Video Lecture

# Valuation: Cash-flows

ADVANCED FINANCIAL MANAGEMENT

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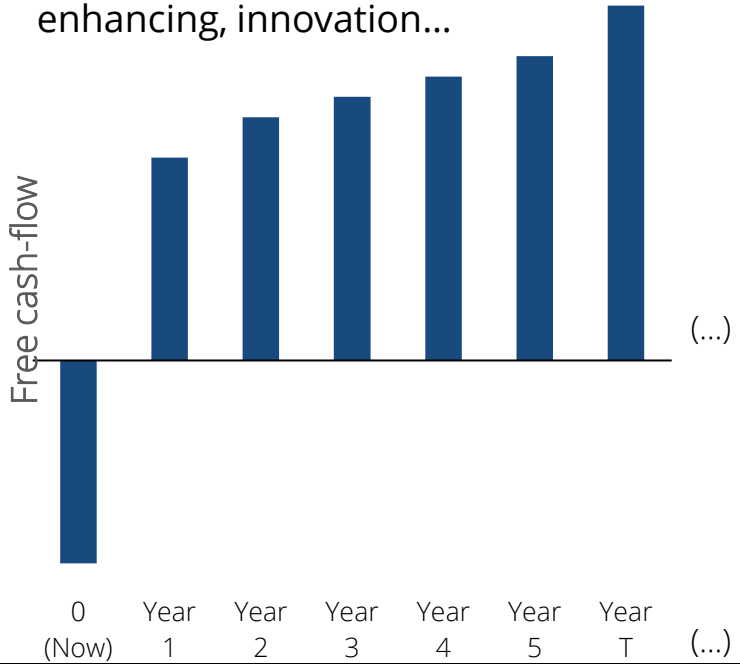
# Scope

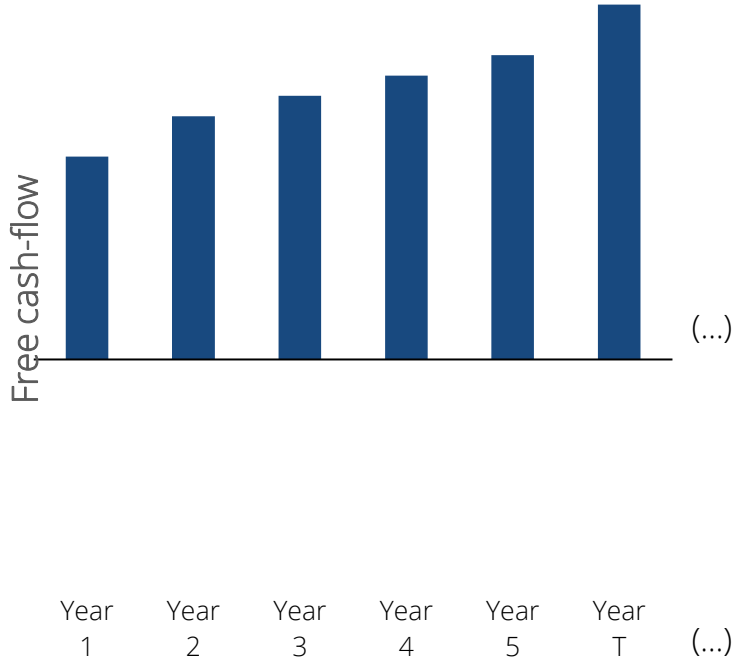
## Project Valuation

- Assess upcoming investments in tangible fixed assets (e.g. new plant, equipment…) or in intangible assets (e.g. R&D, advertising)
- These investments might be done in different scenarios: replacement, scale-enhancing, innovation…



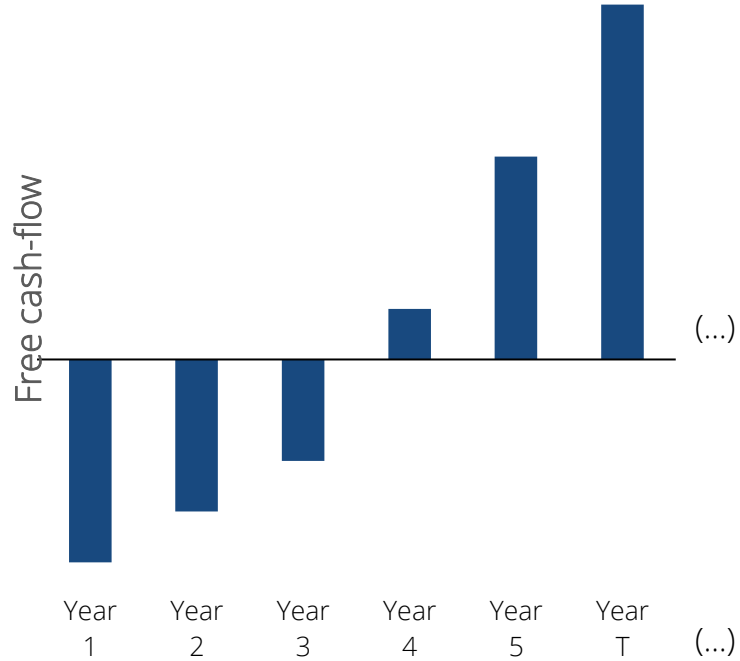

## Corporate Valuation: Mature Business

- Evaluate companies that already generate positive free cash-flows and with steady growth rates




## Corporate Valuation: start-up companies

- Evaluate companies that still have negative cash-flows for a few years and with
- Usually the case in start-up or scale-up companies




Graphs are illustrative

# Methodology

## BUILD A FINANCIAL MODEL

- **Estimate cash-flows** based on business fundamentals and financial rules
- **Compute key metrics** to support decision
- **Build a flexible analysis** to perform sensitivity analysis and scenario analysis

## INTEGRATE BUSINESS FUNDAMENTALS

- **Identify and estimate business drivers** that impact the business: volume, growth rates, margins, synergies,…
- **Acknowledge uncertainty** since estimates are based on forecasts and assumptions – even when they are based on reliable sources of information
- **Prepare contingency plans** using the financial model, which means that the analysis goes beyond the Go/No Go decision. “Plans are nothing, planning is everything” (Dwight Eisenhower)

# Cash-flows characteristics

**Use cash flows instead of accounting earnings**
There are some accounting items that influence accounting earnings and do not represent cash-flows – for example depreciation or uncollected revenues

**Focus on incremental cash-flows**
Incremental cash-flows are those that reflect an increase of cash-flows to the firm (e.g. increase in revenues or reduction in costs) and a decrease of cash-flows (e.g. increase in costs), whatever the company was already generating will not be included

**Exclude sunk costs**
Just because “we have come this far” does not mean that we should continue to throw good money after bad decisions

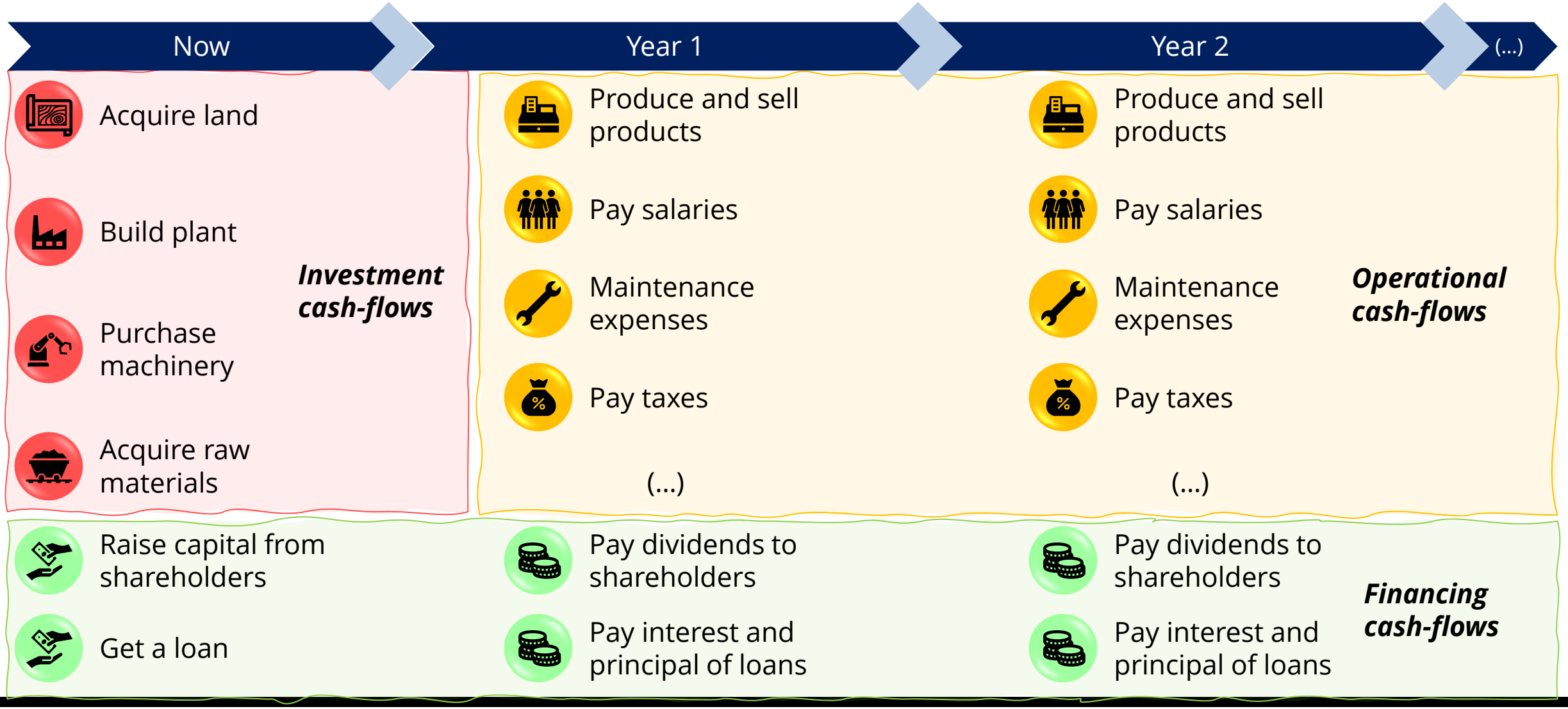
**Measure side effects and externalities**
Launching a certain project has not only the effects on the exact product or business we are directly changing but there are also indirect effects on other products or business units that should be considered – synergies or erosion

**Consider opportunity costs**
If an existing asset is used in a new project, potential revenues from alternative uses of the asset are lost and this loss must be considered

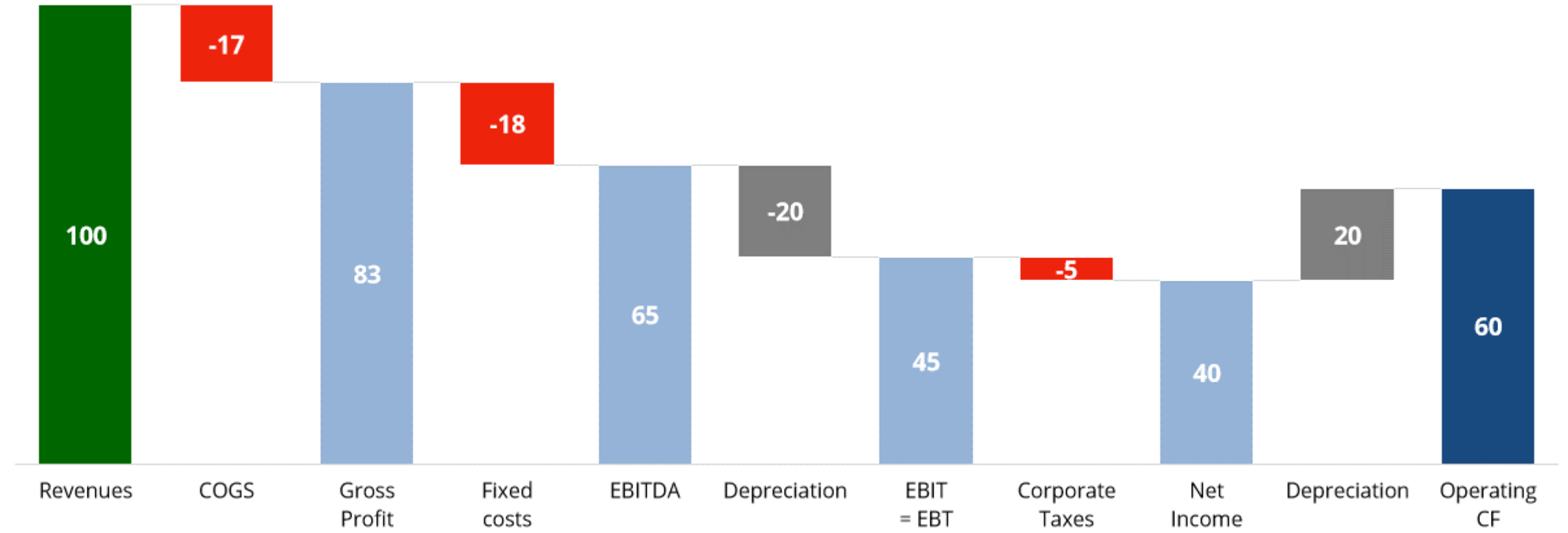
**Include inflation effects**
Cash-flows depend on inflation and we might use nominal or real cash-flows, if we adjust the discount rate properly

**Take in the impact of taxes**
The purpose of project valuation is to assess the value created to the firm and that means all values should be net of taxes

# Manufacturing plant: an illustration



# Operational Cash-flows




Figures are illustrative

# Investment Cash-Flows

**Investment Cash-flow** = − **Capital Expenditures (CAPEX)** + **Asset sales** − **Investment in (Operating) Net Working Capital**

*Breakdown by asset type*

- Tangible assets (e.g. Equipment)
- Intangible assets (e.g. Licenses)
- Company as a whole (e.g. acquisition)

*Breakdown by motivation*

- Expansion CAPEX
- Maintenance CAPEX

- Salvage value
- Taxes on capital gain

- Inventories
- Receivables
- Payables

(…)

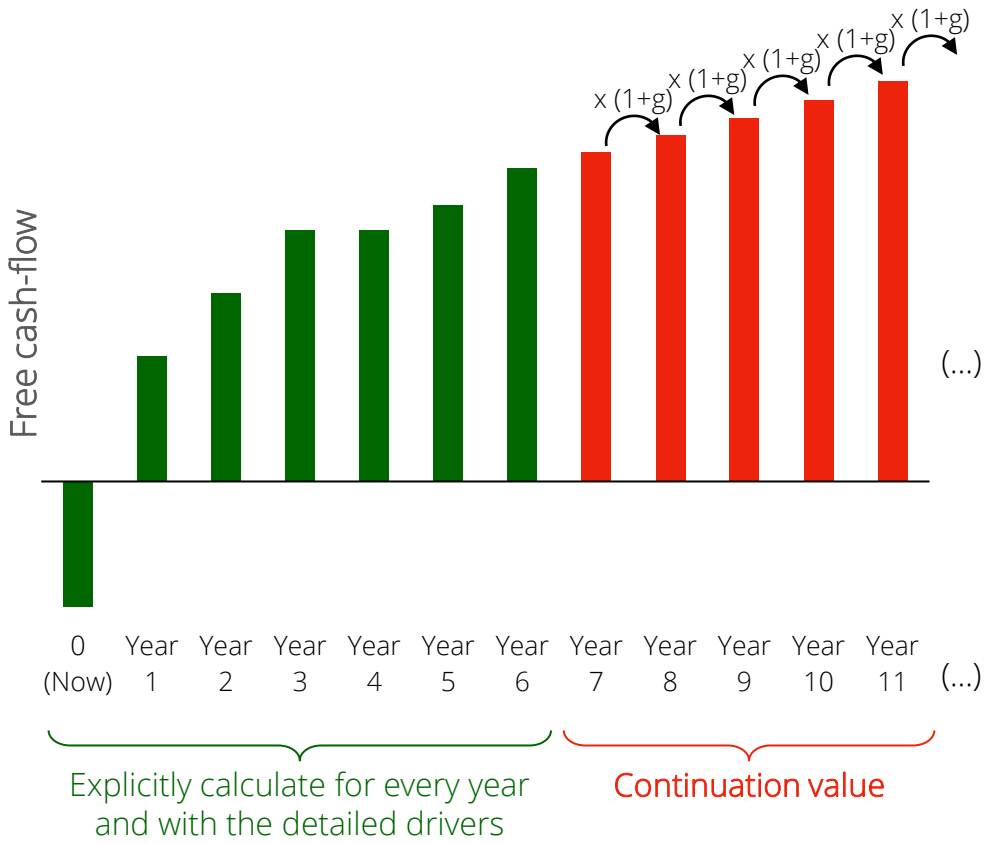
# Financial Modelling example

| | Briefing | Comments |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | **Briefing** | **Comments** |
| 4 | | |
| 5 | A company will invest now and acquire some machinery to operate a new business throughout 5 years | |
| 6 | Annual sales (in units) are expected to be 5,000 in the 1st year, 8,000 in the 2nd year, 12,000 in the 3rd year, 10,000 in the 4th year and 6,000 in the 5th year | |
| 7 | Each sold unit is expected to be priced at 20€ in the first year and rom then the price increases 2% per year | |
| 8 | Cost of sales per unit is 5€ throughout the life of the project | |
| 9 | Selling, General and Administrative costs are expected to be 25,000€ per year | |
| 10 | Corporate tax rate is 30% | |
| 11 | The company did a market study to assess the potential of the market and spent 250,000€ for that matter | |
| 12 | Operations will be installed in a building that the company owns already and that has a market value of 200,000€ (net of taxes) – no depreciation and same salvage value at the end | |
| 13 | The machinery to be acquired costs 100,000€ (to be depreciated in 5 years) and at the end of the project its salvage value is expected to be 30,000€ | |
| 14 | The project has Working capital needs that represent 10% of sales of the following year throughout the life of the project | |
| 15 | | |

Briefing | Cash-flows

# Continuation Value

Incremental cash-flows generated by an investment




Perpetual cash-flows after explicitly calculated period

$$CV = \frac{FCF_{T+1}}{r - g}$$

Stream of limited cash-flows after explicitly calculated period

$$CV = \frac{FCF_{T+1}}{r - g}\left[1 - \left(\frac{1+g}{1+r}\right)^{N}\right]$$

# Corporate Valuation

## Step 1: Reorganize financial statements

- Create the pro-forma operational cash-flow statement
- Identify and analyze investments such as CAPEX and NWC
- Removing non-recurring items
- Breakdown the core items on the statements

## Step 2: Identify and estimate drivers

- Revenues
- Profit margins (cost structure)
- CAPEX needs
- NWC management
- Tax rate
- Growth rate for continuation value
- (...)

## Step 3: Analyze and evaluate different scenarios

- Calculate the Enterprise Value
- Test the robustness
- Evaluate strategy and alternatives

# Key takeaways

01 **To evaluate a project or a company we need to estimate future free cash-flows**

02 **To perform a complete financial analysis we should combine financial modelling with our understanding of business fundamentals**

03 **The financial model should include all the information about the project translated into operational cash-flows and investment cash-flows**