

Valuation Principles

The ACG Cup
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Overview of ComStock Advisors

ComStock Advisors

- Full-service business valuation firm
- Valuations for: Corporate Transactions, ESOPs, Estate, Gift & Income Tax, Litigation
- Offices in Cincinnati, Chicago, Winston-Salem & Washington D.C.
- Have performed over 5,500 engagements since 1996 founding
- Employee-owned company

Nick Sypniewski, ASA



- Managing Director
- BBA University of Cincinnati
- MBA Xavier University
- 10 years in banking. 18 years in valuation
- Valuation Advisory Committee of the ESOP Association
- American Society of Appraisers, Chapter Officer



Valuation Considerations



Valuation Considerations

Nature of Business

- Business Strengths
 - Capacity
 - Strong track record
 - Proven people/products/processes
- Business Risks / Risk Reduction
 - Risk = Volatility
 - Diversification – customers, products, geography, etc.
 - “Core” to the business that is less sensitive to market conditions
 - Exposure to rapidly changing technology (risk)
 - Dependency on key employees (risk)

Valuation Considerations

Financial Considerations

- **EARNING CAPACITY** of the business
 - Profit margins
 - Normalization adjustments
 - Dividend paying capacity of the business
- Financial **RISK**
 - Capital structure / leverage
 - Less fixed costs (vs. variable) in cost structure
 - High working capital /CAPEX requirement (cash flow)
- Strong **GROWTH** prospects (revenue & cash flow)

Adjustments to Earnings

- Non-recurring / extraordinary items
- Nonoperating income & expense
 - Relates to nonoperating asset
- Discretionary (controlling interests only)
 - Most common – owner's compensation/perks
 - Management fees, rent, etc. to affiliated companies
- Synergies
 - Complementary products / distribution channels
 - Eliminate duplicate administrative functions
 - Economies of scale
- Accounting policy issues

Valuation Considerations

Customers & Markets

- Customers
 - Customer concentration / single industry served (risk)
 - Long-term customers / recurring revenue (strength)
 - Small markets for products and services (risk)
 - Cyclical markets (risk)
 - Commodity (risk – must compete on price)
- Basis of Competition
 - Strength of competition
 - Key competitive advantage
 - Differentiate on something other than price
 - Mission-critical products or services

Valuation Considerations

Economy & Industry

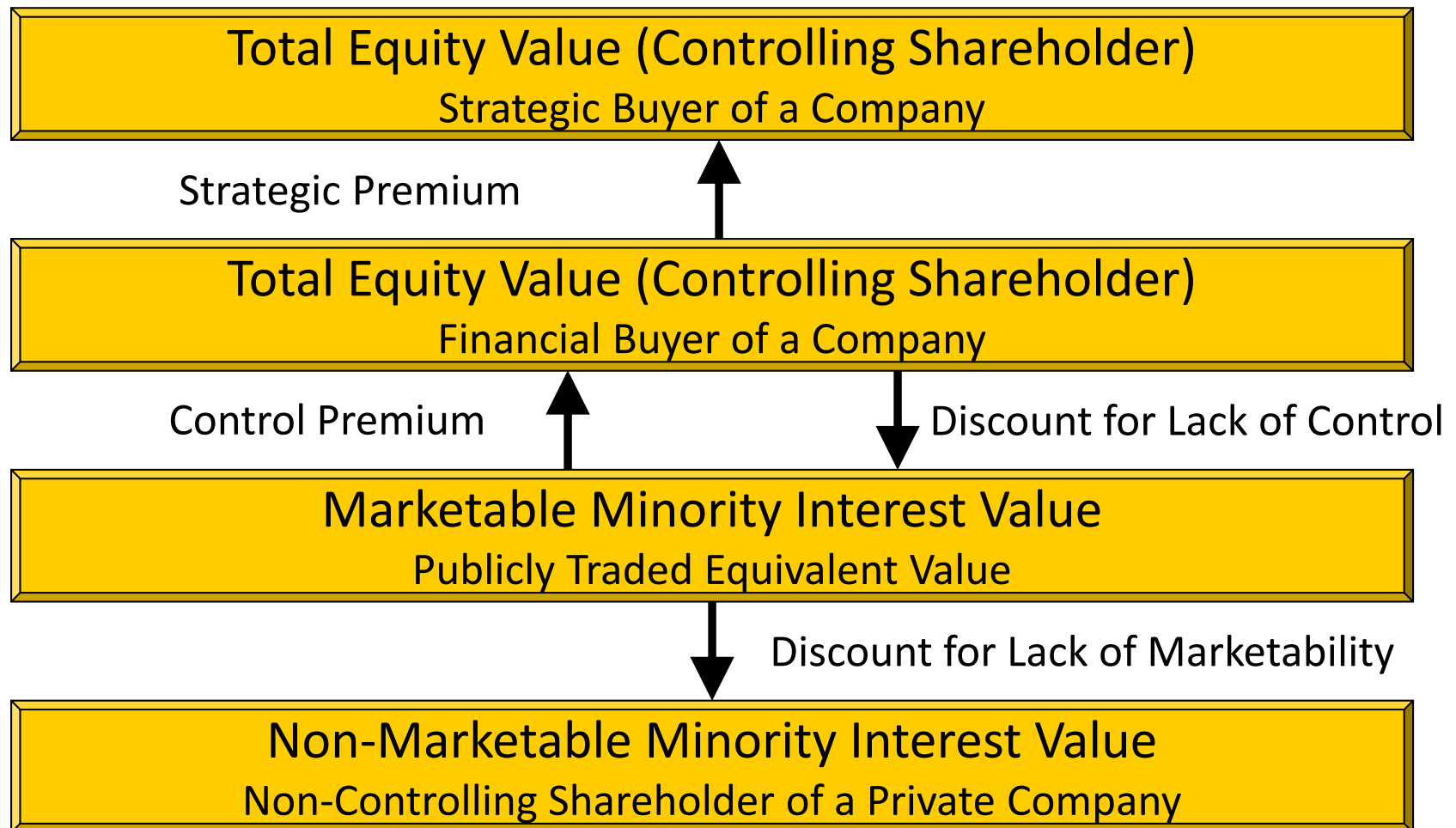
- Market conditions
 - Economic climate
 - Market price of comparable publicly traded companies
 - M&A market
- Industry Conditions
 - Product life cycle
 - Economic sensitivity
 - Relative Strength of customers, suppliers & participants
 - Competition
 - Barriers to entry
 - Substitute products/services
 - Fragmented industry (positive)
 - Consolidated Industry (negative)
 - Critical success factors

Valuation Considerations

Other Considerations

- Company size
- Intangible value of company (goodwill)
- Ownership position
 - Size of the block of stock
 - Control vs. minority ownership position
 - Marketability
 - Warrants, SARs, options, etc.

Levels of Value



Control Premiums Paid

	No. of Transactions	Average Premium	Median Premium
2007	491	31.5%	24.7%
2008	294	56.5%	36.5%
2009	239	58.7%	39.8%
2010	348	51.5%	34.6%
2011	321	54.1%	37.8%
2012	323	46.2%	37.1%
2013	351	51.8%	29.7%
2014	321	54.1%	28.7%
2015	362	48.1%	29.6%
2016	348	59.2%	33.1%
5-Year Weighted Average		51.9%	31.6%
10-Year Weighted Average		50.0%	32.5%

Source: Mergerstat Review, 2017

Prerogatives of Control

- Change management or directors
- Declare & pay dividends
- Set operational and strategic policy
- Acquire, lease or liquidate assets
- Liquidate, dissolve, sell or recapitalize
- Set compensation
- Sell or acquire treasury shares
- Do an IPO
- Change the articles of incorporation/bylaws
- Decide what products to offer
- Decide what markets to enter
- Select vendors, suppliers and subcontractors

but really...

WHY PAY A PREMIUM FOR CONTROL?



Valuation Approaches



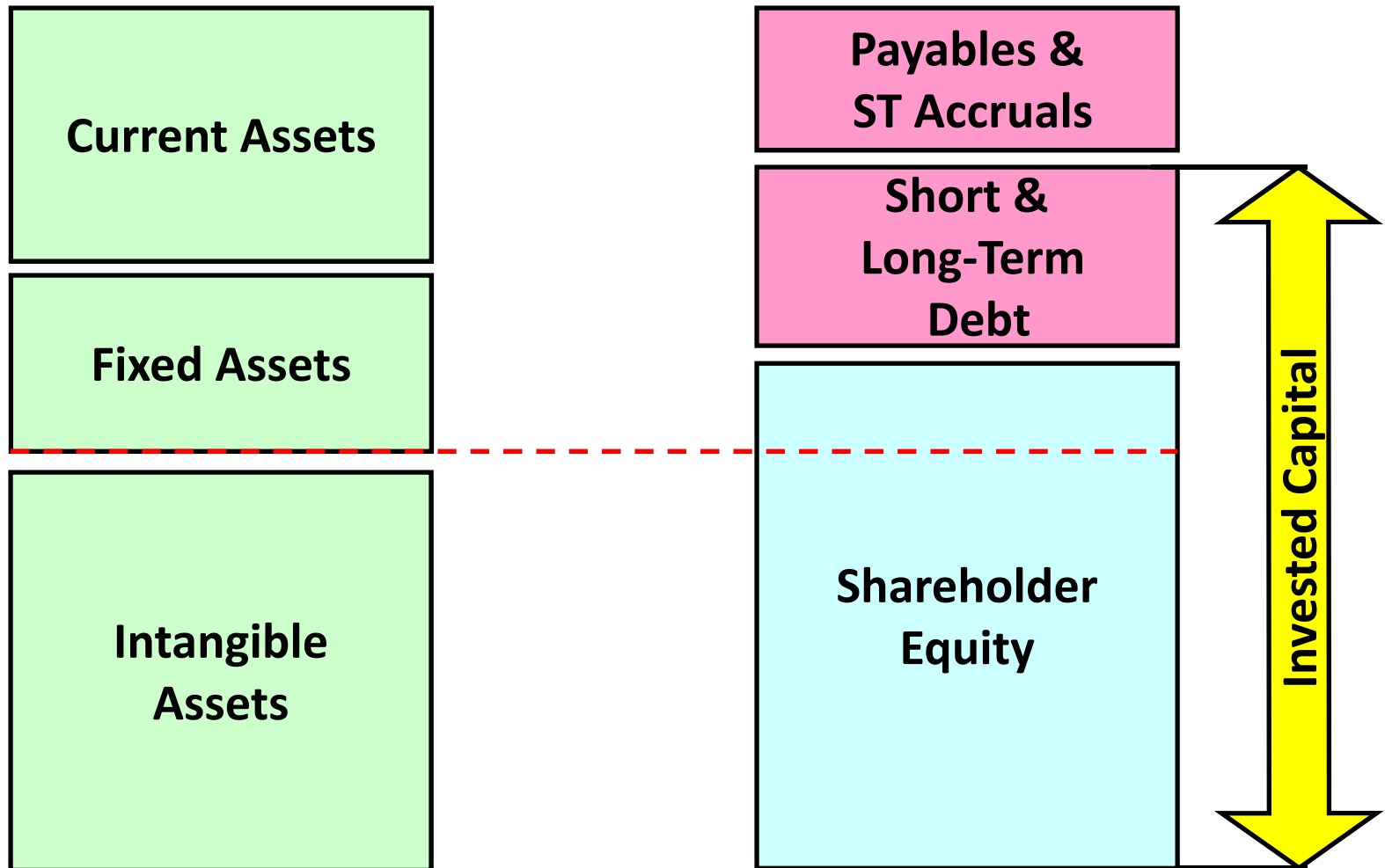
Valuation Approaches

- Income Approach
 - Discounted Cash Flow Method
 - Capitalized Cash Flow/Earnings Method
- Market Approach
 - Guideline Public Companies Method
 - Merger and Acquisition Method
 - Rules of Thumb
 - Prior Transactions
- Asset Approach
 - Adjusted Book Value Method
 - Liquidation Value
 - Excess Earnings Method

Weighting of Approaches

- No set formula
 - What is central tendency of **RANGE OF VALUES**?
 - Do methods support each other?
 - What is the most appropriate method?
- Income approaches
 - Tend to receive greatest weight
 - Availability/reliability of forecast
- Market approach
 - Quality/comparability of market data
 - Consistency among multiples
- Asset approach
 - Often a floor value

Invested Capital (Enterprise Value)





Income Approach



Discounted Cash Flow Method

Discounted Cash Flow (“DCF”)

1. Forecast free cash flow over a period of time
 - **How reasonable are projections? (Growth, margins, etc.)**
 - Consider multiple scenarios
2. Determine a discount rate
3. Discount free cash flows forecast back to present value
4. Determine value in terminal year and discount back to present value

5. Deduct capital debt and add cash (to arrive at equity value)
6. Add non-operating assets (if applicable)

Forecast Revenue & Profit

	Projected Income Statement									
(\$ million)	Year End Dec-18	Year End Dec-19	Year End Dec-20	Year End Dec-21	Year End Dec-22	Year End Dec-23	Year End Dec-24	Year End Dec-25	Year End Dec-26	Residual Year
Revenue	\$2,545	\$2,632	\$2,710	\$2,784	\$2,853	\$2,927	\$3,009	\$3,088	\$3,180	\$3,276
Revenue Growth	3.3%	3.4%	3.0%	2.7%	2.5%	2.6%	2.8%	2.6%	3.0%	3.0%
Cost of Revenue	1,663	1,723	1,772	1,820	1,866	1,914	1,968	2,019	2,080	2,142
Gross Profit	\$882	\$909	\$938	\$964	\$988	\$1,013	\$1,041	\$1,068	\$1,101	\$1,134
Gross Profit Margin	34.7%	34.5%	34.6%	34.6%	34.6%	34.6%	34.6%	34.6%	34.6%	34.6%
General & Administrative Expense	539	556	570	583	599	617	633	649	668	689
Other Operating Income/(Expense)	5	3	6	5	5	5	5	6	6	6
EBITDA	\$348	\$356	\$374	\$385	\$393	\$402	\$413	\$425	\$438	\$451
EBITDA Margin	13.7%	13.5%	13.8%	13.8%	13.8%	13.7%	13.7%	13.8%	13.8%	13.8%
Depreciation	\$81	\$85	\$86	\$87	\$90	\$93	\$96	\$98	\$101	\$104
Operating Profit	\$267	\$271	\$288	\$298	\$303	\$309	\$318	\$327	\$337	\$347
Interest Expense	20	18	18	16	13	12	10	6	-	4
Pretax Income	\$247	\$253	\$270	\$282	\$290	\$297	\$308	\$321	\$337	\$343
Income taxes	84	86	92	96	99	101	105	109	115	117
Net Income	\$163	\$167	\$178	\$186	\$191	\$196	\$203	\$212	\$223	\$226

- Are projections reasonable? (vs overly aggressive or conservative)
- How do growth and profit margins compare to historical and industry outlook?
- How much reinvestment in working capital and capital expenditures are required to support growth?

Free Cash Flow Illustrated

<i>(\$ million)</i>	Year End
Projected Free Cash Flow	Dec-18
Pre-Tax Income	\$247.2
Plus: Interest Expense	20.0
Operating Income	\$267.2
Less: Taxes	(69.5)
Net Income (Pre-debt)	\$197.7
Plus: Depreciation & Amortization	\$81.2
Less: Capital Expenditures	(85.7)
Less: Investment in Working Capital	(23.1)
Free Cash Flow from Operations	\$170.1

“Free cash flow” is the cash flow available to all investors in the company – both debt & equity holders (invested capital)

Discount Rate

- Weighted Average Cost of Capital (“WACC”)
 - WACC of comparable companies or industry
 - Build-up WACC based on components
- Cost of Debt (after-tax)
 - Comparable companies
 - Bond yields
 - Company’s actual cost of debt
- Cost of Equity
 - Comparable companies or industry
 - Risk premium studies (Ibbotson, Duff & Phelps)
 - Build-up using Capital Asset Pricing Model or other model

Weighted Average Cost of Capital

(Cost of Equity * % of Equity in Capital Structure) +
(Cost of Preferred Equity * % of Preferred in Capital Structure) +
(Cost of Debt (1- tax rate)) * % of Debt in Capital Structure)

	Weight	Component Cost	Weighted Cost
Weighted Average Cost of Capital			
Debt (4.5% tax affected)	30%	3.33%	1.00%
Preferred Equity	0%	NA	NA
Common Equity	70%	13.77%	9.64%
Weighted Average Cost of Capital			10.64%

Capital Asset Pricing Model

$$K_e = R_f + (\beta * ERP) + \alpha_{\text{size}} + \alpha_{\text{other}}$$

- K_e = Cost of Equity
- R_f = Risk-Free Investment Rate
 - The return that an investor could obtain from a low-risk guaranteed investment, such as the yield on long-term U.S. Treasury securities (as published in the Federal Reserve's Statistical Release).
- ERP = Equity Risk Premium
 - The extra return earned by an average equity investor who invests in large company stocks (like companies in the S&P 500) in excess of the return on long-term Treasury securities.
 - Various sources estimate this at 3% to 7%, with typical range of 5% to 6%
- β = "Beta" (Levered Beta)
 - Quantifies the relationship between the investment's return and the return on the market as a whole as measure by a broad market index such as the S&P 500 Index. For example, a stock with a beta of 1.5 would rise 1.5 percent for every one percent increase in the overall market.
- α = "Alpha" / Size & Other Risk Premiums
 - Various additional risk premiums – most notably for size, but also customer concentration, reliance on key person, etc.

Beta

CAPM

Guideline Company	Unadjusted Levered Beta	Adjusted Levered Beta	Percent Debt/MC	Tax Rate	Unlevered Beta
American Axle & Mfg	1.35	1.23	68.8%	39.1%	0.53
BorgWarner Inc.	1.76	1.55	18.1%	26.4%	1.33
Dana Incorporated	1.67	1.47	27.2%	39.1%	1.20
Meritor, Inc.	2.27	1.81	33.1%	39.1%	1.39
Stoneridge, Inc.	1.45	1.20	17.4%	39.1%	1.06
Tenneco Inc.	1.92	1.59	34.2%	24.6%	1.14
The Timken Company	1.65	1.46	20.7%	39.1%	1.26
Tower International, Inc.	2.69	1.91	39.9%	39.1%	1.36
WABCO Holdings Inc.	1.67	1.49	12.9%	39.1%	1.36
Shiloh Industries, Inc.	2.10	1.49	49.2%	25.7%	0.87
Minimum	1.35	1.20	12.9%		0.53
Maximum	2.69	1.91	68.8%		1.39
Median	1.72	1.49	30.1%		1.23
Average	1.86	1.52	32.1%		1.15
Subject Company	1.54		30.0%	26.0%	1.17

- Private companies don't have a beta. Use public comps as a proxy
- Higher leverage adds financial risk – reflected in higher beta

Adjusting Beta for Leverage

CAPM

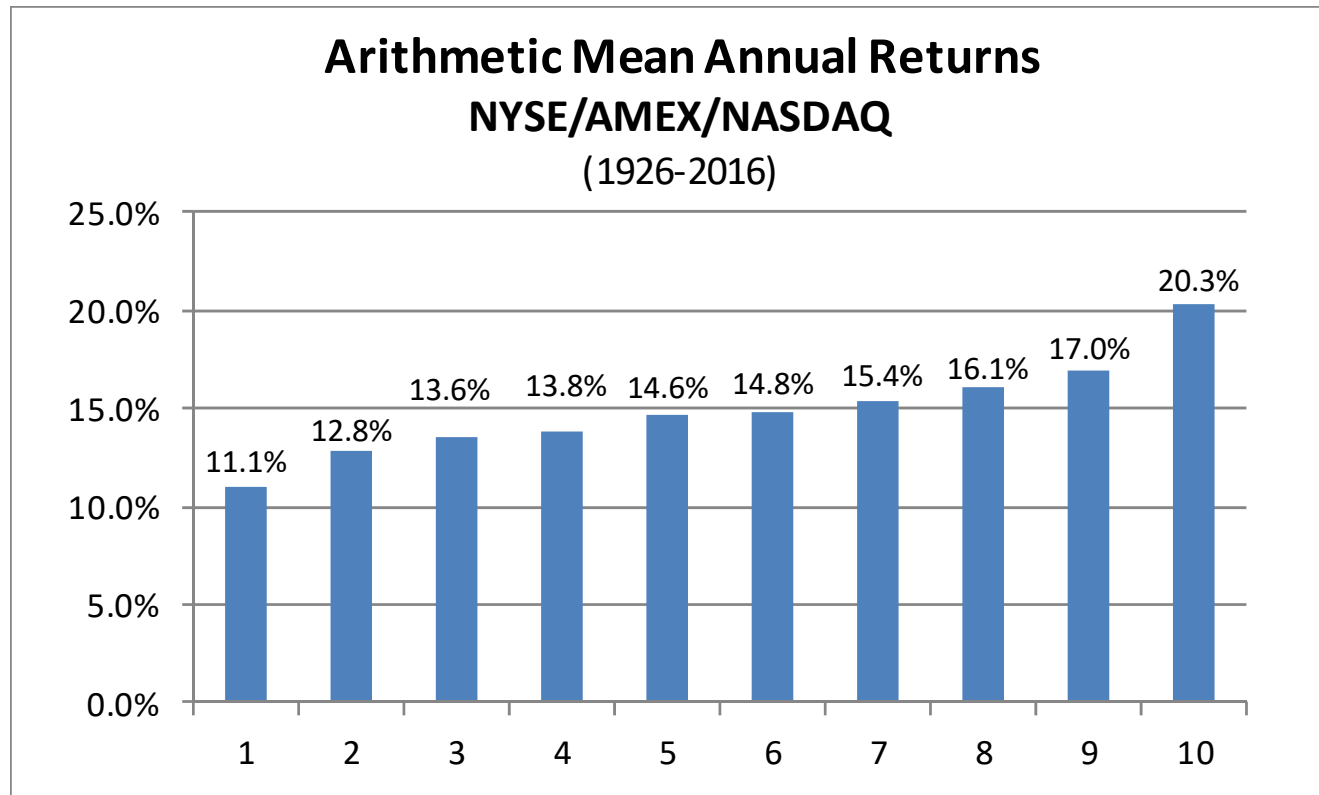
- Companies with less leverage have lower costs of equity than highly-leveraged companies
- Under the CAPM, the impact of financial leverage is reflected in an adjustment to the beta factor
- Beta can be unlevered and relevered using the following formula

$$\text{Unlevered Beta} = \frac{\text{Levered Beta}}{[1 + (\text{Debt\%} / \text{Equity\%}) (1 - \text{Tax Rate})]}$$

Note: Debt% & Equity% based on the MARKET (not book) value of debt and equity. This may involve using a target level or some iteration in the calculation.

Effect of Size

CAPM



Largest ← **Size Decile** → **Smallest**

Source: Duff & Phelps, Inc., *2017 Valuation Handbook*

More on Size

Industry	Median Deal EBITDA Multiple by Size (based on EBITDA) of Target Company					
	\$0M-\$1M	\$1M-\$5M	\$5M-\$10M	\$10M-\$25M	\$25M-\$50M	>\$50M
Manufacturing	4.0	5.5	6.8	7.0	7.5	10.0
Construction & Engineering	3.0	5.0	5.8	7.0	7.3	7.8
Consumer Goods & Services	4.0	6.0	8.0	8.5	9.0	9.0
Wholesale & Distribution	4.0	5.3	6.0	7.0	7.0	7.0
Business Services	4.3	6.0	7.0	6.3	6.8	6.8
Basic Materials & Energy	5.0	5.3	6.0	7.0	8.5	10.0
Healthcare & Biotech	5.0	5.5	7.5	9.0	9.0	11.0
Information Technology	2.0	6.5	7.0	8.5	9.0	10.0
Financial Services	2.5	5.0	5.8	6.0	NA	7.5
Media and Entertainment	2.0	3.5	5.0	7.5	NA	NA
Average	3.6	5.4	6.5	7.4	8.0	8.8

Source: Pepperdine University. Private Capital Markets Project, 2017.

Cost of Equity Calculation

CAPM

<u>Component</u>	<u>Source</u>	<u>Calculation</u>
Risk Free Rate	Federal Reserve Statistical Release H.15	2.58%
Market Equity Risk Premium	Duff & Phelps or Ibbotson	5.97%
Times: Beta	Based on Public Comps	1.54
		<hr/> 9.19%
Small Cap Equity Risk Premium	Duff & Phelps or Ibbotson	0.00%
Company Specific Risk Premium	Judgment (concentration, key person, other)	2.00%
<u>Cost of Equity</u>		<hr/> <hr/> 13.77%

- Does result make sense?
 - Largest public companies return 11.1%
 - Smallest 10% of public companies return 20.3% (9th decile = 17%)
 - 6th decile (subject) returns 14.8%
 - So, need to explain company specific risk
 - Remember, risk free rate at a historically low level

Weighted Average Cost of Capital

(Cost of Equity * % of Equity in Capital Structure) +
(Cost of Preferred Equity * % of Preferred in Capital Structure) +
(Cost of Debt (1- tax rate)) * % of Debt in Capital Structure)

Weighted Average Cost of Capital	Weight	Component Cost	Weighted Cost
Debt (4.5% tax affected)	30%	3.33%	1.00%
Preferred Equity	0%	NA	NA
Common Equity	70%	13.77%	9.64%
Weighted Average Cost of Capital			10.64%

Present Value of Free Cash Flows

<i>(\$million)</i>	Year End	Year End	Year End	Year End	Year End	Year End	Year End	Year End	Year End	Residual
Projected Free Cash Flow	Dec-18	Dec-19	Dec-20	Dec-21	Dec-22	Dec-23	Dec-24	Dec-25	Dec-26	Year
EBITDA	\$348	\$356	\$374	\$385	\$393	\$402	\$413	\$425	\$438	\$451
Depreciation	81	85	86	87	90	93	96	98	101	104
Amortization	-	-	-	-	-	-	-	-	-	-
Operating Profit	\$267	\$271	\$288	\$298	\$303	\$309	\$318	\$327	\$337	\$347
Less: Taxes	(69)	(71)	(75)	(77)	(79)	(80)	(83)	(85)	(88)	(90)
Net Income (Pre-debt)	\$198	\$201	\$213	\$220	\$224	\$228	\$235	\$242	\$249	\$257
Plus: Depreciation & Amortization	81	85	86	87	90	93	96	98	95	95
Less: Capital Expenditures	(85.7)	(84.2)	(83.4)	(86.8)	(89.8)	(93.1)	(94.6)	(96.8)	(100.0)	(103.2)
Less: Investment in Working Capital	(23.1)	(14.1)	(15.3)	(14.0)	(12.9)	(12.3)	(15.1)	(15.6)	(14.6)	(14.4)
Annual Free Cash Flow from Operations	\$170	\$187	\$201	\$207	\$212	\$216	\$221	\$228	\$230	\$234
Partial Year Adjustment	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Free Cash Flow from Operations	\$170	\$187	\$201	\$207	\$212	\$216	\$221	\$228	\$230	\$234
Discount Periods	0.50	1.50	2.50	3.50	4.50	5.50	6.50	7.50	8.50	
Discount Rate	10.64%	10.64%	10.64%	10.64%	10.64%	10.64%	10.64%	10.64%	10.64%	
Discount Factor	0.9507	0.8593	0.7766	0.7020	0.6344	0.5734	0.5183	0.4684	0.4234	
Discounted Free Cash Flow	\$162	\$161	\$156	\$145	\$134	\$124	\$115	\$107	\$97	

Present Value of Periodic Cash Flows

\$1,200

Residual Value

Normalized Residual Cash Flow				\$234
Residual Capitalization Factor	=	$\frac{1}{\text{WACC-Growth}}$	=	$\frac{1}{10.64\% - 3.00\%}$
			=	13.5
Capitalized Residual Cash Flow				<u>\$2,602</u>
Discount Factor	=	$\frac{1}{(1 + \text{WACC})^n}$	=	$\frac{1}{(1 + 10.64\%)^{9.0}}$
			=	0.4025
Present Value of Residual Cash Flow				<u>\$1,269</u>

- Above is the calculation of the residual value using the capitalization of cash flow method (aka the Gordon growth model)
- Residual value may also be based on a multiple of EBITDA, EBIT, etc., but be careful in selecting multiples to be applied to future earnings from today's market (i.e., the multiple for the residual value should be a normal multiple & not inflated)

DCF – Put It All Together

Present Value of Periodic Cash Flows	\$1,200
Present Value of Residual Cash Flows	<u>1,269</u>
Enterprise Value	\$2,470



Market Approach



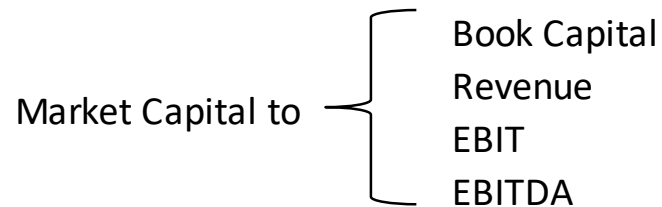
Comparable Companies

Publicly Traded Companies

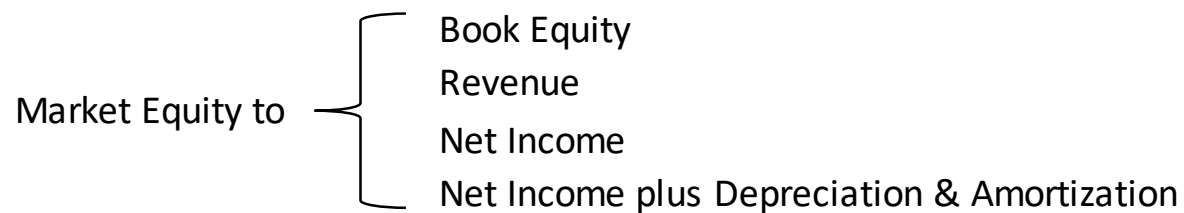
- Selection Process
 - Competitors identified by management
 - Capital IQ
 - Bloomberg
 - FactSet
 - SEC and financial Website search
- Evaluation & Weighting
 - Similarity of business operations or markets
 - Size differences can be substantial
 - Growth, profitability and other financial comparisons
 - Publicly traded companies often trade at higher multiples than private companies
 - Internal/statistical consistency of results

Guideline Company Method

Invested Capital Approach



Equity Approach



Multiples for Earnings Measures

	(\$ million)	Multiple	Value
EBITDA	\$348.4	6.9	\$2,400
Less: Depreciation	81.2		
EBIT	267.2	9.0	\$2,400
Less: Interest	20.0		
Pre-Tax Income	\$247.2		
Less: Taxes	(64.3)		
Net Income*	\$182.9	11.4	\$2,079
Free Cash Flow	\$170.1	14.1	\$2,400

*- "Enterprise Value" vs. Net Income is not appropriate. P/E ratio is based on equity value.

Guideline Public Company Method

1. Select comparable guideline companies
 2. Compare the subject company to the guideline companies
 3. Select appropriate valuation multiples
 4. Apply multiples to the financial performance of the subject company to arrive at the enterprise value of the company
-
5. Deduct capital debt & add cash(to arrive at equity value)
 6. Add non-operating assets (if applicable)
 7. Apply premiums and discounts as necessary

Calculating Invested Capital

Guideline Company	Common Stock Price	Common Shares Outstanding (millions)	Market Value of Common Equity (\$ million)	Plus: Preferred Stock (\$ million)	Equals: Market Value Total Equity (\$ million)	Plus: Capital Debt (\$ million)	Less: Cash & Equivalents (\$ million)	Plus: Minority Interest (\$ million)	Total Market Capital (\$ million)
American Axle & Mfg	\$17.03	111.29	1,895.27	-	1,895.27	4,178.40	(549.60)	3.80	5,527.87
BorgWarner Inc.	\$51.09	211.06	10,783.18	-	10,783.18	2,395.10	(414.30)	90.60	12,854.58
Dana Incorporated	\$32.01	144.68	4,631.32	-	4,631.32	1,791.00	(596.00)	156.00	5,982.32
Meritor, Inc.	\$23.46	88.57	2,077.76	-	2,077.76	1,040.00	(88.00)	27.00	3,056.76
Stoneridge, Inc.	\$22.86	28.17	643.95	-	643.95	135.52	(50.79)	-	728.68
Tenneco Inc.	\$58.54	54.05	3,164.20	-	3,164.20	1,681.00	(277.00)	71.00	4,639.20
The Timken Company	\$49.15	77.84	3,825.98	-	3,825.98	1,005.90	(137.20)	32.90	4,727.58
Tower International, Inc.	\$30.55	20.52	626.92	-	626.92	415.85	(43.60)	-	999.17
WABCO Holdings Inc.	\$143.50	53.63	7,696.07	-	7,696.07	1,153.80	(1,030.20)	74.70	7,894.37
Shiloh Industries, Inc.	\$8.20	22.87	187.57	-	187.57	181.41	(14.45)	-	354.52

Guideline Company Multiples

Guideline Company	Market Capital (\$ million)	TTM Revenue	Mkt Capital to TTM Revenue
American Axle & Mfg	5,527.87	5,478.60	1.01
BorgWarner Inc.	12,854.58	9,471.90	1.36
Dana Incorporated	5,982.32	6,819.00	0.88
Meritor, Inc.	3,056.76	3,347.00	0.91
Stoneridge, Inc.	728.68	789.62	0.92
Tenneco Inc.	4,639.20	9,038.00	0.51
The Timken Company	4,727.58	2,880.60	1.64
Tower International, Inc.	999.17	1,912.16	0.52
WABCO Holdings Inc.	7,894.37	3,083.80	2.56
Shiloh Industries, Inc.	354.52	1,059.50	0.33
Average	3,897.09	4,388.02	1.07
1st Quartile	635.14	2,154.27	0.61
Median	3,847.98	3,215.40	0.92
3rd Quartile	5,641.48	6,483.90	1.27

Guideline Company Multiples

Guideline Company	Performance				Valuation Multiples			
	TTM	Estimated Next 12 Months	3 year Average EBITDA	5 year Average EBITDA	TTM EBITDA	to NTM EBITDA	3 year Average EBITDA	5 year Average EBITDA
American Axle & Mfg	961.10	1,227.00	709.83	596.98	5.8	4.5	7.8	9.3
BorgWarner Inc.	1,629.80	1,737.66	1,508.77	1,435.32	7.9	7.4	8.5	9.0
Dana Incorporated	797.00	921.25	678.33	701.40	7.5	6.5	8.8	8.5
Meritor, Inc.	367.00	408.40	344.00	363.20	8.3	7.5	8.9	8.4
Stoneridge, Inc.	90.62	99.92	70.29	69.48	8.0	7.3	10.4	10.5
Tenneco Inc.	629.00	925.34	727.33	725.00	7.4	5.0	6.4	6.4
The Timken Company	403.50	517.35	423.87	436.44	11.7	9.1	11.2	10.8
Tower International, Inc.	186.25	225.30	176.47	175.54	5.4	4.4	5.7	5.7
WABCO Holdings Inc.	520.30	624.26	495.67	479.38	15.2	12.6	15.9	16.5
Shiloh Industries, Inc.	74.47	NA	63.10	60.91	4.8	NA	5.6	5.8
Average	565.90	742.94	519.77	504.36	8.2	7.2	8.9	9.1
1st Quartile	231.43	408.40	218.35	222.45	6.2	5.0	6.7	6.9
Median	461.90	624.26	459.77	457.91	7.7	7.3	8.7	8.7
3rd Quartile	755.00	925.34	701.96	675.30	8.3	7.5	10.0	10.2

Apply Multiples to Subject Company

Type of Multiple	Guideline Company Range			Selected Range			Subject Data	Value Estimate		
	Low	Median	High	Low	Mid	High		Low	Mid	High
Enterprise Value to Adjusted Book Capital	1.00 x	2.24 x	7.34 x	1.80 x	2.00 x	2.20 x	\$1,198	\$2,156	\$2,395	\$2,635
Enterprise Value to EBITDA										
Current (TTM)	4.8 x	7.7 x	15.2 x	6.40 x	6.9 x	7.5 x	\$347	\$2,220	\$2,394	\$2,602
Next Twelve Months (NTM)	4.4 x	7.3 x	12.6 x	6.40 x	6.6 x	6.7 x	\$348	\$2,230	\$2,299	\$2,334
3 year average	5.6 x	8.7 x	15.9 x	6.80 x	7.8 x	9.0 x	\$333	\$2,262	\$2,595	\$2,994
5 year average	5.7 x	8.7 x	16.5 x	6.70 x	7.8 x	9.2 x	\$328	\$2,195	\$2,555	\$3,013
Enterprise Value								\$2,212	\$2,448	\$2,716

Comparable Companies

Change of Control Transactions

- Selection Process (Actual Transactions)
 - Capital IQ
 - Bloomberg
 - Pratt's Stats
 - Mergerstat
 - SEC Filings
 - GF Data (aggregated)
- Evaluation & Weighting
 - Size and comparability of business
 - Age of transaction (change in market conditions)
 - Adequacy of reported information (reliability & detail)
 - Internal/statistical consistency of results
 - If purpose of valuation is the sale of the entire company, then the method corresponds directly to the purpose of the valuation

Deal Multiples

Industry	Median Deal EBITDA Multiple by Size (based on EBITDA) of Target Company					
	\$0M-\$1M	\$1M-\$5M	\$5M-\$10M	\$10M-\$25M	\$25M-\$50M	>\$50M
Manufacturing	4.0	5.5	6.8	7.0	7.5	10.0
Construction & Engineering	3.0	5.0	5.8	7.0	7.3	7.8
Consumer Goods & Services	4.0	6.0	8.0	8.5	9.0	9.0
Wholesale & Distribution	4.0	5.3	6.0	7.0	7.0	7.0
Business Services	4.3	6.0	7.0	6.3	6.8	6.8
Basic Materials & Energy	5.0	5.3	6.0	7.0	8.5	10.0
Healthcare & Biotech	5.0	5.5	7.5	9.0	9.0	11.0
Information Technology	2.0	6.5	7.0	8.5	9.0	10.0
Financial Services	2.5	5.0	5.8	6.0	NA	7.5
Media and Entertainment	2.0	3.5	5.0	7.5	NA	NA
Average	3.6	5.4	6.5	7.4	8.0	8.8

Source: Pepperdine University. Private Capital Markets Project, 2017.



Summary



Enterprise Value

<i>\$ million</i>	Weight	Enterprise Value Range		
		Low	Mid	High
Discounted Cash Flow Method	50%	\$2,171	\$2,470	\$2,565
Guideline Company Method	25%	2,212	2,448	2,716
Merger & Acquisition Method	25%	2,168	2,342	2,515
Enterprise Value		\$2,200	\$2,400	\$2,600

Implied Enterprise Valuation Multiples

Multiple of:	Revenue	Low	Mid	High
Trailing 12-month Revenue	\$2,464	0.89	0.97	1.06
Projected NTM Revenue	\$2,545	0.86	0.94	1.02
Multiple of:	EBIT	Low	Mid	High
Trailing 12-month EBIT	\$272	8.1	8.8	9.6
Projected NTM EBIT	\$267	8.2	9.0	9.7
Multiple of:	EBITDA	Low	Mid	High
Trailing 12-month EBITDA	\$347	6.3	6.9	7.5
Projected NTM EBITDA	\$348	6.3	6.9	7.5

Equity Value

<i>\$ million</i>	Low	Mid	High
Selected Enterprise Value	\$2,200	\$2,400	\$2,600
Additions/Subtractions from Value			
Less: Capital Debt	(671)	(671)	(671)
Plus: Cash	350	350	350
Value of Equity	\$1,879	\$2,079	\$2,279



Thank You



Any Questions?