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# 1FP571

# Special seminar – Advanced Corporate Finance



EVROPSKÁ UNIE  
Evropské strukturální a investiční fondy  
Operační program Výzkum, vývoj a vzdělávání



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# Valuation Analysis I

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1. Overview
2. Comparable Company Analysis
3. Comparable Acquisitions Analysis
4. Discounted Cash Flow Analysis
5. Summary



# Valuation Analysis

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## 1. Overview: Applications

Application both **internally** (value-based management, managerial accounting, CFO support) and **externally** (communication with stakeholders – mainly shareholders and debt/bondholders)

Notable **external** application uses:

- Acquisitions: how much should we pay to buy the company?
- Divestitures: How much should we sell our company/division for?
- Defense: Is our company undervalued/vulnerable to a raider?
- Fairness Opinions: Is the price offered for our company/division fair from a financial point of view?
- Public Equity Offerings: For how much should we sell our company/division in the public market?
- New Business Presentations: Various



# Valuation Analysis

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## 1. Overview: Methodology

Value Range:

- CCA (Comparable Company Analysis): public market valuation; value based on market trading multiples of comparable companies
- CAA (Comparable Acquisitions Analysis): private market valuation; value based on multiples paid for comparable companies in sale transactions
- DCF (Discounted Cash Flow Analysis): present value of projected free cash flows; inherent value of business
- LBO (Leveraged Buyout Analysis): value an LBO buyer can afford to pay for business and repay debt borrowed for the acquisition
- Other (Liquidation & Break-up Analysis)



# Valuation Analysis

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Equity Valuation Analysis: What Do Analysts Use? (Asquith et al., 2001)

Earnings Multiple	99%
P-E	97%
Relative P-E	35%
Revenue Multiple	15%
Price-to-Book	25%
CF Multiple	13%
DCF	13%
EVA	2%
“Model”	4%



# Valuation Analysis

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## 1. Overview: Enterprise vs. Equity Value

- **Enterprise Value** = Value of all the business' assets
- **Equity Value** = Value of the shareholders' equity
- **Equity Value** = Enterprise Value – Net Debt
- **Net Debt** = total debt + minority interest + preferred stock + capitalized leases + out of the money convertible debt – cash and cash equivalents



# Valuation Analysis

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## 2. CCA: Comparable Company Analysis

CCA values a target company by reference to other publicly-traded companies with similar operating and financial characteristics

This analysis also provided important operating and financial information about the target's industry group

Commonly referred to as "Trading Comps" or "Market Comps" analysis

Market multiples are ratios based on current market conditions (e.g. P/E ratio). These multiples are a "shorthand" method for valuing a company's future cash flow (*N.B. see further*)

If the target company **is not** publicly traded, market multiples are used to **imply** a trading valuation. These implied values do not incorporate the "control" premiums reflected in CCA (Transaction Comps)

If the target **is** traded, market multiples are helpful in understanding how the market views your company. E.g., why does the target trade at a discount or a premium to its peers?



# Valuation Analysis

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## 2. CCA: Comparable Company Analysis

CCA valuation does not incorporate the “control premium” reflected in CAA (comparable acquisitions analysis)

Depending on the market conditions, CCA multiples may or may not be higher than CAA multiples

Importance of selecting the correct comparables – sector? size in terms of the assets? size in terms of the turnover? market share? international presence? ... problem that everybody else share as well

Once the comparables are selected, the implied value of the given company is calculated by multiplying the company’s sales, operating income, operating cash flow, net income, book value and other key operating statistics by the respective CCA multiples

CCA also provides useful information to DCF projections via operating statistics for competing sectoral subjects (working capital, growth rates, margin trends)





# Valuation Analysis

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## Checklist:

- find benchmark firms: i.e. Dell, HP, IBM
- assume market correctly sets the competitors' stock prices
- assume all firms have the same risk (systematic & industry)
- assume cash flow growth is similar for all the firms
- assume accounting techniques to calculate earnings (or book equity, sales or EBITDA) are similar for all the firms

implication: the P/E model (perpetuity or growing perpetuity) is the same for competitors and Target Corp.

## Multiples Valuation Approach:

- take the average P/E of competitors
- multiply by Target's EPS of obtain the predicted price of the Target.



# Valuation Analysis

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## 2. CCA: Comparable Company Analysis

N.B.: valuation by comparables assumes (1) the correctly valued CC, (2) as close as possible match of the target and CC in terms of their operational and financial characteristics (industry, products, cyclicality, markets, customers, size, growth, leverage, margins, ... etc.) and, **the most crucially**, (3) the firm link between such a comparable and value (comes from the (2)).

**Any imaginable multiple** between the target company's and the comparable company's value may and often **is possible**, depending on the specific sector (click-through for internet ad companies, etc.).

Double check the rationale behind, it may or may not be a good idea; multiples based on the cash burned-to-market cap, customer base-to-enterprise value, etc. .. yes, this works, only you have to believe and support your belief that target and comparable companies generate the same margin of value for the individual characteristics in the denominator of P/something.

The fact that other company you call comparable generates x million USD of enterprise value per 1 million of burned cash does not guarantee that the same applies to your target firm. **Think!**



# Valuation Analysis

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## 2. CCA: Finding Comparable Companies

Companies with characteristics similar to those of the business valued:

**Operational:**

Industry  
Products  
Distribution Channels  
Markets  
Customers  
Seasonality  
Cyclicality

**Financial:** Size

Leverage  
Shareholder base  
Growth  
Margins



# Valuation Analysis

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## 2. CCA: Definitions

### **Equity Value (aka Market Value)**

Market value of the company's equity: ( $\#$  fully diluted shares  $\times$  current stock price) – option/warrant proceeds

$\#$  fully diluted shares = primary shares + in the money exercisable options/warrants + shares from the conversion of in the money convertible debt/convertible preferred stock

### **Enterprise Value (aka Adjusted Market Value)**

Market value of the entire enterprise: market value + net debt

Net debt = long-term debt (including current portion) + short-term debt + out of the money convertible debt + minority interest + preferred stock + capitalized leases – cash & cash equivalents

*N.B. net debt should be valued at its market value; the cost of borrowing changes in time and issued bonds may or may not be more or less valuable than at the time of issuance. The same applies to ST debt.*



# Valuation Analysis

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## 2. Definitions of Key Operating Statistics

<b>Sales:</b>	receipts from the sale of goods and services (excl. other income)
<b>Operating Income</b>	earnings before interest expense/ <u>income</u> , taxes and unusual/extraordinary changes
<b>Operating Cash Flow</b>	operating income + depreciation and amortization
<b>Net Income</b>	after-tax income from continuing operations after preferred dividends and before below the line income/charges for extraordinary items
<b>Tangible Book Value</b>	shareholders' equity less goodwill and other intangible assets

*N.B. this is a guide, assuming understanding of the business valued and what to include or exclude*



# Valuation Analysis

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## 2. CCA: Multiples

### **Enterprise Value Multiples:**

Enterprise Value or Adjusted Market Value = (Market Value + Net Debt) / Sales  
/ Operating Cash Flow  
/ Operating Income

### **Equity Value Multiples:**

Equity Value = Market Value / Net Income  
/ Tangible Book Value



# Valuation Analysis

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## 2. CCA: Applying Multiples to Derive CCA

### **General Approach:**

- Calculate the relevant multiples for each CC
- Decide which Cs are the most C
- Get rid of outliers
- Think!

Ideally, 2 sets of financials should be used: LTM and projected full-year results

Do not forget to adjust for net-debt

Adjust the resulting implied values for unusual assets/liabilities not reflected in the results on which the CCA is based (unfunded pension liabilities, unconsolidated minority investments, unallocated corporate overhead expense, etc.)



# Valuation Analysis

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## 2. CCA: Generic Summary

*(USD millions)*

	LTM Results	Multiple Range	Implied Enterprise Value
Net Sales	52.4	1.3 – 1.5x	68.1 – 78.6
Operating Income	4.8	8.3 – 11.2x	39.8 – 53.8
Operating Cash Flow	7.3	5.7 – 6.2x	41.6 – 45.3
Net Income	2.1	12.3 – 12.8x	25.8 – 26.9
Tangible Book Value	4.4	6.1 – 6.4x	26.8 – 28.2
Reference Value of Enterprise Value			USD 36 – 46 million





# Valuation Analysis

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## 3. CAA: Comparable Acquisitions Analysis

- CAA values a company by reference to other private market sales of similar businesses
- What are the right transactions (were there any comparable deals) AND are the required information available?
- Acquisitions of companies with comparable operational and financial characteristics, recent ones being more accurate, market fundamental change dramatically over periods of time
- CCA is based on the same multiples as CCA
- Multiples should be based on the latest public financial information available to the acquirer at the time of the transaction.



# Valuation Analysis

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## 3. CAA: Definitions

### **Purchase Price**

- The total price paid for the acquired company's equity: CAA values a company by reference to other private market sales of similar businesses
- $(\text{number of shares} \times \text{acquisition price per share}) - \text{option proceeds}$
- $\text{Number of shares} = \text{fully-diluted shares outstanding} = \text{primary shares} + \text{all in the money options/warrants} + \text{all in the money convertible debt/convertible preferred stock} - \text{option/warrant proceeds}$

### **Adjusted Purchase Price**

- The total price paid by the acquirer
- $\text{Equity purchase price} + \text{net debt assumed}$
- $\text{Net debt} = \text{same as for CCA}$





# Valuation Analysis

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## 3. CAA: Applying Multiples to Derive CAA

- calculate relevant multiples for each CA
- decide which CA are the most relevant
- use most relevant multiples from most relevant CA
- use the date the acquisition is announced (not closed) to determine the LTM period
- multiply the LTM results of the target company at the acquisition date by the relevant CA multiples to derive implied values



# Valuation Analysis

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## REFERENCES

MIT OpenCourseWare, 15.535 Class #5 "Comparative Analysis",  
[https://ocw.mit.edu/courses/15-535-business-analysis-using-financial-statements-spring-2003/2e2525c97d2e9567a13f7e8cee0f7d35\\_class5.pdf](https://ocw.mit.edu/courses/15-535-business-analysis-using-financial-statements-spring-2003/2e2525c97d2e9567a13f7e8cee0f7d35_class5.pdf)



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