DATA UPDATE 5 FOR 2026: RISK AND HURDLE RATES!

Danger + Opportunity = Risk

LOOKING OUTWARDS!

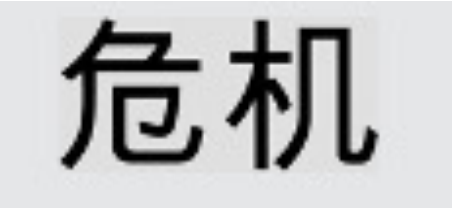
- In my first four posts, I **looked at markets** - equity, debt and collectibles - in the aggregate performed in 2025.
- In this session, I turn my attention to **divergences in risk across companies**, looking at alternative measures of risk, some based on prices and others at earnings
- I also look at **how these differences play out in hurdle rates**, a necessary ingredient for businesses trying to determine whether and how much to invest in individual projects and for investors making that same judgment, when looking at companies.

WHAT IS RISK?

- For a concept that is so central to investing and corporate finance as risk, it is **astonishing how much divergence there is across even finance experts and academics on what it is**, and consequently on how to measure it.
- I have heard some describe it as **uncertainty**, essentially substituting one fuzzy word for another, others as the **risk of (large) loss** and still others **more generally as bad outcomes**.
- If you have taken a finance class, and I confess to having a part in this, you may define risk as **volatility or standard deviation**, or even bring Greek alphabets into play.

A BETTER DEFINITION?

- My favorite definition of risk and one that I start my corporate finance class with is that **Chinese symbol for crisis or big risk:**

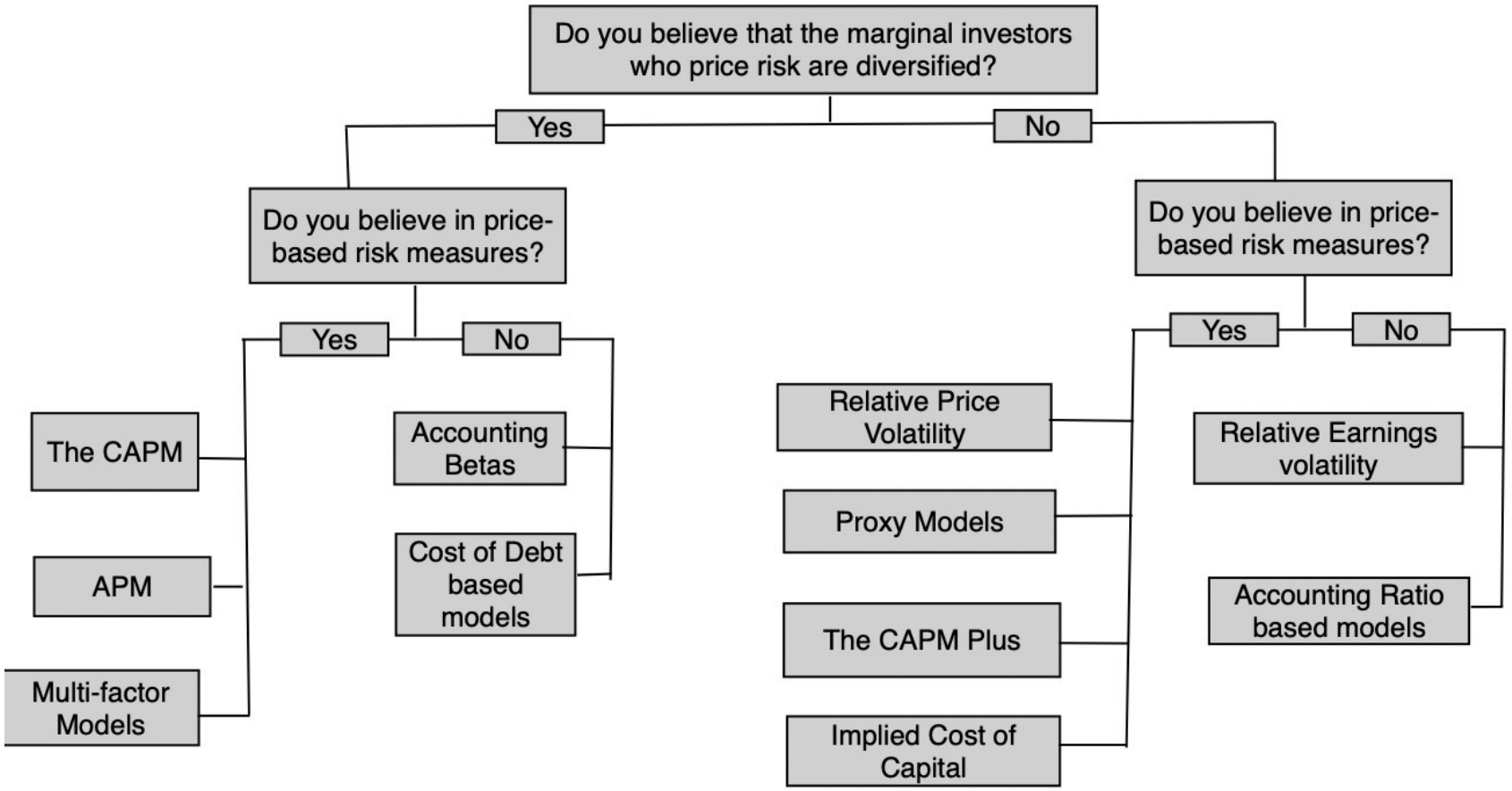


- The first of the two symbols is the **one for danger** and the second is a **symbol for opportunity.** In effect, by bunding together danger and opportunity, the risk measure captures how risk both attracts (to get to opportunity) and repels (with the threat of danger).
- It explains **why avoiding risk is generally not a good business strategy** and nor is a **reckless pursuit of opportunity**.

RISK VARIATIONS

1. **Upside versus Downside**: If you start with a generic definition of risk as receiving an outcome that is different from what your expectation, it is worth recognizing that some of these outcomes will be positive (better than expected) and some will be negative (worse than expected), and that it is the latter than investors and businesses dislike.
2. **Price-based versus accounting-based**: Risk measures that are based upon data can be built on market prices, for publicly traded firms, or on accounting data, especially earnings. Price-based measures have the advantage of constant updating, giving you more data, but are sometimes contaminated by the noise and volatility that come from trading. Accounting measures yield more stability, but since they are updated infrequently, and accounting smooths changes over time, they can offer stale or distorted values.
3. **Total versus Non-diversifiable**: The risk in an investment, whether a project or a business, can come from many different sources, but some of the risks are more investment-specific whereas others are market-wide:

THE RIGHT MEASURE OF RISK



ACCOUNTING RISK MEASURES

Intrinsic Risk Measures

Money Loser Indicator = Set to one if losing money, zero if making positive profit.	Coeff of Variation (Earnings) = Std Dev in Earnings/ Average in Earnings in last 10 years	Debt Load 1. Debt/ EBITDA 2. EBIT/ Interest Expenses
Measure of whether company is losing money; if it is, it is riskier.	Measures volatility in earnings (operating & net), with higher volatility indicating more risk.	Debt/EBITDA (EBIT/Int Exp) measure debt load, with higher (lower) values -> heavier load
Pluses: Intuitive and simple to compute. **Minuses:** Does not consider how much money is being made or lost.	**Pluses**: Based on earnings, a key ingredient of intrinsic value **Minuses:** Skewed by accounting smoothing & cannot calculate when earnings <0.	**Pluses**: Information easily accessible on balance sheet. **Minuses:** Focuses just on risk from financial leverage & ignored operating risks.

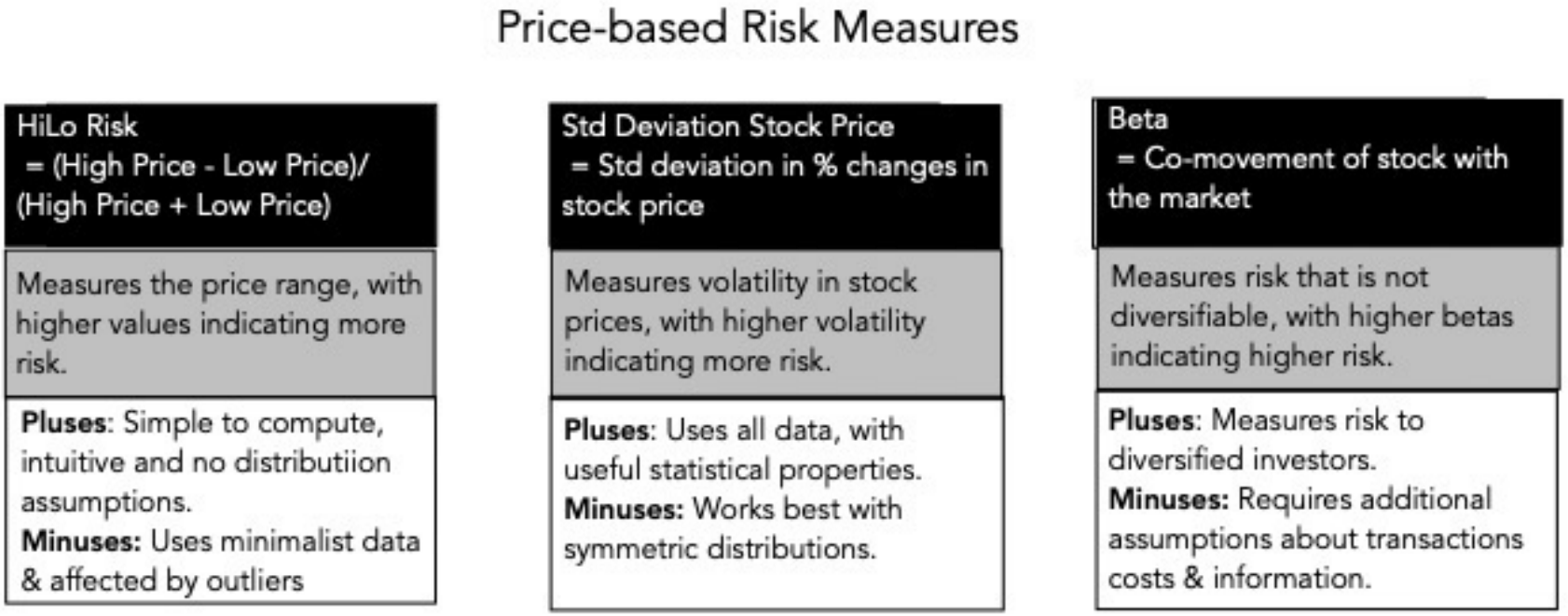
EARNINGS VOLATILITY, ACROSS SECTORS

		Coefficient of Variation (Operating Income)			Coefficient of Variation (Net ncome)		
Sector	# firms	1st Quartile	Median	3rd Quartile	1st Quartile	Median	3rd Quartile
Communication Services	2,193	0.47	0.83	1.19	0.60	1.02	1.36
Consumer Discretionary	6,358	0.46	0.78	1.15	0.54	0.92	1.27
Consumer Staples	3,202	0.34	0.63	1.08	0.40	0.77	1.19
Energy	1,402	0.65	1.00	1.30	0.76	1.12	1.40
Financials	5,278	0.44	0.84	1.25	0.36	0.63	1.13
Health Care	4,452	0.40	0.64	1.02	0.45	0.73	1.13
Industrials	9,007	0.41	0.70	1.12	0.46	0.79	1.20
Information Technology	6,234	0.51	0.83	1.17	0.53	0.88	1.23
Materials	6,457	0.50	0.77	1.10	0.59	0.90	1.24
Real Estate	2,671	0.34	0.64	1.13	0.57	0.95	1.29
Utilities	902	0.27	0.44	0.83	0.36	0.65	1.12

MONEY LOSING, AS A RISK PROXY

		Operating Income		Net income	
Sector	*# firms*	*Positive*	*Negative*	*Positive*	*Negative*
Communication Services	2,193	56.18%	43.82%	50.34%	49.66%
Consumer Discretionary	6,358	69.99%	30.01%	65.93%	34.07%
Consumer Staples	3,202	72.33%	27.67%	69.36%	30.64%
Energy	1,402	56.85%	43.15%	53.00%	47.00%
Financials	5,278	NA	NA	72.74%	27.26%
Health Care	4,452	43.82%	56.18%	41.89%	58.11%
Industrials	9,007	71.32%	28.68%	68.96%	31.04%
Information Technology	6,234	58.20%	41.80%	57.81%	42.19%
Materials	6,457	50.58%	49.42%	48.69%	51.31%
Real Estate	2,671	73.76%	26.24%	65.74%	34.26%
Utilities	902	81.49%	18.51%	77.61%	22.39%
All firms	**48,156**	**59.76%**	40.24%	**61.01%**	38.99%

PRICE-BASED RISK MEASURES



HIGH-LOW RISK, BY SECTOR

		Hi-Lo Risk Measure				
Primary Sector	# firms	1st Decoe	1st Quartile	Median	3rd Quartile	9th Decile
Communication Services	2,193	0.16	0.24	0.35	0.52	0.76
Consumer Discretionary	6,358	0.15	0.21	0.30	0.43	0.62
Consumer Staples	3,202	0.12	0.18	0.27	0.41	0.61
Energy	1,402	0.17	0.24	0.35	0.55	0.76
Financials	5,278	0.11	0.17	0.25	0.39	0.58
Health Care	4,452	0.18	0.26	0.40	0.61	0.82
Industrials	9,007	0.16	0.22	0.31	0.45	0.63
Information Technology	6,234	0.20	0.26	0.35	0.49	0.68
Materials	6,457	0.18	0.25	0.38	0.55	0.72
Real Estate	2,671	0.11	0.15	0.24	0.36	0.55
Utilities	902	0.11	0.15	0.24	0.35	0.52
All firms	48,156	0.15	0.22	0.32	0.47	0.68

STOCK PRICE STANDARD DEVIATION, BY SECTOR

		Standard Deviation in Stock Prices				
Primary Sector	*# firms*	*1st Decile*	*1st Quartile*	*Median*	*3rd Quartile*	*9th Decile*
Communication Services	2,193	19.73%	27.13%	38.83%	53.60%	72.89%
Consumer Discretionary	6,358	18.65%	25.26%	34.80%	46.75%	62.54%
Consumer Staples	3,202	15.46%	21.12%	30.36%	42.66%	59.92%
Energy	1,402	20.99%	27.24%	37.86%	58.41%	90.56%
Financials	5,278	14.77%	20.03%	27.01%	39.71%	59.09%
Health Care	4,452	22.62%	31.23%	44.38%	66.28%	93.16%
Industrials	9,007	19.40%	25.62%	35.76%	48.82%	63.80%
Information Technology	6,234	24.53%	31.98%	41.77%	53.93%	71.12%
Materials	6,457	21.06%	29.13%	40.98%	63.28%	97.58%
Real Estate	2,671	13.99%	19.05%	28.20%	41.74%	59.68%
Utilities	902	14.50%	19.18%	27.47%	39.18%	54.74%
All firms	48,156	18.59%	25.44%	36.31%	51.07%	72.97%

BETAS, BY SECTOR

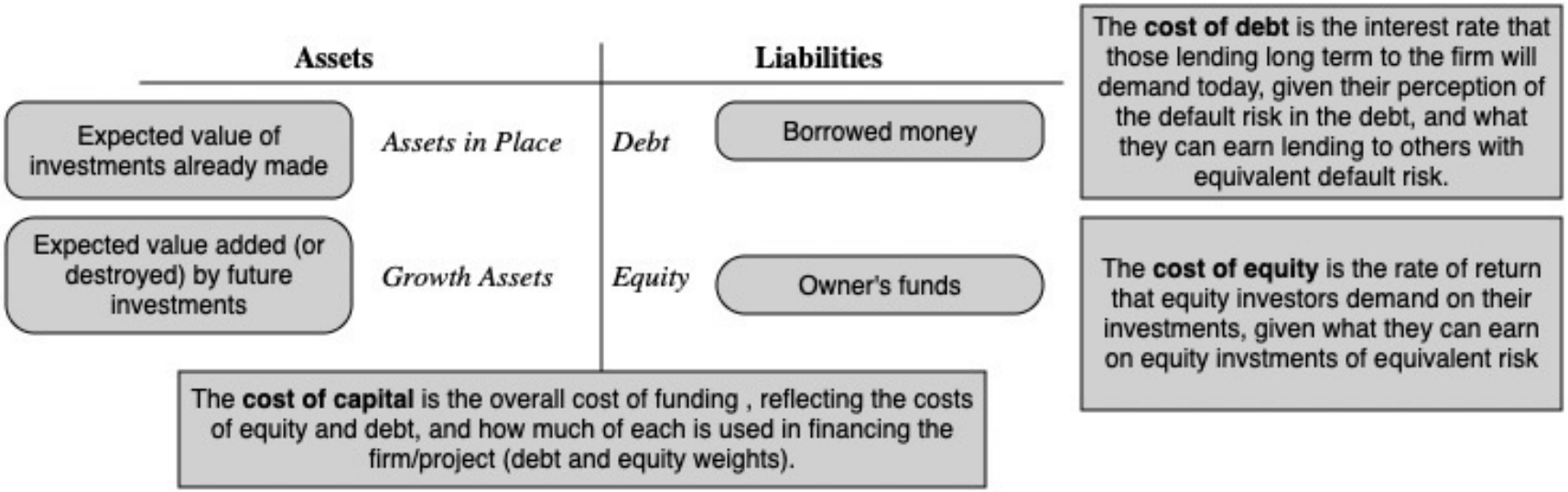
		Beta				
Primary Sector	*# firms*	*1st Decile*	*1st Quartile*	*Median*	*3rd Quartile*	*9th Decile*
Communication Services	2,193	-0.04	0.36	0.86	1.52	2.19
Consumer Discretionary	6,358	-0.09	0.36	0.86	1.45	2.08
Consumer Staples	3,202	-0.13	0.19	0.60	1.10	1.67
Energy	1,402	-0.08	0.33	0.76	1.32	1.93
Financials	5,278	-0.12	0.17	0.63	1.13	1.74
Health Care	4,452	0.09	0.53	1.00	1.58	2.27
Industrials	9,007	0.01	0.49	1.01	1.64	2.29
Information Technology	6,234	0.22	0.77	1.38	2.11	2.81
Materials	6,457	-0.01	0.50	1.07	1.73	2.37
Real Estate	2,671	-0.09	0.25	0.66	1.19	1.86
Utilities	902	-0.03	0.25	0.66	1.14	1.66
All firms	48,156	0.39	0.92	1.56	2.26	0.00

HURDLE RATE: WHAT IS IT?

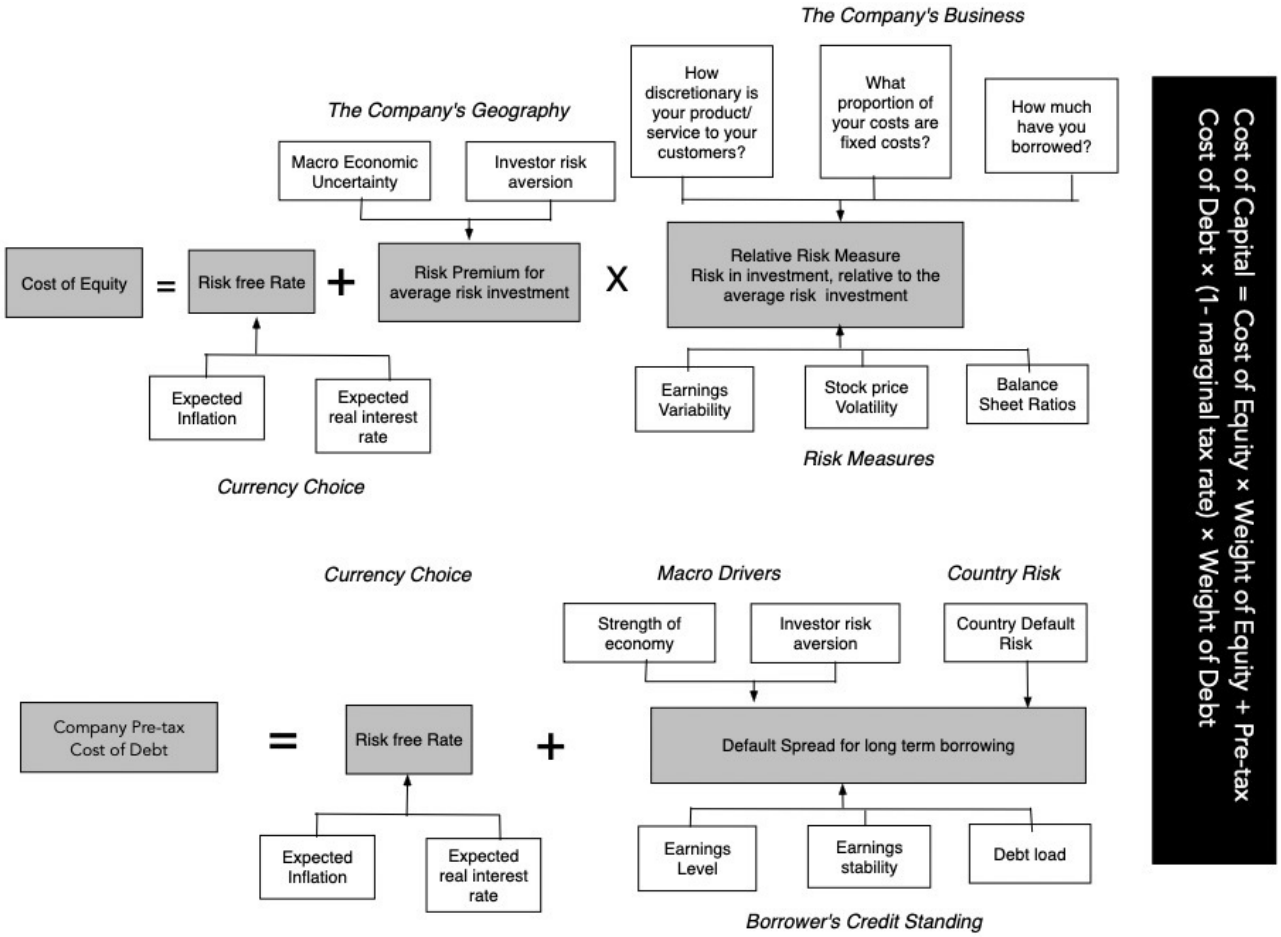
Accounting Test	**Time Weighted CF Test**	**Time Weighted % Return**
Return on invested capital (ROIC) > Cost of Capital	NPV of the Project > 0	IRR > Cost of Capital

Hurdle Rate = Return you can make on investment of equivalent risk
Should reflect the risk of the investment, not the entity taking the investment. Should use a debt ratio that is reflective of the investment's cash flows.

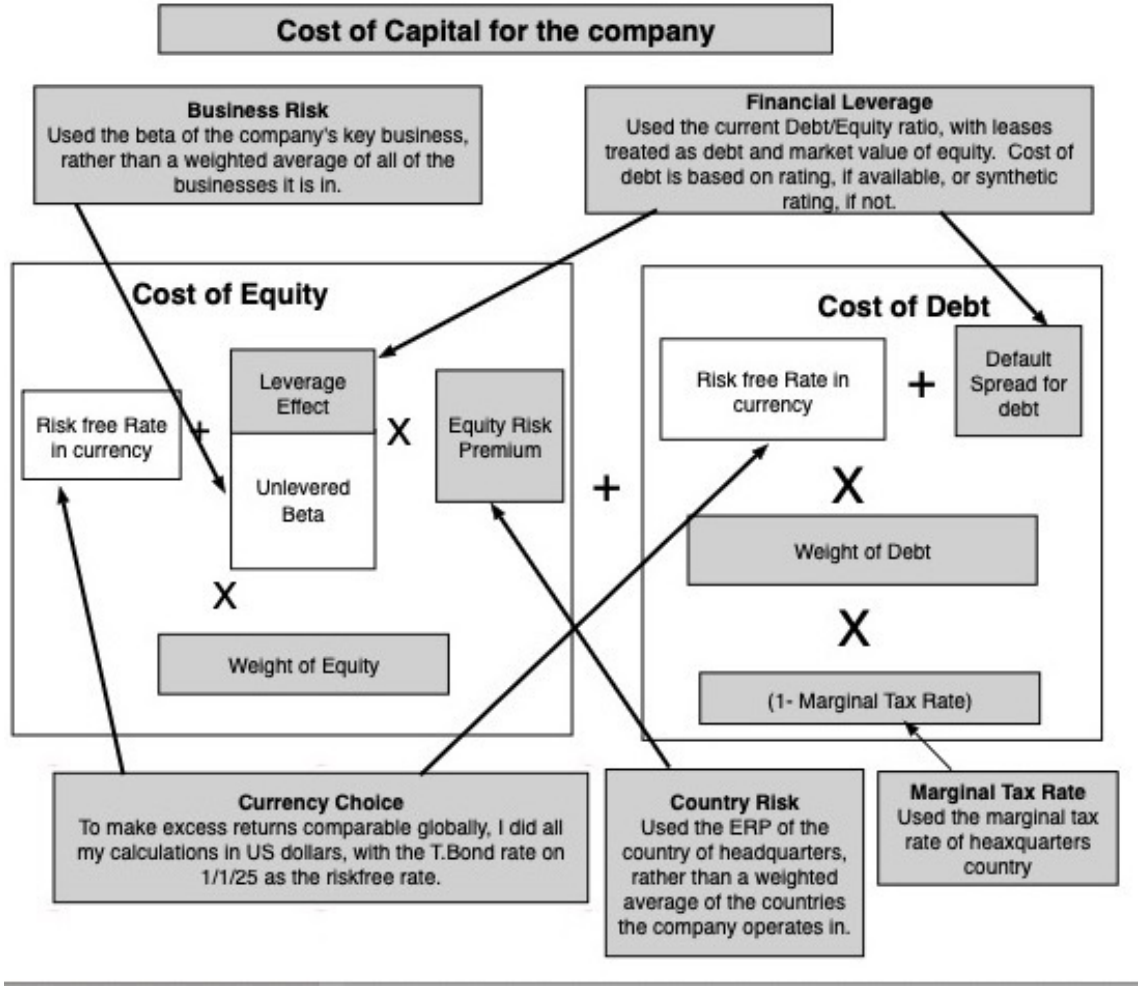
THE OPPORTUNITY COST ARGUMENT



COST OF CAPITAL COMPONENTS

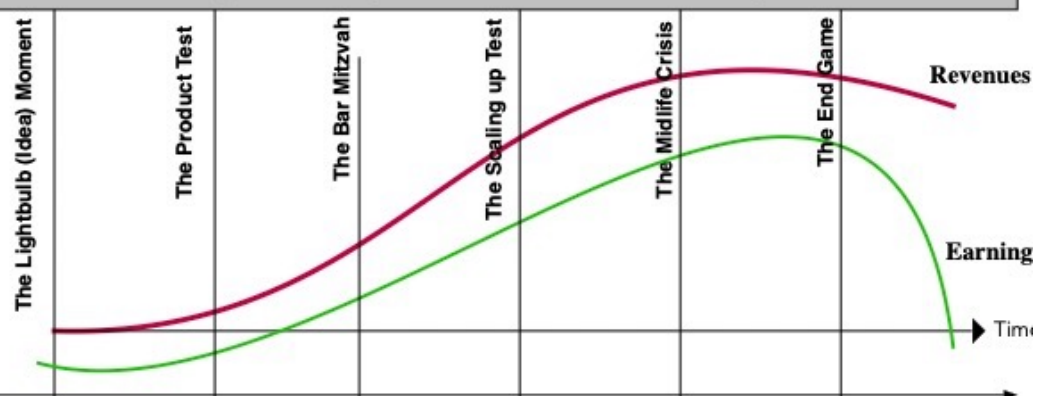


COST OF CAPITAL: ESTIMATION DETAILS



LIFE CYCLE AND COST OF CAPITAL

The Corporate Life Cycle: The Evolution of Uncertainty

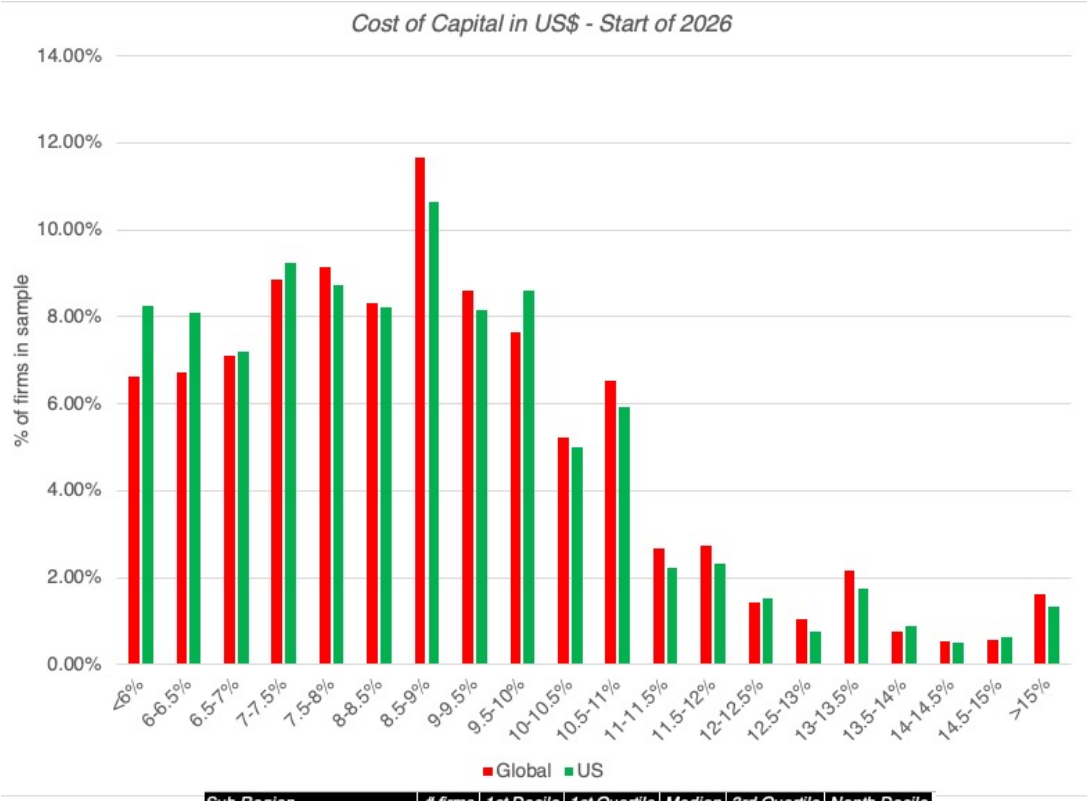


Lifecycle stage	Start-up	Young Growth	High Growth	Mature Growth	Mature Stable	Decline
Amount of Uncertainty	High → Low → High *Uncertainty is greatest at either end of the life cycle, and least for mature companies.*					
Estimation verus Economic Uncertainty	Mostly economic → More estimation *With young companies, most of the uncertainty is real, and neither data nor sophisticated models will reduce exposure to it.*					
Micro versus Macro Uncertainty	Mostly micro (company-specific) → Mostly macro *With young companies, uncertainty is centered on their business models and management. With older companies, uncertainty comes more from macro sources (economy, interest rates etc.)*					
Discrete versus Continuous Uncertainty	High discrete risk (failure) → Mostly continuous risk → High discrete risk (failure) *Two thirds of start ups don't make it to young growth, and declining companies, with debt loads, face risk of distress and failure.*					
Costs of equity & capital	Cost of equity effect will depend on who the marginal investors are in the firm, and if they are diversified, whether the uncertainty that you face is diversifiable or not. The cost of capital can be impacted if debt capacity increases with age.					

CORPORATE AGE AND COST OF CAPITAL

		Cost of Equity			Debt Ratios			Cost of Capital		
Age Decile	# firms	1st Quartile	Median	3rd Quartile	1st Quartile	Median	3rd Quartile	1st Quartile	Median	3rd Quartile
Youngest	4,160	7.80%	9.07%	10.44%	0.00%	3.95%	21.99%	7.12%	8.68%	9.61%
2nd decile	4,465	8.45%	9.63%	11.37%	0.46%	7.50%	29.26%	7.64%	8.83%	9.89%
3rd decile	4,835	8.50%	9.76%	11.68%	0.62%	8.56%	30.32%	7.51%	8.79%	10.11%
4th decile	3,925	8.68%	10.04%	12.06%	1.30%	10.00%	31.57%	7.67%	9.04%	10.48%
5th decile	5,040	8.53%	9.99%	12.02%	1.57%	11.47%	35.02%	7.42%	8.83%	10.36%
6th decile	4,498	8.28%	9.98%	12.28%	1.53%	12.64%	36.99%	7.34%	8.64%	10.46%
7th decile	4,957	8.46%	10.07%	12.63%	2.04%	14.42%	40.06%	7.37%	8.70%	10.42%
8th decile	4,688	8.57%	10.34%	12.82%	2.64%	17.38%	43.26%	7.33%	8.63%	10.45%
9th decile	4,546	8.38%	10.09%	12.85%	3.58%	18.32%	44.00%	7.17%	8.41%	10.24%
Oldest	4,665	7.60%	9.19%	11.40%	6.86%	23.49%	45.03%	6.44%	7.64%	9.05%

COST OF CAPITAL: GLOBAL DISTRIBUTION



Sub Region	# firms	1st Decile	1st Quartile	Median	3rd Quartile	Nonth Decile
Africa and Middle East	2,555	6.52%	7.32%	8.71%	11.23%	13.71%
Australia & NZ	1,702	5.97%	6.98%	8.62%	8.75%	9.71%
Canada	2,576	6.26%	7.30%	8.68%	9.29%	9.76%
China	7,775	6.57%	7.54%	8.87%	10.53%	11.26%
EU & Environs	5,649	5.99%	6.87%	8.26%	9.57%	11.10%
Eastern Europe & Russia	439	6.85%	7.56%	8.81%	10.70%	13.36%
India	5,170	7.14%	7.92%	9.19%	10.94%	12.94%
Japan	3,965	6.30%	7.07%	8.24%	9.43%	10.73%
Latin America & Caribbean	980	6.49%	7.23%	8.84%	10.76%	13.41%
Small Asia	10,367	6.61%	7.62%	9.02%	10.74%	13.11%
UK	984	6.07%	6.75%	8.03%	9.56%	10.60%
United States	5,994	5.26%	6.41%	7.79%	9.16%	9.88%
Global	**48,156**	**6.28%**	**7.24%**	**8.65%**	**10.03%**	**11.66%**

THE BOTTOM LINE!

- To run a business or invest in one, **you need hurdle rates**, and that is what costs of equity and debt should be measuring.
- While models and equations may be how you get these numbers, it is always worth **going back to first principles**, whenever you face questions on what to do.
- As we enter 2026, we are now in our fourth year with US dollar riskfree rates around 4%, and companies and investors seem to have become acclimatized to the resulting costs of capital, and **the shock of seeing dollar riskfree rates surge** in 2022, pushing up costs of capital across the board seem to have faded.