



Trading Comparables Valuation

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Relative Valuation – Objective

Aim to establish what multiple of earnings or other important metric similar assets trade at

Getting comparable companies and calculating a multiple in a completely consistent way

$$\text{Multiple} = \frac{\text{Value}}{\text{Value driver}}$$

Value driver must be consistent with value number!

Valuation is forward looking so earnings should be normalized

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EV and Equity Multiples Intro

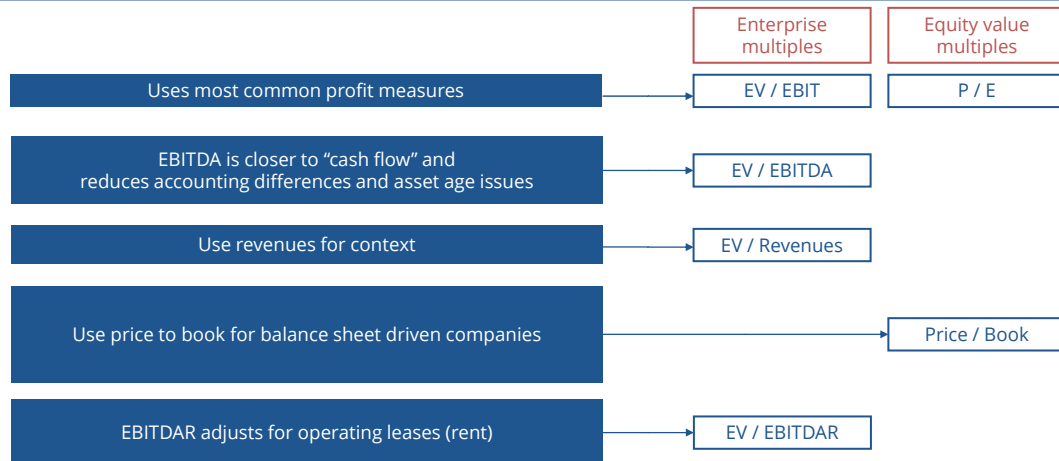
Value consistent with value driver

How much investors pay in relation to a value driver

Value		Value Driver		Multiple	
EV	1,000.0	EBIT	100.0	EV/EBIT	10.0 x
Cash	100.0	Interest income	1.0		
Debt	(300.0)	Interest expense	(15.0)		
		Tax expense	(25.8)		
Equity	800.0	Net income	60.2		
No. of shares	100.0	No. of shares	100.0	P/E	13.3 x

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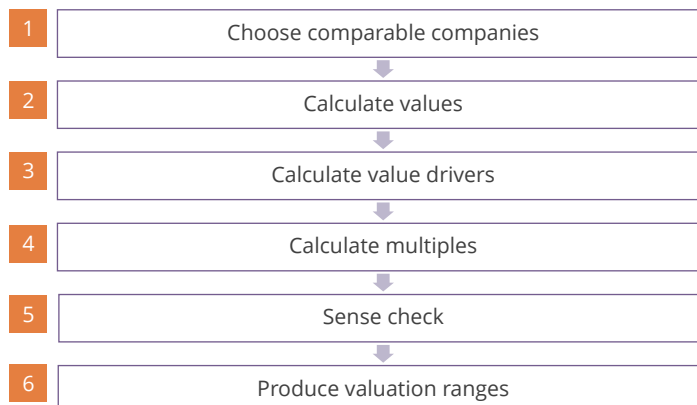
EV and Equity Common Multiples



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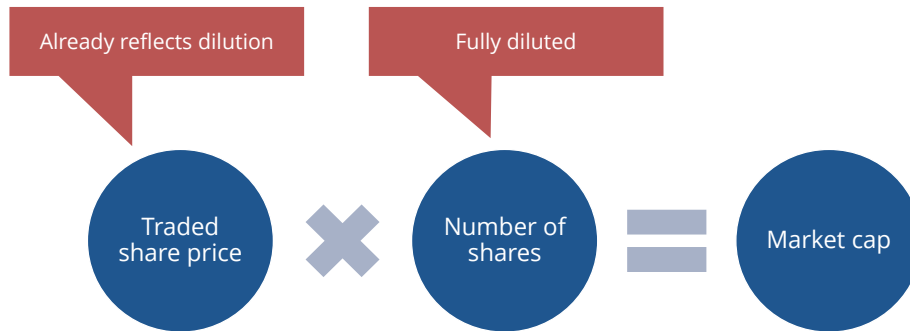
Calculating Multiples – Steps



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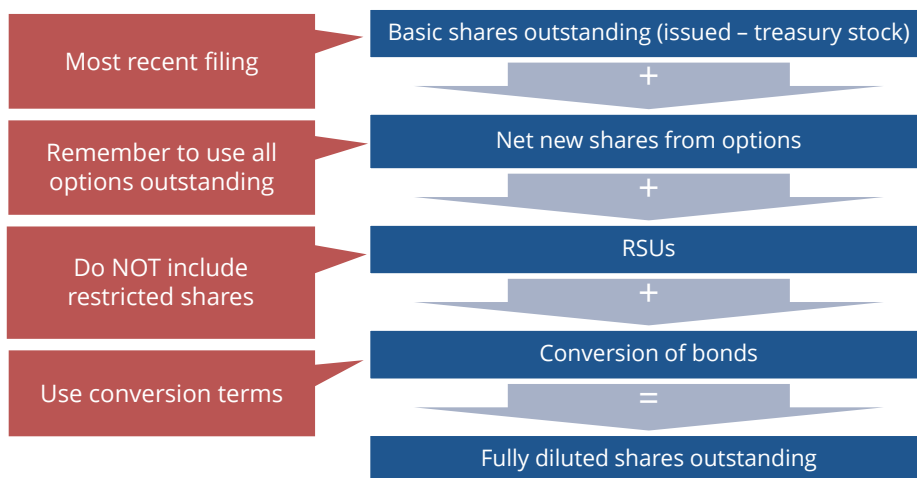
Value – Market Capitalization



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Value – Diluted Number of Shares



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Value – Dilution

Dilutive instruments		
Employee stock options	Restricted share units	Convertible bonds
Adjustment		
Treasury method	Treasury method with strike = 0	"As if converted"

Treasury method

Net dilution

=

$$\text{Number of Options Outstanding} * \text{Max} \left[0, \frac{\text{Price} - \text{Strike}}{\text{Price}} \right]$$

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Value – Treasury Method Example

	Number of Shares	Weighted Average Exercise Price
Outstanding, January 1, 2014	2,644,388	\$ 88.08
Granted	362,721	\$ 187.21
Exercised	(758,299)	\$ 75.18
Forfeited/Expired	(27,629)	\$ 140.54
Outstanding, December 31, 2014	2,221,181	\$ 108.01
Vested or expected to vest, December 31, 2014	2,171,513	\$ 107.71
Exercisable, December 31, 2014	641,592	\$ 66.79

Generally use
options
outstanding rather
than exercisable

Treasury method

Net dilution

=

$$2,221,181 * \text{Max} \left[0, \frac{117.16 - 108.01}{117.16} \right] = 173,470.5$$

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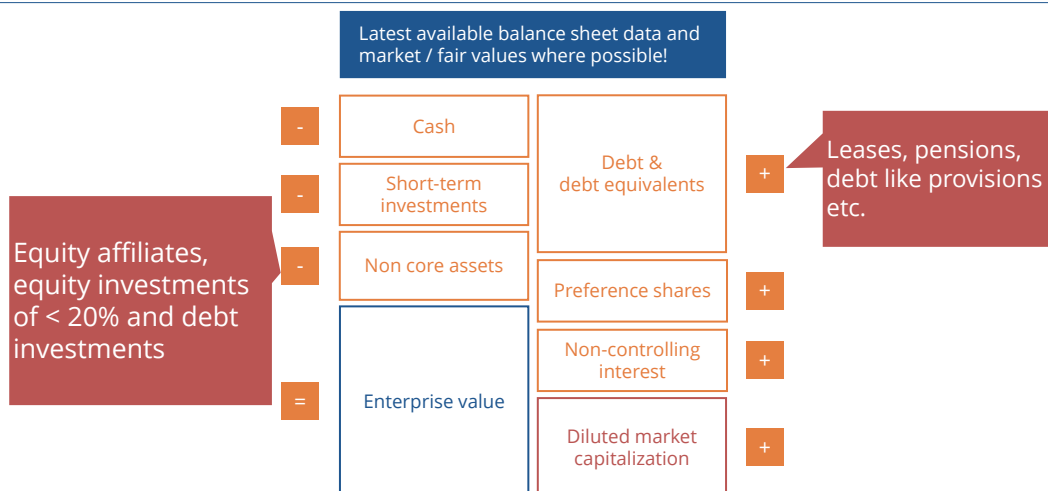
Value – Shares Outstanding Details

Basic shares outstanding	Share issues / repurchases	Stock splits	Multiple share classes
Take from the front page of the latest 10-K or 10-Q as this is the filing date (one month or so after the balance sheet date)	Check no issuances or repurchases since the balance sheet date	Check the stock has not been split since the balance sheet date	Many companies have multiple common share classes – add them together (NOT ADRs)

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Value – Equity to Enterprise Value Bridge

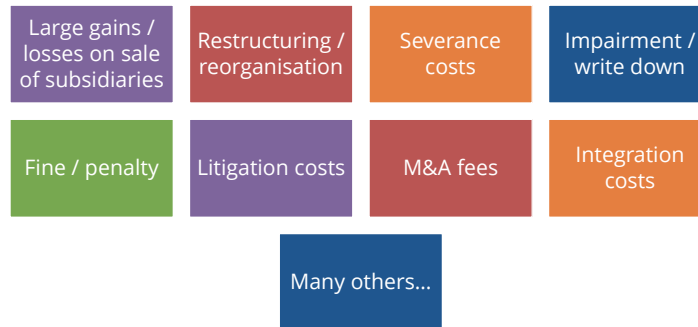


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Value Driver – Cleaning EBIT/EBITDA

Historic EBIT/EBITDA can help predict future EBIT/EBITDA...
but only if non recurring items are removed



Non core and non controlled items must also be removed

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Value Driver – Finding Non Recurring Items

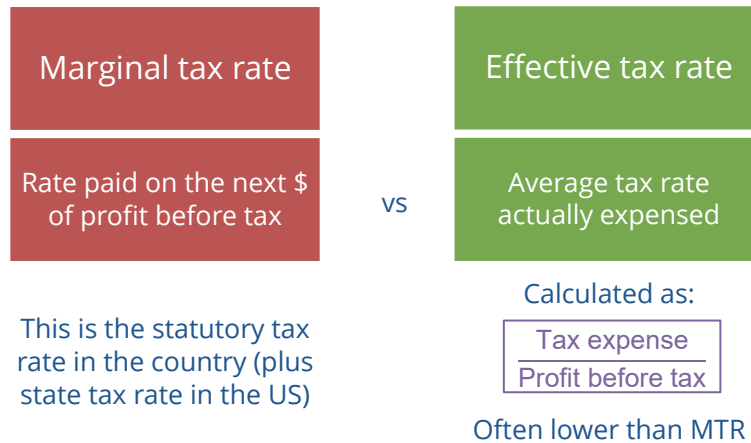
	Net revenue	55,870	
	Cost of sales	<u>20,261</u>	
	Gross margin	35,609	
	Research and development	11,537	
	Marketing, general and administrative	8,136	
2	Check above operating profit → Restructuring and asset impairment charges	295	
	Amortization of acquisition-related intangibles	294	
	Operating expenses	20,262	
1	Start at operating profit → Operating income	15,347	
	Gains (losses) on equity investments, net	411	3
	Interest and other, net	43	Check below operating profit
	Income before taxes	15,801	
	Provision for taxes	<u>4,097</u>	
	Net income	11,704	

4 Check MD&A and footnotes for more detail and embedded non recurring items. Use the lines above operating profit to guide your search, and use lines below operating profit as those you can safely ignore

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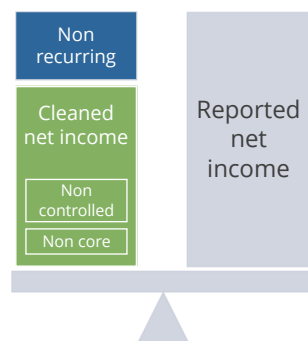
Value Driver – Tax



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Value Driver – Cleaning Net Income



All continuing income, regardless of core or control, is assessed in net income. Only non recurring items are cleaned

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Value Driver – Cleaning Net Income

		Reported figures	Non recurring item	Cleaned figures
	Revenue	500.0		500.0
	COGS	(100.0)		(100.0)
	SG&A	(90.0)		(90.0)
1 Add back non recurring item	Reorganisation	(10.0)	10.0	0.0
	EBIT	300.0		310.0
	Interest	(100.0)		(100.0)
	Profit before tax	200.0		210.0
2 Tax impact of non recurring item $10.0 * 30\%$	Tax	(50.0)	(3.0)	(53.0)
	Net income	150.0	7.0	157.0

3 Post tax non recurring item
 $10.0 * (1-30\%)$

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Value Driver – Cleaning ETR

Non recurring items distort ETR. To forecast ETR it must be cleaned.
Reverse out the non recurring item and recalculate ETR

	Reported figures	Non recurring item	Cleaned figures
Profit before tax	200.0		210.0
Tax	(50.0)	(3.0)	(53.0)
Net income	150.0	7.0	157.0
ETR	25.0%		25.2%

50.0 / 200.0

53.0 / 210.0

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Value Driver – Pro Forma Adjustments

Acquisition closes on 30th September and the acquirer has a 31st December year end

	Consolidated	Target (full year)	Pro forma
Sales	1,000.0	500.0	1,375.0
EBIT	100.0	50.0	137.5
D&A	40.0	10.0	47.5
EBITDA	140.0	60.0	185.0

Pro forma adds an additional 75% of the target's numbers

Consolidated earnings already include 25% of the target's numbers

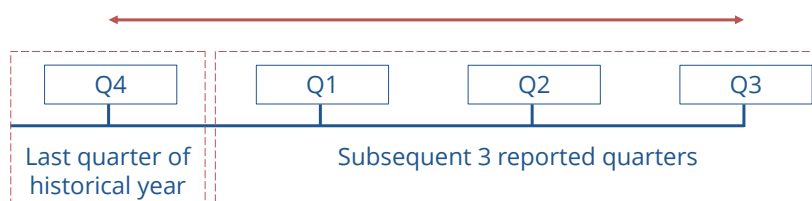
Enterprise value adjustment only if transaction closes after the latest balance sheet date

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Value Driver – Last Twelve Months

Last Twelve Months (LTM) produces rolling yearly income statement items



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Value Driver – Last Twelve Months

The quarterly reports can be used to calculate last twelve months numbers

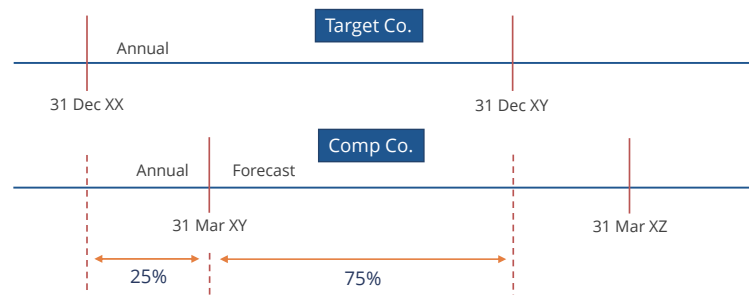
	Hist.	Hist.	Hist.	Hist.	Hist.
Company A	FY 2014	FY 2015	1Q 2015	1Q 2016	LTM
Sales	125.0	155.0	31.3	40.9	164.6
COGS	102.0	112.0	25.5	29.6	116.1
Gross profit	23.0	43.0	5.8	11.3	48.5

Annual +	Old Q -	New Q +
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Value Driver – Calendarization

All companies must be compared across the same earnings period



Calendarize Comp Co. to Target Co. = 25% x Annual + 75% x Forecast

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Building the Multiples Grid

Value numbers are constant

Share price	10.0		
Shares out.	100.0		
Market cap.	1,000.0		
Debt	400.0		
Cash	100.0		
Enterprise Value	1,300.0		

Period	LTM	CY1	CY2
EBITDA	150.0	160.0	165.0
EBIT	120.0	128.0	135.0
DEPS	0.84	0.90	0.95
EV/EBITDA	8.7x	8.1x	7.9x
EV/EBIT	10.8x	10.2x	9.6x
P/E	11.9x	11.2x	10.6x

Median forecast

Multiples fall as earnings grow

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Growth, Returns and Multiples

	Base	High ROC	High g	Low WACC	Return = WACC
Invested capital	100.0	100.0	100.0	100.0	100.0
Return on capital	11.0%	15.0%	11.0%	10.0%	10.0%
WACC	10.0%	10.0%	10.0%	8.0%	10.0%
Growth	3.0%	3.0%	6.0%	6.0%	6.0%
EV	114.3	171.4	125.0	200.0	100.0
EBIT	11.0	15.0	11.0	10.0	10.0
Multiple	10.4 x	11.4 x	11.4 x	20.0 x	10.0 x

Higher ROC produces more value

Higher growth produces more value

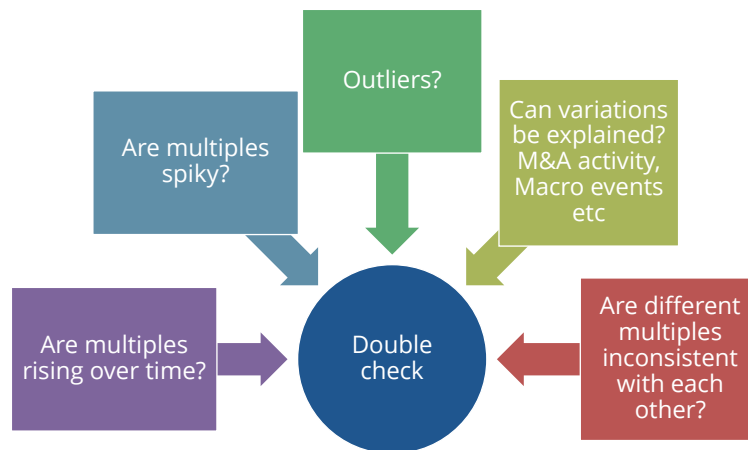
Lower WACC produces more value

Growth irrelevant because ROC = WACC

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Checking the Output



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Other Multiples

EV / revenues	Used for unprofitable or fast growing companies or as a reference
EV / EBITDA	Widely used
EV / (EBITDA – capex)	Used for capital intensive companies
EV / EBIT	Widely used
EV / free cash flow	Increasingly used - focuses on cash generation, only good for mature firms
P / E	Widely used, but impacted by capital structure and accounting issues
P / E / G	P / E to growth. Might be used for companies with different growth rates
Price / book value	Used for balance sheet driven companies (e.g. real estate, banks and insurance)
EV / rooms	Used for hotel companies in the same segment
EV / subscribers	Used for publishers and cable companies

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