

FIN 505 – Financial Management

SESSION 4 – BUSINESS VALUATION

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I Introduction

**The price is what you pay,
The value is what you get.**

Benjamin Graham – Warren Buffett

1.1 Price vs value

PRICE

Expresses the **exchange rate** of a good or service against another good or service.

The **share price** of a company implies the confrontation of **supply and demand**.

Price is **objective**.

VALUE

Represents **the worth of a good or a service** (defined using valuation methods).

Value does not necessarily imply an equilibrium price.

Valuing a company consists of **providing a value or range of value** (but not a price) using a valuation model.

Value is **subjective** and may widely differ depending on:

- Valuation model
- Assumptions
- Purpose: liquidation, M&A,...

1.2 Valuation key competencies

Key competencies

Industrial Organization / Strategy

To analyze macroeconomic and micro-economic growth factors

Finance

To master discounting calculation and valuation models (asset pricing, CAPM, APT, option pricing)

Accounting

To assess the impact of accounting options (depreciation, inventory, goodwill ...)
To identify the pitfalls of financial reporting

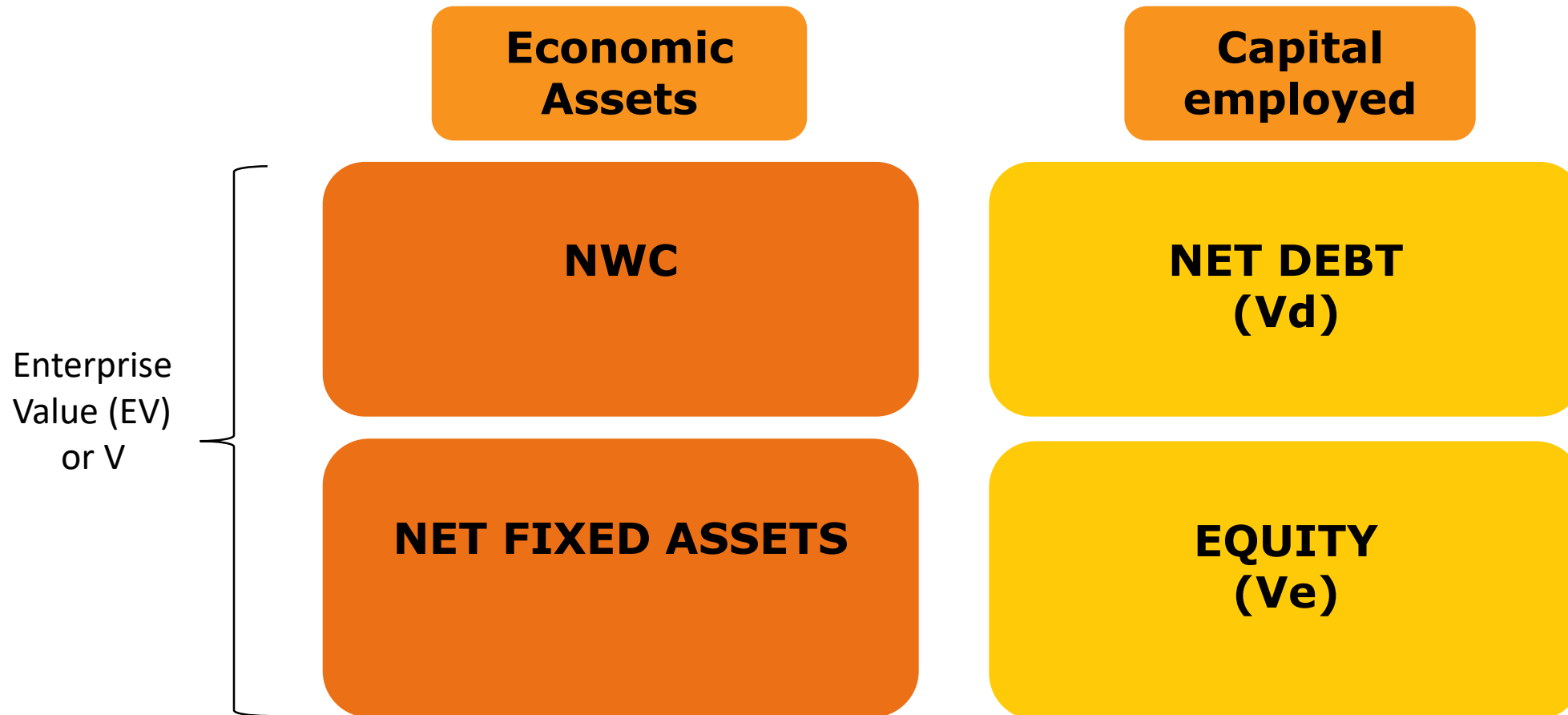
Legal

To understand the legal implications of financial decisions

Tax

To anticipate the impact of valuation methods on taxable income

1.3 Financial Balance Sheet: how to value a company?



2.1 Valuation Models

The **valuation methods** are generally classified into three broad categories:

- 1. Asset-based Model:** assessment of accounting value of economic assets.
 1. Company value is equal to the adjusted value of its tangible, intangible and financial assets.
 2. Value is based on asset price re-evaluation, not on the company's future cash-flows.
- 2. Comparable Model:** based on the comparison with similar companies whose value is known (publicly listed companies).
 1. The company value is equal to the value of comparable assets.
 2. Two types:
 - Comparing the Equity Value (V_e) : using P/E (Price Earnings Ratio), PBR (Price to Book Ratio)
 - Comparing the Enterprise Value (EV): EV/Sales, EV/EBITDA, EV/EBIT, EV/FCFF
- 3. Discounting Model:** based on assessing the Present Value of the future cash-flows.
 1. DDM (Dividend Discount Model): based on discounting future dividends
 2. DCF (Discounted Cash-Flows) : based on discounting free cash-flows (FCFF: cash flows available to shareholders and creditors).

II

Company Environment & Business Model

2.1 Valuing a company

BEFORE VALUING A COMPANY

1. **Prepare an industry and company analysis** to appraise:
 1. The industry characteristics
 2. The market and the company's competitive position
 3. The company's production and distribution system
 4. The company's strategy
2. **Conduct a critical analysis of the auditors' report** and the accounting policies followed by the company to prepare its financial statements
3. **Assess the company's risks:** from a financial and business perspective

WHAT IS A MARKET

A market is described by products/services fulfilling similar needs which are delivered through a distribution system:

- Usually similar needs or products (services).
- Usually same geographic area, same culture.

A market is not an economic sector.

A market can be segmented according to geographical and sociological variables.

2.2 Industry and Company Analysis

Focus on key questions:

1. Company's market (Mature? Growing? Entry barriers?)
2. Company competitive position (Leader? Challenger? Capacity to set prices?)
3. Production systems (Integrated production ? Outsourcing?)
4. Distribution networks (Commercial agents? Own network?)
5. Management and shareholders.

2.3 Stakeholders and managers

From a financial perspective, shareholders are the most important stakeholders.

Two types of shareholders:

- External shareholders: with a sole financial objective (eg. private equity funds).
- Internal shareholders (insiders): shareholders with having a tied to the company (managers, employees, directors) with a dual behavior.

Managers:

- What are their objectives? Incentives?

III Net Asset Valuation

4.1 Net Asset Valuation

Company valuation based on the value of its assets has long prevailed in practice among analysts and experts... but this method has been marginalized in the late 80s.

Useful method for company sharing the following characteristics:

- Firms operating in mature industries, high capital intensive (eg: real estate, ...)
- Conglomerate, holding companies with a diversified business portfolio
- SME (shops, crafts, restaurants, hotels, transportation, ...)
- Companies close to bankruptcy and liquidation (scrap value).

Method: the company value is the cumulative value of its assets

Asset accounting value must be reassessed as if they had to be designed, built or purchased.

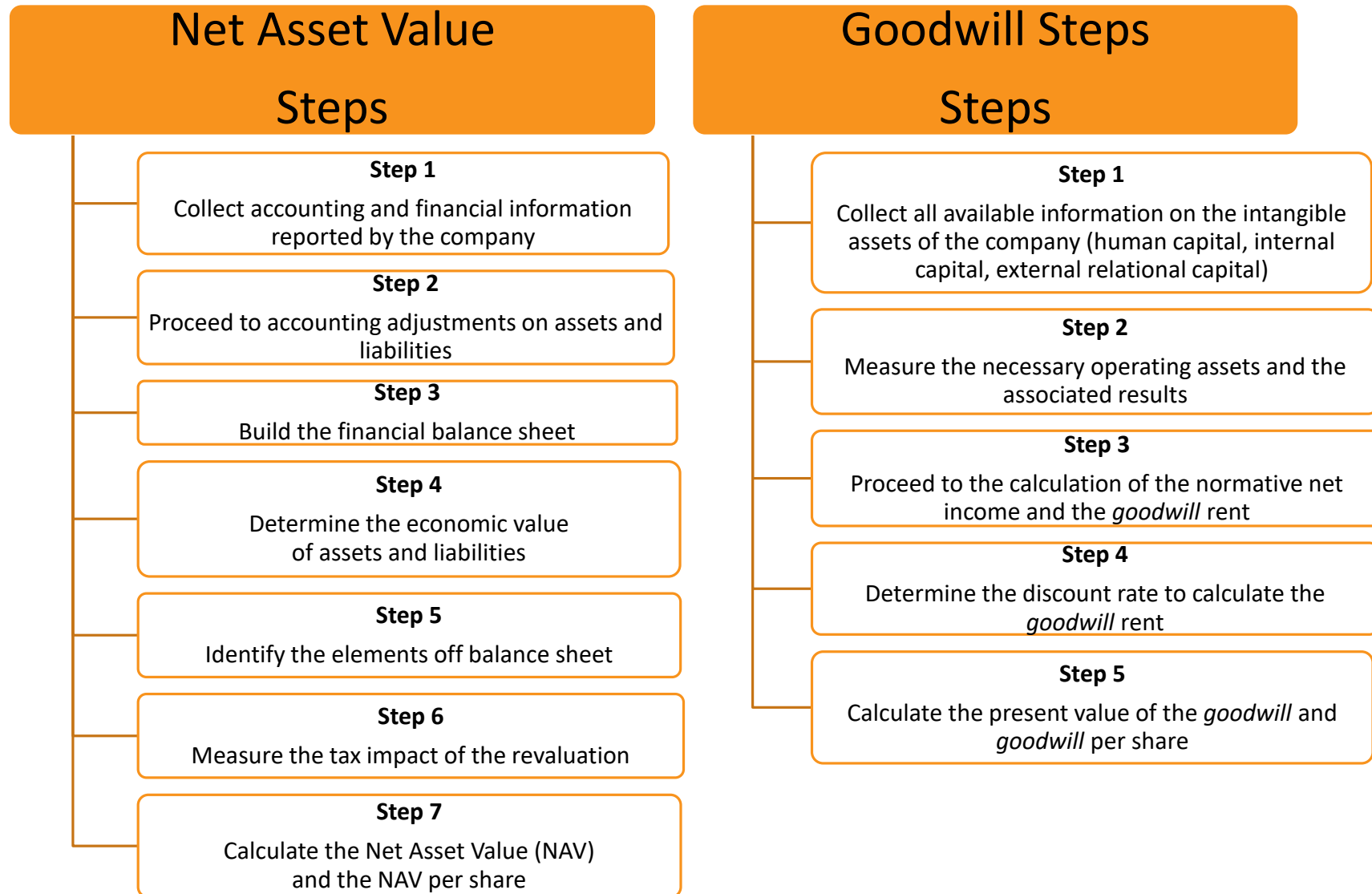
Enterprise Value = Sum of asset value

Net asset value (NAV) = Value of revalued assets - Value of Debt

Cons:

- The company value is based on past performance and do not consider future growth and performance.

4.2 Net Asset Valuation and Goodwill Valuation: steps



IV

Comparative Valuation

4.1 Principles

The comparison approach (also called *comparative method*) assesses a company compared to other similar companies.

This method compares a company to its peers in a relatively simple, quick and objective way. The development of databases stock (FactSet JCF, Thomson Financial, Bloomberg, ...) has contributed to the development of this approach to automate the calculations it requires.

The principle is to be applied a multiple to an Income Statement item (margin), the multiple is calculated from a sample of comparable listed companies.

$$\text{Value} = (\text{multiple}) \times (\text{Accounting Aggregate})$$

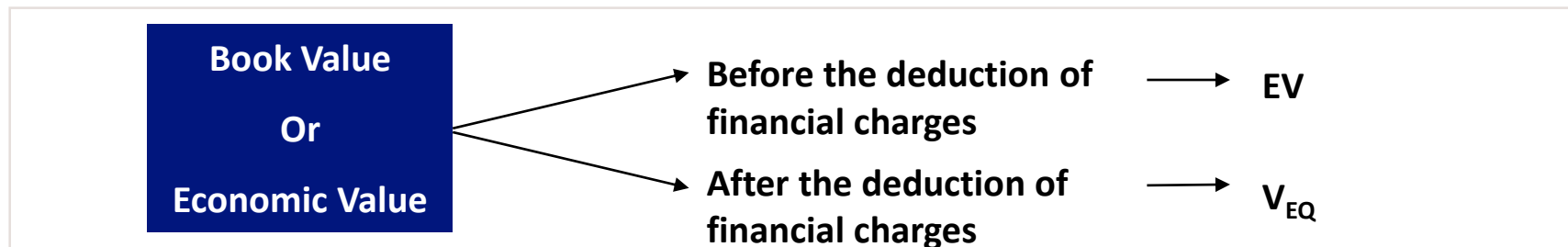
4.1 Principles

This method is particularly suitable for companies with operations already established, generating regular and sustainable performance.

Using multiples implies comparing similar companies in terms of risk profile and/or growth potential. Thus companies must be comparable in terms of activity, market size and geographical coverage.

There are two types of multiples:

- **Multiples of Enterprise Value (xEV):** they are calculated from the accounting earnings before interest, taking into account the financial expenses related to the financial structure of the company (*Equity vs Net Debt*).
- **Multiples of Equity Value (xVe) :** these are calculated from the accounting value of earnings after financial expenses. These multiples are used to obtain the value directly in terms of equity.



V

DCF Model

5.1 Principles

Valuing a business by discounting future cash flows is considered the most relevant assessment methods:

- Consistent with the financial theory.
- Implementation requires a detailed company and industry study in order to highlight its key value drivers.
- Possibility to carry scenario or sensitivity simulation.

The DCF method is simple, but its application difficult, since it relies on uncertain assumptions about the future (business plan, discount rates, terminal company's value, ...).

Business Plan

The business plan is the financial translation of a number of strategic options and their consequences for the coming years.

The art of DCF valuation is to integrate these two dimensions: the past and the future to build a financial forecast for the company.

The consistency of financial and accounting is especially important with a summary table of key ratios of the company. You must ensure that their level is "in line" with past data and industry standards.

Three parameters must be analyzed very carefully because they are the key drivers of enterprise value:

- Sales growth
- Profitability
- Discount rate (WACC)

5.2 Calculation

Value is defined as the discounted future cash-flows.

It can be applied to the value of companies as any other type of assets. Specifically, the value of an asset is equal to the sum of the future cash flows it will generate, discounted at a rate reflecting the average return required given the risk associated (Ke or WACC)

$$P = \sum_{t=1}^{\infty} \frac{\text{Cash - Flows}_t}{(1 + i)^t}$$

This method can be decomposed into 4 main steps:

1. Build a business plan.
2. Compute cash-flows over a short to medium forecast period (called explicit horizon)
3. Calculate the final value after the forecasting horizon
4. Discount the Cash-Flows at the appropriate discount rate

The equity value or enterprise value thus found is the sum of the present value of cash flows over the explicit horizon and the present value of the final value used at the end of the explicit horizon.

5.3 Cash-Flows Definition

Free Cash-Flow to the Firm (FCFF) : Cash-flows after tax, before interest and debt repayment, available to shareholders (dividends) and creditors (interest expense and principal repayment).

+ EBIT

+ Depreciation

= EBITDA

- Normative Income tax on EBIT

- Variation of NWC

- CAPEX (net of asset sales)

= FCFF

5.3 Cash-Flows Definition

FCFE (Free Cash Flow to Equity) : Cash-flow after tax, after interest expenses and debt repayment available to the shareholders ONLY.

+ EBIT

+ Depreciation on tangible / intangible assets

= EBE

- Net financial charges

- Reimbursement of the net debt

+ Issuing of new debts

- Income tax

- Variation of NWC

- CAPEX (net of sells of assets)

= FCFE

5.4 Mini Case Study

The company Bodyvision has a capital of \$1 million and 10,000 shares outstanding. It manufactures and distributes body protection products. It achieved a turnover during the year N of 1,000 k\$ and a net profit of 100 k\$ in N.

Additional assumptions:

The debt, contracted in N-2, is repayable *in fine for* of 500 k\$. Repayment of the principal shall be only in N+5. No new loans has been contracted in N-1 or in N.

The working capital requirement (NWC) was \$30k in N-2, \$40k in N-1 and \$50k in N.

Bodyvision has acquired in N a new machine for a value of \$200k and has decided to sell its old machine at a price of \$120k. No sale or acquisition of other machines took place in N-1.

No financial product has been registered in N-1 or in N.

The standard tax rate is equal to 30%.

Assignment:

- Calculate the cash flow of the firm (FCFF) in N-1 and N.
- Calculate free cash flow to shareholders (FCFE) N-1 and N.

In k€	N-1	N
Sales	950	1 000
Cost of sales	(230)	(220)
Personal expenses	(460)	(450)
EBITDA	260	330
Depreciation	(120)	(130)
EBIT	140	200
Interest charges	(50)	(50)
Tax	(30)	(50)
Net income	60	100