



Risk Radar

**Portfolio Credit and Liquidity Risk Analysis
for Thomson Reuters EIKON™**

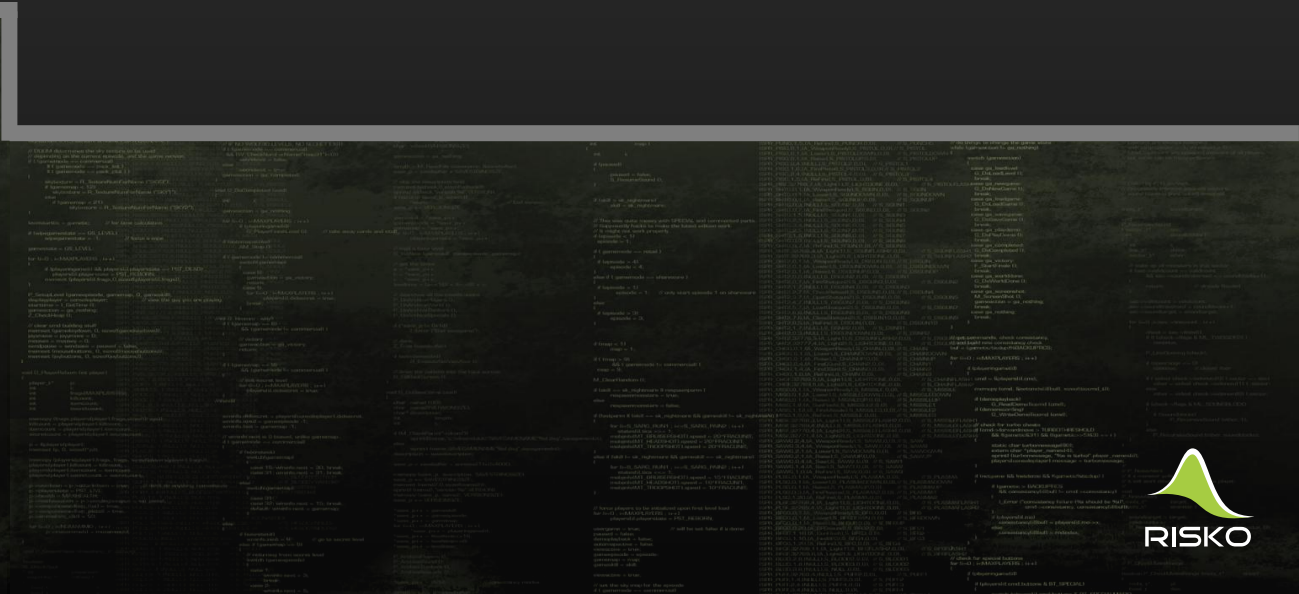
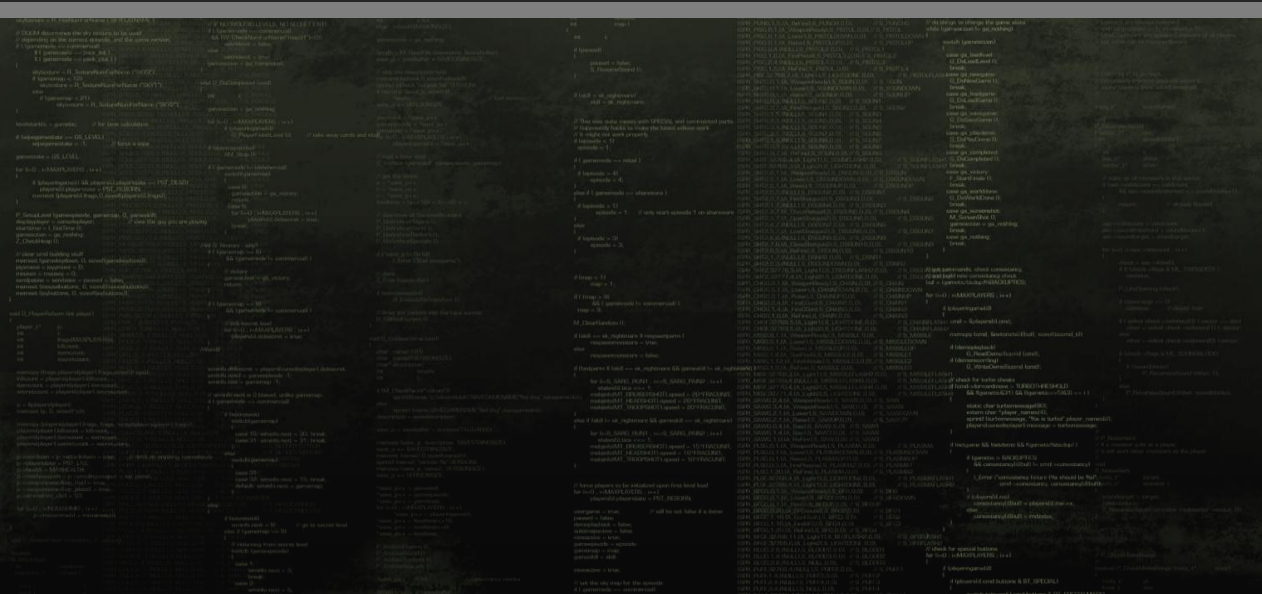
▶ **Solution overview**

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Risk Radar

Automates and empowers
risk analysis for internal decision
making and compliance.

Optimizes
user productivity and cost
effectiveness of the analysis.



Risk Radar - Key features

Estimates tailor-made credit transition matrices from historical ratings.

Estimates portfolio expected losses due to credit transition and default.

Allows the use of custom price sources for each asset in the portfolio & benchmark.

Estimates portfolio liquidity measures for bid-ask spreads and trading frequency.

Applies risk models under normal conditions and under stress.

Easily imports/exports portfolio positions, reference assets and transition matrices.

Risk Radar is available to all users of Thomson Reuters EIKON™, for a fee (free trial for 30 days).

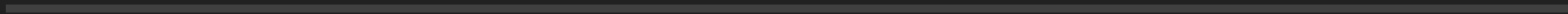
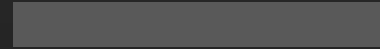
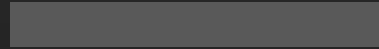
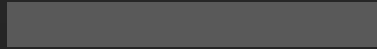
Application modules

**Risk
Summary**

**Portfolio
Management**

**Credit
Risk**

**Liquidity
Risk**



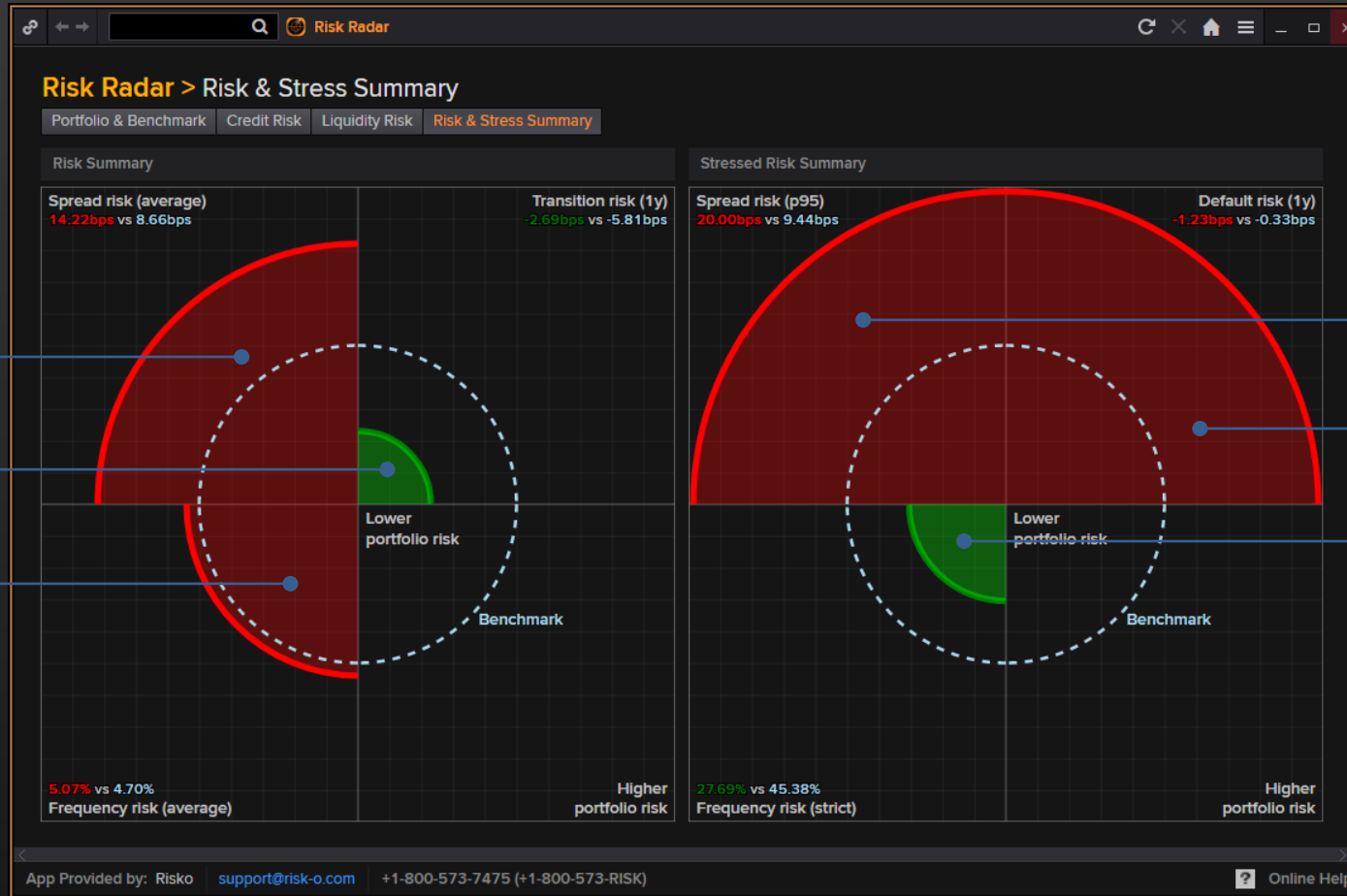
» Portfolio Risk & Stress Summary

Risk under normal conditions

Overall liquidity risk of the portfolio: Average bid/ask spread vs. Benchmark

Expected credit losses due to transition risk.

Liquidity risk (trading frequency of the portfolio).



Risk under stress

Extreme scenario of bid/ask spread increase (p95)

Expected credit losses due to default risk.

Strict trading frequency of the portfolio.

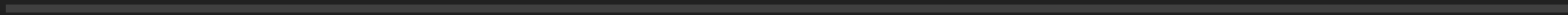
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Portfolio Composition

One-click import / export

Save and Load portfolios and benchmarks from universal CSV spreadsheet files.

Consistent portfolio & benchmark interface

Manage your benchmark portfolio in parallel using the same interface for entering and editing positions.

Select custom price sources

Set alternative pricing sources for each asset in the main portfolio and benchmark.

Your data never leaves your terminal

Risk-Radar works offline. Your positions are analyzed on your EIKON terminal.

The screenshot shows the Risk Radar interface for Portfolio Composition. It features a navigation bar with tabs for Portfolio & Benchmark, Credit Risk, Liquidity Risk, and Risk & Stress Summary. Below the navigation bar, there are buttons for Add Security, Clear, Save, Load, and Hide Quotes. The main content area displays a table of securities with columns for Security, Quote Source, Name, Currency, Units, Local Price, Price (USD), Weight, and Value (USD). A dropdown menu is open for the Quote Source column, showing various options like 552953BW0=, 552953BW0=2M, 552953BW0=1M, etc. The table includes entries for IBM, MSFT.O, GOOGL, BNED, 650119AG5=, 76133JAE8=, and 552953BW0=. The total portfolio value is shown as 32,725,072.50 USD.

Security	Quote Source	Name	Currency	Units	Local Price	Price (USD)	Weight ...	Value (USD)
IBM	552953BW0=	International ...	USD	25,000	143.90	143.90	10.99	3,597,500.00
MSFT.O	552953BW0=2M	Microsoft Ord...	USD	10,000	100.86	100.86	3.08	1,008,600.00
GOOGL	552953BW0=1M	Alphabet Ord...	USD	15,000	1,178.69	1,178.69	54.03	17,680,350.00
BNED	US552953BW08=BGCP	Barnes and N...	USD	80,000	6.49	6.49	1.59	519,200.00
650119AG5=	US552953BW08=JPNY	NWYUV 2.01 ...	USD	25,000	98.71	98.71	7.47	2,443,855.00
76133JAE8=	US552953BW08=MSNR	RETIR 2.600 ...	USD	25,000	96.03	96.03	7.32	2,394,317.50
552953BW0=	US552953BW08=SEML	MGM 8.625 0...	USD	25,000	106.35	106.35	7.87	2,575,000.00
Portfolio value (USD)								32,725,072.50

Reference Bonds – For Credit Transition Matrix estimation

Risk Radar > Reference Bonds

Portfolio & Benchmark | Credit Risk | Liquidity Risk | Risk & Stress Summary

Enter a RIC or a chain of bonds:

☰ | 📄 | Clear | Save | Load

▼ REFERENCE BONDS

Reference bonds are used to estimate transition probabilities and spreads for the credit risk model. To get a list of bonds that match specific criteria, you may use the [Advanced Search App](#). Use the small table / chart buttons to switch between tabular and graphic display of the reference bonds. You can also load and save the list of bonds from/to standard .csv files.

Bond	Name	Currency	Rating S&P	Rating MDY	Rating FTC
478160AF1=	X JNJ 6.730 11/15/23 Sr ...	USD	AAA	Aaa	AAA
478160BH6=	X JNJ 3.375 12/05/23 Re...	USD	AAA	Aaa	AAA
478160AJ3=	X JNJ 6.950 09/01/29 Sr ...	USD	AAA	Aaa	AAA
478160AL8=	X JNJ 4.950 05/15/33 De...	USD	AAA	Aaa	AAA
98385XAM8=	X XOM 6.750 08/01/37 R...	USD	AAA	Aaa	WD
478160AN4=	X JNJ 5.950 08/15/37 Sr ...	USD	AAA	Aaa	AAA
478160AT1=	X JNJ 5.850 07/15/38 Sr ...	USD	AAA	Aaa	AAA
594918AD6=	X MSFT 5.200 06/01/39 ...	USD	AAA	Aaa	AA+

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Customize your own securities database

Enter individual securities or chains in order to feed this list with thousands of reference bonds whose historical ratings will be used to estimate transition probabilities.

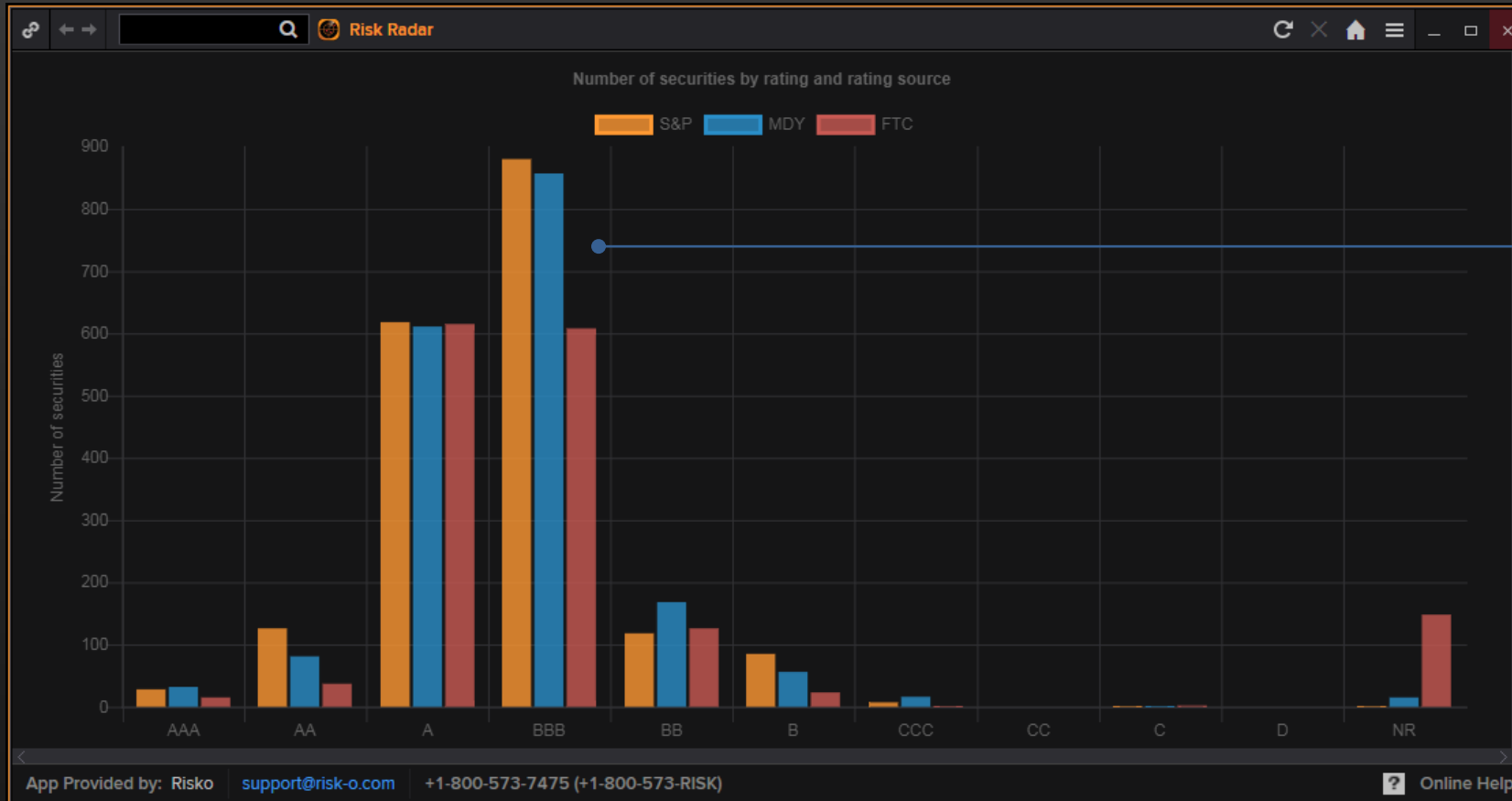
Import / Export your reference asset list

Easily load your reference assets from external data sources.

Copy the historical ratings detail

A single click allows you to copy all historical ratings for every asset in your reference list.

Reference Bonds – For Credit Transition Matrix estimation



Review the distribution of your sample
Count the bonds in your sample grouped by
current rating and rating issuer.

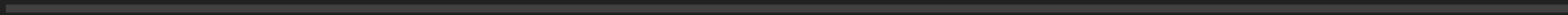
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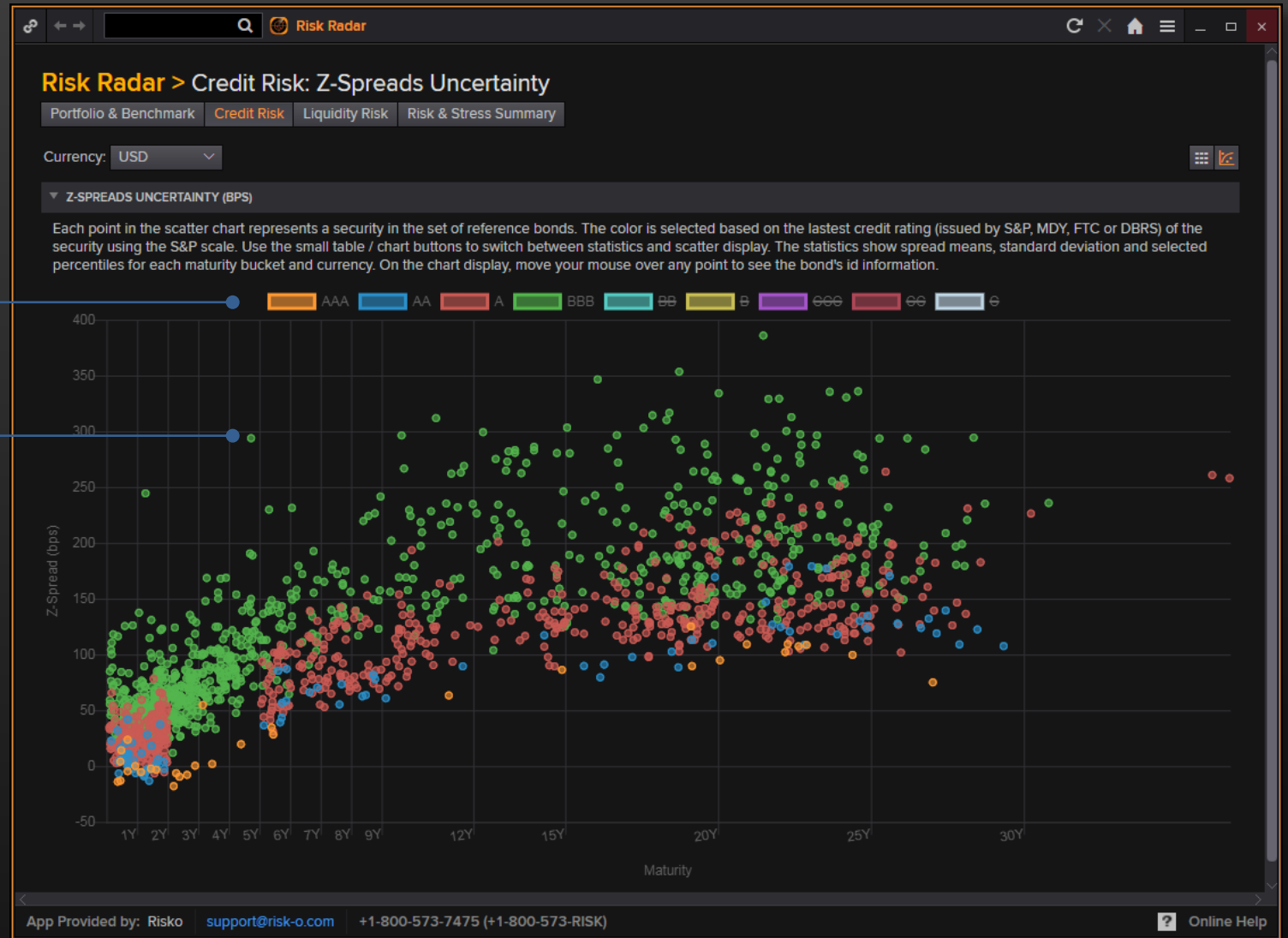
» Z-Spreads uncertainty - Scatter

Look beyond the spread curve

These are the points that form the spread curve. Their dispersion provides critical information about the uncertainty and volatility of spreads for each rating, maturity bucket and currency.

Easily identify outliers

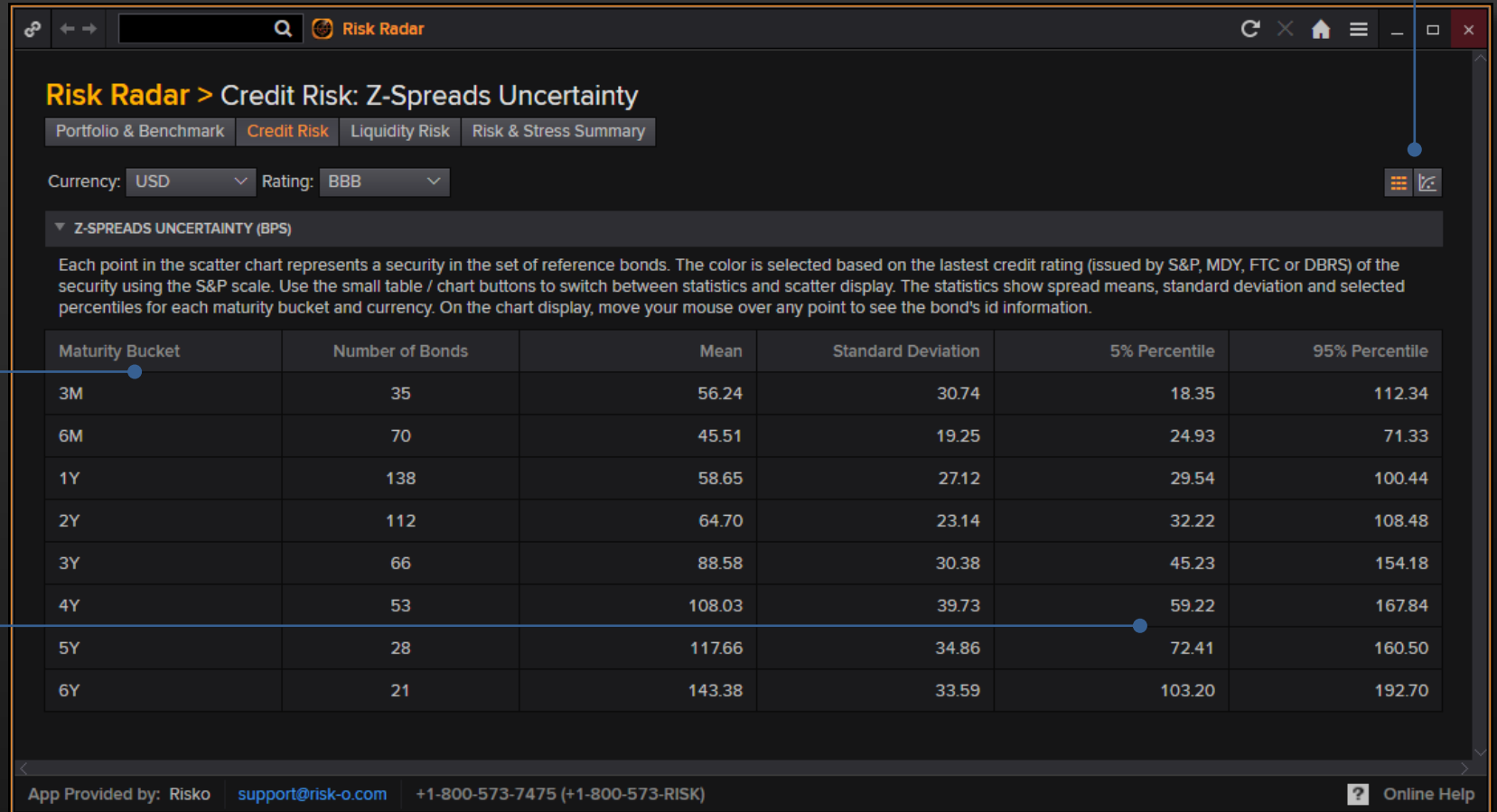
Just move your mouse over any point and the application will identify the security for you.



» Z-Spreads uncertainty - Statistics

Switch from scatter view to statistics

Use these buttons to select your report style



Get the most relevant statistics by group

Quickly explore the key statistics for the Z-Spreads grouped by maturity, currency and rating.

Identify extreme scenarios

Extreme values for each bucket are captured by the 5% and 95% percentiles of each data sample.

» Credit Transition Matrix Estimation

Use historical data or import an external matrix

Risk-Radar automatically estimates credit transition matrices from the historical ratings of the reference assets according to your configuration and parameters. However, if you prefer to use an external matrix, you can use the Load / Save options.

Edit the values to perform what-if analysis

Manually edit the probabilities of the matrix to conduct what-if analysis. All internal rebalancing is done automatically.

Easily configure the calculation parameters

Easily adjust the sample and filter the securities employed to estimate the transition matrix. You can even change the snapshots frequency and the time horizon of the matrix itself.

Risk Radar > Credit Risk: Transition Matrix

Portfolio & Benchmark | **Credit Risk** | Liquidity Risk | Risk & Stress Summary

Use default probabilities from:

▼ CREDIT TRANSITION MATRIX

This customizable credit transition matrix is calculated from the reference bond's historical ratings (issued by S&P, MDY, FTC and DBRS). Any cell can be edited by double clicking it. Default rates can be estimated from the reference bonds or from USD credit curve by Thomson Reuters. Use the switch at the top to change modes. Use the filter criteria below to select which reference bonds, sample, snapshot frequency and matrix effective frequency are used for the matrix estimation.

Rating	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
AAA	98.12%	1.81%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
AA	0.00%	89.23%	10.12%	0.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.46%
A	0.00%	0.49%	94.34%	4.38%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.68%
BBB	0.00%	0.02%	2.29%	95.54%	1.40%	0.12%	0.02%	0.00%	0.00%	0.00%	0.62%
BB	0.00%	0.00%	0.06%	6.64%	84.20%	7.95%	0.45%	0.02%	0.01%	0.00%	0.66%
B	0.00%	0.00%	0.01%	0.92%	12.63%	79.26%	5.02%	0.38%	0.28%	0.07%	1.42%
CCC	0.00%	0.00%	0.00%	0.07%	1.31%	21.39%	67.80%	6.47%	0.99%	1.64%	0.32%
CC	0.00%	0.00%	0.01%	0.02%	0.05%	2.39%	27.86%	27.62%	19.35%	16.00%	6.71%
C	0.00%	0.00%	0.02%	0.06%	0.03%	1.26%	10.99%	0.46%	74.37%	0.06%	12.74%
D	0.00%	0.00%	0.04%	0.13%	0.30%	8.99%	51.80%	3.20%	13.67%	4.78%	17.09%
NR	0.00%	0.00%	0.38%	1.22%	0.02%	0.17%	0.00%	0.00%	0.00%	0.00%	98.19%

Number of points: 19,899
Number of securities: 1,865
Number of transitions: 1,074

From: 2015-06-22 To: 2018-06-22

Issuer Type: All
Sector: All

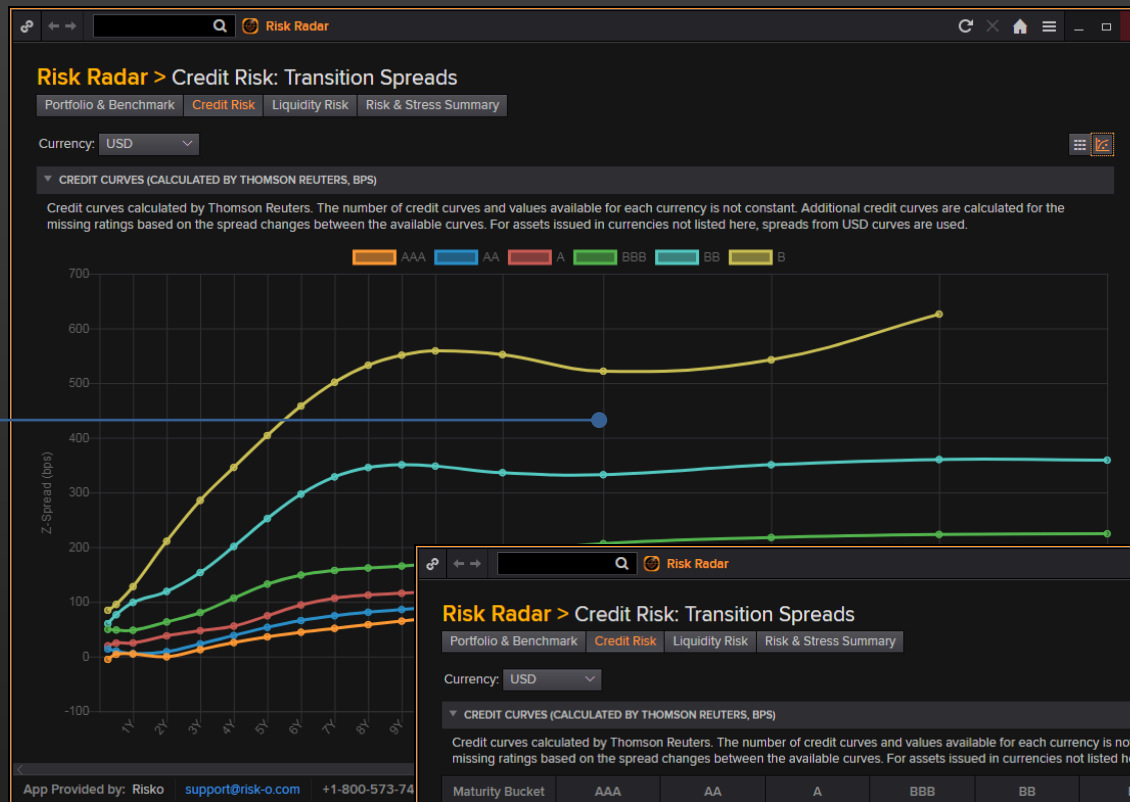
Snapshots frequency: Quarterly
Matrix frequency: Yearly

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Transition Spreads

Estimate the spread distances between ratings

This calculation is carried out separately for each currency, rating and maturity bucket.



Review the detailed data of mean spreads

These are the values used to estimate the shock in spreads for each possible scenario of rating variation for each asset in the portfolio.

The screenshot shows the Risk Radar interface with a table of mean spreads. The table has columns for Maturity Bucket and credit ratings AAA, AA, A, BBB, BB, B, CCC, CC, and C. The data is as follows:

Maturity Bucket	AAA	AA	A	BBB	BB	B	CCC	CC	C
3M	-5.30	13.70	19.60	49.70	60.10	84.50	108.90	133.30	157.70
6M	4.00	10.10	24.60	48.50	76.40	95.20	114.00	132.80	151.60
1Y	4.80	5.30	24.80	48.00	98.90	127.80	156.70	185.60	214.50
2Y	-0.50	8.80	37.80	63.20	119.00	210.70	302.40	394.10	485.80
3Y	12.50	23.10	47.20	80.30	153.50	285.40	417.30	549.20	681.10
4Y	25.50	38.40	55.60	106.70	201.20	345.70	490.20	634.70	779.20
5Y	36.00	53.40	74.50	132.40	252.10	404.10	556.10	708.10	860.10
6Y	44.40	65.70	94.30	149.00	296.90	458.00	619.10	780.20	941.30

Portfolio Credit Risk Report

Switch the target of analysis

Go from the portfolio report to the benchmark report in one click.

The key expected losses

Expected losses due to rating transition and default, per asset and portfolio-wise.

Manually enter or change ratings

Change the ratings of your assets for a quick what-if simulation (or for completing the data if not available).

Risk Radar > Credit Risk: Model Results

Portfolio & Benchmark | **Credit Risk** | Liquidity Risk | Risk & Stress Summary

Loss Given Default: 60 %

PORTFOLIO CREDIT RISK

The transition loss is calculated as the expected value of the price change given a credit rating transition (excluding the ratings D and NR), using the transition matrix and the credit curves. If there are no credit curves available for a bond, the USD credit curves are used instead. You can manually change the bond rating by double clicking it. The default loss is calculated as the probability of default times the loss given default. These measures are only available for bonds and therefore weights are recalculated to get the total values.

Name	Maturity Date	Tenor	Rating	Currency	Duration	Weight (%)	Transition Loss...	Default Loss (b...
NWWYUV 2.017 ...	2020-07-01	2Y	AA	USD	1.93	7.51	-5.86	0.00
RETIR 2.600 1...	2021-11-15	3Y	A	USD	3.19	7.34	-4.58	-11.40
MGM 8.625 02...	2019-02-01	6M	BB	USD	0.57	7.91	0.11	-63.00
CIT 3.875 02/...	2019-02-19	6M	BB	USD	0.63	7.70	0.12	-63.00
Credit Risk						30.46	-2.49	-35.04

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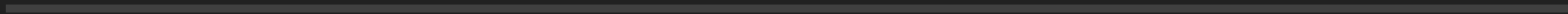
Application modules

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Historical Liquidity Analysis

Switch the target of analysis
Go from the portfolio report to the benchmark report in one click.

Asset liquidity indicators

Current and historical bid-ask spreads for samples of 30, 90 and 180 days.

Portfolio liquidity indicators

Weighted average values of the historical bid-ask spreads.

Risk Radar > Liquidity Risk: Historical Analysis

Portfolio & Benchmark | Credit Risk | **Liquidity Risk** | Risk & Stress Summary

Portfolio

HISTORICAL BID-ASK SPREADS

Last available bid-ask spread and historical spreads average for the last 1, 3 and 6 calendar months. Spreads are calculated as a percentage of the mid price. Note: If a composite RIC is used, the spread could be negative because the bid and ask may come from different sources.

Name	Weight (%)	Bid	Ask	Spread (bps)	Spread (30d, bps)	Spread (90d, bps)	Spread (180d, bp...
International Busi...	10.85	141.28	141.29	0.71	1.09	1.20	1.09
Microsoft Ord Shs	3.08	100.15	100.36	20.95	1.17	1.67	1.89
Alphabet Ord Shs...	53.89	1,165.90	1,173.00	60.71	4.01	4.07	4.28
Barnes and Nobl...	1.72	6.99	7.00	14.30	15.32	14.92	14.50
NWYUV 2.017 0...	7.51	97.79	97.86	7.81	7.98	8.29	8.77
Average Spread (bps)				44.28	13.84	14.73	14.27

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Trading Frequency Analysis

Switch the target of analysis
Go from the portfolio report to the benchmark report in one click.

Frequency indicators

Bid frequency for samples of 30, 90 and 180 days.

Normal and strict liquidity definitions

Normal liquidity risk based on average values. Stressed liquidity requires that all portfolio assets have bid information simultaneously.

Name	Weight (%)	Bid Frequency (30d, %)	Bid Frequency (90d, %)	Bid Frequency (180d, %)
International Business Machine...	10.85	95.83	97.01	95.38
Microsoft Ord Shs	3.08	95.83	97.01	95.38
Alphabet Ord Shs Class A	53.89	95.83	97.01	95.38
Barnes and Noble Education Or...	1.72	95.83	97.01	95.38
NWYUV 2.017 07/01/20 Bond	7.51	100.00	100.00	100.00
Trading frequency (%)		97.10	97.92	95.15
Equivalent risk (100% - Trading frequency)		2.90	2.08	4.85
Stressed trading frequency (%)		95.83	97.01	75.38
Stressed equivalent risk (100% - Stressed trading frequency)		4.17	2.99	24.62

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Portfolio Liquidation Costs

Switch the target of analysis
Go from the portfolio report to the benchmark report in one click.

Liquidation cost

Expected price movement if the position is liquidated in 5 days.

Days to liquidate

Number of days required to liquidate the position without affecting the price more than 1%

The screenshot shows the Risk Radar interface with the 'Liquidity Risk: Liquidation Costs' report. The report includes a table with columns for Name, Units, Volume Liquidity, Daily Volume Average (2...), Liquidation Cost (5d, bps), and Days to Liquidate. The table lists securities such as International Business Ma..., Microsoft Ord Shs, Alphabet Ord Shs Class A, and Barnes and Noble Educat... with their respective values. A 'Total' row is also present. The interface includes navigation tabs at the top and a footer with contact information.

Name	Units	Volume Liquidity	Daily Volume Average (2...	Liquidation Cost (5d, bps)	Days to Liquidate
International Business Ma...	25,000	23,283,986.89	1,433,437.00	0.02	0.00
Microsoft Ord Shs	10,000	54,308,470.94	10,326,338.00	0.00	0.00
Alphabet Ord Shs Class A	15,000	10,282,048.53	665,852.00	0.03	0.00
Barnes and Noble Educat...	700,000	508,810.38	125,540.00	27.52	1.38
Total				5.02	1.38

» Portfolio Liquidity Trend

Switch the target of analysis

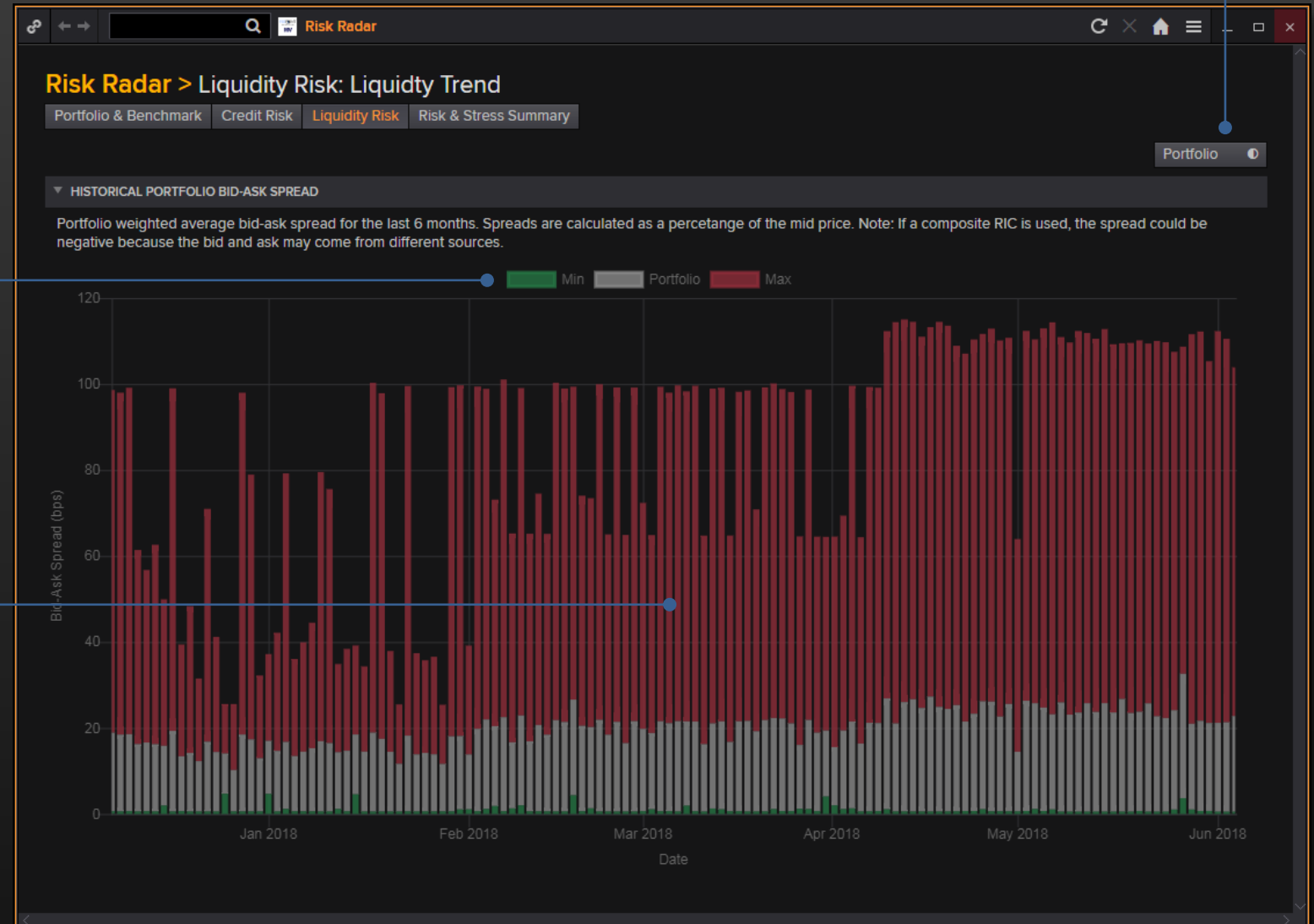
Go from the portfolio report to the benchmark report in one click.

Triple trend

Risk-Radar reports the liquidity trend for the portfolio (weighted average spread), the most liquid and most illiquid asset for each date.

Identify the most illiquid assets

Move the mouse over any bar and the application will identify the more illiquid and more liquid asset for each date.



Portfolio Stressed Liquidity Spreads

All scenarios in an easy-to-read histogram

Built using information from the last six months, it allows you to appraise the distribution of spreads and compare them to those of the benchmark portfolio.



Spread statistics

Quickly access the key statistics and differences between the portfolio and benchmark.



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