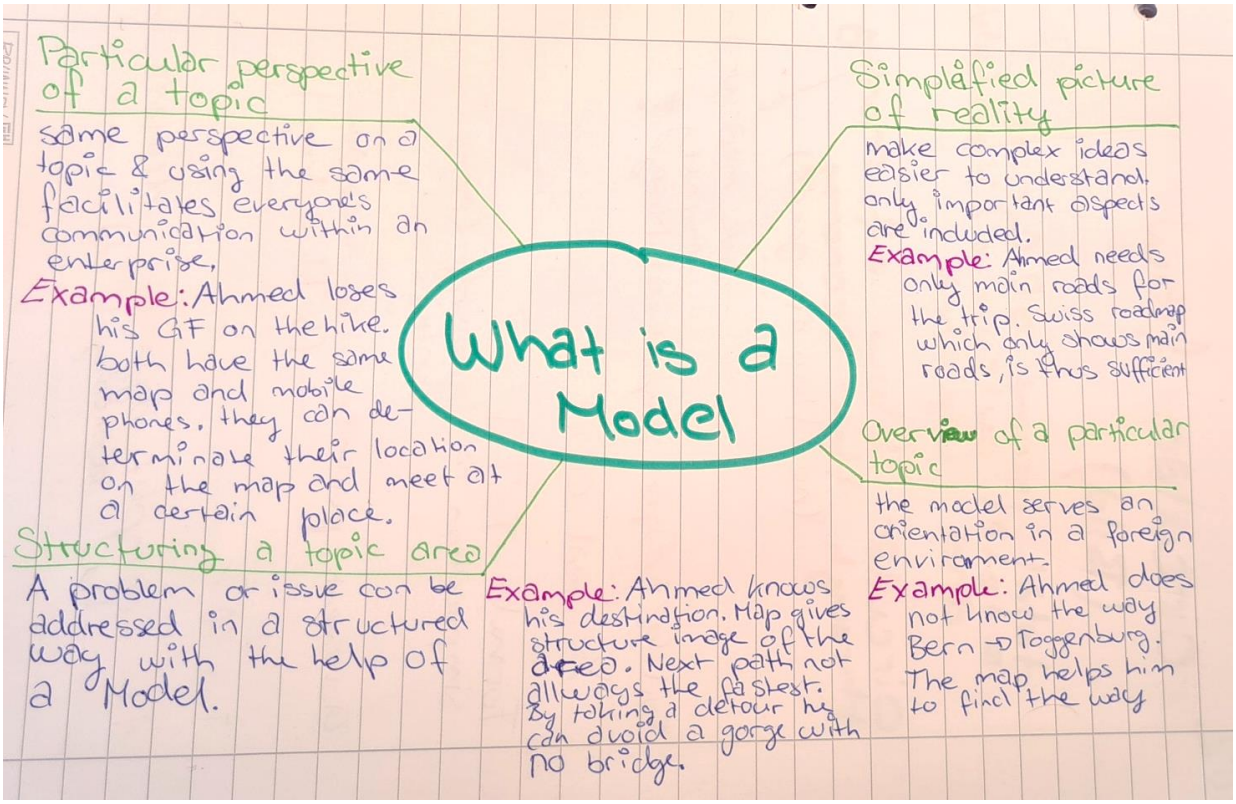
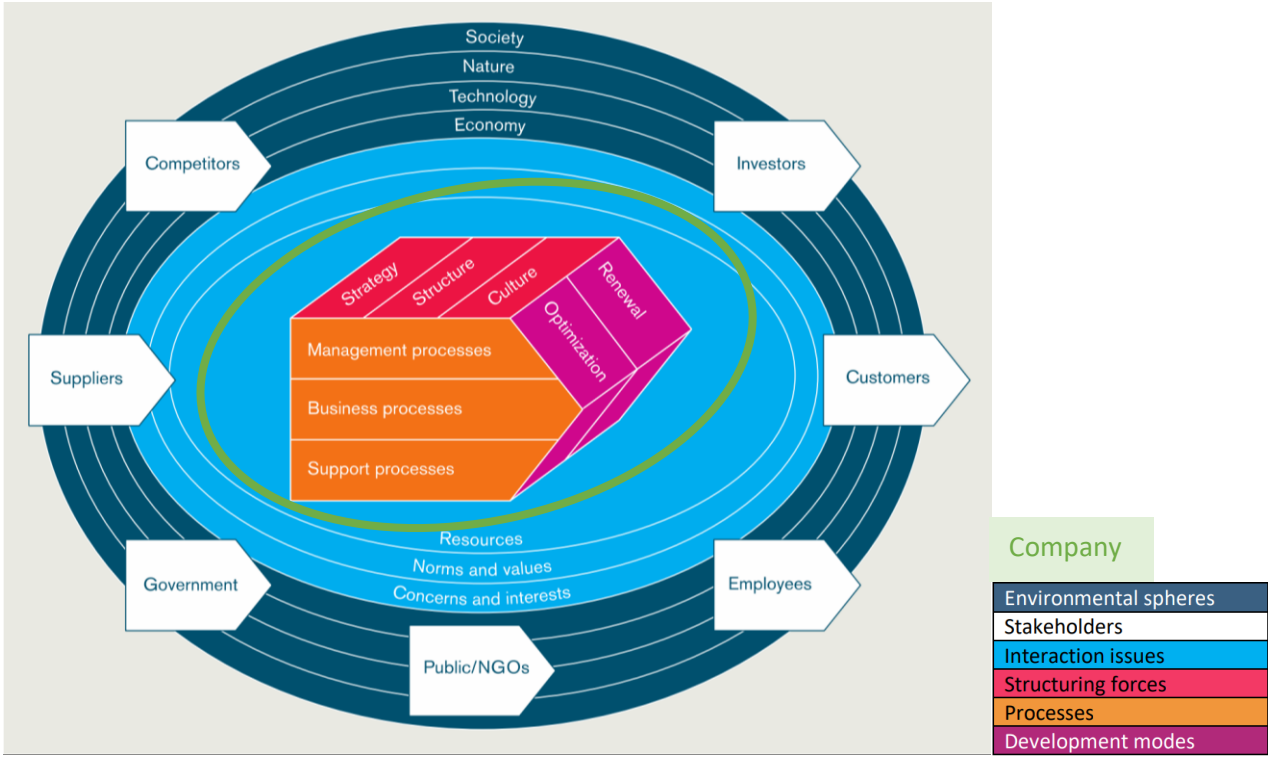
Zusammenfassung BADM

What is a model?



St. Gallen Management Modell



Business Cycles, Unemployment & Inflation SW01

Real GDP (measure of economic activity)

No consideration is given to the distribution of GDP amongst the people in an economy

Case 1: Increasing production	Year 1	Year 2	Year 3
Number of bread loafs produced	100	150	200
Price (CHF / bread loaf)	1.00	1.00	1.00
Nominal GDP (CHF)	**100.00**	**150.00**	**200.00**
Price level	1	1	1
Real GDP (CHF in year 1)	**100.00**	**150.00**	**200.00**

Case 2: Constant production	Year 1	Year 2	Year 3
Number of bread loafs produced	100	100	100
Price (CHF / bread loaf)	1.00	1.50	2.00
Nominal GDP (CHF)	**100.00**	**150.00**	**200.00**
Price level	1	1.5	2
Real GDP (CHF in year 1)	**100.00**	**100.00**	**100.00**

Case 1: Constant population	Year 1	Year 2	Year 3
Real GDP	**100.00**	**150.00**	**200.00**
Population	100	100	100
Real GDP per capita	**1.00**	**1.50**	**2.00**
(number of bread loafs per capita)	1	1.5	2

Case 2: Growing population	Year 1	Year 2	Year 3
Real GDP	**100.00**	**150.00**	**200.00**
Population	100	150	200
Real GDP per capita	**1.00**	**1.00**	**1.00**
(number of bread loafs per capita)	1	1	1

\+ Correct nominal GDP for changes in the price level to obtain real GDP. Real GDP is a much better measure of economic activity.

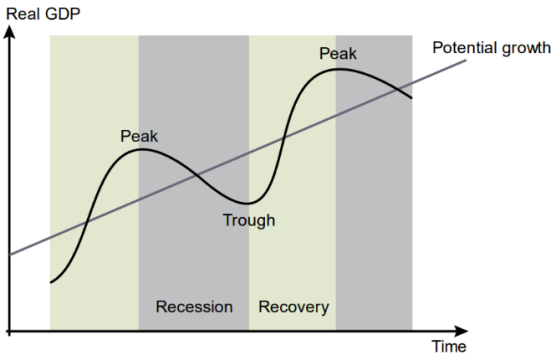
\+ Real GDP per capita is a good measure for the development of (average) prosperity in an economy.

\- GDP only measures value added obtained by (legal) markets.
- I.e. only paid transactions are measured.
- Example 1: Housework is not measured.
- Example 2: Black market activity is not measured.

\- Depletion is not measured
- Example 1: The repairs of a car are measured, but the destruction of a car due to an accident is not.
- Example 2: Destruction of the natural environment.

Business cycle

Observation of the business cycle	current situation
➢ Best known measure: GDP ➢ Problem: Data! Collection and analysis of the necessary data requires a lot of time. ➢ Solution indicators: Relatively easily measurable proxies that are linked to the business cycle (Industrial production, incoming orders, ect.).	
Predictions of the business cycle	1-2 years
➢ Important e.g., for government budgeting, monetary policy, firms' investment decisions. ➢ Statistical models, expert judgements.	



Inflation, Deflation, Disinflation

Inflation	➢ Sustained rise in the average (general) level of prices over time. ➢ Fall in the internal (domestic) purchasing power of money. ➢ Rate of inflation: E.g. 2% p.a.*
Deflation	➢ Fall in the average level of prices. ➢ Rise in the internal (domestic) purchasing power of money. ➢ Rate of inflation: E.g. -2% p.a.*
Disinflation	➢ Fall in the rate of inflation ➢ E.g. inflation falls from 2% p.a.* to 1.5% p.a.*

*Zinssatz in Prozent pro Jahr

	2019	2020	2021
Number of apples	10 apples	10 apples	10 apples
Price of apples	1.50 CHF/apple	2.00 CHF/apple	1.75 CHF/apple
Number of pears	5 pears	5 pears	5 pears
Price of pears	1.00 CHF/pear	0.80 CHF/pear	0.90 CHF/pear
Price of basket	20.00 CHF	24.00 CHF	22.00 CHF
Rate of inflation	NV	20%	$-8.\bar{3}\%$
Price level (index)	100	120	110

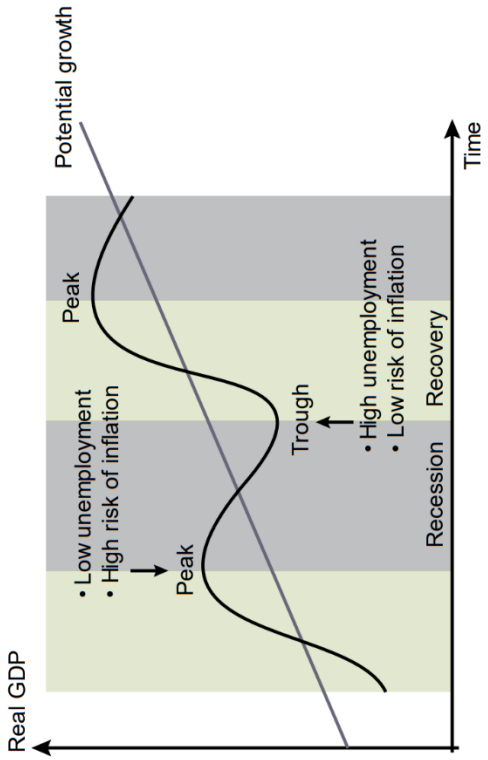
Unemployment (Basic types)

1. Frictional
- Unemployed workers are in the process of finding a job.
- Also termed search unemployment.

2. Seasonal
- Certain industries mainly (perhaps even only) produce or distribute their products at certain times of the year (e.g. farming, tourism, construction).

3. Structural
- Declining industries due to long term changes in market conditions (e.g. motor vehicle production in the UK)
- Globalisation, technological change

4. Cyclical
- Individuals lose their jobs as a result of a downturn in the economy.
- If the decline of the economy is persistent and the unemployment is long-term, cyclical unemployment is also called general, or Keynesian unemployment.



Economic Policy SW02

The (very basic) circular flow (Households and Firms): Total expenditure and total income must be equal, because transaction has two sides – a buyer and a seller

Circular flow of money: GDP(Y) is the sum of Consumption (C), Investment (I), Government purchases (G) and net exports (NX) (exports X – imports M)

Determinants of Aggregate Demand:

The Product Market:

$$\overset{real\ GDP}{\widehat{Y}} = \underbrace{C}_{\substack{Consumption \\ C'>0}}\left(Y - \underbrace{T(Y)}_{\substack{Taxes \\ T'>0}}\right) + \overset{Investments\ I'<0}{\widehat{I}}\ \underbrace{(r)}_{\substack{real \\ intrest\ rate}} + \overset{Government\ spending}{\widehat{G}} + \underbrace{NX}_{closed\ economy=0}$$

The Money Market:

$$\frac{\overset{Money\ supply}{\widehat{M}}}{\underbrace{P}_{Price\ level}} = \underbrace{l(r)}_{\substack{liquidity\ preference \\ l'<0}} + \overset{\overset{Transactions\ demand}{k'>0}}{\widetilde{k(Y)}}$$

where: M: Money supply, P: Price level, l: liquidity preference (speculative demand for money), k: transactions demand for money

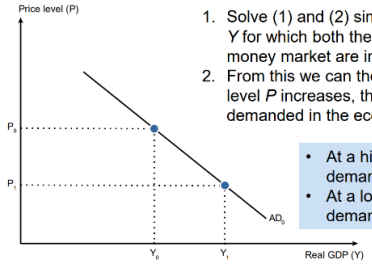
Equilibrium on the product and money markets yields aggregate demand.

Shift of the Demand curve

Shift of the Demand curve	To the left	To the right
Government spending	↓ Decrease	↑ Increase
Investments	↓	↑
Consumption	↓	↑
Taxation	↑	↓
Net exports	↓	↑
Money supply	↓	↑

(1) Equilibrium on the product market: $Y = C(Y - T(Y)) + I(r) + \bar{G}$

(2) Equilibrium on the money market: $\frac{M}{P} = l(r) + k(Y)$



1. Solve (1) and (2) simultanously to obtain *r* and *Y* for which both the product market and the money market are in equilibrium.
2. From this we can then see that as the price level *P* increases, the equilibrium output demanded in the economy (*Y*) decreases.

- At a high price level (P_0), aggregate demand is small (Y_0).
- At a low price level (P_1), aggregate demand is large (Y_1).

Determinants of Aggregate Supply:

The production of real output (factors):

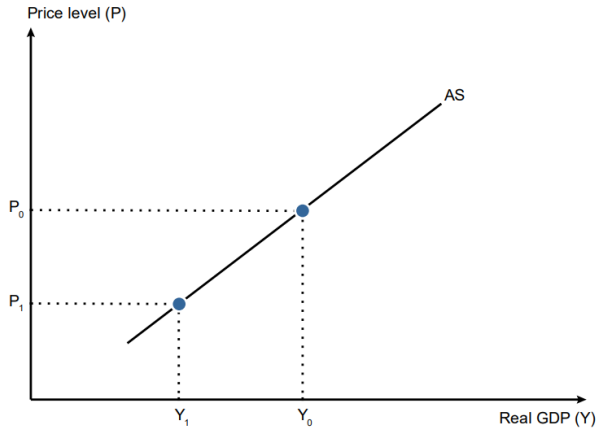
$$Y = \overbrace{\bar{F}}^{technology}\left(\underbrace{\bar{K}}_{capital}, \underbrace{L}_{labour}\right)$$

The labour market:

$$\underbrace{P}_{Price\ level} \overbrace{f\ (\underbrace{L}_{labour})}^{real\ wage} = \overbrace{P^e}^{expected\ price\ level} \quad \underbrace{g(L)}_{g'>0} = \underbrace{\rho(P)}_{\substack{workers\ adjustment\ of\ expectations}} \quad g(L)$$

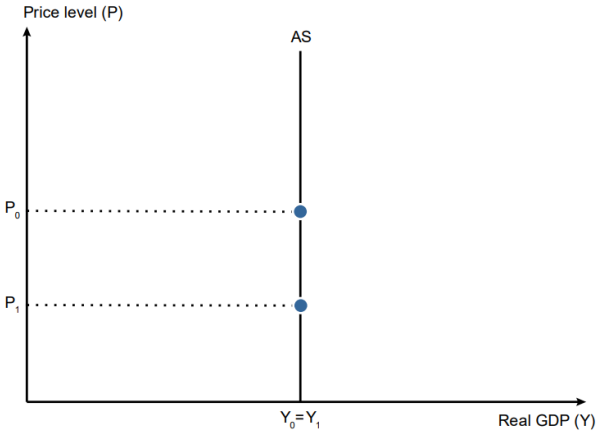
Aggregate supply

Workers' fail to realise changes in the price level: **Price illusion**



- At a high price level (P_0), aggregate supply is large (Y_0).
- At a low price level (P_1), aggregate supply is small (Y_1).

Workers' perfectly realise changes in the price level: **No price illusion**

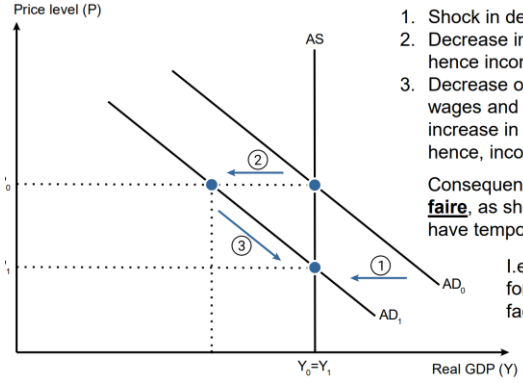


- At a high price level (P_0), aggregate supply (Y_0) is the same as it (Y_1) is at a low price level (P_1).
- (Real wages are constant).

Understanding the Business Cycle and the Effects of Economic Policy

(Four views of the economy)

1. Classical (Classical Model) -> workers have no price illusion

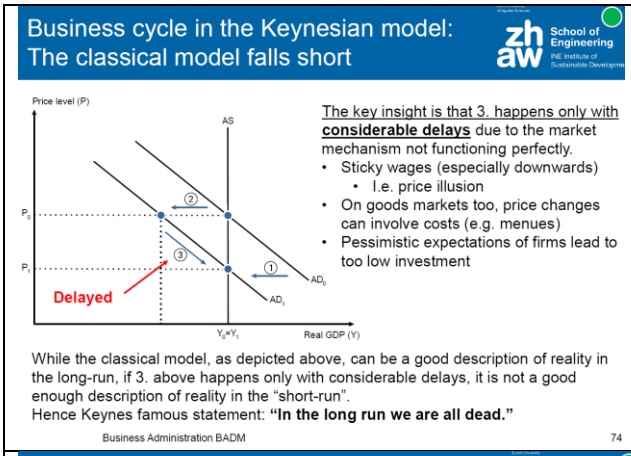


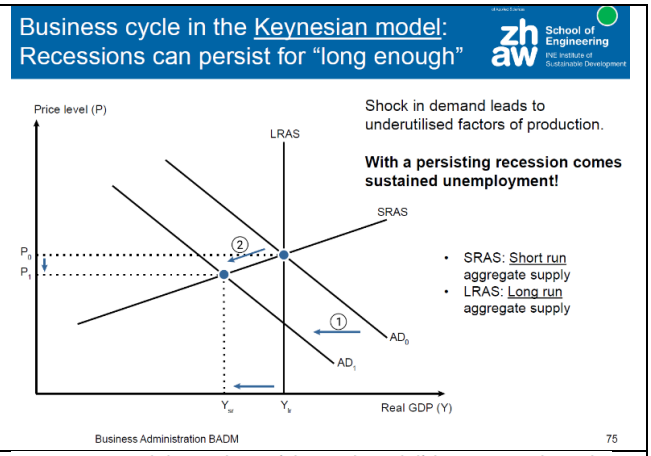
1. Shock in demand
2. Decrease in production (and, hence income)
3. Decrease of prices (incl. nominal wages and interest rates) → increase in production (and, hence, income)

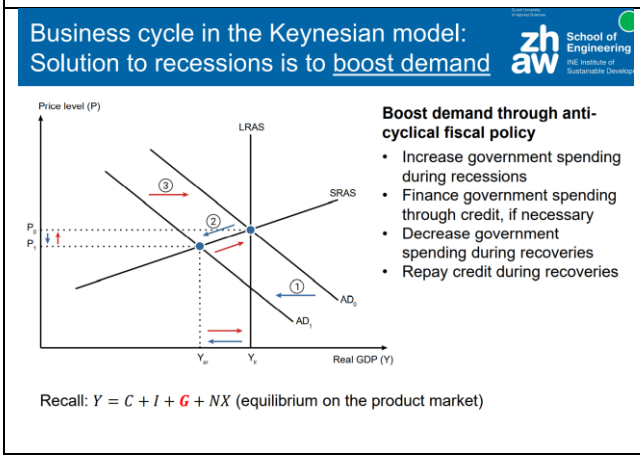
Consequence: **Laissez faire**, as shocks can only have temporary effects.

I.e. there is no reason for economic policy – in fact, it would only harm.

2. Keynesianism (Keynesian Model)

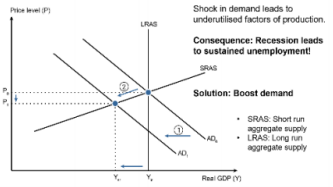






Keynesian Model: number 3 (classical model) happens only with delays (sticky wages, pessimistic firms -> low investments). **In the long run we are all dead!** How long are the delays?

Short run:



Boost demand throug anticyclical fiscal policy: during recession: increase government spending and finance it with credit and pay it back during recoveries.
Challenges of the Keynesian Model: time lags, unpopular during peak, financing of governments deficits, rational expectations

3. Monetarism (Quantity Theory of Money)

$$\underbrace{M}_{Money\ supply} \times \underbrace{\bar{V}}_{Velocity} = \underbrace{P}_{Price\ level} \times \underbrace{Y}_{Real\ GDP}$$

In the long-run, money is neutral. Money stock ↑ → P↑. (no effects on GDP, consumption)
In the short-run, money is not neutral. Money stock ↑ → temporary effects on real GDP and unemployment, Try to keep the price level unchanged.
Investment: M ↑ → Interest rates↓ → investments↑ → GDP↑
Net Exports: M ↑ → exchange rate ↓ → exports↑ → imports↓ → NX ↑

4. Supply Side Economics

Focus on the effects of taxation. how much of additional income is taxed away from the agents earning the income

Summing up:

In the long-run economic growth depends on the quantity and quality of the factors of production.
In the short-run economic output depends on aggregate demand.

Demand for goods and services SW03

The free-market economy

- Based on free decision making by individuals and firms
- Demand and supply decisions.
- Price mechanism -> equilibrium price where demand equals supply.
- Responses to changes in demand and supply.

→ The success of any business is ultimately decided by its relevance to the market.

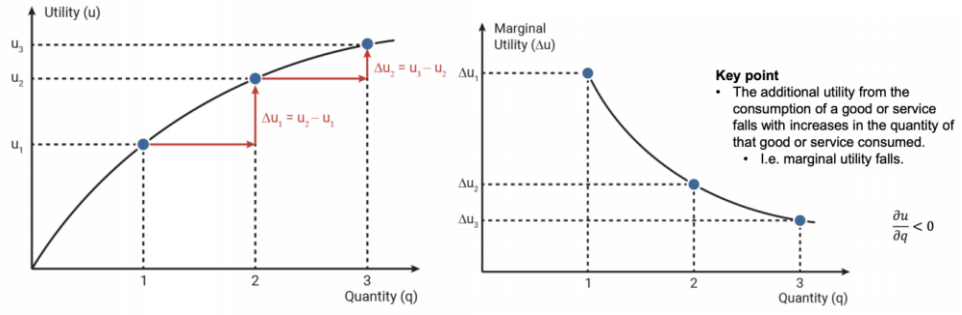
Individual Choice

Homo Oeconomicus: agents are rational, self-interested (Economic man is not a value on how humans should behave)
Positive statement: Economic man is a working hypothesis that is used for making predictions.

Preference rules

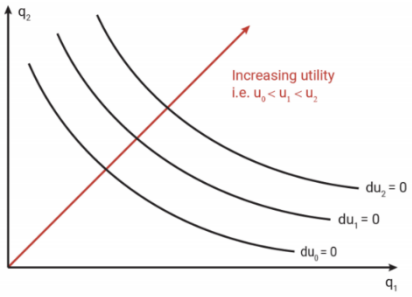
- Preferences describe tastes for one outcome over another
- Preferences are subjective
- Starting point for understanding travel demand
- Possibility to classify individuals into preference or market segments (This is key to marketing)

George's utility and marginal utility: The consumption of water



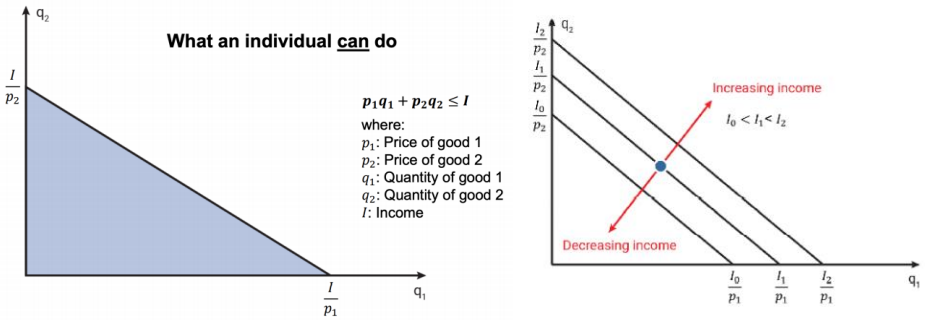
Indifference curves: Increasing utility

- Think of goods and services as bundles of underlying attributes such as:
  travel time, comfort, reliability, etc. which present the sources of utility
- When making choices individuals implicitly attach weights to a set of attributes that influence their choice and chose an alternative from the available set.



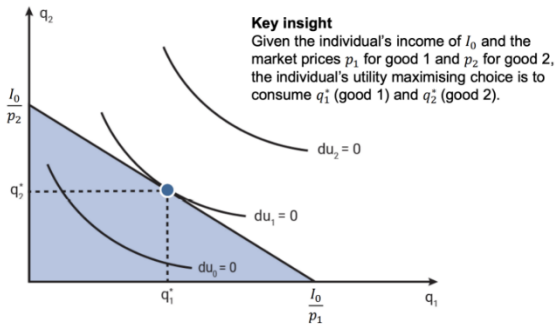
Budget constraint (changes in income):

What an individual can do with its income. $p1 * q1 + p2 * q2 \leq I$



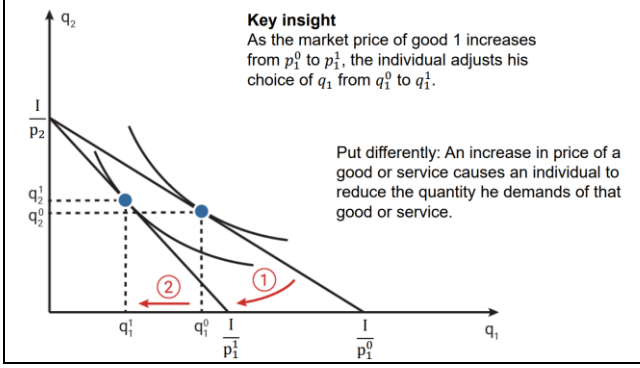
Optimal consumption:

max $u(q1\ ,\ q2\ )\ ,\ p1q1 + p2q2 \leq I$

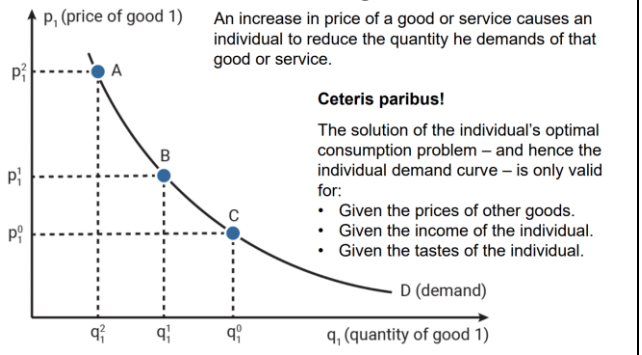


Demand

Deriving an individual's demand for a good or service



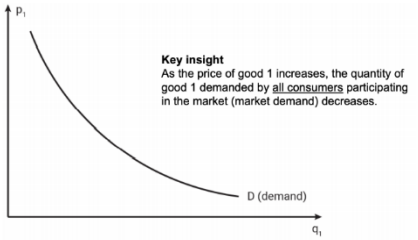
An individual's demand for a good or service



In reality other factors may be changing too e.g. increased service quality associated with price increase -> Failure to account fo other sources of change can result in misleading inferences of the role of price.

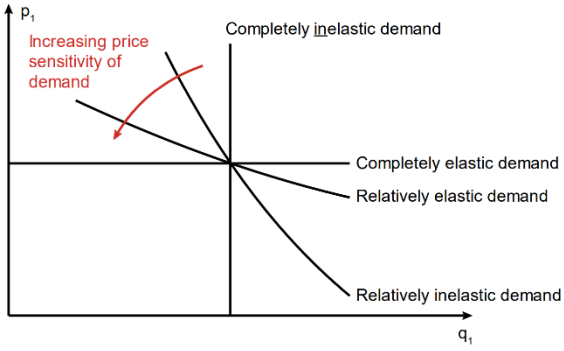
Market demand for a good or service

Market demand for a good or service is made up by all the individuals who participate in that market.
Here we have two individuals – Alicia and Angus. Each of these two individuals chooses a quantity of good 1...
...given the prices of other goods.
...given his or her income.
...given his or her tastes.



Price sensitivity of demand (elastic and inelastic demand): Direct price elasticity depends on the price of all other goods and income. In general, the value of the elasticity is only valid for one point on the demand curve.

Determinants of direct price elasticity: availability, necessities vs. luxury goods, time horizon, substitutability, ease of demand



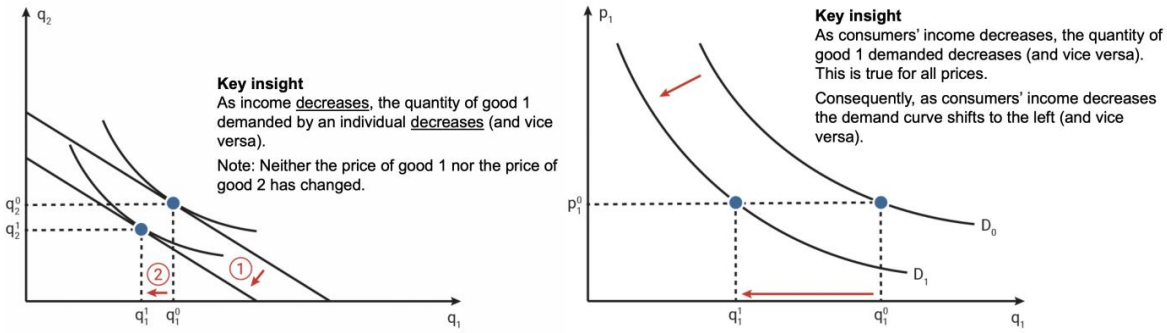
Direct price elasticity of demand

Definition: $$\varepsilon_{lk}(p,I) = \frac{\partial q_l(p,I)}{\partial p_k} \cdot \frac{p_k}{q_l(p,I)}, \text{ with } l = k \quad \rightarrow \quad \varepsilon_{lk}(p,I) = \frac{\frac{\Delta q_l(p,I)}{q_l(p,I)}}{\frac{\Delta p_k}{p_k}}, \text{ with } l = k$$

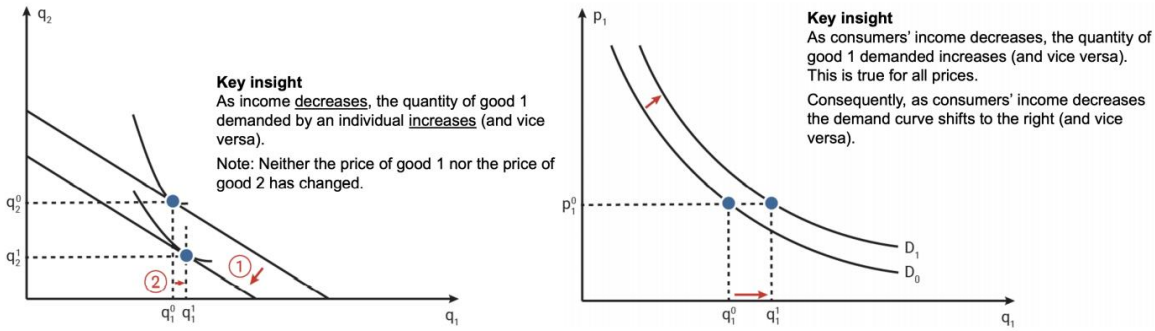
- Elastic demand for good l: $\varepsilon_{lk} < -1$, or $|\varepsilon_{lk}| > 1$ (so we can speak of it being "more" elastic the larger the value of the elasticity).
- Inelastic demand for good l: $\varepsilon_{lk} > -1$, or $|\varepsilon_{lk}| < 1$ (so we can speak of it being "less" elastic the smaller the value of the elasticity).
- Direct price elasticity depends on –> the prices of all other goods –> income
- In general, the value of the elasticity is only valid for one point on the demand curve.

Elasticities of demand
- Short run elasticity of demand = -0.27 → 1% rise in gas price will reduce gas consumption by 0.27% in the short run (within several months).
- Long run elasticity of demand = -0.71 → 1% rise in gas price will reduce gas consumption by 0.71 % in the long run (say, several years).
- Long-run elasticity usually is several times larger (in absolute terms) than short-run elasticity.
  - Put differently, long-run elasticity usually is (much) "more negative" than short-run elasticity.

Changes in income: The case of normal goods



Changes in income: The case of inferior goods (niedrigwertiger)

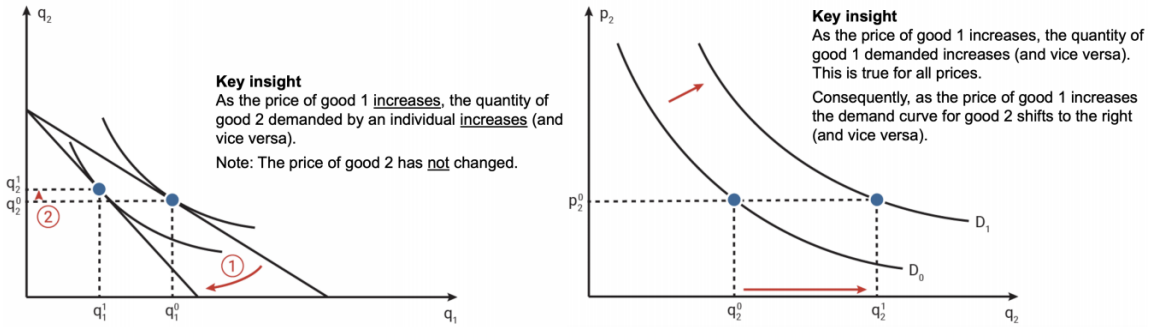


Income elasticity of demand

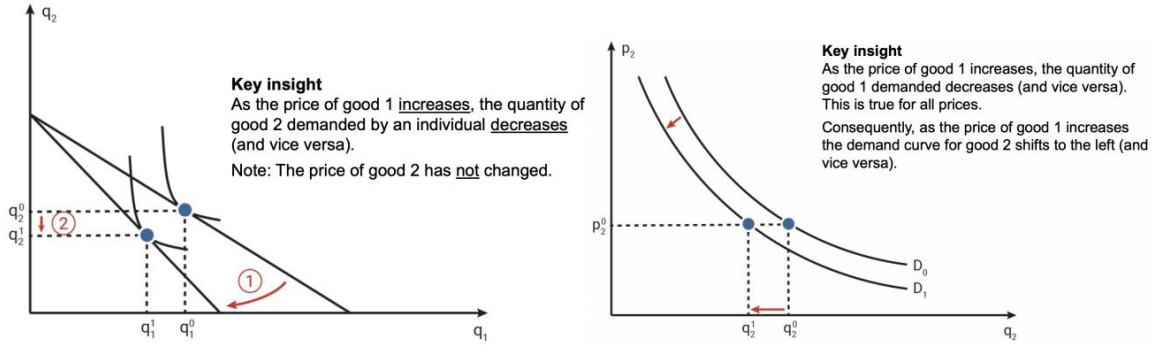
Definition: $\varepsilon_{I,I}(p,I) = \frac{\partial q_1(p,I)}{\partial I} \cdot \frac{I}{q_1(p,I)} \rightarrow \varepsilon_{I,I}(p,I) = \frac{\frac{\Delta q_1(p,I)}{q_1(p,I)}}{\frac{\Delta I}{I}}$

- Normal good: $\varepsilon_{I,I} \geq 0$
- Inferior good: $\varepsilon_{I,I} < 0$
- **Note**: Here we do not apply absolute values because income elasticity can be either positive or negative.

Changes in the price of other goods: The case of substitutes



Changes in the price of other goods: The case of complements



Cross price elasticity of demand

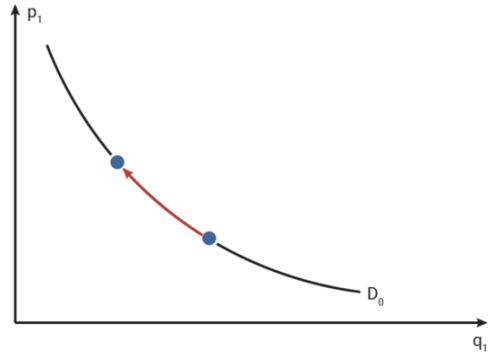
Definition: $\varepsilon_{lk}(p,I) = \frac{\partial q_l(p,I)}{\partial p_k} \cdot \frac{p_k}{q_l(p,I)}$, with $l \neq k$ → $\varepsilon_{lk}(p,I) = \frac{\frac{\Delta q_l(p,I)}{q_l(p,I)}}{\frac{\Delta p_k}{p_k}}$, with $l \neq k$

- Substitutes: $\varepsilon_{lk} > 0$
- Complements: $\varepsilon_{lk} < 0$
- Note: As with income elasticity, here we do not apply absolute values because cross-price elasticity can be either positive or negative.

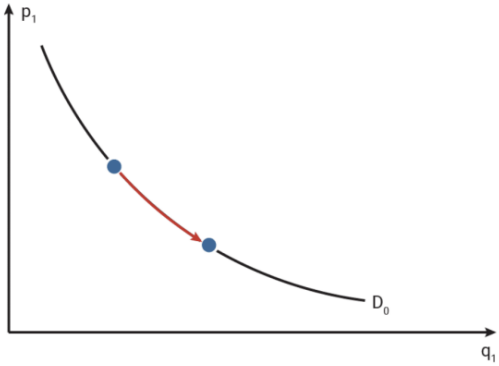
Summing-up

Direct price elasticities	Cross price elasticities	Income elacticites
Change in quantity of good 1, due to a change in the price of good 1	Change in quantity of good 2, due to a change in the price of good 1	Change in the quantity of good 1, due to a change in the level of Income
$\frac{\Delta q_1}{\Delta p_1}$	$\frac{\Delta q_2}{\Delta p_1}$	$\frac{\Delta q_1}{\Delta I}$
Negative values	Positive for substitutes (Ersatz), negative for complements (Ergänzung)	Positive for normal goods, negative for inferior goods (minderwertiges, nur wenn man sich nichts anderes leisten kann)

Movements along the demand curve

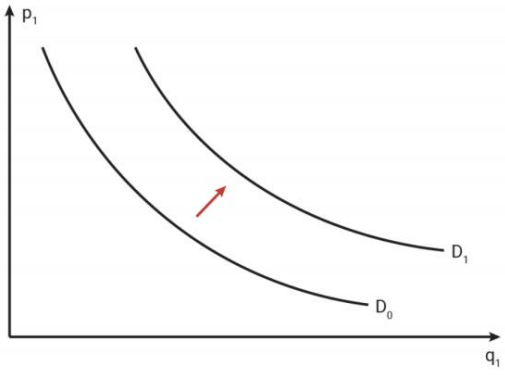


➢ Increase of the price of good 1

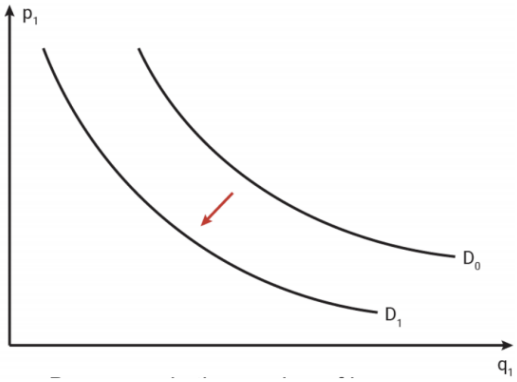


➢ Decrease of the price of good 1

Shifts of the demand curve



- Increases in the number of buyers
- Increases in income for normal goods
- Decreases in income for inferior goods
- Stronger preferences for the good
- Increasing prices of substitutes
- Decreasing prices of complements
- Expectations of future price increases



- Decreases in the number of buyers
- Decreases in income for normal goods
- Increases in income for inferior goods
- Weaker preferences for the good
- Decreasing prices of substitutes
- Increasing prices of complements
- Expectations of future price decreases

Movement along the demand curve: up (Increase of the price), down (decrease of the price)

Shift of the Demand Curve	To the right	To the left
Number of buyers	↑	↓
Income for normal good	↑	↓
Income for inferior good	↓	↑
Preferences for the good	Stronger	Weaker
Prices of substitutes	↑	↓
Prices of complements	↓	↑
Expectations of future price	↑	↓

Elasticities

Direct price elasticities	Cross price elasticities	Income elasticities
➢ Measure the percentage change in quantity of good 1 (q1) and the percentage change in the price of good 1 (p1). ➢ Negative values.	➢ Measure the percentage change in quantity of good 2 (q2) and the percentage change in the price of good 1 (p1). ➢ Positive for substitutes, negative for complements.	➢ Measure the percentage change in quantity of good 1 (q1) and the percentage change in the level of income (I). ➢ Positive for normal goods, negative for inferior goods.

Transport: Derived Demand

Factors determining (bestimmen) transport demand: Physical characteristics of commodities being transportet, Price, Relative prices charged by different modes or different operators, Passenger income, Speed of service, quality of service, peak demand, social habits, changes in competitors services or prices, changes in population distribution

Factors determining the magnitude of direct price elasticities of transport: Trip purpose, methods or charging, time period under consideration, availability of alternative transport modes

Firms Decision Making, Cost, & Selected Market Structures SW 04

Modelling a firm's behaviour

- A firm is association of individuals organized themselves for turning inputs into outputs.
- Each individual will have **different objectives**... and modelling the relation among all types of workers, managers, shareholders, etc. can be very complicated.
- The **simplest** approach in economics is the following: The decisions are made by a **single dictatorial manager** who rationally pursues some goal and can monitor perfectly (and costlessly) that everyone is working according to his guidelines.

Profit – the firms objective: A profit-maximizing firm chooses both its inputs and its outputs with the sole goal of achieving maximum economic profits.

$$\max_{\overbrace{y}^{Output}} \underbrace{\pi}_{Profit}(y) = \underbrace{r}_{Revenue}(y) - \overbrace{c}^{Cost}(y)$$

Demand for a firm's goods and the firm's revenue

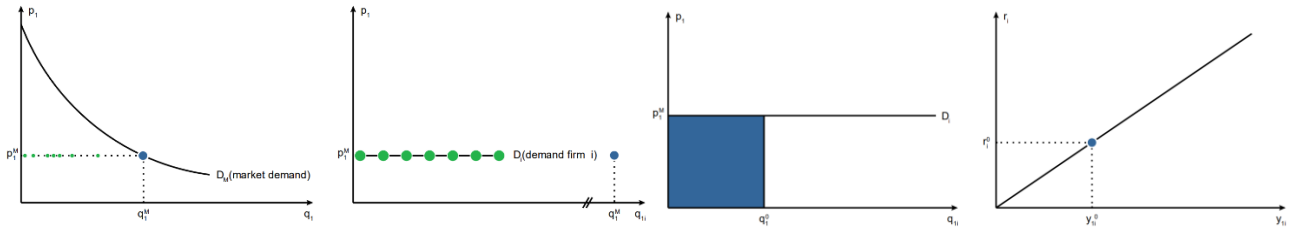
Here, we distinguish three cases of market structure

1. Perfect competition **2. Monopolistic competition** **3. Monopoly (and cartels)**

We will assume that there are many consumers in the market, and that the actions of each consumer have a negligible effect on the market as a whole. Put differently, consumers have no market power.

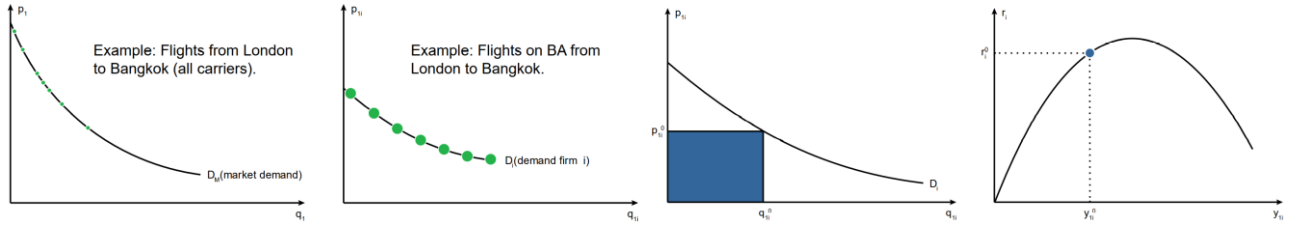
Later, in the section on marketing, we will look at the possibility of a firm charging different consumers different prices for the same good -> "revenue management" or "price discrimination"

Perfect competition: Homogenous good (the goods are identical), Many consumers, many suppliers, free market entry and exit. Demand curve of firm I is perfectly elastic → revenue of firm I is linear in the quantity produced and sold $r(y) = p(y) \cdot y$,



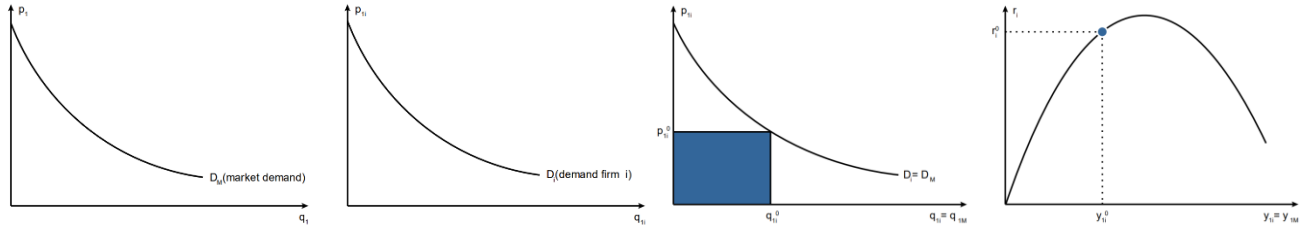
Monopolistic competition: Heterogeneous good, many consumers, many suppliers, free market entry and exit. Because some consumers have a preference for the firms differentiated good, they will not immediately switch to another firm if firm i raises its price. Demand curve of firm I is not perfectly elastic → revenue of firm I is not linear in the quantity produced and sold.

The form of the revenue function depends on the form of the demand function faced by firm i.



Monopoly: Homogeneous good, many consumers, only one supplier, restricted market entry. Market demand is equal to the demand faced by firm i. Consumers have no choice. If they want to get the good, they have to get it from firm i. Firm i has a lot of market power. revenue of the monopoly is not linear

And again, the form of the revenue function depends on the form of the demand function faced by firm i.



Cost analysis

Definitions of cost

accounting cost: The accountant's view of cost stresses out-of-pocket expenses, historical costs, depreciation, and other bookkeeping entries (e.g. for taxation reasons).

Economists focus more on opportunity cost: Opportunity costs are what could be obtained by using the input in its best alternative use.

Economic cost
The economic cost of any input is the payment required to keep that input in its present employment. With perfectly functioning markets, this is the remuneration the input would receive in its best alternative use.

Opportunity cost – an example

- An IT programmer implements a new software and sells it for CHF 3'500.-.
- Her out-of-pocket expenses and deprectiation amount to CHF 1'000.-.

Accounting profits

CHF 3'500 – CHF 1'000.- = CHF 2'500.-. This seems like a good project.

Economic profits

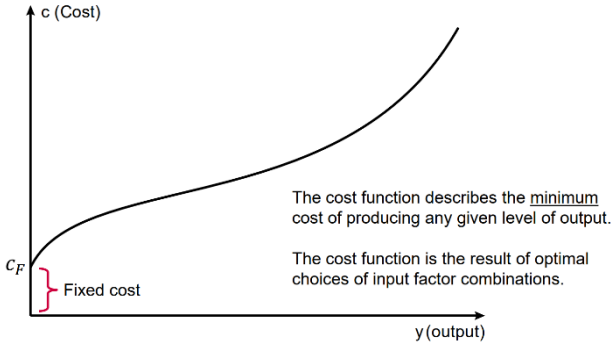
CHF 3'500 – CHF 1'000.- = CHF 2'500.- minus what she could have earned working e.g. for a firm in her time. Now, the project might not seem so good any more…

→ Part of accounting profits are considered to be costs by economists

The cost function:

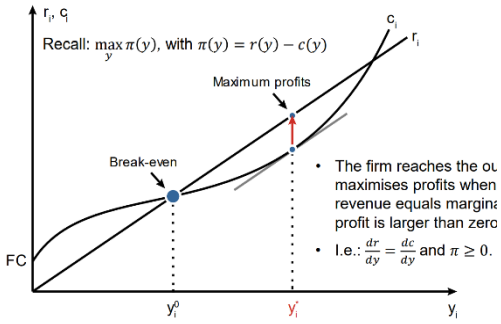
Minimum cost of producing any given level of output

If the price of an input increases, the cost will increase. The increase in costs will be largely influenced by the relative significance of the input in the production process.



Reaction of cost to input price changes:

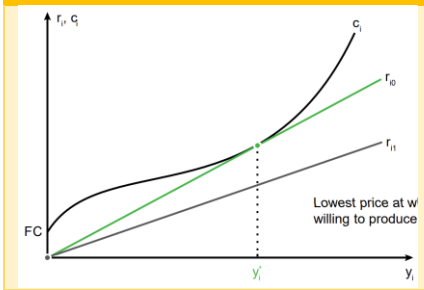
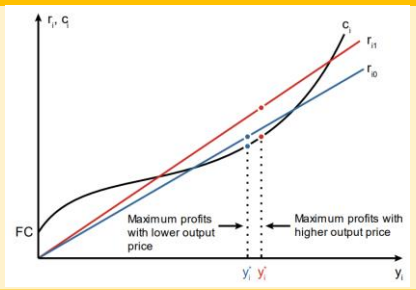
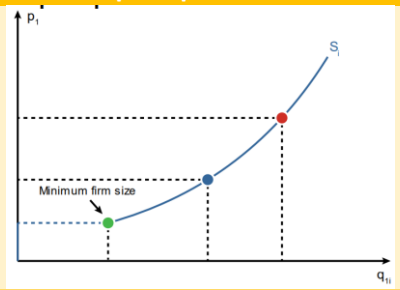
- If the price of an input increases, the cost will increase.
- The increase in costs will be largely influenced by the relative significance of the input in the production process.
- If firms can easily substitute another input for the one that has risen in price, there may be little increase in costs
- It is important to measure the substitution of inputs in order to predict how much costs will be affected by an increase in the price of an input (e.g. due to a tax increase).

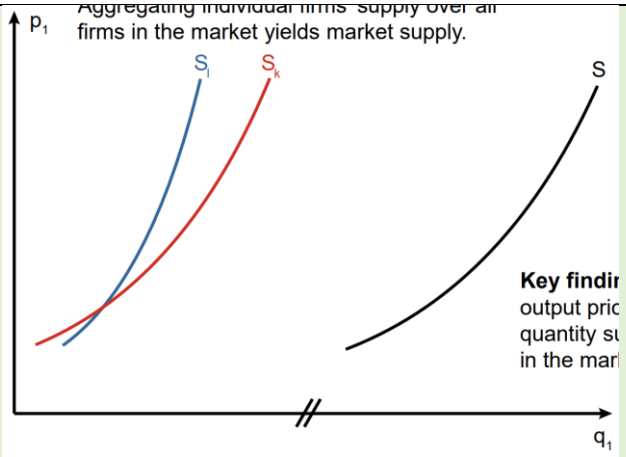


Profit maximisation and the individual firm's supply

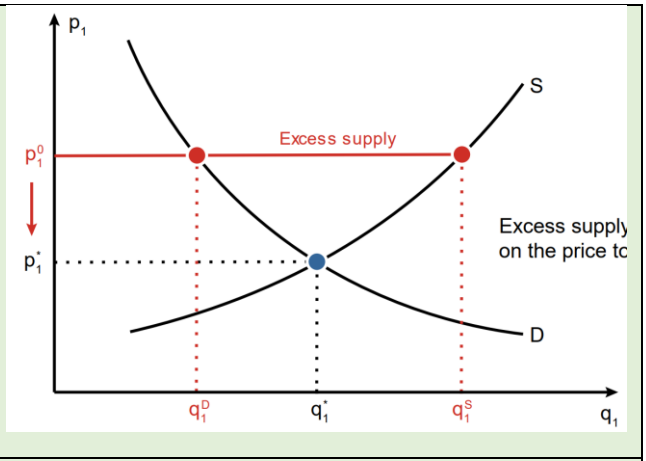
Perfect competition:

The firm reaches the output level that maximises profits when marginal revenue equals marginal cost (and profit is larger than zero).

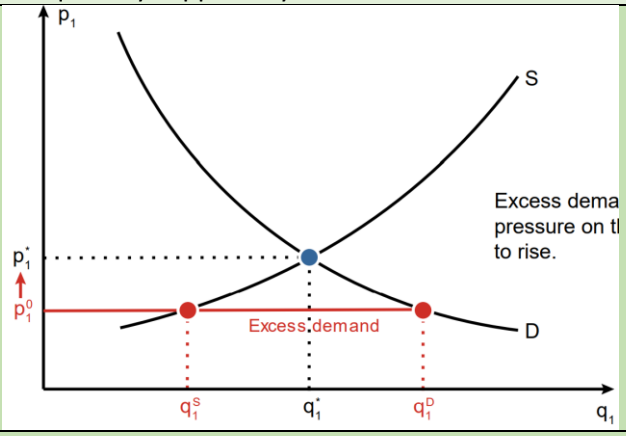
Minimum Firm Size	Profit-maximising output choice	The individual firm's supply curve slopes upwards
		
Lowest price at which the firm is willing to produce a positive quantity.	**Key finding**: The higher the output price, the higher the profit-maximising quantity of output. Consequently, the supply curve of the individual firm slopes upwards.	



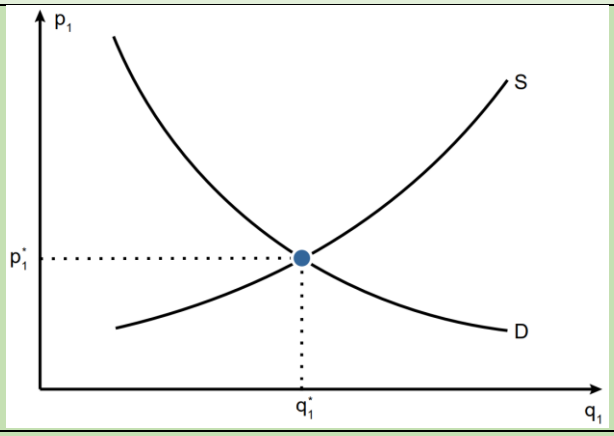
Market supply: Aggregating individual firms' supply over all firms in the market yields market supply.
Key finding: The higher the output price, the higher the quantity supplied by all firms in the market



Excess supply puts pressure on the price to fall.

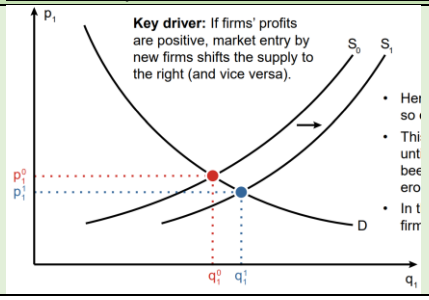


Excess demand puts pressure on the price to rise.



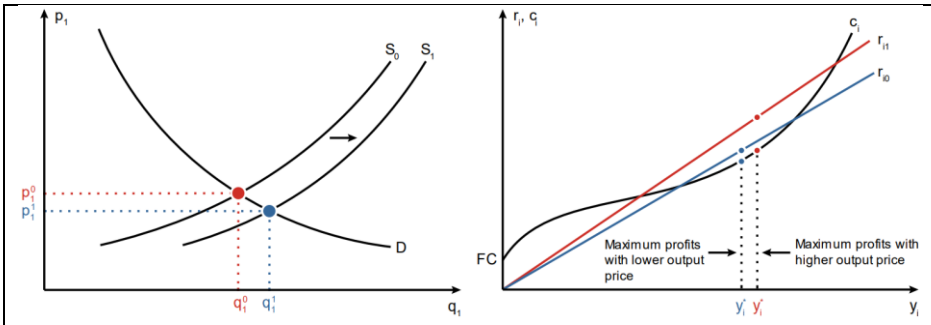
Market equilibrium in the short run

Market equilibrium in the long run
Key driver: If firms' profits are positive, market entry by new firms shifts the supply to the right (and vice versa).
- Hence, prices fall, and so do firms' profits.
- This process goes on until firms' profits have been completely eroded.
- In the long run then, firms' profits are zero.



Recall:

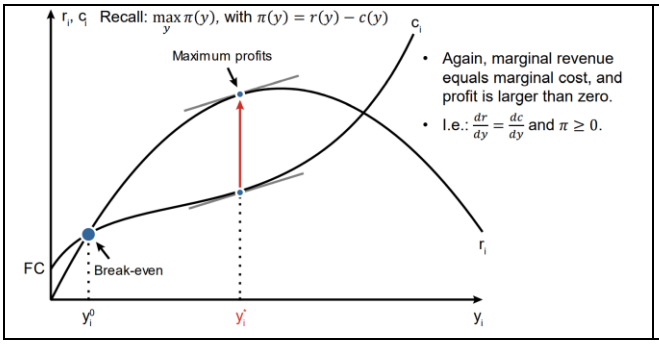
Profit maximisation with varying output prices under perfect competition

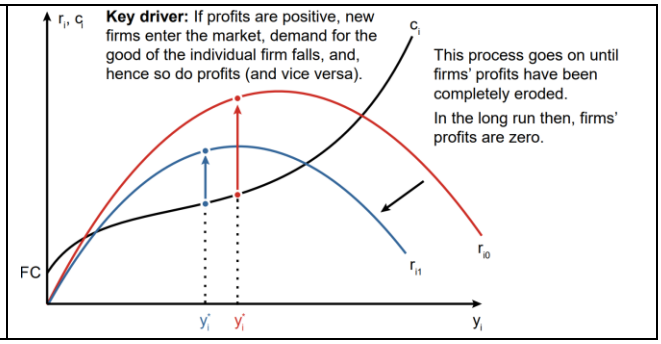


In the long run, with free market entry, firms' profits will be forced towards zero.

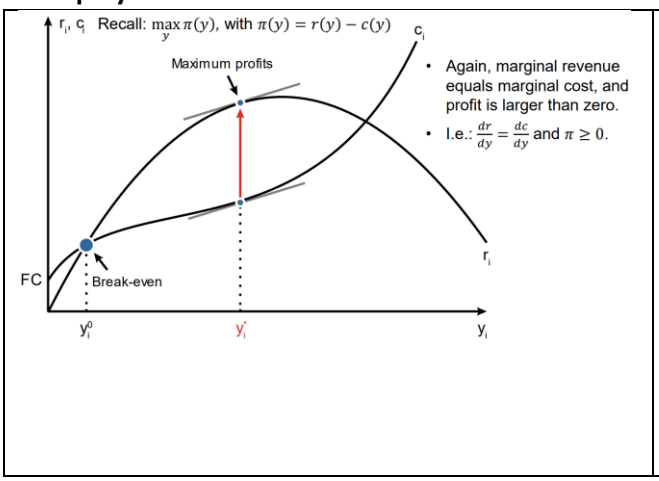
Sequence:
(1) Positive profits,
(2) entry of new firms shifts supply to the right,
(3) market price ↓,
(4) demand facing the individual firm ↓,
(5) revenue ↓,
(6) profits ↓.

Monopolistic competition

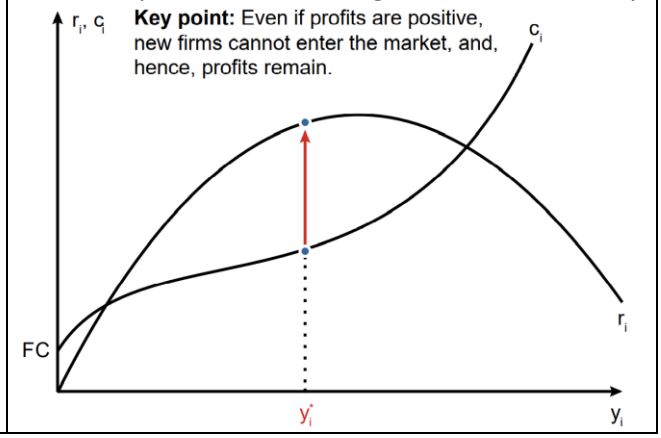




Monopoly



Market equilibrium in the long run (no market entry



Note

- Analytically, in the short-run, profit maximisation for the monopoly works just like profit maximisation under monopolistic competition.
- The key difference though is that the monopoly faces the whole market demand, while a firm under monopolistic competition faces only a share of that market demand.
- However, graphically, both demand curves slope downwards, thereby driving the form of the revenue function and hence the visual presentation of the analysis.

Free market entry and exit

- In general, market entry and exit are costly.
- Consequently, competition will be less fierce and some economic profits will remain.

Profit maximisation

- While firms certainly do seek profits, they will hardly always actually produce at their profit-maximising output level. Nevertheless, they will seek to adapt towards that level.
- This also holds true for input choices and, hence, cost minimisation.

Evaluation

The perspective of the firm	The perspective of the consumer
• Perfect competition is the worst setting of all. Profits are eroded. • Monopoly is the best setting of all. However, it is very difficult to achieve and defend a monopoly position. • Cartels would allow monopoly profits to be shared amongst members. However, cartels are inherrently unstable and illegal in the EU, USA, CHE, etc. • Product differentiation can be attractive because it yields some market power. However, here too, market entry must be contained.	• Perfect competition is the best setting of all. • Monopoly is the worst setting of all. Cartels are just as bad.

Transaction Cost SW06

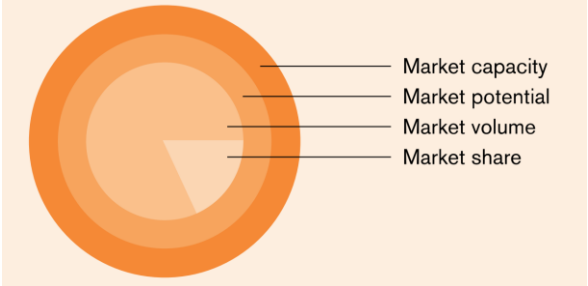
Search goods, experience goods and credence goods

Search goods	Goods with attributes that can be evaluated prior to purchase. Consumers can build on information from direct product inspection. Search goods are fairly easy to deal with. Consumers can evaluate the quality propagated in advertisments and catalogues with relative little effort (i.e. at relatively low cost).
Experience goods	Goods and services with quality attributes that can only be accurately evaluated after the product has been purchased and consumed (i.e. after the product has been experienced). Many personal services such as travel, meals at restaurants or movie theatres have experience attributes.Clearly, if quality attributes cannot be credibly communicated to consumers, the market for high quality will break down as consumers will not be willing to pay the higher price required to cover the higher cost of production of high quality. Signaling quality attributes: Guarantees that promise the consumer support aftertheproduct has been purchased (e.g. cars). Independant reviews / ratings of the product. Reputation of the supplier.
Credence goods	Goods and services with quality attributes that are difficult or impossible for the average consumer to evaluate even after consumption has occurred. Consumers may not have the expertise to make a realistic evaluation or the cost of information-acquisition may be prohibitively high. Many professional services such as consulting, financial advisory or medical advice have credence attributes. Again, if quality attributes cannot be credibly communicated to consumers, the market for high quality will break down. Signaling quality attributes: Independant, expert reviews / ratings of theproduct; labels. Reputation of the supplier.(Guarantees will not work)

Marketing SW07

Marketing plan

Market analysis:

Market research: Quantitative: Determine numerical values in the market. Qualitative: Find out motives for consumer purchasing behavior.	Quantitative market analysis: **Market size** 

Buying behaviour

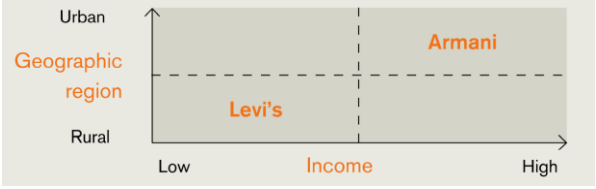
Phase	Description
1	Emergence of demand
2	Different decision-making processes, information acquisition and processing
3	Selection of a product/intention to purchase
4	Buying behavior
5	Use and information gathered
6	Disposal

Purchase decision type:
True decisions: Made only occasionally. The information needs of consumers are particilarly extensive. The comparison of various alternatives requires a long decisionmaking period. (Car)

Habitial decisions: Concern everyday goods and are therefore made relatively often. The consumer shows behavioral habits in the choice of product and brand. (Toothpaste)

Limited decisions: Experience gained from previous purchases within the same product group. Fort he purchase, only a limited number of information sources will be used and a few alternatives considered. (2nd Car)

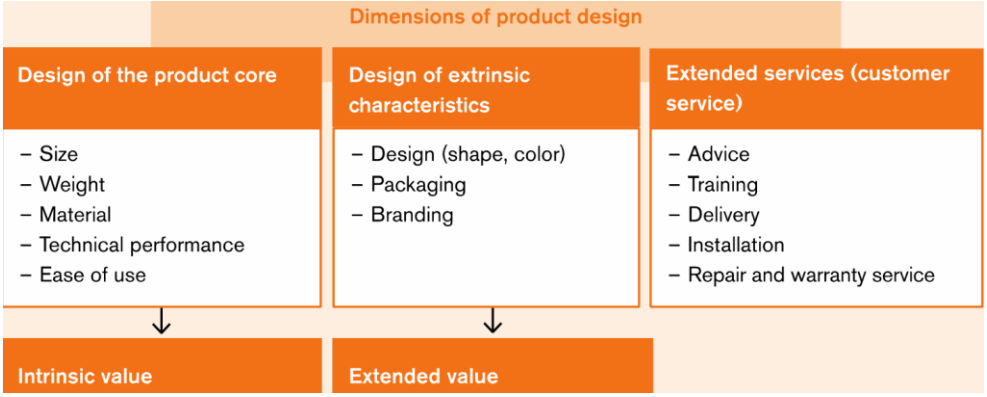
Marketing strategy

Market segmentation:	Positioning:
Geographic: Territory, Population density, climate, language **Socio-demographic:** Age, gender, income, occupation, education **Value and behavior:** Value system, lifestyle, type of recreation, buying motive	Example: Jeans brands. Positioning along the two dimensions of (1) geographic region and (2) level of income. 

Marketing mix

Product	What product performance and design will meet customer needs?	Sales programm/product line, features, packaging, services, warranty
Price	How must prices and conditions be designed so that they are acceptable to the customer?	Price determination, strategy, conditions
Place	Where can the product reach the customer in the simplest, fastest and most cost-effective manner? What distribution channels should be used?	Sales channel, means of transportation
Promotion	How can the enterprise make customers aware of and convinced of the product?	Advertising, public relations, sponsorship

Product policy: Product design



Pricing policy

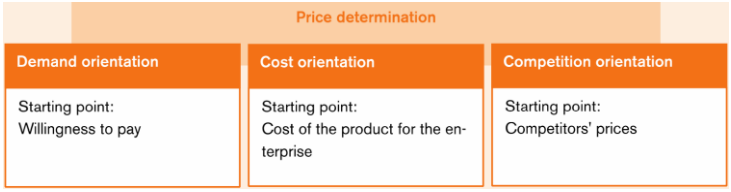
Tasks of pricing policy

Demand curves slope downwards. The higher the price, the smaller the quantity demanded. This relation is captured in direct price elasticity of demand.

Price level: The higher the price, the higher the revenues of an enterprise based on a particular sales volume.

Sales volume: Price affects the amount of goods sold. In general, the sales volume of a product drops as the price increases.

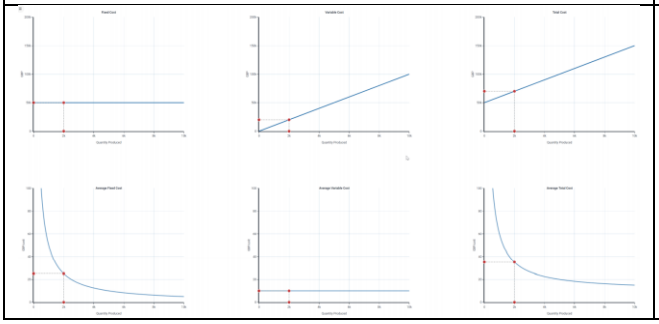
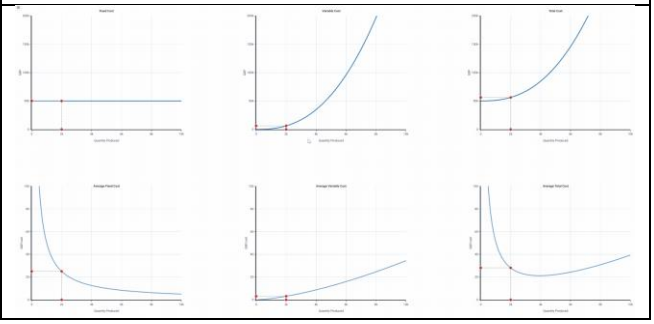
Price determination (bestimmung)



Cost oriented: Price floor → What is the minimum price the firm requires? For profits to be positive, the price must be larger than the long-term price floor.

Long-term price floor: **Price equals average total cost**,i.e.the sum of average fixed and average variable cost. – *At a price below the long-term price floor the firm earns negative profits in the long-term. (continue short term)* At minimum average total cost it intersects with marginal total cost.

Short-term price floor: **Price equals average variable cost.** – *At a price below the short-term price floor the firm earns negative profits not only in the long-term, but also in the short-term. (stop immediately)*

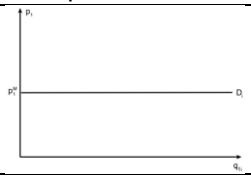
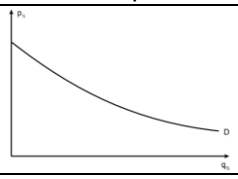
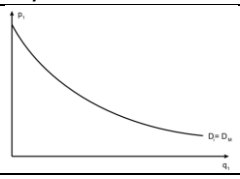
Cost oriented – price floors given linear variable cost	Cost oriented – price floors given convex variable cost
	

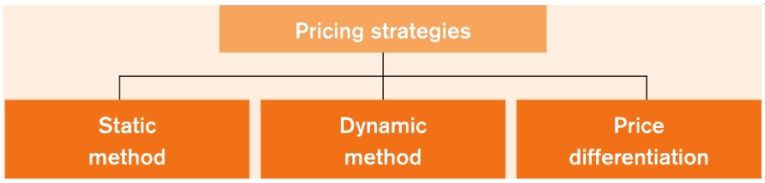
Demand oriented –price ceiling

Consumers' marginal willingness to pay:

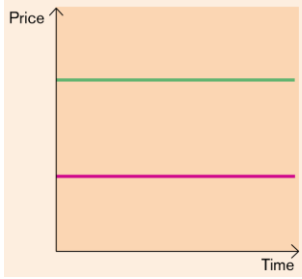
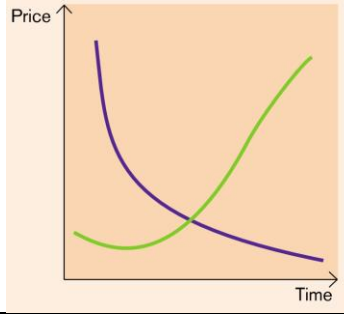
- What is the maximum price consumers' are willing to pay for the last unit at any given quantity?
- The higher the consumer's valuation of a product, the more likely he will be willing to pay a high price, and vice versa.
- Recall: Direct price elasticity of demand.

Competition oriented

Perfect competition	Monopolistic competition	Monopoly
		
• Homogeneous products • Very (perfectly) elastic demand • **Firms are price takers**	• Differentiated products, but substitutes exist • Demand is fairly elastic • **Firms can set their price**	• Elasticity according to market demand • **Monopolist can set price**



Pricing strategies:

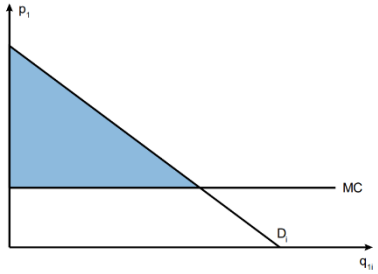
Static concepts	Dynamic concepts
	

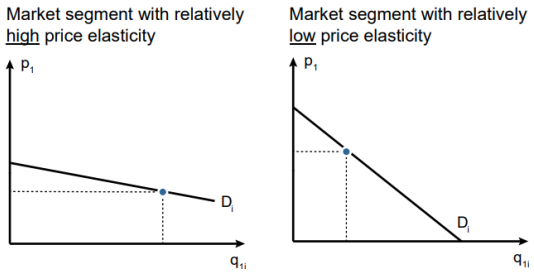
Price differentiation

Requirements for price differentiation (price discrimination)

1. Some market power (price setting power)
2. Information to separate the market
3. Prevent re-sale (arbitrage or market seepage)

- Three types of price differentiation
  - First degree
    With first degree price differentiation, the firm charges every consumer his / her marginal willingness to pay.
    - ➢ All consumer surplus is transferred into profits for the firm
      MC: Marginal cost.
  - ➢ Cost of producing the last unit, i.e. the first derivative of the cost function (assuming a linear cost function for ease of exposition here).
  - Second degree (not relevant)
  - Third degree (the most common form)
    Example: night vs. daytime consumers of electricity





Brand management

- A brand is a name, a term, an emblem, a symbol, a design form or a combination of all these elements with the purpose of identifying a suppliers' products or services and achieving differentiation from the competition.
- It is through a brand that a bond of trust or loyalty is built with the product or service (and with the firms that provide them).
- With a brand name, the firm promises its consumers that it will provide products of constant or steadily increasing quality.
- Brands reduce the complexity of decision-making for the consumer and lower transaction costs (reputation).
- Brands may also carry a social dimension, signalling membership in a particular social group or class.
- **Recall: Credence goods require reputation – a brand – to signal high quality.**

Structuring Forces: Structure & Culture SW08

Structure: Organisation

Organsisation: Organisational charts representing the structure of an organisation:

Objective: Clarify relationships, hierarchies and chains of command.

Positions as building blocks:

– Described independently of a specific job holder.

– Each position is associated with rights and obligations.

– Rights: Authority, often referred to as “competencies”.

– Obligations: Often referred to as “responsibilities”.

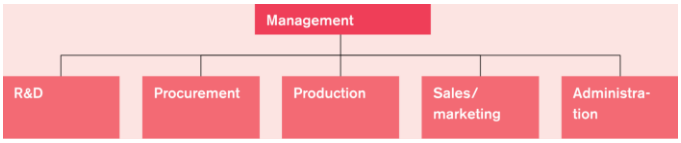
It is important to create the correct incentives and match competencies and responsibilities.

– Analogy: Private ownership creates a strong incentive to take good care of a good such as of a house or a car because the decision maker (rights) must bear the consequences of his decisions (obligations).

Two key aspects to keep in mind:

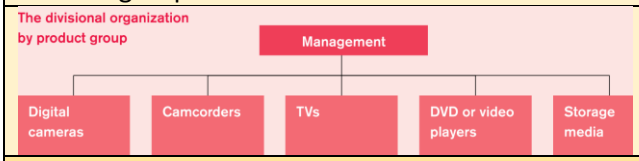
– Span of control: Measures the number of positions that are subordinate to a leadership position.

Functional organisation

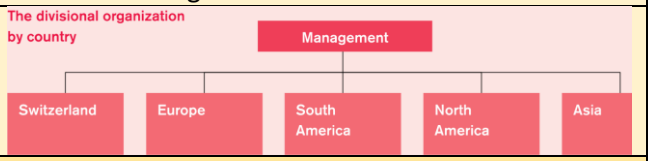


Divisional organisation

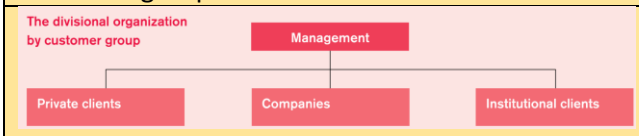
Product groups



Countries or regions



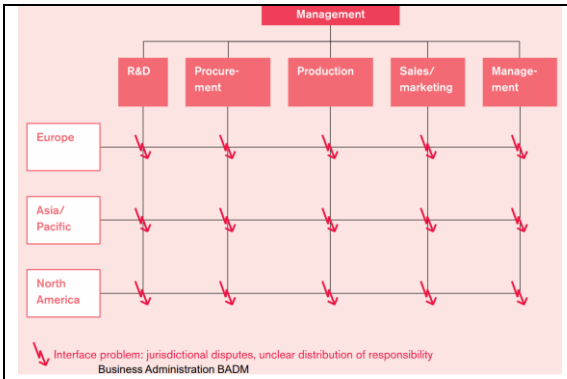
Customer groups



Degree of independence of the divisions

Competencies	Center		
	Cost	Profit	Investment
Costs	x	x	x
Profits		x	x
Investments			x
Autonomy	low	medium	high

Matrix organisation



- Two-dimensional structure in which both dimensions exist equally.
- First division: Functions.

– Enables economies of scale within the individual functions.

- Second division: Countries / regions, product groups or customer segments.

– Ensure coordination from the perspective of countries / regions, etc.

- Advantage: Using two dimensions improves the flow of communication (information).
- Disadvantage: Conflict of interest at the interfaces of the two dimensions. Consequently, it is paramount to clearly define the responsibilities and competencies of managers.

Culture

Characterising culture

By features

Cultural – features	Description
Values	Standards by which people orient their actions
Norms	**Code of Conduct**[1] that helps coordinate how people live together
Rituals	Regular events or procedures

Cultural – features	Description
Stories and myths	These form the background of the culture. They help to convey a sense of belonging to all employees.
Language rules and use	Common levels of communication leading to the formation of culture.
Symbols	These identify a company and its employees to those outside the company.

Cultural elements

Cultural elements	Description
Power distance	This value refers to the equality or inequality between people in a society, and to whether the least powerful members of an organization accept the unequal distribution of power and acknowledge authorities. The greater the distance (i.e., the higher the value), the more unevenly power is distributed in the society.
Individualism	This value determines whether individual or collective values are more highly ranked. A high value indicates that individualism is writ large in the society; people take responsibility for themselves and are less concerned about the collective.
Cultural elements	**Description**
Masculinity	The higher this value is, the more traditional are the gender roles. This means that the man earns the money and the woman stays at home and cares for the children. In addition, structures are dominated by male values and distribute the power relationships are distributed accordingly.
Risk avoidance	This value indicates how tolerant the society is toward uncertainty and risk. The higher the value, the lower the tolerance for uncertainty. As many rules, laws, and standards as possible are established in order to reduce risk.

Cultural elements	Description
Long-term orientation	This value indicates whether a society is based more on short-term or long-term traditions and values. Short-term oriented societies assume more risk, save less and put more emphasis on short-term results. Creativity and individualism are important. Long-term oriented societies adapt traditions to a dynamic context, live and invest sparingly, and focus on long-term goals. The long-term oriented societies are family-based, and mutual respect and traditions are important.

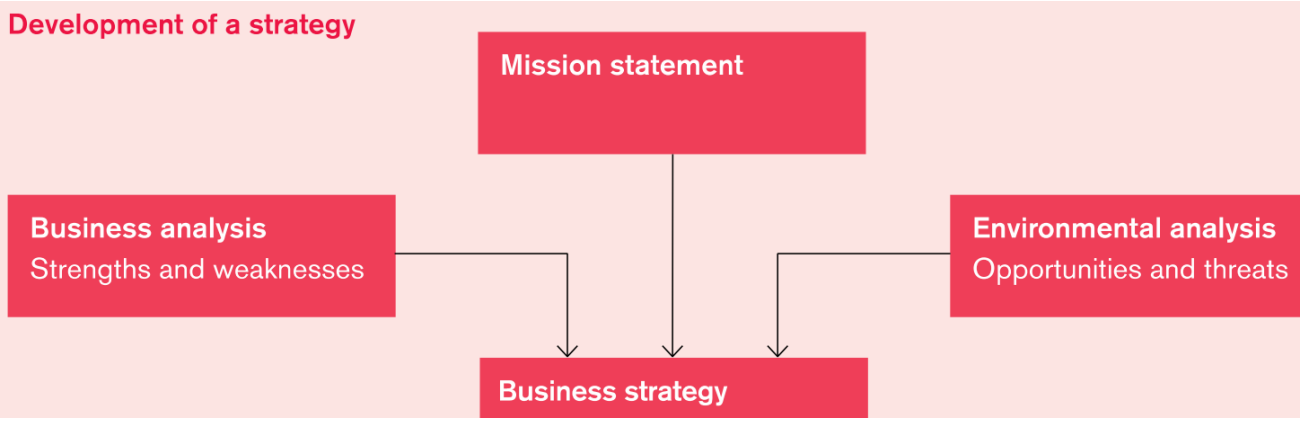
Structuring Forces: Strategy SW09

The concept of strategy

General characteristics of a strategy

Feature	Explanation (A strategy …)	Chess analogy
Long term	… is oriented to the long term.	A game can last several hours.
Goal-oriented	… is focused on a specific goal.	Defeating the enemy
Situation analysis	… is based on an analysis of your own situation and the environment.	Position of own and opponent's pieces, own and opponent's strengths and weaknesses.
Decision	… is a decision from different possibilities.	Only one piece can be moved per turn, even though the player usually has a choice of several pieces.
Feature	**Explanation (A strategy …)**	**Chess analogy**
Direction	… sets the overall direction and thus forms the basis for all subsequent decisions.	If the player chooses a more aggressive playing style, he must make every move aggressively.
Confidentiality	… is strictly confidential.	The player reveals his strategy only to his most trusted confidants
Resource Allocation	… allows for the goal-appropriate allocation of scarce resources.	The player concentrates his forces on the implementation of the strategy.
Resistance	… has a certain temporal stability but can be altered by changing conditions or incorrect assumptions.	As long as everything goes as planned, the player sticks to his strategy; otherwise he makes a change.

Development of a strategy

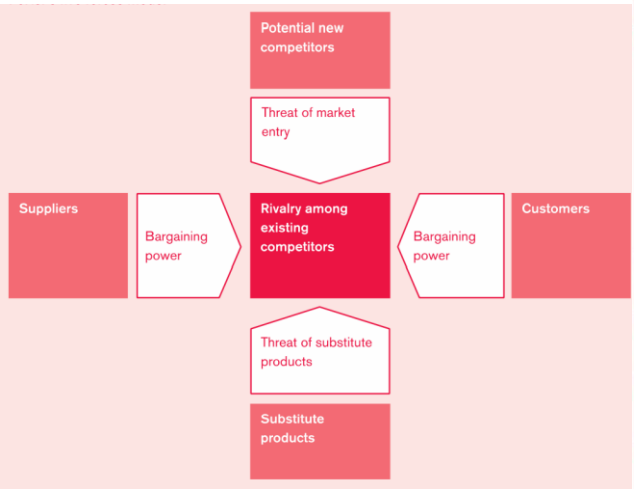


External factors (Opportunities and Threats)

Changes in the environment of a firm (external from the perspective of the firm)

– Technology
– Regulation, politics
– Population, lifestyle, etc.
– Quality standards
– Industry structure -> Porter's five force

Porter's five forces industry analysis framework



Factor	Questions
Intensity of competition in the industry (number of competitors and rivalry between them)	– Who are my competitors? – What strategies are they pursuing? – What products and services do they offer (similar, same, different)? – How high are their costs to produce these goods (cost advantage)? – How do they stand out from us (differentiation advantage)? – What special relationships do they have with certain customer groups? – What are their resources?
Bargaining power of customers to influence prices and delivery conditions	– Are the customers in a dominant position?
Bargaining power of suppliers to influence prices and delivery conditions	– Do suppliers have significant bargaining power?
Potential new competitors	– Are there any new companies that want to and could enter the industry?
Substitute products (replacements)	– Is there a risk of substitute products or innovations?

Bargaining power: Buyers

Buyers' bargaining power depends on:

• Concentration of buyers vs. sellers -> i.e. the intensity of competition (market structure)
• Elasticity of demand (1) Availability of substitutes (2) Time horizon
• Switching costs
• How differentiated the product is
• How "important" a buyer is to the seller (volume) • Knowledge of the buyer (information asymmetry)

Business analysis:

Element	Question
Valuable	It makes an important contribution to a requested product/service
Rare	There are few other companies that have the same competency.
Difficult or impossible to imitate	It would be difficult or take a long time for another company to develop this competency.
Non-replaceable	This competency cannot be replaced by any other competency.

Generic strategies

Porter's generic strategies

		Strategic advantage (performance or cost)	
Strategic target	Industry-wide (total market coverage)	**Differentiation (quality leadership)**	**Cost leadership**
	Restriction to segment (partial coverage)	**Concentration on niches**	

Differentiation (quality leadership) (total market): The enterprise attempts to consistent set itself apart from the competition in order to shield itself from pricing pressure. The products must offer customers added value, in comparison with alternative products and increasing customers willingness to pay. Differentiation, product represents a certain uniqueness for the customer.
Cost leadership (total market): enterprise tries to develop a cost advantage over the competition and thus either increase sales by offering a lower price in the market or retain a higher margin at the same price (produce more cheaply than the competition). Elimination of cost drivers in pruchasing, manufacturing, sales and services.
Focus strategy, niche (segment): enterprise tries to differentiate itself in a particular market niche or achieve cost leadership to achieve the goal more efficientl and effectively.A nich can mean a particular customer group, a section of a product range, or a specific geographically based market.

Ansoff's growth strategies

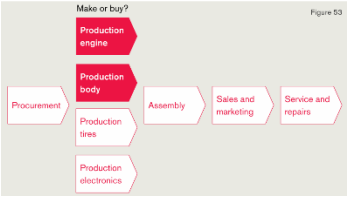
Product	New	**Product development**	**Diversification**
	Current	**Market penetration**	**Market development**
		Current	New
		Market	

Strategy	Description	Measures	Example "Satisfy Your Thirst!"
Market penetration	Increase sales of current products in the traditional market	– Sell more to existing customers. – Entice customers from the competition (crowding-out effect).	– Increased home delivery (new distribution channels) – Price reductions – Increased advertising in sports venues
Market development	Sell current products in new markets (areas and/or customer groups)	– Access foreign markets. – Slightly adapt products to reach new target groups.	– Develop distribution network in neighbouring countries – Market mineral water in glass bottles to acquire gourmet restaurants as customers
Product development → P. 536 Product innovation	Develop new products for current markets	– Develop real market innovations (product innovation). – Improve existing products (product optimization).	– Produce flavored water from a new recipe – Change carbonation
Diversification → Exercises 1, 2, 3 and 4	Develop new products for new markets	– Include very similar products in the product range (see horizontal diversification). – Include new products from upstream or downstream stages of the value chain (see vertical diversification). – Include product-market area that has no relationship with the current product offering (see lateral diversification).	– Include dairy beverages in the range – Produce beverage packaging – Produce car tires

Location of an enterprise

Location factors

Work: Labour costs, sufficiently large pool of workers, availability of qualified personnel, work ethic, good labour relations (few strikes)
Land: availability of land, materials and resources, climate
Capital: Bank loans (functioning banking system), property
Government: taxes and fees, regulations, political stability, legal security, ease of administration, economic stability, infrastructure, quality of life, educational system, flexibility of labour law
Market: Proximity to the customer/market, access to foreign markets (EU-CH Trade Agreement)
Proximity/distance of other enterprises: Cluster (tech parks), Competition

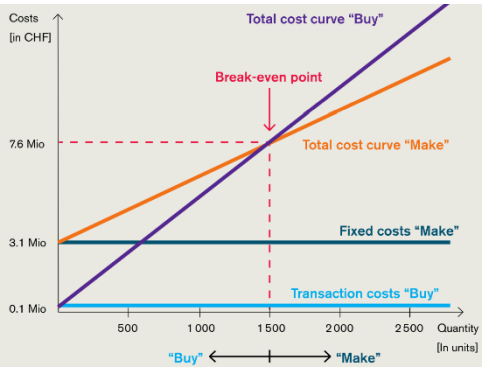


Make or buy?

- Make: In-house production.
- Buy: Procurement from external suppliers

The make or by decision has to be made for each part of the value chain. Make: In-house production. Buy: Procurement from external suppliers.
Competence factor: Are core competencies required?
Quality factor: Can the quality of an external supplier be trusted?
Dependence factor: Dependency on outside suppliers?
Capacity factor: How well is the firm's own capacity utilised?
Cost factor: When change from buy to make and vice versa?

Cost factor: Break-even analysis

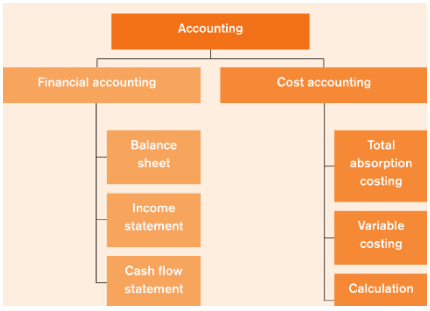


Note, as we have discussed previously, that the form of these cost curves need not be linear.

Finance I: Financial Accounting SW10

Overview of accounting

Objective: Quantify (i.e. measure) and depict the effects of a firm's economic activity, i.e. collect, process, evaluate and communicate financial information.



Financial accounting: Targeted at internal and external stakeholders.

Cost accounting: Targeted only at internal stakeholders, i.e. for internal planning, and monitoring of value movements within the firm.

Balance sheet

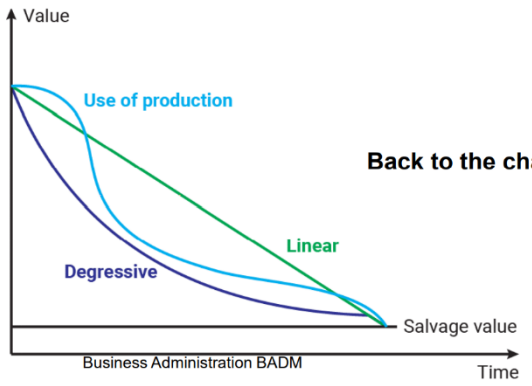
Documentation: The balance sheet represents an inventory of the enterprise's existing assets and liabilities on a specific date.
Profit determination: The gain or loss during a particular period can be seen in the balance sheet.
Information: The balance sheet provides information internally and externally on the financial position of the enterprise.

Assets, Equity and liabilities

Current assets	Allow for the execution of operations and can be liquidated within one year	Liquid assets (cash, postal and bank), accounts receivable, inventories
Fixed assets	Serve the company in the long term and not intended for short-term sale.	Financial assets (stock, bond), mobile assets (machinery), immobile assets, Intangible assets (patents)
Dept (Liabilities)	Is limited and rescindable. The lender is not involved in the enterprise, has no say and is not liable. A distinction is made between the following: Short-term up to 1 year, long-term > 1 year	Creditors (depts to suppliers), Loans, Mortgage, Provision
Equity (Liabilities)	Equity is the dept of the enterprise to its owners. Amount of money that would be returned to a company's shareholders if all of the assets were liquidated and all of the company's debt was paid off.	Capital, reserves, profit

Income statement:
Expenses identify how an enterprise has spent a certain amount of money and how many assets were used.
Revenues indicate how an enterprise has earned a certain amount and by how much assets have grown.
Depreciation: Reduction in value of an asset (current or fixed) due to ageing, wear, price drop etc: Degressive, linear, use of production

Types of depreciation:



Back to the challenge of valuation...

Cash flow statment:
Changes to corporate cash holdings. Three areas where changes in corporate cash holdings can take place:
Business: includes all liquidity-related revenues and expenses that are incurred during business activities. If revenues are higher than expenses, there is cash inflow.
Investing: changes in mones supply that arise as a result of investments. The sale of assets is an option when en enterprise needs cash.
Financing: increases its cash holdings by taking on long-term dept or equity (financing). If dept or equity is paid back, liquid assets will shrink (definancing).

Finance II SW11

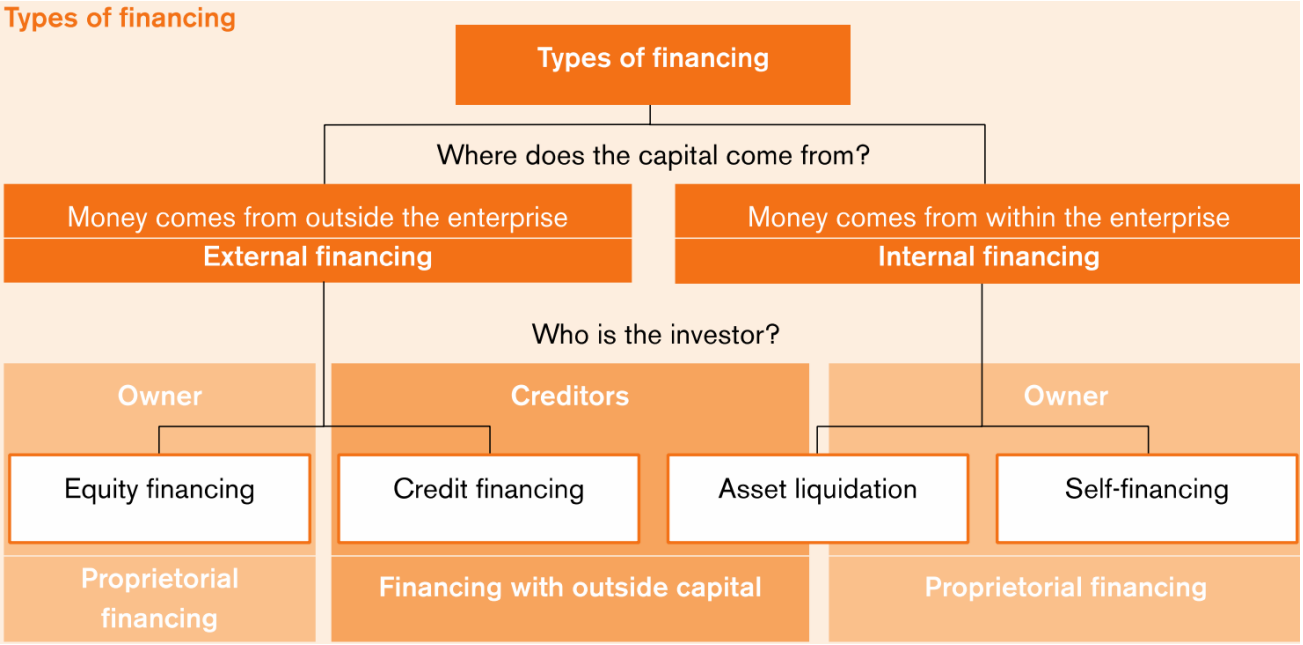
Accounting principles

Why accounting and reporting standards? Legal requirements, facilitate comparison of different enterprises, Think: Asymmetric information. Properly performed accounting is the most basic prerequisite for the analysis of the figures contained therein. Manipulated figures in financial statements lead to false information.

Principle	Explanation	Example "Kitchen King AG"
Completeness	The assets and profit situation of an enterprise can be judged by stakeholders only if all relevant facts are completely reflected in the annual financial statements.	"Kitchen King AG" must disclose in its annual report any anticipated compensation from a class-action lawsuit[1], which may have to be paid next year.
Clarity and materiality	Insight into the financial situation of an enterprise must be guaranteed by clear and appropriate transparency in the balance sheet and income statement→ as well as the presentation of all material facts.	Debts by "Kitchen King AG" to third parties will be sorted according to the period of their repayment obligation (short-term debt, long-term debt). "Kitchen King AG" may specify the amounts in the next whole amounts in francs.

Caution	A profit may only be declared as such in the accounts when something has in fact been sold **(realization principle)**.	"Kitchen King AG" gets a verbal commitment from a customer to expect its next major order to amount to more than 500,000 CHF. "Kitchen King AG" may only realize the amount when a contract exists and the service (delivery of kitchen products) has been provided.
	A loss, however, is to be considered as soon as expenses are apparent, even if they have not yet been incurred **(imparity principle).**	Due to a number of faulty kitchen items, exchanges and warranty claims are foreseeable. An allowance for this is immediately created in the amount of the probable expenses.
	When there are various ways goods could be valued, the lowest value must be recorded in the balance sheet **(lowest value principle)**.	Kitchen cabinets that have not been sold are accounted for at the production cost of 300 CHF per unit and not the current market value of 400 CHF per unit (lowest value).
Continuation	Reporting is based on the assumption that business operations will continue and thus accounts for the assets as for going concern. With the cessation of business, a company is required to prepare a balance sheet at liquidation values[1].	As long as business continues, the values of "Kitchen King AG" may be reported under this assumption, i.e. the values of a going concern.
Consistency	The financial statements comply with the principle of consistency when they are created using the same principles every year, in terms of design and assessment. This ensures that the figures can be compared with previous years.	"Kitchen King AG" has chosen a particular method of depreciation for its machines. This cannot be changed every financial year.
Ban on offsets → Exercises 1 and 2	Assets, liabilities, income, and expenses should not be offset against each other.	"Kitchen King AG" has a loan of 100,000 CHF from its main bank. In addition, the enterprise has an account at the same bank. In the balance sheet, the loan may not be offset against the assets in the account.

Types of financing



Credit financing

Credit financing	Bank overdraft *Short term*	The holder of a current account can bridge financial shortfalls through overdrawing his account up to a certain limit. This limit is set by the bank and ensures that the enterprise constantly remains liquid to enable payment of supplier invoices.
	Bank credit/loan *Medium or long term*	In practice, there is little difference between these two terms. A loan is simply considered a longer-term credit. The conditions are set out in a contract.
	Mortgage loan *Long term*	A mortgage loan is intended the financing property. In this case, the property serves as collateral.
	Bond *Long term*	Bonds or debentures are securities dressed as dept obligations with cash benefits. The bond issuer to provide the bondholder with a (usually annual) interest payment based on the stated worth of the bond and to repay the full amount at the agreed deadline.

Equity financing:

Capital is raised through the sale of shares. The corporation only receives additional capital when new shares are issued. Likewise, capital is only reduced when the corporation buys back its own shares. Careful: The sale of existing shares on a secondary market does not impact the amount of capital available to the corporation. Shares are units of ownership interest in a corporation. Shares provide claims to profits in the form of dividends. (Common) Shares generally provide voting rights, according to the face value of the share.

Self financing:

Annual profits are not or only partially payed out to equity owners. This not distributed income is allocated to equity on the balance sheet. Also referred to as “financing from retained earnings”.

Asset liquidation:

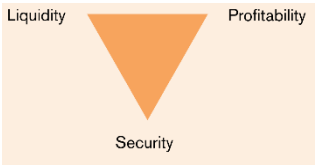
Sale of existing assets. Asset liquidation cannot clearly assign to either equity or debt financing.

Criteria for the choice of financing type

Criterion	Proprietary capital ~ equity financing	Borrowed capital ~ debt financing
Autonomy of management	Codetermination and therefore influence on the management of the enterprise	Once a loan is approved, there is no right of participation and therefore no influence on the management.

Cost to the company	Compensation as a function of profit or loss. Compensation need not necessarily be provided every year.	Contractually agreed-upon fixed interest payments
Quantity available	Limited by financial capacity and willingness of current and new owner	Limited by ability service debt[2] and available collateral[3] of enterprise and shareholder
Duration of availability	Indefinite period, no repayment	Limited period, repayment

Financial analysis



Magic triangle of financial analysis: Liquidity, Profitability, Security

Cost and benefit of liquidity

- Benefit: Ability to pay bills, flexibility.
- Cost: Opportunity cost of holding cash.
  - Cash yields no or only little return (e.g. interest earned on a bank account). With inflation, the value of cash declines over time.
  - Instead of holding cash, the same funds could, provided the firm has access to profitable projects / activities, be put to alternative uses that would yield higher returns. Holding cash foregoes these alternatives.

➢ Target ratios, when applied blindly, can be dangerous.

➢ Cash holdings should be managed to match the time structure of liquidity requirements from liabilities.

- What is the timing of accounts payable vs. accounts receivable? How risky are the firm's accounts receivable (probabilities of default)? How easily can inventories be sold off?

Liquidity ratios, Profitability and Security

Liquidity ratios	Liquidity ratio I *Cash ratio*	$\frac{\text{Cash and equivalents}}{\text{short-term debt}} \cdot 100$	> 20	Too many liquid assets could mean better returns if invested
	Liquidity ratio II *Quick ratio*	$\frac{\text{Cash + accounts receivable}}{\text{short-term debt}} \cdot 100$	≈ 100	Liquid assets are available for the repayment of mature debt.
	Liquidity ratio III *Current ratio*	$\frac{\text{Current assets}}{\text{short-term debt}} \cdot 100$	$150 - 200$	The sale of inventories is associated with greater uncertainties

Profitability	Return on equity	$\frac{\text{Profit}}{\text{Equity}} \cdot 100$	8% or more, depending on and taking into account the risk
	Return on assets	$\frac{\text{Profit + interest}}{\text{Debt + equity}} \cdot 100$	Typically, lower than ROE. 6% or more
	Return on sales *Operating margin*	$\frac{\text{Profit}}{\text{Revenue}} \cdot 100$	Commercial: 2.5% or more Industrial: 1.5% or more
	EBIT margin *Earnings before interest and taxes*	$\frac{\text{EBIT}}{\text{Revenue}} \cdot 100$	Depends on the industry

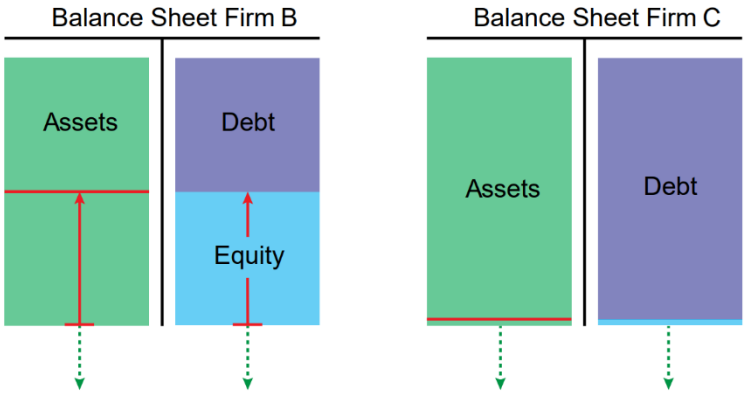
Security	Equity ratio	$\frac{\text{Equity}}{\text{Total capital}} \cdot 100$	$> 30\%$
	Dept ratio	$\frac{\text{Dept}}{\text{Total capital}} \cdot 100$	$< 70\%$
	Debt-equity ratio	$\frac{\text{Dept}}{\text{Equity}} \cdot 100$	$< 230\%$
	Equity to asset ratio I	$\frac{\text{Equity}}{\text{Long-term assets}} \cdot 100$	$90 - 120\%$
	Equity to asset ratio II	$\frac{\text{Equity + long-term dept}}{\text{Long-term assets}} \cdot 100$	$120 - 160\%$

A note on ROE and ROA: In principle: Use equity at the beginning of the year, at the end of the year or average equity to calculate ROE. The issue of new shares increases equity at the end of the year (or sometime during the year). Calculate ROE using equity at the beginning of the year -> no impact, at the end of the year or -> impact average equity -> impact.

Risk:

Firm C displays much more leverage than firm B. Its return on equity (ROE) might look very promising, but its capacity to bear risk is severely limited.

Example: Lehman Brothers 2007: Large profits during the boom. High leverage: A3-4% decline in asset value would eliminate the book value of equity. 2008: Large loss due to large positions in subprime and other lower-rated mortgage tranches. Largest bankruptcy filing in U.S. history.



Finance III: Investment Appraisal

An investment appraisal process should:

Account for the time value of money, Account for risk, Focus on cash flow, Rank competing projects appropriately, Lead to investment decisions that maximize shareholders' wealth.

3 Basic Steps

1. Forecast all relevant after-tax expected cash flows generated by the project.
2. Estimate the opportunity cost of capital – refer to capital markets. Opportunity cost of capital is the (expected)rate of return given up by investing in a project.
3. Evaluation (3 methods presented here) NPV (Net Present Value), IRR (Internal Rate of Return), Real Options

Principle for cash flows that occur at different points in time:

By using appropriate «exchange rates», cash flows that occur at different points in time must be converted into cash flows that occur at a «numéraire point in time». Most of the time it is useful to select the present as the «numéraire point in time». This is what we do when we calculate the present value (PV).

Net Present Value (NPV):

$$NPV = \sum_{t=0}^{N} \frac{CF_t}{(1+r)^t}$$ CF_t: Cash Flow at time t (the cash flow could be positive or negative at any time period). r: Discrete discount rate, i.e. the «opportunity cost of capital». N: Time at which the last cash flow occurs.	Decision rule: An investment should be accepted if the NPV is positive, and rejected otherwise. An investment with a higher NPV ranks higher than an investment with a lower NPV 1. Estimate future cash flows: How much? When? 2. Estimate discount rate 3. Estimate initial costs

Factors influencing the discount rate: Time horizon In general (albeit not necessarily always so), the further into the future a cash flow occurs, the higher the discount rate. (This is analogous to the term structure of interest rates. In «normal times», the short-term interest rate is lower than the long-term interest rate). Expected inflation The higher the expected future inflation, the higher the discount rate. Risk of the cash flow The higher the risk of the cash flow, the higher the discount rate.

Pros and cons of using NPV: NPV is the (old) “gold standard” of investment decision rules. Key benefits of using NPV as decision rule Focuses on cash flows, not accounting earnings, Makes appropriate adjustment for time value of money, Can properly account for risk differences between projects Though best measure, NPV has some drawbacks Lacks the intuitive appeal of payback, Does not capture managerial flexibility (option value)