



U.S. Cost of Capital Module

Sample Data

U.S. Risk-free Rates and Equity Risk Premium Data

KROLL

- Dashboard
- View Data**
- Cost of Capital Inputs
- Industry Benchmarking
- Cost Of Capital Tools
- Resource Library
- Helpful Links

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Cost of Capital Inputs

Valuation Date
March 31, 2016

Investor Perspective
United States

Currency of WACC
USD - US Dollar

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Risk-Free Rates and Equity Risk Premium

Size Premium

Risk Premium Over the Risk-Free Rate

Betas and Industry Risk Premium

Risk-free Rates When should I use the Spot vs. Normalized Risk-free Rate?

[Export to Excel](#)

Data Point	Value	Data as of
Spot 10-year Treasury Yield	1.78%	03/31/2016
Spot 20-year Treasury Yield	2.20%	03/31/2016
Spot 30-year Treasury Yield	2.61%	03/31/2016
Kroll Normalized Risk-free Rate	4.00%	03/31/2016

Risk-Free Rates Over Time

Equity Risk Premium

[Export to Excel](#)

Data Point	Value	Data as of
Kroll Recommended	5.50%	03/31/2016
Supply-side Long-term (1926–2015)	6.03%	12/31/2015
Historical Long-term (1926–2015)	6.90%	12/31/2015

Export Historical ERPs Over Time
[View Supplementary ERP Data](#)

Data Used In

CAPM	Build-Up
$Ke = Rf + B * ERP + RPs$	$Ke = Rf + ERP + RPI + RPs$

Resources

Resources	Type	Updated
Kroll Global Cost of Capital Inputs - Current Guidance	Methodology	01/31/2024
Is the YE2023 Historical ERP correct and unchanged from last year?	Technical Question	2/2/2024
Risk-free Rate Methodology	Methodology	1/31/2024
Equity Risk Premium Methodology	Methodology	1/31/2024

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U.S. Size Premium Data

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Cost of Capital Inputs

Valuation Date

Investor Perspective

Currency of WACC

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Risk-Free Rates and Equity Risk Premium
Size Premium
Risk Premium Over the Risk-Free Rate
Betas and Industry Risk Premium

CRSP Deciles Size Study - Data as of 12/31/2015 [Export to Excel](#)

Data Study: Companies Ranked By:

Decile	Low End Breakpoint (\$M)	High End Breakpoint (\$M)	Size Premium
Mid Cap	2,090.57	9,611.19	1.00 %
Low Cap	448.50	2,083.64	1.70 %
Micro Cap	1.96	448.08	3.58 %
Breakdown of CRSP Deciles 1 - 10			
1	22,035.31	629,010.25	-0.36 %
2	9,618.05	21,809.43	0.57 %
3	5,205.84	9,611.19	0.86 %

[View Supplementary CRSP Decile Size Study Data](#)

Data Used In


CAPM	Build-Up
$Ke = Rf + B * ERP + RPs$	$Ke = Rf + ERP + RPI + RPs$

Resources

Resources	Type	Updated
CRSP Deciles Size Study	Methodology	08/17/2021
Risk Premium Report Size Study	Methodology	08/17/2021
Differences Between the Two Size Studies	Methodology	08/17/2021
High-Financial-Risk Study	Methodology	08/18/2023
Why is Decile 8 Size Premium Lower than Decile 7?	Methodology	02/14/2022

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U.S. Size Premium Data (continued)



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Cost of Capital Inputs

Valuation Date: Investor Perspective: Currency of WACC: Export All Data to Excel

[Risk-Free Rates and Equity Risk Premium](#)
[Size Premium](#)
[Risk Premium Over the Risk-Free Rate](#)
[Betas and Industry Risk Premium](#)

Risk Premium Report Size Study - Data as of 12/31/2015 Export to Excel

Data Study: Companies Ranked By:

Portfolio	Low E	Market Value of Common Equity	End Breakpoint (\$M)	Size Premium
1		Book Value of Equity	> 169,810.95	-1.70 %
2		5-year Average Net Income	169,810.95	-0.06 %
3		Market Value of Invested Capital	49,063.78	0.46 %
4		Total Assets	32,007.05	0.82 %
5		5-year Average EBITDA	23,366.18	1.12 %
6		Net Sales	17,802.62	1.41 %
7		Employees	13,899.79	1.65 %

Constant	Coefficient	Regression Equation
11.780%	-2.476%	Smoothed Premium = 11.780% - 2.476% * Log(Market Value of Common Equity)

[View Supplementary Risk Premium Report Size Study Data](#)

Data Used In

CAPM	Build-Up
$K_e = R_f + B * ERP + RPs$	$K_e = R_f + ERP + RPI + RPs$

Resources

Resources	Type	Updated
CRSP Deciles Size Study	Methodology	08/17/2021
Risk Premium Report Size Study	Methodology	08/17/2021
Differences Between the Two Size Studies	Methodology	08/17/2021
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KROLL 4

Kroll Cost of Capital Navigator

U.S. Betas and Industry Risk Premium

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Cost of Capital Inputs

Valuation Date

September 30, 2020

Investor Perspective

United States

Currency of WACC

USD - US Dollar

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Risk-Free Rates and Equity Risk Premium Size Premium Risk Premium Over the Risk-Free Rate **Betas and Industry Risk Premium**

Industry-level Betas - Data as of 09/30/2020 [Export to Excel](#)

Beta Leverage: Levered

Industry	Full Information	OLS	Sum	Vasicek Adjusted	Blume Adjusted	Peer Group
GICS 10 - Energy	1.68	1.68	1.56	1.67	1.44	1.68
GICS 1010 - Energy	1.68	1.68	1.56	1.67	1.44	1.68
GICS 101010 - Energy Equipment & Services	2.44	N/A	N/A	N/A	N/A	N/A
GICS 10101020 - Oil & Gas Equipment & Services	2.48	N/A	N/A	N/A	N/A	N/A
GICS 101020 - Oil, Gas & Consumable Fuels	1.66	1.72	1.56	1.71	1.46	1.68
GICS 10102020 - Oil & Gas Exploration & Production	2.00	1.84	1.85	1.83	1.54	1.68
GICS 10102030 - Oil & Gas Refining & Marketing	1.35	1.77	1.38	1.74	1.50	1.67

[View Industry Company List](#)


Data Used In

CAPM	Build-Up
$Ke = Rf + B * ERP + RPs$	$Ke = Rf + ERP + RPI + RPs$

Resources

Resources	Type	Updated
Equity Betas	Methodology	08/17/2021
Differences in Estimation of Equity Betas	Methodology	08/17/2021
Levered Betas	Methodology	09/28/2021
Full-Information Betas	Methodology	08/17/2021
Industry Risk Premia	Methodology	08/17/2021
Debt Betas	Methodology	08/17/2021

U.S. Betas and Industry Risk Premium (continued)



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Industry Risk Premium (RPI) - Data as of 09/30/2020

[Export to Excel](#)

ERP used in RPi: 6% - Kroll Recommended

Industry	Full Information	OLS	Sum	Vasicek Adjusted	Blume Adjusted	Peer Group
GICS 10 - Energy	4.08%	4.08%	3.36%	4.02%	2.64%	4.08%
GICS 1010 - Energy	4.08%	4.08%	3.36%	4.02%	2.64%	4.08%
GICS 101010 - Energy Equipment & Services	8.64%	N/A	N/A	N/A	N/A	N/A
GICS 10101020 - Oil & Gas Equipment & Services	8.88%	N/A	N/A	N/A	N/A	N/A
GICS 101020 - Oil, Gas & Consumable Fuels	3.96%	4.32%	3.36%	4.26%	2.76%	4.08%
GICS 10102020 - Oil & Gas Exploration & Production	6.00%	5.04%	5.10%	4.98%	3.24%	4.08%
GICS 10102030 - Oil & Gas Refining & Marketing	2.10%	4.62%	2.28%	4.44%	3.00%	4.02%

Debt Betas by Credit Rating - Data as of 09/30/2020

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Moodys Ratings	Value
Aaa	0.02
Aa	0.05
A	0.12
Baa	0.26
Ba	0.38
B	0.40
Caa	0.56

Unlevering and Relevering Formulas

Resources	Type	Updated
Hamada	Formula	02/05/2024
Miles Ezzell	Formula	02/05/2024
Harris Pringle	Formula	02/05/2024

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U.S. Industry-level Data

Cost of Equity, Cost of Debt, and WACC Estimates, Valuation Multiples, Levered and Unlevered Betas, and More

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STEP 1
Benchmarking Inputs
STEP 2
Benchmarking Analysis

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Data Updated Through September 30, 2020

GICS 10

Annualized Monthly Performance Statistics (%)

Industry	Geometric Mean			Arithmetic Mean			Standard Deviation			Market Benchmark *		
	1-Year	3-Year	5-Year	1-Year	3-Year	5-Year	1-Year	3-Year	5-Year	Geometric Mean	Arithmetic Mean	Standard Deviation
Energy	-43.2	-16.6	-6.4	-36.1	-11.8	-2.6	34.2	29.9	27.4	15.1	12.3	14.0
High-Financial Risk	-	-	-	-	-	-	15.1	12.3	14.0	15.1	12.3	14.0

Return Ratios (%)

	Return on Assets		Return on Equity		Dividend Yield		Current Ratio		Profitability Ratio (%)	
	Latest	5-Yr Avg	Latest	5-Yr Avg	Latest	5-Yr Avg	Latest	5-Yr Avg	Latest	5-Yr Avg
Median (29)**	4.1	2.4	7.0	5.2	3.0	3.0	1.3	1.5	9.1	5.3
SIC/GICS Composite (29)**	3.8	3.4	6.7	6.0	4.4	3.7	1.1	1.1	5.9	4.9
Large Composite (5)**	3.2	4.2	5.3	6.9	4.8	4.1	1.0	1.1	3.6	4.0
Small Composite (5)**	2.8	3.4	3.3	3.9	0.5	0.6	-	-	6.9	10.4
High-Financial Risk (35)**	-1.8	-4.0	-4.8	-9.1	2.6	1.7	1.1	1.3	5.5	-6.7

Liquidity Ratio

Latest	5-Yr Avg
1.3	1.5
1.1	1.1
1.0	1.1
-	-
1.1	1.3

Betas Levered

	Raw (OLS)	Blume Adjusted	Peer Group	Vasicek Adjusted	Sum	Downside
Median	1.68	1.44	1.68	1.67	1.56	1.98
SIC/GICS Composite	1.48	1.31	1.65	1.49	1.20	1.59
Large Composite	1.38	1.25	1.64	1.41	1.06	1.47
Small Composite	1.44	1.28	1.64	1.54	1.47	1.56
High-Financial Risk	2.24	1.79	1.66	2.21	1.82	2.31

Fama-French (F-F) 5-Factor Model

	Fama-French (F-F) Components					Debt/MV Equity		Debt/Total Capital	
	F-F Beta	SMB Premium	HML Premium	RMW Premium	OMA Premium	Latest	5-Yr Avg	Latest	5-Yr Avg
Median	1.6	2.6	2.9	-3.9	3.3	44.9	27.6	31.0	21.6
SIC/GICS Composite	1.2	2.1	1.8	-0.6	2.7	51.3	27.6	33.9	21.7
Large Composite	1.3	1.7	1.4	-0.1	-0.2	41.0	20.5	29.1	17.0
Small Composite	1.3	3.3	1.4	-2.0	4.4	2.5	1.1	2.5	1.1
High-Financial Risk	-	-	-	-	-	-	69.5	67.0	41.0

Cost of Equity Capital (%)

	CAPM	CRSP Deciles		Risk Premium Report		Discounted Cash Flow		Fama-French
		CAPM + Size Prem	Build-Up	CAPM + Size Prem	Build-Up	1-Stage	3-Stage	5-Factor Model
Median	12.5	14.3	13.7	15.7	12.2	13.9	16.9	16.7
SIC/GICS Composite	11.4	11.7	12.8	11.4	9.5	10.1	23.1	15.8
Large Composite	11.0	11.0	12.7	10.1	8.9	11.3	10.0	12.9
Small Composite	11.8	13.8	14.7	16.1	14.7	49.8	10.0	17.4
High-Financial Risk	-	-	-	27.9	26.6	-	-	-

Weighted Average Cost of Capital (WACC) (%)

	CAPM	CRSP Deciles		Risk Premium Report		Discounted Cash Flow		Fama-French
		CAPM + Size Prem	Build-Up	CAPM + Size Prem	Build-Up	1-Stage	3-Stage	5-Factor Model
Median	9.6	10.1	10.5	11.1	8.9	10.6	13.1	12.8
SIC/GICS Composite	8.8	9.0	9.7	8.8	7.5	7.9	16.5	11.7
Large Composite	8.7	8.8	9.9	8.1	7.3	9.0	8.0	10.1
Small Composite	11.6	13.6	14.4	15.8	14.5	48.7	9.9	17.1
High-Financial Risk	-	-	-	13.4	13.0	-	-	-

Cost of Debt (%)

Latest	4.8
	4.5
	4.1
	7.1
	9.3

Capital Structure

SIC/GICS Composite (%)

Legend: D / TC (66.1%), E / TC (33.9%)

Cost of Equity Capital (%)

WACC (%)

U.S. Company-level Betas Data and Tool

Levered, Unlevered, and Relevered Betas

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- Dashboard
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 - U.S. Cost of Capital Estimates
 - International Cost of Capital Estimates
 - Company Level Betas
 - My Previously Created Estimate
- Resource Library
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Company-level Betas

General Inputs Edit Inputs

<p>Valuation Date ⓘ</p> <input type="text" value="March 31, 2016"/>	<p>Return Frequency ⓘ</p> <input type="text" value="Monthly"/>
<p>Currency of WACC ⓘ</p> <input type="text" value="USD - US Dollar"/>	<p>Lookback Period ⓘ</p> <input type="text" value="5-Year"/>
<p>Subject Company Location ⓘ</p> <input type="text" value="United States"/>	<p>Market Index ⓘ</p> <input type="text" value="MSCI USA"/>

Note: All fields required. Click on the green "plus" icon below to select Comparable Companies once all general input fields are selected.

Performance Indices ⓘ

Comparable Companies ⓘ

Company													
	Apple Inc	AstroNova Inc	HP Inc	Western Digital Corp	Xerox Holdings Corp	NetApp Inc	+						
# of Observations	60	60	60	60	60	60							
▼ Levered Betas ⓘ	Denominated in mm. Betas calculated through March 31, 2016.												
OLS Beta ↗	0.98	0.38	1.66	1.45	1.32	1.66		Apple Inc	AstroNova Inc	HP Inc	Western Digital Corp	Xerox Holdings Corp	NetApp Inc
Sum Beta ↗	0.91	0.73	2.18	2.33	1.58	1.29		60	60	60	60	60	60
Vasicek Adjusted	1.03	0.52	1.54	1.39	1.30	1.57		0.98	0.38	1.66	1.45	1.32	1.66
Blume Adjusted	0.99	0.61	1.43	1.29	1.21	1.43		0.91	0.73	2.18	2.33	1.58	1.29
Portfolio Beta	1.02	1.02	1.02	1.02	1.02	1.02		1.03	0.52	1.54	1.39	1.30	1.57
								0.99	0.61	1.43	1.29	1.21	1.43
								1.02	1.02	1.02	1.02	1.02	1.02

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U.S. Cost of Capital Data and Tool

Our tool guides users step-by-step through the process of estimating U.S. cost of capital, allowing either Kroll's data or custom inputs to be incorporated into the analyses.

The screenshot displays the Kroll Cost of Capital Navigator interface. The left sidebar contains navigation options: Dashboard, View Data, Cost Of Capital Tools, U.S Cost of Capital Estimates, International Cost of Capital Estimates, Company Level Betas, My Previously Created Estimate, Resource Library, and Helpful Links. The main content area shows a progress bar with four steps: STEP 1 (General Inputs), STEP 2 (Cost of Capital Equations), STEP 3 (Results), and STEP 4 (U.S. Industry Benchmarking). The current step, STEP 2, is titled 'CRSP Deciles Size Study' and includes sub-sections for 'Risk Premium Report Study' and 'High Financial Risk (HFR) Study'. Under 'CRSP Deciles Size Study', the 'CAPM + Size Premium' method is selected, with a 'Build-up' view. The equation shown is: $16.20\% = 4.00\% + 1.20 \times 5.50\% + 5.60\%$. The components are: COST OF EQUITY CAPITAL (16.20%), KROLL NORMALIZED RISK-FREE RATE (4.00%), CUSTOM (1.20), KROLL RECOMMENDED (5.50%), and DECILE 10 (\$1.96 m-\$209.41m) (5.60%). A 'Market Value of Common Equity' field is visible with a 'See full data tables' link. At the bottom right, there are buttons for 'Go to Results', 'Previous', and 'Save & Continue'. The footer contains copyright information: '© 2024 Cost of Capital Navigator by Kroll, LLC. All rights reserved.'

U.S. Cost of Capital Inputs Data

The Cost of Capital Navigator allows users to export data into their spreadsheets via the platform or by using the accompanying **Navigator Excel Add-in**.

The screenshot shows an Excel spreadsheet with the following data in cells B2 to B4:

6/30/2016	
Market Cap	100
Size Premia	5.60%

The Cost of Capital Navigator add-in window displays the following information:

CRSP Deciles Size Study

Size Premium

The size premium represents the difference between actual historical excess return and the excess return predicted by beta. The "size effect" is based on the empirical observation that companies of smaller size are associated with greater risk and, therefore, have greater cost of capital. All size premia are "beta-adjusted", meaning that they have been adjusted to remove the portion of excess return that is attributable to beta, leaving only the size effect's contribution to excess return.

Decile	Market Cap Range	Size Premium
Decile 10	(\$1.96 m-\$209.41m)	5.60%
Micro Cap	(\$1.96 m-\$448.08m)	3.58%
Decile 10B	(\$1.96 m-\$108.60m)	8.76%
Decile 10Y	(\$64.85 m-\$108.60m)	7.32%