Kroll Valuation X Series

Spring 2023

Your Speakers Today

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Maksim is a Vice President in Valuation Advisory at Kroll Frankfurt Office. He has around 7 years of experience in the fields of business and assets valuation as well as litigation support, M&A, financial modeling, strategic consulting, market research and investor relations in Belarus, Poland, Russia and Germany.

He joined Kroll in 2019 and is a member of valuation advisory team. Previously, he worked for a number of Russian M&A and consulting boutiques as well as in investor relations department of Eurotorg LLC in Minsk.

Maksim participated in projects with clients from financial, retail, e-commerce, healthcare, media, automotive, IT and other industries, including a number of startups, whom Maksim assisted in the preparation of business plans, financial models, and investor presentations for VC/PE funding rounds.

He is also a guest lecturer in valuation practice for the educational project “League of Analysts” in Belarus.

Maksim speaks English, German, Russian and Belarusian. He holds MSc in Management from the University of Mannheim. Maksim also holds Chartered Financial Analyst (CFA) and Chartered Financial Modeler (CFM) certifications.

Goals of Today's Workshop

How Will It Be Useful for You?

During the Workshop we will:

1. Introduce you to the valuation profession & career (and hopefully get you excited for it!)
2. Give you as many tips on skills and knowledge required to succeed
3. Show you how valuation is done "in real life"
4. Introduce recent/special/advanced valuation topics – for you to get ahead
5. Direct you to useful sources for further study

Agenda

1. About Kroll
2. Introduction to Valuation Profession
3. Valuation Basics & Methodologies Overview
4. Basics of Financial Modeling in Excel
5. Real-Life Business Valuation Case
6. Advanced Topics in Valuation
7. Your Opportunities at Kroll
8. Networking Lounge

1 About Kroll

About Kroll

Kroll is the world's premier provider of services and digital products related to **financial advisory and risk**

We work with clients across diverse sectors in the areas of valuation, expert services, investigations, cyber security, corporate finance, restructuring, legal and business solutions, data analytics and regulatory compliance.

The firm's nearly **6,500 professionals** are located in **30 countries and territories around the world**.

~6,500

TOTAL PROFESSIONALS GLOBALLY

13,400

CLIENTS INCLUDING NEARLY

51% OF THE

S&P 500

THE AMERICAS

2,700+

PROFESSIONALS

EUROPE AND MIDDLE EAST

1,250+

PROFESSIONALS

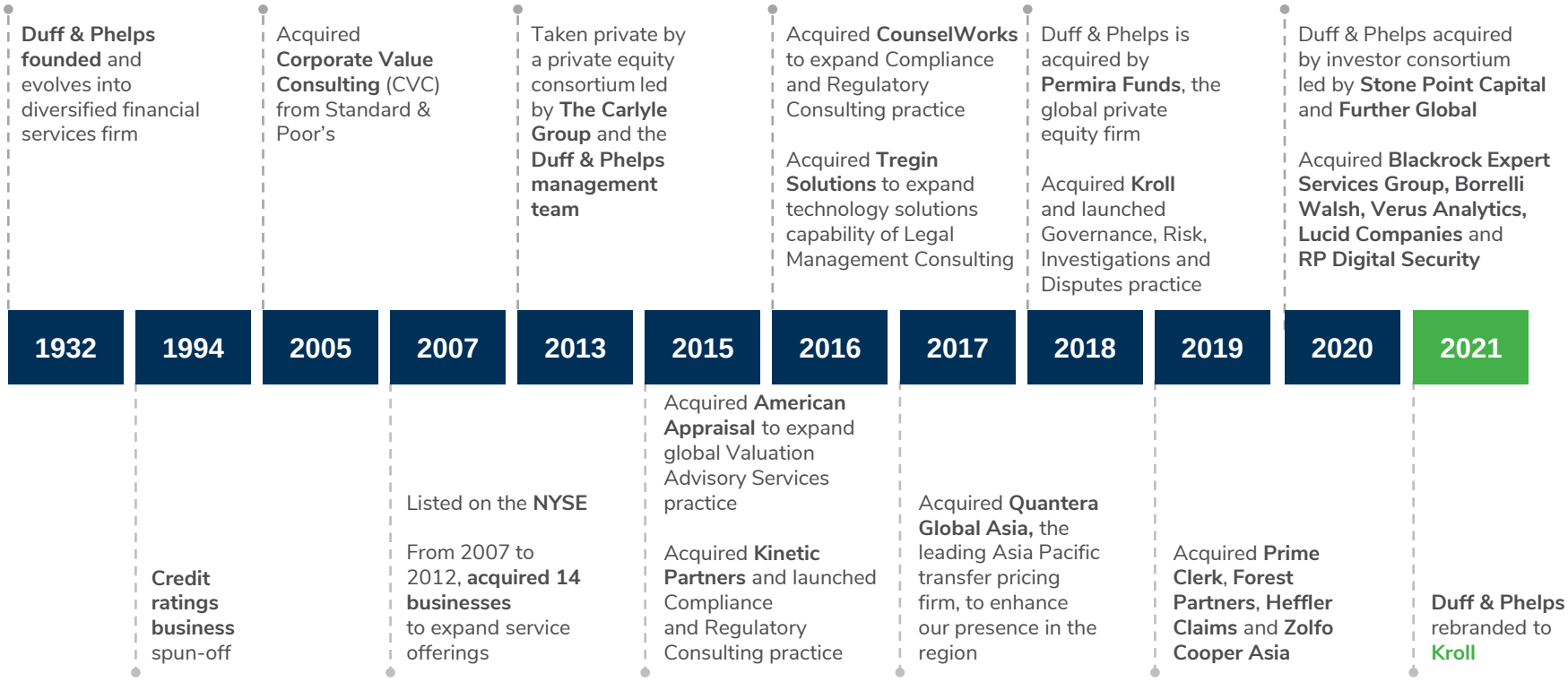
ASIA PACIFIC

950+

PROFESSIONALS

Our Evolution

Operating for nearly 100 Years



Our Locations

Across 30 Countries and Territories Worldwide

THE AMERICAS

Addison
Atlanta
Austin
Bogota
Boston
Buenos Aires
Chicago
Dallas
Denver
Ellensburg
Houston
Los Angeles
Mexico City
Miami
Minneapolis
Morristown
Nashville
New York
Philadelphia
Reston
San Francisco
São Paulo
Seattle
Secaucus
Silicon Valley
St. Louis
Toronto
Washington, D.C.
Waterbury
Westchester

EUROPE AND MIDDLE EAST

Abu Dhabi
Agrate Brianza
Amsterdam
Barcelona
Bari
Berlin
Bilbao
Birmingham
Channel Islands
Dubai
Dublin
Frankfurt
Gibraltar
Lisbon
London
Longford
Luxembourg
Madrid
Manchester
Milan
Moscow
Munich
Padua
Paris
Pesaro
Riyadh
Rome
Turin
Zurich

ASIA PACIFIC

Bangalore
Beijing
Guangzhou
Hanoi
Hong Kong
Hyderabad
Jakarta
Kuala Lumpur
Mumbai
New Delhi
Shanghai
Shenzhen
Singapore
Sydney
Taipei
Tokyo

CARIBBEAN

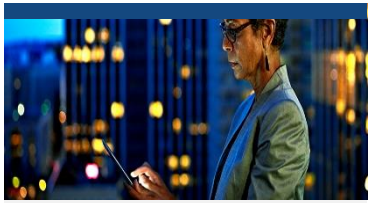
British Virgin Islands
Cayman Islands

STRATEGIC PARTNERS

Almaty
Athens
Limassol

Enhancing Value Across a Range of Expertise

Our Service Areas



VALUATION ADVISORY

Valuation and consulting for financial reporting, tax, investment and risk management purposes

- Valuation Services
- Alternative Asset Advisory
- Real Estate Advisory
- Tax Services
- Transfer Pricing
- Fixed Asset Advisory Services

CORPORATE FINANCE

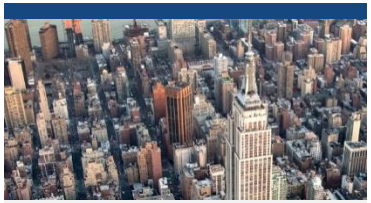
Objective guidance to management teams and stakeholders throughout restructuring, financing and M&A transactions, including independent fairness and solvency opinions

- M&A Advisory
- Fairness and Solvency Opinions
- Transaction Advisory Services
- ESOP and ERISA Advisory
- Financial Sponsors Group
- Distressed M&A and Special Situations
- Private Capital Markets and Debt Advisory

GOVERNANCE AND RISK ADVISORY

Risk management and mitigation, disputes and other advisory services

- Forensic Investigations and Intelligence
- Financial Services Compliance and Regulation
- Compliance Risk and Diligence
- Expert Services
- Restructuring Advisory
- Information Management and Governance
- Security Risk Management
- Data Insights and Forensics



BUSINESS SERVICES

Complex legal and business solutions through our proprietary technology and team of experts

- Prime Clerk
- Class Action Administration
- Mass Tort Administration
- Regulatory and Government Administration
- Notice Media Solutions
- Lucid Issuer Services
- Lucid Agency and Trustee Services
- Corporate Actions
- Business Technology

CYBER RISK

With unrivaled frontline experience from handling 2,700+ incidents every year, we're uniquely positioned to deliver end-to-end cyber risk solutions to support every step of the journey toward cyber resilience:

- Cyber Risk Governance
- System Assessments and Testing
- Incident Response and Litigation Support
- Notification, Call Centers, and Monitoring
- Managed Security Services

2 Introduction to Valuation Profession

Why and When Do We Need Valuation?

Over to you:

1. Think of as many situations as possible when valuation of business/assets is needed
2. Have you ever done a valuation of business/asset? For what purpose?

Why and When We Need Valuation

Private Person	Corporate	Investment Company	Government
» Shall I buy or sell the stock in my personal portfolio?	» How much is my business worth, and is the offer representing a fair price?	» How much are my investment holdings worth?	» How much inheritance tax should be paid for me?
» How much should I pay for options and derivatives to make a hedge against risks?	» How do I best increase the value of my business and what actions can I take?	» How should we find undervalued companies for our funds?	» How much would I get if I implemented a 1% wealth tax on the richest?
» What is the value of the assets I got from an inheritance?	» What should I pay to buy a competitor and what are the effects from synergies?	» What exit multiple can I assume if I sell the company in the future?	» What interest rate I would have to pay on government bond?
» Is the tuition fee for my university reasonable to pay?	» For how much shall I sue the supplier for damages resulting from contract breach?	» How do I find arguments to pay less for an investment (e.g. in a start-up)?	» What is the fair amount we should get as a result of a privatization deal?
» How much is my house worth?	» What is the value of employee options I am giving out?	» How do I maximize my investment valuation ahead of an IPO?	» What is the stake the state shall receive for the bail-out of a company?

What Our Valuation Team Does

Common Types of Projects:

1. Business Valuations for strategic, tax, reorganization, M&A and other purposes
2. Purchase Price Allocations after M&A deal: deriving the fair value of all the assets and liabilities of the target to derive the goodwill
3. Calculation of damages for arbitration/courts (e.g., valuation impact of contract breach or accounting misstatements)
4. Derivation of the fair value of stock options awarded
5. Audit of client's own financial models or valuations done by other experts
6. Fairness Opinions to assist the board of directors/supervisory board to decide whether the terms of M&A transaction are fair

Valuation vs Investment Banking

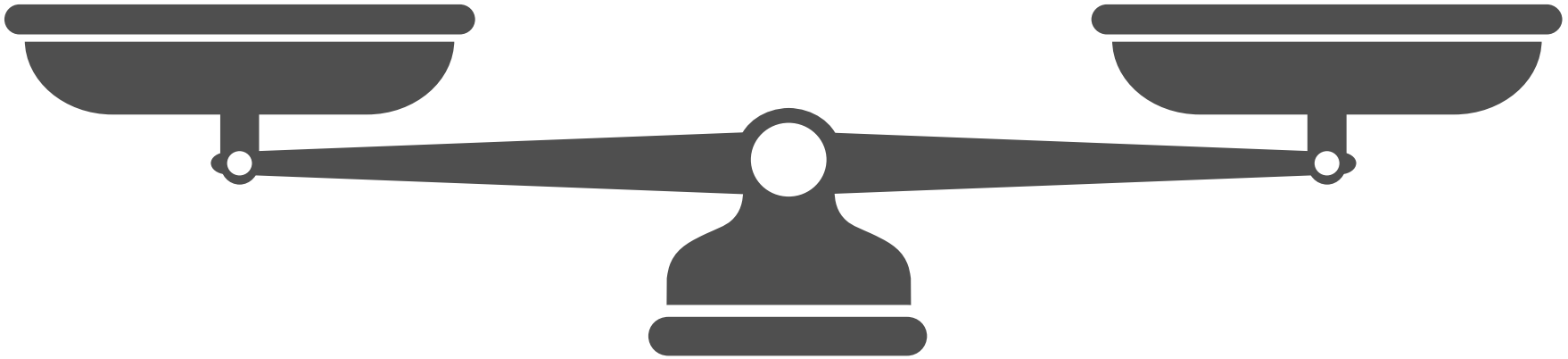
Advantages of Each Career Path

Valuation

1. Incentive to do honest analysis
2. Better work-life balance
3. Wide range and diversity of projects
4. Countless opportunities for exit
5. More crisis-resistant and less vulnerable in market downturns

Investment Banking

1. Pay and bonuses
2. More deal exposure



3 Valuation Basics & Methodologies Overview

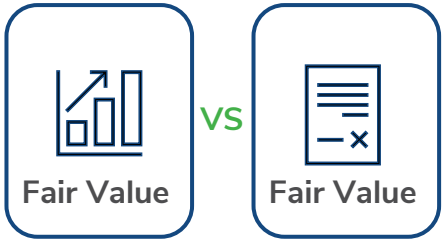
Valuation - Introduction

Introduction to Valuation

"Valuation is a combination of both **art** and **science**." – Aswath Damodaran

"A good valuation consists of **numbers** and a **story**." – Aswath Damodaran

One **major concept** of investing is the **difference** between **price** and **value**. Simply put, price is **what you pay** for something or what the market thinks it is worth; value is **what you think** it is **worth**.

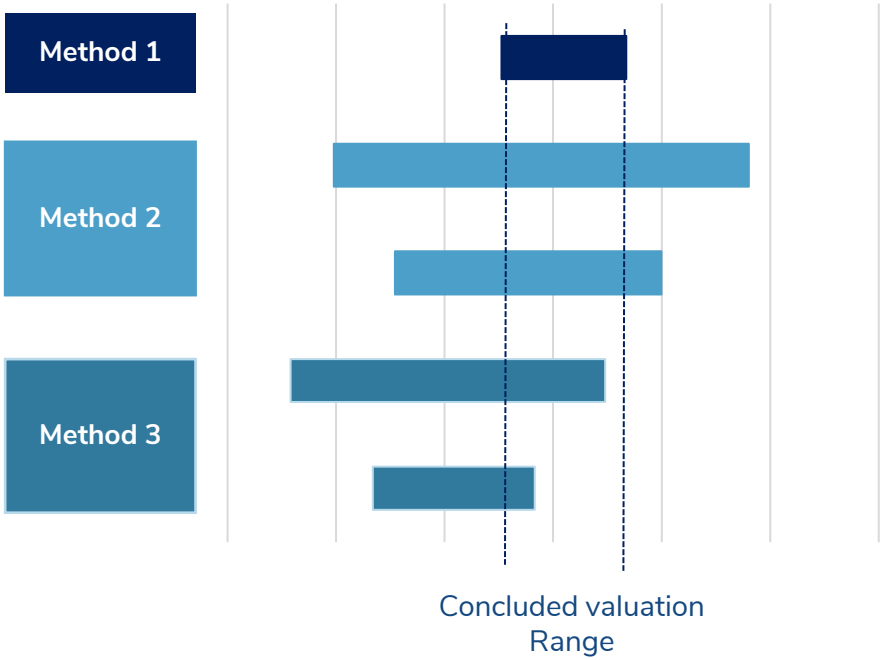


Private assets do **not** have a "**market value**" (are not valued by the market) and need an appraiser

Football Field Approach – Valuation Ranges

There is **no clear-cut** single **value**; instead, various **valuation ranges** can be derived that indicate the range in which the **fair value** should lie.

Valuations are always **dependent** on the time of valuation, and since public valuation parameters are constantly changing, a **range** represents only a **snapshot** at a particular point in time.



The Concept of Price vs. Value

Fair Valuation Is in the Eye of the Beholder

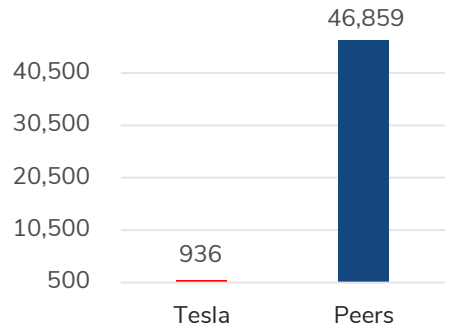
Company Information

- Tesla designs, develops, manufactures, and sells electric vehicles as is a pioneer in the automotive companies
- Incorporated in 2003 in Austin, Texas (U.S.)
- The company operates in 2 segments: automotive and energy generation & storage
- Revenue growth from 2017 to 2021: 483%

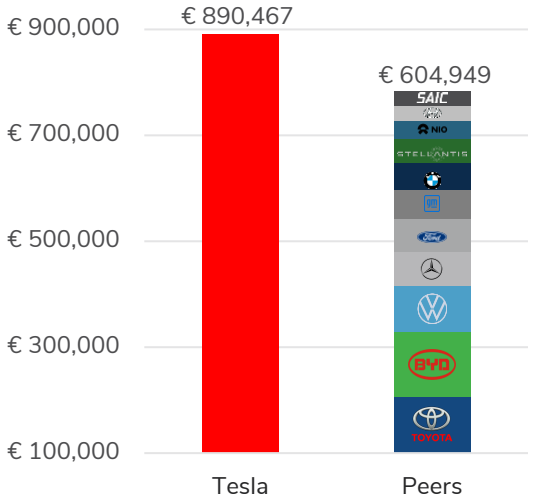
Key Figures

- Global Deliveries in 2022: **1.31 million vehicles**
- Total Revenue in 2022: **EUR 76.2 B**
- Market Cap. as of December 2022: **EUR 364 B**

Global Deliveries in 2021 (in K)



Market Cap. Comparison* (in EUR M)



Competitor Key Figures

- Global Sales in 2022: **8,230,000 vehicles**
- Total Revenue in 2022: **EUR 232.6 B**
- Market Cap. as of December 2022: **EUR 175.4 B**

- Global Sales in 2022: **1,860,000 vehicles**
- Total Revenue in 2022: **EUR 53.1 B**
- Market Cap. as of December 2022: **EUR 88.4 B**

- Global Sales in 2022: **8,262,800 vehicles**
- Total Revenue in 2022: **EUR 278.7 B**
- Market Cap. as of December 2022: **EUR 67.6 B**

Sources: Capital IQ and Official Companies Websites
* As of 12.31.2022

Tesla Valuation & Valuation Methods

Over to you:

1. Can Tesla still be undervalued?
2. Which valuation methods do you know?

Introduction to Valuation Methods

Cost Approach, Market Approach, and Income Approach (1/2)

Valuation Methods

Cost Approach	Market Approach (relative value)	Income Approach (intrinsic value)
Cost to Rebuild/ Replacement Cost	Public Company Comparables	Discounted Cash Flow Method
Net Asset Value/ Liquidation Value	Precedent Transactions	Dividend Discount Model

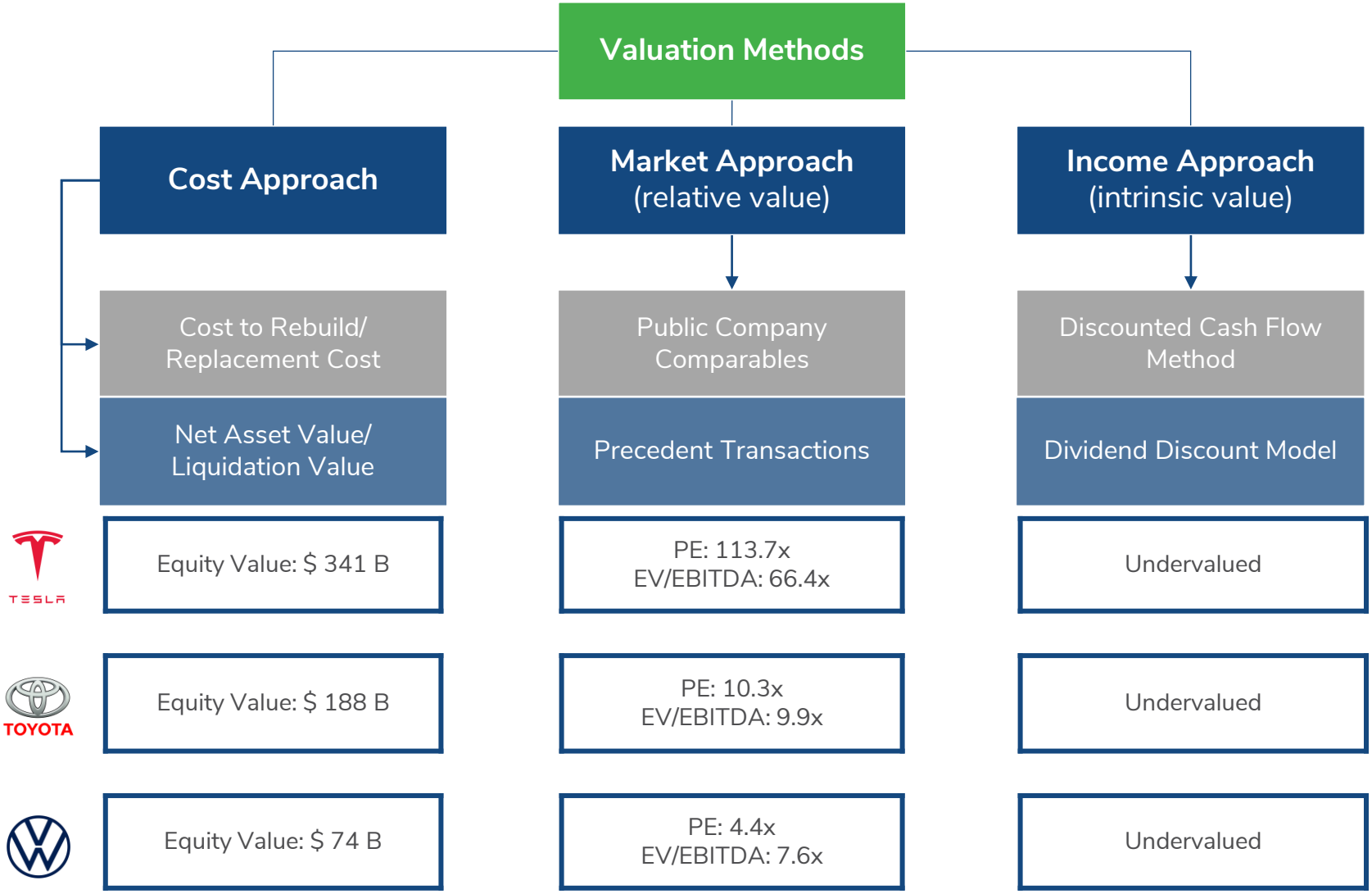
» Value obtained serves as a lower limit for the business value

» Valuation of a company by comparison with other similar listed companies or transactions with targets similar targets to the company valued

» Present Value of the Cash Flow that the business could be expected to generate in the future

Introduction to Valuation Methods

Cost Approach, Market Approach, and Income Approach (2/2)



Sources: Bloomberg and Capital IQ
*Capital IQ Median price target as of 12.30.2022

The Three Major Financial Statements

Income Statement, Balance Sheet, and Cash Flow Statement

Income Statement

in EUR m	2019 Act.	2020 Act.	2021 Act.
Revenue	100	110	125
Cost of Goods Sold	(60)	(63)	(75)
Gross Profit	40	47	50
Operating Expenses	(23)	(25)	(27)
EBITDA	17	22	23
D&A	(2)	(2)	(3)
EBIT	15	20	20
Interest Expense	(3)	(4)	(5)
EBT	12	16	15
Taxes	(3)	(4)	(4)
Net Income	9	12	11

- Represents how much **Revenue** and **Expenses** a company incurred over a period
- The **"top line"** shows the **Revenue** figures, while the **"bottom line"** gives information about the profitability such as **EBITDA**, **EBIT** or **Net Income**

Balance Sheet

in EUR m	2019 Act.	2020 Act.	2021 Act.
Cash	12	18	22
Account Receivables	15	17	18
Inventory	17	22	23
PP&E	22	21	21
Total Assets	66	78	84
Accounts Payable	15	16	15
Debt	14	13	9
Total Liabilities	29	29	24
Share Capital	28	28	28
Retained Earnings	9	21	32
Shareholder's Equity	37	49	60
Total Liabilities & Equity	66	78	84

- A **snapshot** of what a company **owns** in a **fixed period** and **how the assets were financed**
- Detailed information about a **company's assets**, **liability** and **equity**
- **Assets** = **Liabilities** + **Shareholders' Equity**

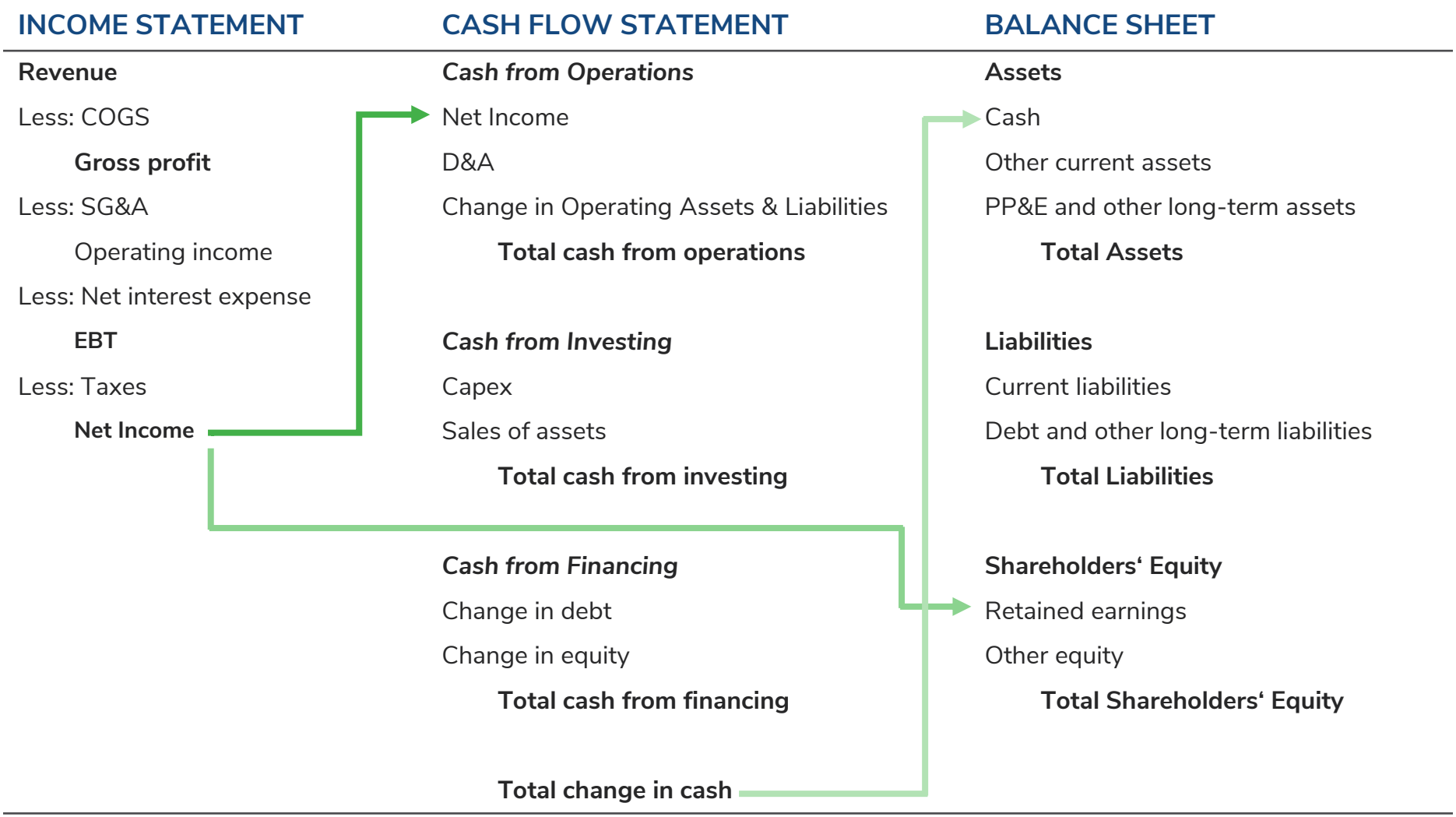
Cash Flow Statement

in EUR m	2020 Act.	2021 Act.
Net Income	12	11
Depreciation & Amortization	2	3
Accounts Receivables	(2)	(1)
Inventory	(5)	(1)
Accounts Payable	1	(1)
Operating Cash Flow	**8**	**11**
Investments in PP&E	(1)	0
Investing Cashflow	**(1)**	**0**
Debt Repayment	(1)	(4)
Financing Cash Flow	**(1)**	**(4)**
Total Change of Cash	**6**	**7**

- Company's **inflows** and **outflows** of cash
- While the Income statement shows the **profit** the company made, the Cash Flow statement presents **cash generation**
- The "bottom line" is the **total change of cash**

The Three Major Financial Statements

How Individual Financial Statements Are Linked



Income Approach - DCF

Intrinsic Value Methodology

Overview

1. Forecasting FCF based on Business Plan
2. Forecasting the Terminal Value
3. Estimating the WACC
4. Discounting the projected CF and Terminal Value
5. Running sensitivity analysis

Key Concepts

Enterprise Value & Equity Value

» Enterprise Value: Value of an **operating assets** company that is attributed to the company´s common shareholders, debt holders and any other provider of funding $\boldsymbol{EV = Equity\ Value + Debt\ - Cash + Preferred\ Stocks + Noncontrolling\ Interst}$

» Equity Value or Market Cap: value of **all assets of a** company that is attributed to the company´s common shareholders

Forecast Period

» Forecast FCF for a number of years into the future
» Revenue can be forecasted by assuming yearly growth rate or forecasting drivers such as price, volume sold, number of customers…
» Margins and other cash flow items projected as historical % of revenue or based on market analysis (matched with benchmarks of peer group)

Terminal Value

» Value of the company beyond the projection period with the two estimation methodologies:
  - Perpetuity Growth – Gordon Method: Terminal value estimated by assuming that CF grow forever at a constant growth rate $\frac{CF_t*(1+g)}{r-g}$
  - Exit Multiple: $Terminal\ Value = EBITDA_T * Exit\ Multiple_t$

Sensitivity Analysis

» Analysis of how the different values of a set of independent variables affect a specific dependent variable under certain specific conditions
» Helps to define a range of values for the subject company rather than a single point of value
» Most common variables used in sensitivity analysis: WACC & Terminal Growth Rate

Different Types of Cash Flows

Derivation of Unlevered and Levered Cash Flows

Application

- **Cash flow** refers to the **net balance** of cash **moving into** and **out** of a business at a specific point in time
- Finance professionals usually refer to **Free Cash Flow** as **Unlevered Free Cash Flow** or **Levered Free Cash Flow**
- The **main differences** between the generic Free Cash Flow and the Unlevered Free Cashflow are:
    a. the **company's interest expense**, which is not deducted to calculate the Unlevered Free Cash Flow
    b. Repayment/increase of Debt
- In **Financial Modeling**, usually the **Unlevered Free Cash Flow** belonging to both, investors and debtors is **applied**

Unlevered

Cash **before** financial obligations

EBIT
- Taxes on EBIT
+ Depreciation & Amortization
- Capital Expenditures
-/+ In/Decrease in Net Working Capital (NWC)

= Free Cash Flow to Firm (FCFF)

- Debt + Equity Investors
- Enterprise Value
- WACC

Levered

Cash **after** financial obligations

Operating Net Income
+ Depreciation & Amortization
- Capital Expenditures
-/+ In-/Decrease in NWC
-/+ Repayment/Increase of debt

= Free Cash Flow to Equity (FCFE)

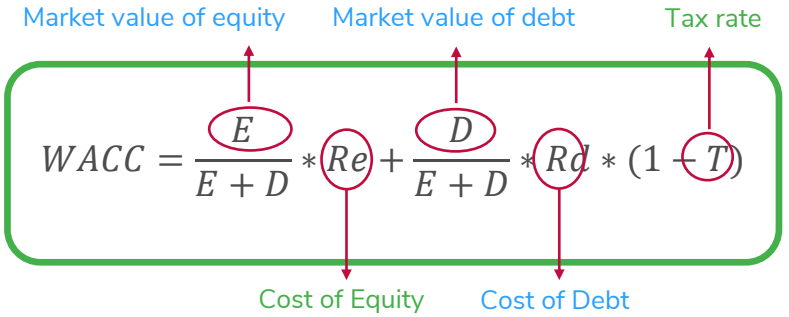
- Equity Investors
- Equity Value
- Cost of Equity

Cost of Capital

Weighted Average Cost of Capital (WACC) Approach

Firm's perspective: Reflects the cost of financing required to satisfy equity investors and creditors

Investor's perspective: Required rate of return for all sources of capital investments (debt or equity)



Cost of Equity

- Usually calculated using the CAPM : $\mathrm{Re} = \mathrm{Rf} + \beta * (\mathrm{Rm} - \mathrm{Rf})$
- Risk-free rate or reinvestment (**Rf**): rate of return that has no default risk. Proxy: government long-term borrowing rate
- Equity Risk Premium (**Rm-Rf**): additional return above the risk-free rate, which is required to compensate investors for extra risk taken
- Can be based on historical averages or implied numbers
- Use databases (Kroll, Damodaran, http://market-risk-premia.com/)
- Beta (β): measure of volatility or systematic risk.
- If $\beta = 1$ about as risky as the market
- If $\beta < 1$ less risky than the market.
- If $\beta > 1$ riskier than the market
- Use peer group beta for comparable companies
- Adjust beta for capital structure

$$\beta_U = \frac{\beta_L}{1 + (\frac{D}{E} * (1 - T))}$$

Cost of Debt

- Cost of debt is the yield to maturity on the firm's debt
- Calculated using the actual **Cost of Debt** (if a company has traded bonds) or Implied Cost of Debt (using **Credit Ratings)**

Weightings

- Based not on book values of equity and debt (backward-looking) but on **market values** (if available) or **peer group data** (for private companies) or **management indications**

Market Approach
Relative Value Methodology

Comparable Companies (Peer Group)

Valuing a company by comparing it with similar publicly traded companies as a benchmark. Most commonly done by applying the average/median multiple for peers (e.g. Price-to-earnings) to the corresponding metric of the company (e.g. earnings)

Ideally, the following aspects should be similar:

- Industry
- Geography
- Size related measures (Revenue, Market Cap.)
- Growth profile
- Margins
- Level of debt and risks entailed

Comparable Transactions

- Valuing a company by comparing it with companies that have been previously acquired in an M&A transaction. The mechanic in general is the same as in comparable companies valuation

Ideally, the following aspects should be similar:

- Industry
- Geography

For the Transactions analysis it is important to search for last 3-5 years transactions (usually more recent transactions are a lot more indicative)

Tips:

- Use key words in the business description
- If you don't find enough comparable searching by industry, search by adjacent industries (suppliers, clients etc)
- Modify the industry scope depending on the number of comparable that you find (usually 6 to 20 is a good number)
- Put thought (and research) into selecting an appropriate multiple (for financial industries Price/Book and Price/Earnings are good, for other corporates Enterprise Value/EBITDA, for loss-making companies Enterprise Value/Sales and so on)

4 Basics of Financial Modeling in Excel

Kroll Valuation Model

Best practices for structuring and setting up a financial model in excel

Financial Model

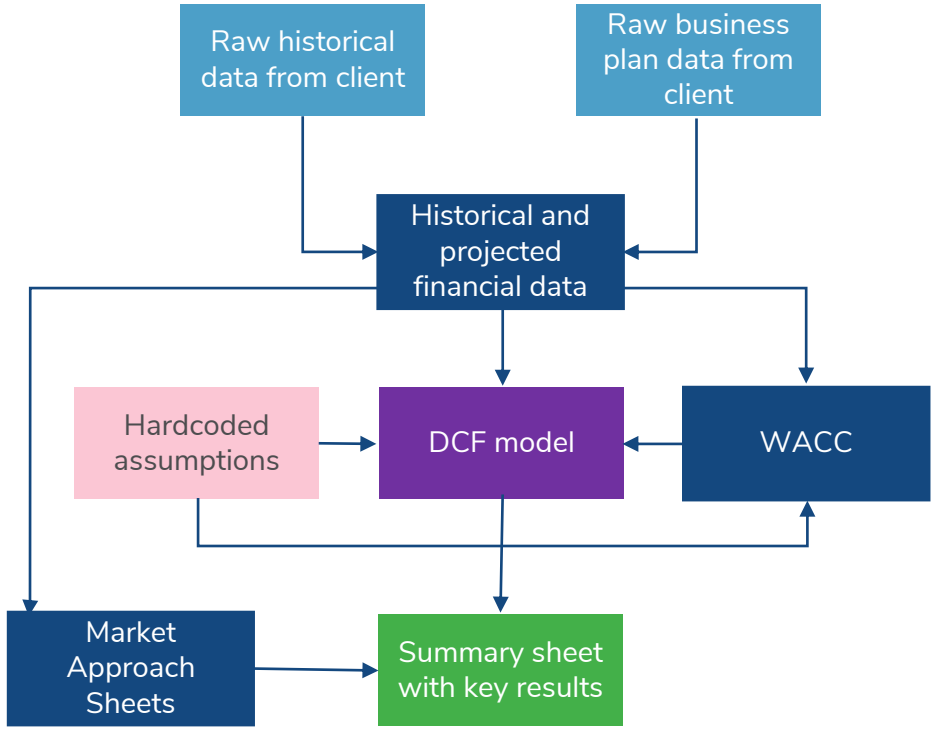
The following practise tips improve the quality of your Valuation Model:

- Create an easy-to-follow and logical structure of the model (one structure example is on the right side of this slide)
- Make an assumptions sheet where you put all the hardcoded numbers and avoid hardcoding on other sheets
- Create an executive summary sheet highlighting the key findings of the Financial model
- Avoid over-engineering and make the model as user-friendly as possible using footnotes for explanations
- Use clear and consistent labeling (one color for hardcoded numbers, one for formulas, one for links from other sheets)
- Avoid links to other files

Valuation Model in Practice

- In practise, Excel is used as the most common tool to build Financial Models. The creation of a valuation model requires multiple calculation sheets and always depends on the quality of data that is available

Sample Model Structure



Financial Modeling Standards

Useful Sources for You to Improve Your Financial Modeling Skills

Issuer	Document	Link
The FAST Standard Organisation	The FAST Standard: Practical, structured design rules for financial modelling.	https://www.fast-standard.org/wp-content/uploads/2019/10/FAST-Standard-02c-July-2019.pdf
Corporate Finance Institute	Financial Modeling Best Practices	https://corporatefinanceinstitute.com/resources/financial-modeling/financial-modeling-best-practices-ebook/
ICAEW	Financial Modeling Code	https://www.icaew.com/-/media/corporate/files/technical/technology/excel-community/financial-modelling-code.ashx
PwC	Global Financial Modeling Guidelines: Developing best-in-class financial models	https://www.pwc.com.au/deals/assets/pwc-global-financial-modeling-guidelines-booklet-live.pdf

Excel Short-Cuts

Ctrl 1 Format cells	Ctrl Y Redo or repeat last action	Ctrl Z Undo last action	Ctrl ++ Insert selection
Shift space Select row	Ctrl space Select column	Ctrl Shift & Insert box around selection	Ctrl Shift - Remove box around selection
Ctrl 9 Hide row	Ctrl 0 Hide column	Ctrl Shift 9 Unhide row	Ctrl D Overwrite a cell(s)
Shift arrow Select cell(s)	Shift Ctrl arrow Select range	Ctrl arrow Go to start/end of range	F2 Show precedents
F2+F9 Turn references into values	F4 Fix row, column or cell	Shift F10 Right click	Shift F2 Insert comment

Excel Formulas (1/2)

IF

- =IF(<statement>, <what to do if true>, <what to do if false>)

Estimated Price	60
Real Price	54
State:	=IF(L28>L27, "Overvalued", "Undervalued")

Estimated Price	60
Real Price	54
State:	Undervalued

MATCH

- =MATCH(<item that you are searching for>, <range of cells>, 0)
- To be in alpha numeric order add 0

Position		Currency	
1	GBP	USD	=MATCH(L26,$K$26:$K$30,0)
2	USD	GBP	1
3	JPY	GBP	1
4	SFR	USD	2
5	EUR	EUR	5

Currency	
USD	2
GBP	1
GBP	1
USD	2
EUR	5

VLOOKUP

- VLOOKUP(<what you want to look up>, <where you have to look for it>, <column number with the value to return>, 0)
- To be an exact coincidence: 0

Currency	Rate to GBP	Currency	Rate
GBP	1.00	USD	=VLOOKUP(M26,$K$26:$L$30,2,0)
USD	1.35	JPY	110.00
JPY	110.00	JPY	110.00
SFR	1.09	USD	1.35
EUR	1.19	EUR	1.19

XLOOKUP

- =XLOOKUP(<what you want to look up>, <the range to search>, < the range to return>,0)

Currency	Rate to GBP	Currency	Rate
GBP	1.00	USD	=XLOOKUP(M26,$K$26:$K$30,$L$26:$L$30)
USD	1.35	JPY	110.00
JPY	110.00	JPY	110.00
SFR	1.09	USD	1.35
EUR	1.19	EUR	1.19

Excel Formulas (2/2)

XNPV

- To determine the net present value (NPV)
- =XNPV(<discount_rate>, <cash_flows>, <dates>)

	01/01/2022	01/01/2023	01/01/2024	01/01/2025
Cash Flow	-€ 500	€ 150	€ 200	€ 300
Discount Rate	7%			
NPV	=XNPV(Q9,Q8:T8,Q7:T7)			

XIRR

- To determine the internal rate of return (IRR)
- =XIRR(<cash_flows>, <date>)

	01/01/2022	01/01/2023	01/01/2024	01/01/2025
Cash Flow	(500)	€ 150	€ 200	€ 300
IRR	=XIRR(I3:L3,I2:L2)			

MIRR

- To determine the modified internal rate of return(MIRR)
- =MIRR(<cash_flows> , <dates>)

	01/01/2022	01/01/2023	01/01/2024	01/01/2025
Cash Flow	(500)	€ 150	€ 200	€ 300
Borrowing Cost	5%			
Reinvestment	8%			
MIRR	10,B11,B12)			

PMT

- To determine the periodical payment given an interest rate, number of periods and an amount to repay
- =PMT(<rate>,<number of periods>, <present value>)

Interest rate per period	4.5%
Number of periods	30
PV	1,000,000
PMT	=PMT(I10,I11,I12)

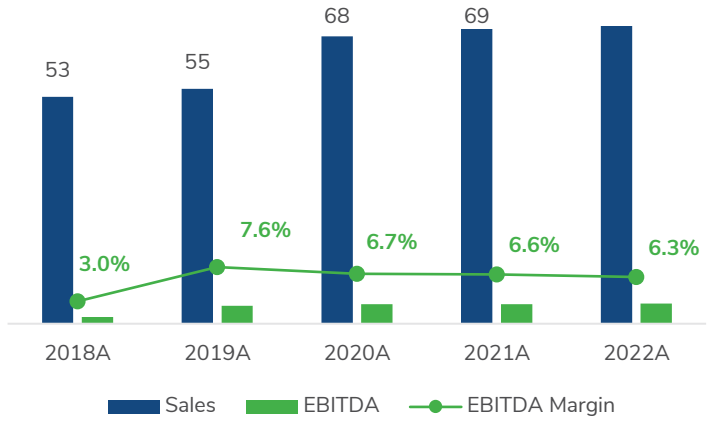
5 Real-Life Business Valuation Case

REWE GROUP

General Overview

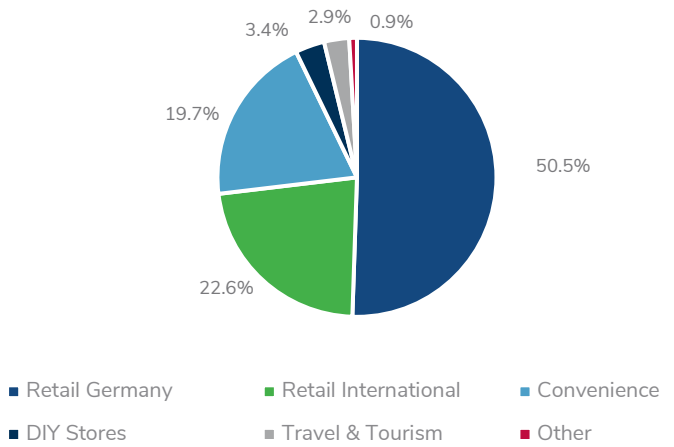
- Rewe Group is a German company founded in 1927 and headquartered in Cologne with more than 380,000 employees worldwide
- The group operates retail stores and provides travel and tourism services in Germany and internationally
- It operates through Retail Germany, Retail International, Convenience, DIY Store, Travel and Tourism, and Other segments
- The revenue in 2021 was mainly generated in the German and international retail segments

Key Financial Data (EUR mn)



Services

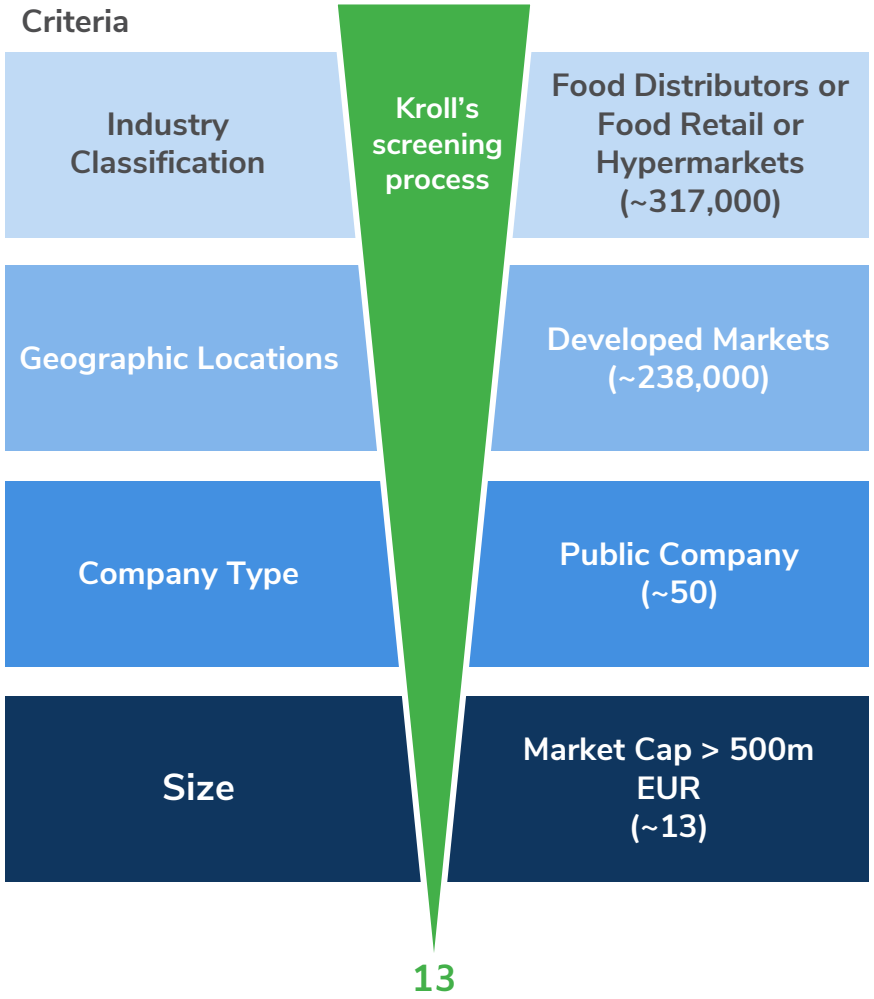
Revenue Split 2021



Sources: Rewe Group Annual Reports 2021 and 2022 and Capital IQ

Selecting the REWE Peer Group

Screening Approach



Some of REWE's Selected Peers

Peer	Country	Industry	Sales FY22 (EURm)	EBITDA Margin FY22
Ahold Delhaize	Netherlands	Food Retail	86,984	6.5%
Carrefour	France	Hypermarkets	82,893	4.5%
TESCO	UK	Food Retail	73,017	6.3%
Sainsbury's	UK	Food Retail	36,195	5.5%
Jerónimo Martins	Portugal	Food Retail	24,623	7.5%
Groupe Casino	France	Food Retail	33,623	7.8%
Axfood	Sweden	Food Retail	6,595	5.3%

Sources: Capital IQ

Market Approach

Comparable Public Companies Multiples - Selection

Company	Ticker	EURm Enterprise Value	LTM Revenue	FY+1 Revenue	FY+2 Revenue	LTM EBITDA	FY+1 EBITDA	FY+2 EBITDA	Market Cap
Koninklijke Ahold D	ENXTAM:AD	42,625	0.51x	0.5x	0.5x	7.80x	6.0x	5.9x	27,693
Tesco PLC	LSE:TSCO	31,307	0.42x	0.4x	0.4x	6.93x	6.5x	6.4x	20,480
Jerónimo Martins, S	ENXTLS:JMT	14,598	0.61x	0.6x	0.5x	12.05x	8.1x	7.5x	13,989
Carrefour SA	ENXTPA:CA	30,726	0.37x	0.4x	0.3x	8.27x	6.0x	5.8x	12,066
Dino Polska S.A.	WSE:DNP	8,158	2.20x	2.0x	1.5x	23.76x	20.7x	16.1x	7,197
Axfood AB (publ)	OM:AXFO	6,146	0.93x	0.9x	0.9x	17.73x	10.9x	10.4x	6,644
J Sainsbury plc	LSE:SBRY	12,913	0.37x	0.4x	0.4x	7.00x	5.3x	5.3x	5,416
Sonae, SGPS, S.A.	ENXTLS:SON	4,957	0.64x	0.7x	0.6x	8.94x	6.0x	6.9x	1,867
Ingles Markets, Incc	NasdaqGS:IMKT.A	2,037	0.37x	n/a	n/a	4.35x	n/a	n/a	1,731
Casino, Guichard-P	ENXTPA:CO	17,508	0.54x	0.5x	0.5x	9.90x	6.5x	5.9x	1,378
United Super Marke	TSE:3222	1,080	0.22x	0.2x	0.2x	7.19x	7.7x	7.0x	952
Distribuidora Intern	BME:DIA	1,768	0.27x	0.2x	0.2x	13.64x	3.8x	3.0x	760
Axial Retailing Inc.	TSE:8255	440	0.24x	0.2x	0.2x	4.05x	4.1x	4.0x	547

Total Peers	Enterprise Value	LTM Revenue	FY+1 Revenue	FY+2 Revenue	LTM EBITDA	FY+1 EBITDA	FY+2 EBITDA	EBITDA margin	Revenue growth FY / FY-1
Low	440	0.2x	0.2x	0.2x	4.0x	3.8x	3.0x	5.4%	-7.5%
First Quartile	2,037	0.4x	0.3x	0.3x	7.0x	5.8x	5.7x	5.3%	-1.8%
Median	**8,158**	**0.4x**	**0.4x**	**0.4x**	**8.3x**	**6.2x**	**6.2x**	5.1%	**7.5%**
Mean	**13,405**	**0.6x**	**0.6x**	**0.5x**	**10.1x**	**7.6x**	**7.0x**	5.9%	**8.7%**
Third Quartile	17,508	0.6x	0.6x	0.6x	12.1x	7.8x	7.2x	5.0%	11.9%
High	42,625	2.2x	2.0x	1.5x	23.8x	20.7x	16.1x	9.3%	37.1%

Total Peers	EBITDA margin	Revenue growth FY / FY-1
Low	5.4%	-7.5%
First Quartile	5.3%	-1.8%
Median	5.1%	**7.5%**
Mean	5.9%	**8.7%**
Third Quartile	5.0%	11.9%
High	9.3%	37.1%

- When doing comparable companies analysis it is important to look at growth and margins of the Subject company vs Peers
- In this case EBITDA margin of REWE is in line with peer average (**around 6%**) but its growth is somewhat **below the median of 7.5%**
- Therefore it make sense to use „conservative“ multiple ranges, e.g. first quartile to median

Sources: Capital IQ

Market Approach

Comparable Public Companies – How Do We Get the Equity Value?

$$EV = Equity\ Value + Debt - Cash + Preferred\ Stocks + Noncontrolling\ Interst$$

Selected Multiples		Selected Revenue Multiples			Selected EBITDA Multiples		
		First Quartile	Diff	Median	Median	Diff	Mean
	EV / LTM	0.4x	0.0x	0.4x	8.3x	1.9x	10.1x
	EV / FY+1	0.3x	0.1x	0.4x	6.2x	1.4x	7.6x
	EV / FY+2	0.3x	0.1x	0.4x	6.2x	0.9x	7.0x

Enterprise Value range, based on		Revenue Multiple			EBITDA Multiple		
		First Quartile	Diff	Median	Median	Diff	Mean
	EV / LTM	27,229	3,571	30,799	37,912	8,480	46,392
	EV / FY+1	25,629	9,578	35,206	28,493	6,407	34,899
	EV / FY+2	25,655	9,969	35,623	29,048	4,128	33,176

Technically it is "excess cash", i.e., cash that is not needed for business operations. In practice usually all cash of the balance sheet is added as a shortcut

Subject (EUR millions)				
Add: cash*	626	626	626	626
Substrat: debt	14,021	14,021	14,021	14,021

$$Equity\ Vale = EV + Cash - Debt$$

Equity Value range, based on		Revenue Multiple			EBITDA Multiple		
		First Quartile	Diff	Median	Median	Diff	Mean
	LTM	13,834	3,571	17,404	24,516	8,480	32,997
	FY+1	12,234	9,578	21,811	15,098	6,407	21,504
	FY+2	12,260	9,969	22,228	15,653	4,128	19,781

Sources: Capital IQ and Kroll Valuation Template

Market Approach
Transaction Multiples

Date	Target / Issuer	Buyers / Investors	Country	EV / EBITDA	EV / REVENUE	EV (EURm)
2021-11-10	ICA	AMF Pensionsforsakring AB; ICA handlarnas Forbund AB	Sweden	11.36x	0.95x	12,228
2021-08-19	Morrisons	Clayton, Dubilier & Rice, LLC	UK	14.22x	0.58x	12,009
2021-07-31	MC Sonae	CVC Advisers Ltd	Portugal	7.68x	0.78x	4,047
2020-11-20	euroethnic foods	PAI Partners SAS	Belgium, France, Luxembourg	12.50x	2.22x	1,000
2020-02-18	real-	SCP Group S.A.R.L; X+Bricks AG	Germany	n/a	0.14x	1,000
2020-06-08	Iceland	Existing Management	UK	6.62x	n/a	998
2021-08-06	Condis	Portobello Capital Gestion, SGECR, S.A.	Spain	7.35x	0.28x	250
2020-06-18	Netto Marken-Discount	Salling Group A/S	Poland	n/a	0.13x	202
2020-08-27	superSol	Carrefour SA	Spain	n/a	0.17x	78

All Transactions	Enterprise Value	Revenue Multiple	EBITDA Multiple	EBITDA Margin
Low	78	0.1x	6.6x	3.8%
First Quartile	250	0.2x	7.4x	4.1%
Median	**1,000**	**0.4x**	**9.5x**	**8.4%**
Mean	**3,535**	**0.7x**	**10.0x**	**8.8%**
Third Quartile	4,047	0.8x	12.2x	10.1%
High	12,228	2.2x	14.2x	17.8%

- In this case EBITDA margin of REWE (**around 6%**) is lower than median margin for Target companies, so it makes sense to use first quartile to median as a range for EBITDA multiple

Sources: Capital IQ and Kroll Valuation Template

Market Approach

Transactional Multiples – How Do We Get the Enterprise Value?

$$EV = Equity\ Value + Debt - Cash + Preferred\ Stocks + Noncontrolling\ Interst$$

Selected Multiples		Selected Revenue Multiples			Selected EBITDA Multiples		
		Median	Diff	Mean	First Quartile	Diff	Median
	EV / LTM	0.4x	0.2x	0.7x	7.4x	2.1X	9.5x

Subject (EUR millions)		Revenues		EBITDA	
EV / LTM	2021	75,550	75,550	4,746	4,746

Enterprise Value range, based on		Revenue Multiples			EBITDA Multiples		
		Median	Diff	Mean	First Quartile	Diff	Mean
	EV / LTM	32,626	17,065	49,691	35,282	9,893	45,175
Subject (EUR millions)							
Add: cash*		626	626		626		626
Substrat: debt		14,021	14,021		14,021		14,021

$$Equity\ Vale = EV + Cash - Debt$$

Equity Value range, based on		Revenue Multiples			EBITDA Multiples		
		Median	Diff	Mean	First Quartile	Diff	Median
		19,231	17,065	36,296	21,887	9,893	31,780

Sources: Capital IQ and Kroll Valuation Template

Cost of Capital

Weighted Average Cost of Capital for the Rewe Group

Primary Inputs and Key Assumptions

cost of equity = risk-free rate + market risk premium * beta + size premium

- In line with our internal Kroll Recommendation for the Eurozone, we consider a uniform **Risk-free Rate** of **3,0%** before personal income tax reductions to be reasonable
- For betas, it is important to check the statistical significance **(rule-of-thumb: T-test higher than 2)** and use only statistically significant betas in the analysis
- Regarding the market risk premium, in line with our internal Kroll recommendation for the Eurozone, a uniform **Equity Risk Premium** of **6,0%** before personal income tax reductions is deemed appropriate
- No size premium applied. As a rule-of-thumb, if revenue/market cap is in billions of USD/EUR – no need to worry about size premia. If smaller – googling "CRSP Size Premia" helps (Kroll also as a database of size premia, but it is not free of charge)
- Debt and Equity weights of 45% debt and 55% equity are based on the median ratio of the peer group

Capital Asset Pricing Model

Assumptions		Input
Currency		EUR
Risk Free Rate	R_f =	3.0%
Equity Risk Premium	ERP =	6.0%
Size Premium	RP_s =	0.0%
Debt as % of Total Capital	D =	45.0%
Equity as % of Total Capital	E =	55.0%

Calculations

Comparable Company	Credit Rating (if available)	Beta	Total Debt	Total Equity	Debt/ Equity	Debt/ Capital	Unlevered Beta
Axfood AB (publ)	-	0.38	628	5,559	11.3%	10.1%	0.34
Carrefour SA	BBB	0.50	19,283	14,143	136.3%	57.7%	0.21
Casino, Guichard-Perrachon S.A.	CCC+	0.70	14,892	4,304	346.0%	77.6%	0.16
Dino Polska S.A.	-	0.94	381	7,863	4.8%	4.6%	0.90
Ingles Markets, Incorporated	BB	0.51	588	1,714	34.3%	25.5%	0.38
J Sainsbury plc	NR	0.61	8,346	5,690	146.7%	59.5%	0.25
Jerónimo Martins, SGPS, S.A.	-	0.50	2,933	12,937	22.7%	18.5%	0.41
Koninklijke Ahold Delhaize N.V.	BBB	0.28	20,324	26,232	77.5%	43.7%	0.16
Sonae, SGPS, S.A.	-	1.05	2,722	2,267	120.1%	54.6%	0.48
Tesco PLC	BBB-	0.70	18,358	18,447	99.5%	49.9%	0.35

		Beta Range	
Relevered Beta Calculations		Median	Mean
Unlevered Beta		0.35	0.36
Debt/Equity		81.8%	81.8%
Relevered Beta	β =	0.63	0.66

- Base cost of debt on traded bonds of the company; if none, use peer rating and take market data for average yields for bonds with the same rating. Alternative: synthetic rating by using Damodaran data base

		Rounded		Concluded
Weighted Average Cost of Capital Calculations	Weight	Low	High	
Cost of Debt (Kd(pt) + CRP)*(1-t)	45.0%	3.6%	3.6%	
Cost of Equity (R_f + β*ERP + RP_s + CRP + A)	55.0%	6.8%	7.0%	
Cost of Capital	**100.0%**	**5.35%**	**5.45%**	5.45%

Sources: Capital IQ and Kroll research

Income Approach
Forecast and DCF Model

Key Assumptions

YoY growth 2022: average of the competitors for the last 5 years

Average percentage over the last 5 years

Average percentage over the last 5 years

Mid- Year Convention represents that a company's cash flow does not come 100% at the end of each year, but rather come more or less evenly spread over the year

		2023	2024	2025	2026	2027	2028	Terminal Year
Total Revenues		78,322	80,977	83,498	85,864	88,059	90,065	91,866
YoY growth (%)		6.6%	5.8%	5.1%	4.3%	3.5%	2.8%	2.0%
Cost of sales		(56,627)	(58,547)	(60,369)	(62,080)	(63,667)	(65,117)	(66,419)
Gross Profit		21,695	22,431	23,129	23,784	24,392	24,948	25,447
Personnel expenses		(9,099)	(9,407)	(9,700)	(9,975)	(10,230)	(10,463)	(10,672)
Total operating expenses		(8,031)	(8,304)	(8,562)	(8,805)	(9,030)	(9,236)	(9,420)
EBITDA adj.		4,565	4,720	4,866	5,004	5,132	5,249	5,354
% of revenues		5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%
Depreciation & Amortization		(3,227)	(3,337)	(3,440)	(3,538)	(3,628)	(3,711)	(3,785)
EBIT adj.		1,338	1,383	1,426	1,467	1,504	1,538	1,569
% of total sales		1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Income Tax	20.6%	(276)	(285)	(294)	(302)	(310)	(317)	(323)
Debt-free Net Income		1,062	1,098	1,132	1,164	1,194	1,221	1,246
% of total sales		1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
+ Depreciation		3,227	3,337	3,440	3,538	3,628	3,711	3,785
- Investment in NWC		219	240	227	213	198	181	162
- Capex		(4,550)	(4,422)	(4,295)	(4,167)	(4,040)	(3,913)	(3,785)
Free cash flow		(41)	252	505	748	980	1,201	1,408
Discount Period		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mid-Year Convention		0.50	1.50	2.50	3.50	4.50	5.50	6.50
Present Value Factor		0.97	0.92	0.88	0.83	0.79	0.75	0.71
PV of Free Cash Flow		-40	233	442	622	772	897	

Key Assumptions

YoY sales growth match the long term real GDP growth or inflation

Cost of sales as percentage of Total Revenue

For the Terminal Value, depreciation has to be equal or very close to Capex

Example:

$$1{,}201 * 1.00 * \frac{1}{(1 + 5.45\%)^{5.5}}$$

$$= 1{,}201 * 1.00 * 0.75 = 897$$

Income Approach
Value Conclusion

DCF Final Output (EUR m)

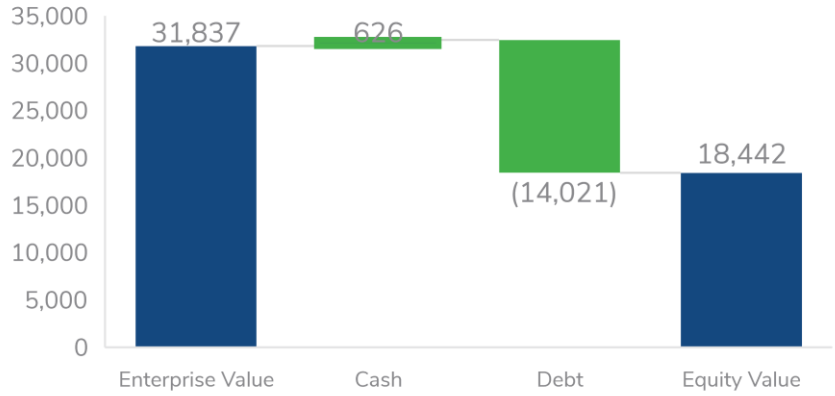
Terminal Value Calculation	
Discount Rate	5.5%
Long Term Growth Rate	2.0%
Cap Rate	3.5%
Terminal Value	40,820
Present Value Factor	0.71
PV of Terminal Value	**28,911**

Sum of Discrete Free Cash Flows	2,926
PV of Terminal Value	28,911
Enterprise Value (MEUR)	**31,837**

Equity Bridge	
+Cash	626
-Debt	(14,021)
Equity	**18,442**

Implied EV/LTM Revenue	**0.4x**
Implied EV/LTM EBITDA	**6.9x**

Equity Bridge (EUR m)



Sensitivity of Equity Value(EUR m)				
		WACC		
Long term growth rate		4.5%	5.0%	5.5%
	1.5%	11,836	8,371	5, 691
	2.0%	24,461	18,442	13,961
	2.5%	42,238	31,927	24,628

Football Field

Market Approach and Income Approach

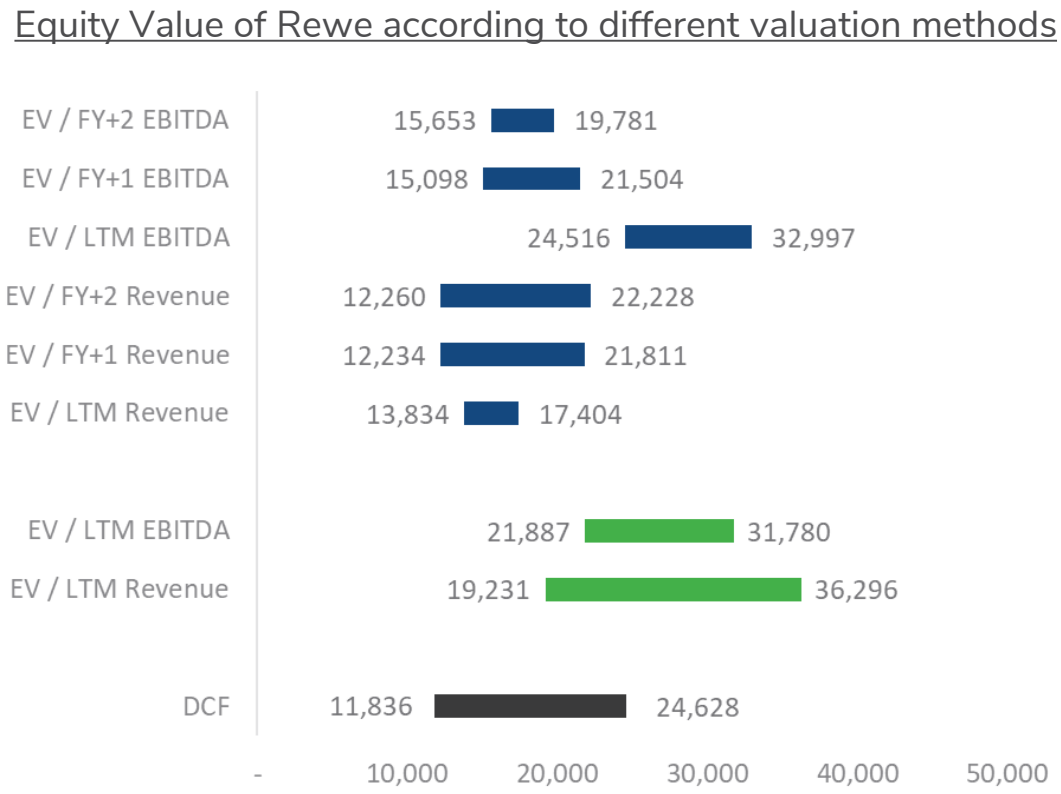
Over to you:

1 Which valuation Range would you conclude?

Trading Companies' Analysis

Transaction Multiples Analysis

DCF



Football Field

Market Approach and Income Approach

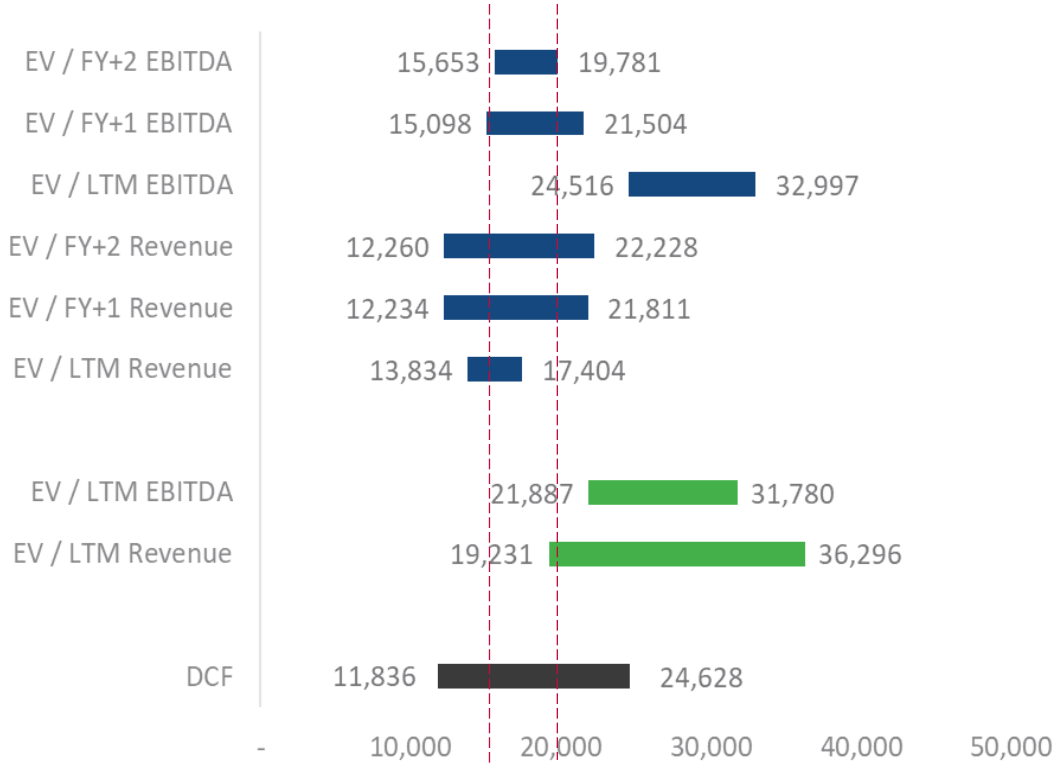
Equity Value of Rewe according to different valuation methods

Concluded Range: 15bn – 20bn

Trading Companies' Analysis

Transaction Multiples Analysis

DCF



6 Advanced Topics in Valuation

Special Topics

3 selected advanced/special aspects of valuations for you to get ahead

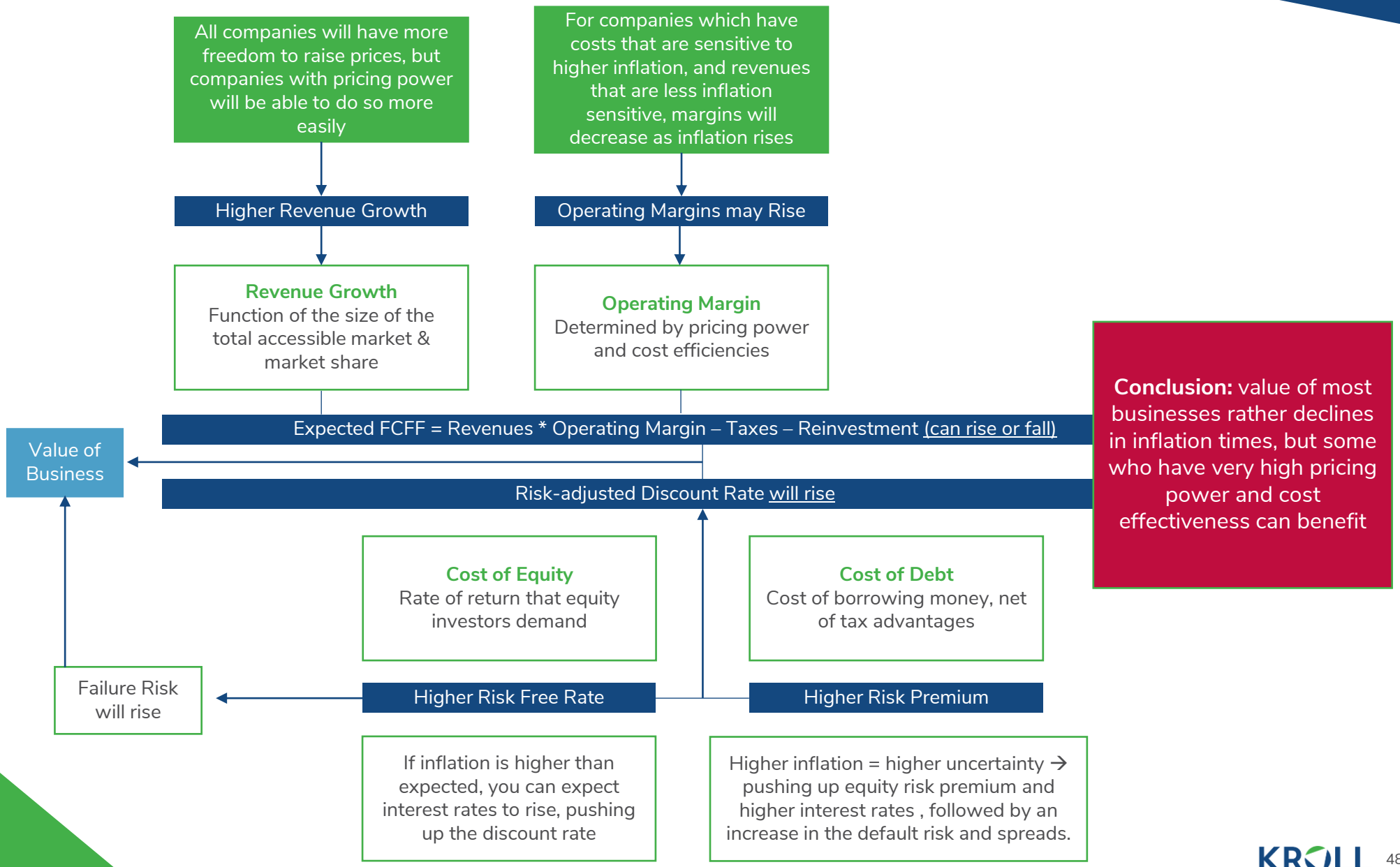
1. Inflation impact on valuations
2. Valuation of companies in risky countries
3. Peculiarities of German valuation standards

Valuation and Inflation

Over to you:

1. Does higher inflation increase or decrease company value in your view, and if so, why?
2. Does it affect all companies the same?

Valuation in Times of Inflation



Sources: adapted from A.Damodaran

Valuation of Companies in Risky Countries

Over to you:

1. How would you value a company based in Russia/Ukraine/Syria (or having operations in any very risky country) differently?

Valuation of Companies in Risky Countries

Country Risk Premium

The **country risk premium** reflects the additional risk of investing a specific country

When do we have to include it?

Include country risk premium when the risk of investing in that country cannot be diversified

How can we measure it?

1. If a country has USD/EUR-denominated government bonds – the risk can be measured by the spread of their yield versus US or German government bond yields
2. If a country has no USD/EUR bonds but has a credit rating (most countries have) – use average spread for the same rating
3. If a country has no rating – use Damodaran database (he has non-rated countries also)
4. CDS (credit default swap) market can also be used, but it is only available for a limited number of countries

How we introduce this in the CAPM?

$$Re = Rf + \beta * (Rm - Rf) + \text{Country Risk Premium}$$

What are the determinants of equity risks premiums?

- Political instability
- Nationalization risk
- Default probability
- Currency fluctuations
- Adverse government regulations

Country	Country Risk Premium
Syria	20.34%
Argentina	11.87%
Egypt	5.44%
Spain	1.58%
Germany	0.00%

Sources: A.Damodaran

Peculiarities of Valuation Standards in Germany

IDW S1 for German Valuations

Key point: **DCF is the key method, market approach only for plausibilisation.** Other points:

1. No normalization of the Risk-Free Rate
   Determined by taking into account the current interest rates as well as interest structure data published by the Deutsche Bundesbank
2. Pre-defined Market Risk Premium
   Current ranges of 6.0% to 8.0% (Neue Kapitalkostenempfehlungen des FAUB (idw.de)
3. No Size Premium or other additional premia in discount rate allowed (except for country risk)
4. Individual company risk is usually covered in cash flows
5. No „exit multiple“ approach allowed. Terminal value schedule is calculated using Gordon method

Selection of Useful Links for Valuation (1/2)

Category/Topic	Description	Link
Valuation Theory		
DCF	Getting familiar with the concept	https://www.youtube.com/watch?v=M8cuAJYYnTM
Comparables	Understanding concept and basic application	https://corporatefinanceinstitute.com/resources/knowledge/valuation/comparable-company-analysis/
Business Valuation in Germany	Overview of the peculiarities of German valuation market and standards	https://www.en.som.lmu.de/persons/emerprof/ballwieser/business-valuation-in-germany.pdf
Purchase Price Allocations	Overview	https://www.redwoodvaluation.com/everything-you-wanted-to-know-about-purchase-price-allocation/
Purchase Price Allocations	More detailed Guide – Intangible assets in a business combination	https://www.grantthornton.global/globalassets/1.-member-firms/global/insights/article-pdfs/2013/intangible-assets-in-a-business-combination-nov-2013.pdf
MS Office		
Excel	Basics – Crash Course	https://www.youtube.com/watch?v=kjoldYi7eH0
PowerPoint	Basics – Key Shortcuts	https://www.youtube.com/watch?v=A65mir76mXk
Database Tutorials		
Capital IQ	Overview of the platform	https://youtube.com/playlist?list=PLI3-0Xe_motRKcK8Dhmg89yQxwxM_IJhW
Mergermarket	Transaction search Example (from 18:40)	https://www.youtube.com/watch?v=klSu6ocokhk&ab_channel=WUTIS

Selection of Useful Links for Valuation (2/2)

Category/Topic	Description	Link
Data Useful for Valuation		
Damodaran Database	Extensive database of a broad range of useful data (we usually use industry betas and country risk premia)	https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html
Basiszinskurve	Risk-free rates compliant with German valuation standards, implied Equity Risk Premia	http://www.basiszinskurve.de/
Database Tutorials		
Valuation Lecture Notes	Valuation Lecture Notes - Damodaran	https://pages.stern.nyu.edu/~adamodar/New_Home_Page/eqlect.htm

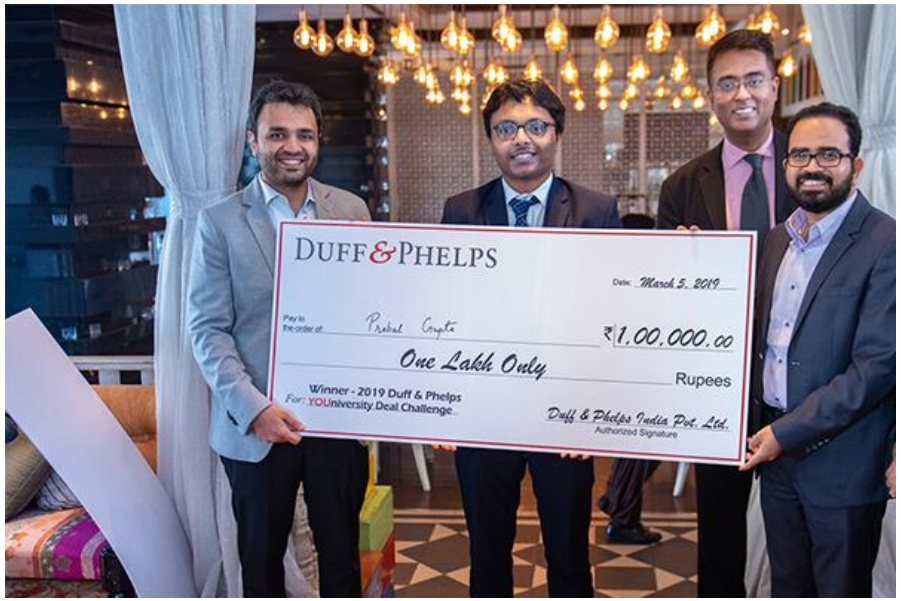
7 Your Opportunities at Kroll

Kroll One Team Challenge

About the competition

- Since 2010, The Duff & Phelps YOUniversity Deal Challenge engaged students from around the world to hone their financial and presentation skills
- With our expansion of services and the renaming of Duff & Phelps as Kroll, we are happy to announce the formation of the Kroll One Team Challenge!
- No longer only a financial competition, the bigger and better Kroll One Team Challenge will test students in areas of valuation, investigations, mergers and acquisitions, transaction opinions, restructuring, governance, and risk avoidance
- Finalist teams present their solution to a group of Kroll experts and nationally recognized professors
- All finalist team members win substantial scholarships
- In addition to scholarships, all regional winners will attend the international finals in London for the opportunity to double their scholarship awards and to compete internationally

How to participate



- Application usually starts in October and the event takes place in March
- For further information and event application, just visit the following website: https://careers.kroll.com/2021-Kroll-One-Team-Challenge
- For direct contact, just contact the following e-mail address: KrollOneTeamChallenge@kroll.com

Advantage through our Team Culture

Universities where we are constantly building a network of people and hiring people to fulfill the needs of our clients with excellence and integrity

Apply now for the Valuation Team in Frankfurt!

Your Profile

- Studying business administration / economics / mathematics / engineering
- Minimum internship length of 10 weeks (or 20 weeks for working students)
- Ideally, you have already gathered practical experience in a similar role
- Excellent English (written and spoken) and you are very familiar with MS-Office (Excel, PowerPoint, Word). German language not required but highly preferrable

Your Tasks

- Performance of in-depth research of capital markets, industries and competitors as well as analyses of target companies
- Conception and development of tailor-made analysis tools to support existing valuation models
- Performance of valuations on a wide range of entities using discounted earnings, discounted cash flow, market multiples
- Analysis of capital markets and assessment of cost of capital according to CAPM

Areas where valuation is required

Investment Banking ✓	Private Equity ✓
Consulting ✓	Venture Capital ✓
Asset Management ✓	Hedge Funds ✓
Sales & Trading ✓	Corporate Financial Management ✓

8 Networking Lounge