

Week 10 – Technical Review

Investment Banking Recruiting

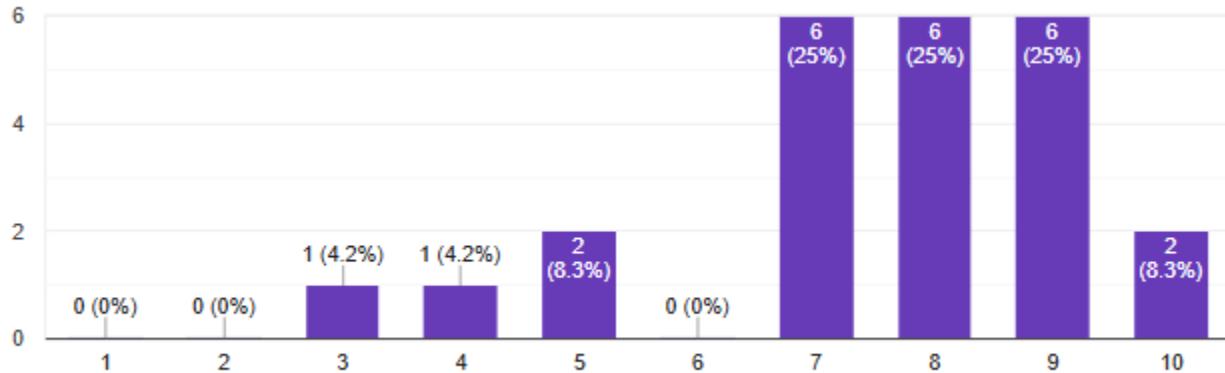
November 4, 2024



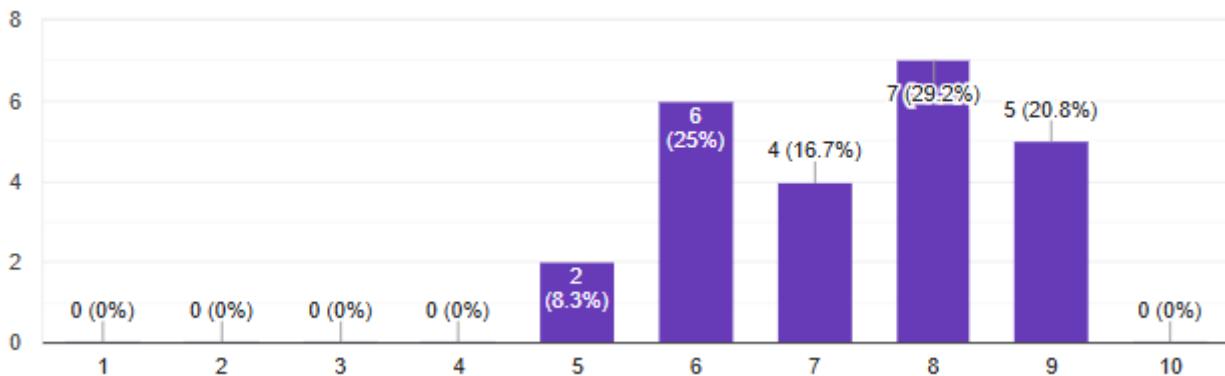
Class Sentiment – Technical Concepts

The students in the class have reported the following levels of comfort with the technical concepts that have been covered thus far in the course

General Idea of Investment Banking



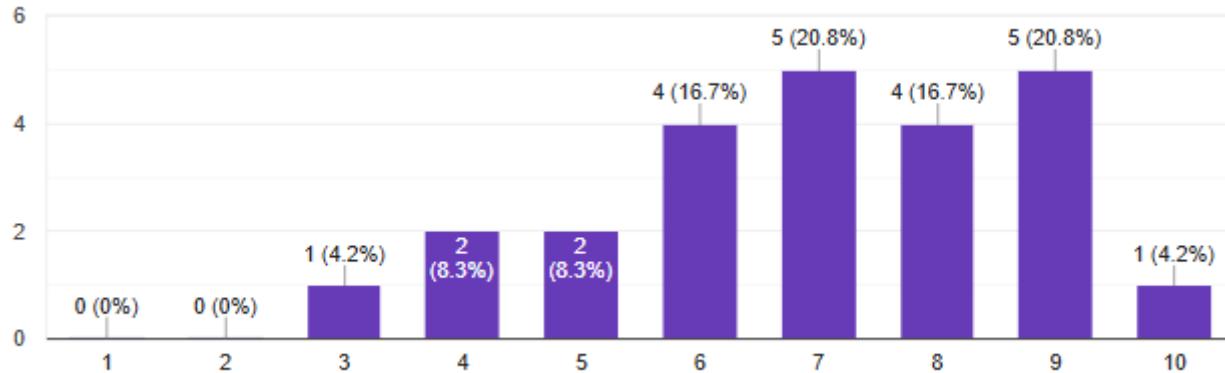
Financial Accounting



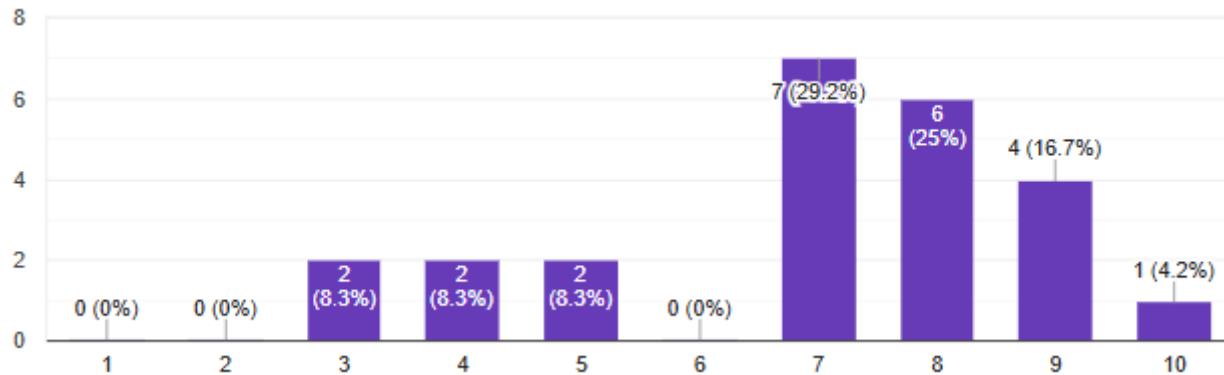
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Enterprise and Equity Value



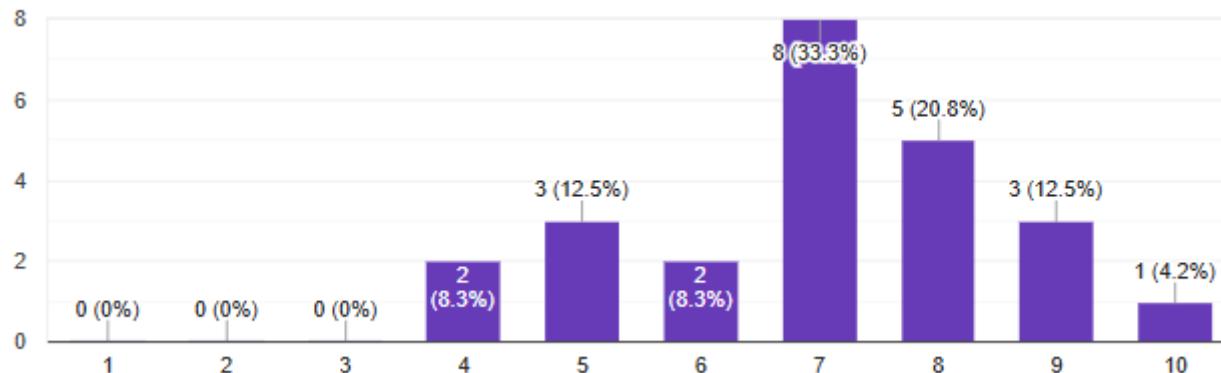
Relative Valuation



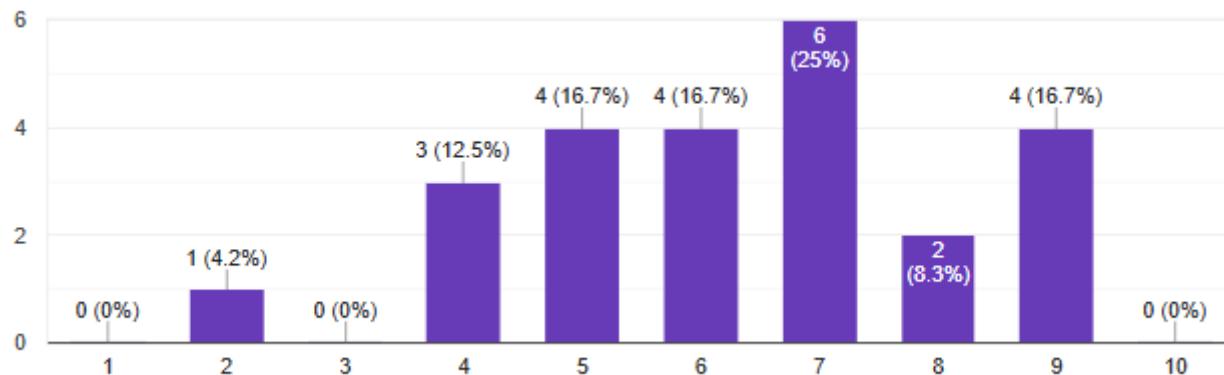
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Intrinsic Valuation



Leveraged Buyouts



Expanding office hours as a result



Please meet especially to work on story and behaviorals



Assignment for this week

Instructions - Operating Model

This operating model will be used for the relative valuation, the DCF, and the leveraged buyout. After having used the given assumptions to complete this section, simply link the operating model to the following sections in the appropriate places to save yourself from doing extra work.

All numbers are in millions.

LTM Rev	\$100.00
Sales Growth	5% <-YoY Increase in Sales
LTM Gross Profit	\$60.00
Gross Profit	2% <-YoY Increase in Gross Profit
SG&A	20% <- Percent of Sales
D&A	5% <- Percent of Sales
NWC	4% <-Increase every year, not an operating balance, percentage of sales
Capex	4% <-Increase every year, not an operating balance, percentage of sales
Debt	\$30.00
Excess Cash	\$5.00
Share Count	10

Operating Income Statement

Year	2024 A	2025 PF	2026 PF	2027 PF	2028 PF	2029 PF	2030 PF
------	--------	---------	---------	---------	---------	---------	---------

Rev

Growth %

COGS

Gross Profit
Gross Margin

SG&A

EBITDA
EBITDA Margin

DA

EBIT

Cash Flow Items

Year	2024 A	2025 PF	2026 PF	2027 PF	2028 PF	2029 PF	2030 PF
------	--------	---------	---------	---------	---------	---------	---------

D&A

Increase in NWC

Capex

Balance Sheet Information

Debt
Excess Cash

Share Count

Page 1

Instructions - Valuation by Multiples

Value Jimmer's T Shirts using the multiple method.
Assume the model is created at the end of 2024.

Use the operating model to fill in the LTM financial information - because earnings were not included therein assume LTM earnings of \$10M

Information for the relevant public comps is given and in blue. Now fill in the multiples using the given information. All numbers in millions USD.

After filling in the multiples using the given information, use the financial data from the last twelve months to value the firm on an enterprise and equity value basis.

Once you have valued the entirety of the firm, determine an implied share price. Assume the firm currently has \$30M in Debt, \$5 M in Cash, and 10,000,000 shares outstanding.

Comp Universe - Jimmer's T Shirts

Firm Name	EV	Equity Value	Financial Information				EV/Rev	Multiples	
			LTM Rev	LTM EBITDA	LTM EBIT	LTM Earnings		EV/EBITDA	P/E
NKE	\$117,304	\$106,072	\$50,002	\$7,201	\$6,385	\$5,301			
LULU	\$23,042	\$23,193	\$3,989	\$2,700	\$2,200	\$1,832			
RIL	\$13,517	\$12,596	\$6,647	\$1,036	\$811	\$692			
TJX	\$135,696	\$123,295	\$55,623	\$7,125	\$6,099	\$4,763			
VFC	\$15,209	\$8,323	\$10,093	\$787	\$479	(\$667)			
HBI	\$5,872	\$2,535	\$5,491	\$529	\$427	(\$238)			
LEVI	\$8,371	\$6,698	\$6,157	\$757	\$576	\$155			
UAA	\$4,142	\$3,684	\$5,568	\$362	\$221	(\$83)			
COLM	\$4,912	\$4,866	\$3,332	\$398	\$271	\$214			
ANF	\$7,182	\$7,015	\$4,664	\$817	\$671	\$501			

25th Percentile

Median

75th Percentile

Jimmer T Shirts LTM Financial Info

Rev

Growth %

COGS

Gross Profit
Gross Margin

SG&A

EBITDA
EBITDA Margin

DA

EBIT

Interest

EBT

Taxes

Net Income

Page 1

Jimmer T Shirts Firm Valuation

EV/Rev	EV/EBITDA	EV/EBIT	P/E
--------	-----------	---------	-----

25th Percentile

Median

75th Percentile

Jimmer T Shirts Implied Share Price Valuation

EV/Rev	EV/EBITDA	EV/EBIT	P/E
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25th Percentile

Median

75th Percentile



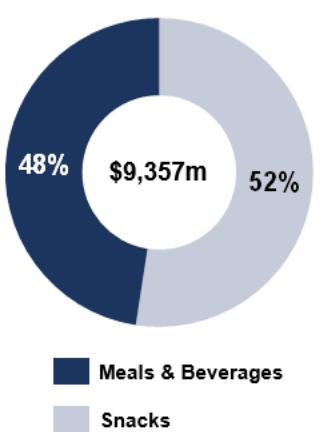
This is great practice





Campbell Soup Company snapshot

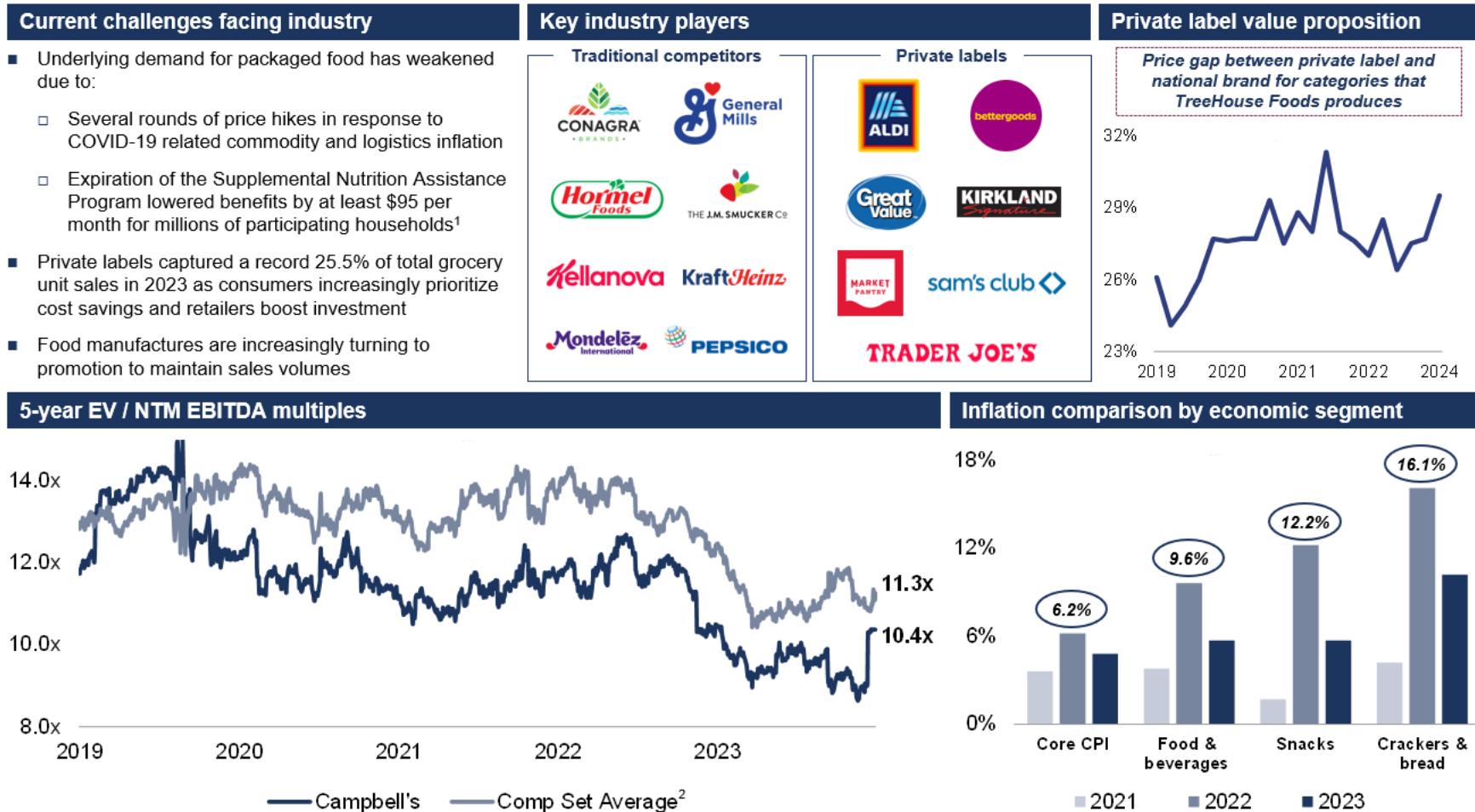
Leading American manufacturer of highly-recognized snack, meal and beverage products

Company description		Campbell's brands		Key metrics																																																																																											
				2024E	2025E																																																																																										
Campbell Soup Company is the manufacturer and marketer of high-quality, branded food and beverage products		Meals & Beverages          Snacks         		Multiples EV / Sales 2.2x 2.0x EV / EBITDA 12.1x 11.4x Net debt / EBITDA 3.8x 3.5x P / E 15.3x 14.5x																																																																																											
<ul style="list-style-type: none"> Product segments: Meals and Beverages: soup, simple meals and beverages products sold in retail and foodservice in the U.S. and all segments of Canada Snacks: snacking products sold in retail in the U.S. and all segments of Latin America 		Margins EBITDA 19.2% 19.3% EBIT 15.1% 15.3% Net Income 9.5% 9.2%		Historical and projected financials																																																																																											
<table border="1"> <thead> <tr> <th>(\$m, except EPS)</th><th>FY2022</th><th>FY2023</th><th>FY2024E</th><th>FY2025E</th><th>FY2026E</th></tr> </thead> <tbody> <tr> <td>Revenue</td><td>\$8,562</td><td>\$9,357</td><td>\$9,662</td><td>\$10,540</td><td>\$10,637</td></tr> <tr> <td>% growth</td><td>1.0%</td><td>9.3%</td><td>3.3%</td><td>9.1%</td><td>0.9%</td></tr> <tr> <td>Adjusted EBITDA</td><td>1,634</td><td>1,753</td><td>1,853</td><td>2,031</td><td>2,091</td></tr> <tr> <td>% margin</td><td>19.1%</td><td>18.7%</td><td>19.2%</td><td>19.3%</td><td>19.7%</td></tr> <tr> <td>(-) D&A</td><td>(337)</td><td>(387)</td><td>(391)</td><td>(417)</td><td>(413)</td></tr> <tr> <td>Operating Income</td><td>1,297</td><td>1,367</td><td>1,458</td><td>1,608</td><td>1,666</td></tr> <tr> <td>% margin</td><td>15.1%</td><td>14.6%</td><td>15.1%</td><td>15.3%</td><td>15.7%</td></tr> <tr> <td>Capex</td><td>(242)</td><td>(370)</td><td>(492)</td><td>(488)</td><td>(494)</td></tr> <tr> <td>% of revenue</td><td>2.8%</td><td>4.0%</td><td>5.1%</td><td>4.6%</td><td>4.6%</td></tr> <tr> <td>FCF (EBITDA - CapEx)</td><td>1,392</td><td>1,383</td><td>1,361</td><td>1,543</td><td>1,597</td></tr> <tr> <td>% conversion</td><td>85.2%</td><td>78.9%</td><td>73.5%</td><td>76.0%</td><td>76.4%</td></tr> <tr> <td>Net Income</td><td>861</td><td>903</td><td>921</td><td>968</td><td>1,022</td></tr> <tr> <td>% margin</td><td>10.1%</td><td>9.7%</td><td>9.5%</td><td>9.2%</td><td>9.6%</td></tr> <tr> <td>EPS Non GAAP (diluted)</td><td>\$2.85</td><td>\$3.00</td><td>\$3.08</td><td>\$3.22</td><td>\$3.44</td></tr> </tbody> </table>		(\$m, except EPS)	FY2022	FY2023	FY2024E	FY2025E	FY2026E	Revenue	\$8,562	\$9,357	\$9,662	\$10,540	\$10,637	% growth	1.0%	9.3%	3.3%	9.1%	0.9%	Adjusted EBITDA	1,634	1,753	1,853	2,031	2,091	% margin	19.1%	18.7%	19.2%	19.3%	19.7%	(-) D&A	(337)	(387)	(391)	(417)	(413)	Operating Income	1,297	1,367	1,458	1,608	1,666	% margin	15.1%	14.6%	15.1%	15.3%	15.7%	Capex	(242)	(370)	(492)	(488)	(494)	% of revenue	2.8%	4.0%	5.1%	4.6%	4.6%	FCF (EBITDA - CapEx)	1,392	1,383	1,361	1,543	1,597	% conversion	85.2%	78.9%	73.5%	76.0%	76.4%	Net Income	861	903	921	968	1,022	% margin	10.1%	9.7%	9.5%	9.2%	9.6%	EPS Non GAAP (diluted)	\$2.85	\$3.00	\$3.08	\$3.22	\$3.44	FY2023 revenue breakdowns 		Cap table (\$m, except share price)	
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				Share price as of 7/24/24 \$46.47 % of 52 week high 96% Shares outstanding (m) 299 Equity value \$13,875 (+/-) Debt 7,179 (-) Cash (107) Net debt \$7,074 Enterprise Value \$20,949																																																																																											



Industry overview

Food makers face a prolonged post-pandemic downturn as consumer demand shows weakness



Source: FactSet as of 7/24/24, TreeHouse Foods, Retail Dive, U.S. Bureau of Labor Statistics

Notes:

1. Figure to a study from the Center on Budget and Policy Priorities

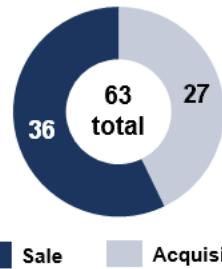
2. Comp set average includes Conagra, General Mills, Hormel Foods, J.M. Smucker and Kellanova



Campbell's benchmarked 2-year share price performance

Extended downturn as inflation and the end of pandemic-era benefits dampen sales volumes

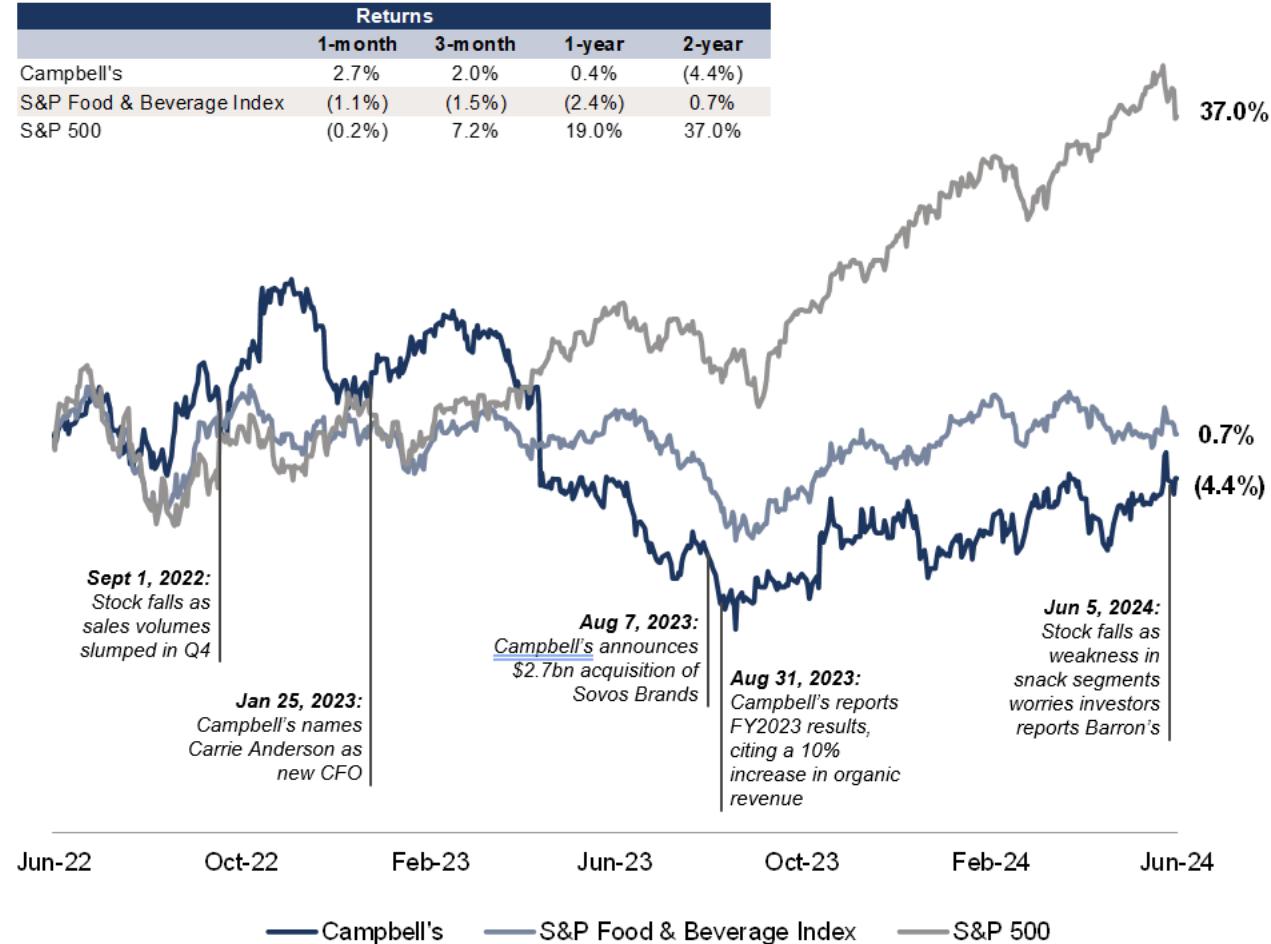
Transaction Metrics (since 1992)	
	(\$m)
Total transaction value ¹	\$20,474
Average transaction value	\$325



	Returns			
	1-month	3-month	1-year	2-year
Campbell's	2.7%	2.0%	0.4%	(4.4%)
S&P Food & Beverage Index	(1.1%)	(1.5%)	(2.4%)	0.7%
S&P 500	(0.2%)	7.2%	19.0%	37.0%

Recent acquisition / sale history

- Aug '23: Acquired Sovos Brands for \$2.7bn in all-cash deal
- May '23: Sold Emerald Nuts to Flagstone Foods, a segment that earned \$66m in revenue in 2022
- Mar '21: Sold Plum baby food and snacks for \$101m to Sun-Maid Growers of California
- Jan '21: Sold New Jersey based Ecce Panis to Jimmy's Cookies
- Sep '19: Sold European Chips Business to Valeo Foods for \$80m
- Aug '19: Sold all international operations to KKR for \$2.2bn



Source: Company filings, FactSet as of 7/24/24, WSJ

Notes:

1. 35 out of 63 transactions have disclosed purchase prices, used in calculating totals and averages



Trading comparables

Campbell's trading multiples are nearing 5-year lows, closely aligned with industry peers

Trading comparables summary

Company Name	Share price		Valuation (\$b)		EBITDA		EV / EBITDA		Price / Earnings	
	7/24/2024	% 52-wk	Market Cap	EV	% margin	LTM EBITDA	2024E	LTM	NTM	
General Mills	\$65.51	84%	\$36.7	\$49.4	21.2%	11.8x	11.9x	15.2x	14.5x	
Kellanova	57.23	84%	19.8	25.6	15.2%	10.7x	11.5x	20.8x	15.8x	
CONAGRA BRANDS	29.86	89%	14.3	22.9	19.4%	9.8x	9.8x	14.0x	14.8x	
THE J.M. SMUCKER CO.	116.78	76%	12.5	20.3	23.0%	10.7x	10.0x	16.4x	11.7x	
Hormel Foods	31.51	76%	17.3	18.9	10.9%	14.3x	13.1x	21.8x	19.5x	
Average					17.8%	11.6x	11.0x	17.4x	15.3x	
Median					19.4%	10.7x	10.0x	16.4x	14.8x	
Campbell's	\$46.47	96%	\$13.9	\$21.0	18.7%	12.5x	10.9x	16.3x	14.8x	

Sources: Bamsec, FactSet as of 7/24/24



DCF valuation

DCF supports ~\$24.9bn valuation or 12.1x+ 2025E EBITDA, ~28% above public market pricing

DCF valuation (\$m)								Commentary
	2023A	2024E	2025E	2026E	2027E	2028E	2029E	Terminal
Revenue	9,473	10,040	10,579	10,737	11,021	11,214	11,410	11,410
% growth	6.5%	6.0%	5.4%	1.5%	2.6%	1.7%	1.7%	
Adj. EBITDA	1,793	1,929	2,056	2,099	2,135	2,164	2,202	2,202
% margin	18.9%	19.2%	19.4%	19.6%	19.4%	19.3%	19.3%	
Less: D&A	(407)	(423)	(427)	(428)	(449)	(457)		
% of revenue	4.1%	4.0%	4.0%	3.9%	4.0%	4.0%		
EBIT	1,522	1,632	1,672	1,707	1,715	1,745		
(-) Cash taxes	365	392	401	410	412	419		
NOPAT	1,157	1,241	1,271	1,297	1,303	1,326	\$1,326	
(+) D&A	407	423	427	428	449	457		
(-) Capital expenditures	(491)	(490)	(502)	(496)	(519)	(528)		
(-) Changes in working capital	32	(95)	127	2	2	2		
UFCF	482	1,078	1,322	1,231	1,235	1,257	1,257	
Discount factor	0.99	0.95	0.90	0.85	0.81	0.76	0.76	
PV of cash flow	476	1,025	1,190	1,049	997	960		
Enterprise value build (\$bn) – Exit multiple								
Cumulative discounted UFCF	\$5.7							
Terminal year EBITDA	\$2.2							
<i>Exit multiple</i>	10.7x							
Terminal value	\$23.7							
<i>Implied terminal growth rate</i>	0.3%							
(x) Discount factor	0.76x							
Discounted terminal value	\$18.1							
DCF enterprise value	\$23.8							
(-) Net debt	7.1							
Equity Value	\$16.7							
Diluted shares outstanding (m)	299							
Implied Share Price	\$55.90							
Premium / (discount) as of 7/24/24	21.3%							
Enterprise value build (\$bn) - GGM								
Cumulative discounted UFCF	\$5.7							
Terminal year UFCF	\$2.2							
<i>Terminal year growth rate</i>	0.7%							
Terminal value	\$26.1							
<i>Implied exit EV/EBITDA multiple</i>	11.8x							
(x) Discount factor	0.76x							
Discounted terminal value	\$19.9							
DCF enterprise value	\$25.6							
(-) Net debt	7.1							
Equity Value	\$18.6							
Diluted shares outstanding	299							
Implied Share Price	\$62.14							
Premium / (discount) as of 7/24/24	34.8%							

Source: Bloomberg, Company filings, FactSet as of 7/24/24

Notes:

1. Comp set average includes Conagra, General Mills, Hormel Foods, J.M. Smucker and Kellanova



Campbell's evolving M&A strategy

After strong pre-2000's performance, the company has struggled to sustain growth, relying on various M&A strategies with inconsistent outcomes

Pre-2000 success & shift towards M&A

- Company achieved significant success in the decades preceding the 2000s, primarily driven by legacy soup segment
- As consumer preferences shifted and soup segment stagnated, the company pursued acquisitions to stimulate growth
- International expansion and health-oriented brands yielded mixed success
- Recent investor materials affirm North America as the exclusive geography and snack segment as the key growth driver going forward



Strategy	Rationale	Acquisitions	Results
1992-2011 Expand internationally	<ul style="list-style-type: none"> Drive expansion beyond crowded U.S. markets Capitalize on established supply chain to dominate emerging markets 	   	<ul style="list-style-type: none"> Sold off its UK / Ireland holdings in 2006 for \$847m Sold off all existing international operations to KKR in 2019 for \$2.2b
2012-2019 Acquire fresh and refrigerated food brands	<ul style="list-style-type: none"> Cater to the rising demand for healthy alternatives Broaden snack & beverage portfolio, dominated by "indulgent" offerings 	  	<ul style="list-style-type: none"> After \$1.55bn purchase of Bolthouse Farms, sold for \$510m in 2019 Plum organics was sold for \$101m in 2021 to Sun-Maid Growers of California
2017-present Stabilize meals and beverages & build snacks into growth driver	<ul style="list-style-type: none"> U.S. snack market growing faster than meals & beverages Meals & beverages segment required stabilization after years of revenue stagnation 	  	<ul style="list-style-type: none"> \$6.0 billion Snyder's-Lance acquisition reaffirms commitment to snack segment \$2.7 billion Sovos Brands acquisition bolsters Meals & Beverages as a stable contributor

Source: Company filings, FactSet as of 7/24/24, Food Institute

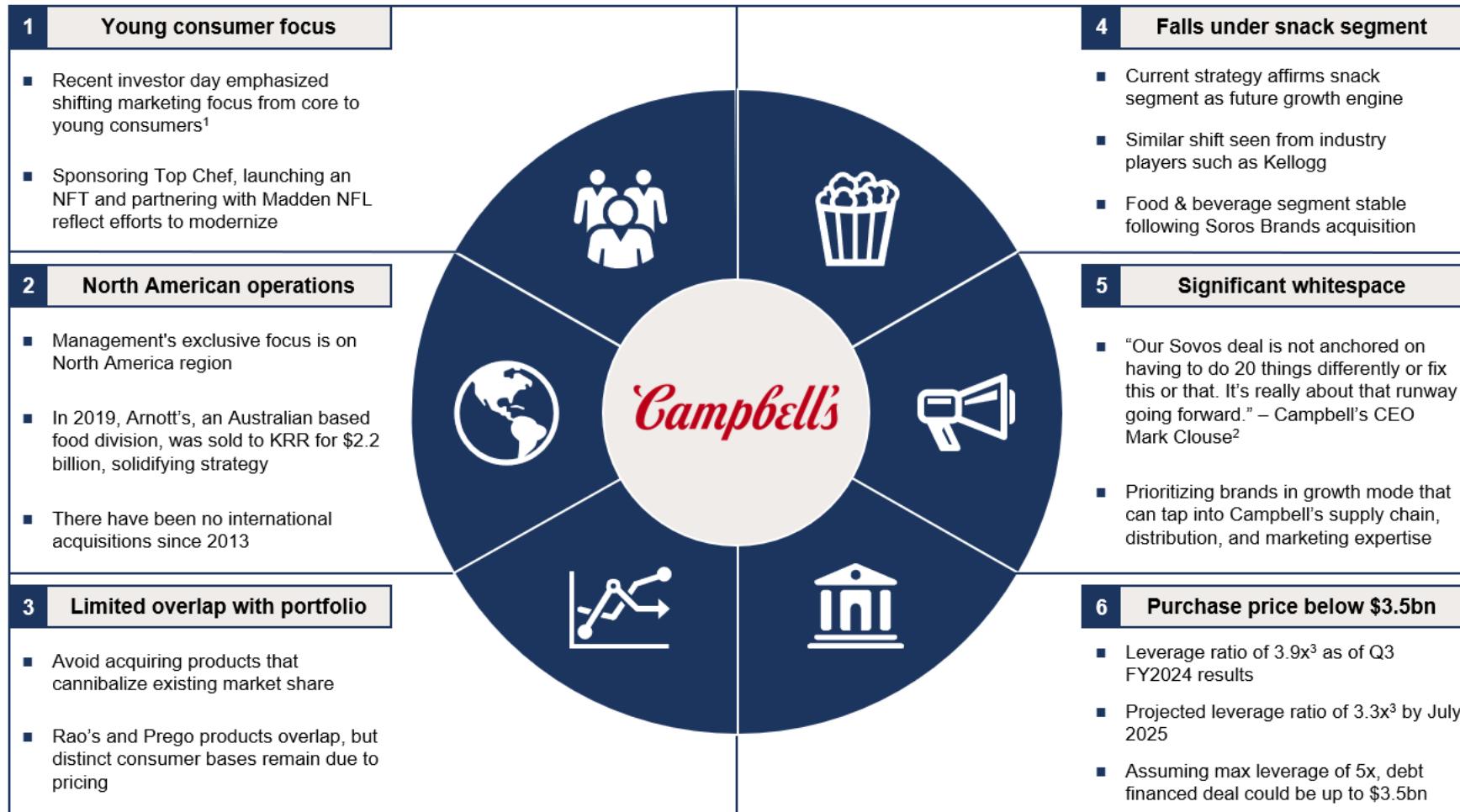
Notes:

1. CAGR non-inclusive of dividends



Acquisition criteria

Recent M&A activity and corporate disclosures outline criteria for ideal acquisition target



Source: Company filings, FactSet as of 7/24/24, Investor Presentation, Yahoo Finance, WSJ

Notes:

1. Investor day presentation released Dec 14, 2021

2. Aug 10, 2023 interview with Yahoo Finance

3. Calculated as Net Debt / TTM Adjusted EBITDA



Potential acquisition target: Chomps

Chomps would reinforce Campbell's strategy to drive growth through its snack segment

Company description	Revenue Growth (\$m)	Strategic rationale																		
CHOMPS <ul style="list-style-type: none"> In 2022, the company received \$80m as part of a minority investment from PE firm Stride Consumer Partners 2022 funding round valued the business at approx. \$200-300m, according to CEO Peter Maldonado Products are sold online and in over 18,000 stores, including Walmart, Trader Joe's and Whole Foods HQ: Naples, FL Employees: 78 	<p>Select products</p> <p>Revenue Growth (\$m)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Revenue (\$m)</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>\$45</td> </tr> <tr> <td>2021</td> <td>\$75</td> </tr> <tr> <td>2022</td> <td>\$100</td> </tr> <tr> <td>2023</td> <td>\$245</td> </tr> <tr> <td>2024E¹</td> <td>\$500</td> </tr> </tbody> </table>	Year	Revenue (\$m)	2020	\$45	2021	\$75	2022	\$100	2023	\$245	2024E ¹	\$500	<p>Future runway</p> <ul style="list-style-type: none"> Chomps' 3% market share of U.S. meat snacks segment presents ample expansion opportunity <p>Minimized product overlap</p> <ul style="list-style-type: none"> Chomps complements Campbell's existing portfolio without direct overlap <p>Enhanced reach</p> <ul style="list-style-type: none"> Campbell's advanced distribution network will enhance Chomps' availability and visibility <p>Durable target consumer</p> <ul style="list-style-type: none"> Chomps' pricing targets a resilient consumer, offsetting recent snack brand weaknesses <p>Market trends</p> <ul style="list-style-type: none"> Rising demand for high-protein, portable snacks presents a strategic growth opportunity for Campbell's 						
Year	Revenue (\$m)																			
2020	\$45																			
2021	\$75																			
2022	\$100																			
2023	\$245																			
2024E ¹	\$500																			
Major competitors	Highly illustrative deal value (\$m) & funding method																			
<table border="1"> <thead> <tr> <th>Brand</th> <th>Ownership</th> <th>Est. EV / Rev multiples³</th> </tr> </thead> <tbody> <tr> <td>DUKE'S</td> <td>CONAGRA BRANDS</td> <td>2.2x</td> </tr> <tr> <td>JACKLINKS</td> <td>Family-owned</td> <td>2.5x</td> </tr> <tr> <td>KRAVE JERKY</td> <td>THE HERSHEY COMPANY</td> <td>2.0x</td> </tr> <tr> <td>SLIM JIM</td> <td>CONAGRA BRANDS</td> <td>3.0x</td> </tr> <tr> <td>TILLAMOOK COUNTRY SMOKERY</td> <td>INSIGNIA CAPITAL GROUP</td> <td></td> </tr> </tbody> </table>	Brand	Ownership	Est. EV / Rev multiples ³	DUKE'S	CONAGRA BRANDS	2.2x	JACKLINKS	Family-owned	2.5x	KRAVE JERKY	THE HERSHEY COMPANY	2.0x	SLIM JIM	CONAGRA BRANDS	3.0x	TILLAMOOK COUNTRY SMOKERY	INSIGNIA CAPITAL GROUP		<p>Estimated deal value (\$m)²: \$590m</p> <p>Financing method: Debt</p> <ul style="list-style-type: none"> Preferable given Campbell's P/E near 5-year low <p>Leverage pre-transaction: 3.3x</p> <p>Leverage post-transaction: 3.5x</p> <p>Potential synergies: estimated \$7-10m of cost synergies³</p>	
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TILLAMOOK COUNTRY SMOKERY	INSIGNIA CAPITAL GROUP																			

Source: Bloomberg, Brainy Insights, CNBC, Company filings, FactSet as of 7/24/24, NIQ
Notes:

1. Estimate according to Chomps management

2. Calculated as average of both midpoints

3. Calculated as a diluted % of synergies reported in 2024 Sovos Brand acquisition

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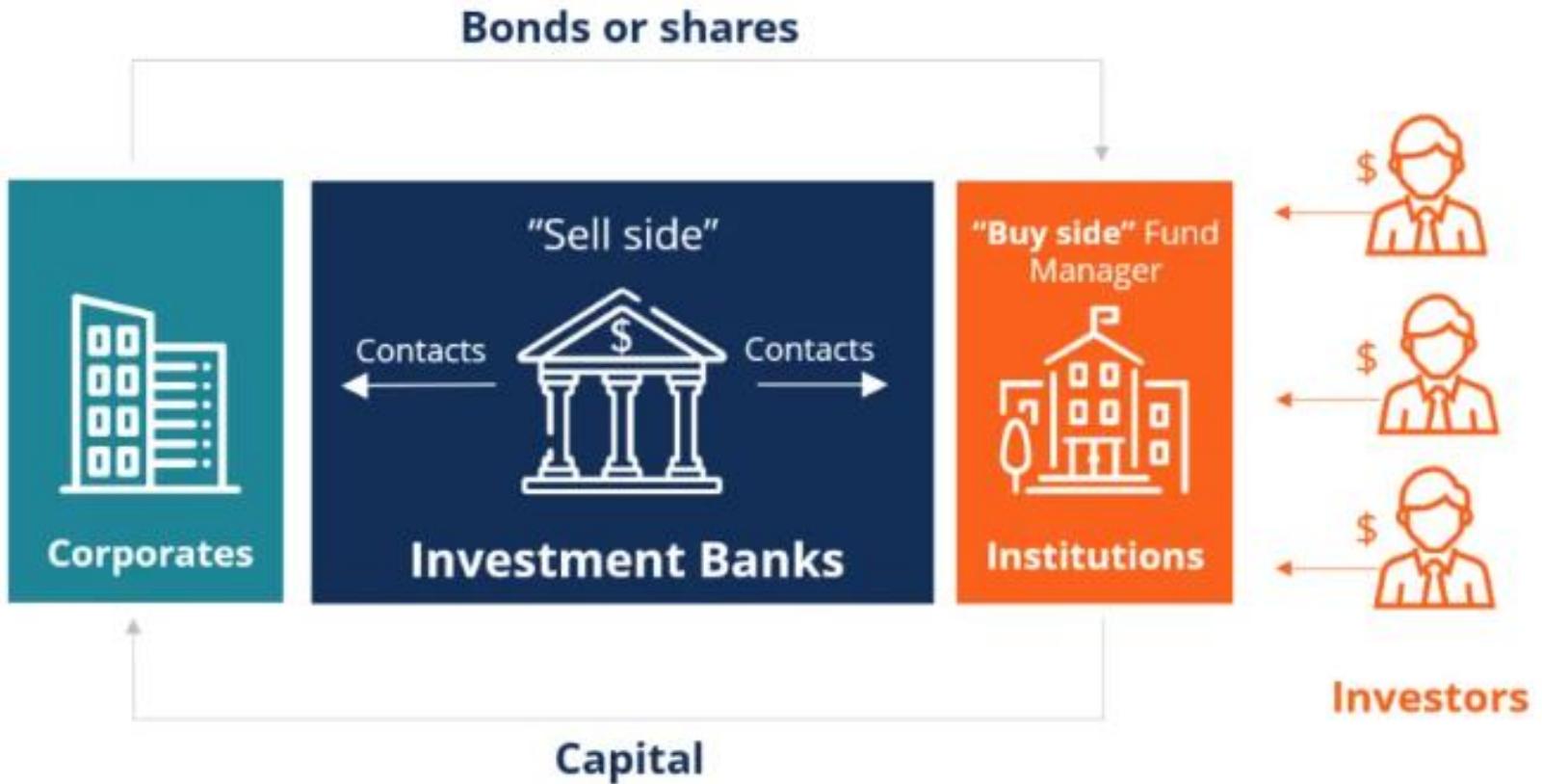
EV & Equity Value

Valuation – Intrinsic and Relative

LBO



Role of an Investment Bank



Role of Investment Banking Analyst

An investment banking analyst supports senior bankers in strategic financial decisions by performing financial modeling, data analysis, and research to assist in M&A, IPOs, and capital-raising activities

Skill	Description
Financial Modeling & Valuation	Build and maintain financial models to evaluate companies' financial performance and project future outcomes; Perform valuations using various methods (DCF, comparable company analysis, precedent transactions) to determine a company's worth.
Pitchbook Creation	Create presentations and pitch materials to attract clients and outline potential deal structures and opportunities – most of your time creating pitchbooks will be spent in PowerPoint creating original content and making revisions per feedback from seniors
Industry Research & Due Diligence	Conduct in-depth research on market trends, industry outlooks, and competitors to inform strategic advice; Assist in reviewing financial documents and verifying data accuracy during the due diligence process in deals
Transaction Support	Support on live transactions, including tracking deal progress, updating models, and coordinating with various stakeholders.
Other	Note taking, data scrubbing, updating comp sets, checking emails, or any task sent your way by a more senior banker

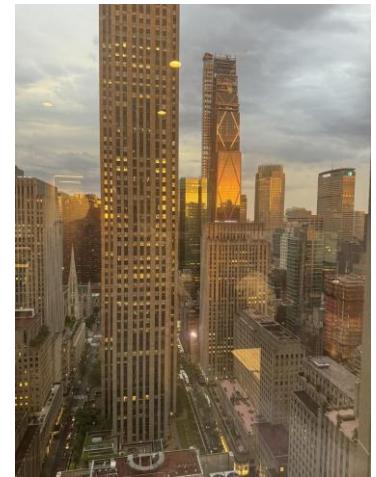
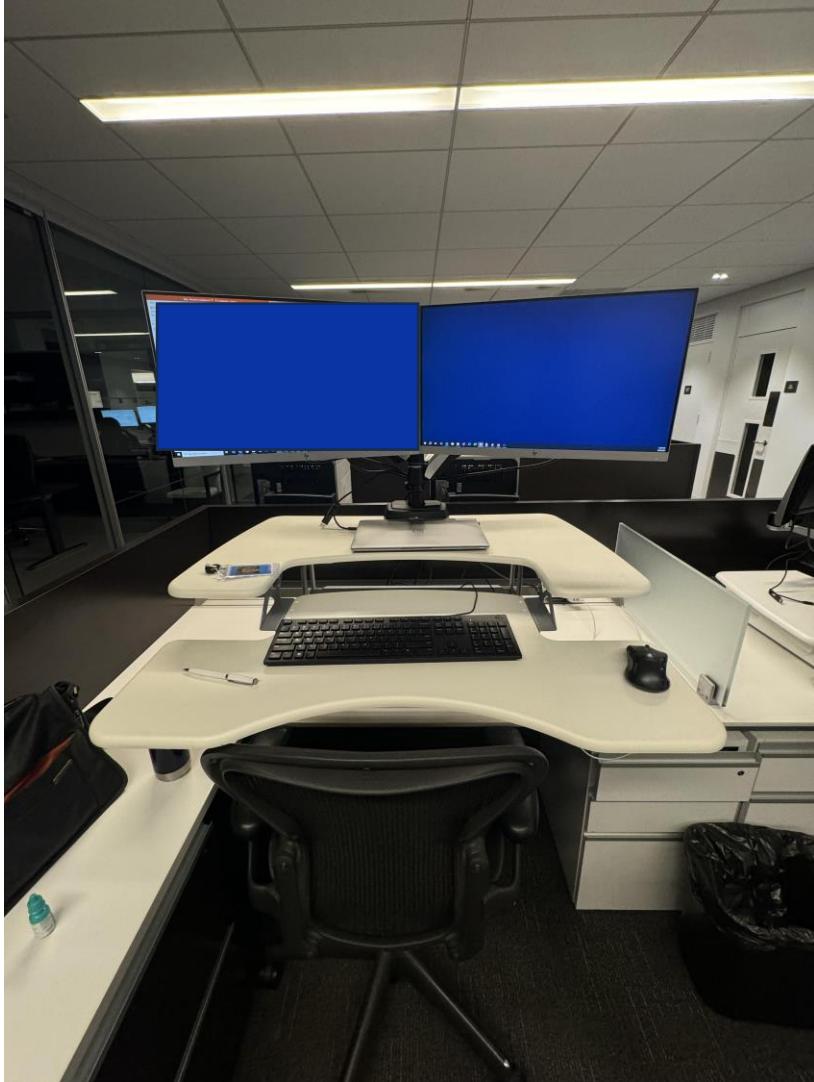
Some major outputs of investment banks

Output	Description
Models	<ul style="list-style-type: none">• DCF, Comps, Precedent Transactions, LBO, other
CIM (Confidential Information Memorandum)	<ul style="list-style-type: none">• A detailed document provided to prospective buyers in a sale process. It includes in-depth information about the target company, such as its history, operations, financials, management, and market position.
Pitchbook	<ul style="list-style-type: none">• A presentation prepared for client meetings to showcase the bank's capabilities, potential deal ideas, market analysis, and strategic recommendations.
Teaser	<ul style="list-style-type: none">• A brief document that provides an overview of the target company without disclosing its identity.
Management Presentations	<ul style="list-style-type: none">• A structured presentation prepared for management teams to present to potential buyers or investors during roadshows or deal processes.
Industry and Market Research Reports	<ul style="list-style-type: none">• Reports that outline current market conditions, industry trends, and competitive landscapes.
Fairness Opinion	<ul style="list-style-type: none">• A professional opinion provided to a company's board of directors regarding the fairness of a financial transaction (e.g., a merger or acquisition) from a financial perspective.

Day in the Life of an Investment Banking Analyst

9:30 AM	Arrive at office, check email, read WSJ and News
10 AM	Check comments from associate and work on pitch deck for upcoming deal
12 PM	Grab lunch and continue working on the pitch deck at your desk
1 PM	Begin working on the valuation materials for another deal you are on
3 PM	Meet with VP and associate to discuss next steps on live deal
3:30 PM	Jump on zoom call with the CFO of a company you are working with
4 PM	Work on merger model for another deal you've been staffed on
7 PM	Grab dinner and wait on comments from senior bankers
9 PM	Head home (depends on group / bank) to finish work from your apartment
1 AM	Finish up for the night

The corporate grind...



If you are trying to understand the role better

<https://www.wallstreetprep.com/knowledge/ma-analyst-day-in-the-life/>

<https://www.youtube.com/watch?v=A-NQ0PTCI9c>

<https://mergersandinquisitions.com/investment-banking-analyst-job/>

<https://www.wallstreetoasis.com/forum/investment-banking/investment-banking-analyst-a-true-day-in-the-life>

<https://www.wallstreetoasis.com/faq/what-is-investment-banking>



Course Overview

The aim of this course is to help students prepare to successfully recruit for careers in investment banking – the strenuous nature of the career path requires a high pace of instruction to allow for adequate preparation

Accounting

Accounting serves as the foundation upon which a solid understanding of topics in the world of finance are built. Financial accounting is primarily summarized by a knowledge of the function and purpose of the 3 financial statements, the basic principles of accrual-based accounting, and how the financial statements fit together.

EV and Equity Value

Enterprise and equity value both serve to paint a picture of the worth of the firm – each to a different set of investors. Both can be determined by market forces, which are easily observable in the case of a publicly owned firm, and by way of valuation methodologies.

Valuation

The three main forms of firm valuation that have been discussed in this course include valuation by public comps, valuation by precedent transactions, and intrinsic valuation by way of the discounted cash flow analysis. All three serve to cross check on another to develop an accurate depiction of the worth of the firm.

Leveraged Buyouts

The leveraged buyout is the primary tool of financial engineering utilized by private equity firms seeking to enhance returns to shareholders. This method of capitalizing a firm in an M&A scenario can also be used as the floor valuation in determining the value of a firm in a sale process.

M&A

Advising on mergers and acquisitions is the primary service provided by investment banks – this financial product requires a strong knowledge of financial accounting, the valuation techniques described above, market expertise, and economic intuition.

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Course Overview

Financial Accounting

EV & Equity Value

Valuation – Intrinsic and Relative

LBO



What do you need to know for recruiting?

Accounting Questions & Answers – Basic

Here are the 5 most important Accounting concepts you need to know:

1. The 3 financial statements and what each one means.
2. How the 3 statements link together and how to walk through questions where one or multiple items change.
3. Different methods of accounting – cash-based vs. accrual, and determining when revenue and expenses are recognized.
4. When to *expense* something and when to *capitalize* it. Not all expenses are created equal.
5. What individual items on the statements, like Goodwill, Other Intangibles and Shareholders' Equity, actually mean.

What do you need to know for recruiting?

Accounting Questions & Answers – Basic

Here are the 5 most important Accounting concepts you need to know:

1. The 3 financial statements and what each one means.

What this means?

- Know what the three statements are
- Why it is necessary that all 3 exist
- Major line items on each statement

Book value vs market value

Market Value

The market value of an asset is the present value of all future cash flows of the asset. This value is determined by forces of supply and demand in the market, hence the name “market value”

$$= \sum_{t=1}^N \frac{CF_t}{(1+r)^t}$$

Book Value

The book value of an asset is the value that is recorded on the financial statements and observed for accounting purposes including amortization. This is recorded at historical cost.



Accrual accounting vs cash-based accounting

Accrual accounting is one of the most important concepts in accounting, and governs the company's timing in recording its revenues (i.e. sales) and associated expenses.

- **Principle #2: Revenue Recognition:** Accrual basis of accounting dictates that revenues must be recorded when earned and measurable.
- **Principle #3: Matching Principle:** Under the matching principle, costs associated with making a product must be recorded during the same period as revenue generated from that product.

Exercise: Amazon.com sells a book

The following transactions occurred on the specified dates:

6/5/13	Amazon.com purchases a book from a publisher for \$10
12/29/14	Amazon.com receives a \$20 credit card order for that book
1/4/15	The book is shipped to customer
2/1/15	Amazon.com receives cash

1. From the options above, when should Amazon.com record revenue?
2. From the options above, when should Amazon.com record expenses?

Income statement overview



What Is the Income Statement?

- The income statement is a financial report that depicts the operating performance of a company (i.e. revenues less expenses generated – i.e. profitability) over a specific period of time (typically a quarter or year).



Also referred to as:

- The Consolidated Statement of Earnings
- The Profit and Loss (P&L) Statement
- Statement of Revenues and Expenses



Why is it Important?

- It facilitates the analysis of a company's growth prospects, cost structure, and profitability.
- Analysts can use the income statement to identify the components and sources ("drivers") of net earnings.

Balance Sheet Overview

- The balance sheet reports the company's resources (assets) and how those resources were funded (liabilities and shareholders' equity) on a particular date (end of the quarter, end of the year).
 - Contrast with the income statement, which reports a company's revenues, expenses and profitability over a specified period of time.
- The fundamental equation in accounting is:

$$Assets = Liabilities + Equity$$



Net Working Capital

NWC is the difference between a company's current operating assets and current operating liabilities - it represents the short-term liquidity available to a company to fund its day-to-day operations

	Working Capital Schedule							
	2017A	2018A	2019A	2020P	2021P	2022P	2023P	2024P
Working Capital Balances								
Accounts receivable, net		3,498	4,272	4,630	5,015	5,450	5,944	6,505
Inventories		5,261	5,622	6,148	6,660	7,238	7,893	8,638
Prepaid expenses and other current assets		1,130	1,968	2,112	2,288	2,487	2,712	2,968
Total non-cash current assets		9,889	11,862	12,890	13,963	15,175	16,548	18,111
Accounts payable		2,279	2,612	2,816	3,051	3,315	3,616	3,957
Accrued liabilities		3,269	5,010	5,397	5,846	6,353	6,928	7,583
Total non-debt current liabilities		5,548	7,622	8,213	8,897	9,669	10,544	11,540
Net working capital		4,341	4,240	4,677	5,067	5,506	6,004	6,571
Change in net working capital			(101)	437	389	440	498	567

The accounting treatment of NWC will also have significant impact on cash flow and will be a major factor of the adjustment of your net income to retained earnings by way of cash flow from operations

Amortization of Long-Term Assets

Amortization – the allocation of the cost of an asset over its useful life

Depreciation – the sort of amortization applicable to tangible and fixed long-term assets

Liabilities and Equity

Liabilities and equity represent the company's sources of funds (how it pays for assets).



Liabilities represent what the company owes to others:

1. They must be measurable
2. Their occurrence is probable



Equity represents sources of funds through:

1. Equity investment
2. Retained earnings (what the company has earned through operations since its inception)

Deferred Tax Liability

Deferred taxes represent a temporary discrepancy in taxation reported on the financial statements and the tax schedule.

A **deferred tax asset** represents the potential to pay less taxes in the future – this often arises out of net operating loss carryforwards.

A **deferred tax liability** represents the obligation to pay more taxes in the future. This will often occur because of accelerated depreciation.

Sources and Uses of Funds

Uses of Funds	Source of Funds
Increase in assets	Decrease in assets
Decrease in liabilities	Increase in liabilities
Decrease in equity	Increase in equity

Apple Inc.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	Years ended		
	September 30, 2023	September 24, 2022	September 25, 2021
Cash, cash equivalents and restricted cash, beginning balances	\$ 24,977	\$ 35,929	\$ 39,789
Operating activities:			
Net income	96,995	99,803	94,680
Adjustments to reconcile net income to cash generated by operating activities:			
Depreciation and amortization	11,519	11,104	11,284
Share-based compensation expense	10,833	9,038	7,906
Other	(2,227)	1,006	(4,921)
Changes in operating assets and liabilities:			
Accounts receivable, net	(1,688)	(1,823)	(10,125)
Vendor non-trade receivables	1,271	(7,520)	(3,903)
Inventories	(1,618)	1,484	(2,642)
Other current and non-current assets	(5,684)	(6,499)	(8,042)
Accounts payable	(1,889)	9,448	12,326
Other current and non-current liabilities	3,031	6,110	7,475
Cash generated by operating activities	110,543	122,151	104,038
Investing activities:			
Purchases of marketable securities	(29,513)	(76,923)	(109,558)
Proceeds from maturities of marketable securities	39,686	29,917	59,023
Proceeds from sales of marketable securities	5,828	37,446	47,460
Payments for acquisition of property, plant and equipment	(10,959)	(10,708)	(11,085)
Other	(1,337)	(2,086)	(385)
Cash generated by/(used in) investing activities	3,705	(22,354)	(14,545)
Financing activities:			
Payments for taxes related to net share settlement of equity awards	(5,431)	(6,223)	(6,556)
Payments for dividends and dividend equivalents	(15,025)	(14,841)	(14,467)
Repurchases of common stock	(77,550)	(89,402)	(85,971)
Proceeds from issuance of term debt, net	5,228	5,465	20,393
Repayments of term debt	(11,151)	(9,543)	(8,750)
Proceeds from/(Repayments of) commercial paper, net	(3,978)	3,955	1,022
Other	(581)	(160)	976
Cash used in financing activities	(108,488)	(110,749)	(93,353)
Increase/(Decrease) in cash, cash equivalents and restricted cash	5,760	(10,952)	(3,860)
Cash, cash equivalents and restricted cash, ending balances	\$ 30,737	\$ 24,977	\$ 35,929
Supplemental cash flow disclosure:			
Cash paid for income taxes, net	\$ 18,679	\$ 19,573	\$ 25,385
Cash paid for interest	\$ 3,803	\$ 2,865	\$ 2,687

CFO

CFI

CFF

**Net
change
in cash**

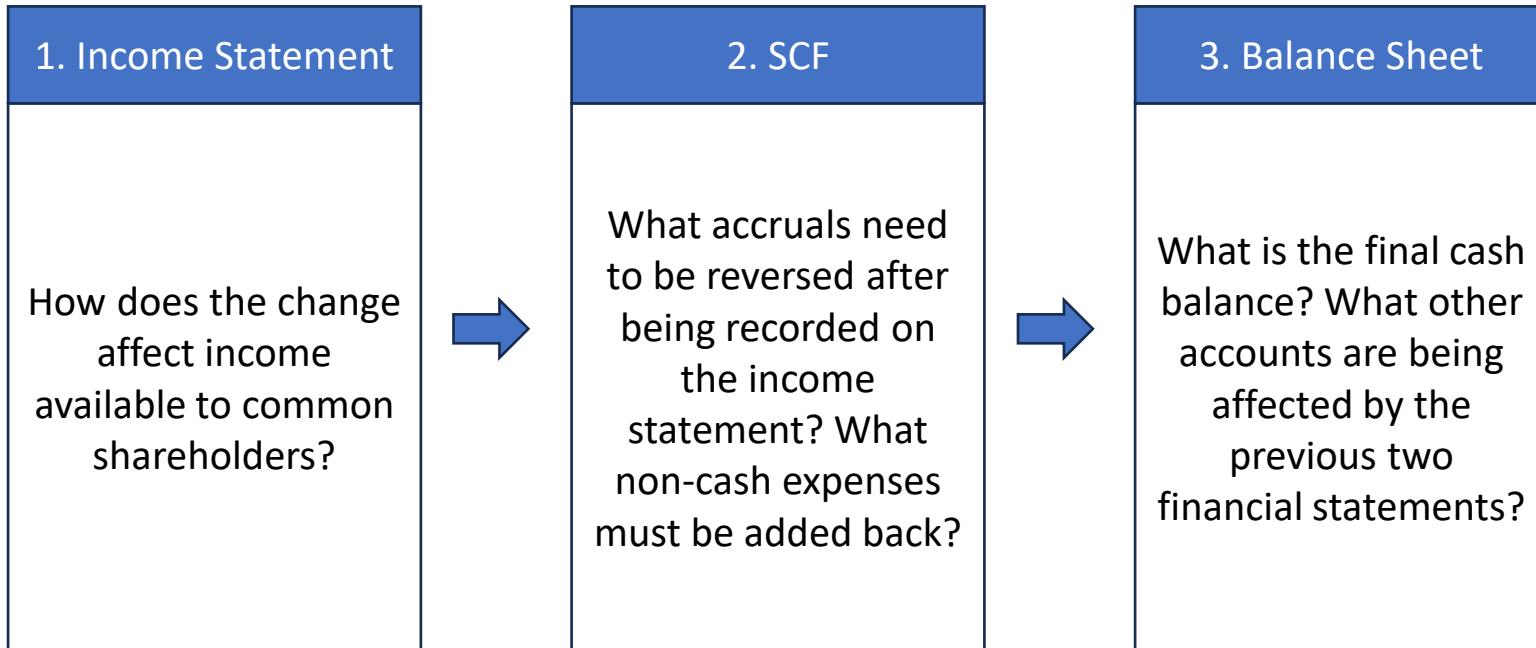
Cash flow statement overview

- While the I/S is very useful because it attempts to provide insight to a company's "true" profitability using accrual accounting which matches revenues with their corresponding expenses, it also requires management judgment (i.e. useful life, inventory cost, revenue recognition assumptions can have material impacts on profitability) and is thus not only potentially misleading about the company's liquidity, it is also prone to manipulation.
 - A company may show high profitability but running out of cash because significant revenues recognized were noncash.
 - A company may show low or negative profitability but generating a ton of cash during the period because the major expense was noncash D&A.

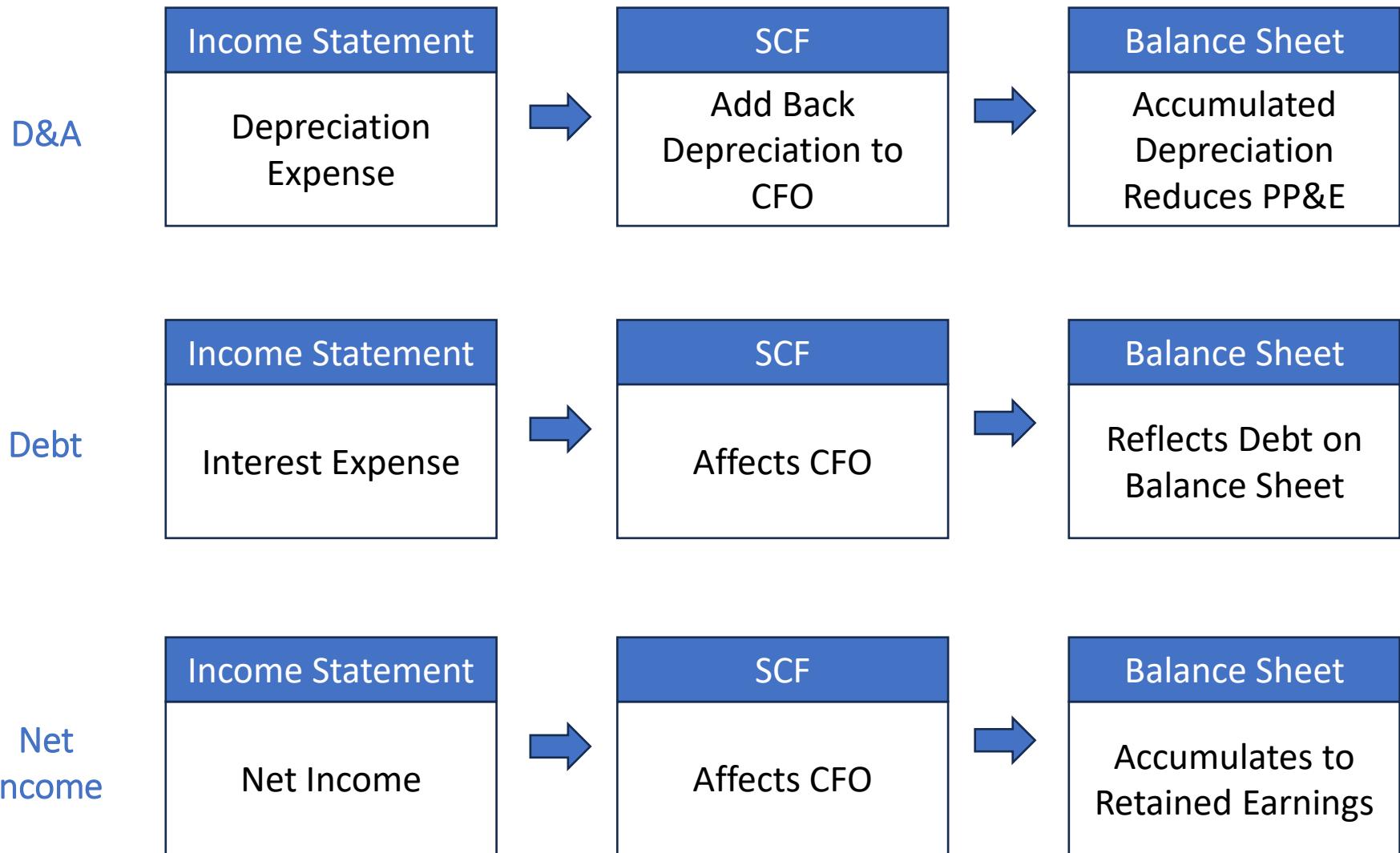
- Along with the B/S and I/S, the cash flow statement (CFS) is a required financial statement that provides insight that the I/S cannot – namely, exactly how much cash a company generates and from what activities.
- The CFS reconciles net income to a company's actual change in cash balance over a period in time (quarter or year).

How do the financial statements link together?

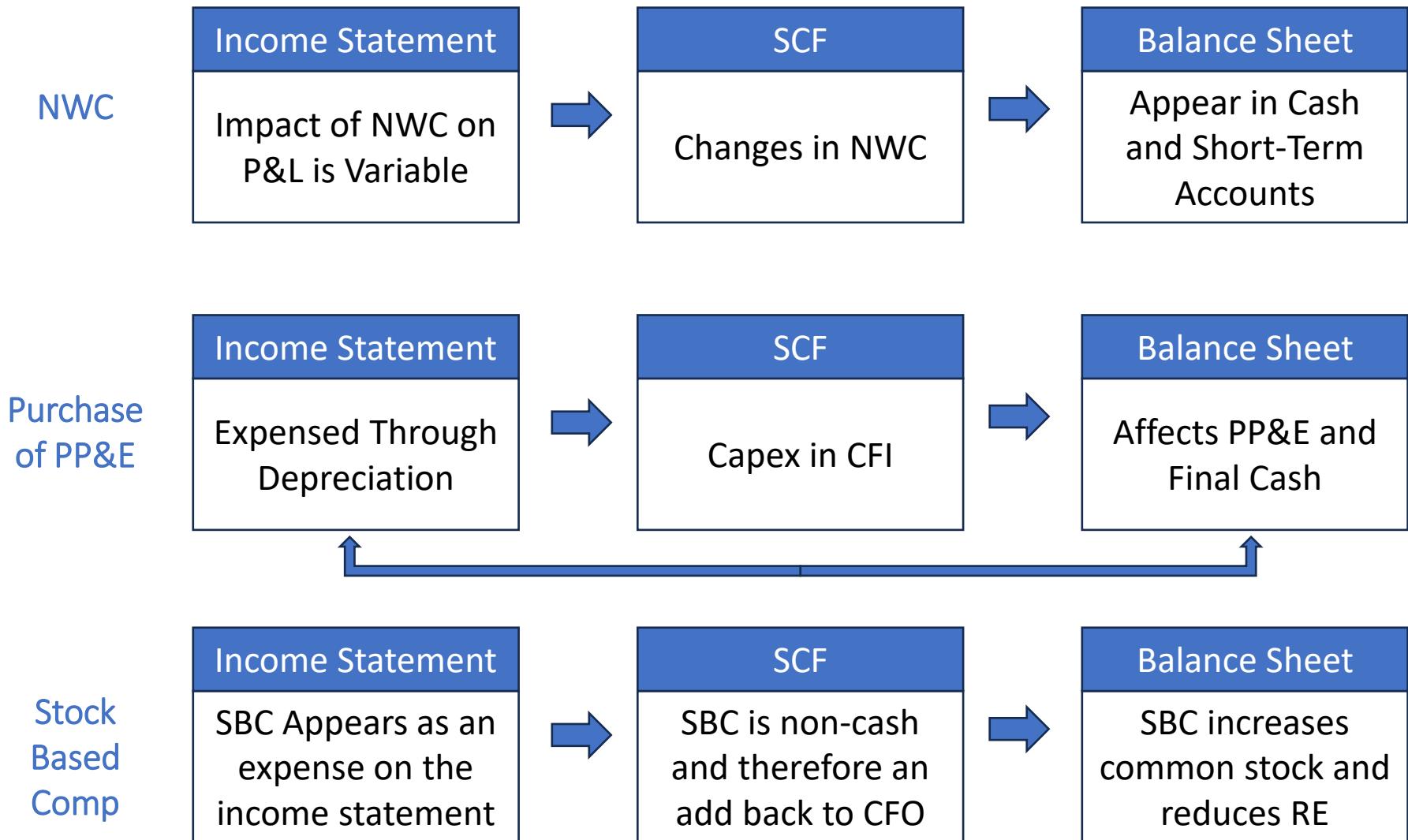
Throughout the recruiting process, the most asked questions you will receive on accounting will test your knowledge of how the three financial statements fit together – be sure to always answer in the format provided below



Other Links Between 3 Financial Statements



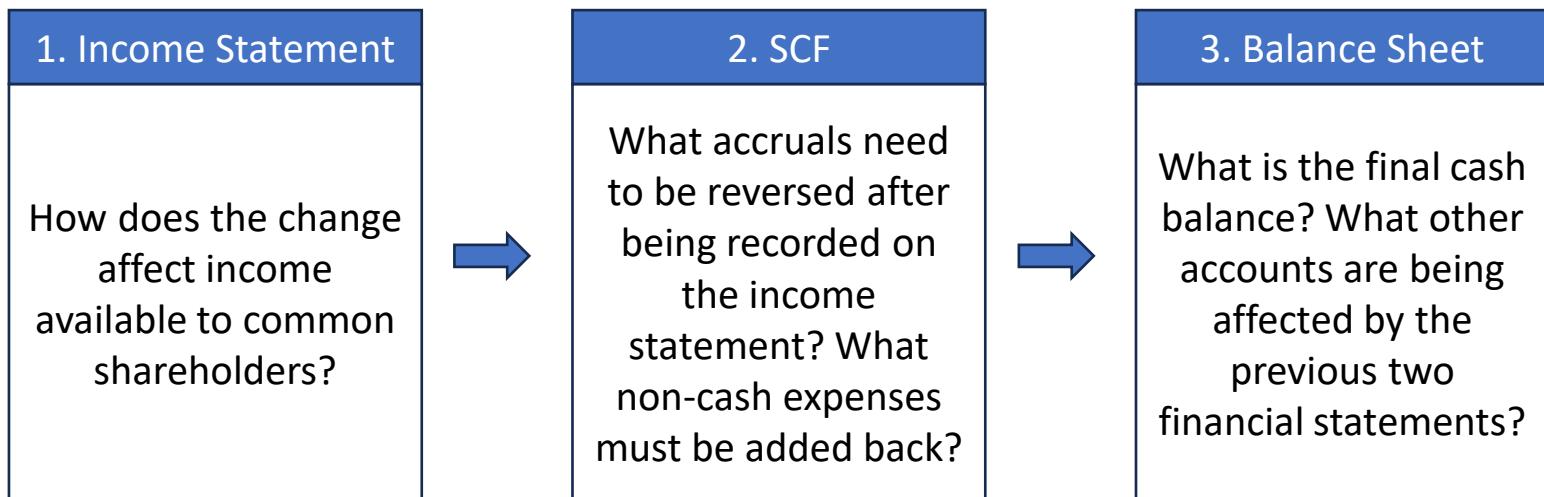
Other Links Between 3 Financial Statements



NWC Example



With a \$100 sale on account, walk me through the 3 financial statements. Assume a 20% tax rate.



NWC Walk-Through

With a \$100 sale on account, walk me through the 3 financial statements. Assume a 20% tax rate.

1. Income Statement

The \$100 is directly added to sales revenue, which increases our taxable income by \$100. With a 20% tax rate, net income is up by \$80.

2. SCF

Net income has increased by \$80 to begin the cash flow to operations section of the SCF. However, because the sale was on account, our NWC has increased by \$100, and our CFO is down \$20.

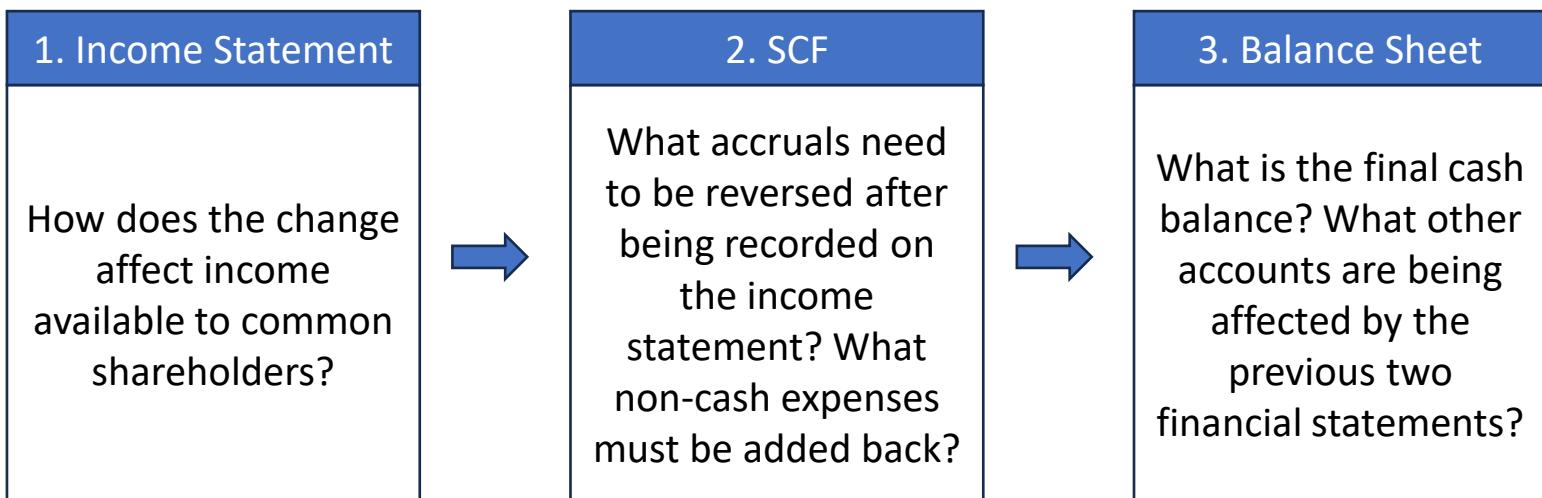
3. Balance Sheet

Cash is down \$20, and accounts receivable is up by \$100. The assets side of the balance sheet is up by \$80, which matches with the \$80 increase in retained earnings.

Sale of PP&E Example



Company A purchased PP&E worth \$200 10 years ago. The PP&E has a useful life of 20 years and is depreciated on a straight-line basis. They just sold the PP&E for \$180. Walk me through the changes in the 3 financial statements.



Sale of PP&E Walk-Through

Company A purchased PP&E worth \$200 10 years ago. The PP&E has a useful life of 20 years and is depreciated on a straight-line basis. They just sold the PP&E for \$180. Walk me through the changes in the 3 financial statements (%20 tax).

1. Income Statement

The PP&E has been depreciated to a book value of \$100. Thus, the sale at a price of \$180 represents an \$80 gain on the sale, which will directly increase the taxable income. At a 20% tax rate, our net income is up \$64.

2. SCF

Net income has increased by \$64 to begin the CFO sections of the SCF. The \$80 gain on sale is deducted out of CFO, and the entire sale of the asset (\$180) is added into the CFI section. Cash is up by \$164.

3. Balance Sheet

Cash is up by \$164. PP&E is down by \$100. Retained earnings has increased by \$64, and both sides of the balance sheet have increased by \$64.

Accounting

- Income Statement (P&L)
- Balance Sheet
 - Assets
 - Liabilities
 - Equity and Equity Accounts
- Statement of Cash Flows
 - CFO
 - CFI
 - CFF
- Sources and Uses of Funds
- Accrual Based Accounting
 - Expense Timing Principle
 - Revenue Recognition Principle
- Cash Based Accounting
- Deferred Tax Assets and Liabilities
- Market vs Book Value
- Required SEC filings for public firms
- NWC

You need to know how changes to different line items flow through the 3 statements !!!

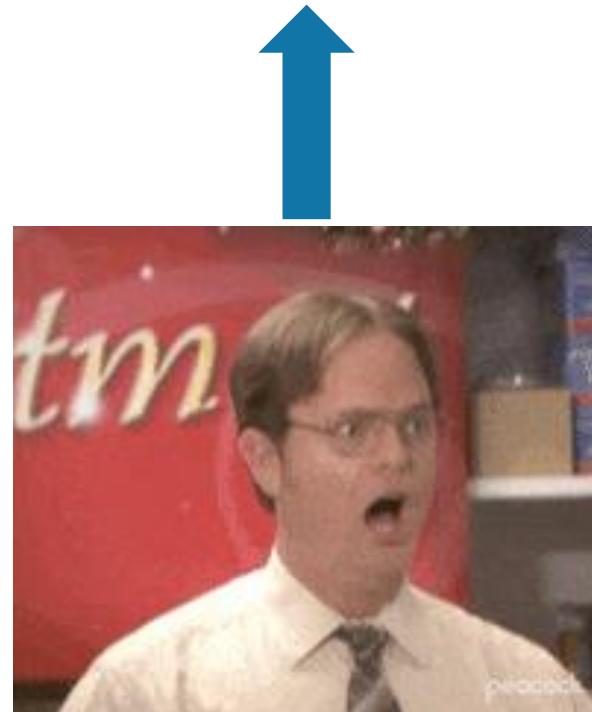


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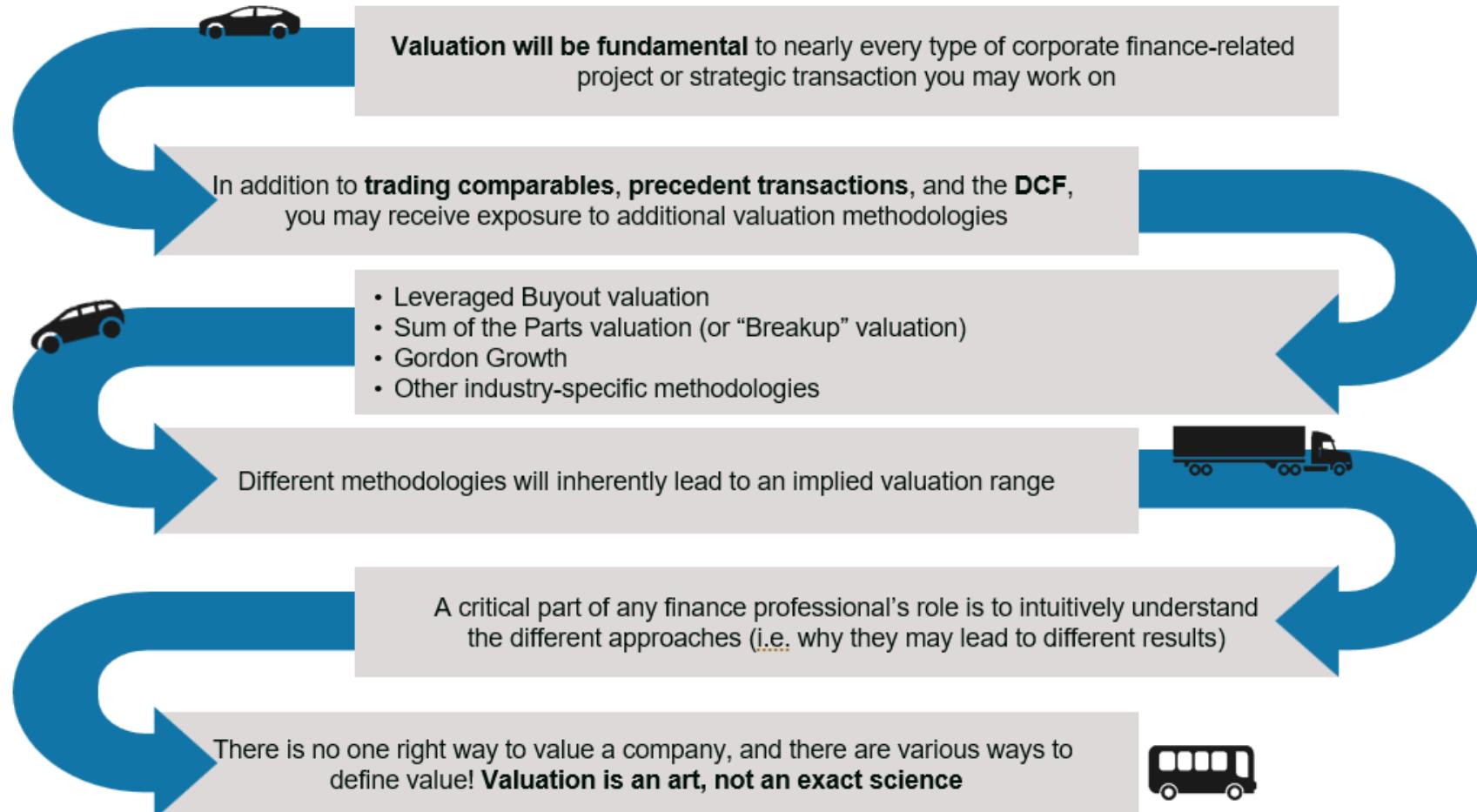
EV & Equity Value

Valuation – Intrinsic and Relative

LBO

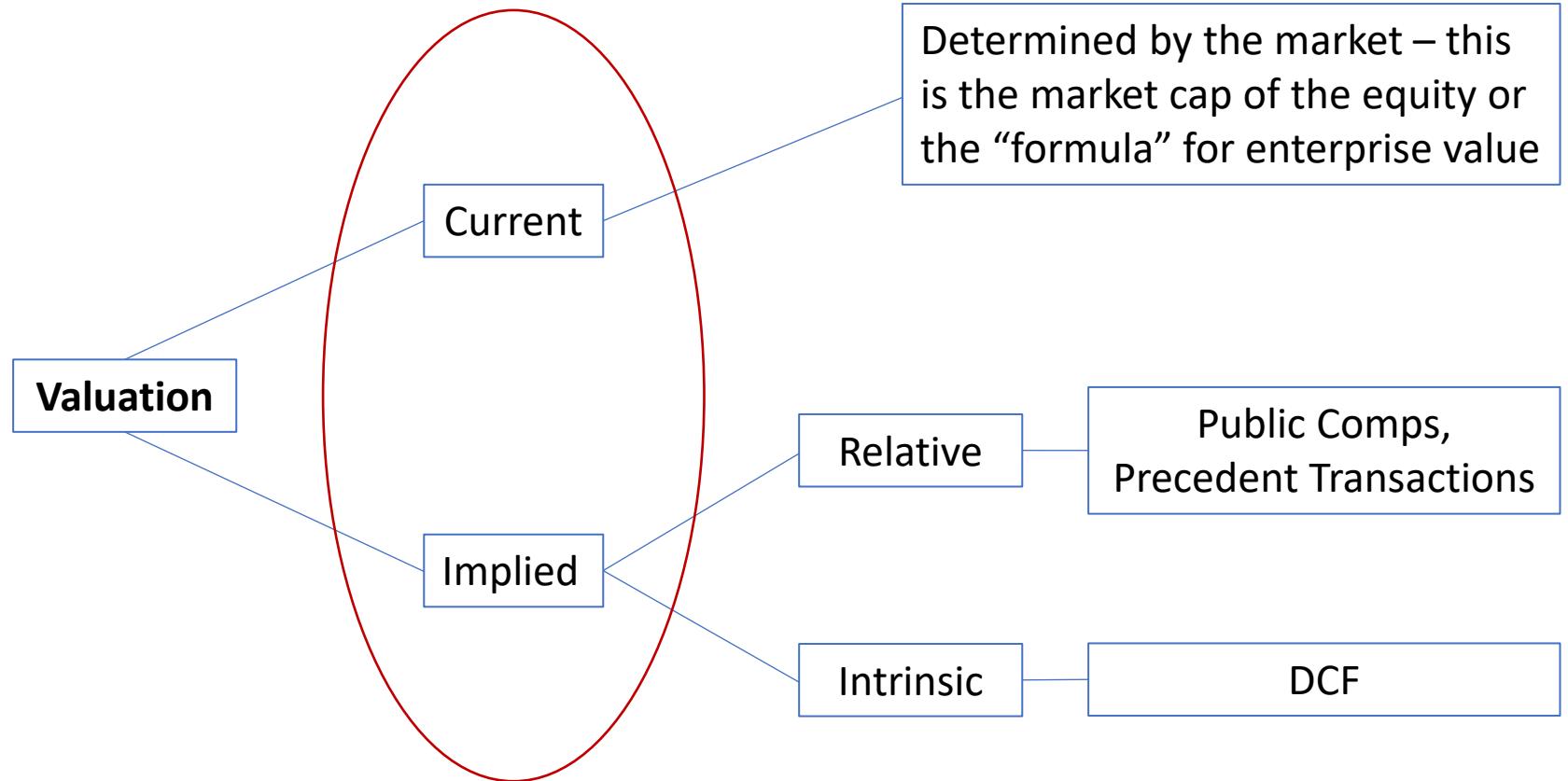


Valuation Roadmap



Current vs Implied Valuation

The most effective tool for valuing an asset is a financial market – analysis made by an investment banker seeks to represent value on either a relative or intrinsic basis to cross check market valuations and value private firms



Enterprise Value

The value of a company's core business operations to all the investors and creditors in the company

Equity Value

The value of a company's net assets attributable to the equity holders – also known as the market capitalization of the firm

Who's Been Paid

In the world of finance, you will often hear the word levered used to describe whether the impacts of capital structure have been taken into consideration when looking into cash flows, multiples, and valuation

Unlevered

The impacts of capital structure have not yet been considered

$$\text{FCFF (UFCF)} = \text{NOPAT} + \text{D\&A} - \text{NWC} - \text{Capex}$$

EV Multiples

Levered

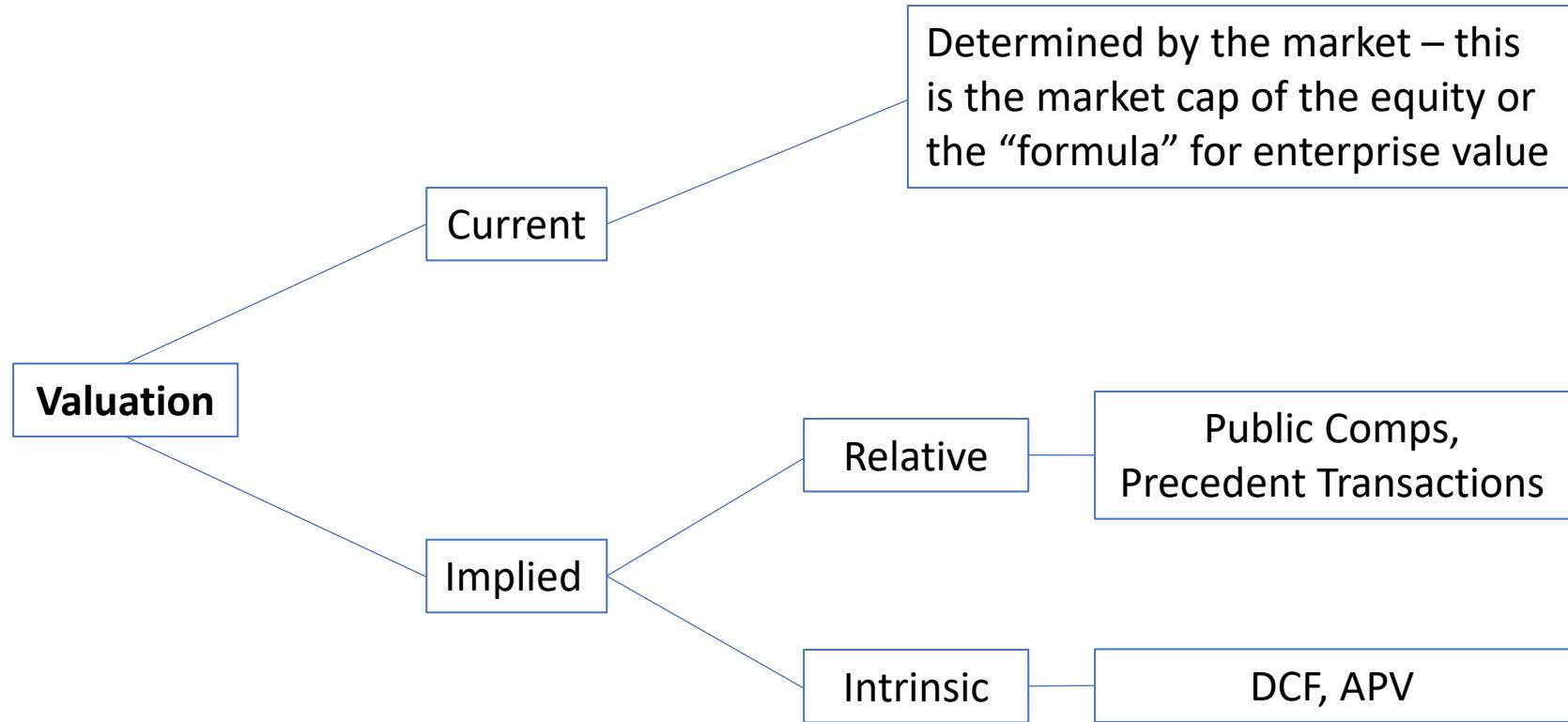
The impacts of capital structure (financial leverage), including the payment of interest, have been considered

$$\text{FCFE (LFCF)} = \text{NI} + \text{D\&A} - \text{NWC} - \text{Capex} - \text{Net Borrowing}$$

Equity Value Multiples

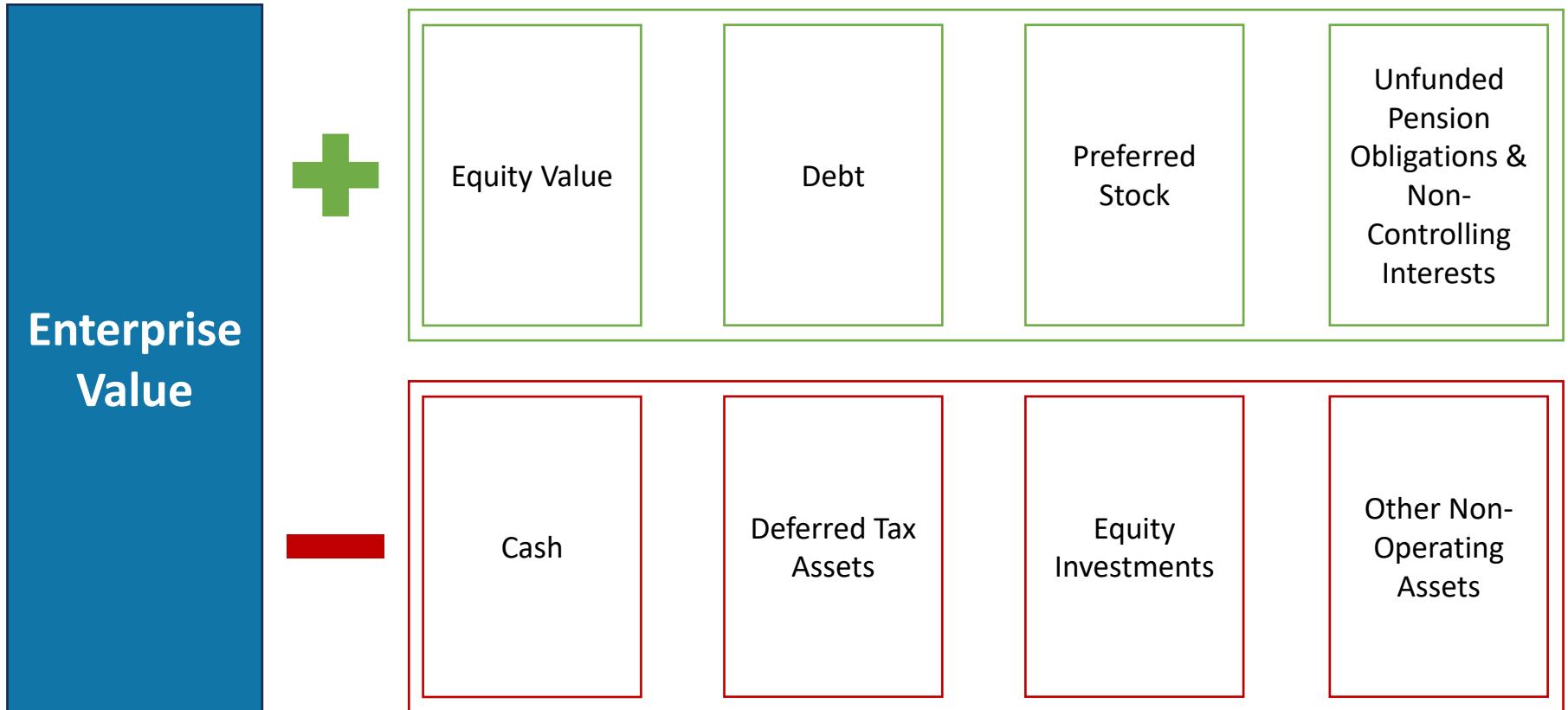
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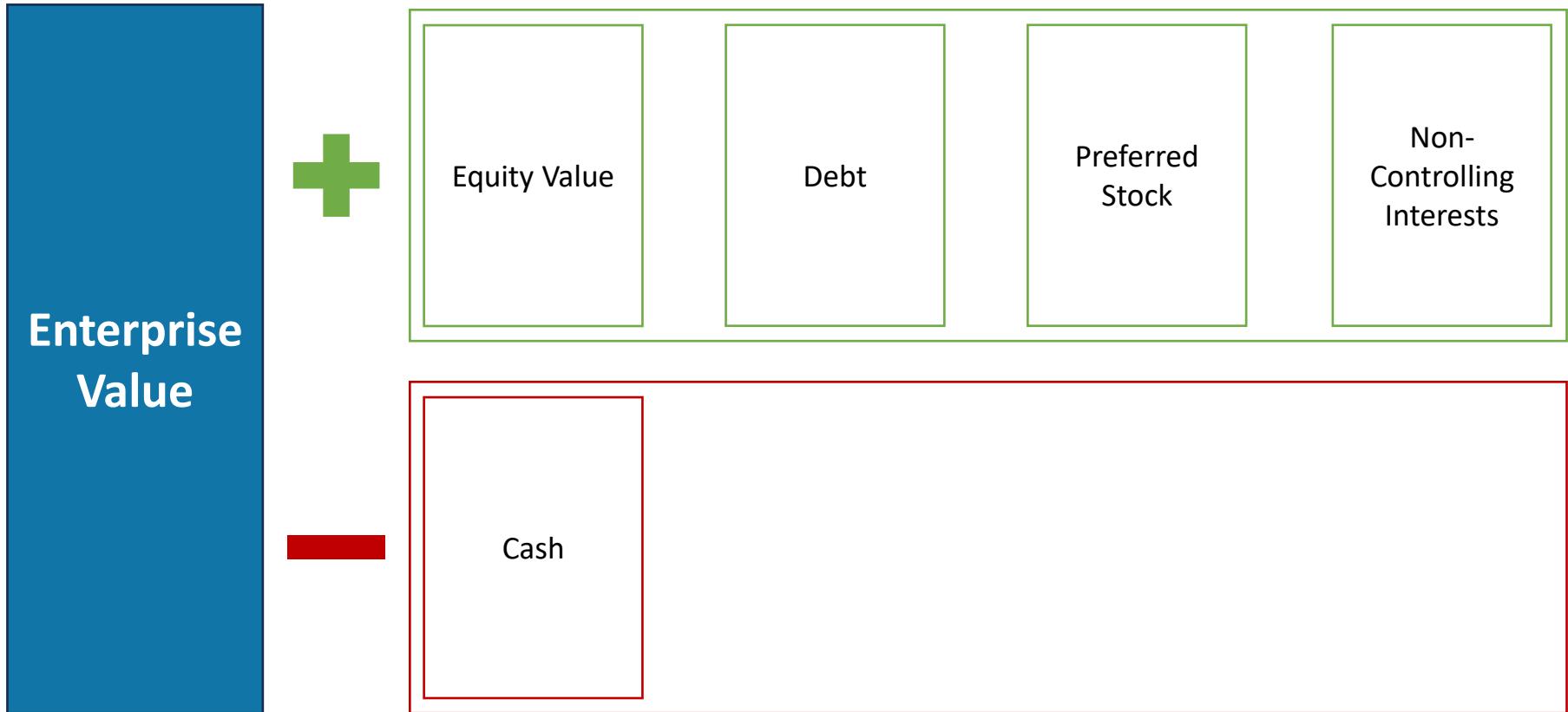


Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors



In interviews, just give the simple formula!

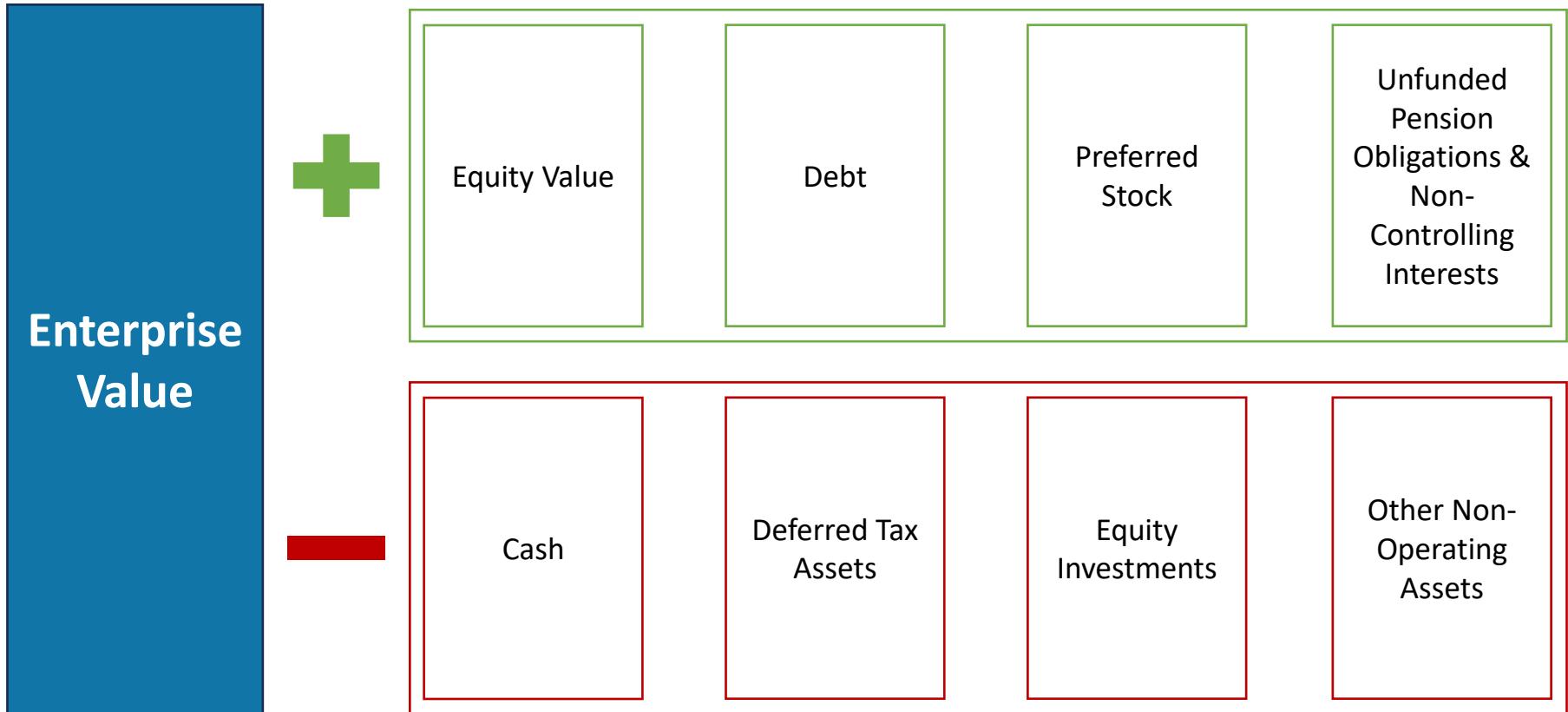


Why is equity value added?

- Equity value is net assets, or total assets – total liabilities
- Captures the net value of all operating assets (the things we want to include in EV, as well as non-operating assets such as cash and equity investments)
- The things we will go on to subtract will rectify all of the non-operating items in equity value

Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors

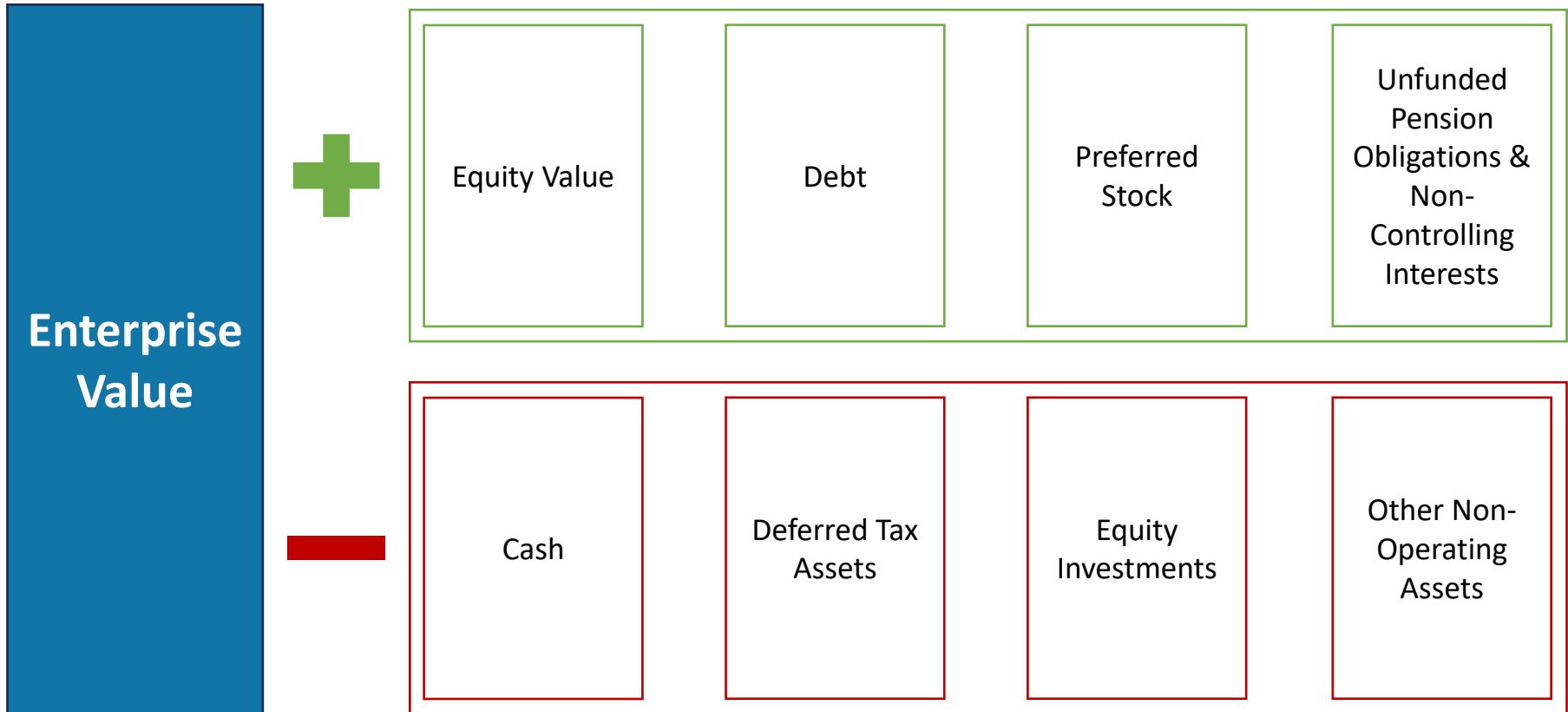


Why is debt added?

- Enterprise value can be seen as the value of the operations of a business or the cost of acquiring the operations of the business
- Terms of debt agreements usually say that debt must be refinanced in an acquisition, so debt becomes a cost of acquiring
- So, if you want to own the operations of the business, you must pay off the debt investors

Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors

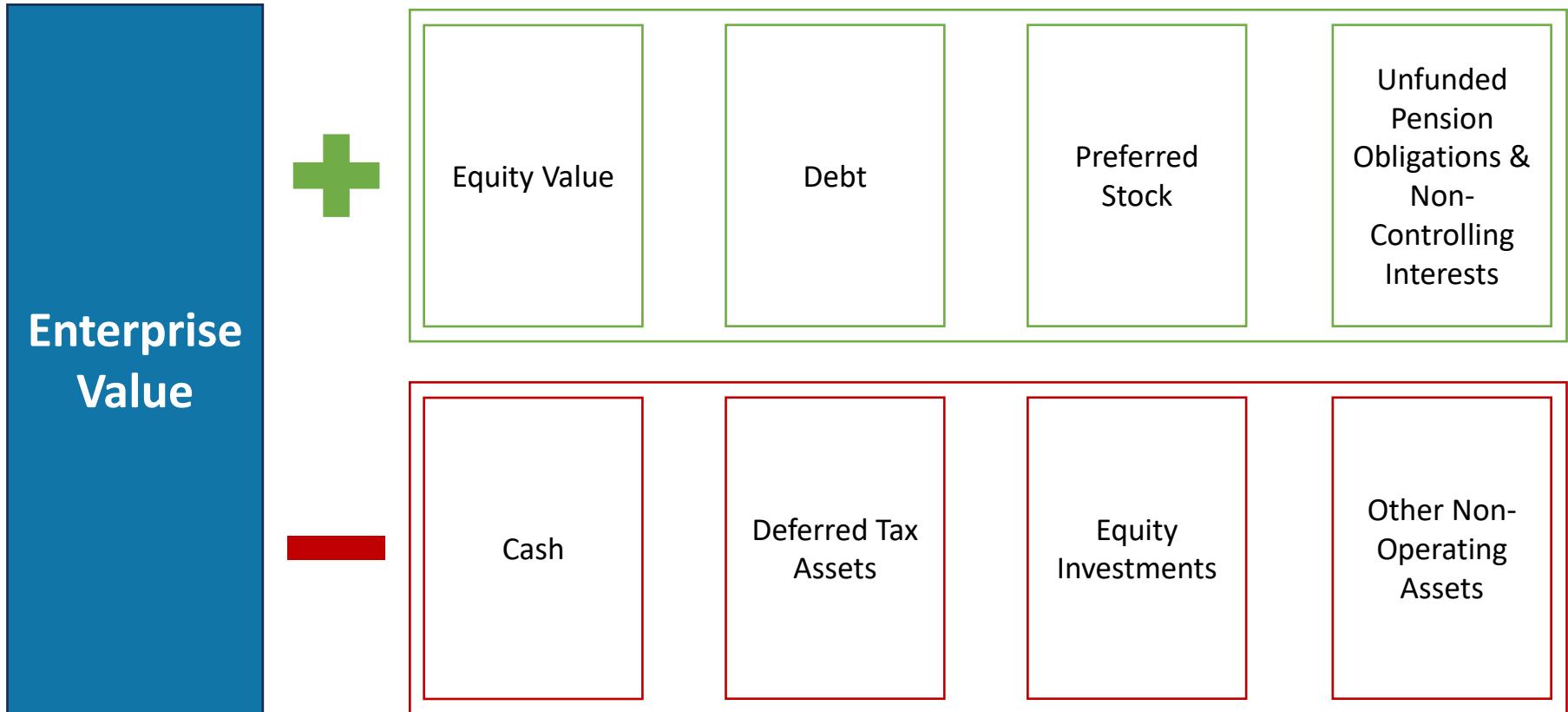


Why is preferred stock added?

- Preferred stocks are hybrid securities that have features of both equity and debt.
- They are treated more as debt, in this case, because they pay a fixed amount of dividends and have a higher priority in asset and earning claims than common stock.
- In an acquisition, they normally must be repaid just like debt.

Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors

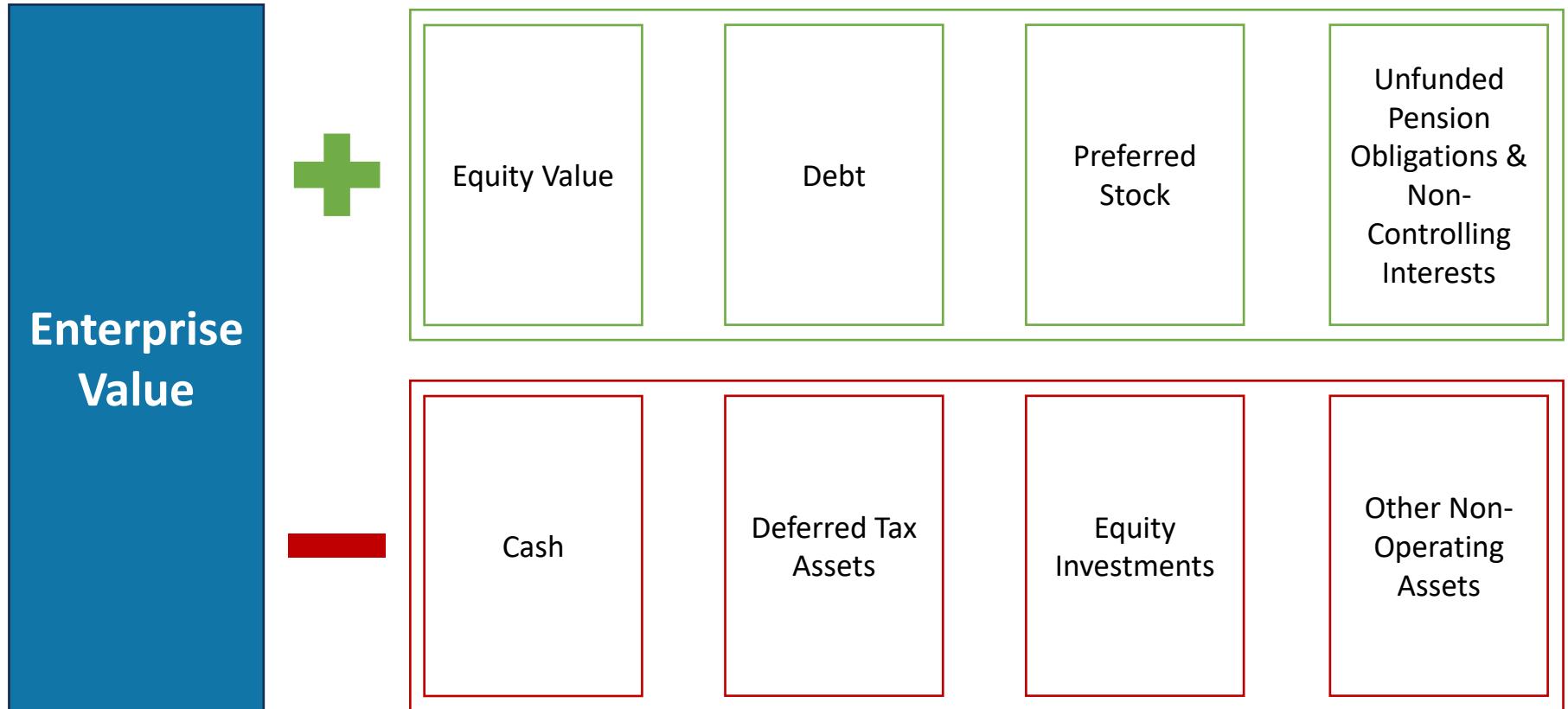


Why is non-controlling interest added to EV?

- Non-controlling interest refers to when a company owns more than 50% of a company, but less than 100% of a company
- The portion they do not own is non-controlling interest, and it is reported on the balance sheet
- Even though they own less than 100% of the company, they report revenue as if they owned 100%
- To account for this, EV must also include 100% of the non-controlling interest

Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors

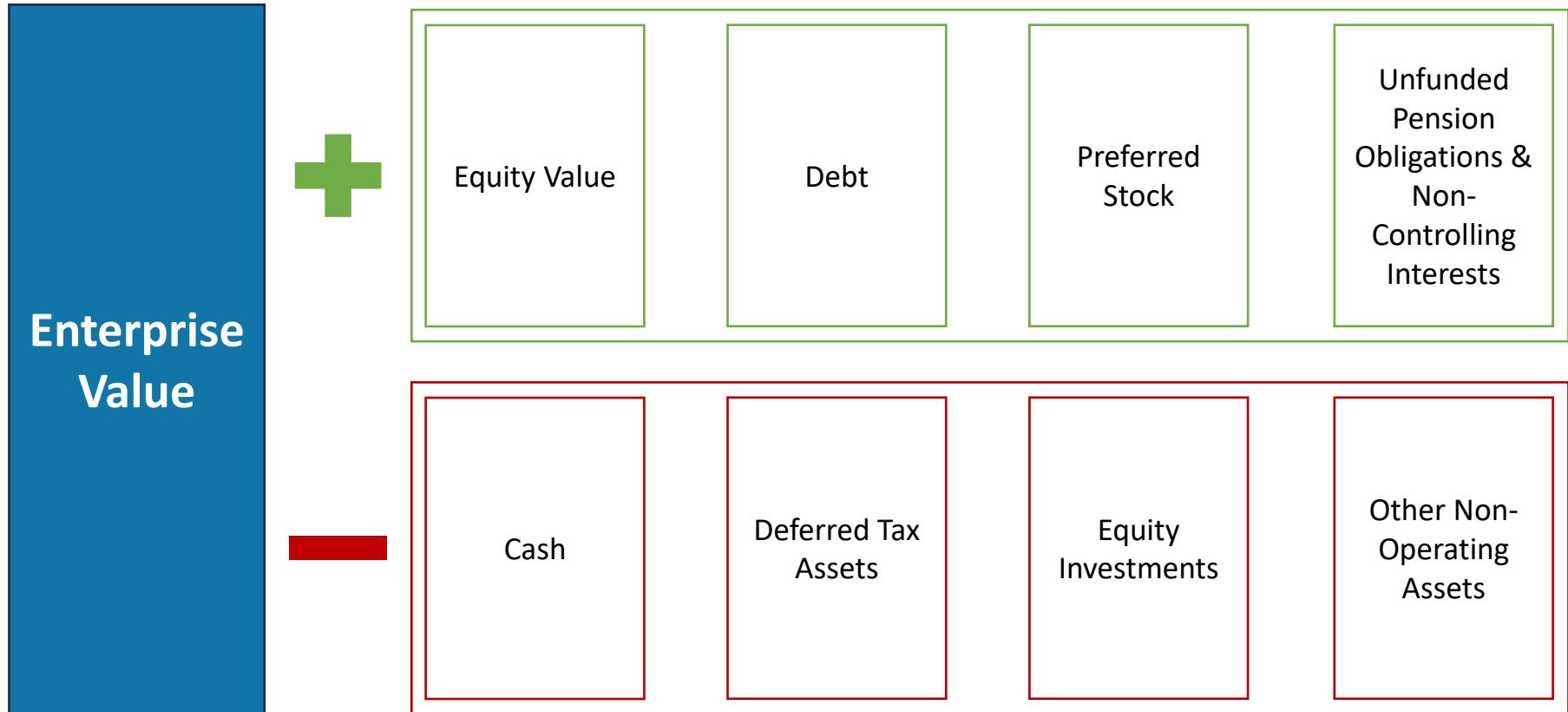


Why are unfunded pension obligations added to EV?

- Unfunded pension obligations represent the gap between the pension liabilities (defined benefit plan only) and the assets the company holds to cover future payments.
- When the present value of all future cash outflows to meet the pension liability is greater than the value of the assets existent to cover the pension requirements, an unfunded pension exists.
- This can be seen as another investor group because workers are agreeing to work for less today in exchange for cash flows in the future.

Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors

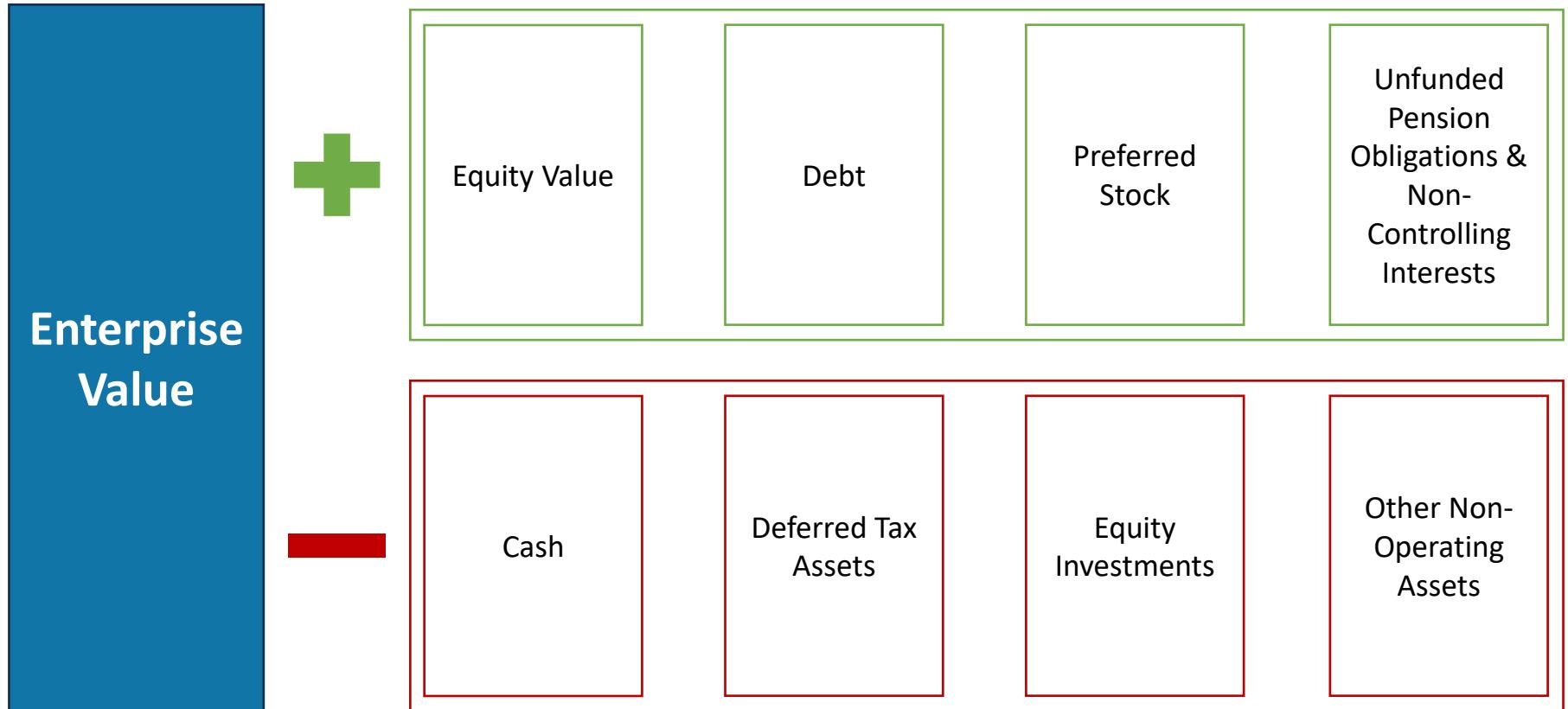


Why is cash subtracted?

- Cash sitting on a company's balance sheet could hypothetically be used to pay down outstanding debt if deemed necessary.
- Can also be thought of as a non-operating asset
- Cash's value is already captured with equity value

Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors

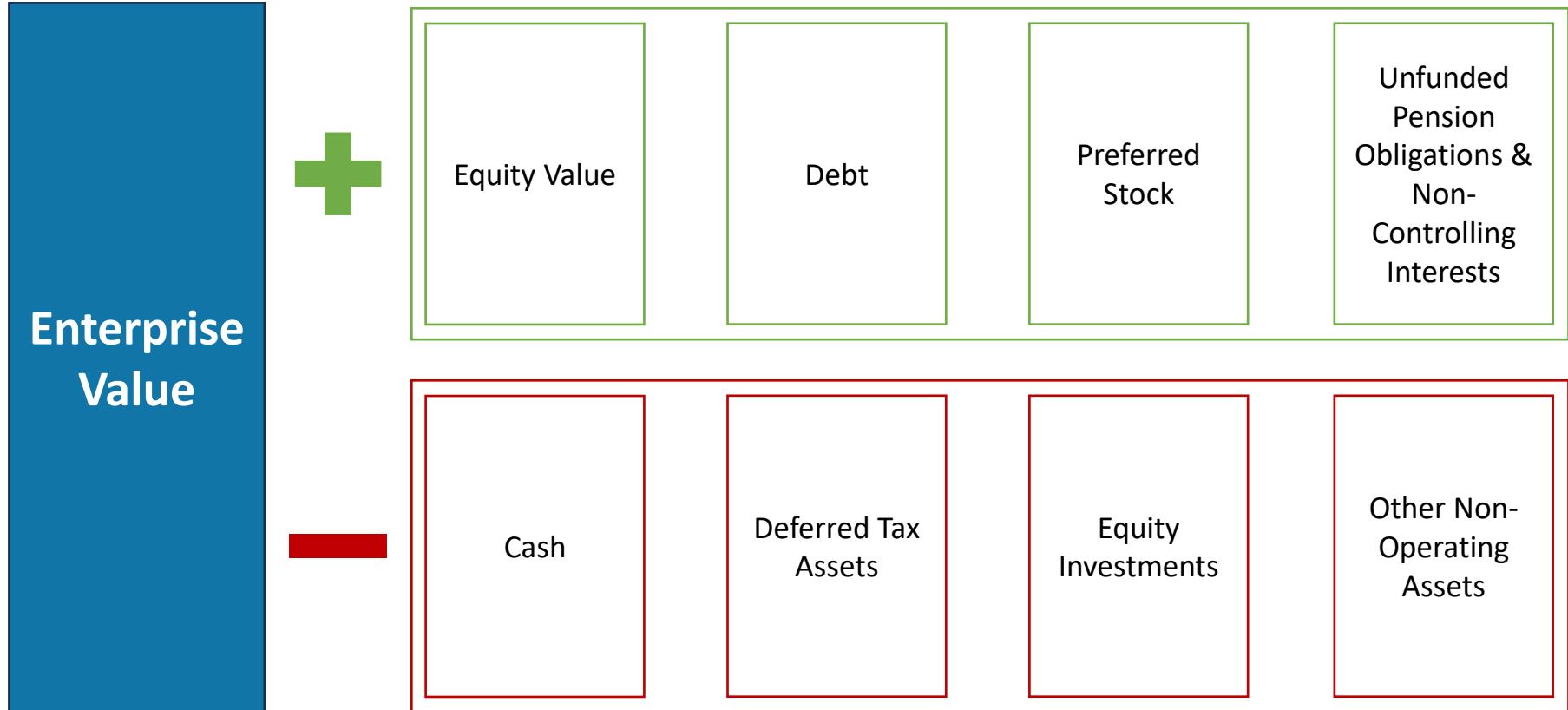


Why are equity investments subtracted?

- Represent minority stakes in other companies (the Parent Company owns < 50% of these other companies)
- For example, Company A owns 30% of Company B. Company A records an Equity Investment or “Associate Company” on the Assets side of its Balance Sheet for this 30% stake
- The Parent Company owns less than 50%, so it cannot “control” these other companies. Therefore, its stakes are considered non-core to its business
- Equity Value (Market Cap) implicitly includes the values of these partial stakes
- Because of accounting rules, you will see either 0% or 100% of the other companies’ EBIT and EBITDA in the Parent Company’s metrics.

Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors

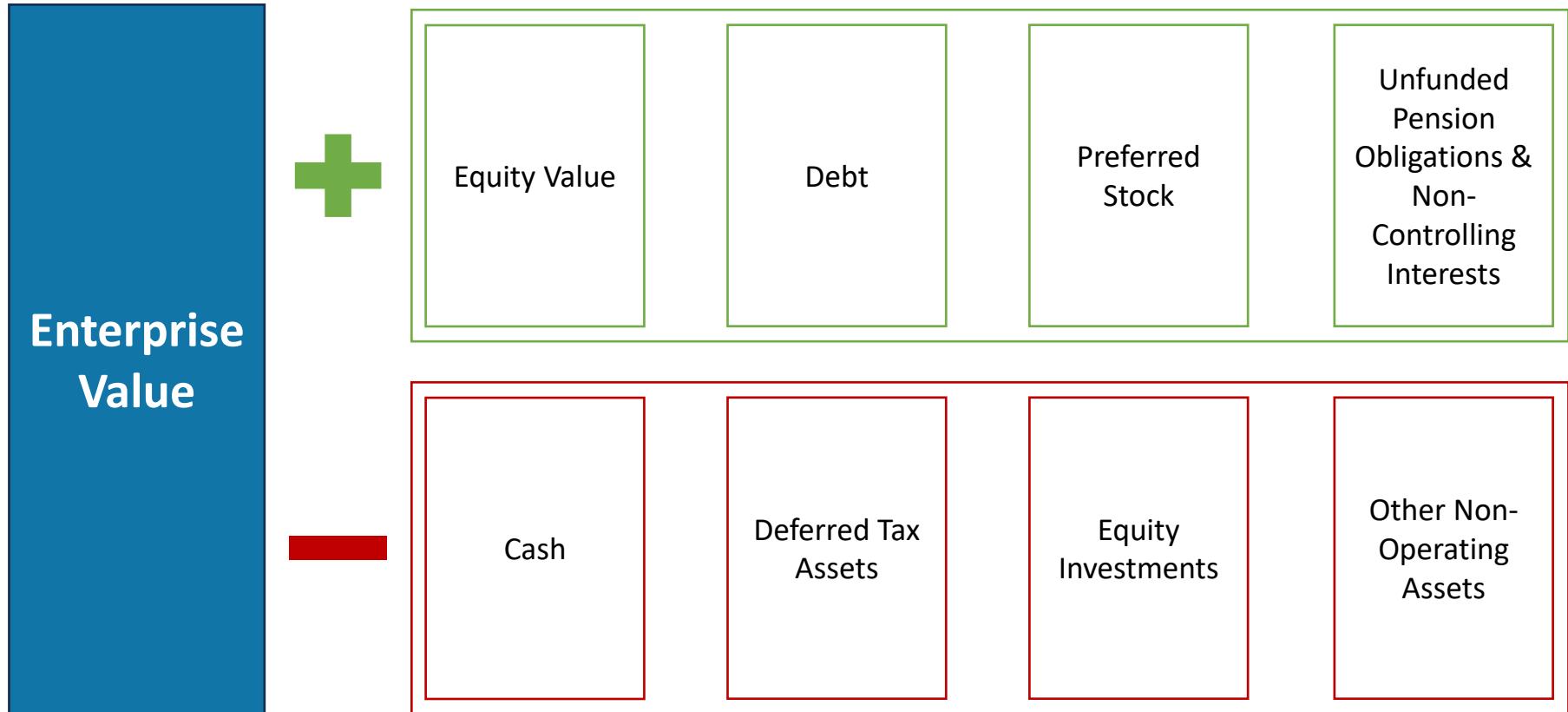


Why are DTAs subtracted?

- Net Operating Losses (NOLs) accumulate when a company records negative Pre-Tax Income
- The off-Balance Sheet NOL increases by –Pre-Tax Income, and the Deferred Tax Asset increases by –Pre-Tax Income * Tax Rate
- When the company finally records positive Pre-Tax Income, it can use these NOLs to reduce its taxable Income, thereby reducing its Cash Taxes
- The logic is that the NOLs are not core to the company's business because they're not required to sell and deliver products and services.

Full Enterprise Formula

Solving for enterprise value can be done either by converting from market cap or by using intrinsic/relative valuation methodologies – both provide insight into the value of the businesses core operations to all investors



Methods of Determining Equity Value

There exist at minimum four methods for determining the equity value of a firm – can you think of more?

Market Cap

Fully Diluted Shares Outstanding * Price Per Share

Relative

Multiple * Relevant Metric

Intrinsic

Present Value of all FCFE (Levered FCF)

Net Assets

Market Value of Assets – Market Value of Liabilities

Dilution

- **Dilution occurs when a company issues new shares, resulting in a reduction of existing shareholders' ownership percentage and a potential decrease in the value of their shares.** This happens because the total number of shares outstanding increases, but the company's total value may not necessarily increase in proportion to the new share issuance.
- The **effect of dilution is typically negative for existing shareholders**, as their proportional ownership and voting rights decrease.

Basic shares outstanding vs diluted shares outstanding

Basic shares outstanding



Diluted shares outstanding



- Total number of shares **currently held** by all its shareholders, excluding options, convertible securities, or warrants

- Total number of shares that would be outstanding if all sources of conversion, such as options, convertible securities, and warrants, were exercised

Metrics of Dilution

Dilution represents a decrease in value of the underlying equity security – this can be measured in a variety of ways in a financial context ranging from ownership to claim on the company's cash flow

Ownership
Dilution

When a company issues new shares, the existing shareholders own a smaller percentage of the company, which reduces their control or influence over company decisions

EPS
Dilution

Dilution can also impact earnings per share (EPS) - when more shares are outstanding, the company's earnings are distributed among a larger number of shares, leading to a lower EPS, which might make the stock less attractive to investors

Price Per
Share

While the company's total market capitalization might increase with new shares, the per-share market value could decrease if the market perceives that the issuance dilutes the value of existing shares, especially if the new capital raised doesn't immediately create equivalent value

Voting
Power
Dilution

If additional shares are issued, especially to new strategic investors or insiders, existing shareholders may see their voting power diluted, making it harder for them to influence key corporate decisions

Dilutive Securities: Warrants, Options, RSU, PSU, Converts, etc.

Fully diluted equity value is the market value of a company if all dilutive securities (such as stock options, convertible debt, and warrants) are exercised and converted into common stock

1

Stock Options / Warrants

- **Stock Options:** Right granted to an employee to purchase shares of the company's stock at a predetermined price ("exercise" or "strike" price)
- **Warrants:** Very similar to options, but key differences are that they are used in the financing of deals rather than as employee compensation

2

Convertible Bonds

- **Convertible Bonds:** Type of hybrid financial instrument with features of debt and equity
 - Give the holder the option to convert the bond into a predetermined number of shares – in your questions this conversion rate is based off the conversion price

3

RSU / PSU

- **Restricted Stock Units (RSUs):** Type of equity compensation offered by companies to their employees. Represent a promise to deliver shares of stock under conditions
- **Preferred Stock Units (PSUs):** Rather than time-based vesting, it is performance-based

The Money (Options)

- **In-the-Money:** When the current share price is above the exercise price
- **Out-of-the-Money:** When the current share price is below the exercise price
 - Only in-the-money securities have a dilutive effect

Use the 400 question guide examples

6. Let's say a company has 100 shares outstanding, at a share price of \$10 each. It also has 10 options outstanding at an exercise price of \$5 each – what is its fully diluted equity value?

Use the 400 question guide examples

6. Let's say a company has 100 shares outstanding, at a share price of \$10 each. It also has 10 options outstanding at an exercise price of \$5 each – what is its fully diluted equity value?

Its basic equity value is \$1,000 ($100 * \$10 = \$1,000$). To calculate the dilutive effect of the options, first you note that the options are all “in-the-money” – their exercise price is less than the current share price.

When these options are exercised, there will be 10 new shares created – so the share count is now 110 rather than 100.

However, that doesn't tell the whole story. In order to exercise the options, we had to “pay” the company \$5 for each option (the exercise price).

As a result, it now has \$50 in additional cash, which it now uses to buy back 5 of the new shares we created.

So the fully diluted share count is 105, and the fully diluted equity value is \$1,050.

Use the 400 question guide examples

14. A company has 1 million shares outstanding at a value of \$100 per share. It also has \$10 million of convertible bonds, with par value of \$1,000 and a conversion price of \$50. How do I calculate diluted shares outstanding?

Use the 400 question guide examples

14. A company has 1 million shares outstanding at a value of \$100 per share. It also has \$10 million of convertible bonds, with par value of \$1,000 and a conversion price of \$50. How do I calculate diluted shares outstanding?

This gets confusing because of the different units involved. First, note that these convertible bonds are **in-the-money** because the company's share price is \$100, but the conversion price is \$50. So we count them as additional shares rather than debt.

Next, we need to divide the value of the convertible bonds – \$10 million – by the par value – \$1,000 – to figure out how many individual bonds we get:

$$\$10 \text{ million} / \$1,000 = 10,000 \text{ convertible bonds.}$$

Next, we need to figure out how many shares this number represents. The number of shares per bond is the par value divided by the conversion price:

$$\$1,000 / \$50 = 20 \text{ shares per bond.}$$

So we have 200,000 new shares ($20 * 10,000$) created by the convertibles, giving us 1.2 million diluted shares outstanding.

We do not use the Treasury Stock Method with convertibles because the company is not “receiving” any cash from us.

Dilutive Securities: How to Factor it in

You will often be given a situation in which a firm has dilutive equity securities in addition to common shares – although several methods exist for the treatment of dilutive securities, the following are the most important

1

Treasury
Stock
Method
(Options)

- **Options and Warrants:** Applies to options and warrants
 - You assume that the option / warrant holders pay the company and get new shares, and that the company uses this money to repurchase some of these new shares

2

"If
Converted"
Method
(Converts)

- **Convertible Bonds:** Applies to convertible bonds and sometimes other securities that are linked to the company's share price
 - You check to see if the company's share price is above a certain level; if it is, you count the shares, and if it is not, you don't count the shares (with a convertible bond, you count it as debt)

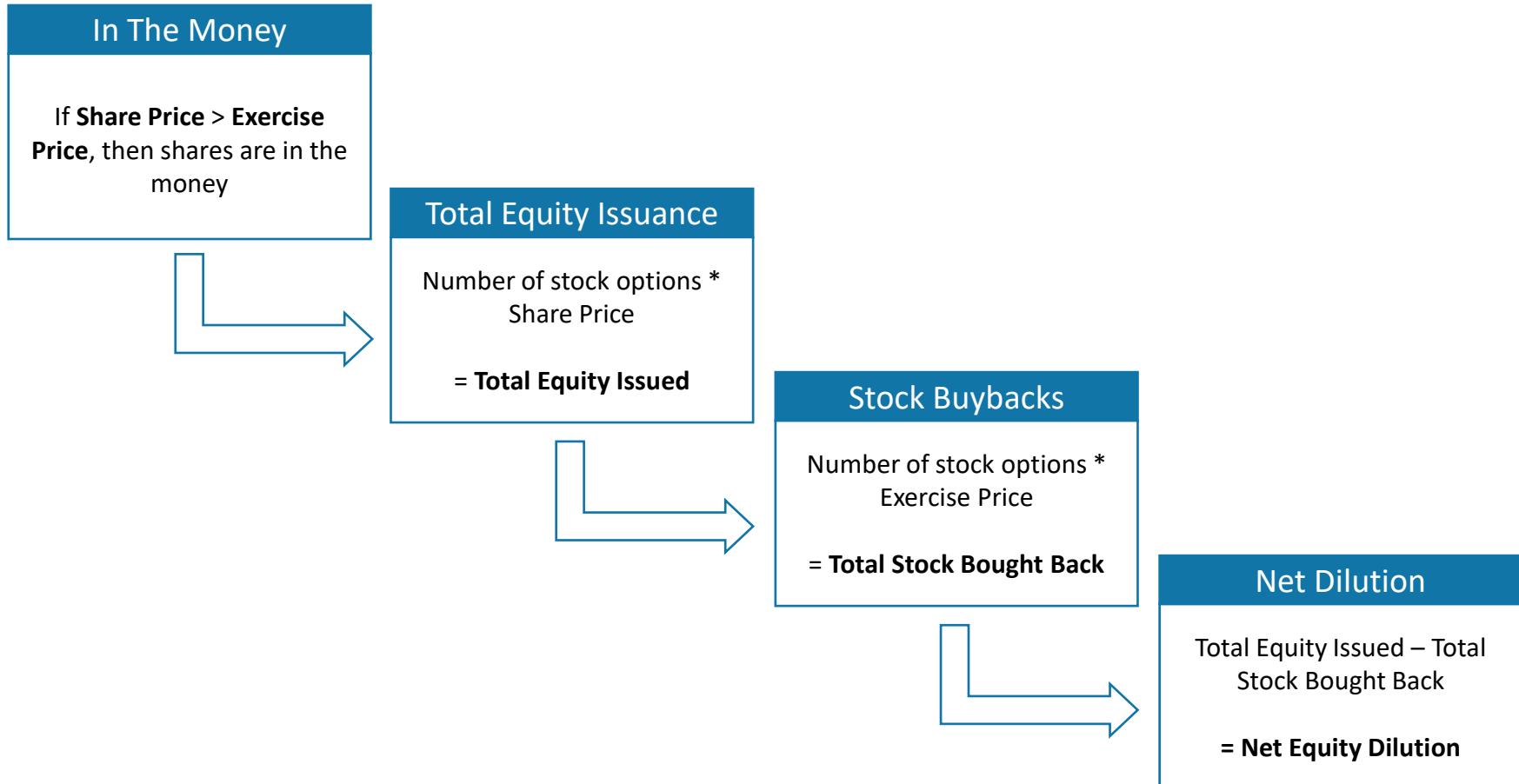
3

Straight-Up
Addition
(RSU / PSU)

- **Straight-Up Addition:** This one applies to restricted stock, restricted stock units (RSUs), and sometimes other variants of these
 - You simply add these units to the company's share count to calculate the diluted shares

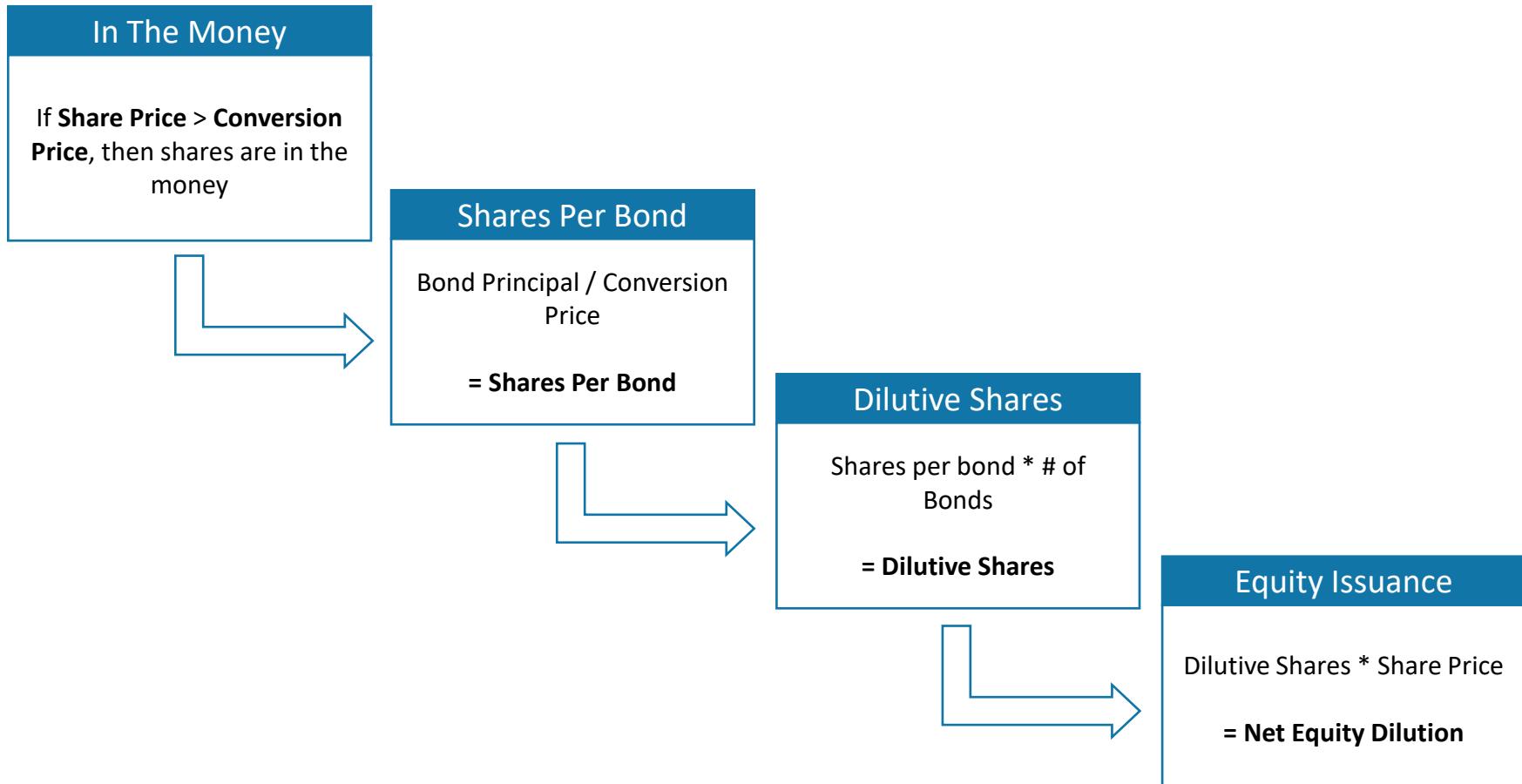
Treasury Stock Method

The treasury stock method (TSM) is used to determine the impact of dilutive securities in the form of stock options and warrants – the method is known as the TSM because small fraction of the dilutive equity will be bought back



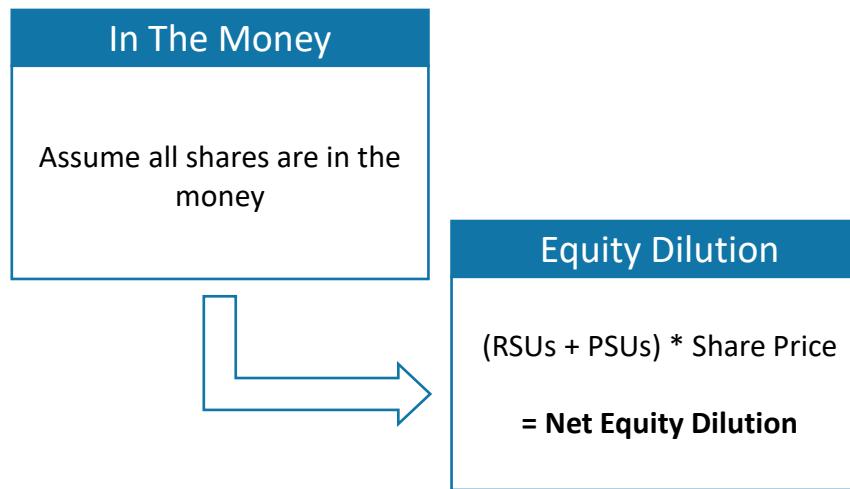
If Converted Method

The if-converted method is used to determine the dilutive affect of convertible debt securities – such financial instruments are treated as if they were common equity as long as the conversion price is in the money



Straight Up Addition

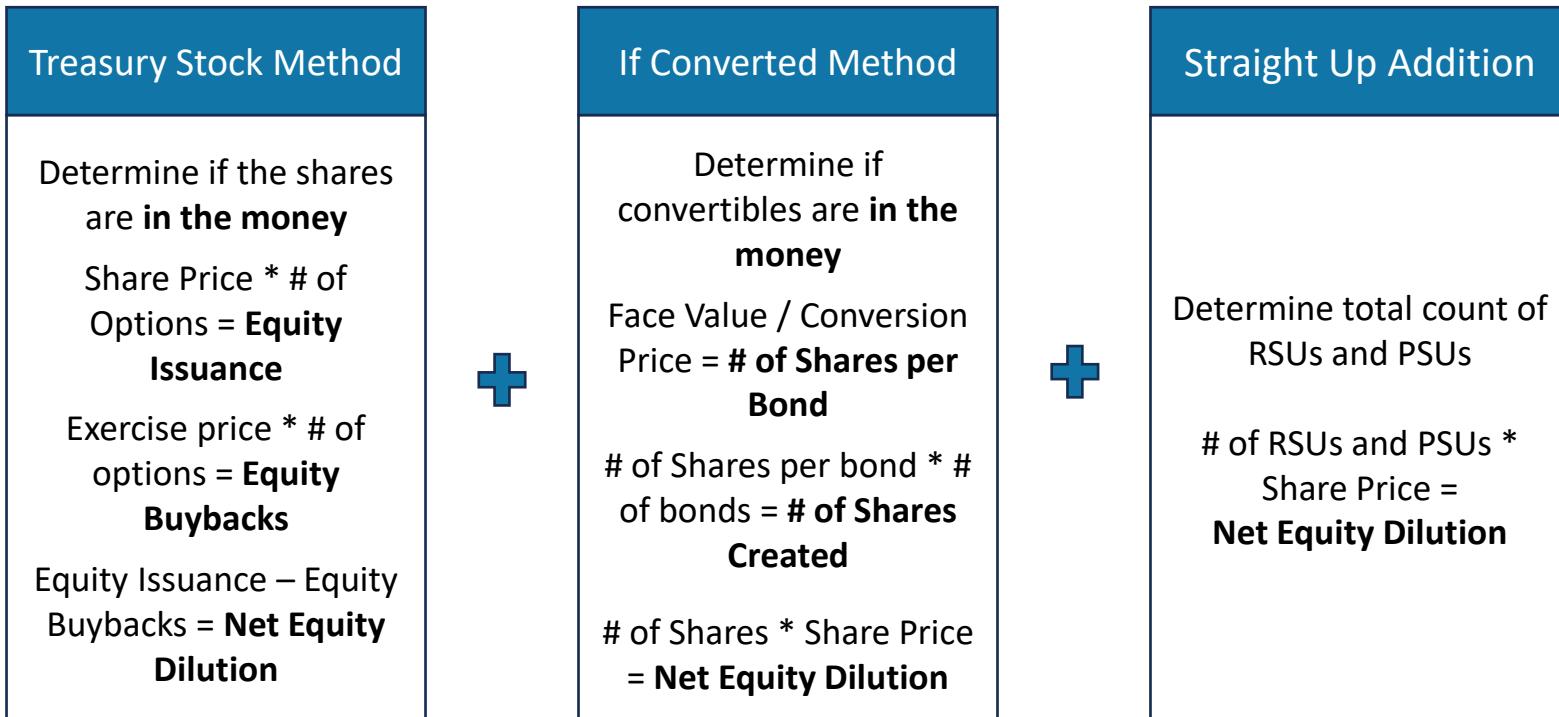
Restricted stock units and performance stock units are all aggregated with the share count to determine fully diluted equity value



Example - FDSO

For your interviews, there are certain ways you will learn to factor in dilution from the securities. All you should care

A company has 5,000 shares at \$40 a share. There are 200 call options at an exercise price of \$10, 100 PSUs and 200 convertible bonds at a price of \$50 and a par value of \$100. What is the diluted equity value?



Example – FDSO Answers

For your interviews, there are certain ways you will learn to factor in dilution from the securities. All you should care

A company has 5,000 shares at \$40 a share. There are 200 call options at an exercise price of \$10, 100 PSUs and 200 convertible bonds at a price of \$40 and a par value of \$100. What is the diluted equity value?

Treasury Stock Method

Share price is \$40, exercise price is \$10, **shares are in the money**

200 Call Options * \$40 = **\$8,000 Equity Issuance**

200 Call Options * \$10 = **\$2,000 Buybacks**

\$8,000 Issued - \$2,000 Bought Back
= **\$6,000 Net Equity Dilution**



If Converted Method

Share Price is \$40, conversion price is \$40, **bonds are in the money**

Par Value \$100 / Conversion Price \$40 = **2.5 Shares Per Bond**

200 Convertible Bonds * 2.5 Shares Per Bond
= **500 Shares**

500 Shares * \$40 Per Share = **\$20,000 Net Equity Dilution**



Straight Up Addition

100 PSUs to be added in
100 PSUs * \$40 Share Price
= **\$4,000 Net Equity Dilution**

Example – FDSO Answers

After determining the effect of dilutive securities, put it all together by adding the sum of the dilutive effects to the company's market capitalization to determine fully diluted equity value

A company has 5,000 shares at \$40 a share. There are 200 call options at an exercise price of \$10, 100 PSUs and 200 convertible bonds at a price of \$50 and a par value of \$100. What is the diluted equity value?

Treasury Stock Method

\$6,000 Net Equity Dilution



If Converted Method

\$20,000 Net Equity
Dilution



Straight Up Addition

\$4,000 Net Equity Dilution

\$200,000 Market Cap + \$30,000 Dilutive Effects
= \$230,000 Fully Diluted Equity Value

Impact of Events on Enterprise and Equity Value

Interviewers will commonly assess your knowledge of changes to enterprise and equity value – when determining how valuation has changed always work within the framework of the following questions

Equity Value

Does common shareholders equity change?

If yes, then our equity value has changed. Further information is required to determine if our EV has changed as well.

Enterprise Value

Do net operating assets change?

If yes, then our EV will change by the amount that NOA changes – it doesn't matter which investor group paid because EV reflects all investors.

Example - Capital Structure Changes

Company issues \$100 of common stock and holds the proceeds as cash

Does common shareholders equity change?

If yes, then our equity value has changed. Further information is required to determine if our EV has changed as well.

Do net operating assets change?

If yes, then our EV will change by the amount that NOA changes – it doesn't matter which investor group paid because EV reflects all investors.

Example Answers – Capital Structure Changes

Company issues \$100 of common stock and holds the proceeds as cash

Does common shareholders equity change?

Yes – a \$100 increase in common stock equates to a \$100 increase in shareholders equity

Do net operating assets change?

No – because the proceeds are held as cash, which is a non-operating asset and excluded in the EV formula, the enterprise value has not changed

Enterprise and Equity Value

Enterprise and equity value are both metrics used to represent the value of the firm to a given specified group of financiers and are used to cross check on another to accurately represent firm value

- Enterprise Value Formula and “The Bridge”
 - Conversion items including Debt, Preferred Stock, Non-controlling interests, etc.
 - Why certain assets are excluded from enterprise value
- Equity Formula
 - Method for determining market equity value
- Implied vs current valuation
- Calculation of FDSO and diluted equity value
- Unlevered vs levered valuation tools and applications

Table of Contents

Course Overview

Financial Accounting

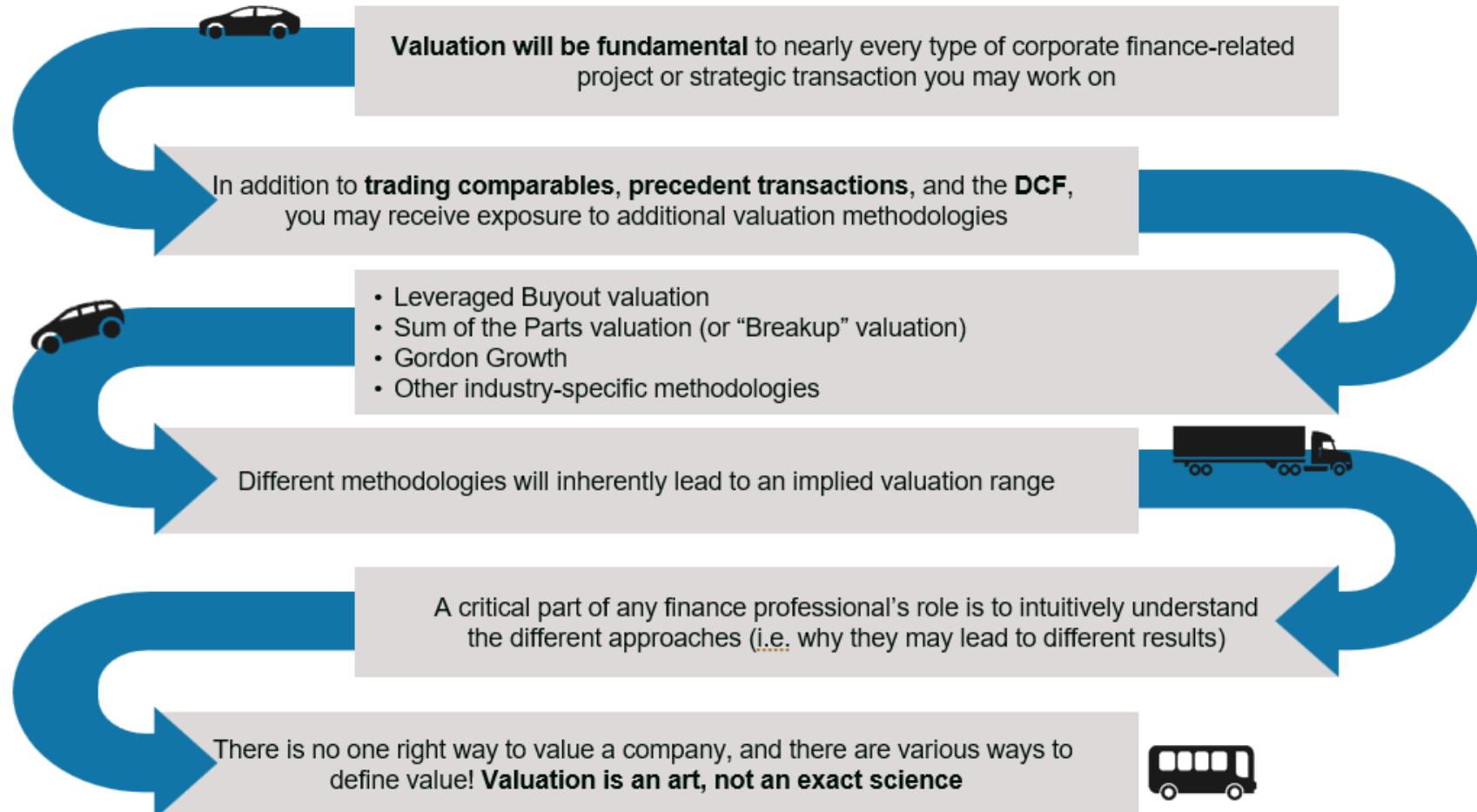
EV & Equity Value

Valuation – Intrinsic and Relative

LBO

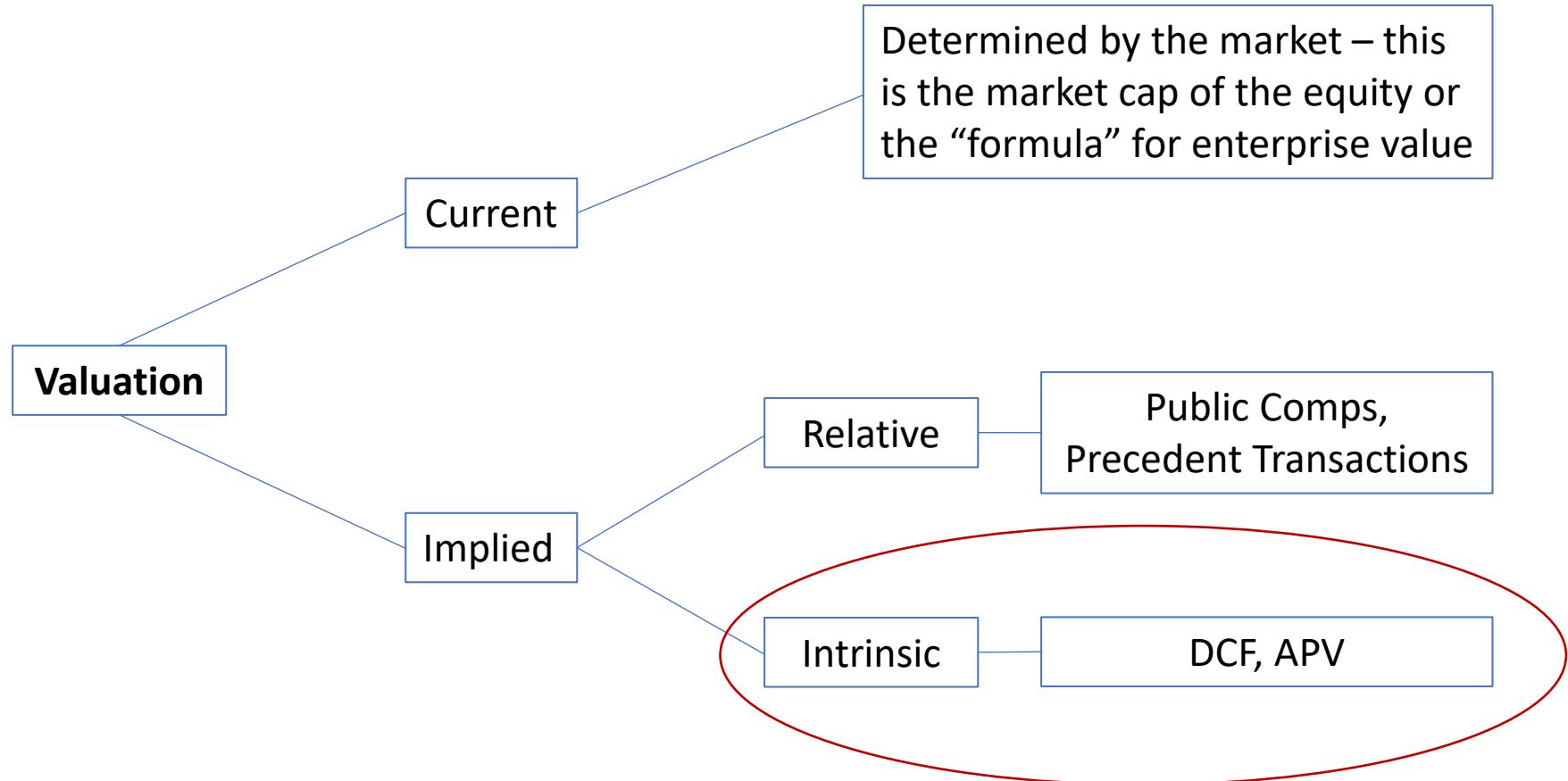


Valuation Roadmap



Current vs Implied Valuation

The most effective tool for valuing an asset is a financial market – analysis made by an investment banker seeks to represent value on either a relative or intrinsic basis to cross check market valuations and value private firms



Cash Flows

In the world of finance, you will often hear the word levered used to describe whether the impacts of capital structure have been taken into consideration when looking into cash flows, multiples, and valuation

Unlevered
(EV)

The impacts of capital structure have not yet been considered

$$\text{FCFF (UFCF)} = \text{NOPAT} + \text{D\&A} - \text{NWC} - \text{Capex}$$

Levered
(Equity Value)

The impacts of capital structure (financial leverage), including the payment of interest, have been considered

$$\text{FCFE (LFCF)} = \text{NI} + \text{D\&A} - \text{NWC} - \text{Capex} + \text{Net Borrowing}$$

The Discounted Cash Flow (DCF) method is a valuation technique used to estimate the value of a company by **forecasting its future cash flows and then discounting them back to their present value.**

This method helps determine what a company is worth today based on its ability to generate cash in the future. It is commonly used in corporate finance to assess investment opportunities, mergers, and acquisitions.

How does a DCF quantify enterprise value?

- Unlevered free cash flow (UFCF) represents the cash flow left over for all capital providers, such as debt, equity, and preferred stock investors
- In a DCF you are estimating future UFCF and then discounting them back to today
- Once you find EV, you can back into what equity value is

$$EV = \sum_{i=1}^n \frac{FCFF_i}{(1 + WACC)^i} + \frac{TV}{(1 + WACC)^n}$$

DCF Valuation

The discounted cash flow analysis can be used for a variety of purposes ranging from capital budgeting to equity value and/or enterprise value

Enterprise Value
DCF

Impacts of Total Capital Structure Accounted for by WACC

Discount UFCF

Equity Value
DCF

**Impacts of Capital Structure Accounted for Interest Expense,
Value of Equity Determined by Cost of Equity**

Discount LFCF

Introduction to Discount Rates

The interest rate or rate of return used to discount future cash flows to their present value. In academic terms, it reflects both the **opportunity cost of capital** (what investors could earn in alternative investments of similar risk) and the **compensation required for the uncertainty** of future cash flows.

A discount rate therefore accounts for the time value of money – which is determined by consumption, investment, and risk.

WACC Overview

- **WACC** represents a given company's weighted average return on invested capital based on that company's underlying capital structure
 - Debt and equity components have different "expected" returns and tax implications, and thus need to be analyzed independently before combining
- What an investor would expect to earn from an alternative investment with a similar risk profile

Conceptual Overview of WACC Calculation

Debt	+	Equity	Where:
(After-tax Cost of Debt * % of Debt in Capital Structure)	+	(Cost of Equity * % of Equity in Capital Structure)	<ul style="list-style-type: none">• R_d = Cost of Debt• R_e = Cost of Equity• T = Marginal Tax Rate• D = Market Value of Debt• E = Market Value of Equity• V = Total Value ($D + E$)
$(r_d \cdot (1-t)) \cdot (D/(D+E))$	+	$(r_e) \cdot (E/(D+E))$	

WACC is critical to a DCF analysis, as it represents the annual rate that free cash flows in the future are discounted by, so it is critical to intuitively understand its composition

Introduction to the CAPM

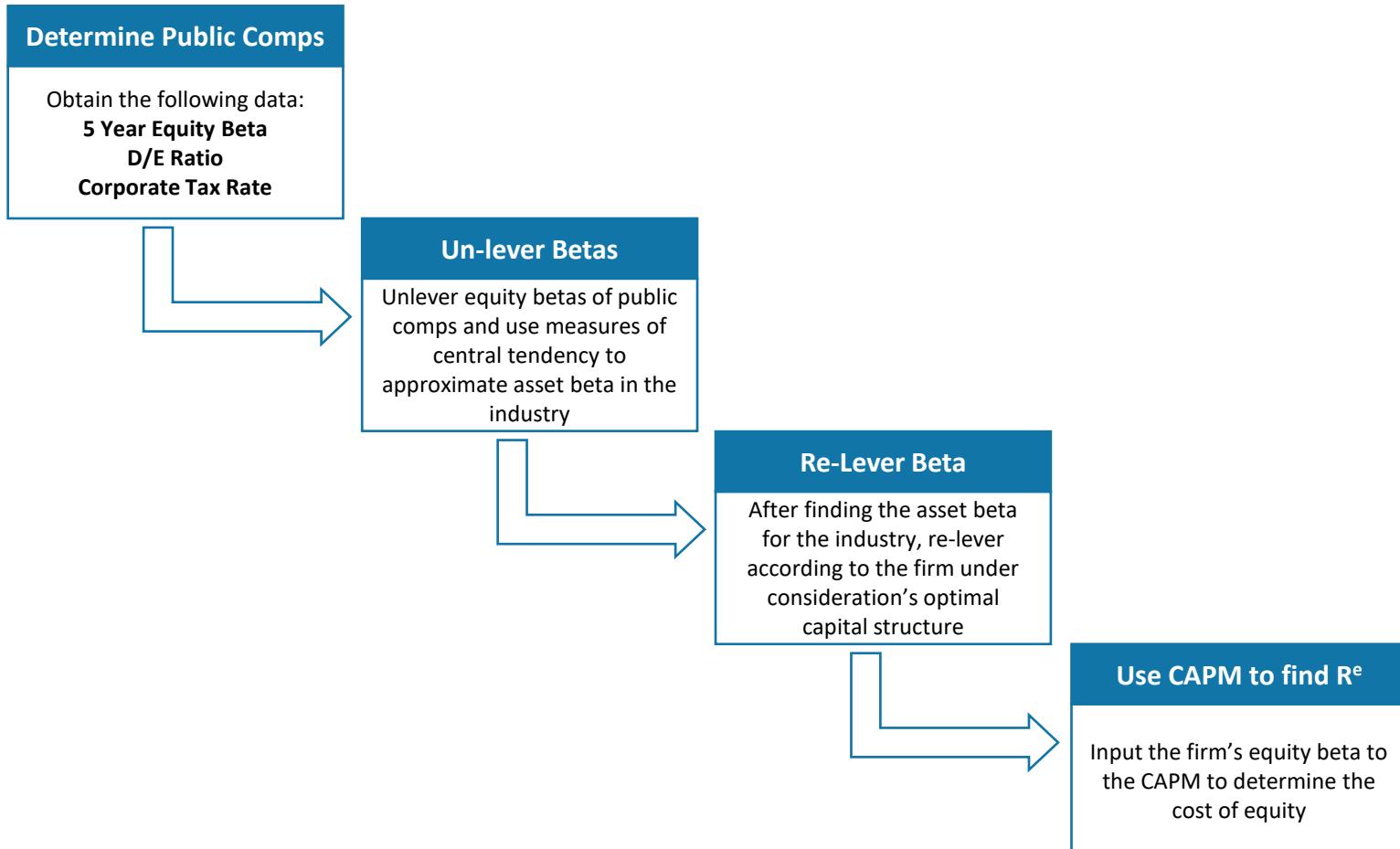
CAPM calculates the cost (expected return) of equity capital based on expected stock market performance and risks and the company's share price sensitivity to movements in the overall market (beta)

$$\text{CAPM} = Re = Rf + \beta (Rm - Rf)$$

Equation	Name	Where to Find It
Re	Re (cost of equity)	<ul style="list-style-type: none">Derived from CAPM
Rf	Risk-free Rate	<ul style="list-style-type: none">Current yield on US 10-year bond is preferred Rf proxy in USReflects YTM of “riskless” government bonds of equivalent maturity to the duration of each cash flows being discounted
$Rm - Rf$	Market Risk Premium	<ul style="list-style-type: none">Excess expected market return (typically the S&P 500) over that of the risk-free rate; assumptions vary but generally 5-8%
β	Asset Beta (Unlevered Beta)	<ul style="list-style-type: none">Can be derived from the Asset Beta equation (following page)

Determining the Cost of Equity

Determining a firm's cost of equity is a multi-step process that requires the use of the capital asset pricing model in addition to the evaluation of systematic risk as measured by beta



Introduction to Discounted Cash Flows

Definition

The **DCF analysis** values a company based on the **present value (“NPV”)** of the sum of its projected **future free cash flows**

Deep Dive

How its Calculated

- Sum of future free cash flows for ~5 years and **Terminal Value (“TV”)**
- **Discount** each annual cash flow at least one year in the future **at a rate (or “cost of capital”) reflecting the risk profile** of the business
- Projection period should be long enough for company to achieve a “steady state⁽¹⁾”

Additional Details

- **Free cash flows** can be derived based on one's assumptions for a company's growth, margins profile, **CapEx**, and working capital requirements
- **TV** reflects company value beyond the projection period (i.e., in perpetuity)
- Increases in cash flows or the TV increase valuation, but increases in WACC decrease valuation

What It's Not

- **Intrinsic Value** does not reflect the current **Market Value** of a company
- Not sensitive to periods of market volatility

$$NPV = CF^0 + \frac{CF^1}{1 + WACC} + \frac{CF^2}{(1 + WACC)^2} + \dots,$$

Terminal Value – the DCF in Perpetuity

- The perpetual growth model assumes the firm continues to exist indefinitely by expanding the forecasts applied at the end of the explicit forecast period

$$TV = \frac{FCF_n * (1 + g)}{(r - g)}$$

Other Methods of Determining Terminal Value

In addition to the perpetual growth model, there exist multiple other forms of valuing the firm's enterprise value at the conclusion of the explicit forecast period.

Exit Multiples Method

Assumes the firm is sold at the end of the explicit forecast period.

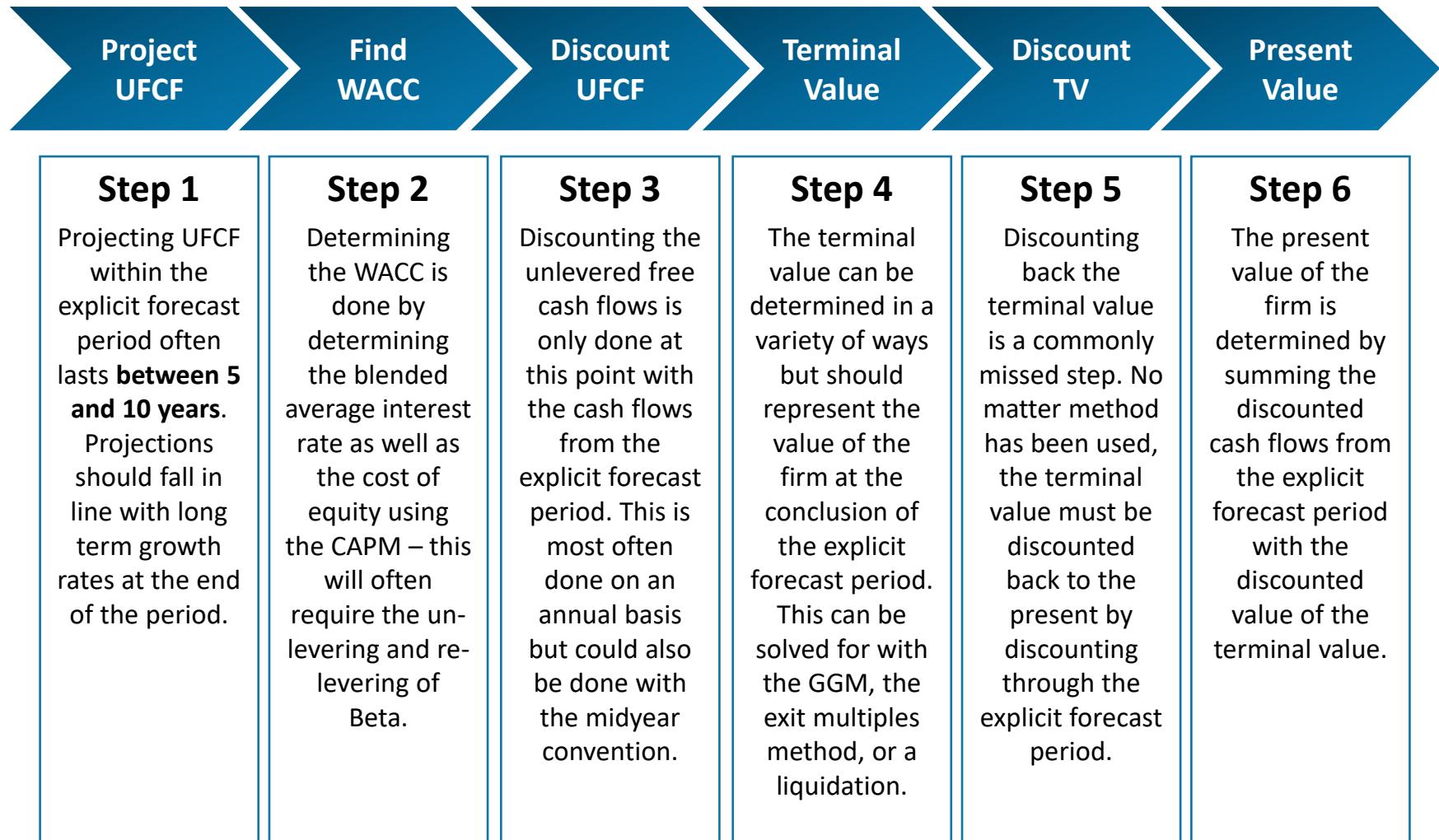
Apply market determined multiples to the final year's EBITDA and discount this terminal EV back over the course of the explicit forecast period.

Liquidation Valuation

Assumes the company is liquidated at the conclusion of the explicit forecast period.

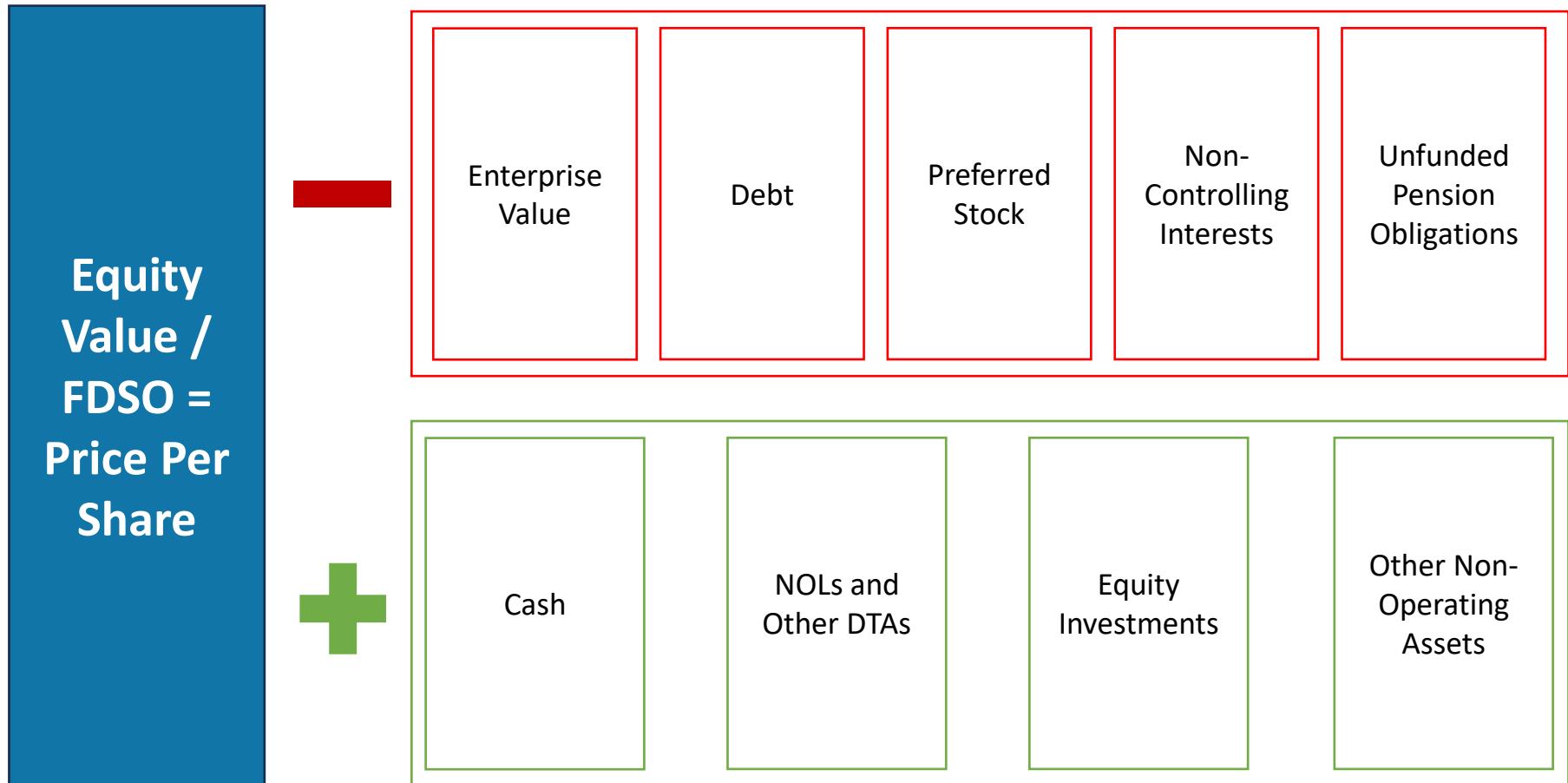
This technique is used far more commonly for DCF terminal value in cases of capital budgeting than in firm valuation.

Walk me Through a DCF



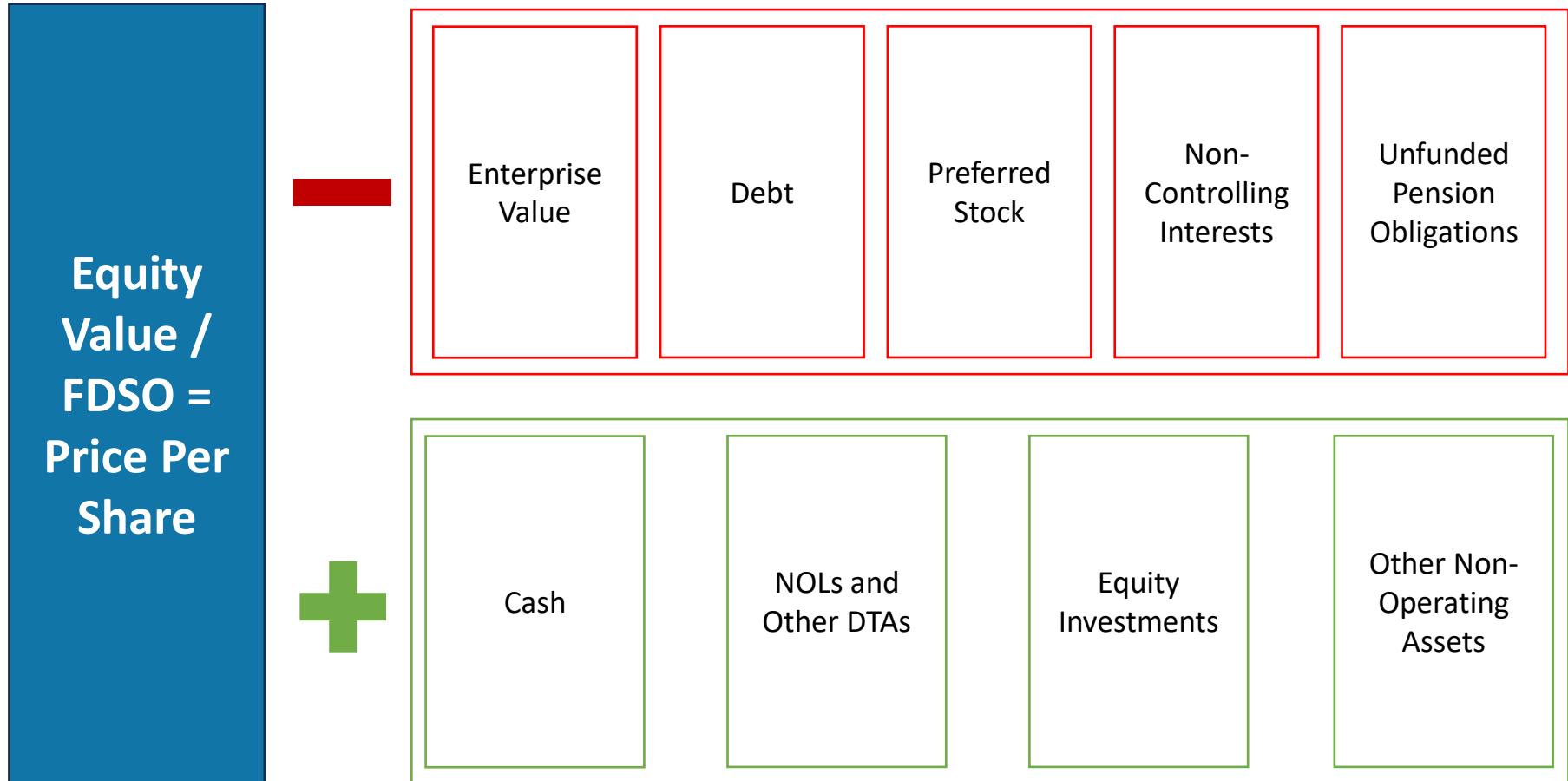
Using the DCF to Determine Share Price

For a private company, upon completion of the DCF valuation is complete – however in the case of a public company, transition to equity value and divide by FDSP to find an implied price per share



Using the DCF to Determine Share Price

For a private company, upon completion of the DCF valuation is complete – however in the case of a public company, transition to equity value and divide by FDSP to find an implied price per share



Key Inputs in the DCF

Revenue growth %

WACC

Tax rate

Risk free rate

CapEx projections

Exit multiple

D&A Projections

Perpetuity growth rate

Beta

D/E Ratio

Working Capital Change

If these increase

How does
that effect
Enterprise
value?

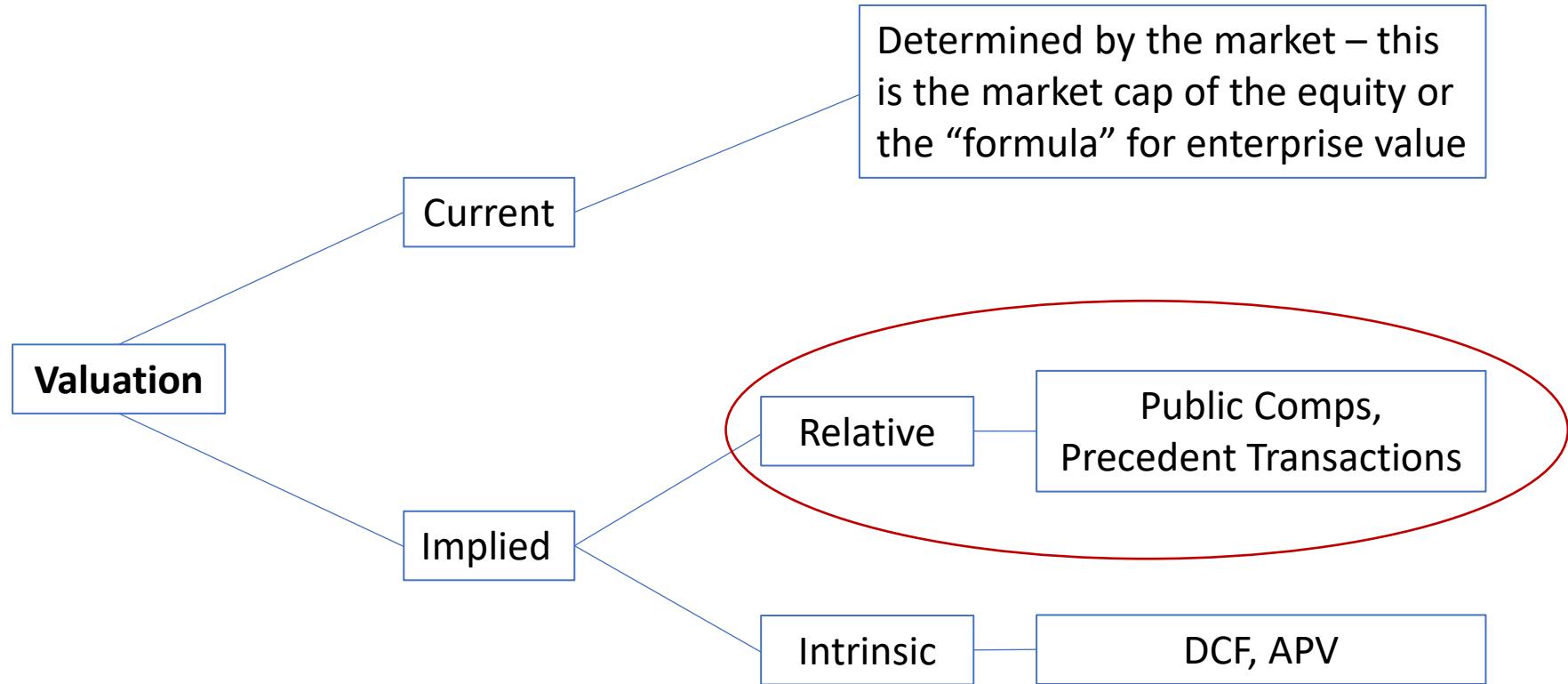
Key Inputs in the DCF

Revenue growth %	EV goes up
WACC	EV goes down
Tax rate	Unclear
Risk free rate	EV goes down
CapEx projections	EV goes down
Exit multiple	EV goes up
D&A Projections	No impact
Perpetuity growth rate	EV goes up
Beta	EV goes down
D/E Ratio	Unclear
Working Capital Change	EV goes down

If these increase

Current vs Implied Valuation

The most effective tool for valuing an asset is a financial market – analysis made by an investment banker seeks to represent value on either a relative or intrinsic basis to cross check market valuations and value private firms



Multiples are a shorthand measure for intrinsic valuation – both value the firm based off the present value of future cash flows

$$\frac{1}{(r - g)} * FCF_{n+1} = 10x * FCF_{n+1}$$

Parameters of Relative Valuation

For multiples to be applied from one set of firms to another, the firms must face similar systematic risk and have similar growth rates – this allows for standardization of WACC and thus leaves CF as the only variable

$$\frac{1}{(r - g)} * FCF_{n+1} = 10x * FCF_{n+1}$$

Essential Characteristics of Comps Universe

Business Characteristics	Financial Characteristics
<ul style="list-style-type: none">- Sector- Products and Services- Customers and End Markets- Distribution Channels- Geography	<ul style="list-style-type: none">- Size- Profitability- Growth- Return on Investment- Credit Profile

Cash Flows and Practical Applications

Cash drives firm value – thus in a perfect world, only cash flow multiples would be used to represent firm value, however as the income statement is standardized and thus allows for greater degree of comparability

Valuation Metrics	
Cash Flow <ul style="list-style-type: none">- FCFF (UFCF)- FCFE (LFCF)- FCF	Income Statement <ul style="list-style-type: none">- Revenue- EBITDA- EBIT- Net Income

Review of multiples

Definition



Multiples – use a **value metric** in the numerator and a **financial or operational metric** in the denominator. Reflects current valuation on a per unit basis based on market conditions

Enterprise Value Multiples

EV / Revenue

Enterprise Value divided by Revenue

EV / EBITDA

Enterprise Value divided by EBITDA

EV / EBIT

Enterprise Value divided by EBIT

Equity Value Multiples

P / E

Equity Value divided by Net Income, OR
(Price per Share divided by EPS)

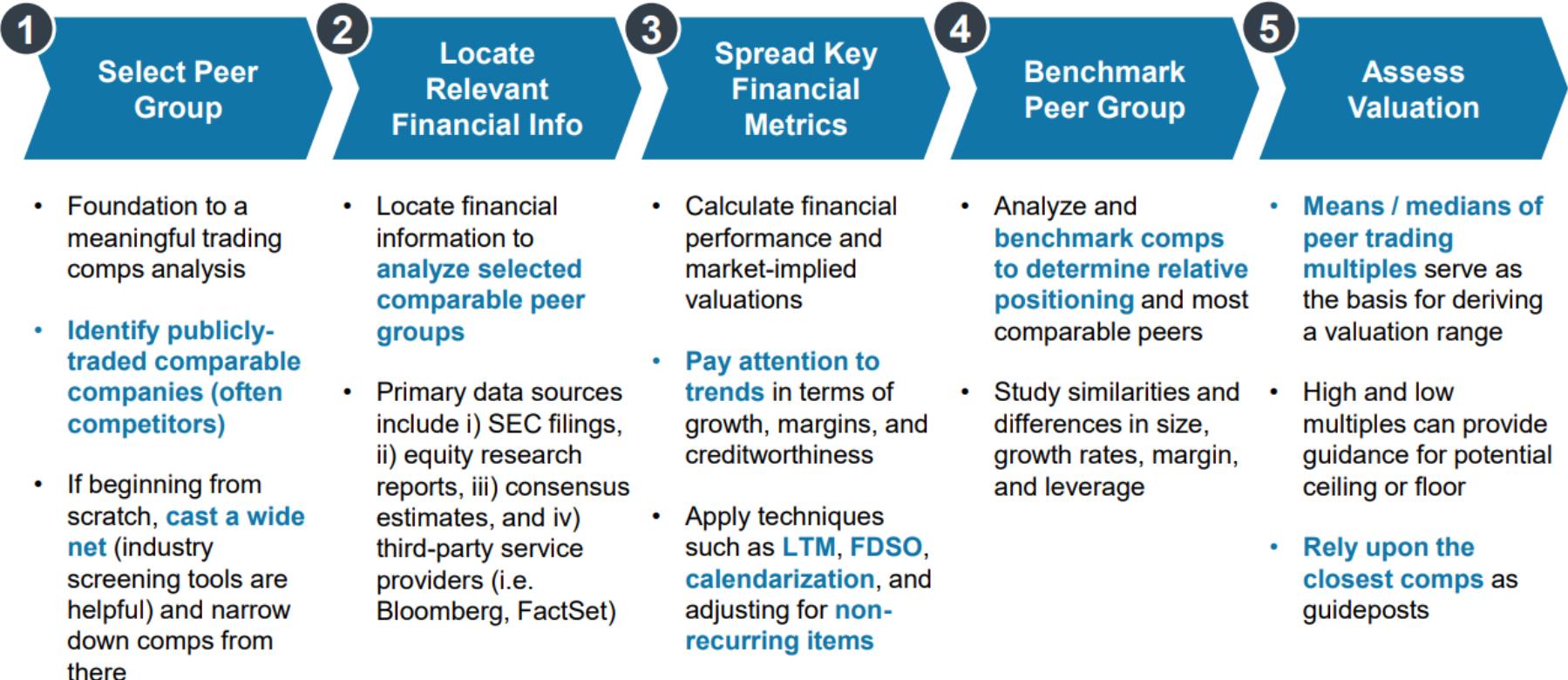
PEG

P / E ratio divided by Projected Long-term EPS Growth Rate

P / B

Equity Value divided by Book Value of Equity

Trading comps analysis steps



The steps above are a guidepost for any financial analyst looking to conduct a trading comps analysis

Advantages and disadvantages of trading comps



1

Market Based

- Based on public market data, reflecting the market's growth and risk expectations, as well as overall sentiment

2

Relativity

- Easily measurable and comparable versus other companies

3

Quick and convenient

- Valuation can be determined on the basis of a few easy-to-calculate inputs

4

Current

- Based on prevailing market data, which can be updated on a daily (or intraday) basis



1

Market based

- Valuation that is completely market-based can be skewed during periods of irrational exuberance or bearishness

2

Absence of relevant comparables

- "Pure play" comparables may be difficult to identify or even non-existent

3

Potential disconnect from cash flow

- Prevailing market conditions may have significant disconnect from a company's projected cash flow generation

4

Company specific issues

- Based on the valuation of other companies, which may fail to capture target-specific strengths, weaknesses, and risks

Common Precedent Transaction Multiples

EV / Revenue

Enterprise Value divided by Revenue

EV / EBITDA

Enterprise Value divided by EBITDA

EV / EBIT

Enterprise Value divided by EBIT

P / E

Equity Value divided by Net Income

The key difference between public comps and precedent transactions is control premium

- Share price in an acquisition = market value of share + control premium
- Control premium is the price the acquirer pays to take a majority (controlling) stake in the firm being acquired
- Control premium also exists because strategic buyers are able to realize synergies post acquisition – thus enabling a higher purchase price
- Because precedent multiples inherently include a control premium, **they will yield a higher valuation than public comparables**

Synergies

Strategic acquirers can also absorb the cost of the control premium by realizing synergies



Synergies

Definition:

- **Synergies** are potential cost savings, growth opportunities, lower costs of capital, or other benefits resulting from the combination of two companies
- Expected incremental cash flow and earnings in the future (beyond what the buyer could generate on its own)

Key Themes:

- Prices (and valuation multiples) can be impacted by the buyer's opinion of the probability of achieving potential synergies (timing, size, etc.)
- Most relevant for **strategic buyers** (less for **financial buyers**)
- Sometimes (not always) disclosed, either in absolute \$ or % of the target's revenue

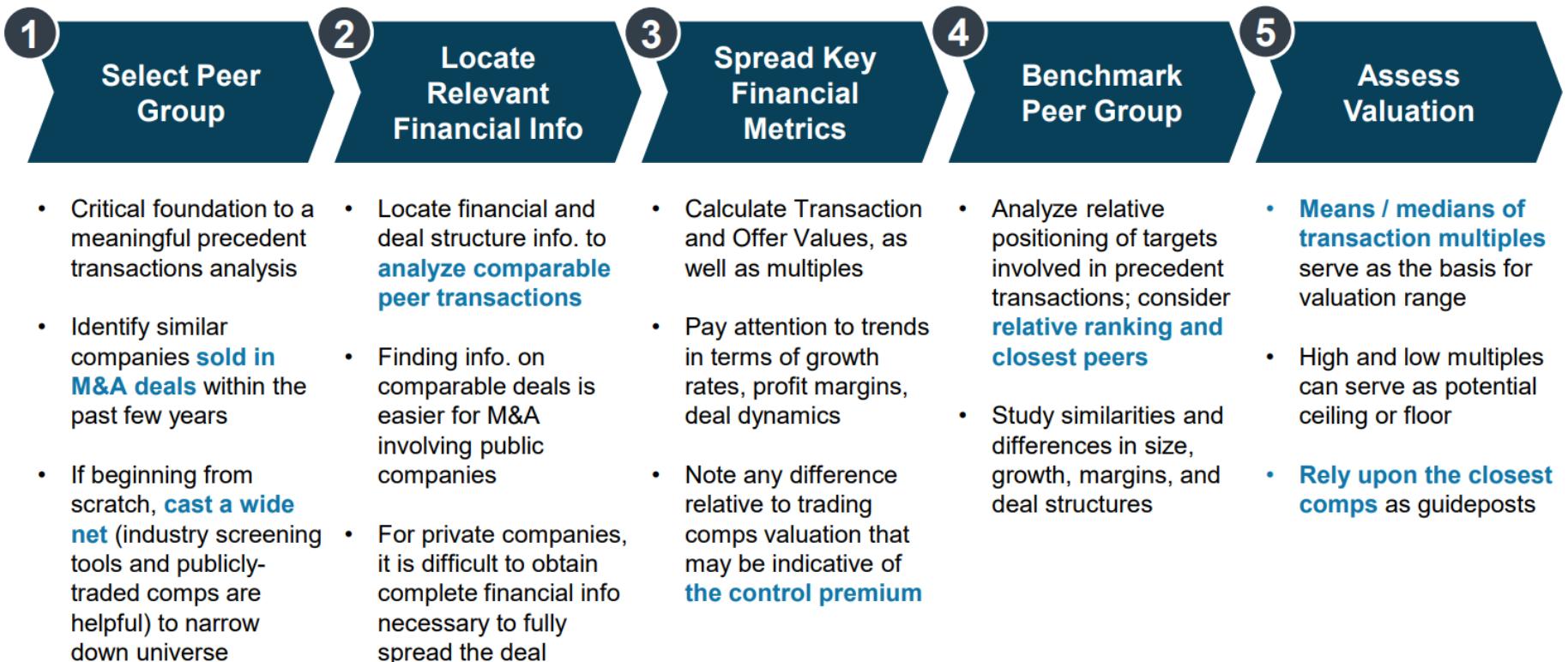
Key Takeaway

Synergies should be compared across precedent transactions (if possible) to provide greater context to each deal

Cost Synergies vs Revenue Synergies

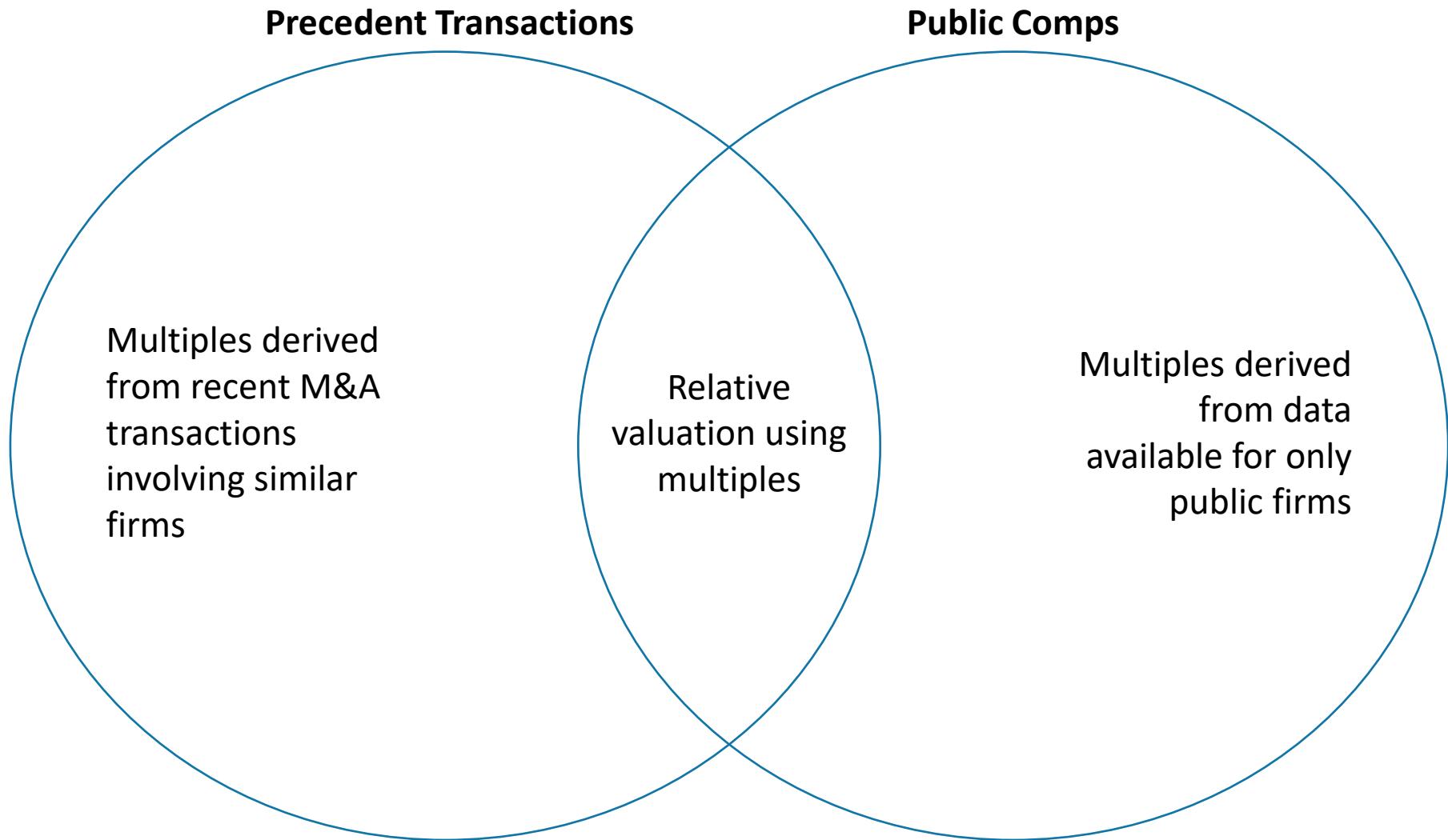
Cost Synergies	Revenue Synergies
(Hard Synergies)	(Soft Synergies)
<ul style="list-style-type: none">- Consolidation of administrative departments (accounting, finance, HR)- Economies of scale to drive down production costs- Consolidation of brick-and-mortar facilities	<ul style="list-style-type: none">- Cross Selling- Geographic Expansion- Product Diversification- Increased Pricing Power

Precedent transaction analysis process

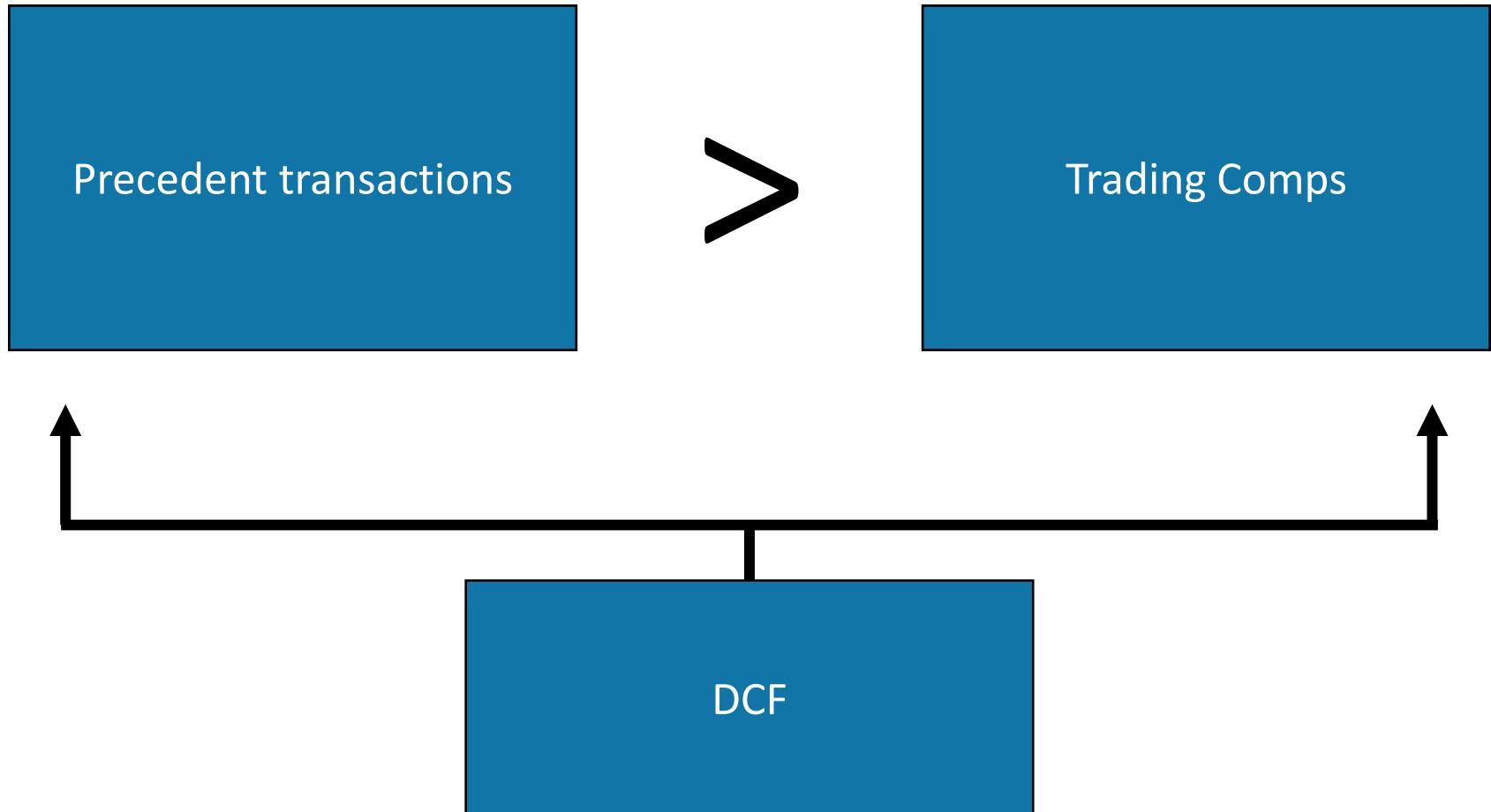


The steps above are a guidepost for any financial analyst looking to conduct a precedent transactions analysis

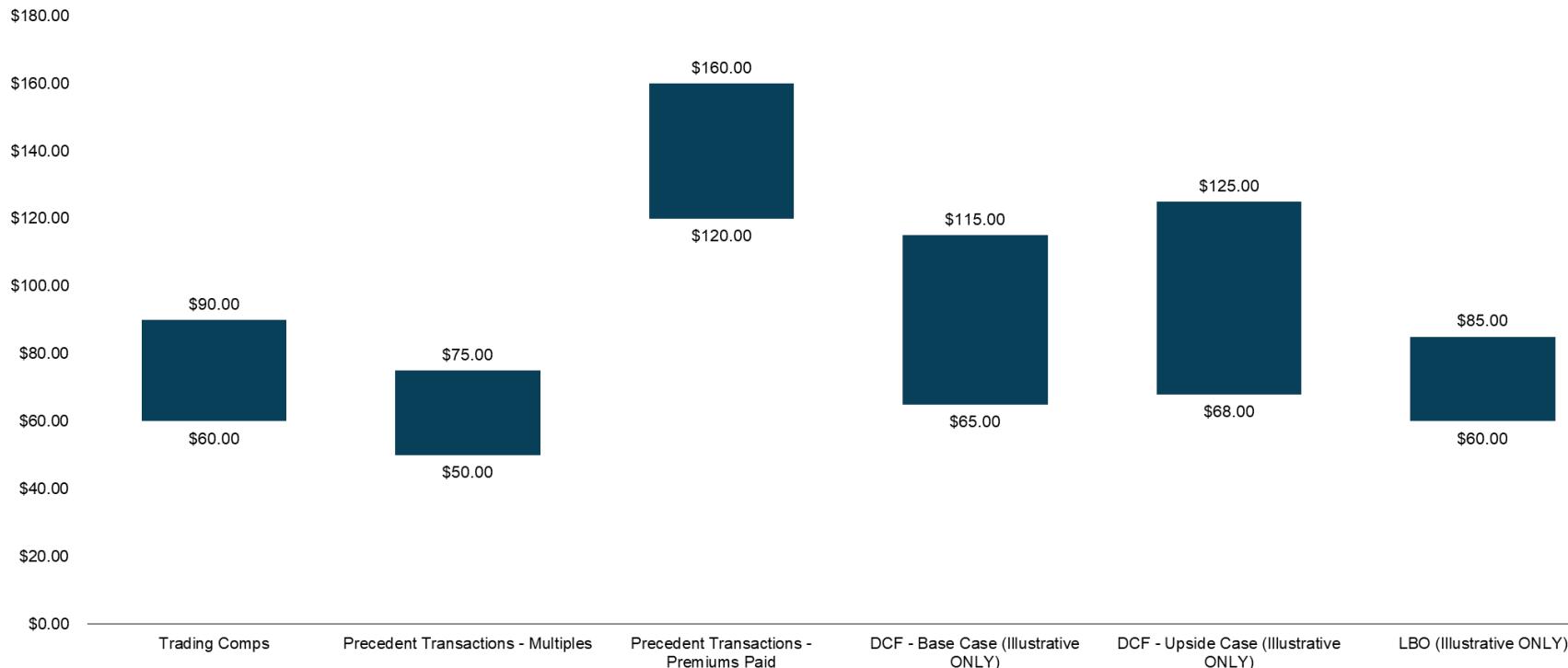
Precedent transactions overview



Ranking the 3 major valuation techniques



Putting it all together – Football field



Valuation

Across all product and coverage groups of an investment bank, valuation is the lifeblood of services provided and involves techniques such as valuation my multiples and discounted cash flow analysis

- Relative Valuation
 - Feasible multiples
 - Sourcing and Benchmarking Comps
 - LTM vs Forward Multiples
- Precedent Transactions
 - Feasible Multiples
 - Sourcing and Benchmarking Comps
 - Precedent Transactions vs Relative Valuation
- Discounted Cash Flow
 - CAPM
 - WACC and Discount Rates
 - UFCF (And Other Cash Flows)
 - Terminal Value
 - EMM
 - Perpetual Growth Model
- Other Valuation Methodologies
 - SOTP
 - LBO
 - Divided Discount

Table of Contents

Course Overview

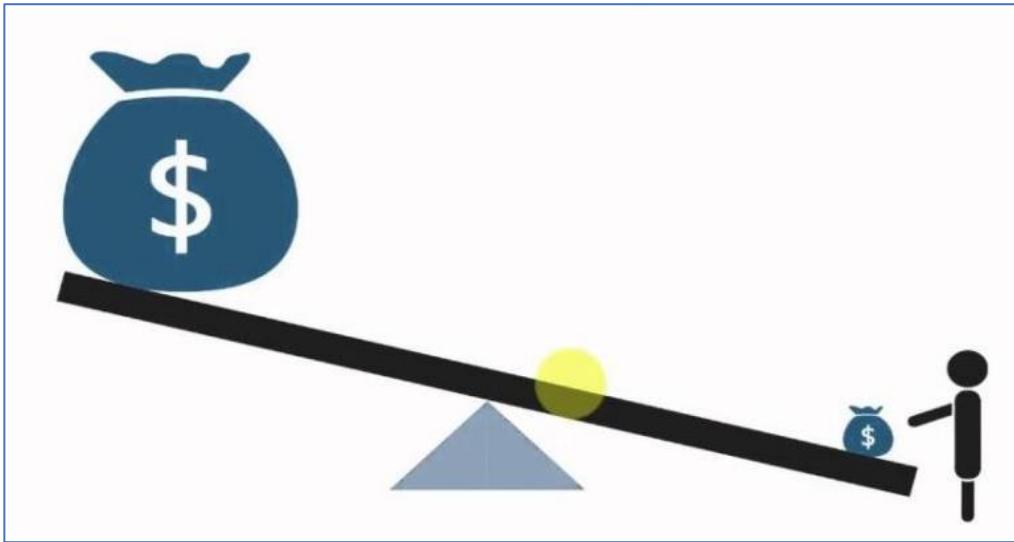
Financial Accounting

EV & Equity Value

Valuation – Intrinsic and Relative

LBO

Financial Leverage



Financial Leverage

Leverage is a tool, force, or advantage used to amplify an outcome. In finance, this simply refers to a device of financial engineering used to enhance ROE. This device is debt – higher debt yields more extreme outcomes as measured by return on equity. Leverage considerations are a crucial part of the financing structure of both M&A deals and LBOs.

Tradeoff Theory of Debt Financing

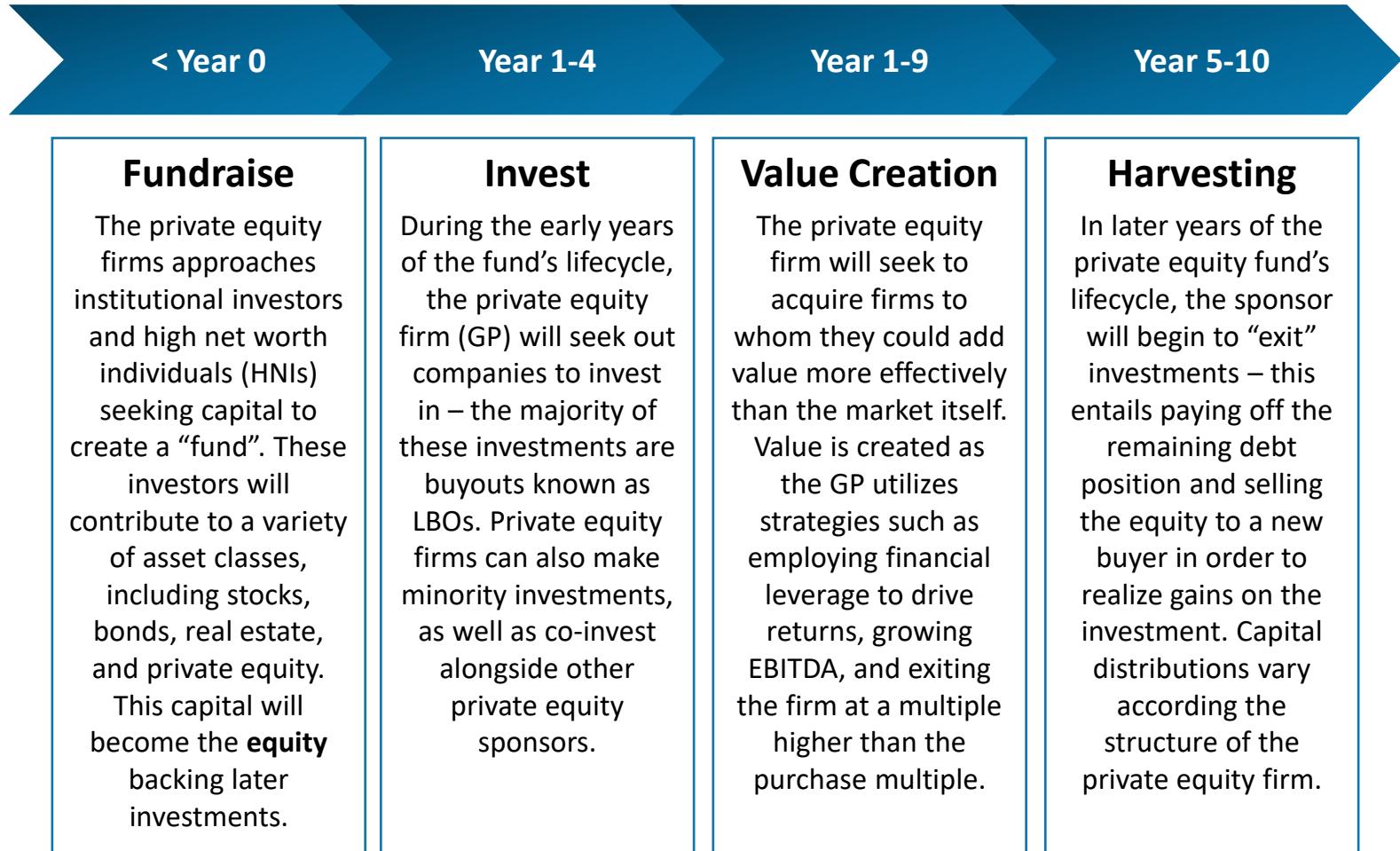


Leveraged Buyouts Key Terms and Definitions

LBO	Leveraged Buy Out
Sponsor	Private Equity (PE) Fund
Leverage	Debt
Equity	Sponsor Cash “Down Payment” (non-debt source of cash to finance the deal)
Portfolio Company (“Portco”)	A company that a PE firm owns
IRR	Internal Rate of Return; how we measure returns over various time horizons
Cash on Cash or Multiple of Money	Multiple of invested capital (i.e. = $\frac{\text{Cash Received at Exit}}{\text{Cash Invested}}$)

Private Equity Overview

“Private equity” refers to investors that invest in the equity of private companies ranging from the startup, to growth, to later stages using borrowed capital (debt) and investments from limited partners (equity)



Private Equity in the Economy

Private equity is just one of many forms of investment companies, other examples include hedge funds, mutual funds, endowments, pensions, and even retail investors trading stocks from their own homes

Public Equity Investors

Hedge funds, Mutual Funds, Retail Investors, Endowments, Pensions

Private Equity Investors

Limited partners such as endowments, pensions, high net worth individuals, etc. invest through a private equity sponsor known as a GP

Private Equity in the Economy

Private equity investing is only available to more specialized and expert level investors – the nature of private equity itself requires less liquidity and longer holding periods in order to realize significant returns

Public Markets Characteristics

SEC mandates release of consistent and reliable information to ensure minimal information asymmetry – this system fosters market liquidity and allows for even the most novice of investors to contribute capital.

Secondary markets play a key role in the trading of public equities.

Private Markets Characteristics

Private companies are far less regulated than public companies in the US and are required to disclose almost no information to the public – as such informational asymmetry is high thus fostering a market in which limited liquidity can exist and only sophisticated investor participate.

Secondary markets play a small but growing role in private equity.

Characteristics of a good LBO Candidate

There are multiple criterion used by private equity firms when evaluating investment opportunities. Stability is the major theme! Growth helps, but it's less important than stability.

1

- Strong, predictable cash flows to service the debt while continuing to fund the business

2

- Mature, steady, defensive industry characteristics

3

- Leading market position and or strong brands

4

- Limited capital expenditure and product development requirements

5

- Undervalued (low valuation statistics relative to peers; e.g., P/E or EV/EBITDA multiples)

6

- Owned by a motivated seller

7

- Opportunities for immediate rationalization for the financial sponsor (e.g., margins improvements, working capital improvements, synergies with other portfolio companies)

8

- Viable exit strategies (e.g., IPO or strategic sale)

Value Creation in Leveraged Buyouts

Shareholder value is created in a leveraged buyout by pulling on any combination of 3 levers: financial leverage, growth in EBITDA, and multiples arbitrage

Financial Leverage

Financial leverage (debt) is used to “concentrate” returns the equity holders in an LBO. Prudent usage of leverage has strong potential to increase IRR and MOIC.

Operational Improvements

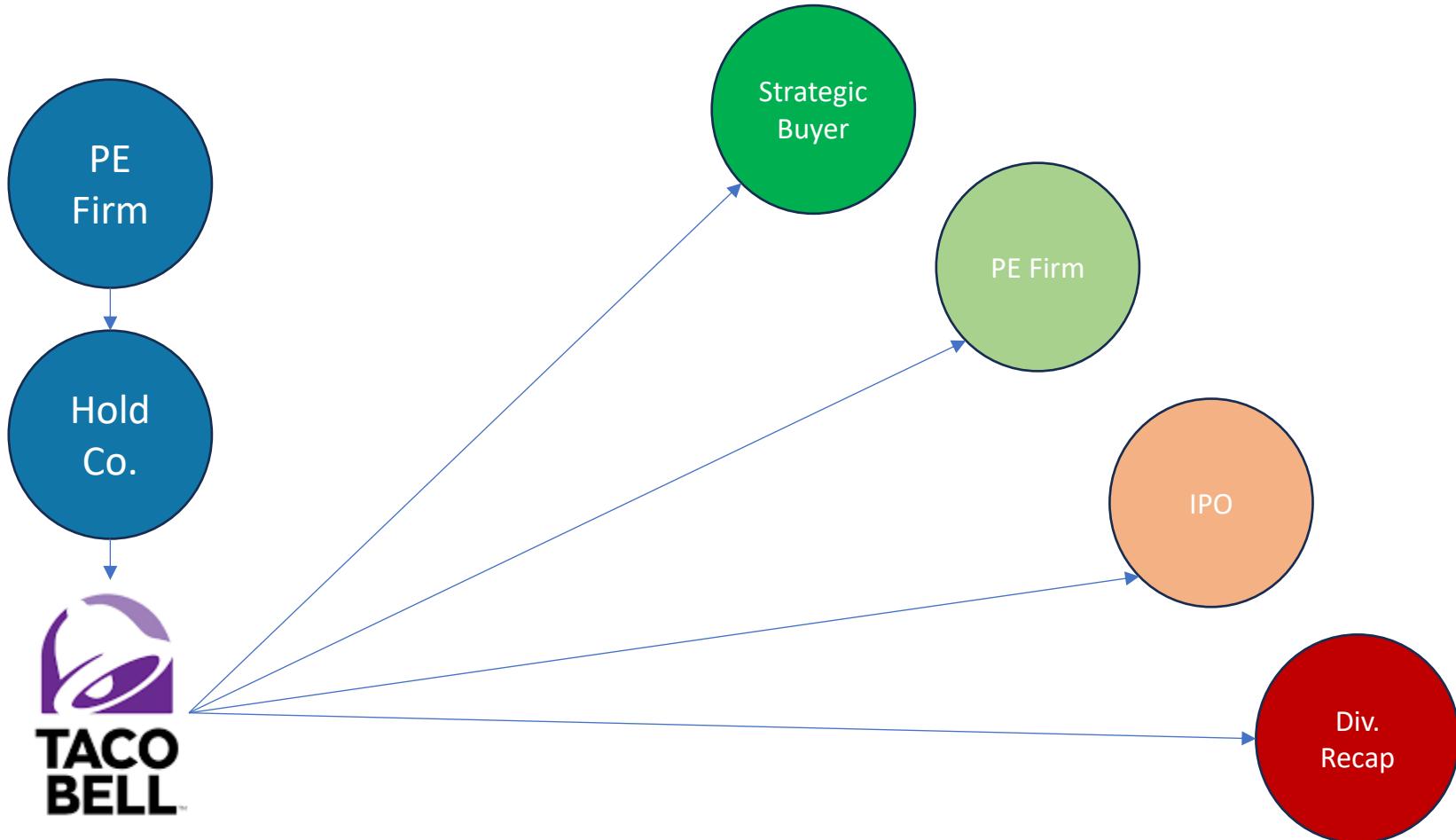
The LBO target is often purchased and sold based off an EBITDA multiple, thus increasing operational profitability drives an increase in EV and equity value.

Multiple Arbitrage

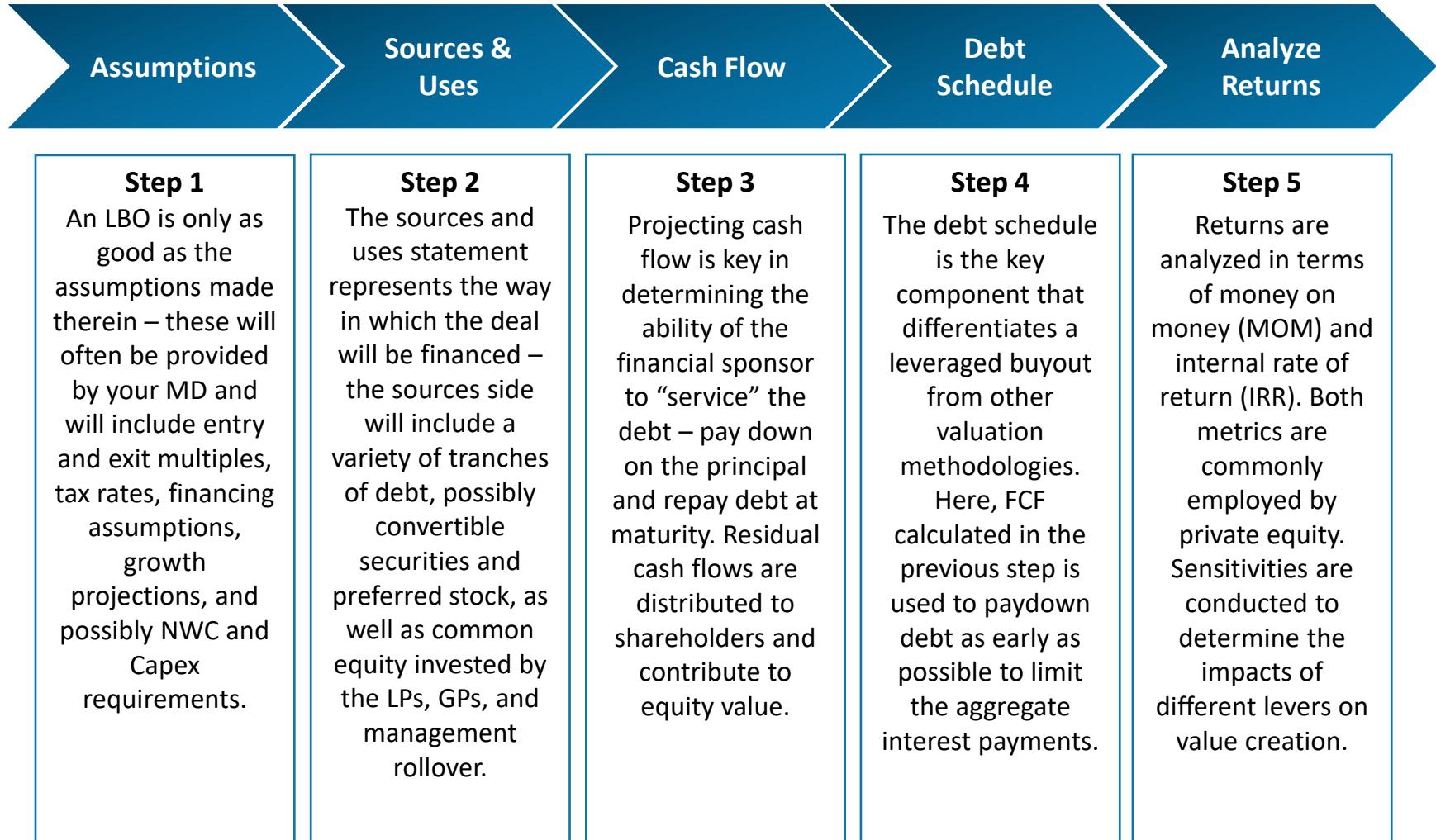
Selling the LBO target at a higher price than it was purchased for on a per-unit basis further contributes to increases in EV.

Exiting a Private Equity Investment

After holding a company for 3-7 years, a PE firm will often seek to “exit” their investment – sell to another PE firm, strategic buyer, the public market, or perform a dividend recapitalization in search of high FCFE



Walk me Through an LBO



Leveraged Buyouts

The leveraged buyout is the primary technique of financial engineering employed by a private equity sponsor seeking out higher returns for the equity investors

- Financial Leverage and the Impacts of Capital Structure
- Private Equity Overview
- Lifecycle of a Fund
- Private and Public Equity Investors in the Economy
- Leveraged Buyouts
 - Walk-thru
 - Value creation in an LBO
 - Exit Strategies
- Paper LBO
- Complex LBO Model

Attendance Word: Fintech

