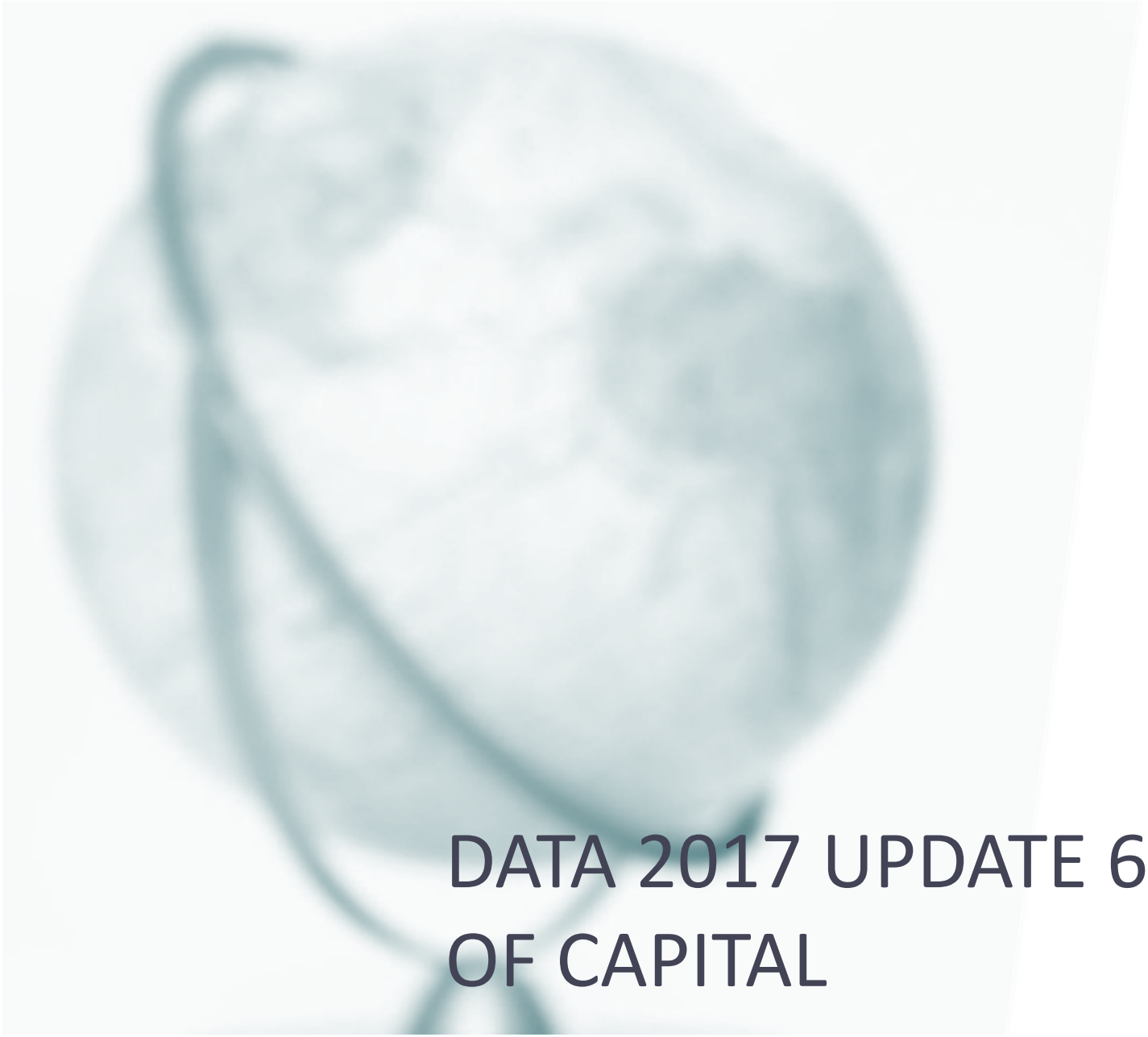
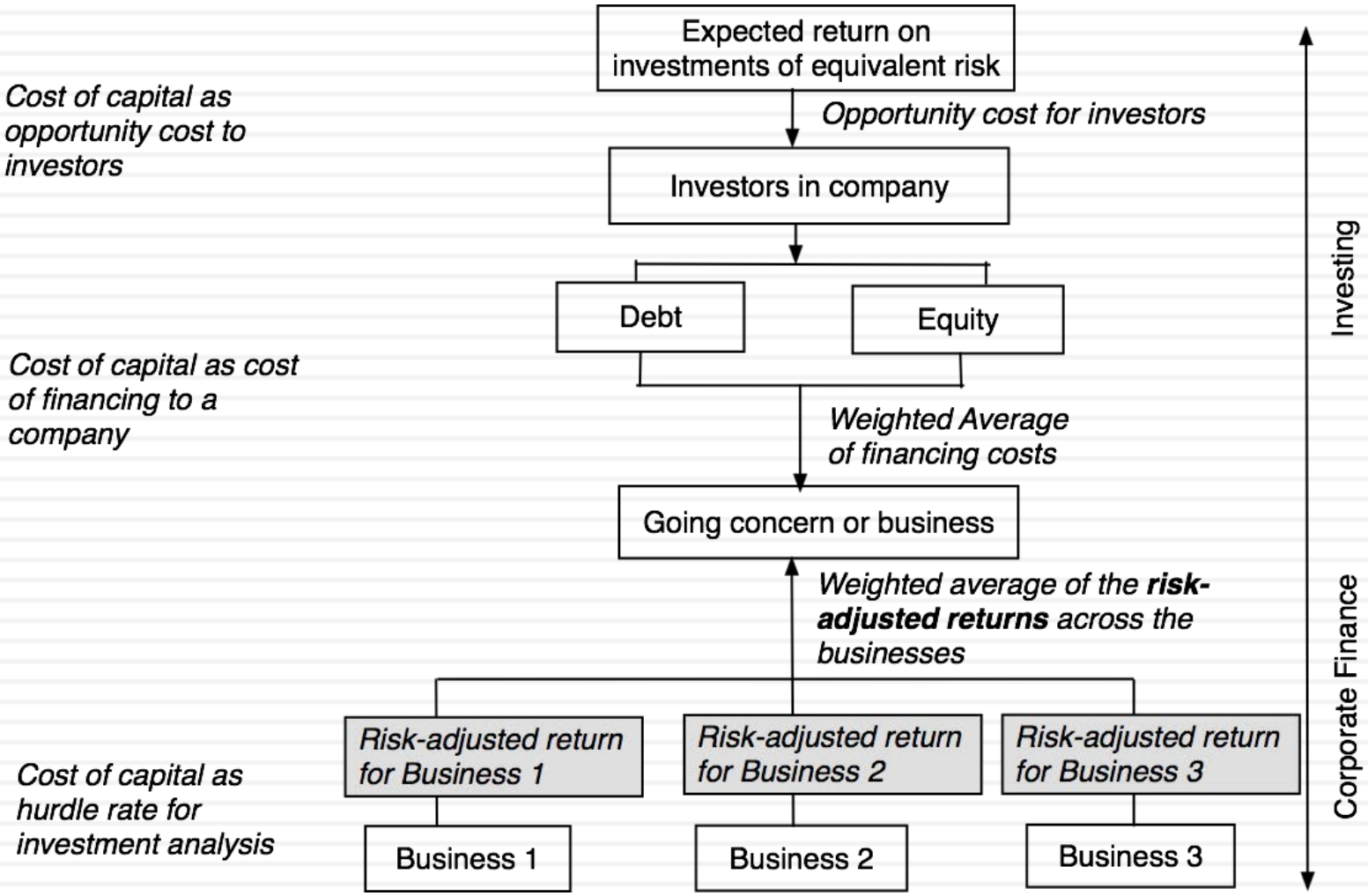


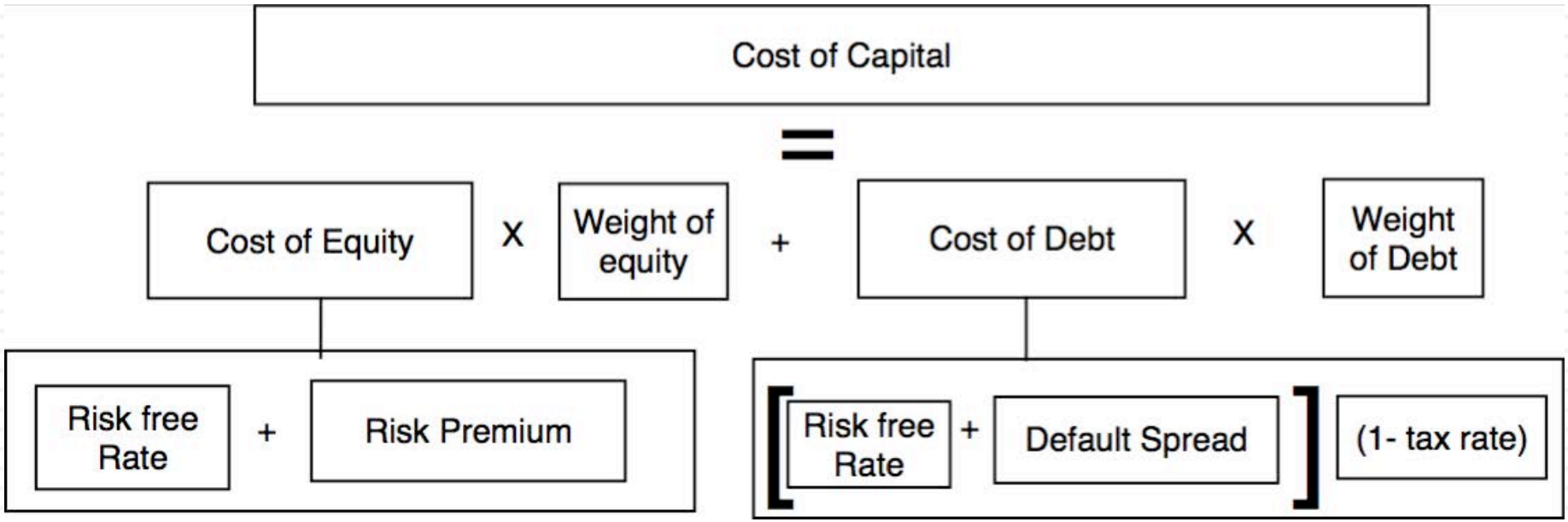
DATA 2017 UPDATE 6: THE COST OF CAPITAL

Aswath Damodaran

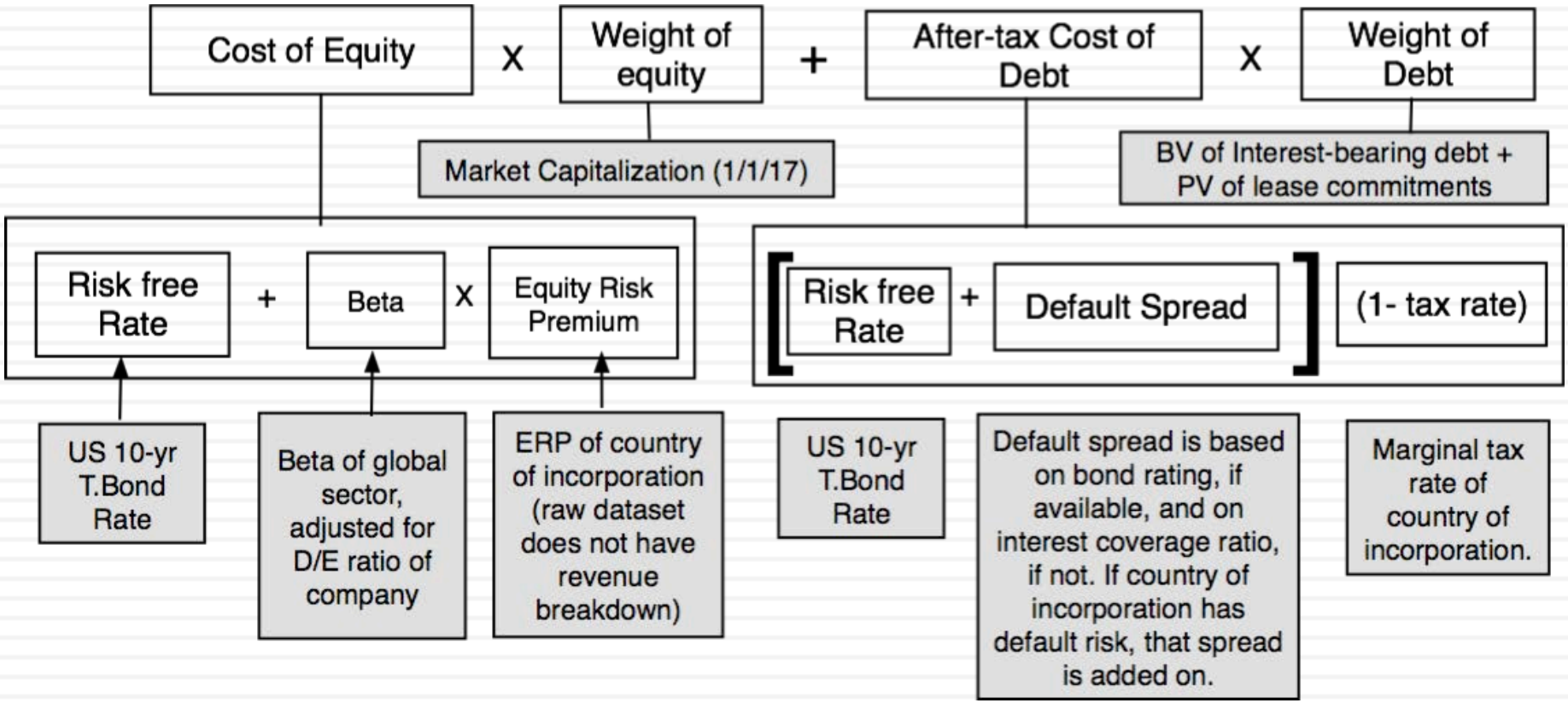
The Swiss Army Knife of Finance



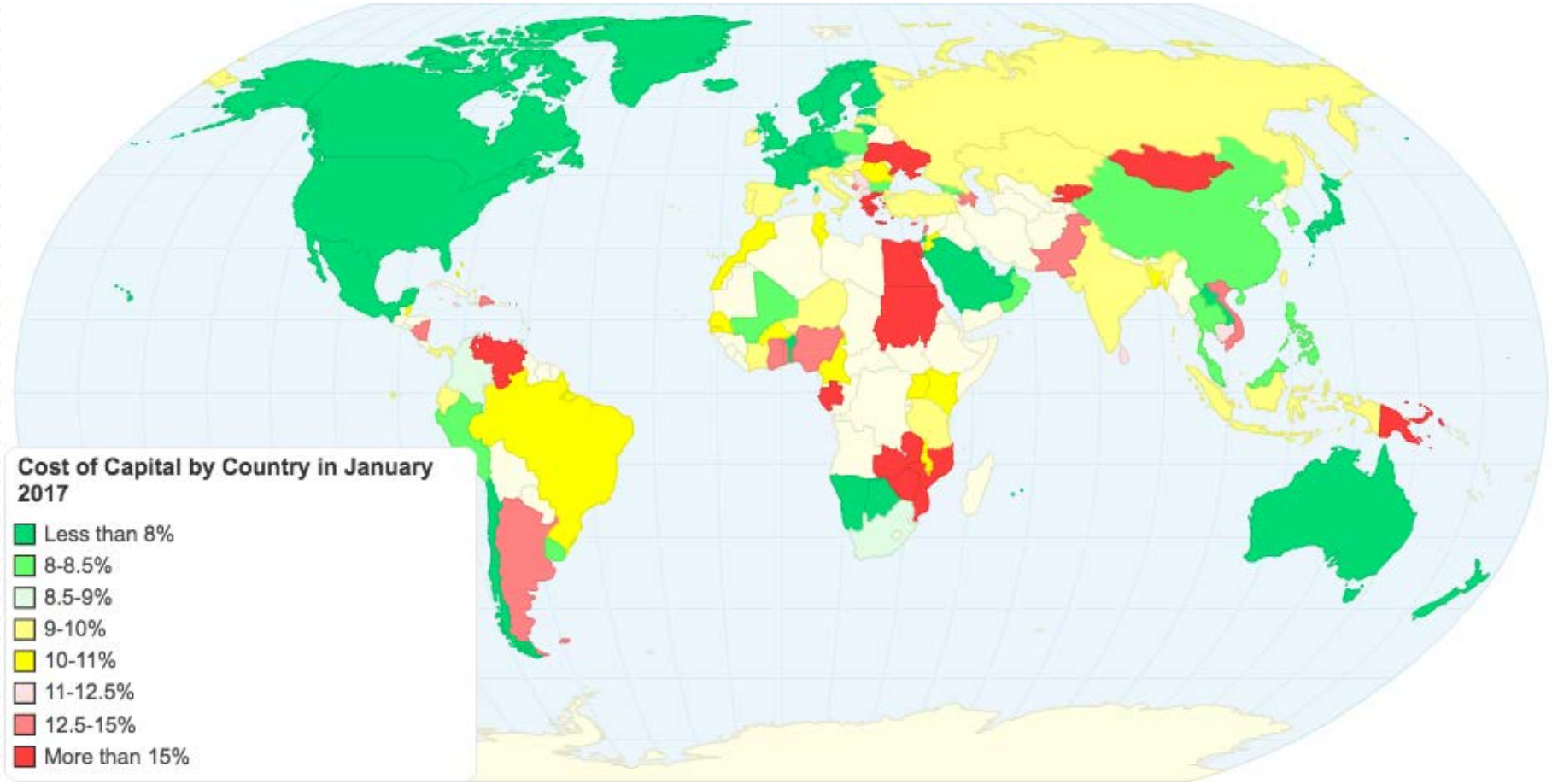
Cost of Capital: The Ingredients



Estimation Specifics



Cost of Capital: A Global Comparison



Why costs of capital vary across countries..

- Country risk: Country risk shows up in two places in the cost of capital calculation, the equity risk premium for the company (which is set equal to the equity risk premium of the country it is in) and an default spread in the cost of debt.
- Industry concentration: Since my measure of relative risk comes from looking at the global beta for the sector in which a company operates, the cost of capital for a country will reflect the breakdown of industries in that country.
- Marginal tax rate: To the extent that a higher marginal tax rate lowers the after-tax cost of debt, holding all else constant, countries with higher marginal tax rates will have lower after-tax costs of debt and perhaps lower costs of capital.
- Debt ratio: Twinned with the marginal tax rate, in computing how much a company is being helped by the tax benefit of debt, is the amount of debt that the company uses, with higher debt ratios often translating into lower costs of capital.

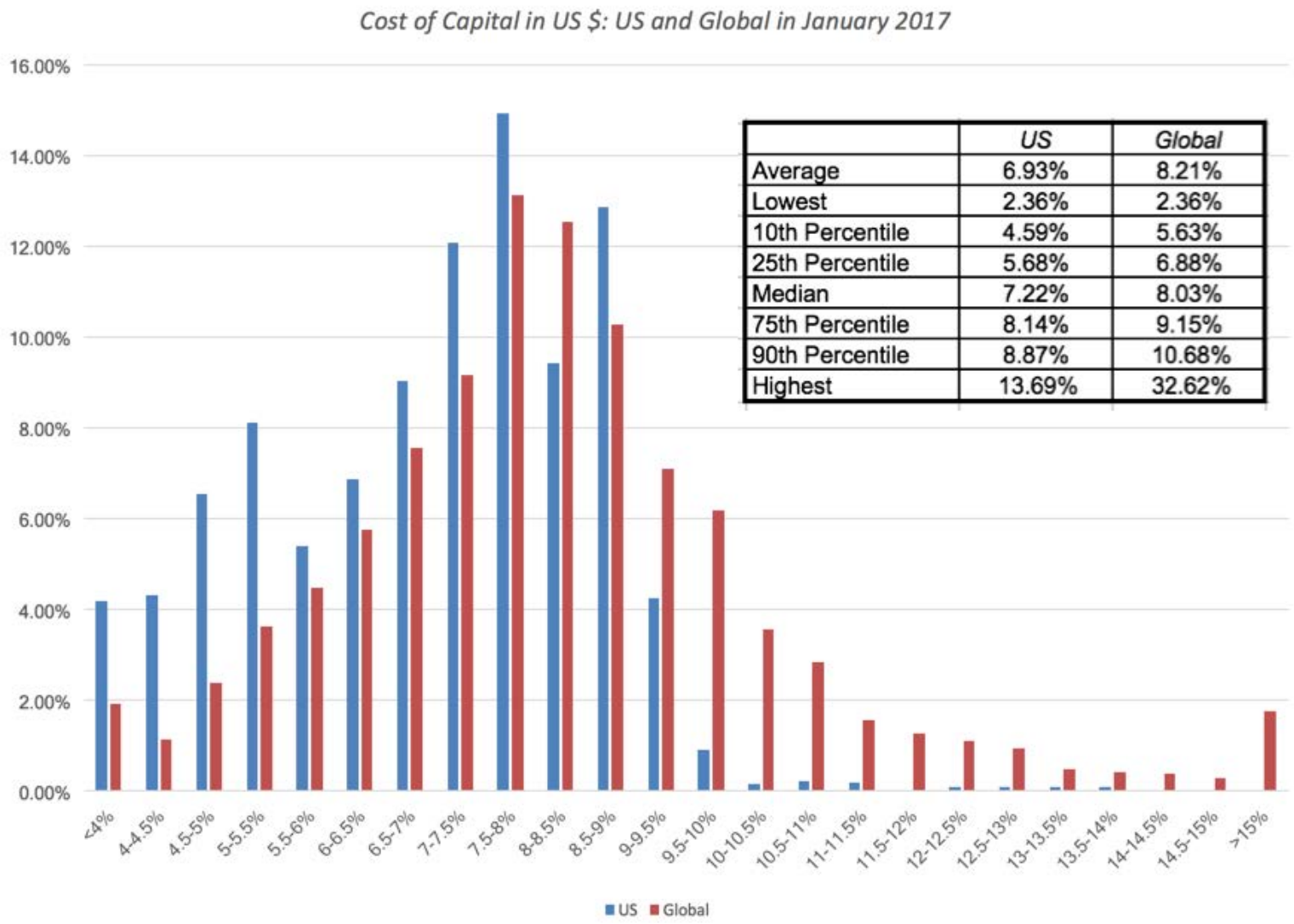
Costs of Capital across sectors: Highs and Lows!

Industries with lowest Cost of Capital (in US$)			Industries with highest Cost of Capital (in US$)		
Industry Name	*Cost of Equity*	*Cost of Capital*	*Industry Name*	*Cost of Equity*	*Cost of Capital*
Utility (General)	7.77%	5.39%	Computers/Peripherals	10.84%	9.52%
R.E.I.T.	7.55%	5.53%	Oil/Gas (Integrated)	12.28%	9.56%
Hospitals/Healthcare Facilities	7.65%	5.61%	Chemical (Diversified)	12.53%	9.97%
Food Wholesalers	7.30%	5.65%	Semiconductor Equip	11.21%	10.14%
Power	8.16%	5.67%	Software (Internet)	10.58%	10.23%
Real Estate (Operations & Services)	8.18%	5.84%	Oil/Gas (Production and Exploration)	13.49%	10.26%
Air Transport	8.56%	6.01%	Drugs (Biotechnology)	11.52%	10.29%
Retail (Distributors)	8.74%	6.12%	Retail (Online)	11.27%	10.49%
Retail (Grocery and Food)	7.87%	6.13%	Semiconductor	12.03%	10.83%
Trucking	8.56%	6.22%	Software (Entertainment)	12.37%	11.62%

Differences across sectors: Probing for reasons

- Business risk: Some businesses are clearly more risky than others and I am using my sector betas to capture the differences in risk.
- Leverage differences: Companies in some sectors borrow more than others, with mixed effects on the cost of capital. The resulting higher debt to equity ratios push up sector betas more, leading to higher costs of equity. That, though, is more than partially offset by the benefit of raising financing at the after-tax cost of debt, a bargain relative to equity.
- Country exposure: Some industry groupings have geographic concentrations and to the extent that those concentrations are in countries with very low or very high risk, relative to the rest of the world, your cost of capital will be skewed low or high.

Cost of Capital: Regaining Perspective



	US	Global
Average	6.93%	8.21%
Lowest	2.36%	2.36%
10th Percentile	4.59%	5.63%
25th Percentile	5.68%	6.88%
Median	7.22%	8.03%
75th Percentile	8.14%	9.15%
90th Percentile	8.87%	10.68%
Highest	13.69%	32.62%

Some closing thoughts

1. The cost of capital (or any discount rate) is not a receptacle for all your hopes and fears. There is nothing more dangerous that intuitively tweaking costs of capital; you adjust it for risks that you should not adjusting for at prices that the market will never pay.
2. When your valuation goes wrong, it is almost always the case that it is because you got the numerator (cash flows) wrong, not because you got the discount rate wrong.
3. The cost of capital is not the input that you should be spending the bulk of your time in a valuation.
4. If you are in a hurry to value a company, use the distributional statistics for cost of capital (7% for a safe company, 8% for an average risk company and 10% for a risky company), estimate the cash flows well and then come back and fine tune the cost of capital.