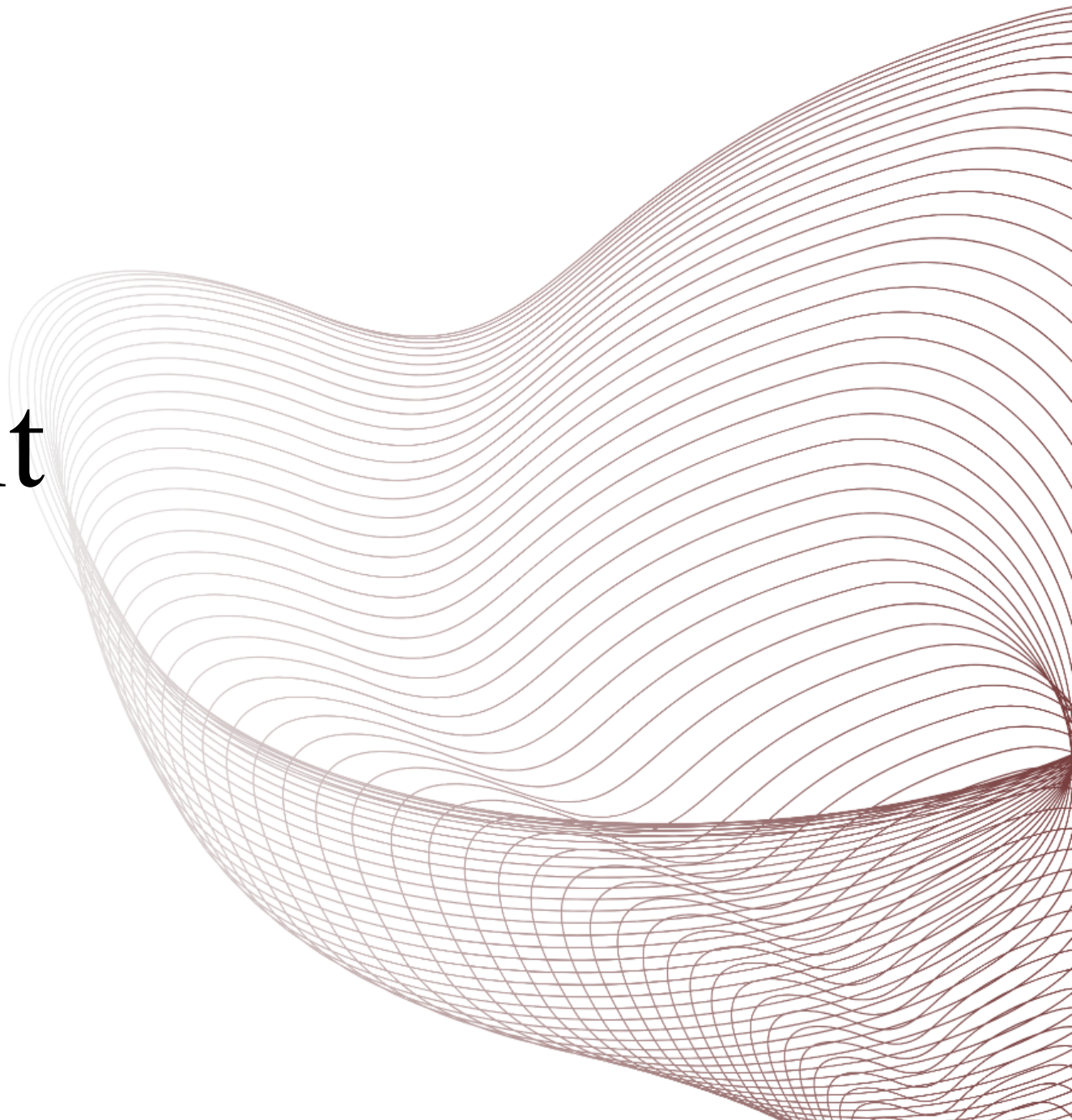
aic Aggie Investment Club

Equity Valuation: Implicit & Explicit

November 6th, 2023

Talk to your neighbor:



WHAT IS THE VALUE OF A BUSINESS?

THE PRESENT VALUE OF ITS FUTURE FREE CASH FLOWS

Implicit v. Explicit Valuation

Explicit

Definition: Stated clearly and in detail, leaving no room for confusion or doubt.

A **Discounted Cash Flow** model is an explicit form of valuation. In detail, you model out what exactly you believe free cash flows will be, and discount them back to today, explicitly stating exactly why you believe the business has a certain value.

What is **explicitly** stated:

- Revenues
- Margins
- Tax Rate
- D&A
- Capital Expenditures
- Net Working Capital
- Cost of Capital

Implicit

Definition: Implied thought not plainly expressed (not explicitly stated).

Multiples are an implicit form of valuation. If we think a business is worth 10x EBITDA, the only thing we're explicitly stating nothing, except that the business is worth 10x.

HOWEVER, within that statement of being worth 10x EBITDA, we are implicitly stating everything that a DCF says.

What is **implicitly** stated:

- Revenues
- Margins
- Tax Rate
- D&A
- Capital Expenditures
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- Cost of Capital

Equity Valuation Recap – **Explicit Valuation**

Year	1	2	3	4	5	6	7	8	9	10
Free Cash Flow	100	105	110	116	122	128	134	141	148	155
Discount Rate	8.63%	8.63%	8.63%	8.63%	8.63%	8.63%	8.63%	8.63%	8.63%	8.63%
PV of FCF	92	89	86	83	80	78	75	73	70	68

Perpetuity	
Year 11 Cash Flow	163
Pepretuity Growth Rate	3.5%
Discount Rate	8.63%
Terminal Value	3178
PV of Terminal Value	1390

Valuation	
Sum of PV of FCF From Explicit Period	794
PV of Terminal Value	1390
PV of FCFs	2184
Market Value of Debt	1000
Cash	100
Equity Value	1284
Shares Outstanding	100
Implied Price/Share	$12.84

Discount Rate (WACC)	
YTM on Bonds	8%
Tax Rate	25%
Cost of Debt	6%
Risk Free Rate	5%
Market Risk Premium	5%
Beta	1.25
Cost of Equity	11.25%
Weight of Debt	50%
Weight of Equity	50%
Weighted Average Cost of Capital (WACC)	8.625%

Projecting Future Cash Flows

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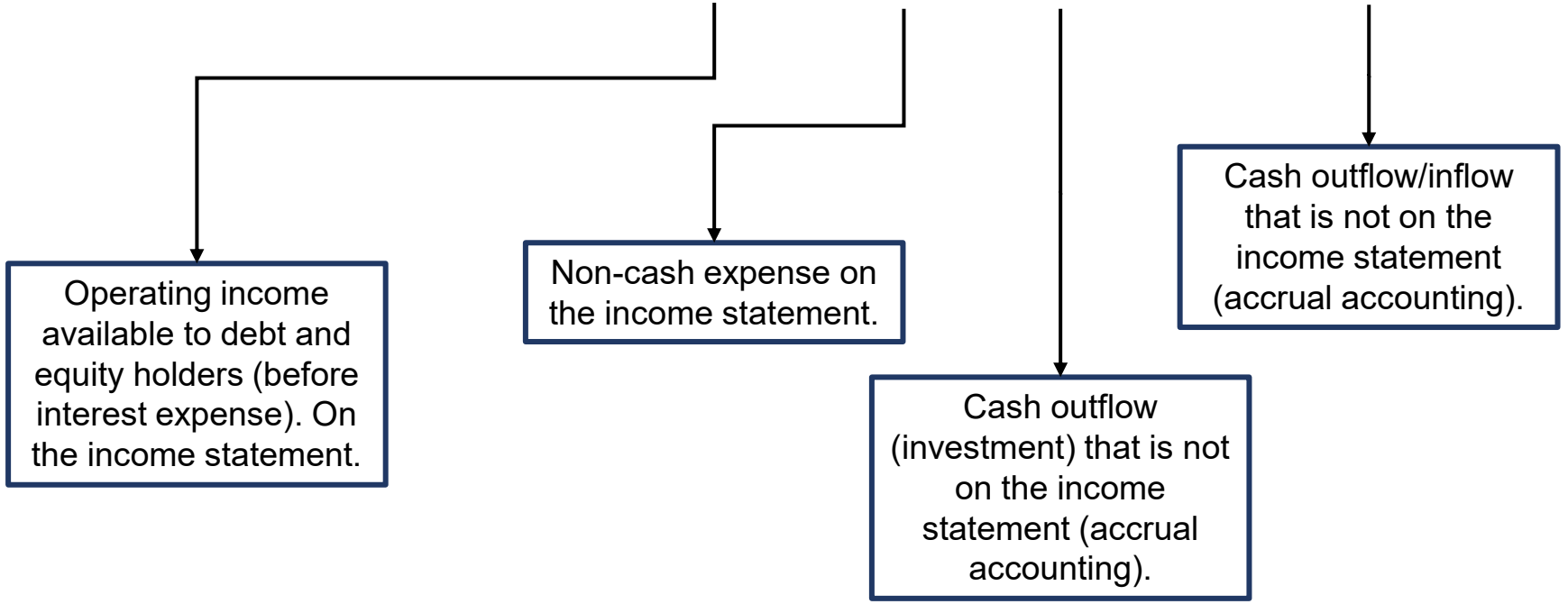
Equity Valuation – Calculating Free Cash Flow

Unlevered free cash flow is the amount of cash available to debt and equity holders, after investments have been made.

Unlevered Free Cash Flow = EBIT * (1 – Tax Rate) + D&A – CapEx – ΔNet Working Capital



How do you project future free cash flow?

1.) How much revenue will the business generate?
   a) How fast is the market growing/shrinking?
   b) Will the business grow faster, slower, or at the pace of the market? Why?
   c) How many stores will the business open and what will be the revenue per store? Will it increase, decrease, or stay the same as before?

2.) How much costs will the business incur to generate that revenue?
   a) Will gross margins stay the same? Does the company have a strong product/brand that will allow them to pass cost increases to customers?
   b) Will the business experience operating leverage? Positive or negative?

EBIT

3.) What will the company's tax rate be? (Can use historical and/or management guidance)

EBIT * (1-T) = NOPAT

How do you project future free cash flow?

4.) How much depreciation & amortization will there be in the future?
   a) What is D&A as a percentage of revenue? Will it remain the same, or change?
   b) Will the business become more or less capital intensive? If CapEx increases, D&A will increase, but slower.

Depreciation & Amortization

4.) How much CapEx will there be in the future?
   a) What is CapEx as a percentage of revenue? Will it remain the same or change?
   b) Will the business become more or less capital intensive? CapEx is the driver of changes in depreciation, and acquisitions the primary driver of amortization.
   c) Will the company be expanding store count faster? Are they looking to implement a new ERP system? These would increase CapEx.

Capital Expenditures

4.) How will working capital change in the future?
   a) What is working capital as a percentage of revenue? Are there any reasons to think this will change?

Change In Net Working Capital

Calculating The Weighted Average Cost of Capital(WACC)

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How do you find the cost of Debt + Equity (From Week 4)

Debt

Yield to Maturity (YTM) on Company Bonds

Maturity Date	Issuer	Security Type
Aug-08-2025	The Sherwin-Williams Company (NYSE:SHW)	Corporate Debentures

Seniority	Coupon	Offer Date
Senior Unsecured	4.250	Aug-08-2022

Amt. Outstdg. ($mm)	Current Price	Current YTW	S&P Rating
400.00	97.080	5.988	BBB

This is a market rate!
This is the return that investors believe they should receive for taking on the associated risk. (Required Rate of Return)

Equity

Capital Asset Pricing Model (CAPM)

Cost of Equity = Risk Free Rate + Beta * (Exp. Market Return – Risk Free Rate)

The CAPM model finds the required rate of return for an asset given its risk level.

The model uses the risk-free rate and adjusts the return based on the additional risk taken above the overall market risk.

Risk is defined as Beta

$$\beta_i = \frac{\mathrm{Cov}(r_i, r_m)}{\mathrm{Var}(r_m)}$$

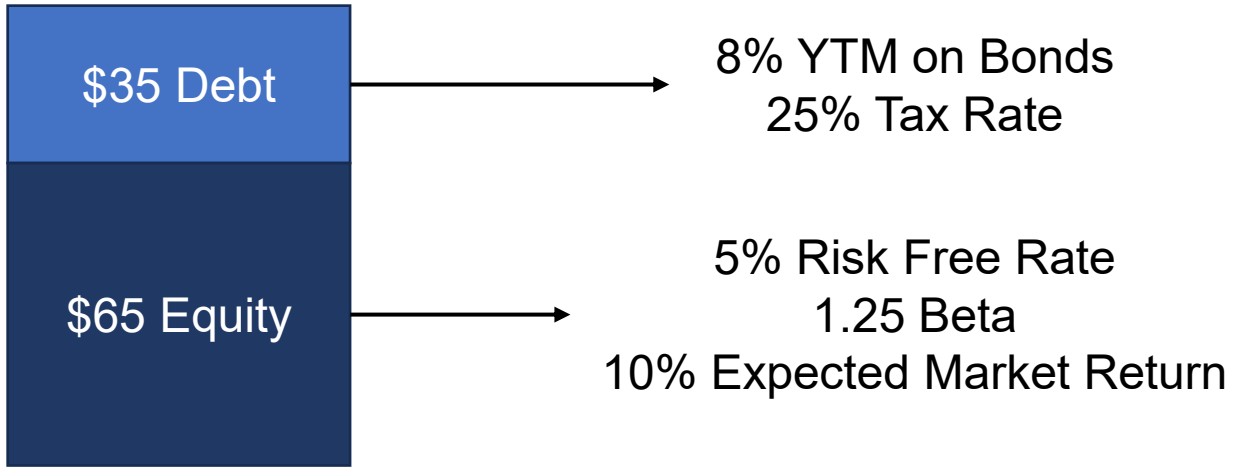
β_i = market beta of asset i
Cov = covariance
Var = variance
r_m = average expected rate of return on the market
r_i = expected return on an asset i

Weighted Average Cost of Capital (From Week 4)

- To determine the overall cost of capital for a business, we need to find the “Weighted Average Cost of Capital” (WACC).
- This uses the weighting of debt and equity the company has (the amount of each as a percentage of total capital) and averages the cost of both together.

WACC = (% Weight of Equity * Cost of Equity) + (% Weight of Debt * After-Tax Cost of Debt)

Example



Cost of Debt: 8% * (1 - .25) = 6.00%
Weight of Debt: 35 / (35 + 65) = 35%

Cost of Equity: 5% + 1.25 * (10% - 5%) = 11.25%
Weight of Equity: 65 / (35 + 65) = 65%

WACC: (6% * 35%) + (11.25% * 65%) = **9.14%**

Finding Equity Value From PV of FCF (Enterprise Value)

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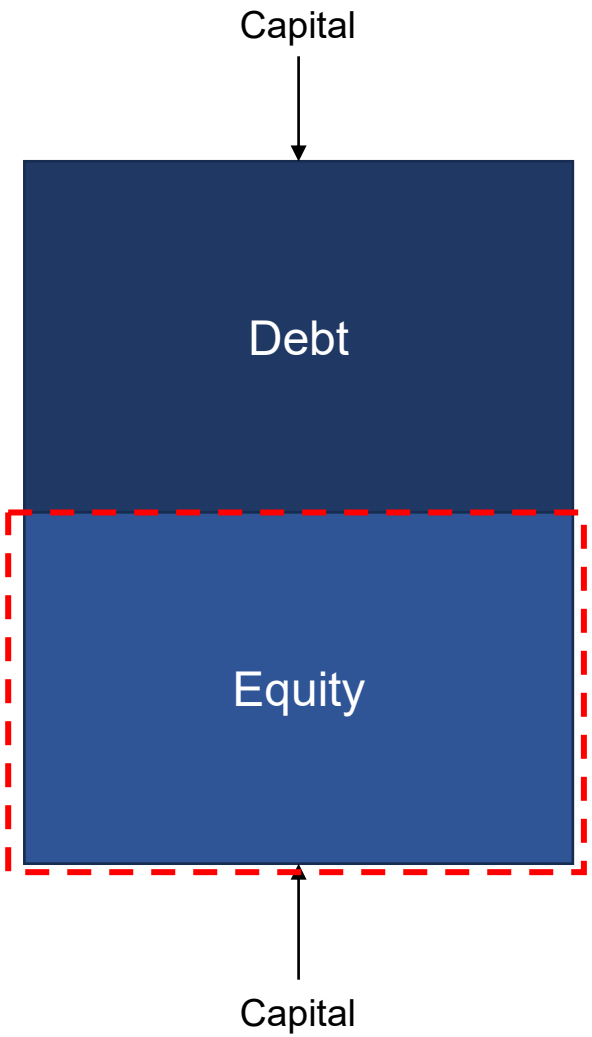
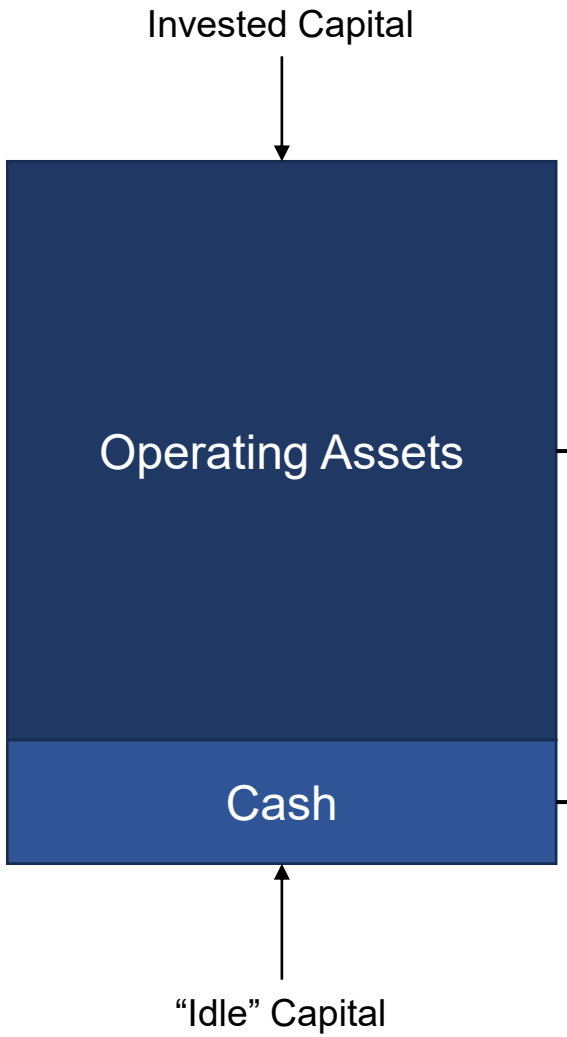
Equity Valuation – Residual Claim On Earnings (From Week 5)





Equity Value =
Present Value of Unlevered Free Cash Flows – Debt + Cash

Enterprise Value = Market Cap + Debt - Cash

Operating assets are used to generate cash. Specifically, "Free Cash Flow"

Unlevered Free Cash Flow = EBIT * (1 – Tax Rate) + D&A – CapEx – ΔNet Working Capital

Uninvested cash is not being used to generate additional cash. We can simply add this to equity value, as it is cash that we have today (the balance sheet value is its present value).

Implicit Valuation – Looking at Multiples

Multiples are often looked at to tell how a company is valued? Is it cheap, expensive, or fairly priced?

It's difficult and time consuming to run a DCF, but it's easy to divide two numbers to find a ratio.

Multiples tell you the price you are paying for a certain types of earnings or revenue.

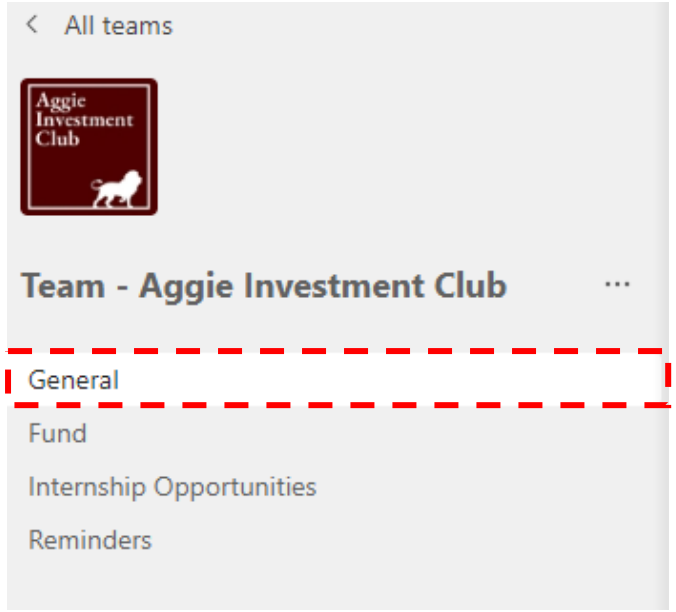
Enterprise Value: $2.7T
LTM EBITDA: $125.8B
LTM EBIT: $114.3B

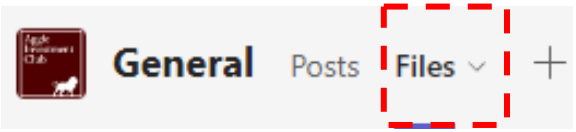
EV/EBITDA: 19.1x
EV/EBIT: 23.7x

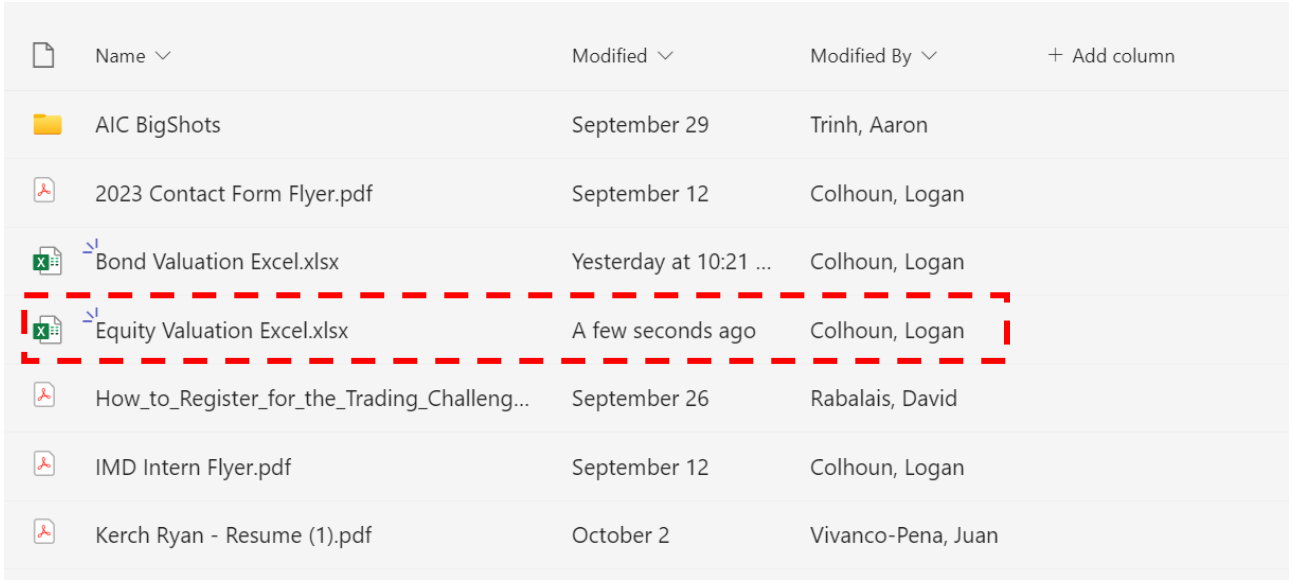
Price / Earnings	Enterprise Value / Earnings Before Interest & Taxes	Enterprise Value / Earnings Before Interest, Taxes, Depreciation & Amortization	Enterprise / Revenue
P/E	**EV/EBIT**	**EV/EBITDA**	**EV/Sales**

Why are investors willing to pay different multiples for different companies?

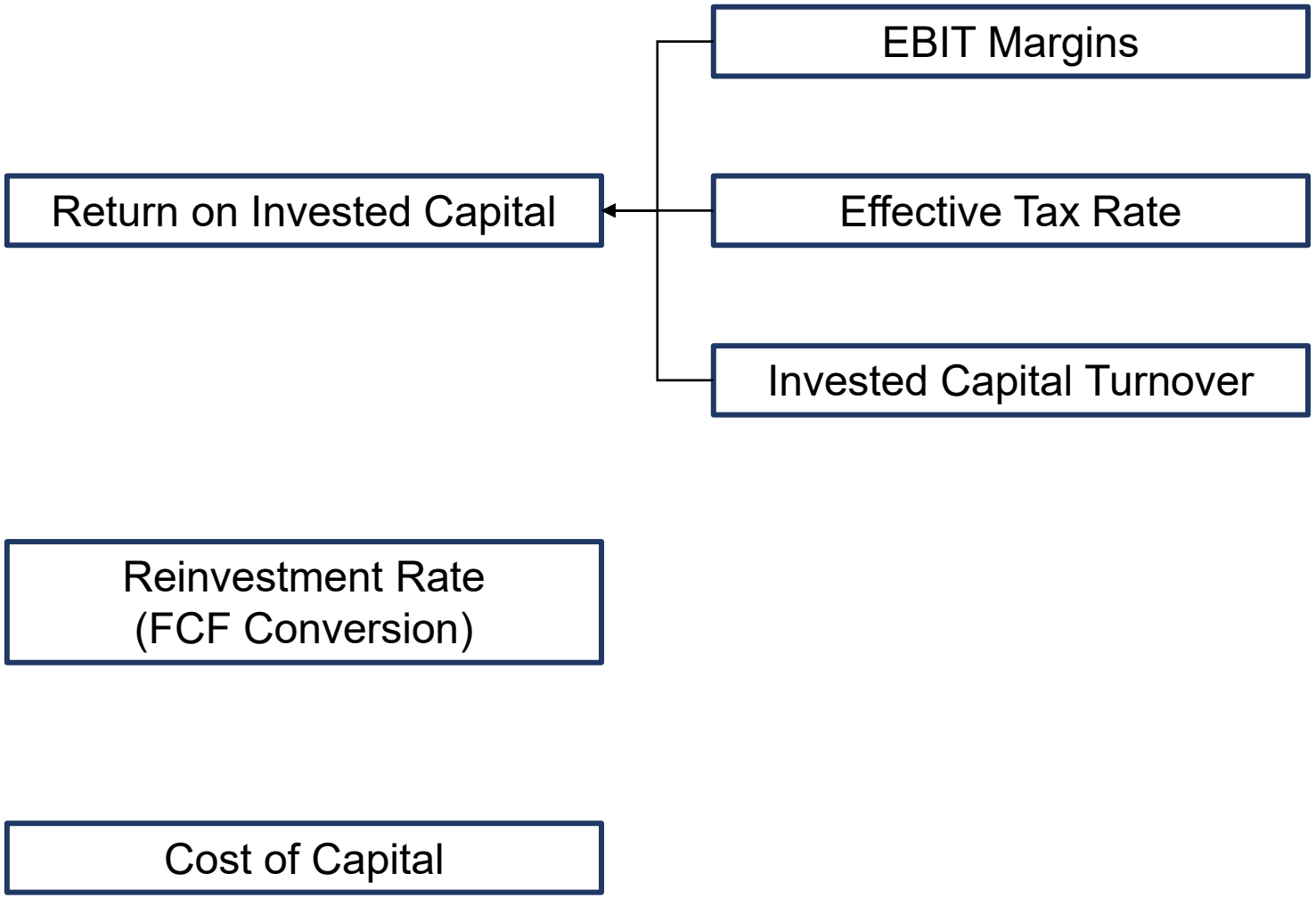
Equity Valuation Excel







What effects the fair value multiple of a business?



IF ROIC > WACC
Higher reinvestment rate = higher value (creating value)

IF ROIC = WACC
Reinvestment rate has no effect on value

IF ROIC < WACC
Higher reinvestment rate = lower value (destroying value)

What effects the fair value multiple of a business?

If a business consistently earns the cost of capital into perpetuity, with no deviations, the fair multiple of the business is:

NTM EV/NOPAT = 1/ Cost of Capital.

Assume the cost of capital is 8.5%.

1/ .085 = ~11.765x NTM NOPAT

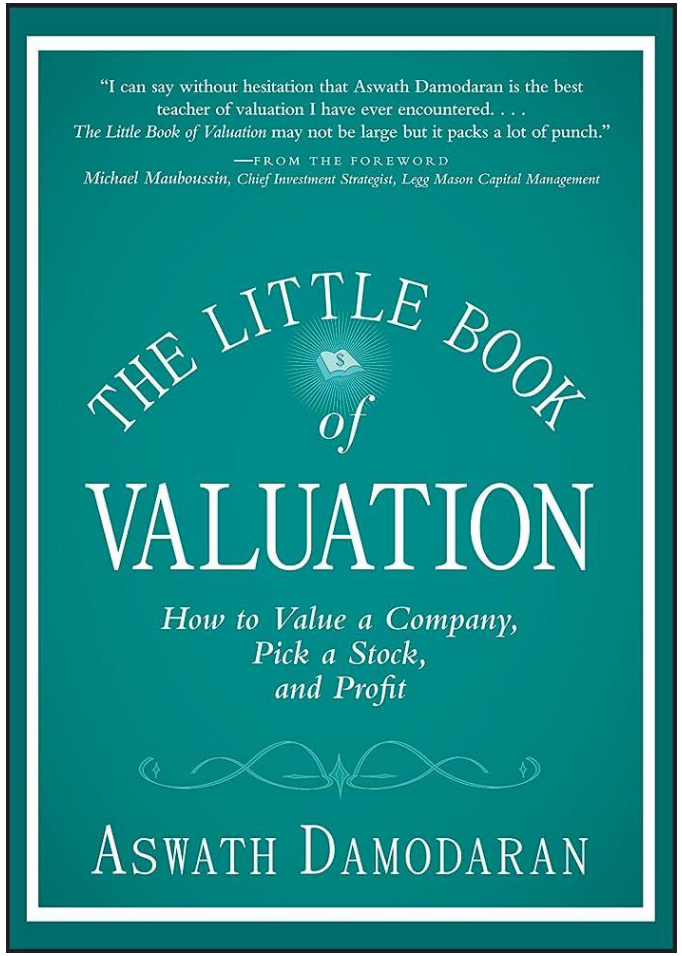
You would pay more for the business IF:

The company generates ROICs > WACC
The company has more opportunities for reinvestment (higher reinvestment rate), assuming ROICs > WACC.

ROIC *implicitly* states EBIT margins, which implicitly states gross margins, which implicitly states the companies pricing power, etc.

Valuation Book Suggestions

Read First



Read Second