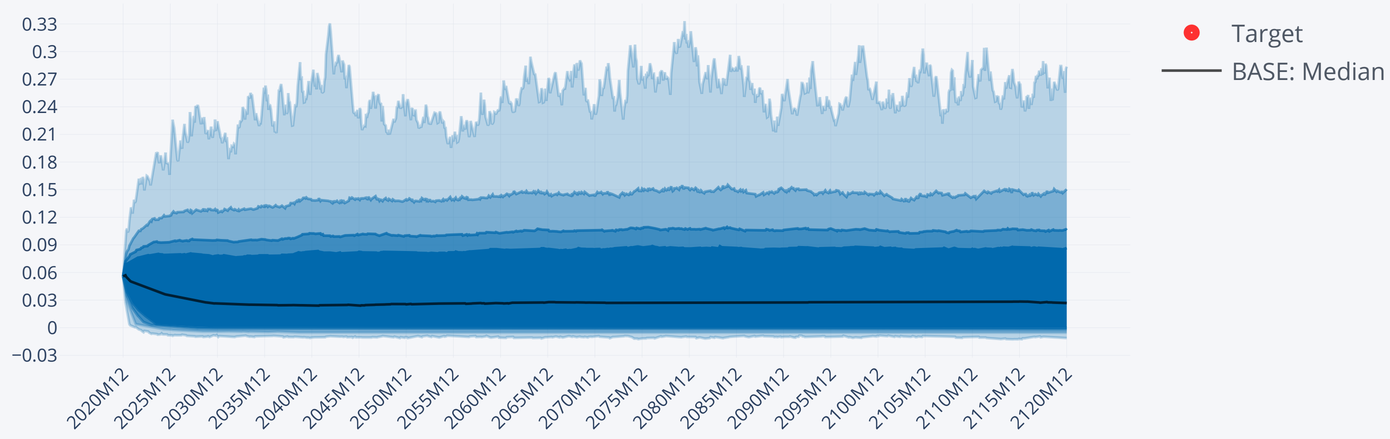
US Treasury 1 Month Yield - Spot
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 1 Month Yield - Spot

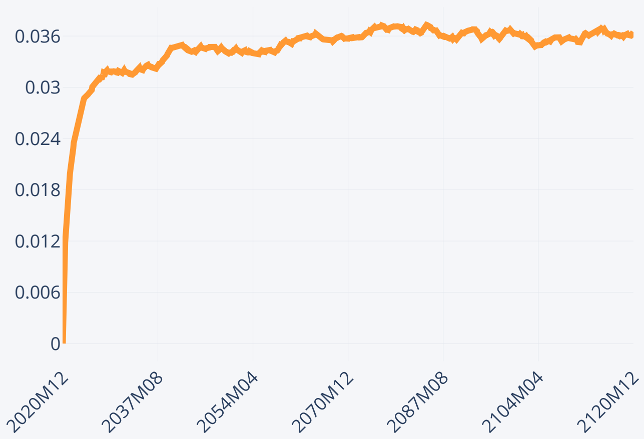


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

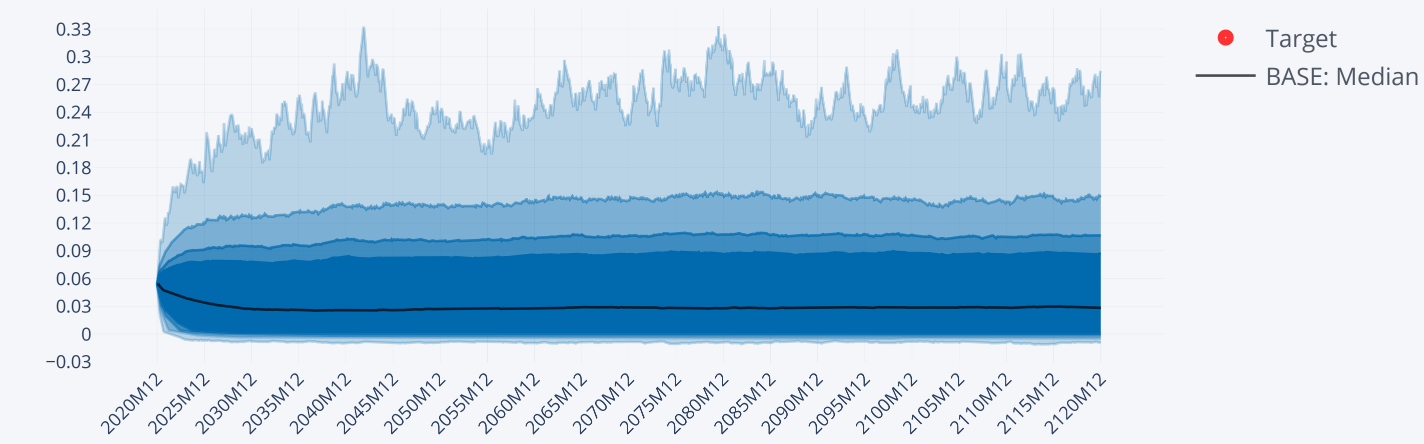
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0500	0.0339
std	0.0180	0.0344
min	0.0015	-0.0099
1%	0.0110	-0.0051
5%	0.0210	-0.0022
10%	0.0273	-0.0003
50%	0.0495	0.0254
90%	0.0733	0.0827
95%	0.0807	0.1000
99%	0.0950	0.1394
max	0.1240	0.2433

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 3 Month Yield - Spot

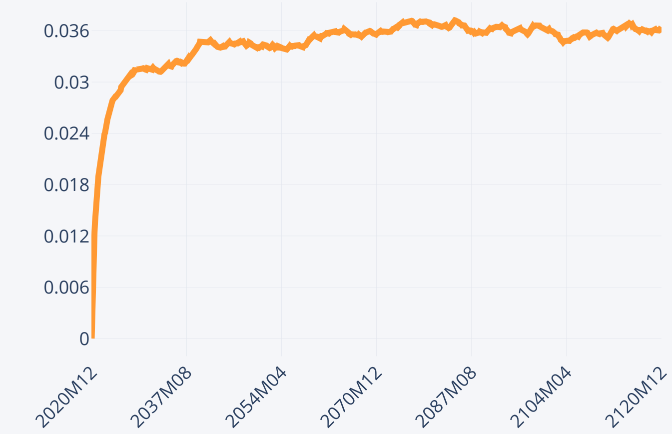


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0467	0.0349
std	0.0175	0.0343
min	0.0013	-0.0090
1%	0.0089	-0.0045
5%	0.0186	-0.0017
10%	0.0247	0.0002
50%	0.0462	0.0270
90%	0.0693	0.0834
95%	0.0766	0.1006
99%	0.0905	0.1400
max	0.1171	0.2401

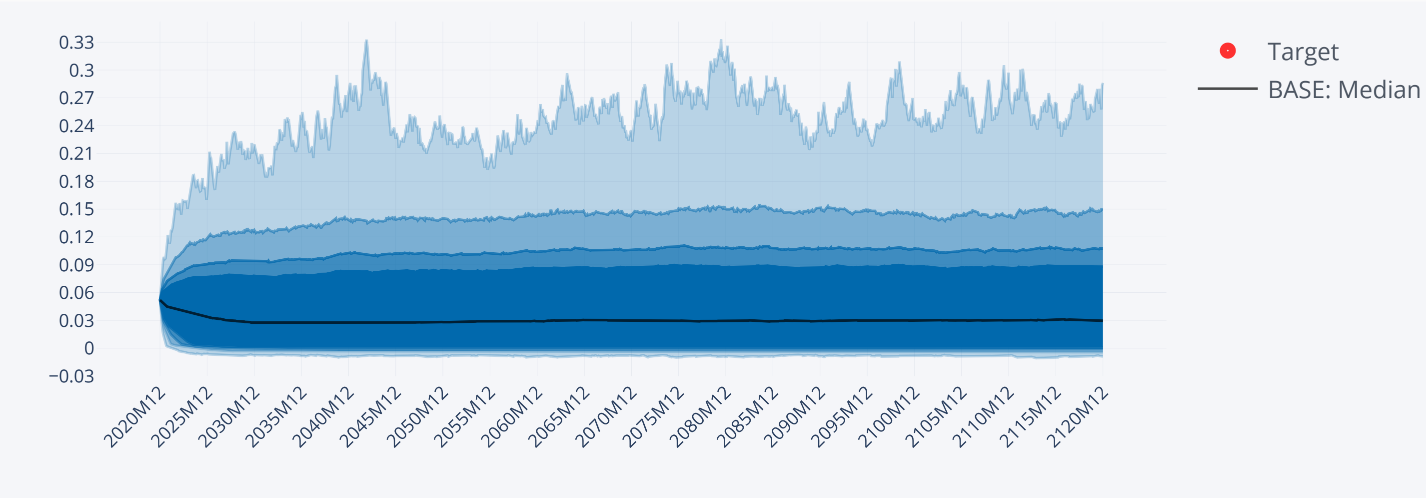
Cross Sectional Volatility Over Time : BASE



US Treasury 6 Month Yield - Spot
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 6 Month Yield - Spot

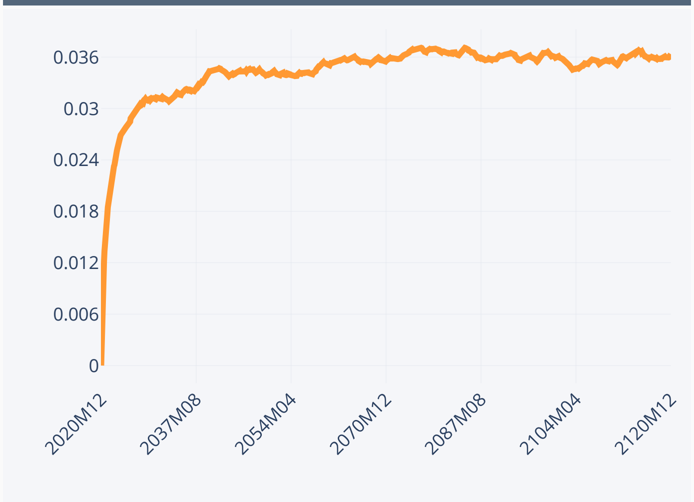


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0448	0.0358
std	0.0171	0.0342
min	0.0012	-0.0084
1%	0.0079	-0.0041
5%	0.0173	-0.0014
10%	0.0231	0.0006
50%	0.0442	0.0281
90%	0.0670	0.0839
95%	0.0737	0.1009
99%	0.0875	0.1401
max	0.1125	0.2374

Cross Sectional Volatility Over Time : BASE



US Treasury 1 Year Yield - Spot

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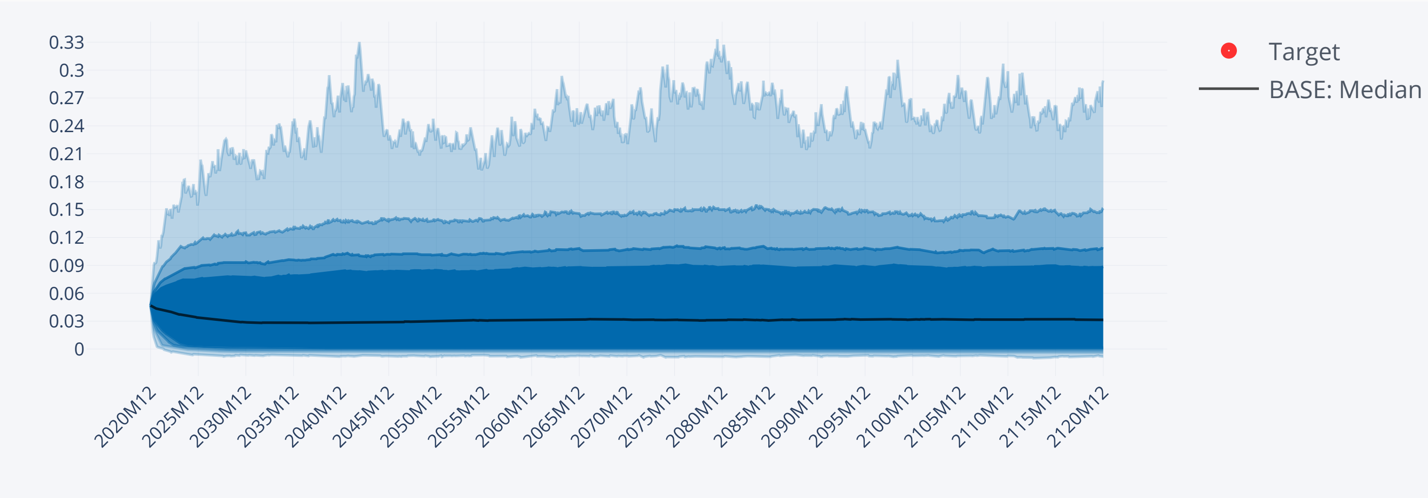
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 1 Year Yield - Spot

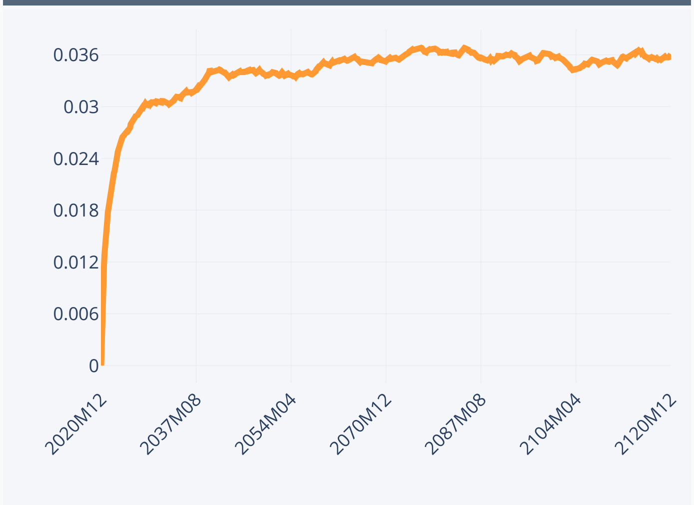


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

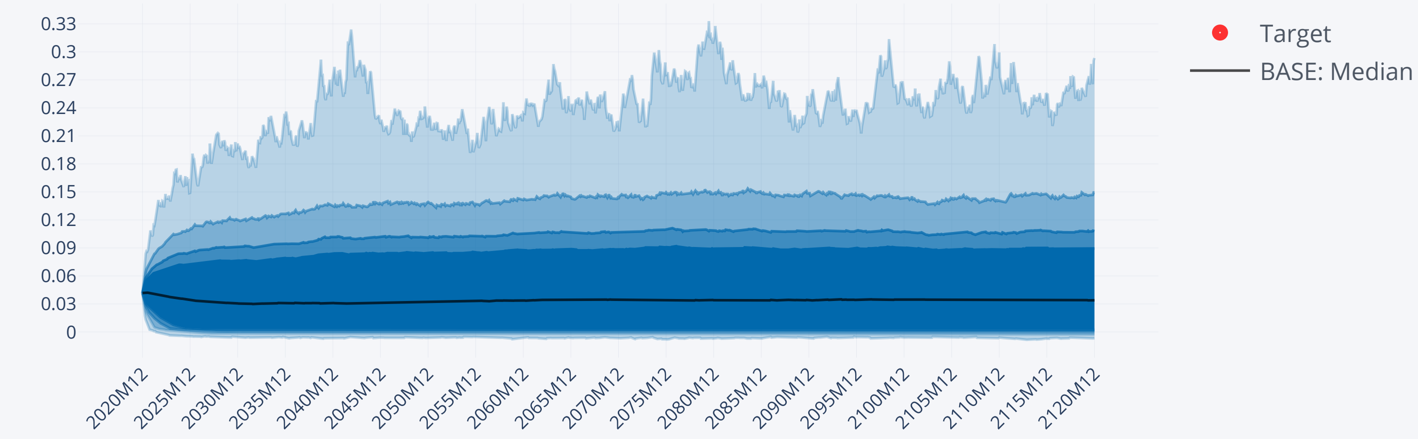
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0434	0.0369
std	0.0164	0.0339
min	0.0013	-0.0078
1%	0.0081	-0.0034
5%	0.0170	-0.0008
10%	0.0226	0.0011
50%	0.0429	0.0299
90%	0.0646	0.0845
95%	0.0711	0.1009
99%	0.0841	0.1390
max	0.1082	0.2337

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 2 Year Yield - Spot

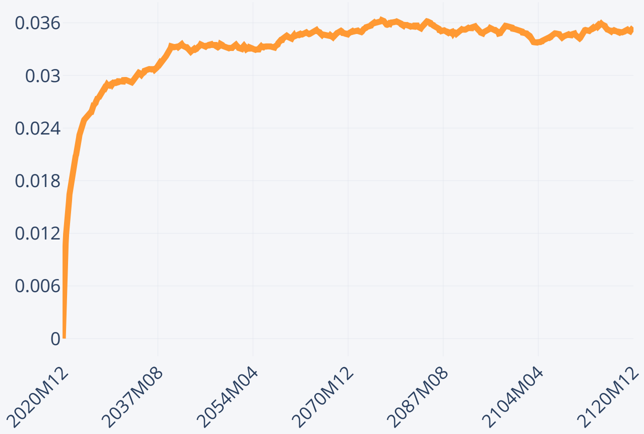


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

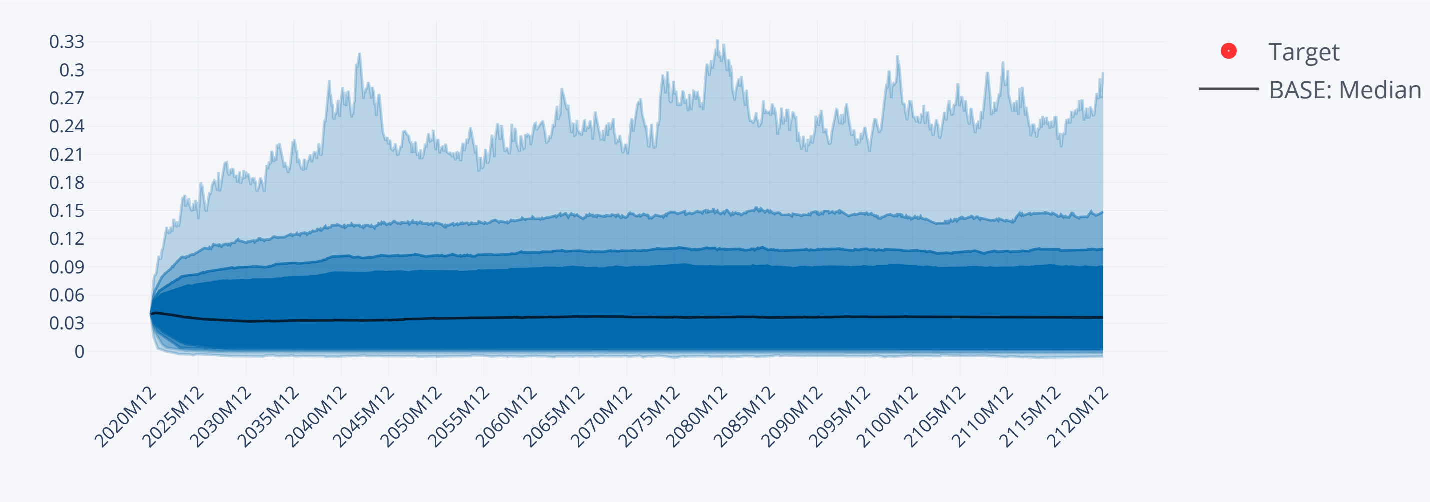
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0420	0.0388
std	0.0152	0.0333
min	0.0017	-0.0067
1%	0.0093	-0.0024
5%	0.0177	0.0002
10%	0.0228	0.0019
50%	0.0416	0.0326
90%	0.0617	0.0853
95%	0.0677	0.1008
99%	0.0795	0.1392
max	0.1025	0.2277

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 3 Year Yield - Spot

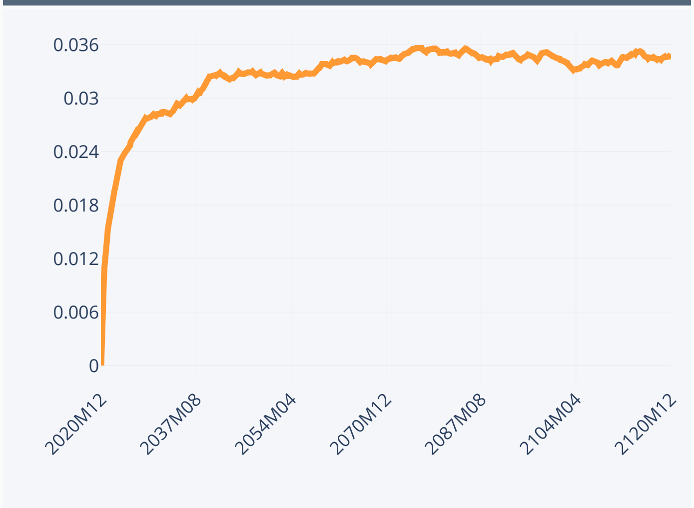


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0411	0.0404
std	0.0141	0.0327
min	0.0020	-0.0056
1%	0.0105	-0.0015
5%	0.0184	0.0010
10%	0.0233	0.0027
50%	0.0408	0.0348
90%	0.0595	0.0860
95%	0.0649	0.1014
99%	0.0758	0.1367
max	0.0977	0.2225

Cross Sectional Volatility Over Time : BASE



US Treasury 4 Year Yield - Spot

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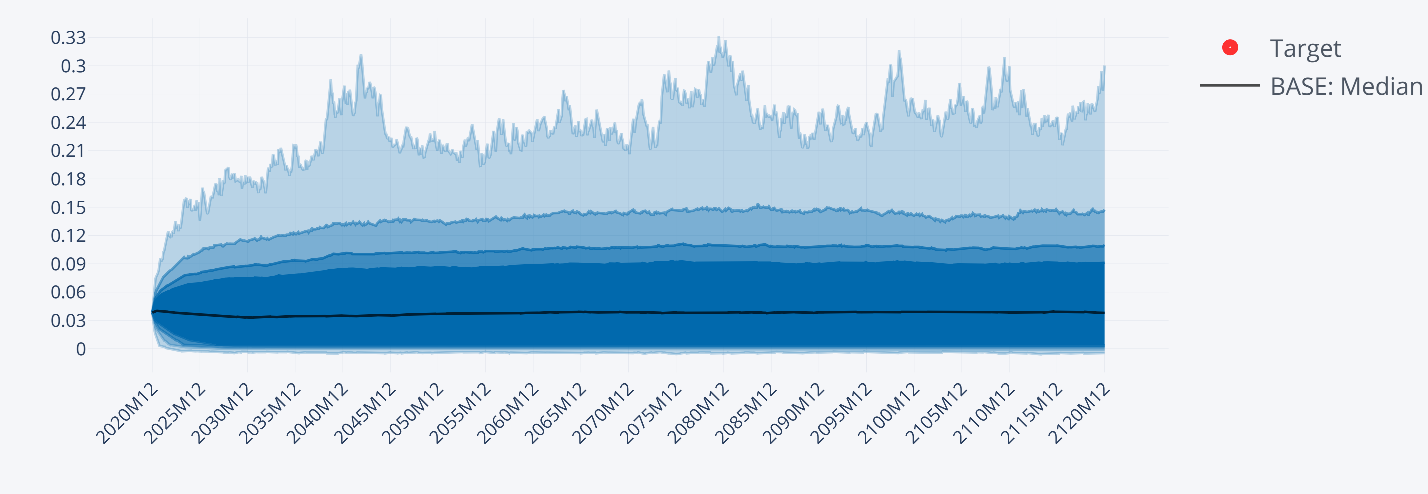
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 4 Year Yield - Spot

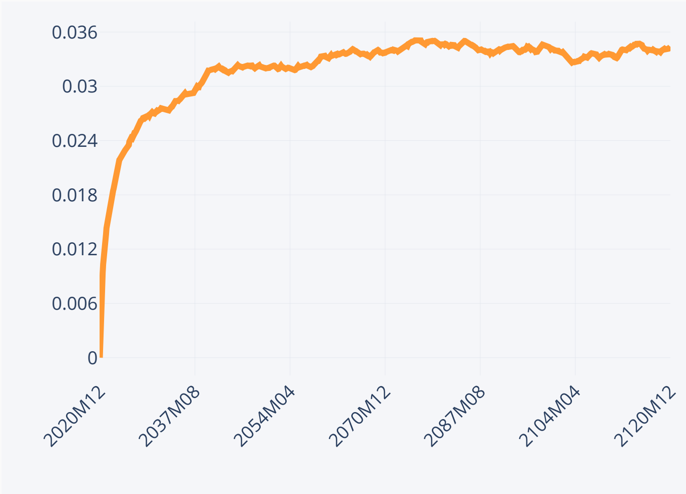


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0404	0.0419
std	0.0132	0.0322
min	0.0024	-0.0047
1%	0.0118	-0.0007
5%	0.0192	0.0016
10%	0.0239	0.0033
50%	0.0401	0.0369
90%	0.0576	0.0864
95%	0.0625	0.1016
99%	0.0730	0.1354
max	0.0935	0.2179

Cross Sectional Volatility Over Time : BASE



US Treasury 5 Year Yield - Spot

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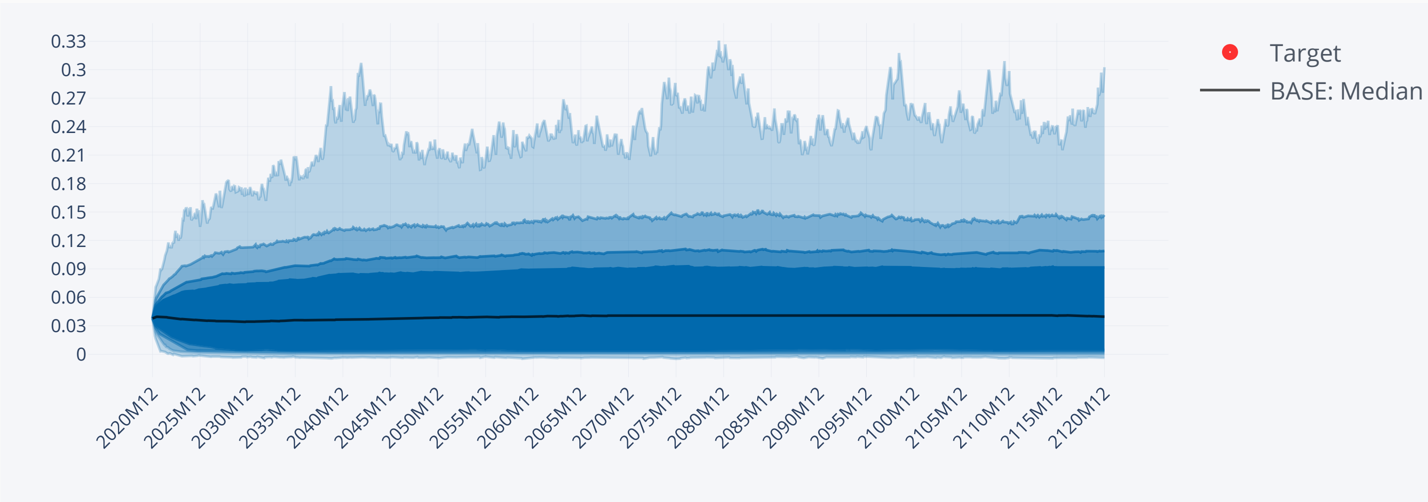
Simulated Data in Percentiles : US Treasury 5 Year Yield - Spot

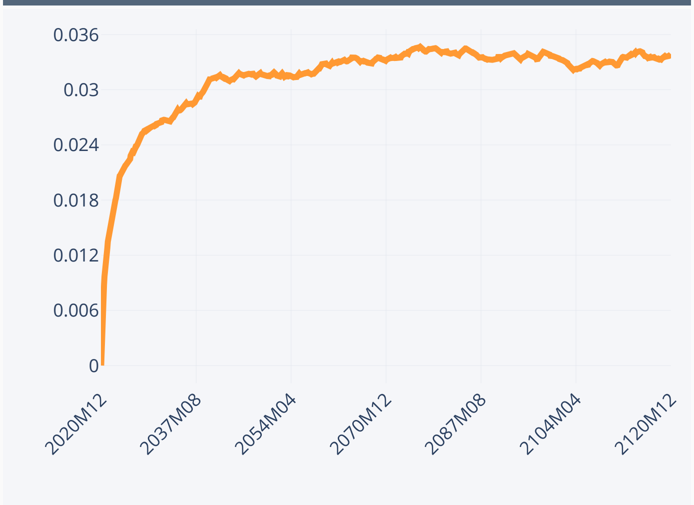


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

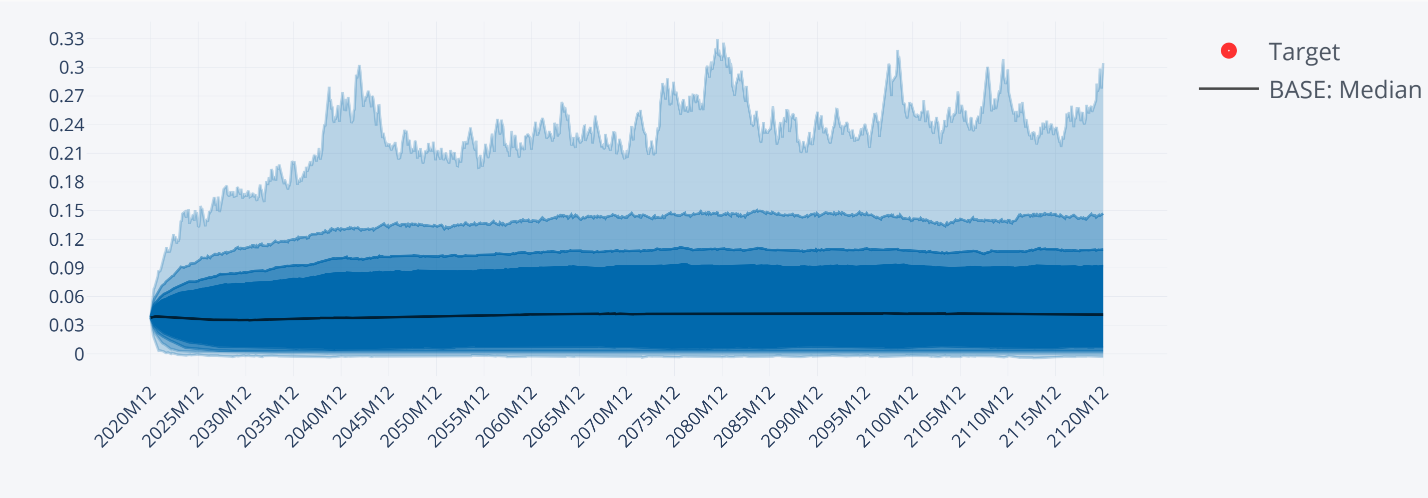
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0398	0.0433
std	0.0124	0.0317
min	0.0027	-0.0038
1%	0.0130	0.0000
5%	0.0200	0.0022
10%	0.0243	0.0039
50%	0.0396	0.0386
90%	0.0560	0.0868
95%	0.0607	0.1015
99%	0.0705	0.1344
max	0.0899	0.2137

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 6 Year Yield - Spot

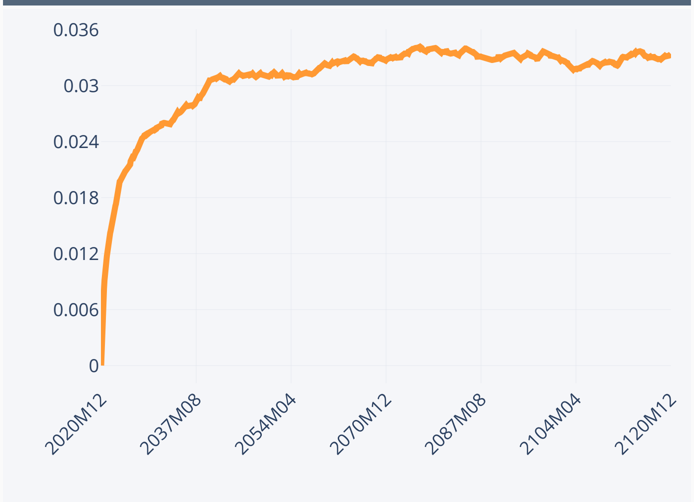


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0394	0.0445
std	0.0117	0.0312
min	0.0029	-0.0031
1%	0.0140	0.0007
5%	0.0206	0.0028
10%	0.0247	0.0057
50%	0.0391	0.0400
90%	0.0546	0.0875
95%	0.0591	0.1016
99%	0.0686	0.1340
max	0.0867	0.2098

Cross Sectional Volatility Over Time : BASE



US Treasury 7 Year Yield - Spot

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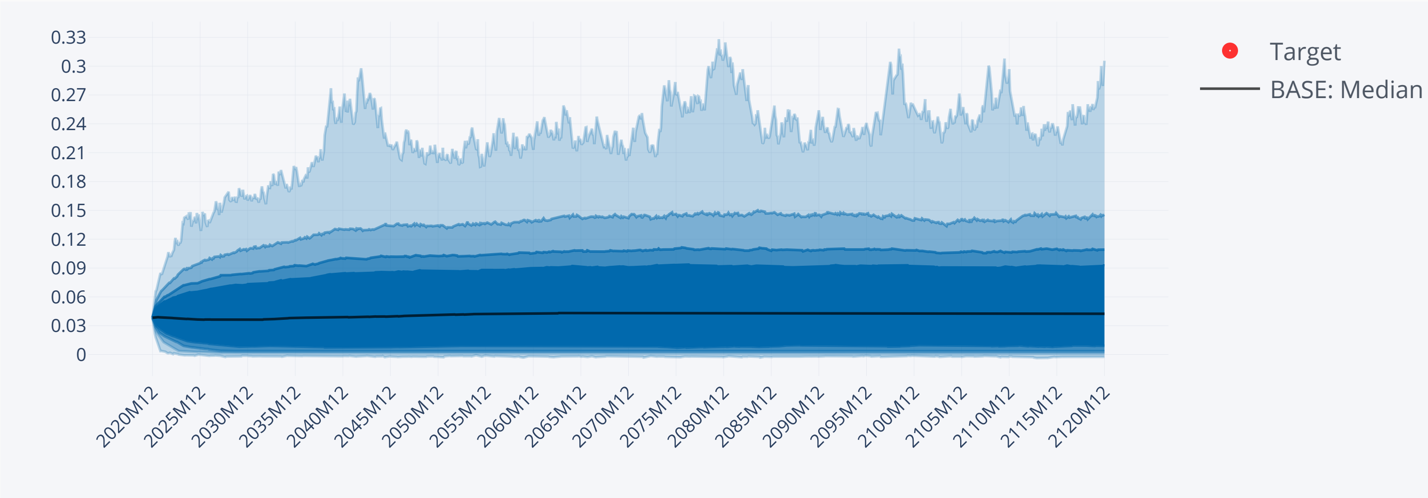
Simulated Data in Percentiles : US Treasury 7 Year Yield - Spot



Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

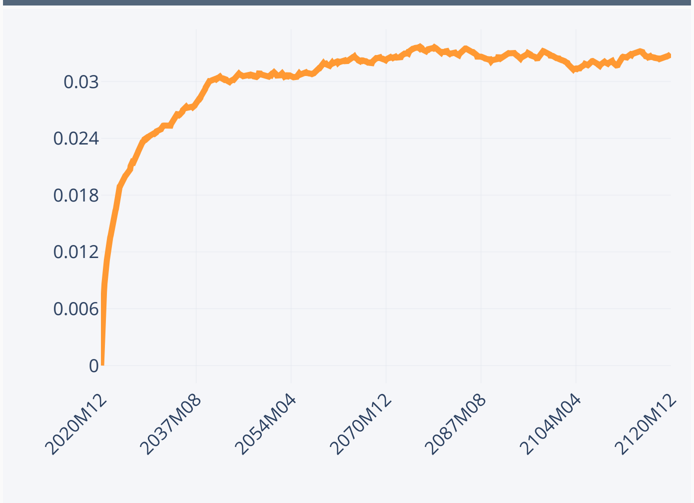
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max

The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0390	0.0456
std	0.0111	0.0308
min	0.0032	-0.0024
1%	0.0149	0.0012
5%	0.0212	0.0033
10%	0.0251	0.0079
50%	0.0387	0.0412
90%	0.0536	0.0880
95%	0.0577	0.1020
99%	0.0667	0.1343
max	0.0839	0.2062

Cross Sectional Volatility Over Time : BASE



US Treasury 8 Year Yield - Spot

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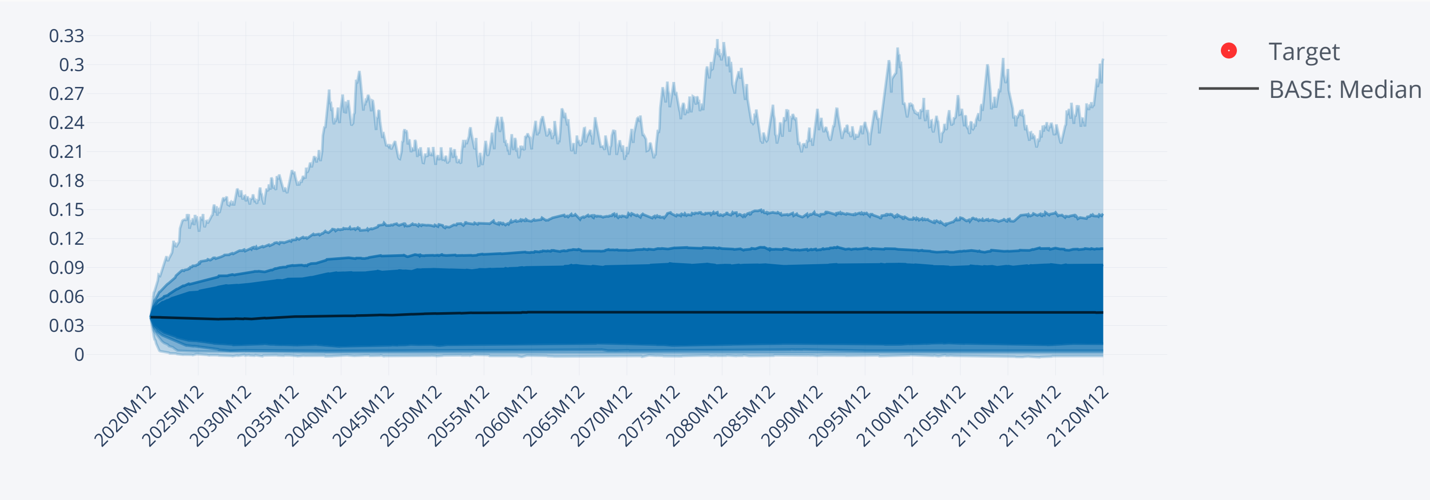
Simulated Data in Percentiles : US Treasury 8 Year Yield - Spot

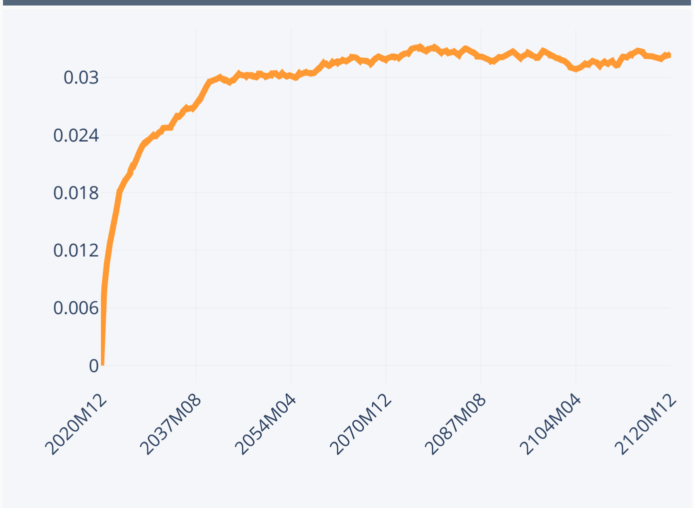


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

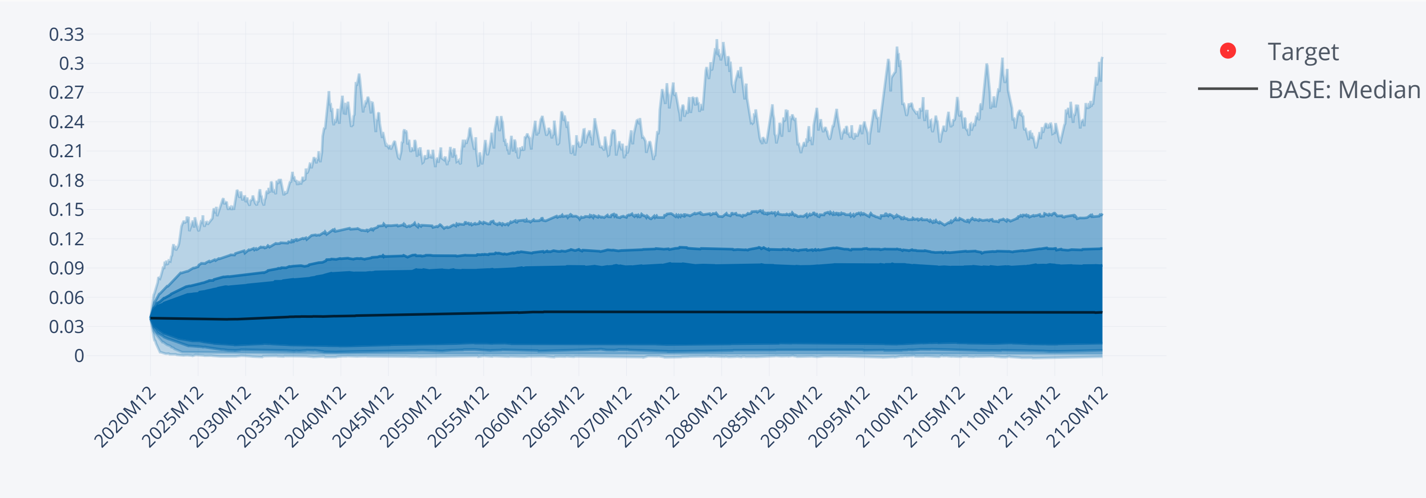
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0387	0.0465
std	0.0106	0.0304
min	0.0034	-0.0018
1%	0.0157	0.0017
5%	0.0218	0.0037
10%	0.0254	0.0099
50%	0.0384	0.0423
90%	0.0526	0.0885
95%	0.0565	0.1021
99%	0.0650	0.1337
max	0.0814	0.2029

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 9 Year Yield - Spot

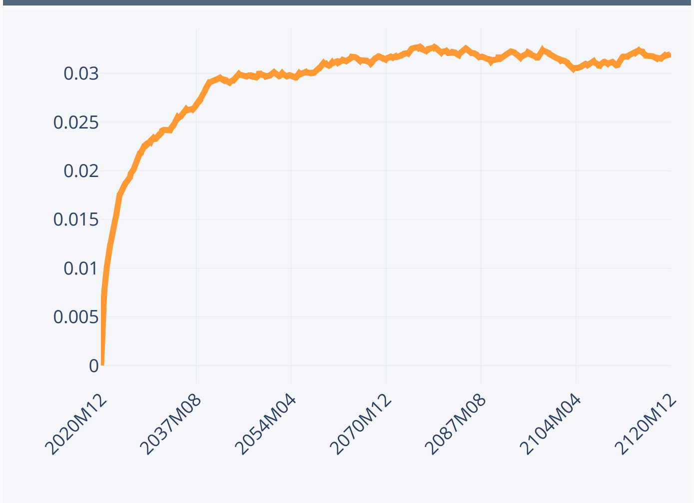


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0384	0.0474
std	0.0102	0.0299
min	0.0036	-0.0012
1%	0.0166	0.0022
5%	0.0224	0.0045
10%	0.0258	0.0116
50%	0.0381	0.0434
90%	0.0517	0.0886
95%	0.0555	0.1024
99%	0.0637	0.1330
max	0.0792	0.1998

Cross Sectional Volatility Over Time : BASE



US Treasury 10 Year Yield - Spot

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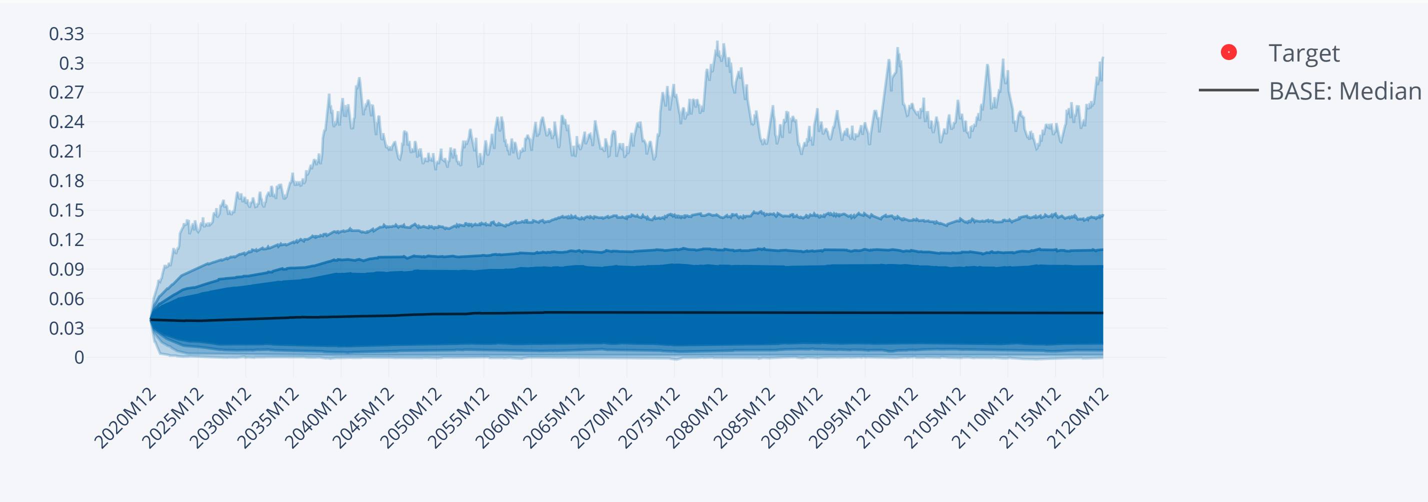
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 10 Year Yield - Spot

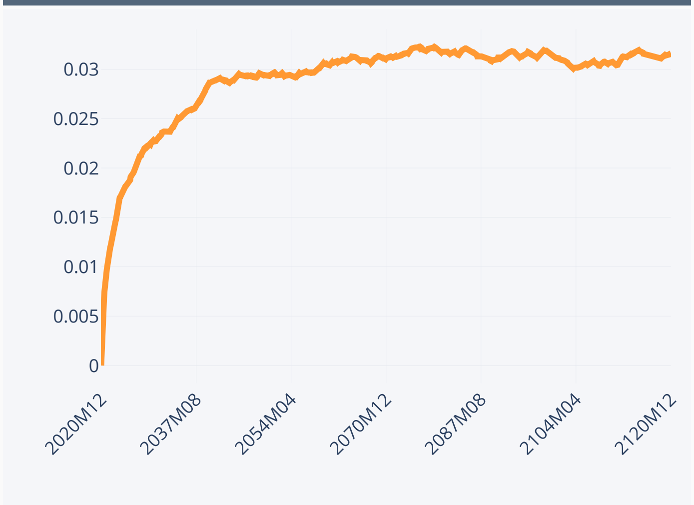


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

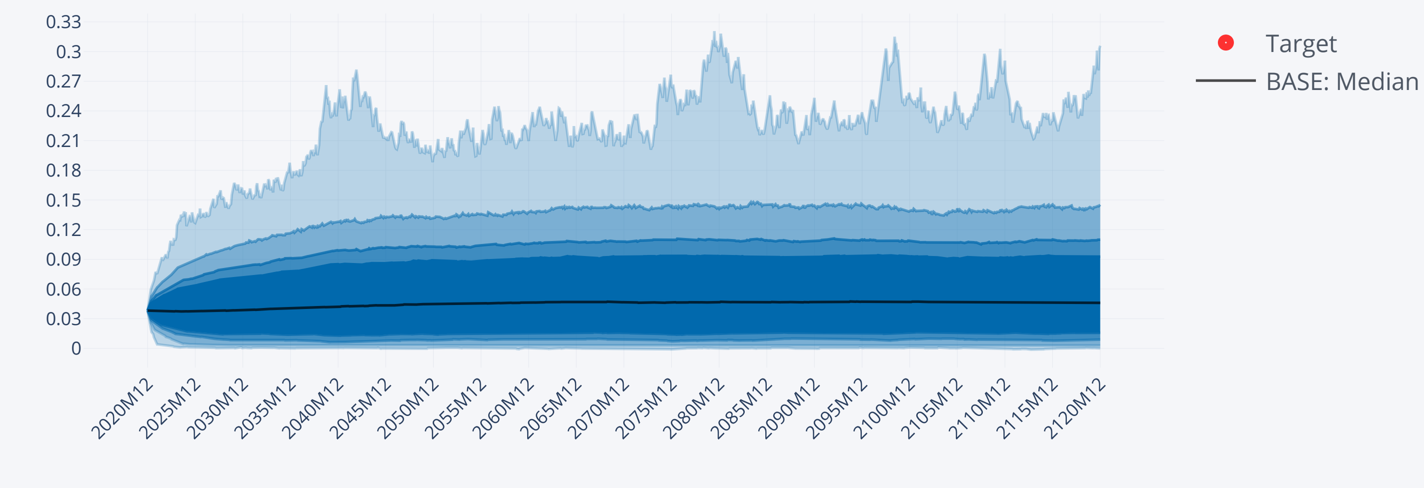
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0382	0.0482
std	0.0098	0.0295
min	0.0038	-0.0007
1%	0.0173	0.0026
5%	0.0227	0.0062
10%	0.0260	0.0131
50%	0.0379	0.0443
90%	0.0510	0.0888
95%	0.0547	0.1024
99%	0.0625	0.1332
max	0.0772	0.1969

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 11 Year Yield - Spot

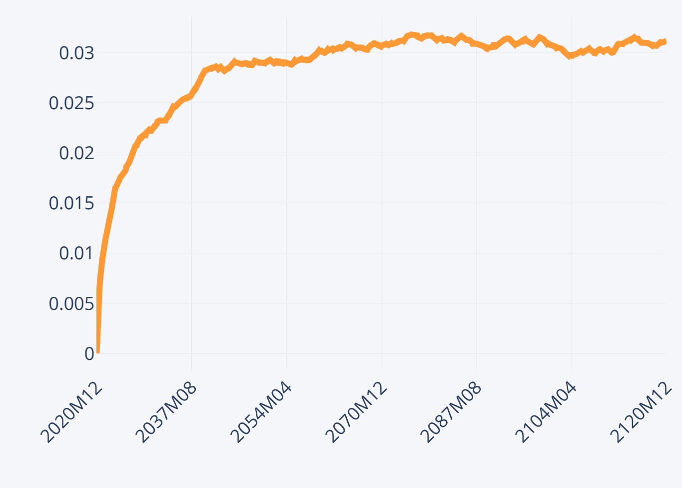


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0380	0.0488
std	0.0094	0.0291
min	0.0040	-0.0002
1%	0.0179	0.0030
5%	0.0231	0.0077
10%	0.0263	0.0145
50%	0.0377	0.0449
90%	0.0504	0.0888
95%	0.0540	0.1025
99%	0.0616	0.1325
max	0.0754	0.1941

Cross Sectional Volatility Over Time : BASE



US Treasury 12 Year Yield - Spot
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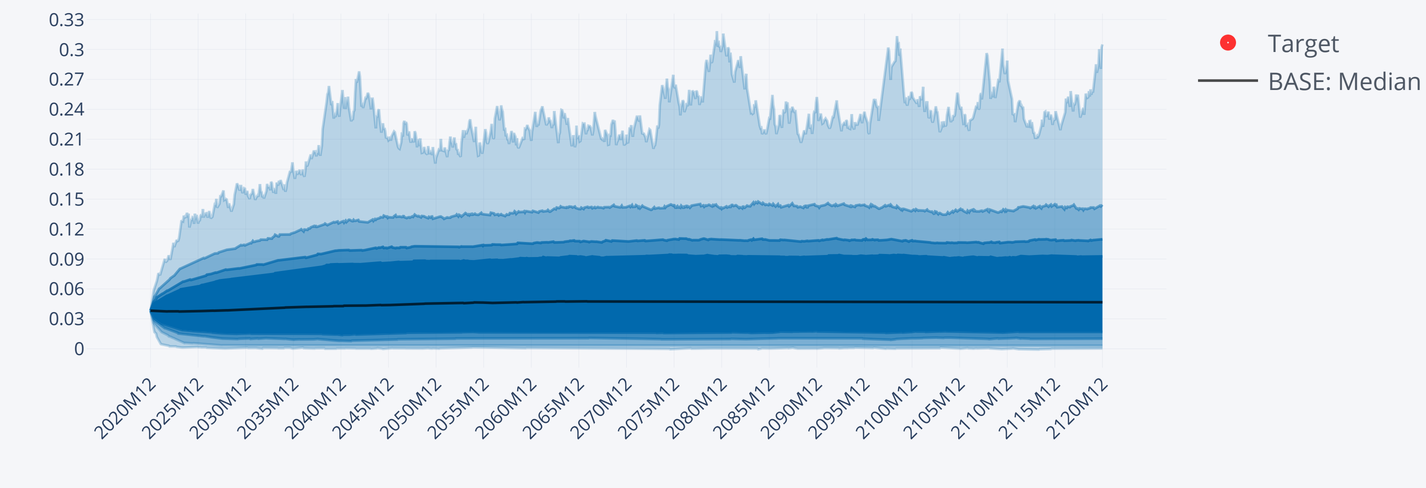
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 12 Year Yield - Spot

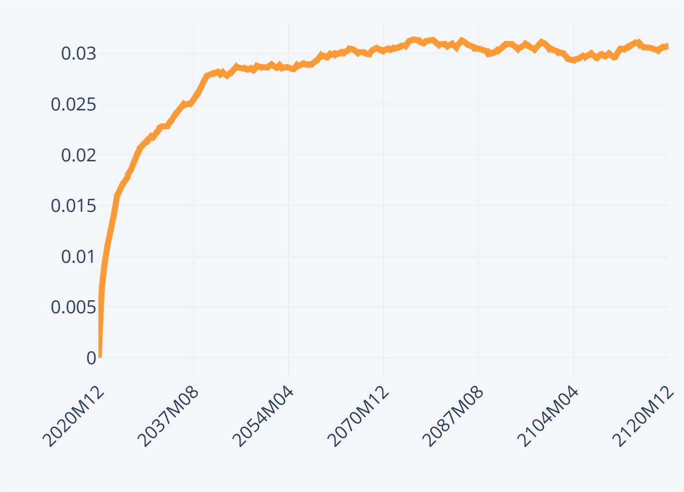


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0379	0.0494
std	0.0091	0.0288
min	0.0049	0.0002
1%	0.0184	0.0033
5%	0.0235	0.0090
10%	0.0265	0.0157
50%	0.0375	0.0456
90%	0.0498	0.0889
95%	0.0533	0.1024
99%	0.0608	0.1315
max	0.0738	0.1914

Cross Sectional Volatility Over Time : BASE



US Treasury 13 Year Yield - Spot
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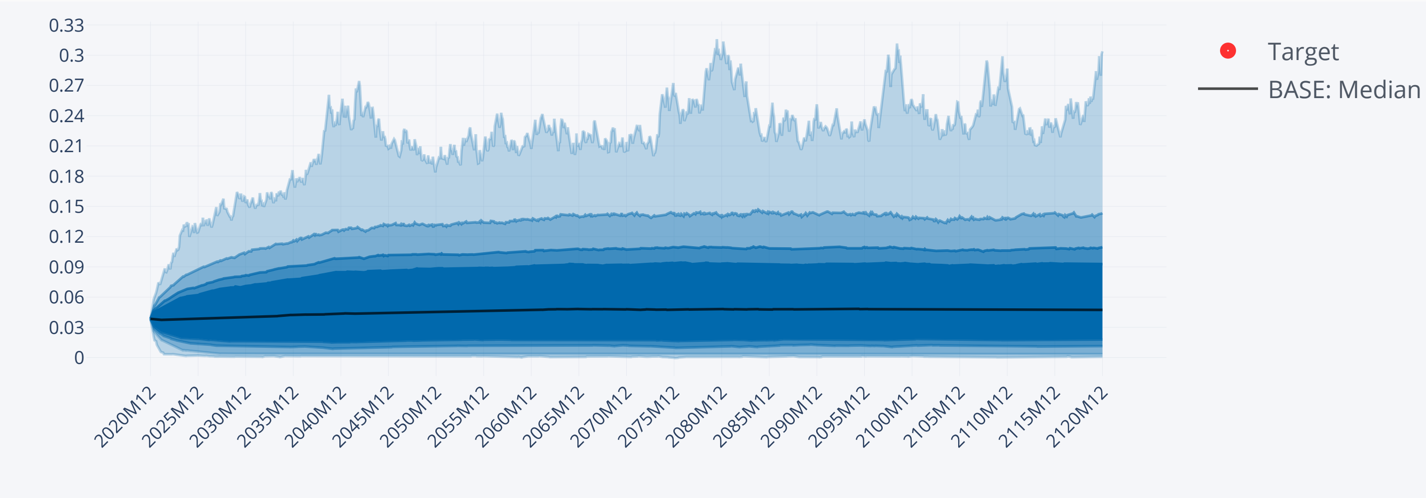
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 13 Year Yield - Spot

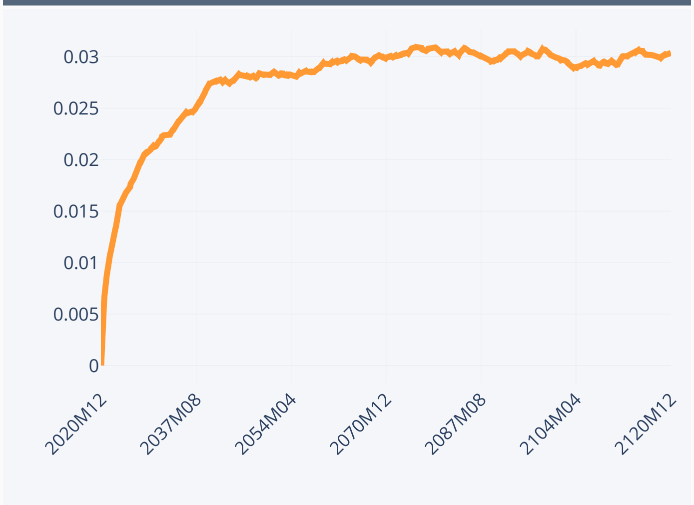


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

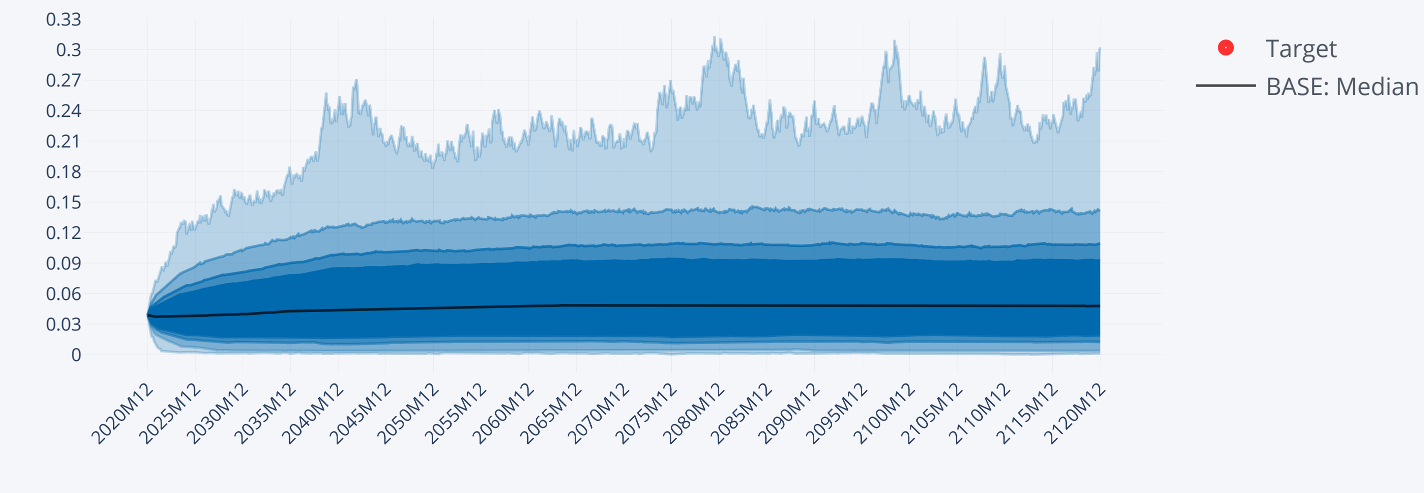
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0377	0.0499
std	0.0089	0.0284
min	0.0057	0.0006
1%	0.0189	0.0036
5%	0.0238	0.0103
10%	0.0268	0.0167
50%	0.0374	0.0461
90%	0.0494	0.0890
95%	0.0528	0.1023
99%	0.0601	0.1312
max	0.0723	0.1888

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 14 Year Yield - Spot

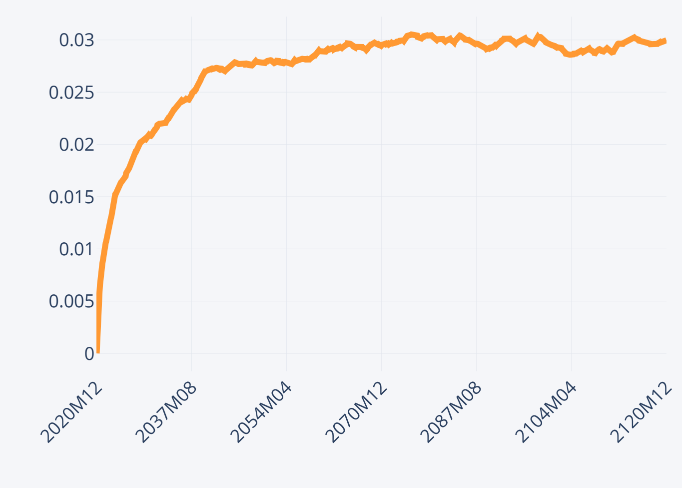


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0377	0.0504
std	0.0086	0.0280
min	0.0065	0.0009
1%	0.0194	0.0038
5%	0.0241	0.0114
10%	0.0269	0.0177
50%	0.0373	0.0466
90%	0.0490	0.0890
95%	0.0524	0.1021
99%	0.0594	0.1307
max	0.0710	0.1863

Cross Sectional Volatility Over Time : BASE

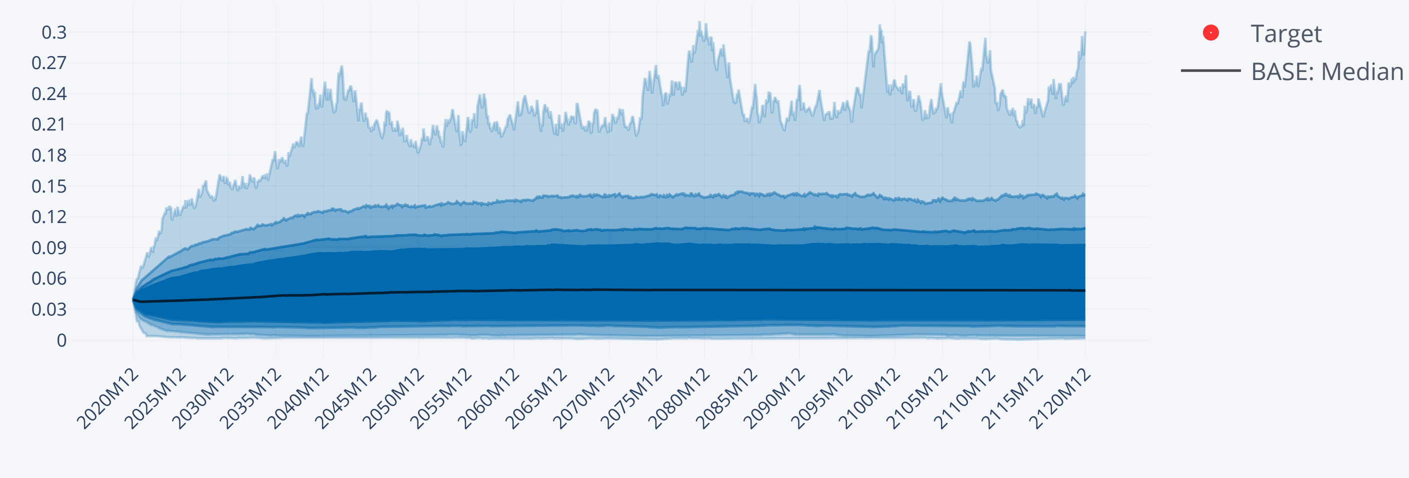


US Treasury 15 Year Yield - Spot

Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 15 Year Yield - Spot

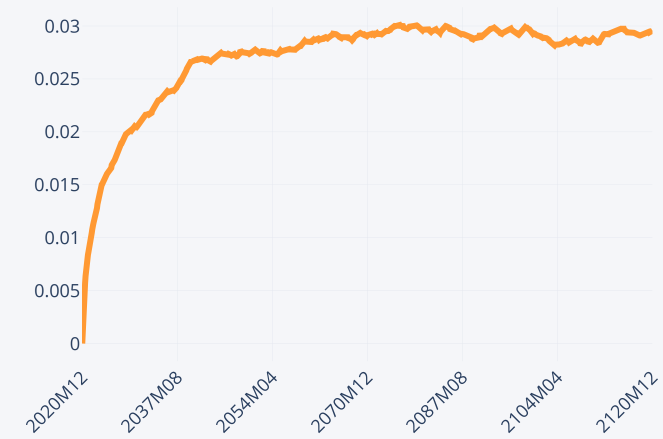


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0376	0.0507
std	0.0084	0.0276
min	0.0073	0.0013
1%	0.0198	0.0045
5%	0.0245	0.0125
10%	0.0272	0.0186
50%	0.0373	0.0471
90%	0.0486	0.0889
95%	0.0519	0.1019
99%	0.0587	0.1301
max	0.0698	0.1839

Cross Sectional Volatility Over Time : BASE



US Treasury 16 Year Yield - Spot
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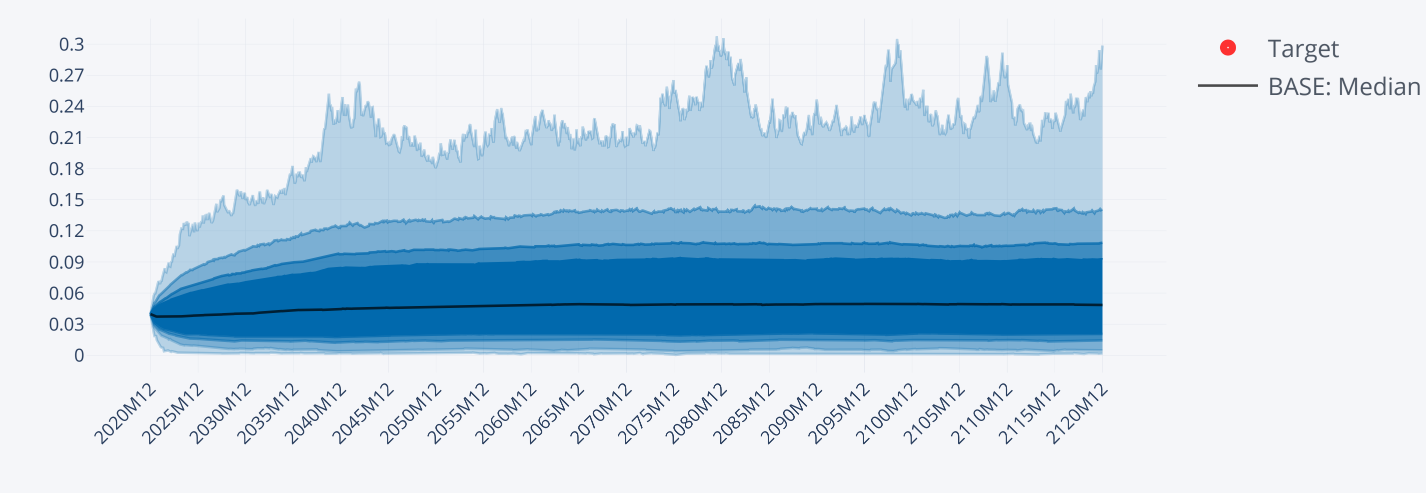
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 16 Year Yield - Spot

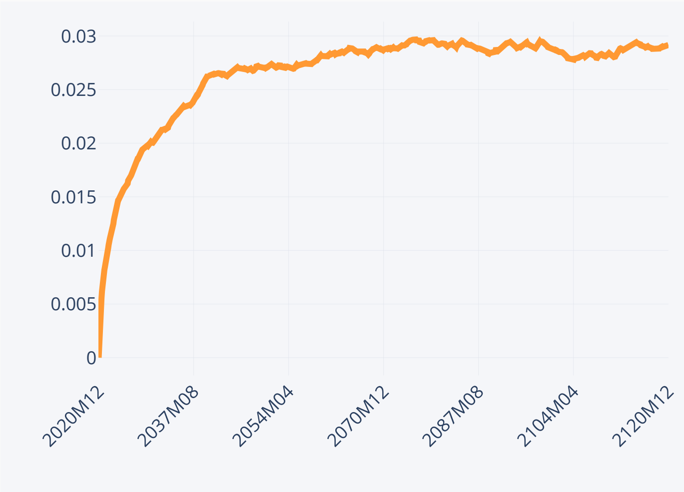


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0376	0.0510
std	0.0082	0.0272
min	0.0080	0.0016
1%	0.0202	0.0056
5%	0.0247	0.0134
10%	0.0274	0.0195
50%	0.0372	0.0474
90%	0.0483	0.0886
95%	0.0515	0.1015
99%	0.0582	0.1293
max	0.0687	0.1815

Cross Sectional Volatility Over Time : BASE



US Treasury 17 Year Yield - Spot

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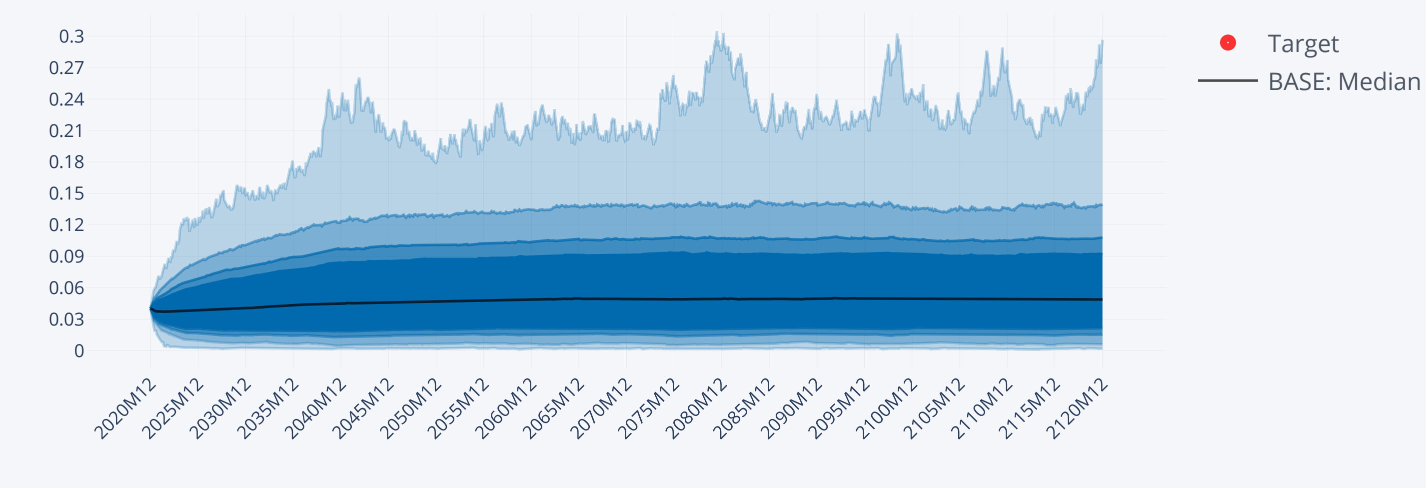
Dec 2023 - Lower Corp Spreads

Validation Report

Simulated Data in Percentiles : US Treasury 17 Year Yield - Spot

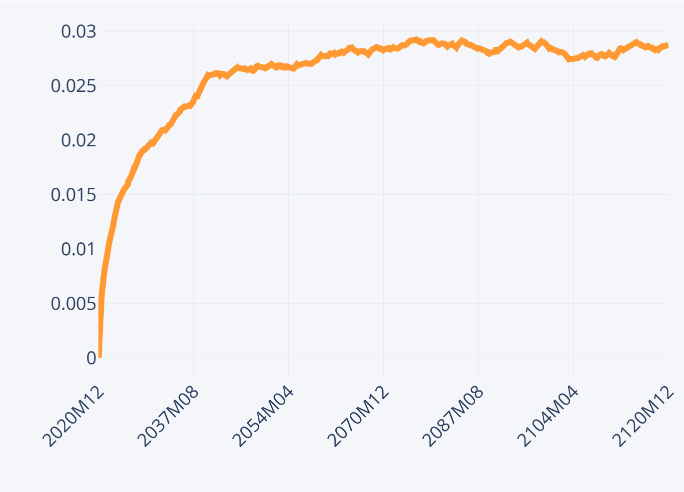


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

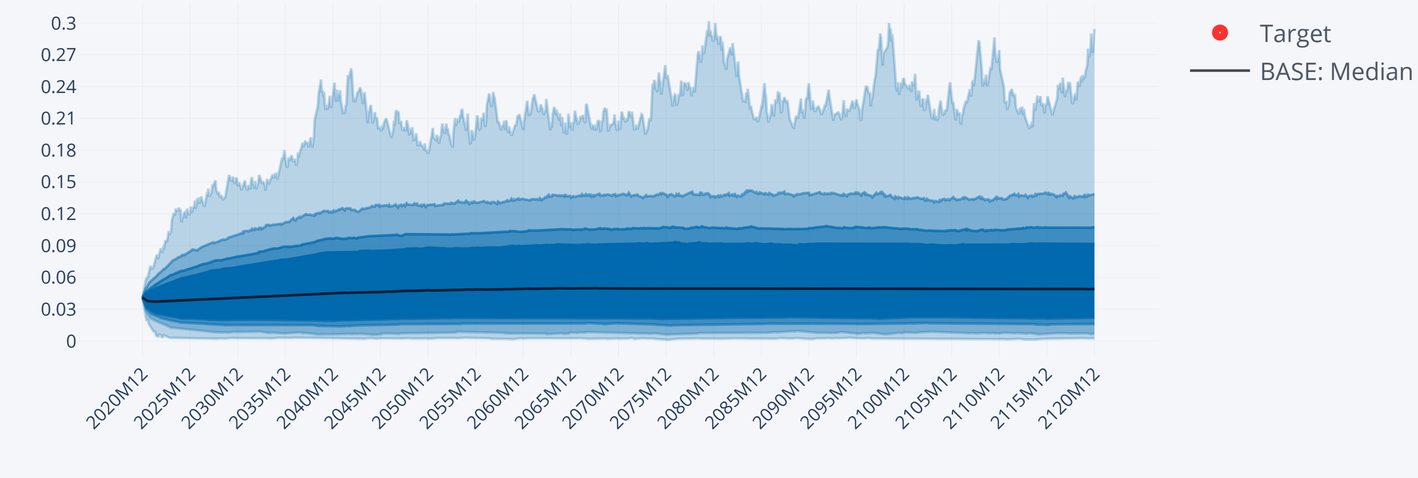
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0375	0.0513
std	0.0080	0.0268
min	0.0087	0.0019
1%	0.0205	0.0066
5%	0.0250	0.0142
10%	0.0276	0.0202
50%	0.0372	0.0476
90%	0.0480	0.0884
95%	0.0512	0.1011
99%	0.0576	0.1288
max	0.0679	0.1791

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 18 Year Yield - Spot

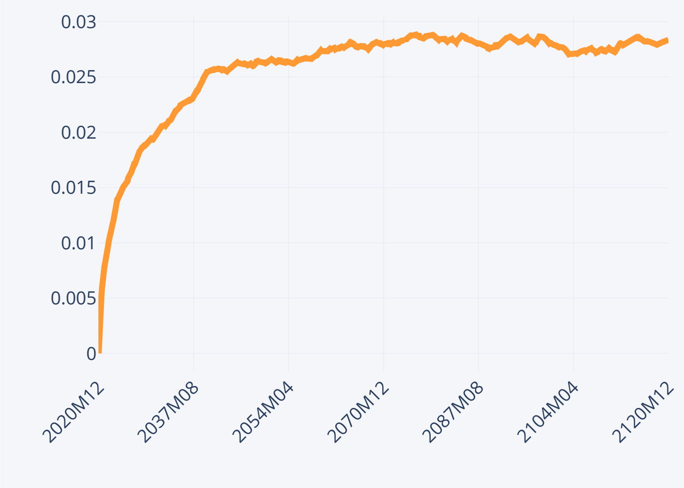


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

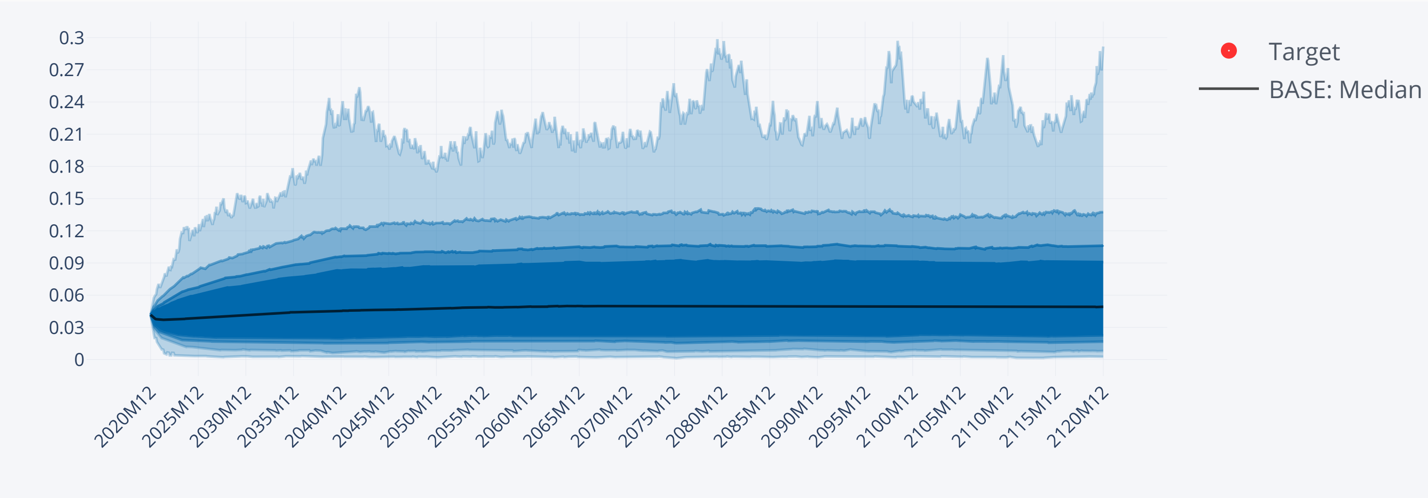
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0375	0.0515
std	0.0078	0.0265
min	0.0094	0.0021
1%	0.0209	0.0076
5%	0.0253	0.0150
10%	0.0278	0.0209
50%	0.0371	0.0479
90%	0.0477	0.0881
95%	0.0508	0.1007
99%	0.0572	0.1281
max	0.0674	0.1768

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 19 Year Yield - Spot

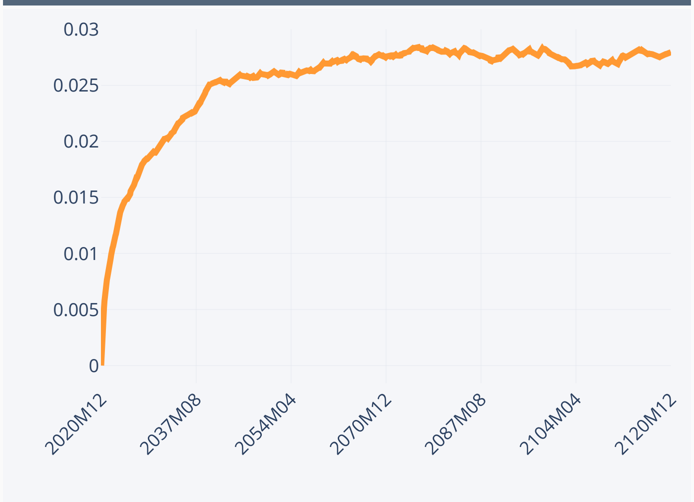


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

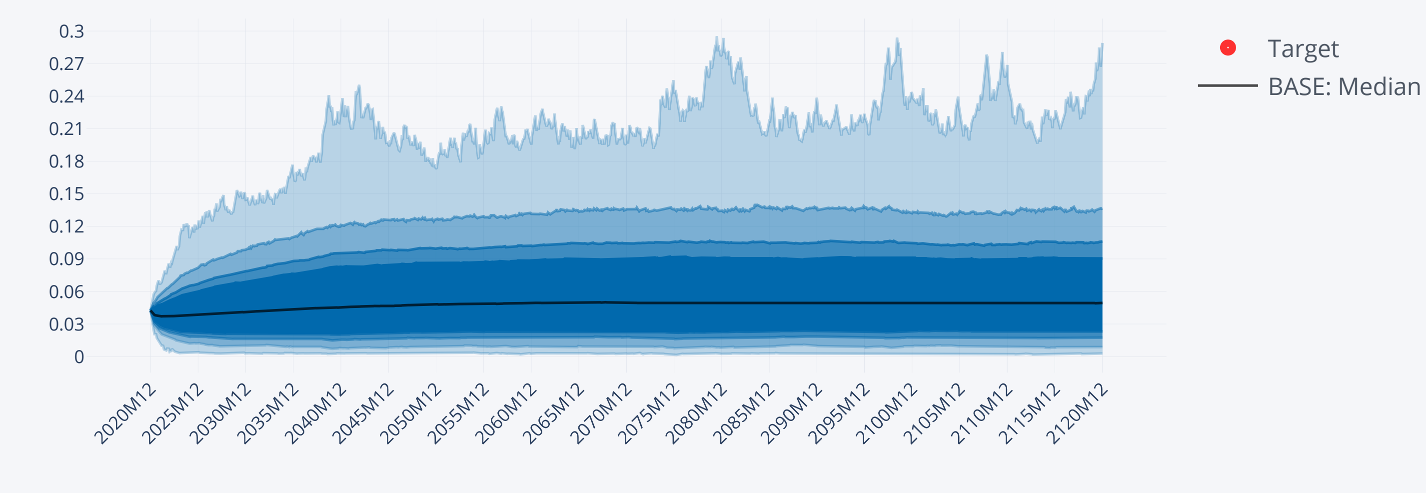
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0375	0.0516
std	0.0076	0.0261
min	0.0101	0.0023
1%	0.0212	0.0084
5%	0.0256	0.0157
10%	0.0281	0.0215
50%	0.0371	0.0480
90%	0.0474	0.0877
95%	0.0505	0.1001
99%	0.0567	0.1270
max	0.0669	0.1746

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 20 Year Yield - Spot

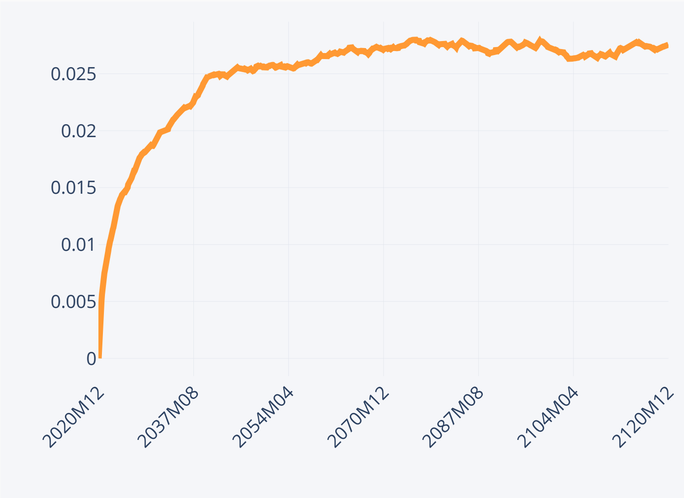


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0375	0.0517
std	0.0075	0.0257
min	0.0107	0.0026
1%	0.0216	0.0093
5%	0.0259	0.0164
10%	0.0282	0.0221
50%	0.0371	0.0482
90%	0.0472	0.0873
95%	0.0502	0.0996
99%	0.0563	0.1260
max	0.0664	0.1729

Cross Sectional Volatility Over Time : BASE



US Treasury 21 Year Yield - Spot

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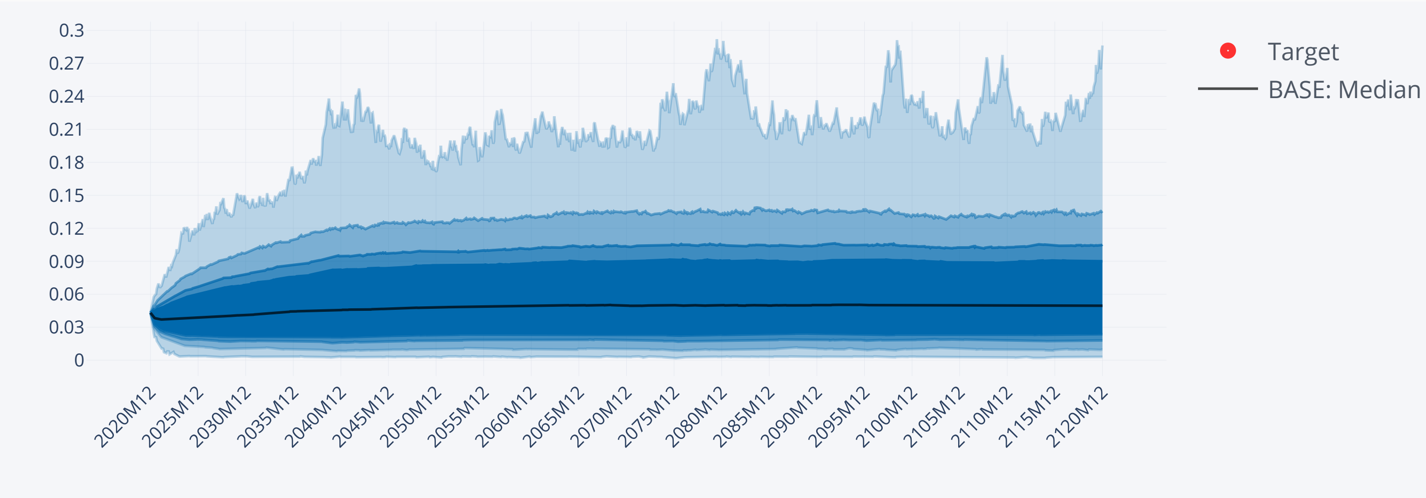
Simulated Data in Percentiles : US Treasury 21 Year Yield - Spot

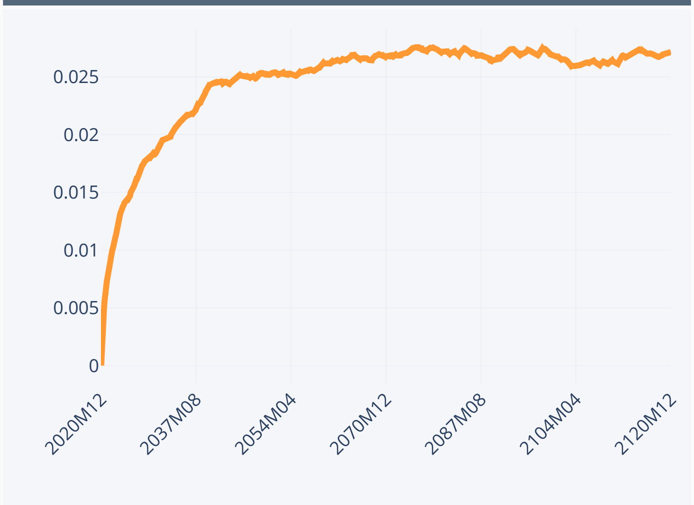


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0374	0.0518
std	0.0073	0.0253
min	0.0113	0.0028
1%	0.0219	0.0100
5%	0.0260	0.0170
10%	0.0284	0.0225
50%	0.0371	0.0482
90%	0.0470	0.0868
95%	0.0500	0.0990
99%	0.0559	0.1250
max	0.0659	0.1714

Cross Sectional Volatility Over Time : BASE



US Treasury 22 Year Yield - Spot

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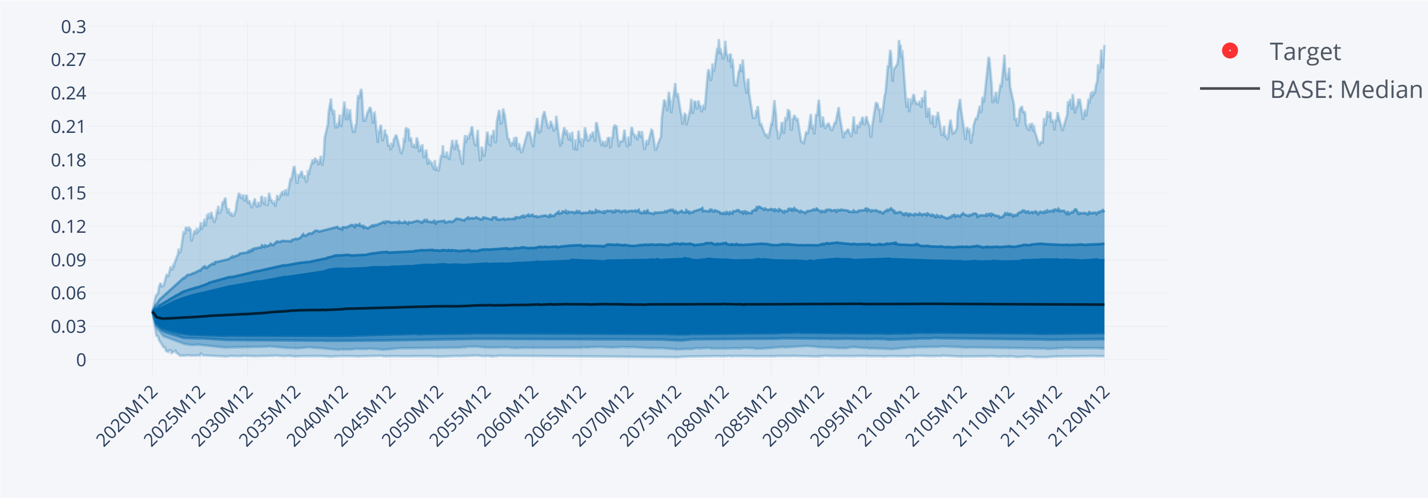
Dec 2023 - Lower Corp Spreads

Validation Report

Simulated Data in Percentiles : US Treasury 22 Year Yield - Spot

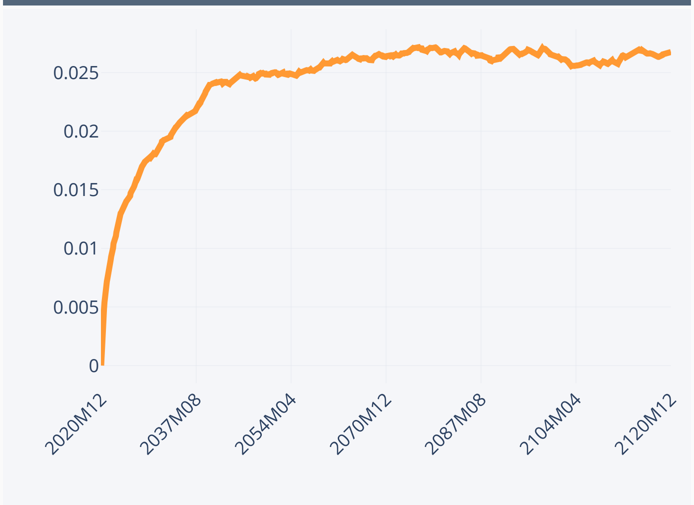


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0374	0.0518
std	0.0072	0.0250
min	0.0118	0.0030
1%	0.0222	0.0108
5%	0.0262	0.0176
10%	0.0285	0.0230
50%	0.0370	0.0483
90%	0.0468	0.0863
95%	0.0497	0.0984
99%	0.0555	0.1241
max	0.0654	0.1698

Cross Sectional Volatility Over Time : BASE



US Treasury 23 Year Yield - Spot
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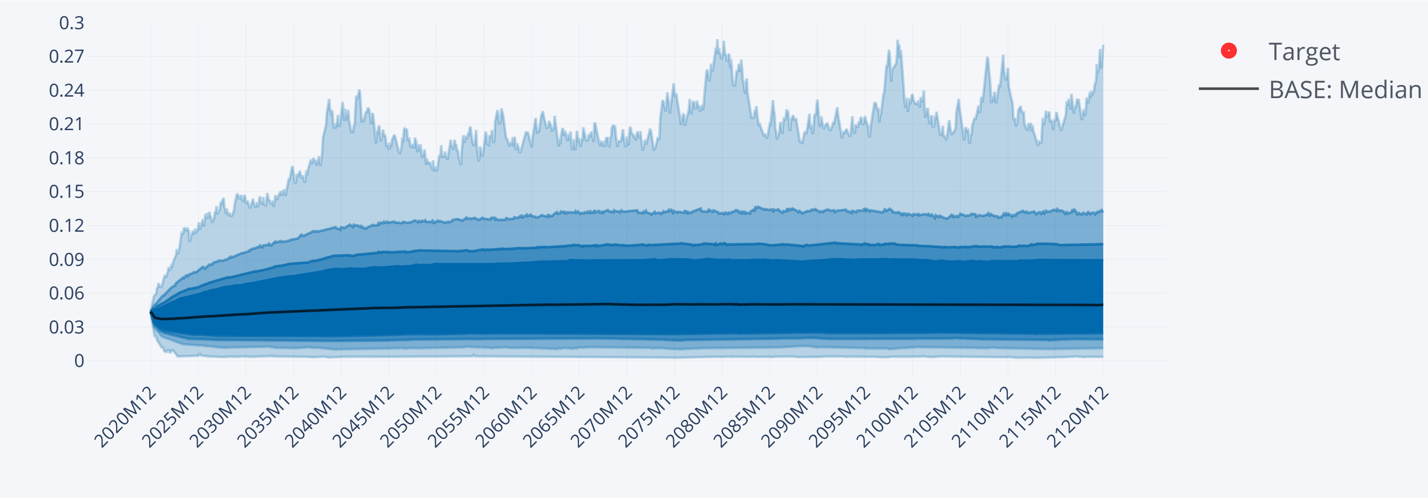
Validation Report

Simulated Data in Percentiles : US Treasury 23 Year Yield - Spot

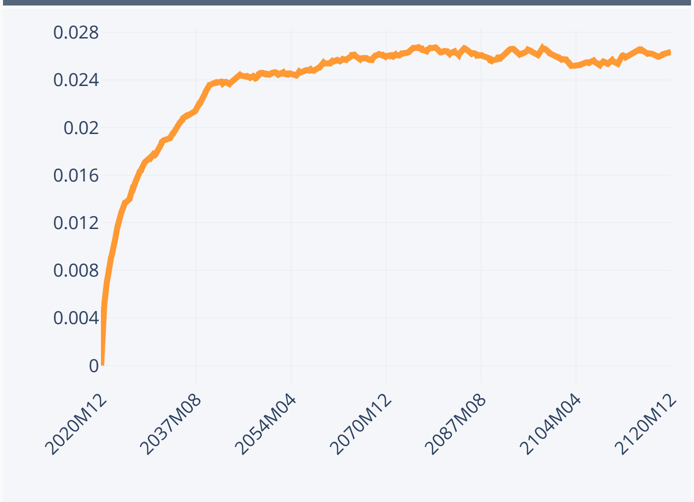


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0374	0.0518
std	0.0070	0.0246
min	0.0123	0.0032
1%	0.0224	0.0114
5%	0.0264	0.0181
10%	0.0287	0.0235
50%	0.0370	0.0484
90%	0.0465	0.0859
95%	0.0493	0.0977
99%	0.0551	0.1231
max	0.0649	0.1682

Cross Sectional Volatility Over Time : BASE



US Treasury 24 Year Yield - Spot
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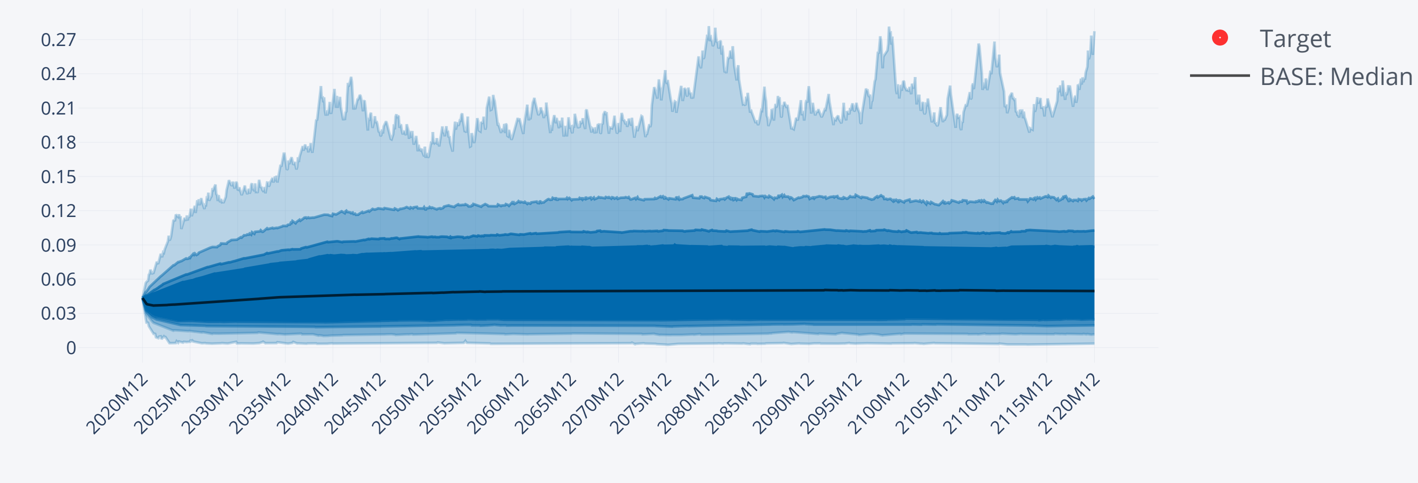
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 24 Year Yield - Spot

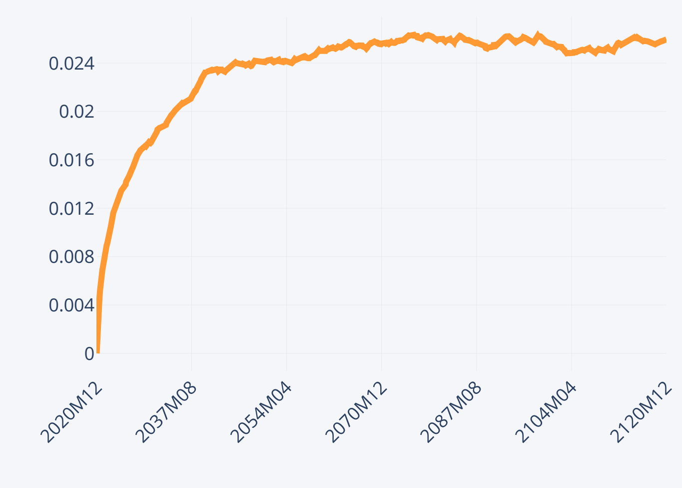


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0373	0.0518
std	0.0069	0.0242
min	0.0128	0.0034
1%	0.0227	0.0120
5%	0.0266	0.0186
10%	0.0288	0.0239
50%	0.0369	0.0484
90%	0.0463	0.0853
95%	0.0491	0.0970
99%	0.0548	0.1220
max	0.0644	0.1665

Cross Sectional Volatility Over Time : BASE



US Treasury 25 Year Yield - Spot

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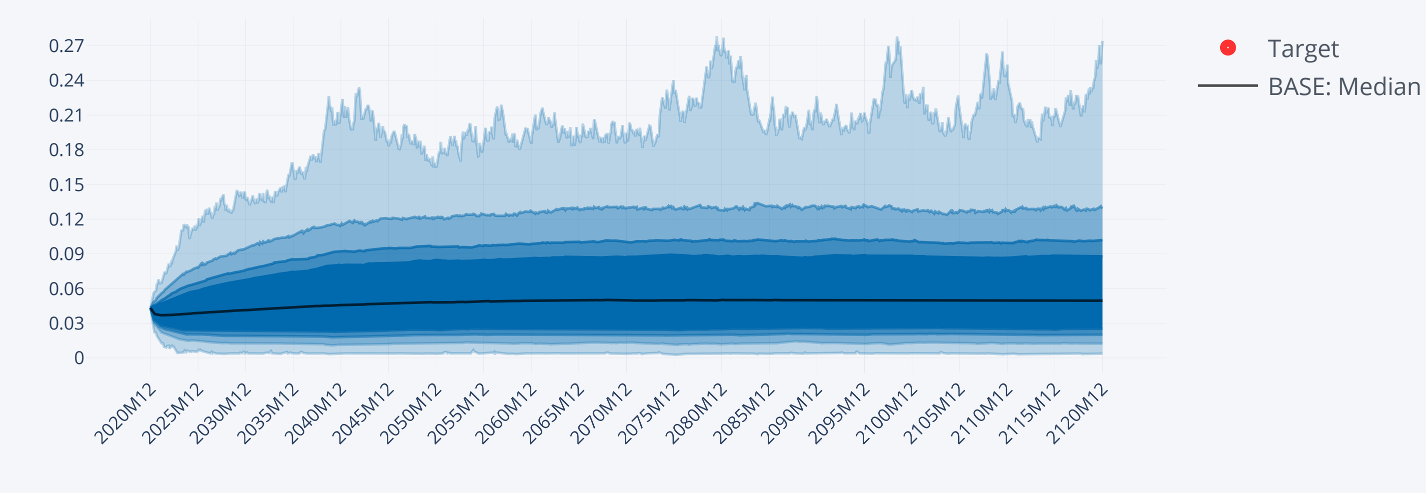
Simulated Data in Percentiles : US Treasury 25 Year Yield - Spot

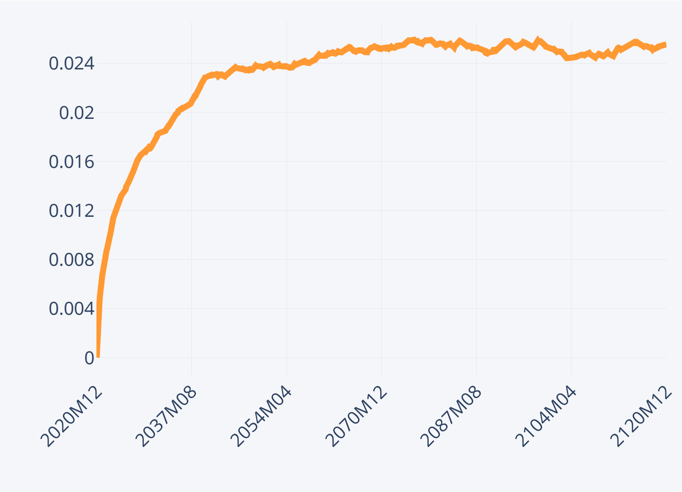


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0372	0.0517
std	0.0068	0.0238
min	0.0132	0.0035
1%	0.0229	0.0126
5%	0.0267	0.0191
10%	0.0289	0.0243
50%	0.0369	0.0484
90%	0.0461	0.0848
95%	0.0488	0.0962
99%	0.0544	0.1211
max	0.0640	0.1648

Cross Sectional Volatility Over Time : BASE



US Treasury 26 Year Yield - Spot

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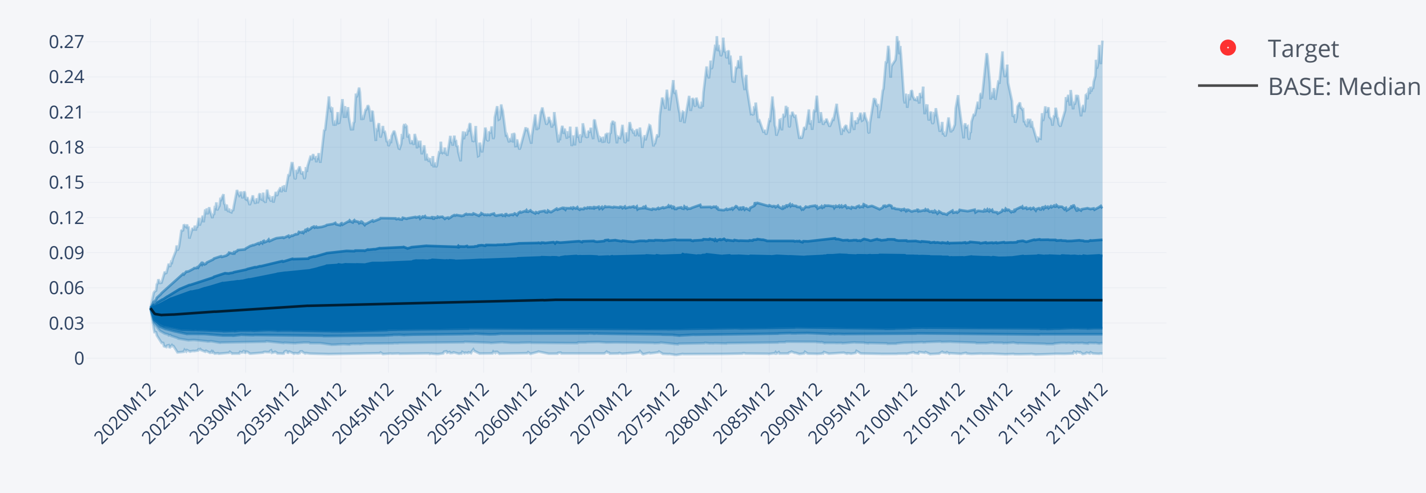
Simulated Data in Percentiles : US Treasury 26 Year Yield - Spot

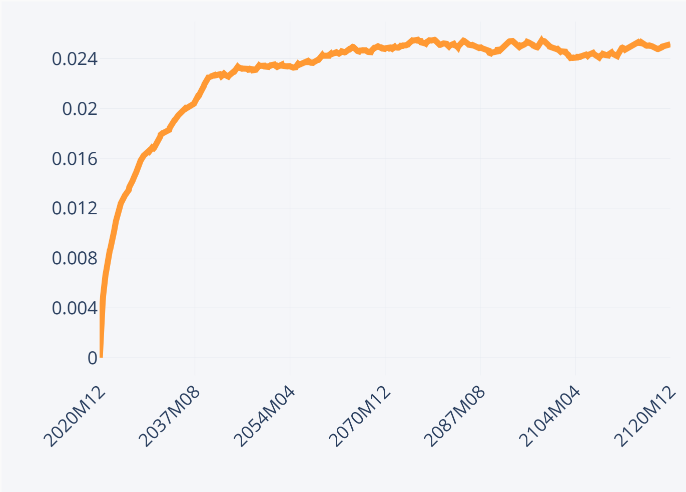


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0371	0.0516
std	0.0067	0.0235
min	0.0136	0.0037
1%	0.0232	0.0132
5%	0.0268	0.0195
10%	0.0290	0.0246
50%	0.0368	0.0483
90%	0.0458	0.0842
95%	0.0485	0.0954
99%	0.0540	0.1200
max	0.0636	0.1631

Cross Sectional Volatility Over Time : BASE



US Treasury 27 Year Yield - Spot
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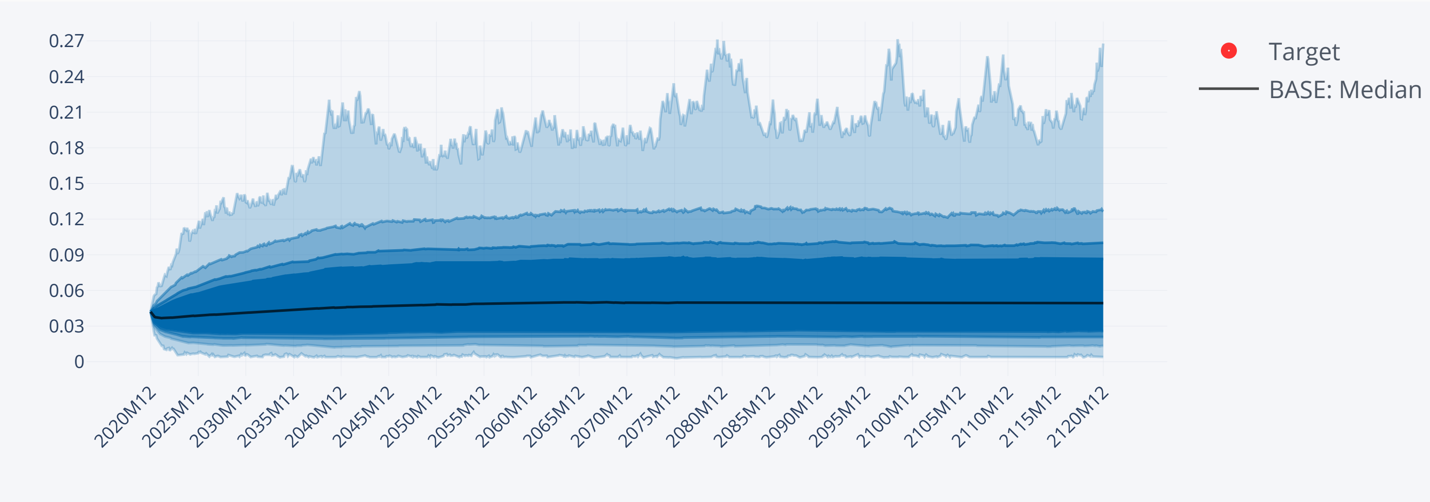
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 27 Year Yield - Spot

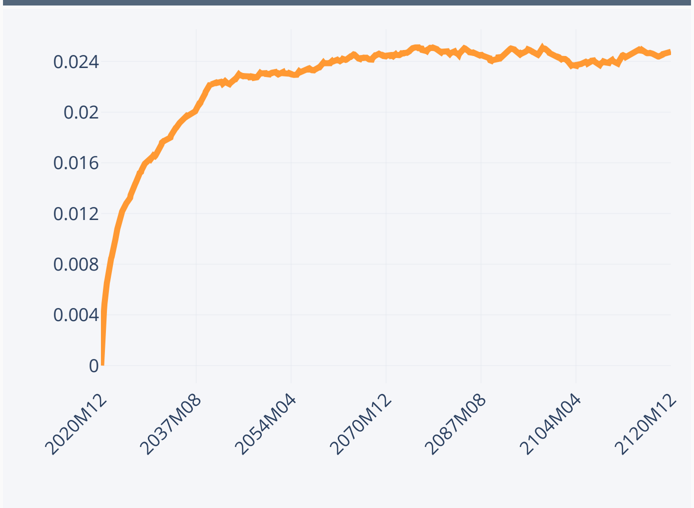


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0371	0.0515
std	0.0065	0.0231
min	0.0140	0.0038
1%	0.0233	0.0137
5%	0.0270	0.0200
10%	0.0290	0.0249
50%	0.0367	0.0483
90%	0.0456	0.0835
95%	0.0482	0.0947
99%	0.0536	0.1188
max	0.0631	0.1613

Cross Sectional Volatility Over Time : BASE



US Treasury 28 Year Yield - Spot

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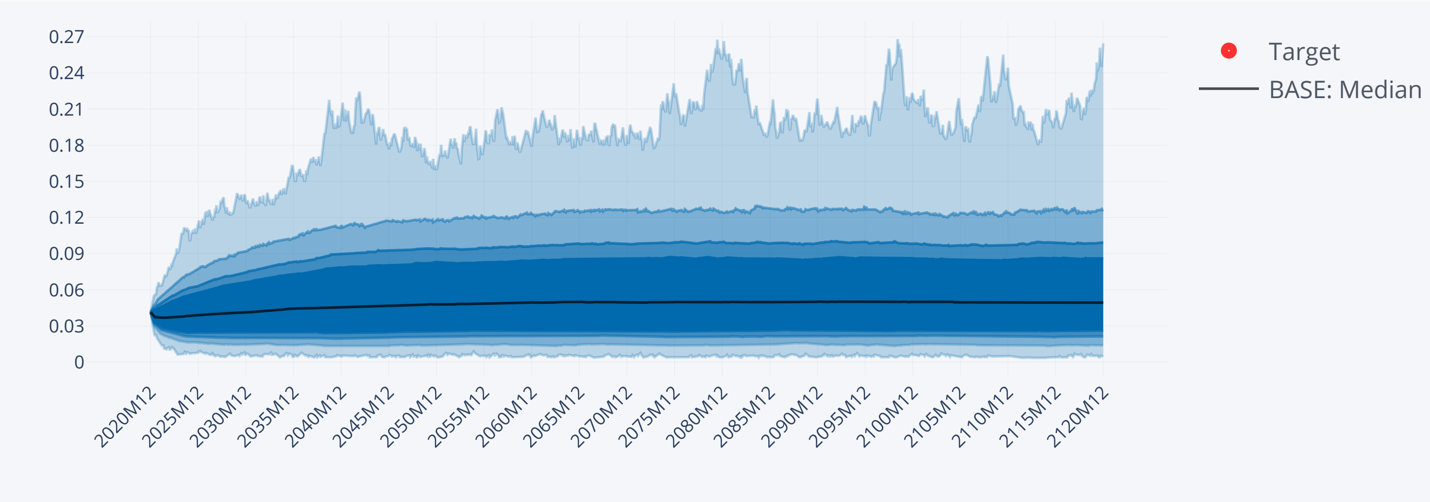
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 28 Year Yield - Spot

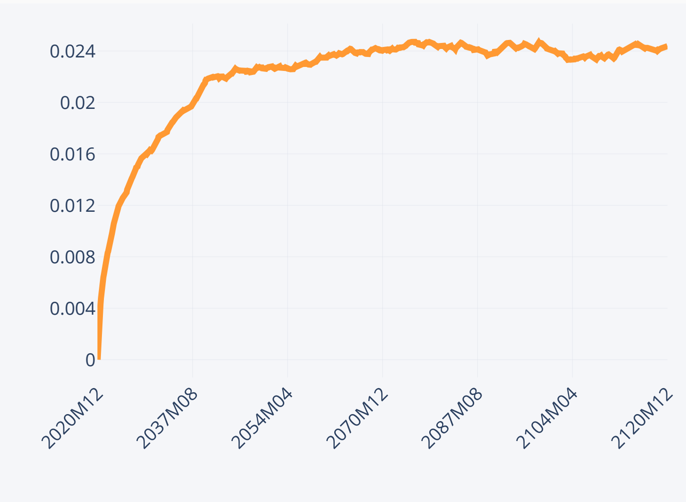


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0370	0.0514
std	0.0064	0.0227
min	0.0144	0.0040
1%	0.0235	0.0142
5%	0.0271	0.0204
10%	0.0291	0.0252
50%	0.0366	0.0482
90%	0.0453	0.0828
95%	0.0479	0.0939
99%	0.0532	0.1177
max	0.0626	0.1595

Cross Sectional Volatility Over Time : BASE



US Treasury 29 Year Yield - Spot

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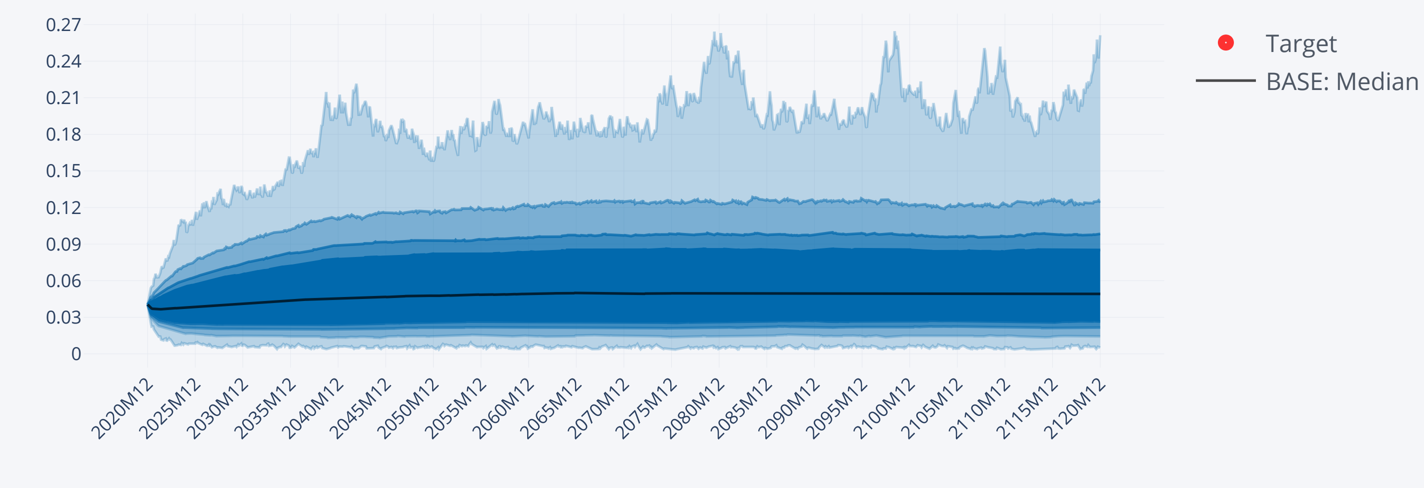
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 29 Year Yield - Spot

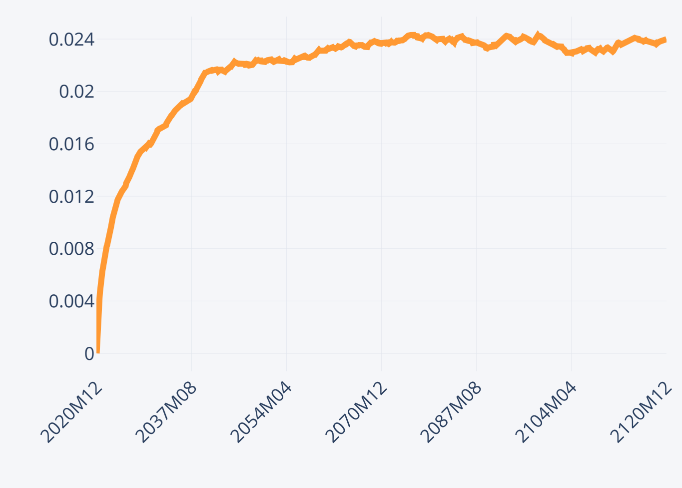


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0369	0.0512
std	0.0063	0.0224
min	0.0148	0.0046
1%	0.0237	0.0147
5%	0.0271	0.0208
10%	0.0291	0.0255
50%	0.0365	0.0481
90%	0.0451	0.0822
95%	0.0476	0.0930
99%	0.0528	0.1164
max	0.0622	0.1577

Cross Sectional Volatility Over Time : BASE



US Treasury 30 Year Yield - Spot

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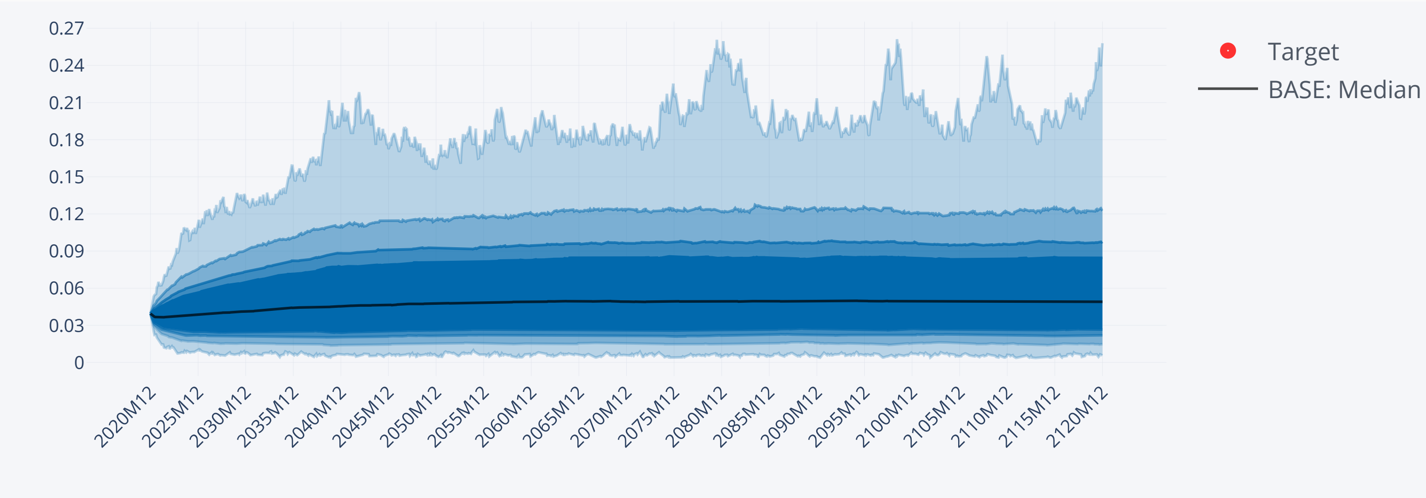
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 30 Year Yield - Spot

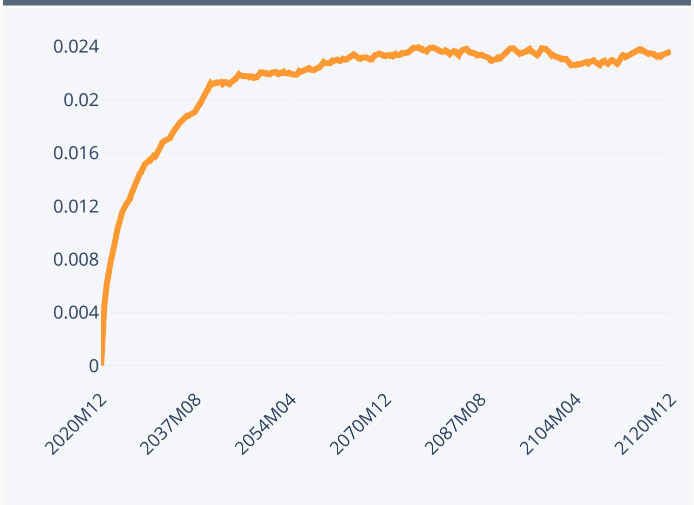


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

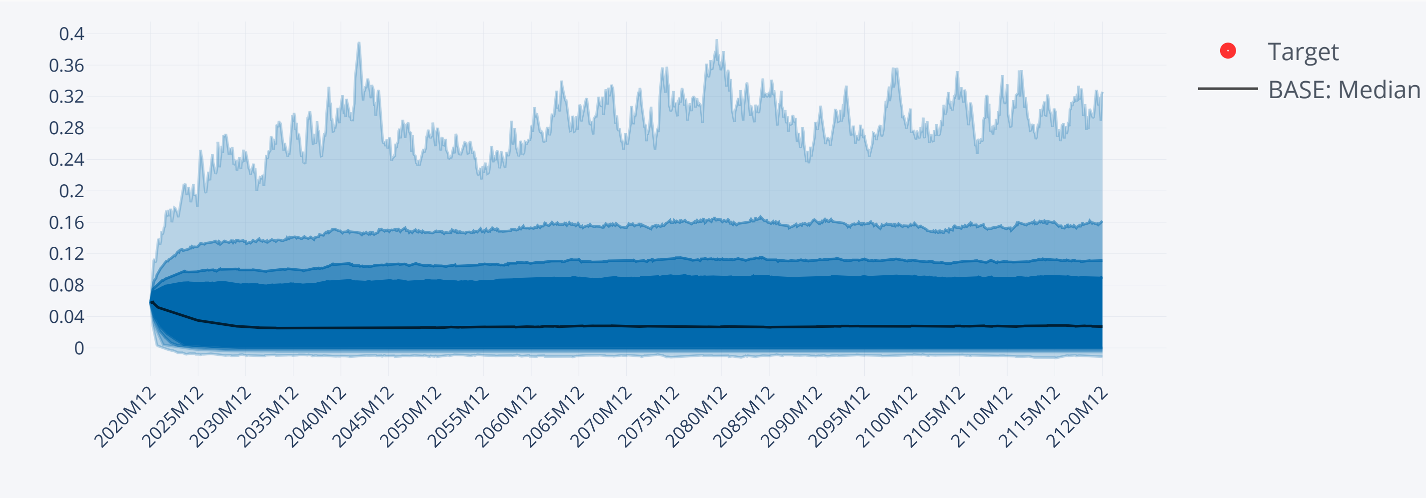
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0368	0.0511
std	0.0062	0.0220
min	0.0151	0.0053
1%	0.0238	0.0151
5%	0.0272	0.0211
10%	0.0292	0.0258
50%	0.0365	0.0480
90%	0.0448	0.0815
95%	0.0473	0.0922
99%	0.0524	0.1153
max	0.0617	0.1559

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 1 Month Yield - Coupon

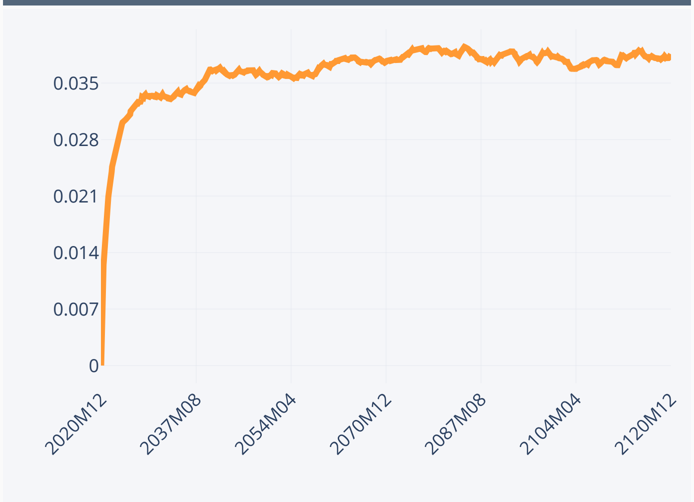


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0513	0.0350
std	0.0189	0.0362
min	0.0015	-0.0099
1%	0.0111	-0.0050
5%	0.0212	-0.0022
10%	0.0277	-0.0003
50%	0.0507	0.0257
90%	0.0759	0.0860
95%	0.0838	0.1048
99%	0.0993	0.1489
max	0.1315	0.2738

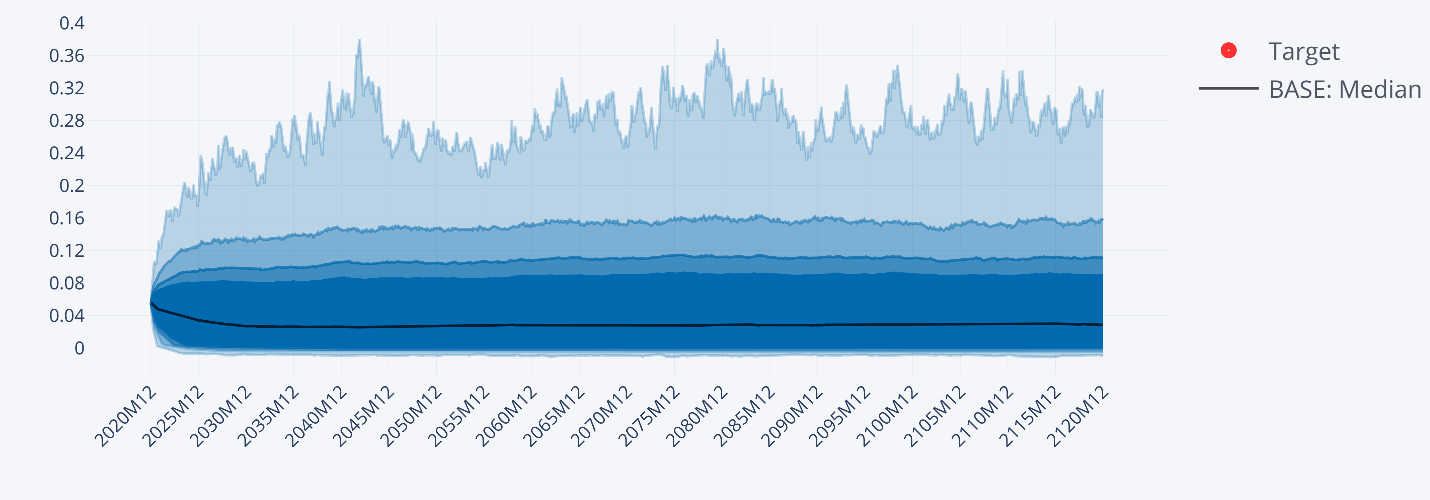
Cross Sectional Volatility Over Time : BASE



US Treasury 3 Month Yield - Coupon
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 3 Month Yield - Coupon

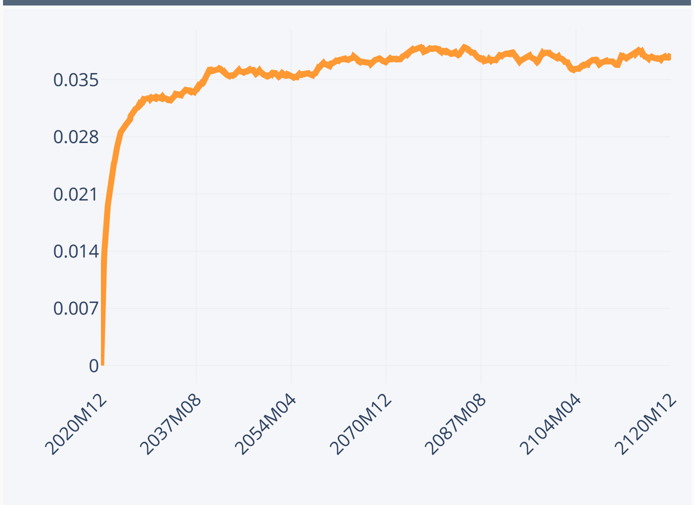


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

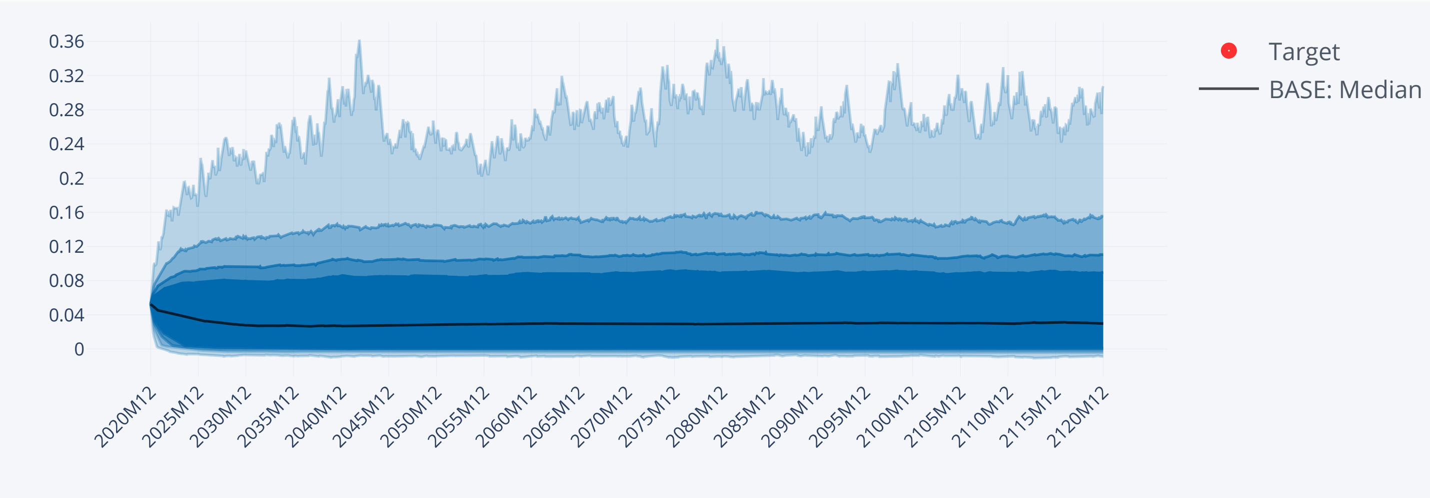
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0477	0.0358
std	0.0182	0.0358
min	0.0013	-0.0090
1%	0.0089	-0.0045
5%	0.0188	-0.0017
10%	0.0249	0.0002
50%	0.0470	0.0272
90%	0.0711	0.0860
95%	0.0788	0.1045
99%	0.0937	0.1478
max	0.1225	0.2638

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 6 Month Yield - Coupon

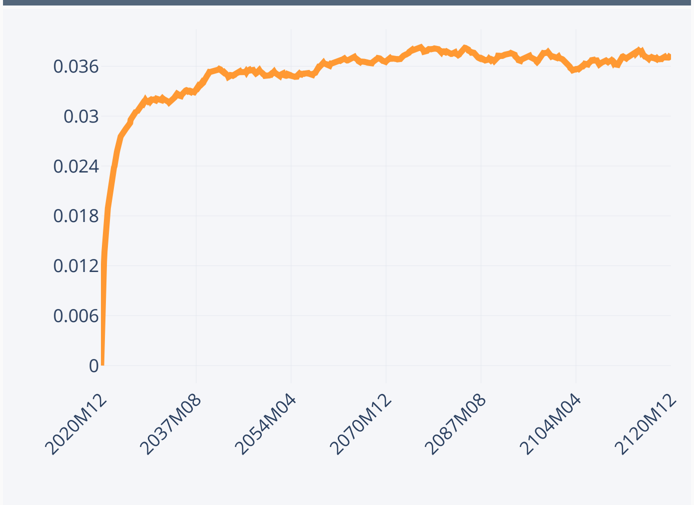


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

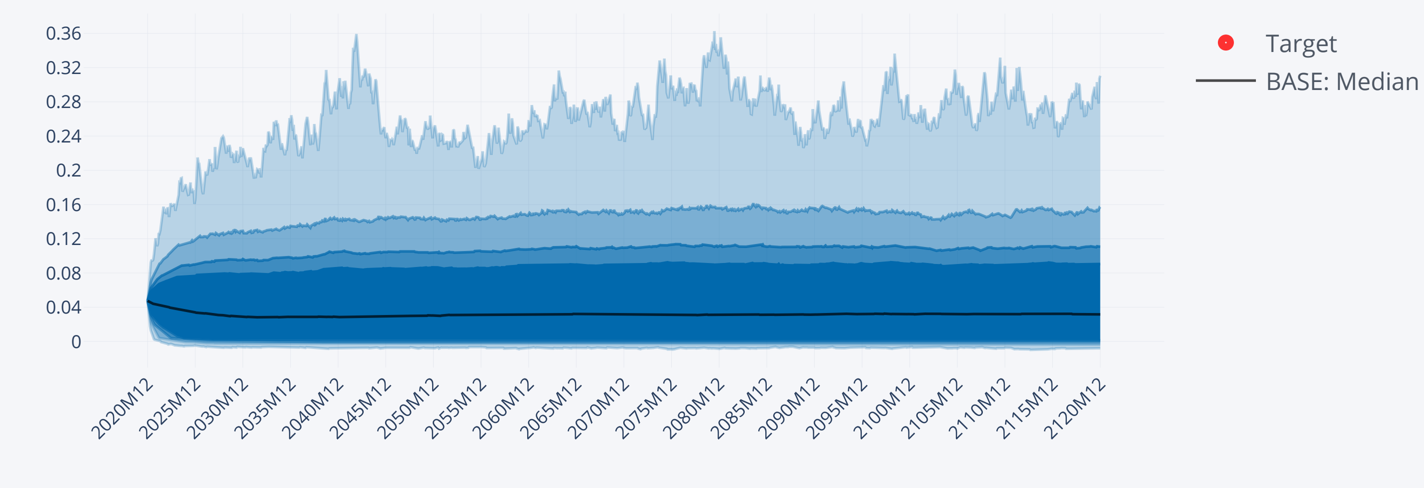
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0454	0.0364
std	0.0175	0.0352
min	0.0012	-0.0084
1%	0.0080	-0.0041
5%	0.0173	-0.0014
10%	0.0233	0.0006
50%	0.0447	0.0283
90%	0.0681	0.0857
95%	0.0751	0.1035
99%	0.0895	0.1451
max	0.1158	0.2520

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 1 Year Yield - Coupon

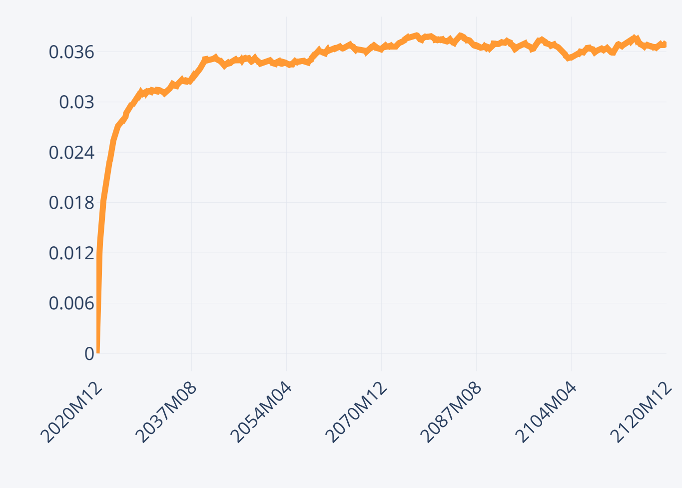


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

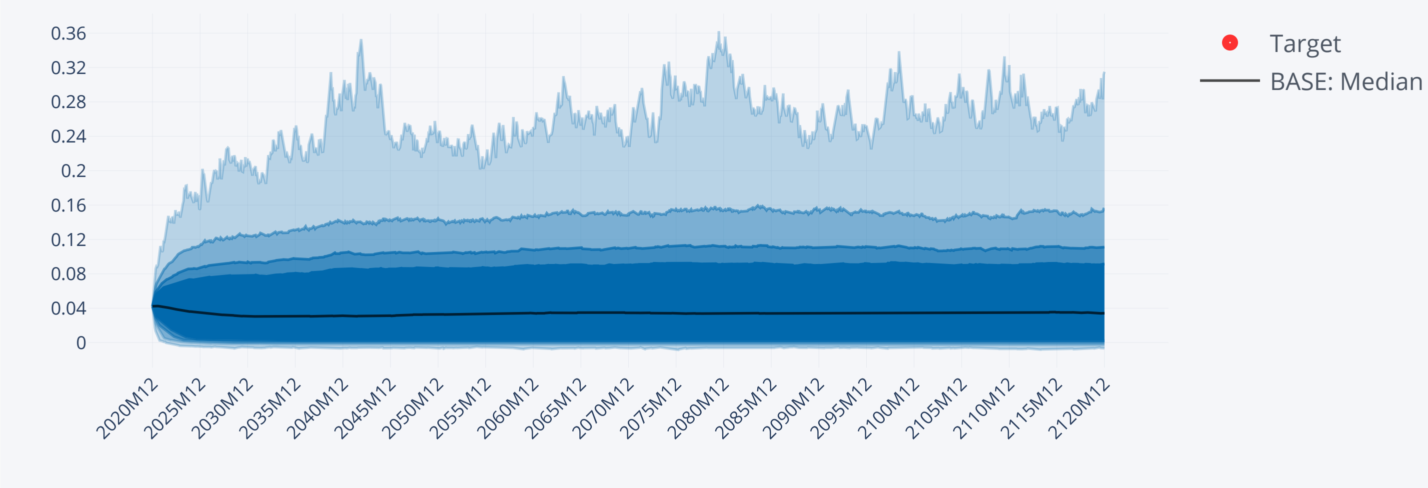
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0439	0.0375
std	0.0168	0.0349
min	0.0013	-0.0078
1%	0.0081	-0.0034
5%	0.0171	-0.0008
10%	0.0227	0.0011
50%	0.0434	0.0301
90%	0.0657	0.0862
95%	0.0724	0.1035
99%	0.0860	0.1439
max	0.1113	0.2481

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 2 Year Yield - Coupon

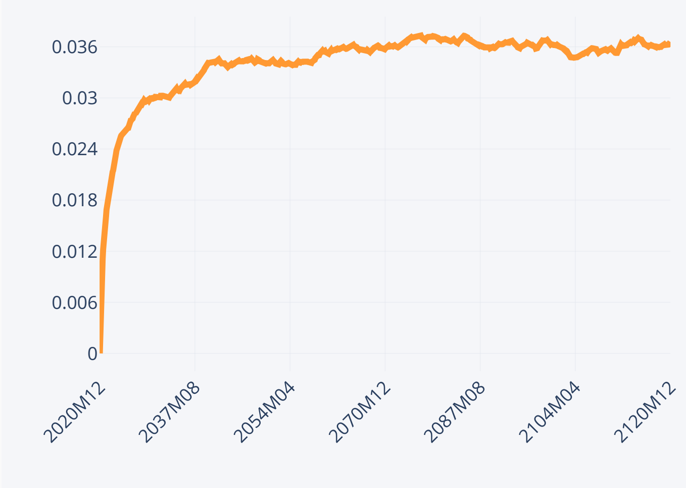


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

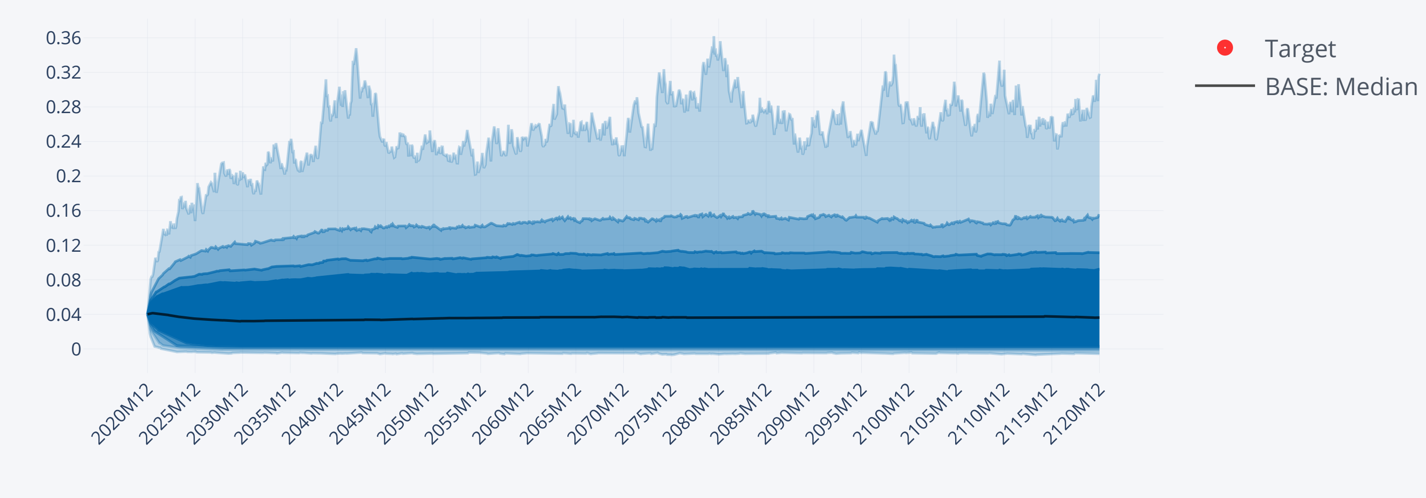
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0425	0.0394
std	0.0155	0.0342
min	0.0017	-0.0067
1%	0.0093	-0.0024
5%	0.0177	0.0002
10%	0.0229	0.0019
50%	0.0421	0.0328
90%	0.0628	0.0871
95%	0.0690	0.1033
99%	0.0813	0.1445
max	0.1055	0.2422

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 3 Year Yield - Coupon

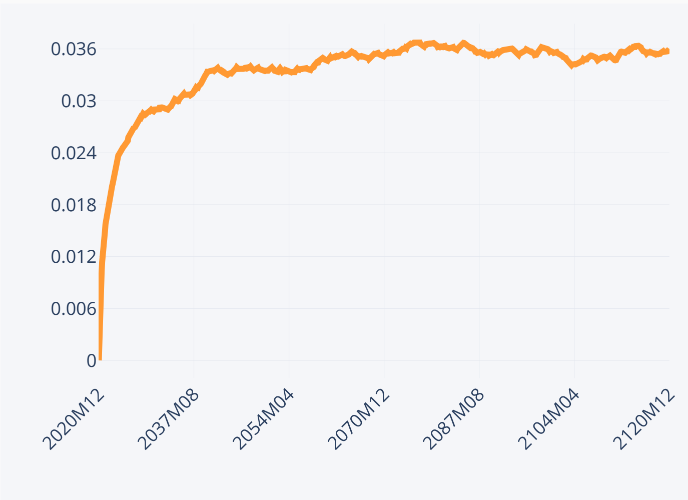


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

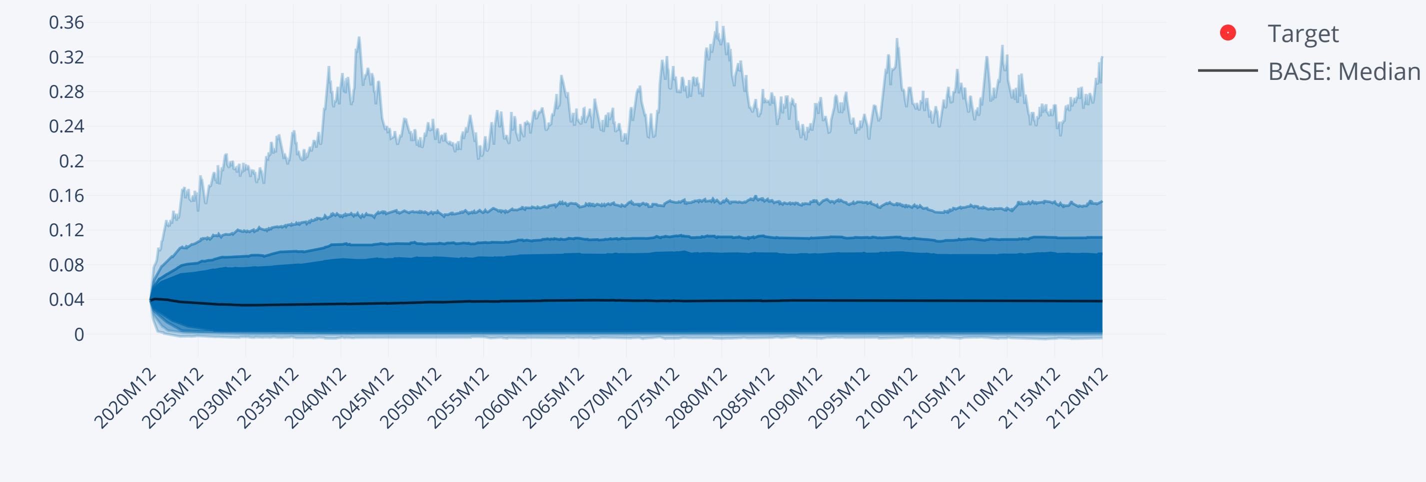
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0416	0.0410
std	0.0145	0.0337
min	0.0020	-0.0056
1%	0.0105	-0.0015
5%	0.0185	0.0009
10%	0.0234	0.0027
50%	0.0412	0.0350
90%	0.0606	0.0875
95%	0.0662	0.1043
99%	0.0778	0.1428
max	0.1009	0.2374

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 4 Year Yield - Coupon

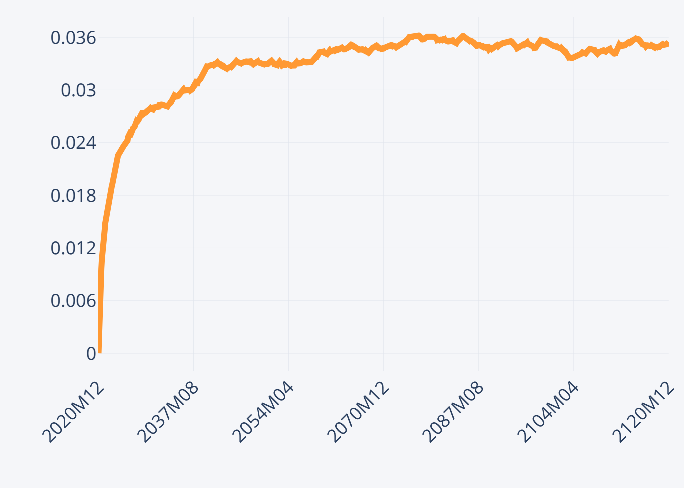


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0410	0.0425
std	0.0136	0.0331
min	0.0024	-0.0046
1%	0.0118	-0.0007
5%	0.0193	0.0016
10%	0.0240	0.0033
50%	0.0406	0.0370
90%	0.0588	0.0882
95%	0.0640	0.1041
99%	0.0749	0.1404
max	0.0969	0.2334

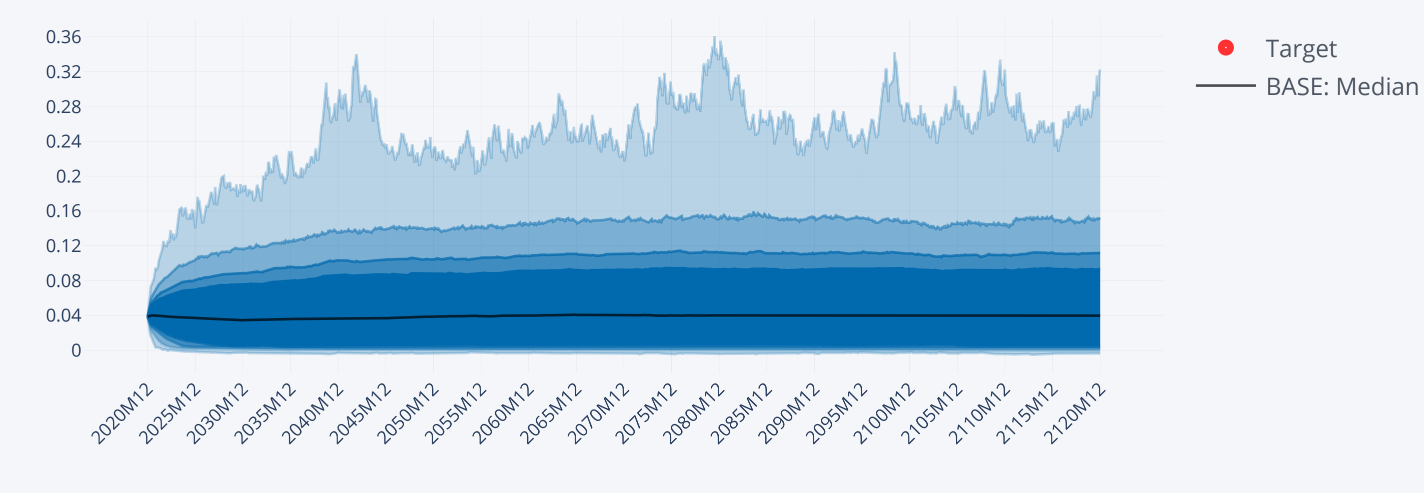
Cross Sectional Volatility Over Time : BASE



US Treasury 5 Year Yield - Coupon
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 5 Year Yield - Coupon

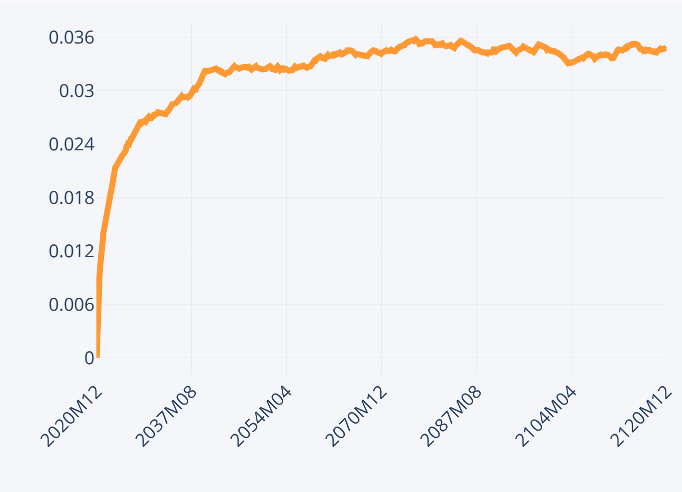


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

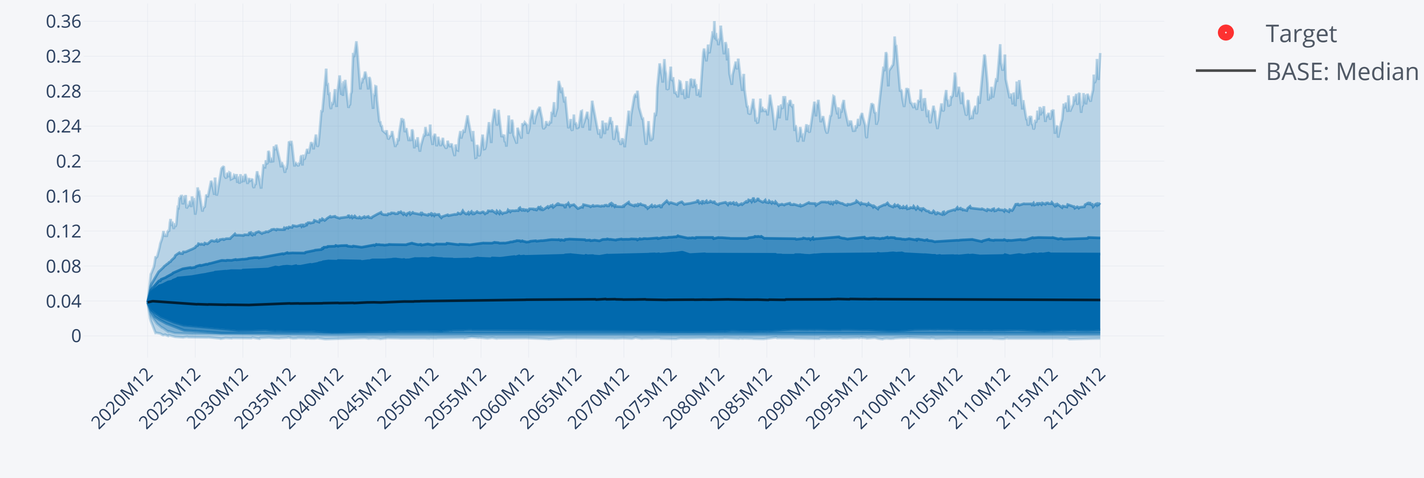
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0405	0.0438
std	0.0129	0.0326
min	0.0027	-0.0038
1%	0.0130	0.0000
5%	0.0200	0.0022
10%	0.0244	0.0039
50%	0.0402	0.0386
90%	0.0573	0.0885
95%	0.0622	0.1040
99%	0.0727	0.1391
max	0.0936	0.2300

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 6 Year Yield - Coupon

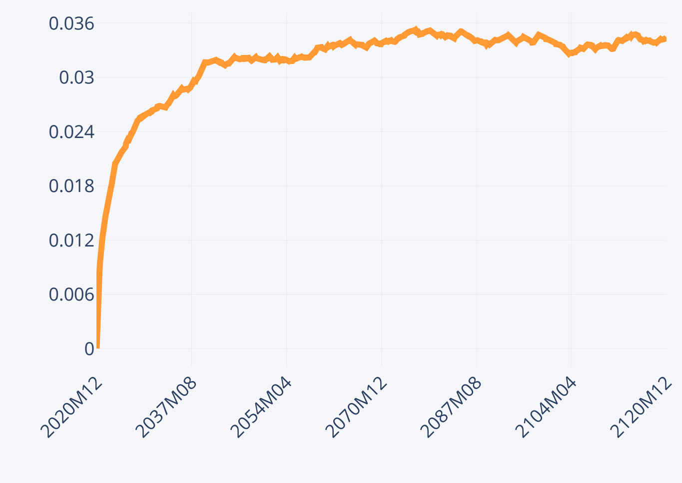


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0400	0.0449
std	0.0122	0.0321
min	0.0029	-0.0030
1%	0.0139	0.0007
5%	0.0207	0.0028
10%	0.0248	0.0057
50%	0.0397	0.0400
90%	0.0559	0.0889
95%	0.0607	0.1040
99%	0.0706	0.1388
max	0.0907	0.2272

Cross Sectional Volatility Over Time : BASE



US Treasury 7 Year Yield - Coupon
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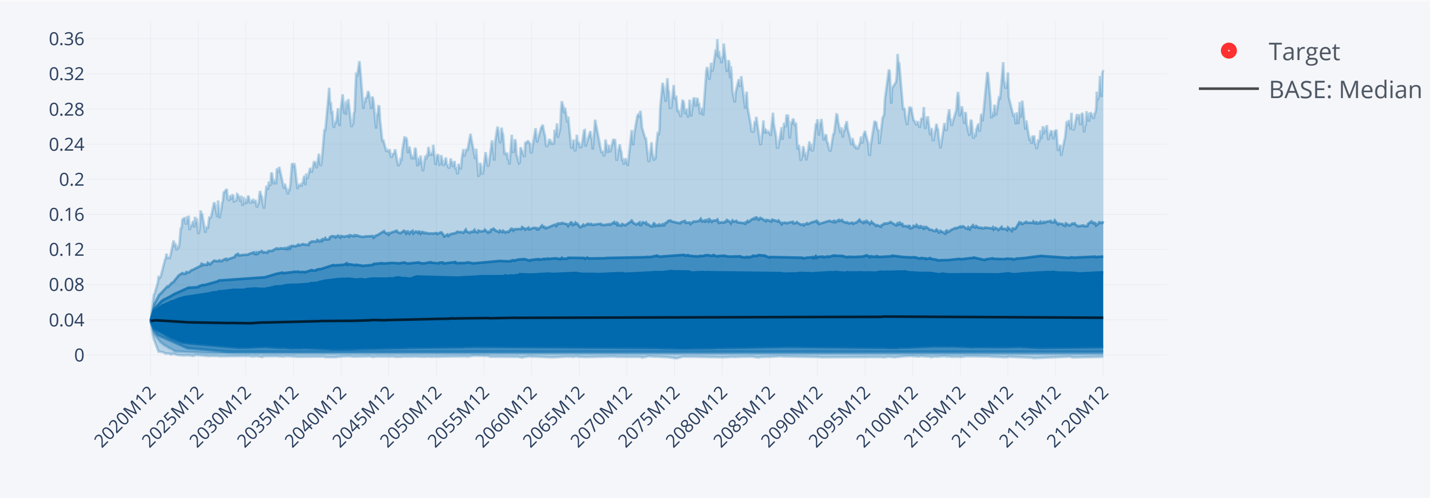
Simulated Data in Percentiles : US Treasury 7 Year Yield - Coupon

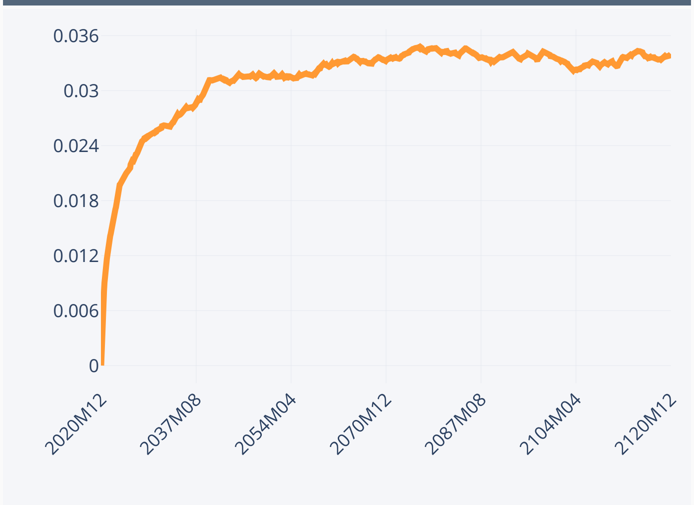


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0397	0.0459
std	0.0117	0.0317
min	0.0032	-0.0024
1%	0.0148	0.0012
5%	0.0212	0.0033
10%	0.0252	0.0078
50%	0.0393	0.0411
90%	0.0549	0.0894
95%	0.0593	0.1041
99%	0.0691	0.1388
max	0.0882	0.2247

Cross Sectional Volatility Over Time : BASE



US Treasury 8 Year Yield - Coupon
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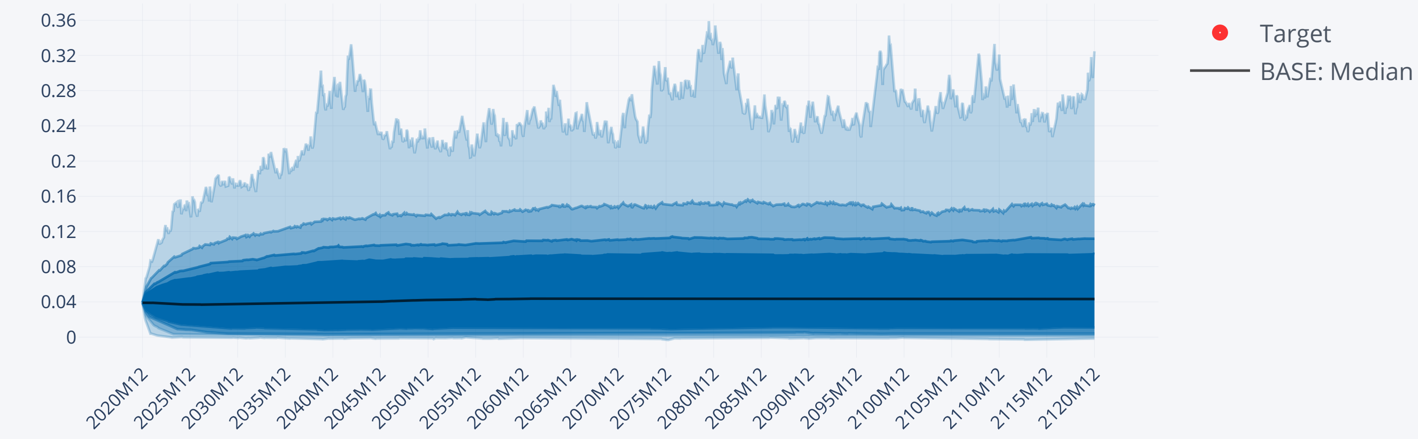
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 8 Year Yield - Coupon

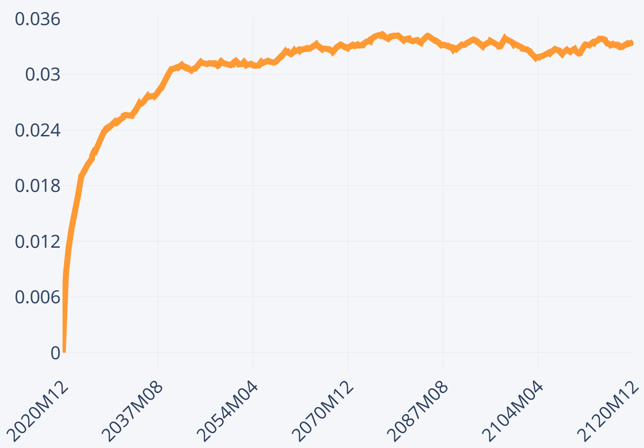


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0394	0.0468
std	0.0112	0.0312
min	0.0034	-0.0017
1%	0.0156	0.0017
5%	0.0218	0.0037
10%	0.0255	0.0097
50%	0.0389	0.0421
90%	0.0540	0.0898
95%	0.0582	0.1045
99%	0.0676	0.1385
max	0.0859	0.2226

Cross Sectional Volatility Over Time : BASE



US Treasury 9 Year Yield - Coupon
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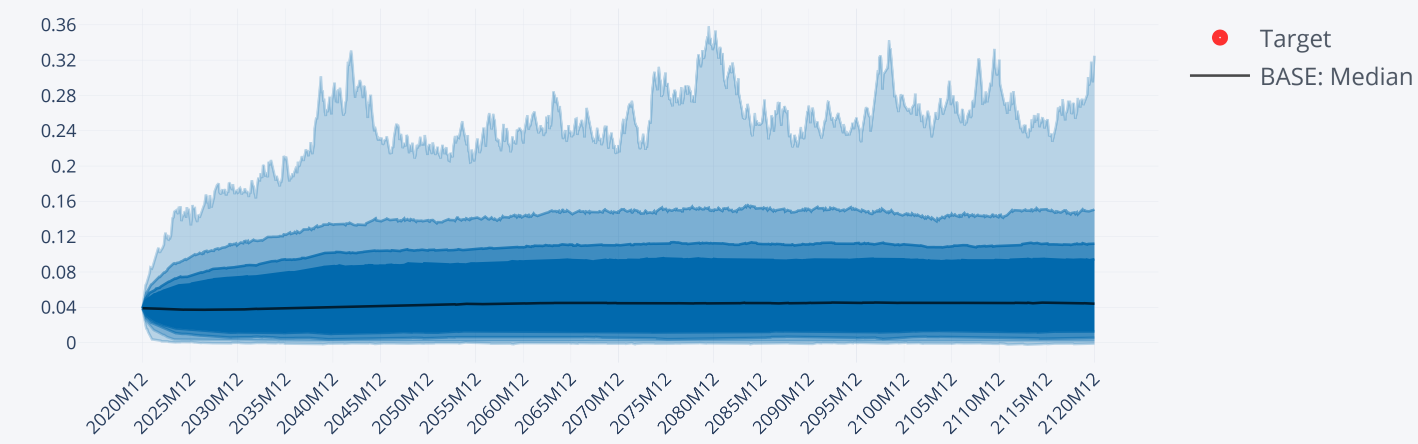
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 9 Year Yield - Coupon

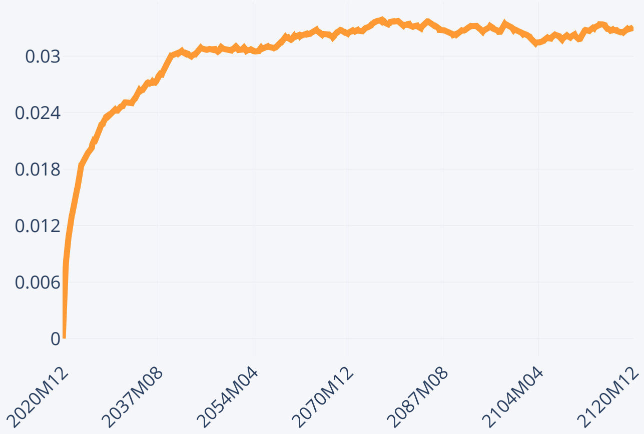


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0391	0.0476
std	0.0108	0.0308
min	0.0036	-0.0012
1%	0.0164	0.0022
5%	0.0223	0.0045
10%	0.0258	0.0114
50%	0.0387	0.0430
90%	0.0532	0.0900
95%	0.0572	0.1043
99%	0.0662	0.1387
max	0.0840	0.2208

Cross Sectional Volatility Over Time : BASE



US Treasury 10 Year Yield - Coupon
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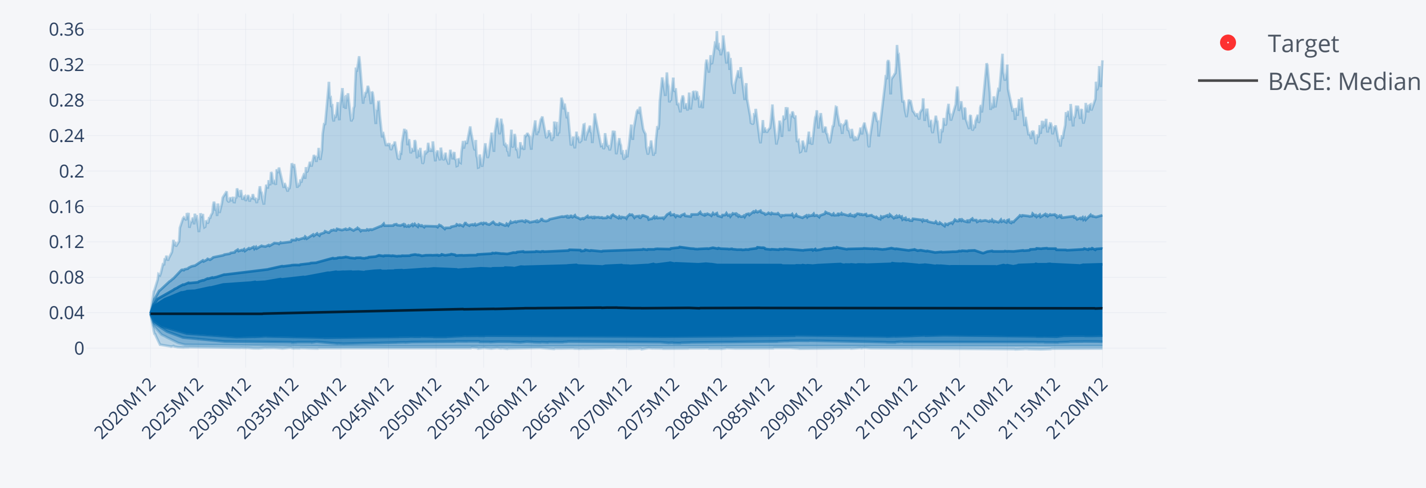
Simulated Data in Percentiles : US Treasury 10 Year Yield - Coupon

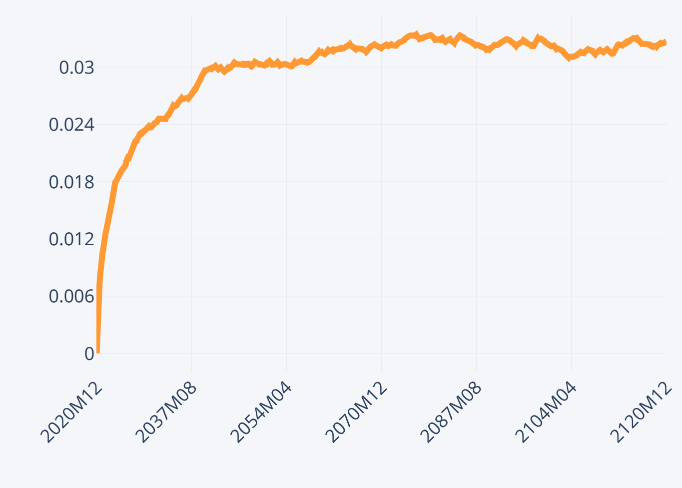


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0389	0.0483
std	0.0104	0.0304
min	0.0038	-0.0007
1%	0.0171	0.0026
5%	0.0227	0.0061
10%	0.0261	0.0128
50%	0.0385	0.0439
90%	0.0525	0.0902
95%	0.0565	0.1044
99%	0.0653	0.1380
max	0.0823	0.2192

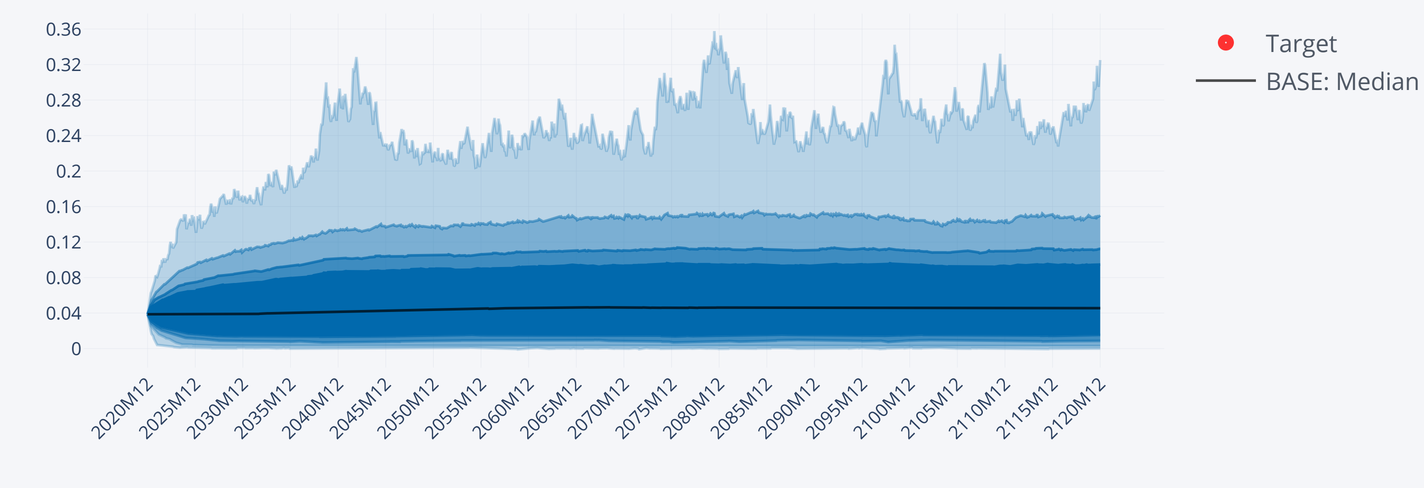
Cross Sectional Volatility Over Time : BASE



US Treasury 11 Year Yield - Coupon
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 11 Year Yield - Coupon

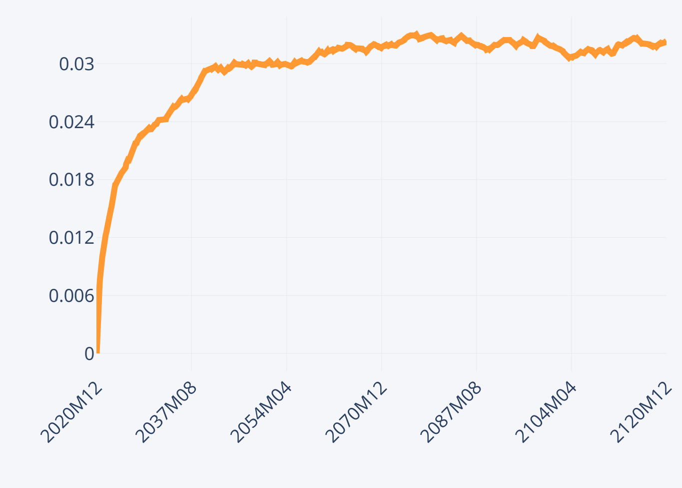


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0387	0.0489
std	0.0101	0.0301
min	0.0040	-0.0002
1%	0.0177	0.0029
5%	0.0230	0.0075
10%	0.0263	0.0141
50%	0.0383	0.0446
90%	0.0519	0.0902
95%	0.0559	0.1045
99%	0.0643	0.1373
max	0.0807	0.2178

Cross Sectional Volatility Over Time : BASE



US Treasury 12 Year Yield - Coupon

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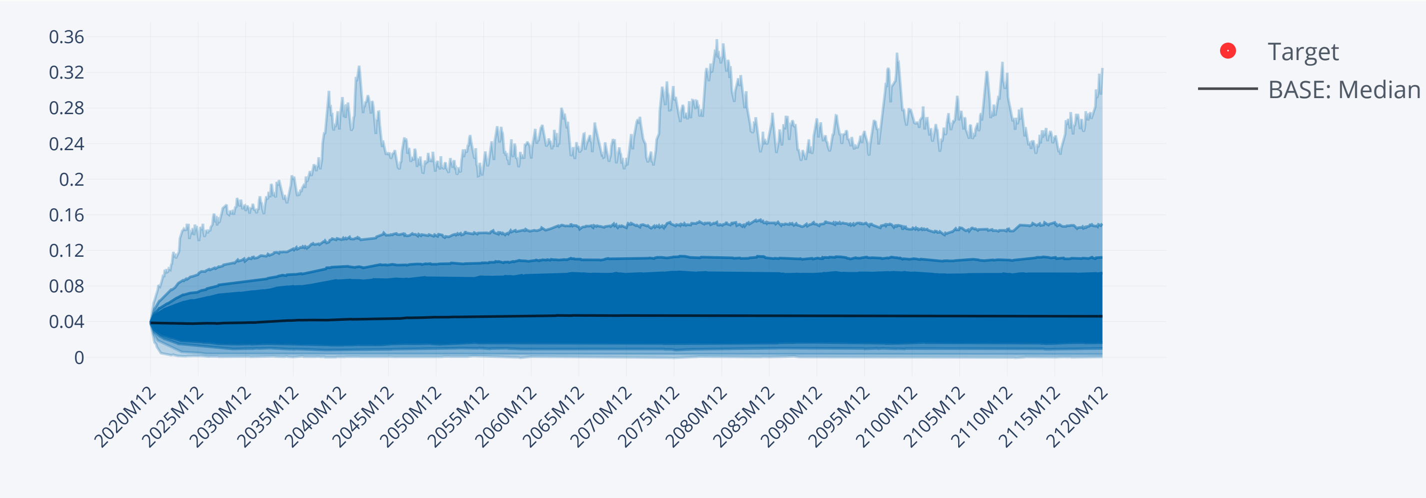
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 12 Year Yield - Coupon

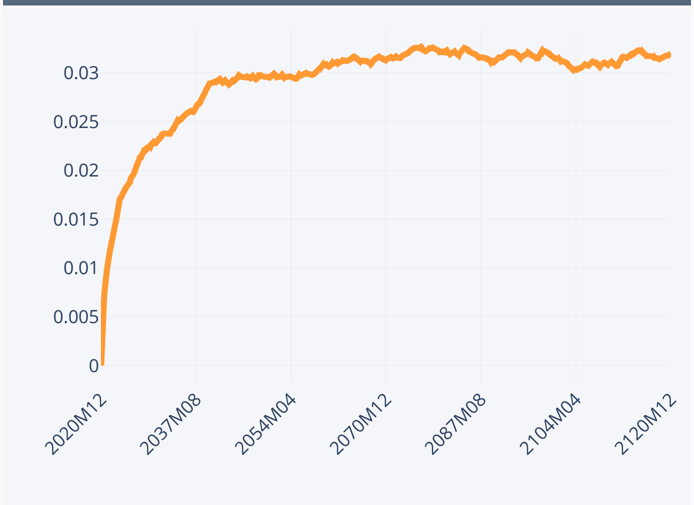


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0386	0.0495
std	0.0098	0.0297
min	0.0049	0.0002
1%	0.0182	0.0033
5%	0.0234	0.0088
10%	0.0266	0.0153
50%	0.0382	0.0450
90%	0.0515	0.0902
95%	0.0552	0.1044
99%	0.0635	0.1374
max	0.0794	0.2166

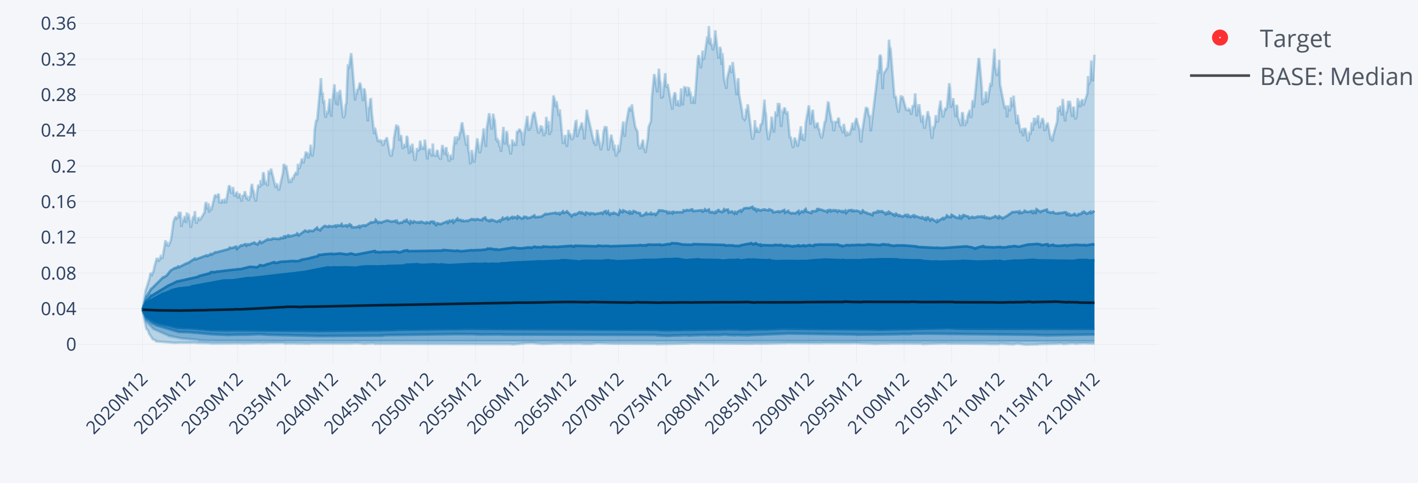
Cross Sectional Volatility Over Time : BASE



US Treasury 13 Year Yield - Coupon
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 13 Year Yield - Coupon

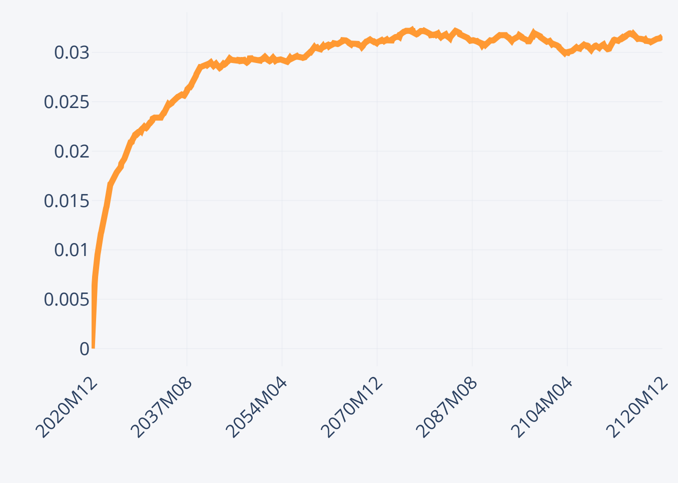


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

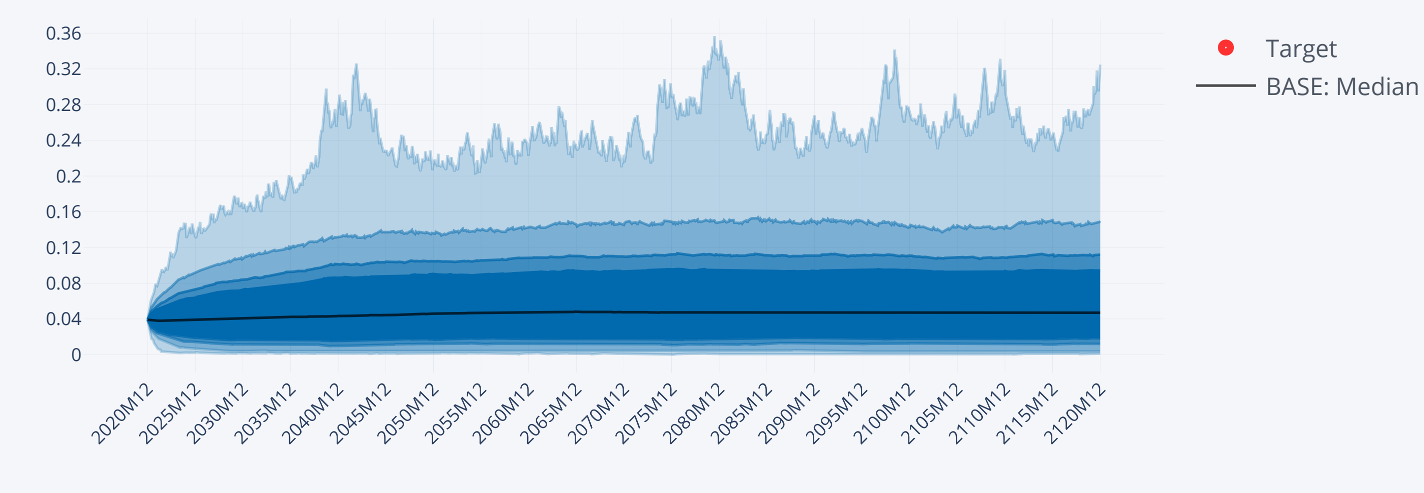
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0385	0.0499
std	0.0095	0.0294
min	0.0057	0.0006
1%	0.0187	0.0036
5%	0.0237	0.0100
10%	0.0268	0.0162
50%	0.0380	0.0455
90%	0.0510	0.0901
95%	0.0547	0.1044
99%	0.0628	0.1370
max	0.0782	0.2155

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 14 Year Yield - Coupon

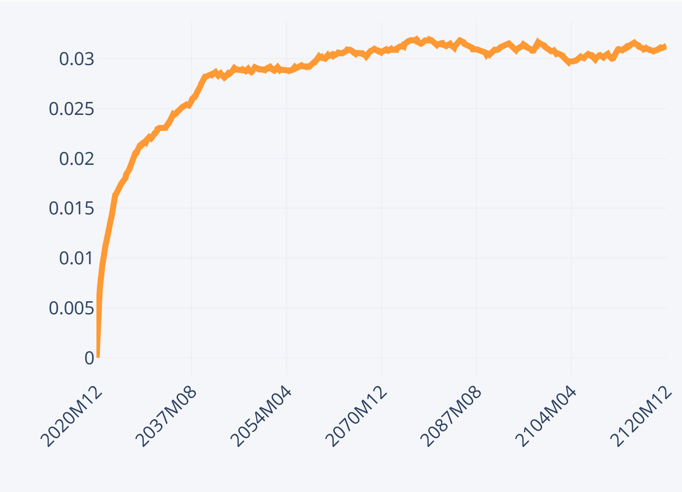


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0384	0.0503
std	0.0093	0.0291
min	0.0064	0.0009
1%	0.0191	0.0038
5%	0.0240	0.0110
10%	0.0270	0.0171
50%	0.0379	0.0459
90%	0.0506	0.0901
95%	0.0543	0.1042
99%	0.0622	0.1364
max	0.0771	0.2145

Cross Sectional Volatility Over Time : BASE

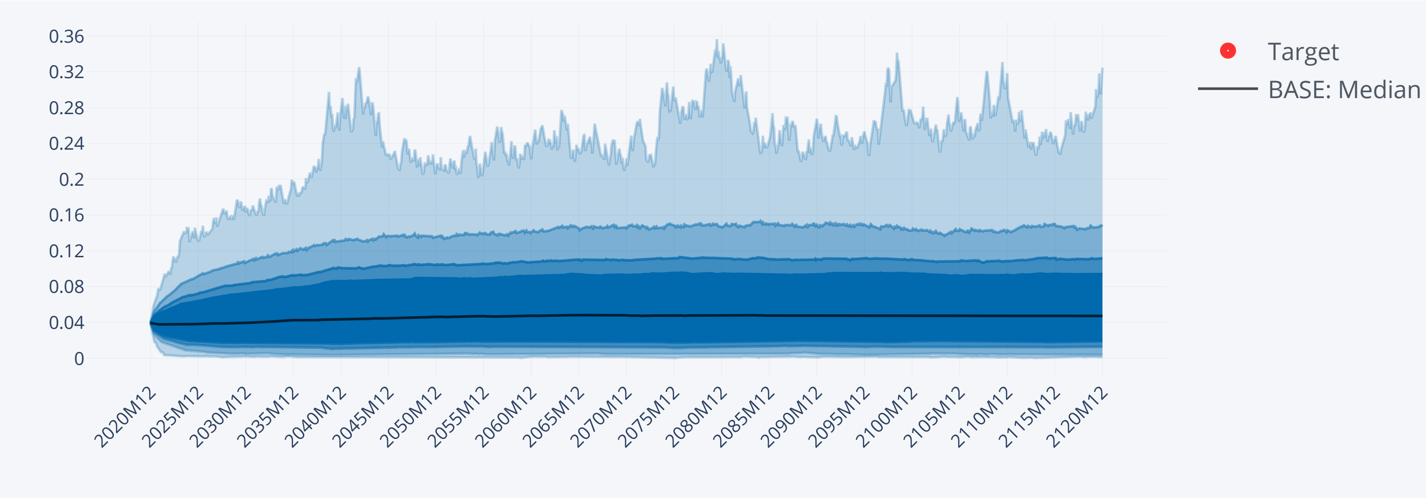


US Treasury 15 Year Yield - Coupon

Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 15 Year Yield - Coupon

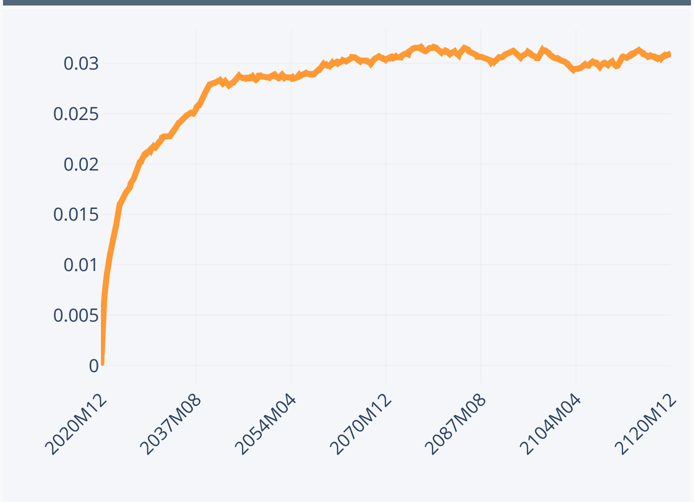


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

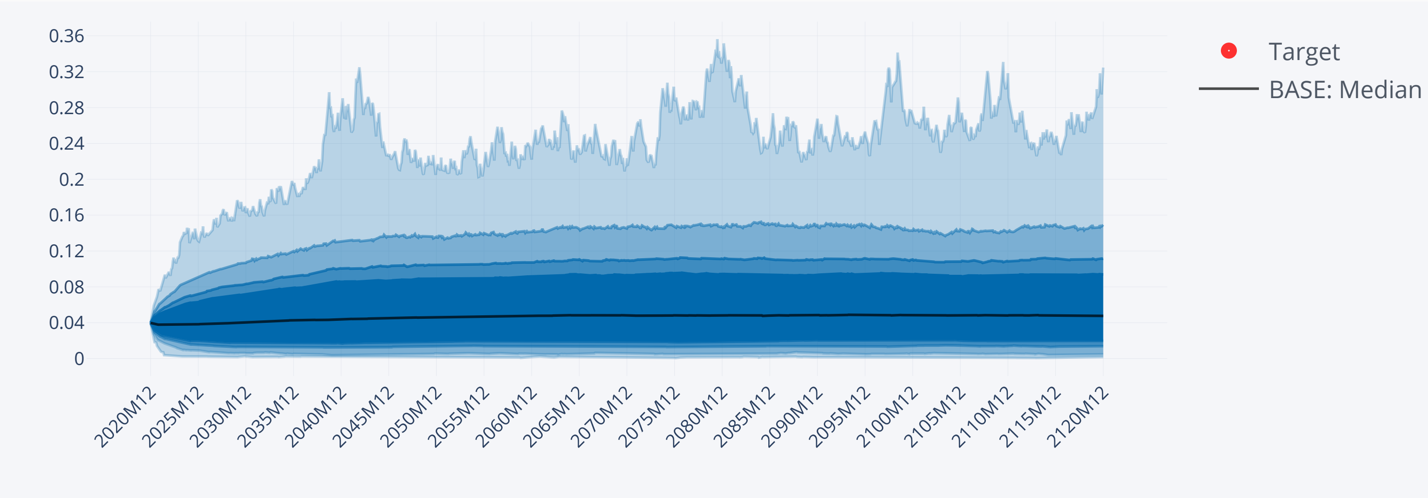
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0383	0.0506
std	0.0091	0.0288
min	0.0072	0.0013
1%	0.0195	0.0044
5%	0.0243	0.0120
10%	0.0272	0.0179
50%	0.0379	0.0462
90%	0.0503	0.0900
95%	0.0539	0.1041
99%	0.0618	0.1359
max	0.0761	0.2136

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 16 Year Yield - Coupon

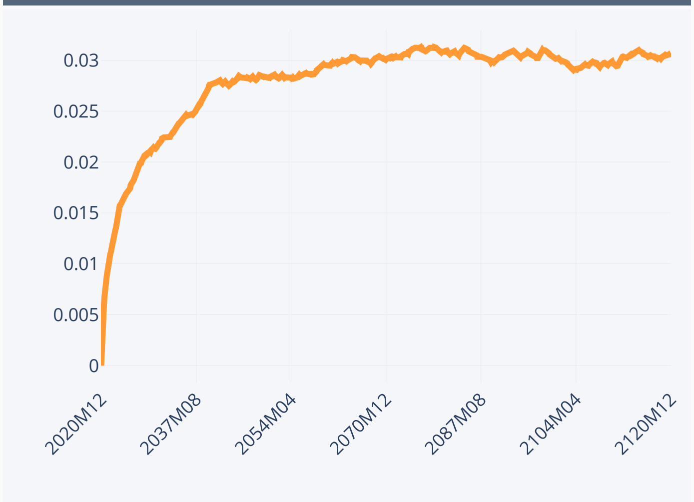


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0383	0.0509
std	0.0089	0.0285
min	0.0079	0.0016
1%	0.0199	0.0055
5%	0.0246	0.0129
10%	0.0273	0.0186
50%	0.0379	0.0465
90%	0.0500	0.0899
95%	0.0536	0.1040
99%	0.0614	0.1359
max	0.0752	0.2128

Cross Sectional Volatility Over Time : BASE



US Treasury 17 Year Yield - Coupon

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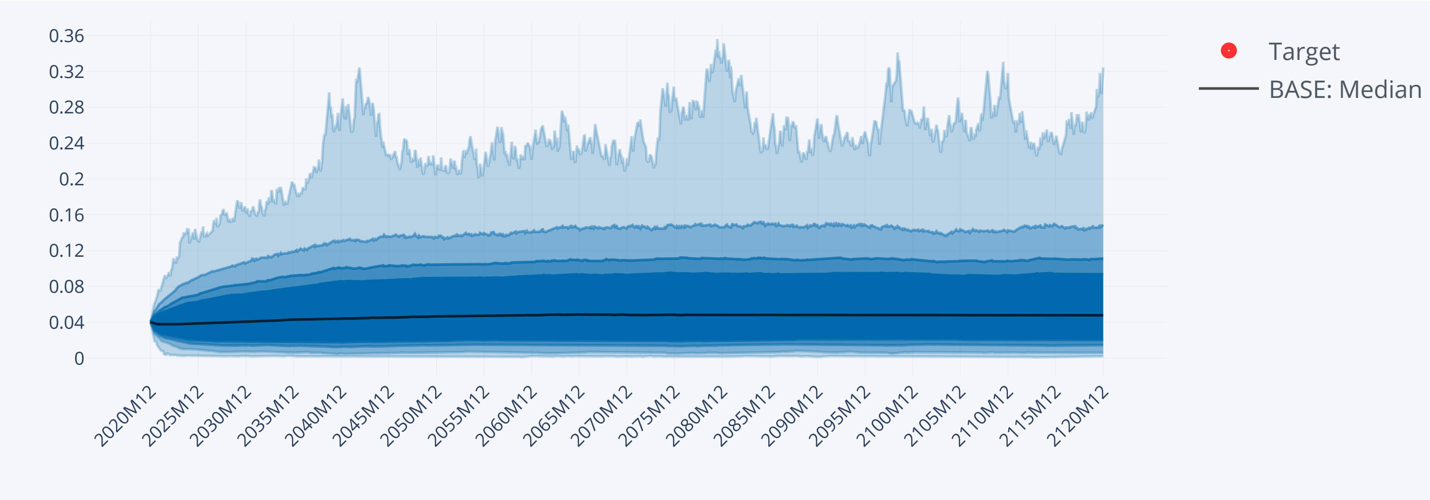
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 17 Year Yield - Coupon

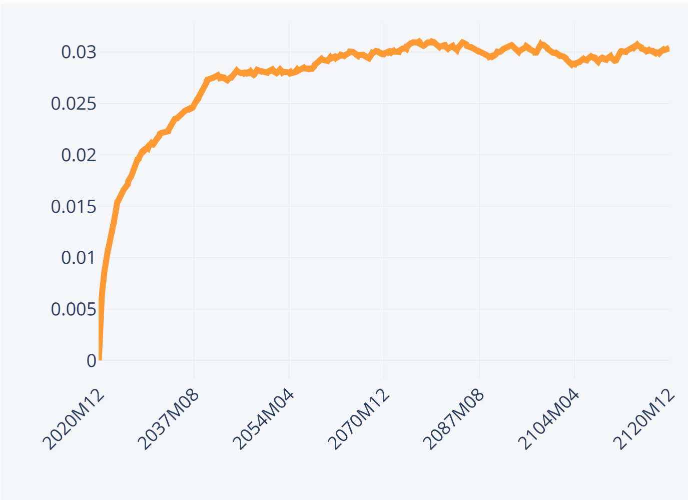


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0383	0.0512
std	0.0087	0.0282
min	0.0085	0.0018
1%	0.0202	0.0064
5%	0.0248	0.0137
10%	0.0275	0.0193
50%	0.0378	0.0468
90%	0.0498	0.0897
95%	0.0533	0.1038
99%	0.0610	0.1359
max	0.0744	0.2121

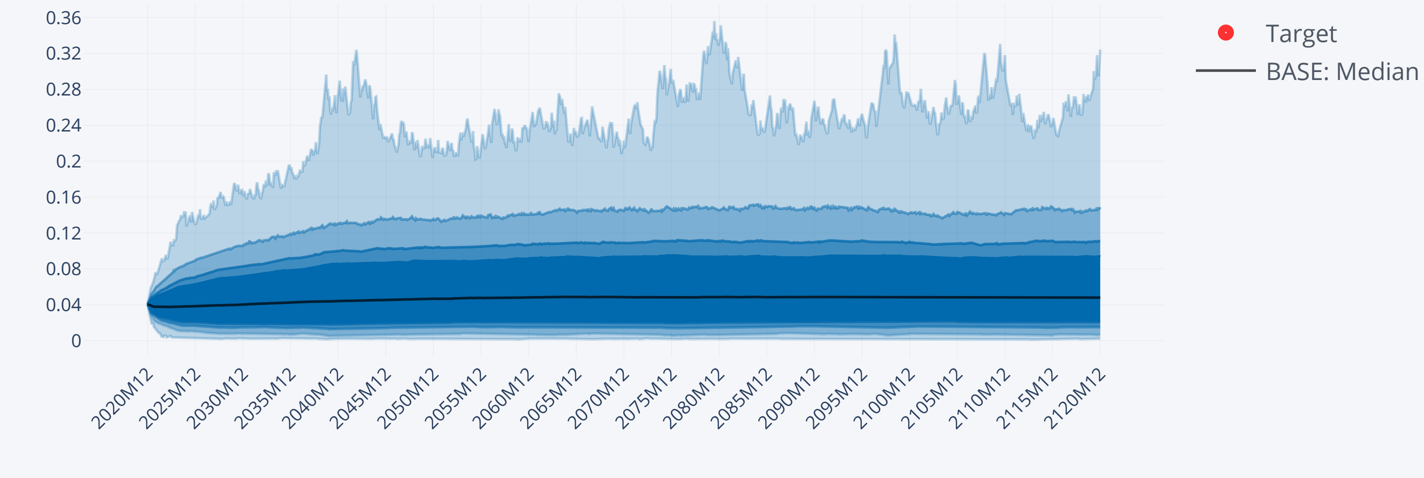
Cross Sectional Volatility Over Time : BASE



US Treasury 18 Year Yield - Coupon
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 18 Year Yield - Coupon

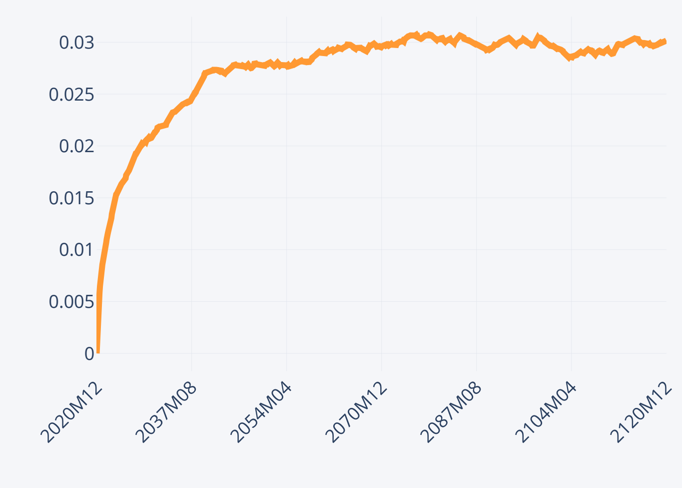


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0382	0.0514
std	0.0086	0.0279
min	0.0091	0.0021
1%	0.0206	0.0073
5%	0.0251	0.0143
10%	0.0277	0.0199
50%	0.0378	0.0469
90%	0.0496	0.0896
95%	0.0530	0.1036
99%	0.0605	0.1356
max	0.0737	0.2114

Cross Sectional Volatility Over Time : BASE



US Treasury 19 Year Yield - Coupon

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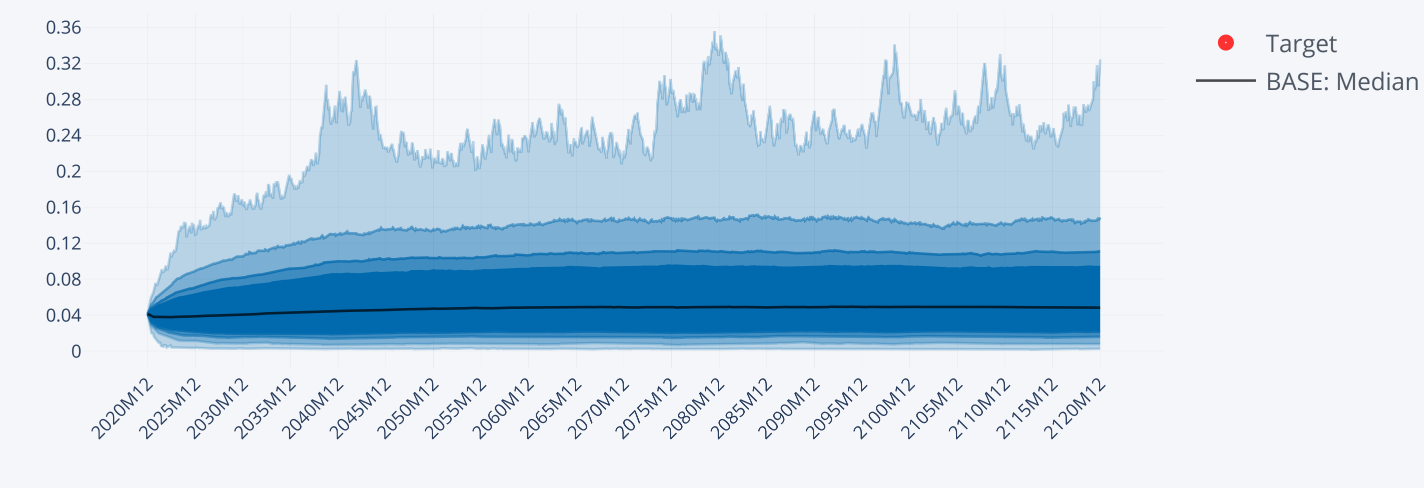
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 19 Year Yield - Coupon

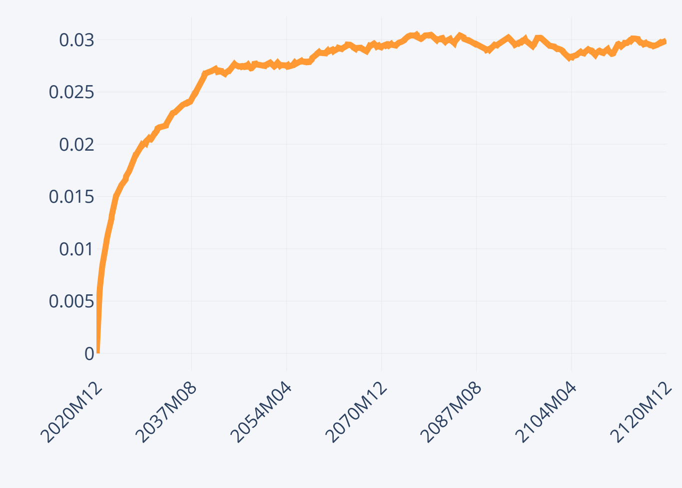


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0382	0.0515
std	0.0084	0.0277
min	0.0097	0.0023
1%	0.0208	0.0081
5%	0.0253	0.0150
10%	0.0279	0.0205
50%	0.0378	0.0471
90%	0.0494	0.0894
95%	0.0528	0.1033
99%	0.0601	0.1353
max	0.0730	0.2108

Cross Sectional Volatility Over Time : BASE



US Treasury 20 Year Yield - Coupon
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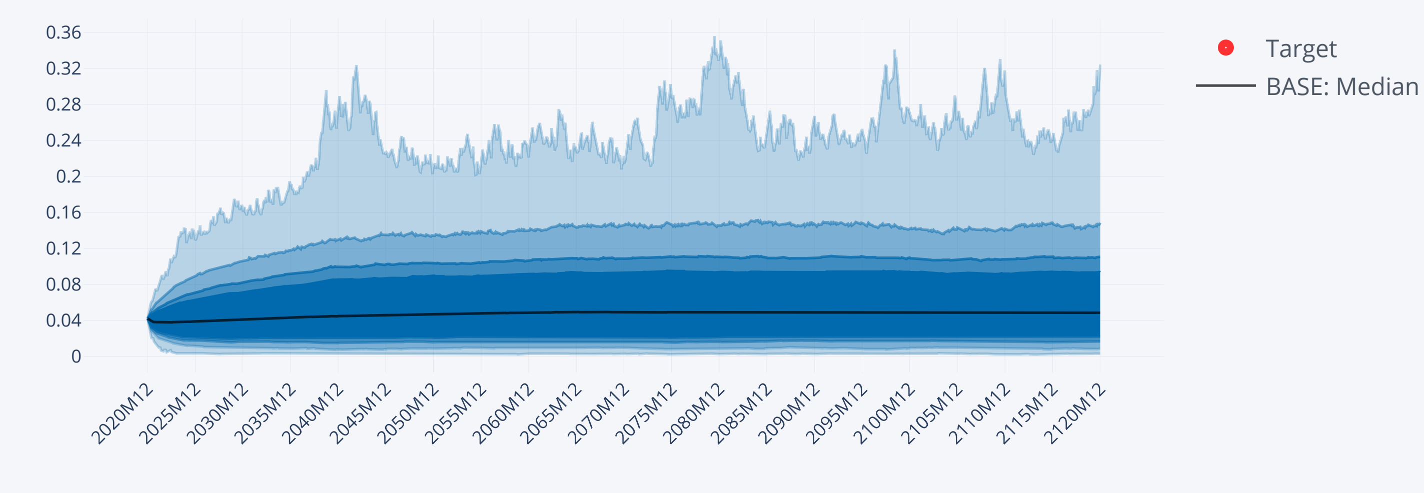
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 20 Year Yield - Coupon

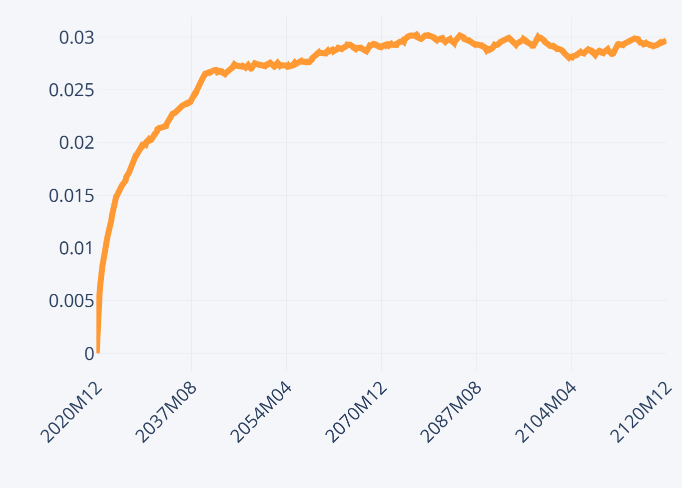


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0382	0.0517
std	0.0083	0.0274
min	0.0103	0.0025
1%	0.0211	0.0089
5%	0.0255	0.0156
10%	0.0281	0.0209
50%	0.0377	0.0473
90%	0.0492	0.0892
95%	0.0526	0.1030
99%	0.0598	0.1349
max	0.0724	0.2103

Cross Sectional Volatility Over Time : BASE



US Treasury 21 Year Yield - Coupon

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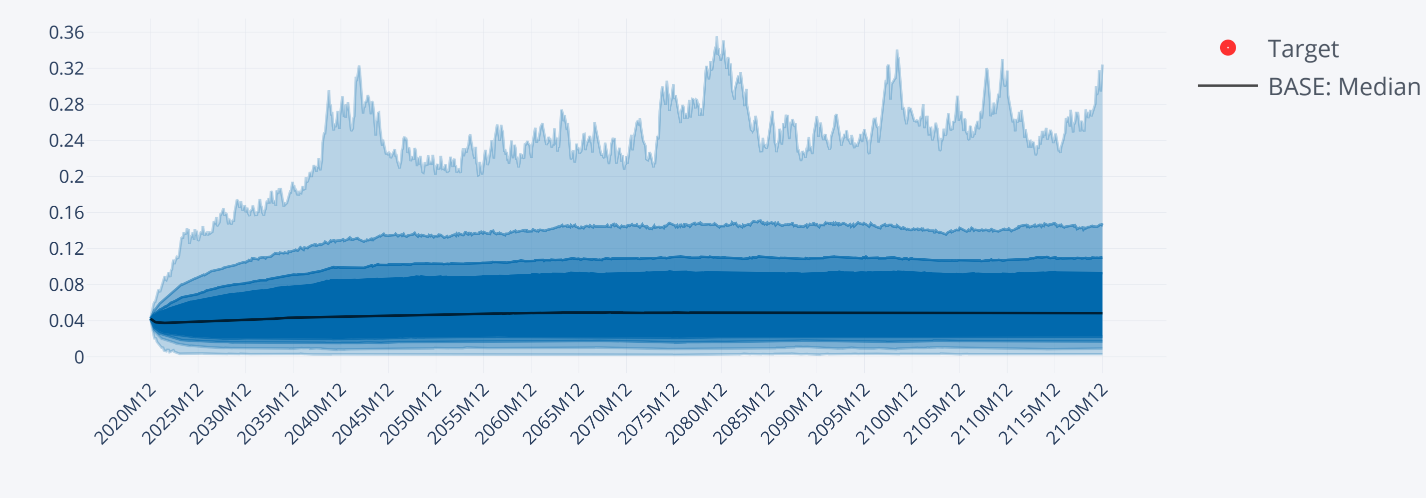
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 21 Year Yield - Coupon

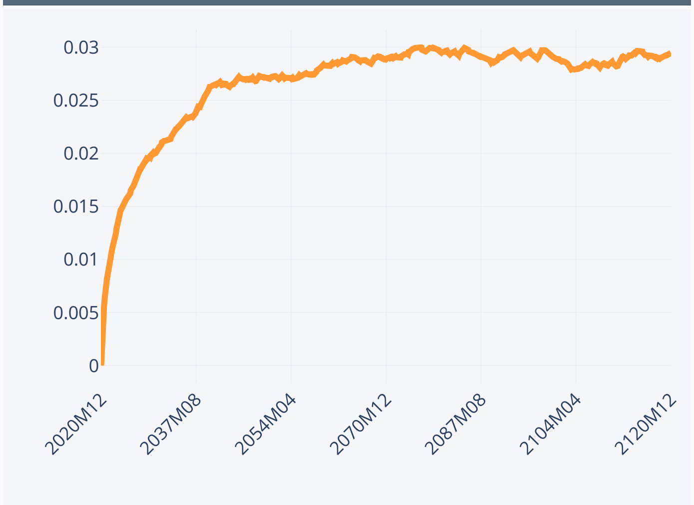


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

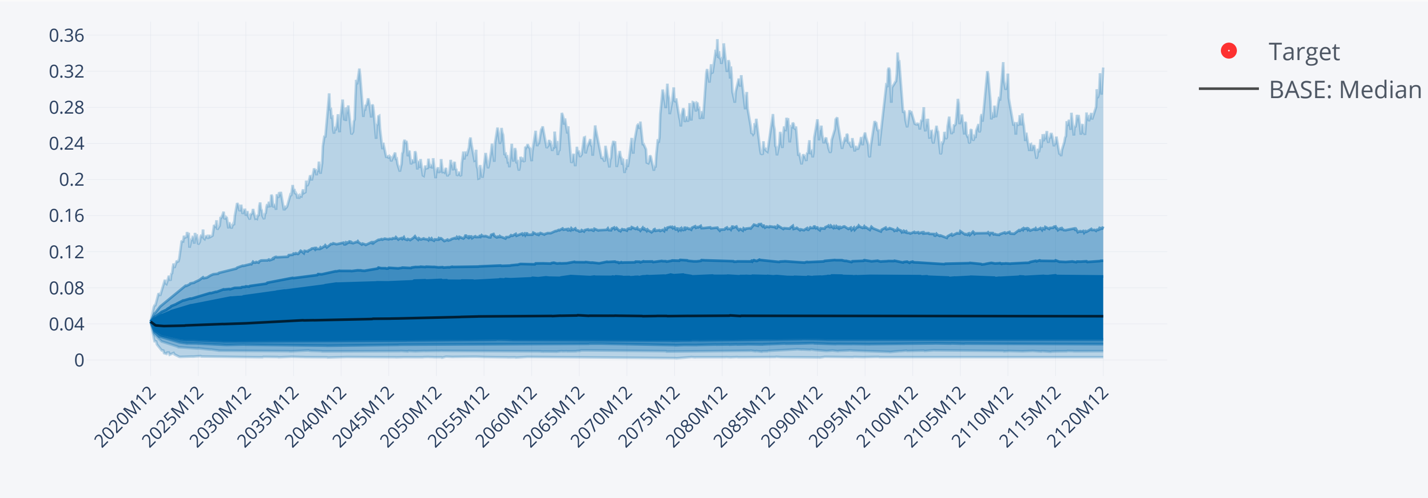
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0382	0.0518
std	0.0082	0.0272
min	0.0108	0.0027
1%	0.0214	0.0096
5%	0.0257	0.0160
10%	0.0282	0.0214
50%	0.0377	0.0474
90%	0.0490	0.0891
95%	0.0524	0.1028
99%	0.0595	0.1345
max	0.0718	0.2098

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 22 Year Yield - Coupon

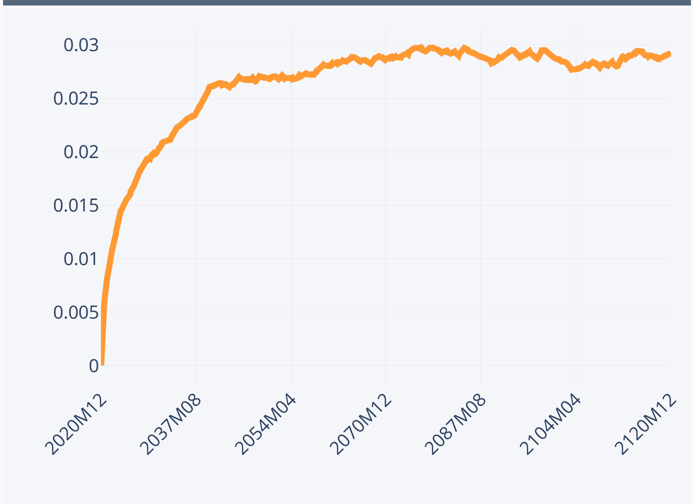


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0382	0.0519
std	0.0080	0.0270
min	0.0113	0.0029
1%	0.0216	0.0102
5%	0.0259	0.0166
10%	0.0283	0.0218
50%	0.0377	0.0475
90%	0.0488	0.0890
95%	0.0521	0.1026
99%	0.0591	0.1341
max	0.0713	0.2093

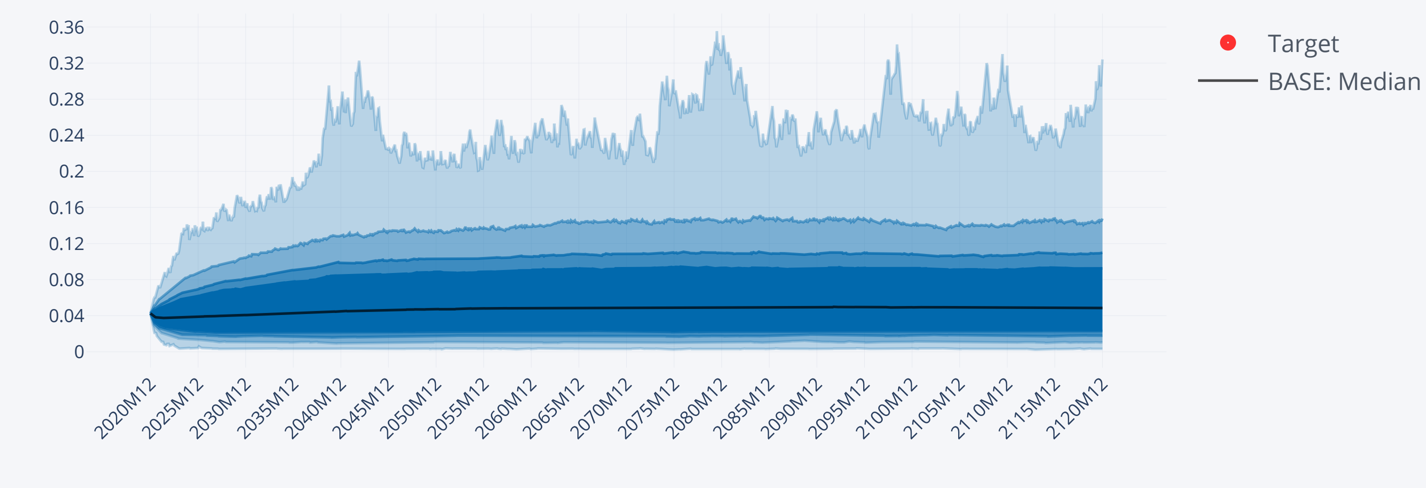
Cross Sectional Volatility Over Time : BASE



US Treasury 23 Year Yield - Coupon
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 23 Year Yield - Coupon

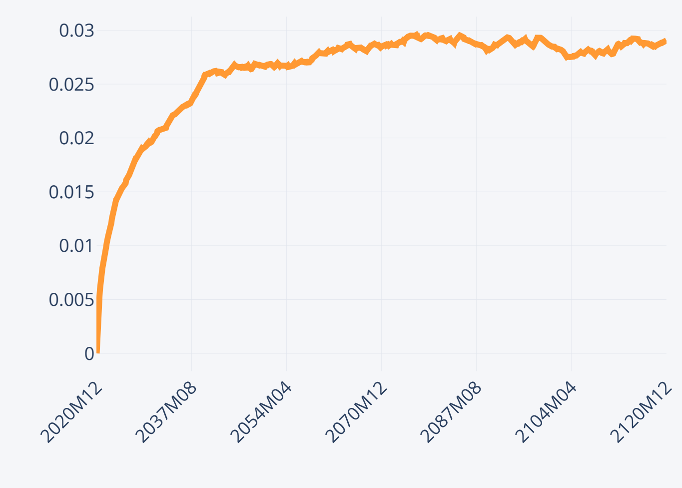


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0381	0.0520
std	0.0079	0.0268
min	0.0117	0.0031
1%	0.0218	0.0108
5%	0.0261	0.0170
10%	0.0284	0.0221
50%	0.0376	0.0475
90%	0.0486	0.0887
95%	0.0519	0.1023
99%	0.0588	0.1338
max	0.0708	0.2089

Cross Sectional Volatility Over Time : BASE



US Treasury 24 Year Yield - Coupon
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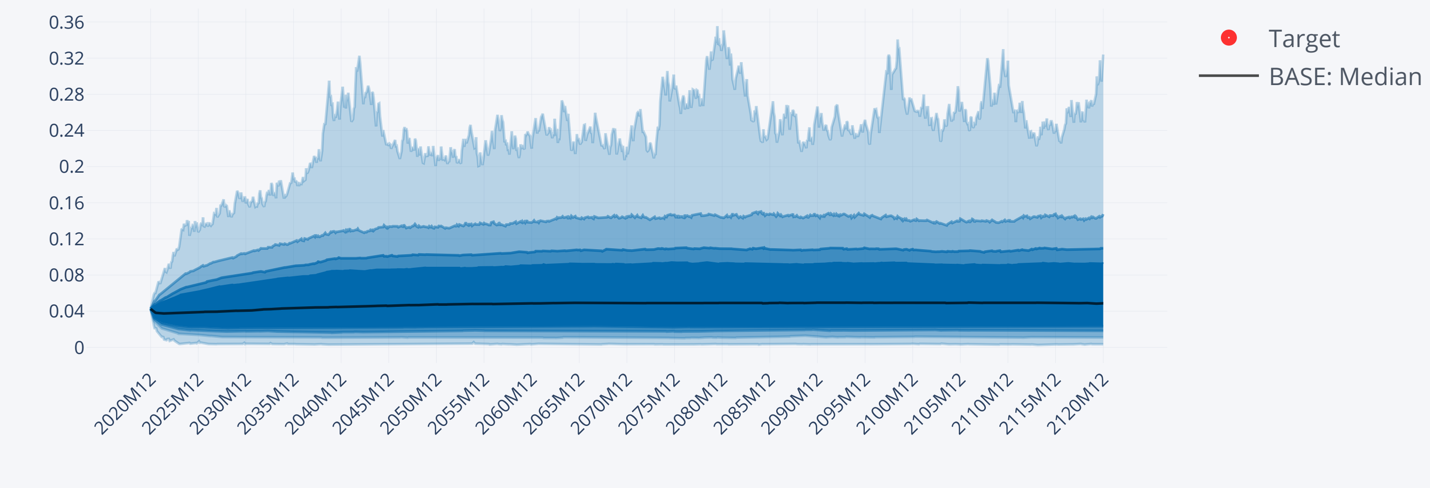
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 24 Year Yield - Coupon

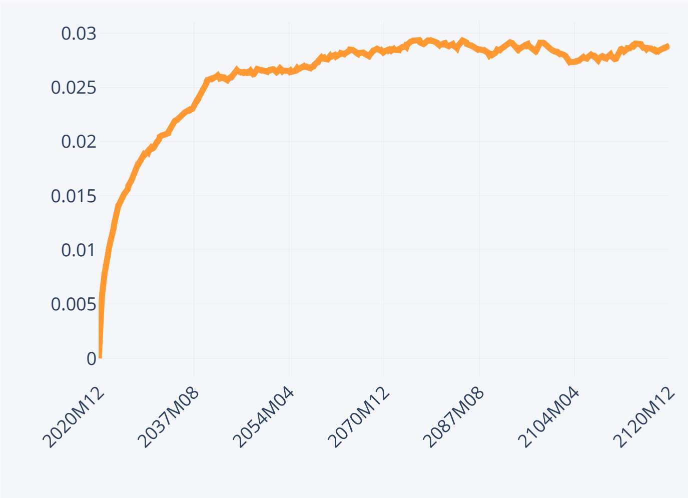


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0381	0.0520
std	0.0078	0.0266
min	0.0121	0.0033
1%	0.0221	0.0113
5%	0.0262	0.0174
10%	0.0285	0.0225
50%	0.0376	0.0476
90%	0.0484	0.0885
95%	0.0516	0.1021
99%	0.0586	0.1334
max	0.0703	0.2085

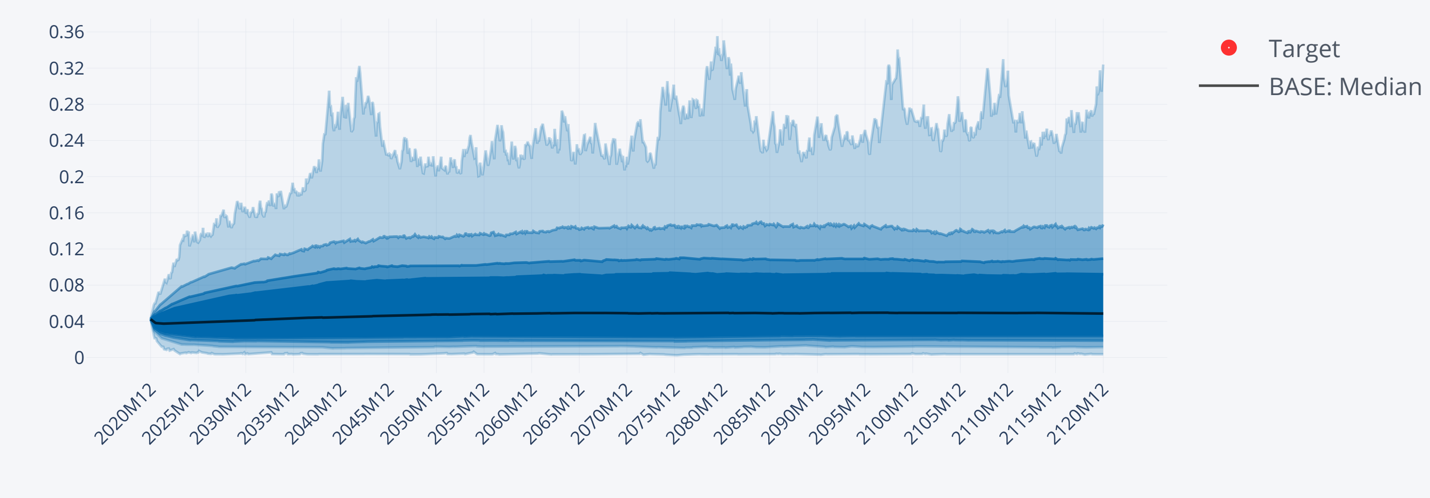
Cross Sectional Volatility Over Time : BASE



US Treasury 25 Year Yield - Coupon
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 25 Year Yield - Coupon

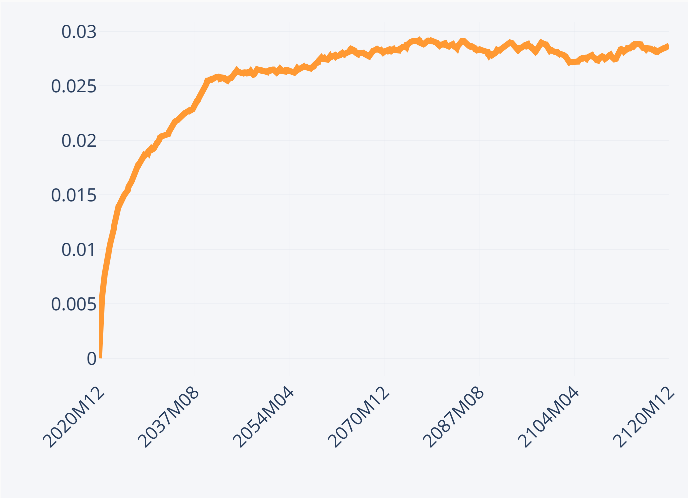


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0380	0.0520
std	0.0077	0.0264
min	0.0125	0.0034
1%	0.0223	0.0118
5%	0.0263	0.0178
10%	0.0286	0.0228
50%	0.0375	0.0476
90%	0.0482	0.0884
95%	0.0515	0.1019
99%	0.0583	0.1330
max	0.0698	0.2081

Cross Sectional Volatility Over Time : BASE



US Treasury 26 Year Yield - Coupon

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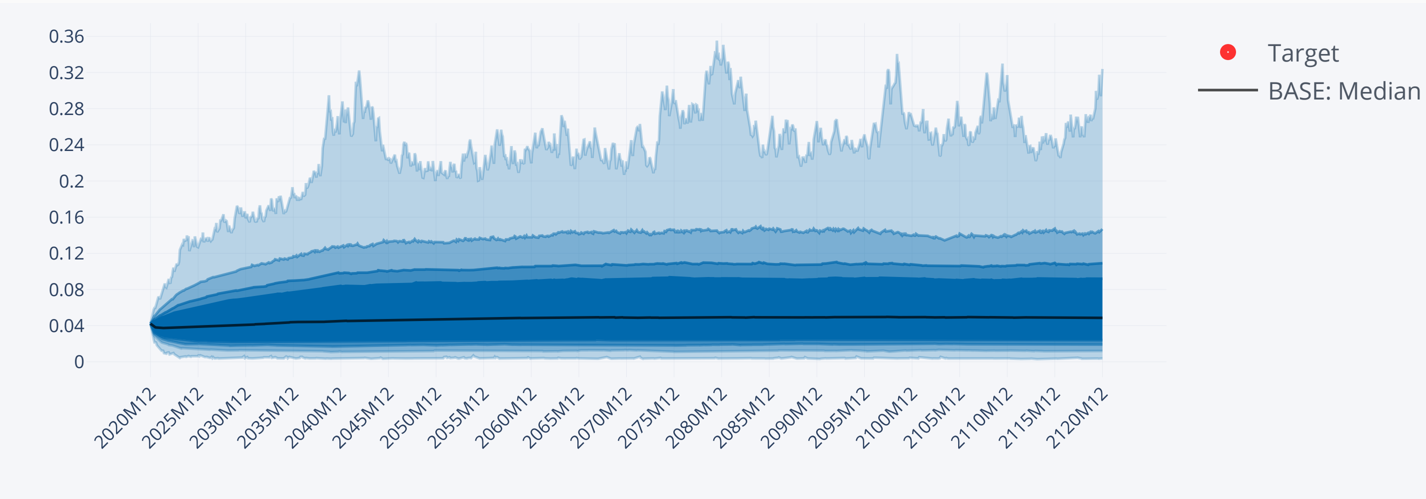
Dec 2023 - Lower Corp Spreads

Validation Report

Simulated Data in Percentiles : US Treasury 26 Year Yield - Coupon

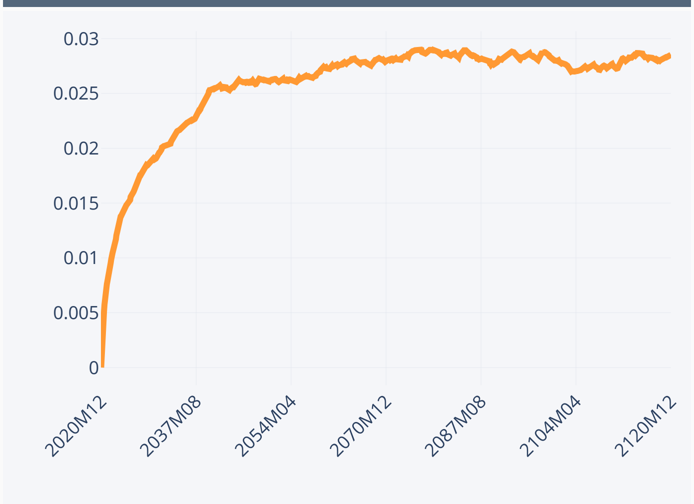


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0380	0.0521
std	0.0076	0.0263
min	0.0128	0.0036
1%	0.0224	0.0123
5%	0.0264	0.0182
10%	0.0287	0.0230
50%	0.0375	0.0476
90%	0.0480	0.0881
95%	0.0512	0.1015
99%	0.0580	0.1327
max	0.0693	0.2078

Cross Sectional Volatility Over Time : BASE



US Treasury 27 Year Yield - Coupon

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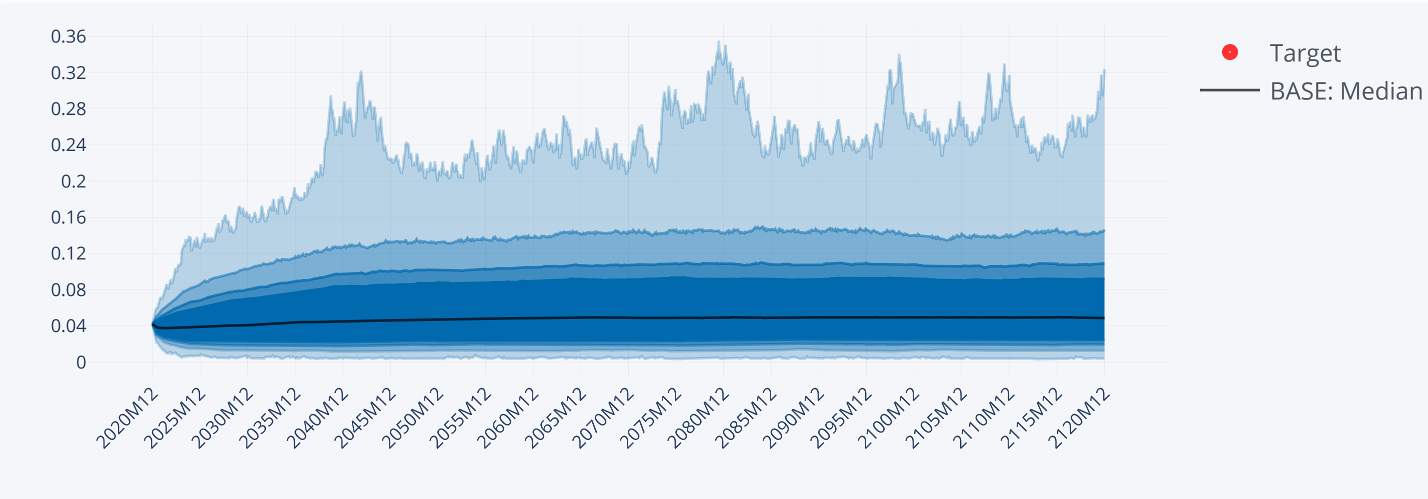
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 27 Year Yield - Coupon

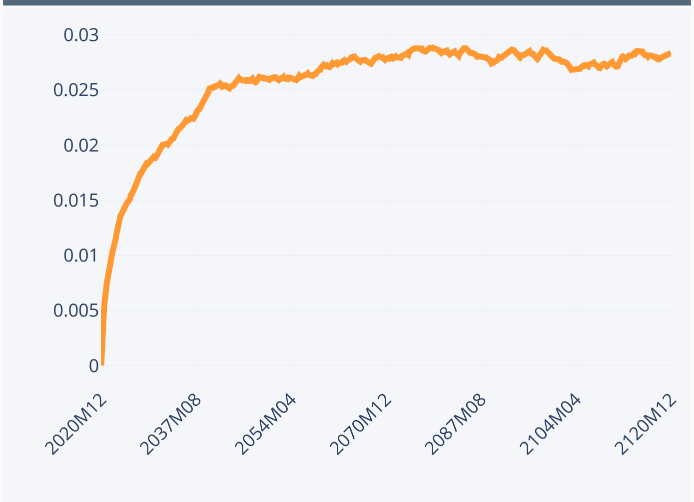


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0379	0.0521
std	0.0075	0.0261
min	0.0132	0.0037
1%	0.0226	0.0127
5%	0.0265	0.0185
10%	0.0288	0.0233
50%	0.0374	0.0475
90%	0.0478	0.0879
95%	0.0511	0.1013
99%	0.0578	0.1324
max	0.0689	0.2075

Cross Sectional Volatility Over Time : BASE

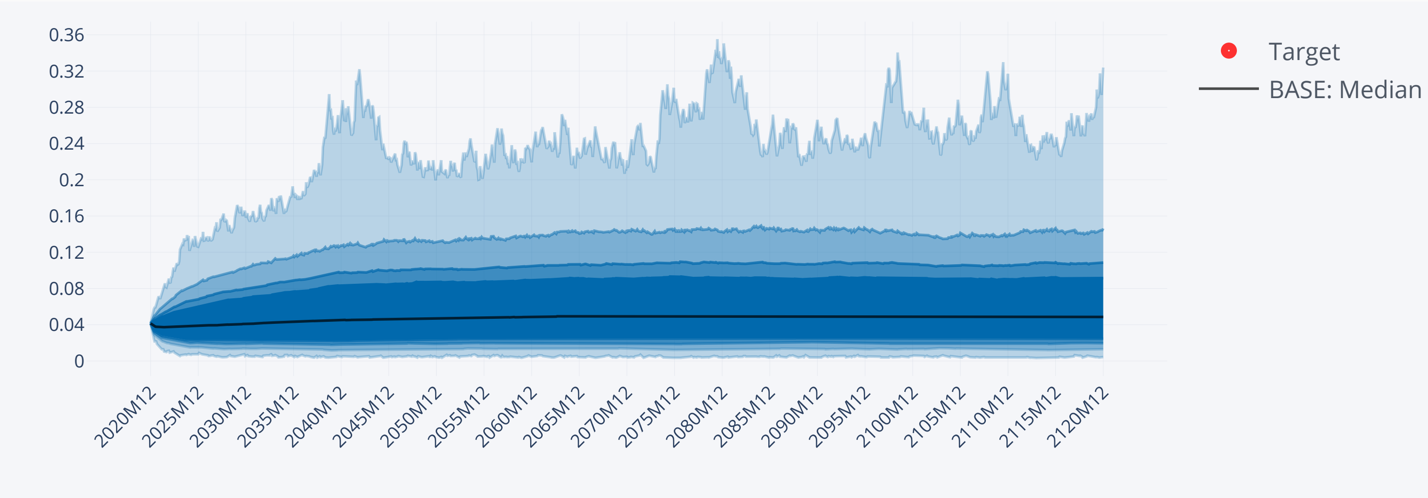


US Treasury 28 Year Yield - Coupon

Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : US Treasury 28 Year Yield - Coupon

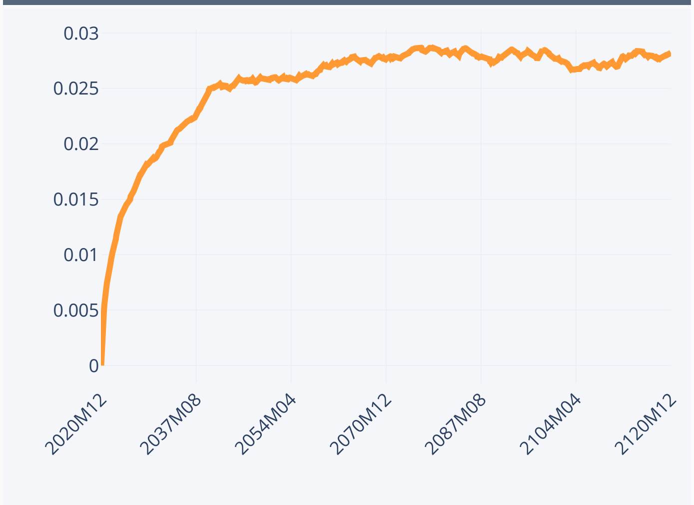


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0379	0.0521
std	0.0074	0.0259
min	0.0135	0.0039
1%	0.0227	0.0131
5%	0.0266	0.0188
10%	0.0288	0.0235
50%	0.0373	0.0475
90%	0.0477	0.0877
95%	0.0508	0.1011
99%	0.0575	0.1321
max	0.0685	0.2072

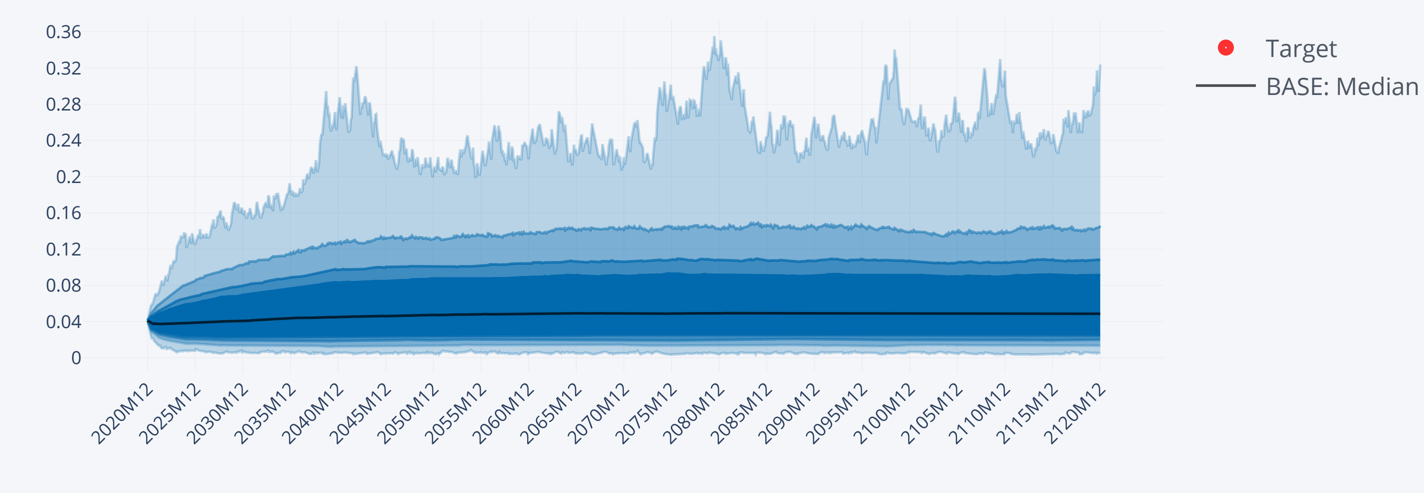
Cross Sectional Volatility Over Time : BASE



US Treasury 29 Year Yield - Coupon
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : US Treasury 29 Year Yield - Coupon

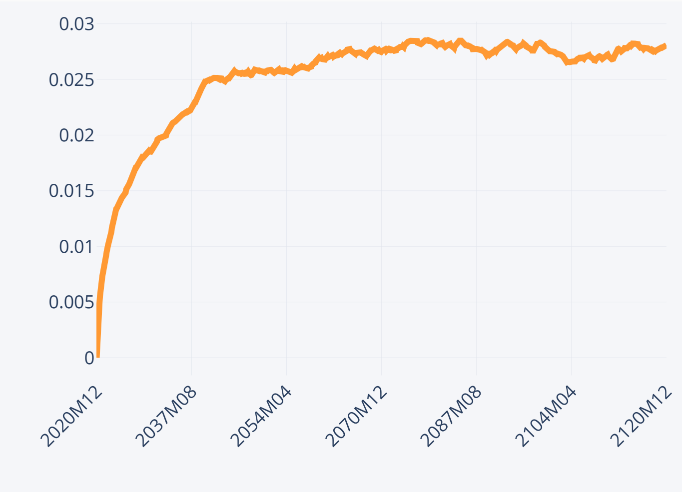


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

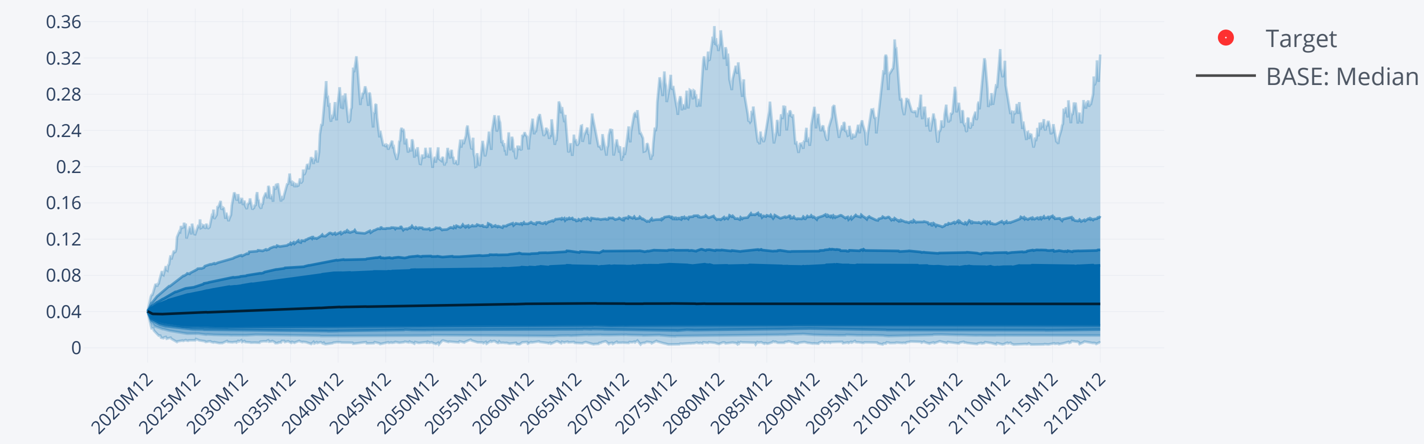
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0378	0.0521
std	0.0074	0.0258
min	0.0138	0.0044
1%	0.0229	0.0135
5%	0.0267	0.0191
10%	0.0289	0.0238
50%	0.0373	0.0475
90%	0.0475	0.0875
95%	0.0506	0.1008
99%	0.0572	0.1318
max	0.0681	0.2069

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : US Treasury 30 Year Yield - Coupon

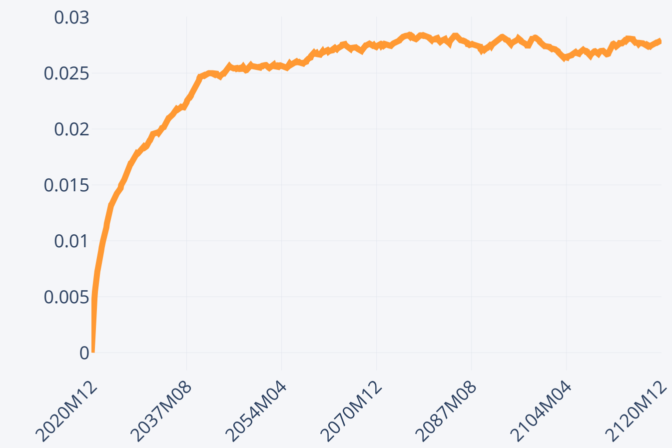


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

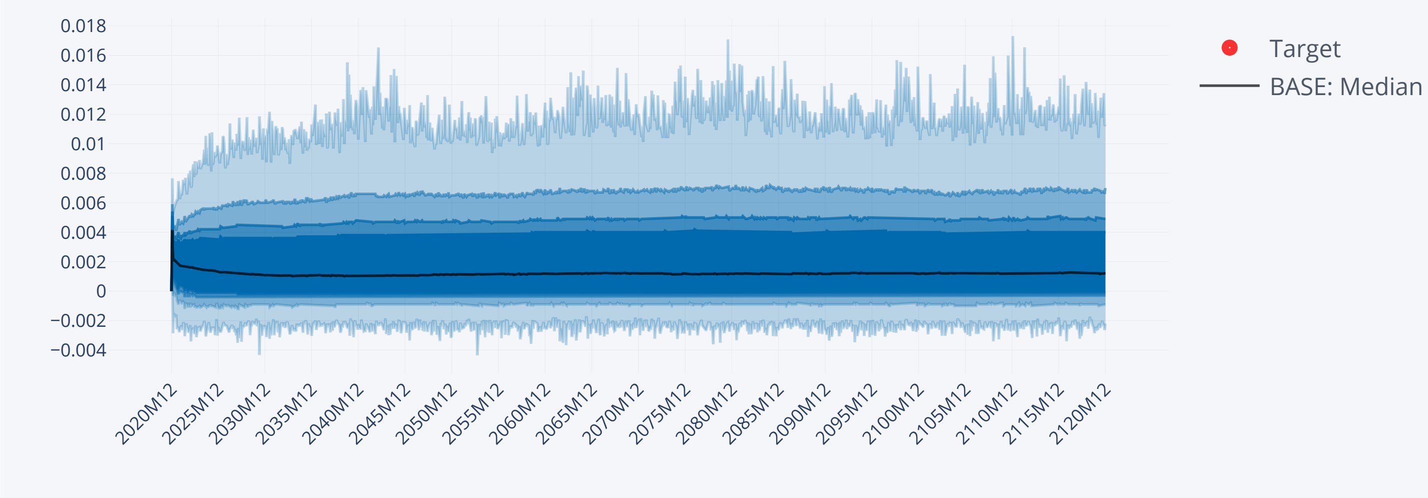
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0377	0.0521
std	0.0073	0.0257
min	0.0141	0.0050
1%	0.0230	0.0138
5%	0.0267	0.0194
10%	0.0289	0.0240
50%	0.0372	0.0474
90%	0.0473	0.0873
95%	0.0504	0.1006
99%	0.0569	0.1316
max	0.0677	0.2067

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Money Market Price

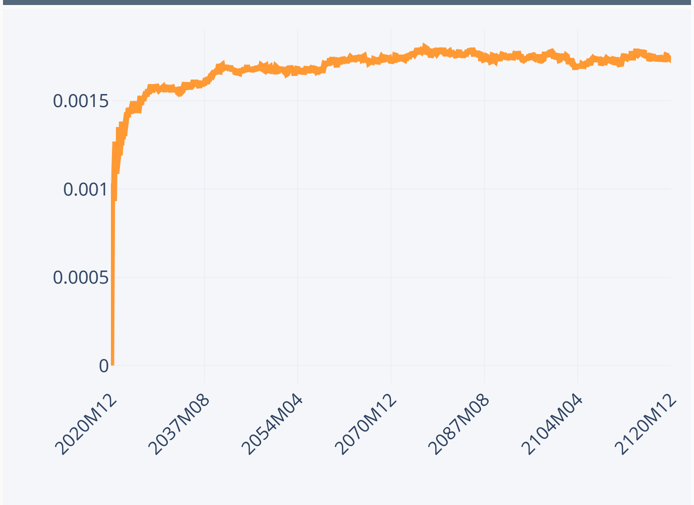


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

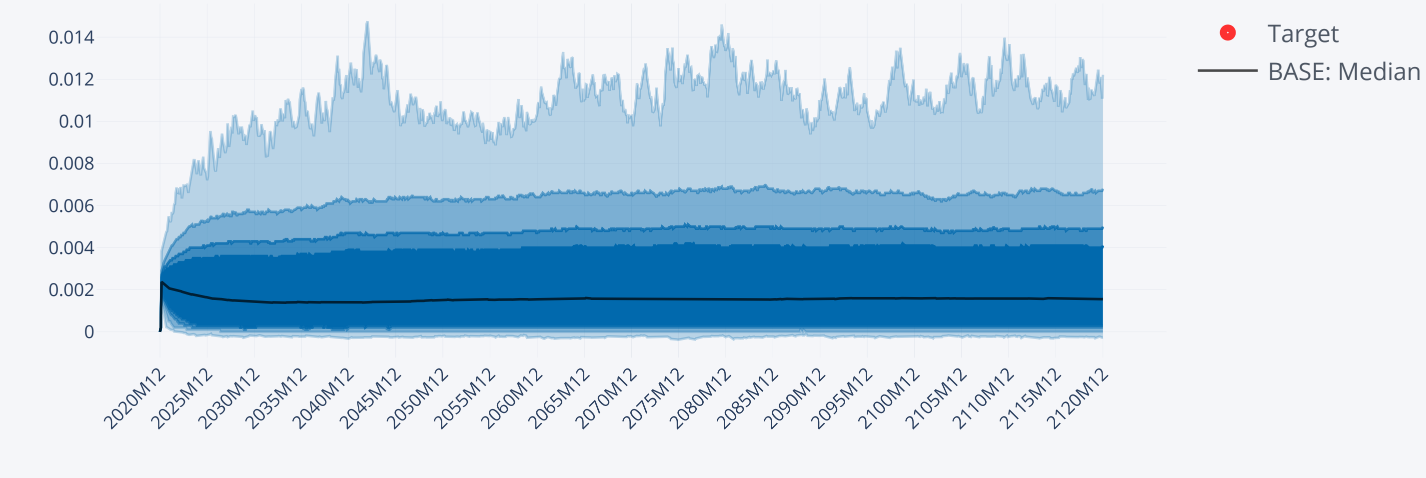
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0018	0.0015
std	0.0011	0.0017
min	-0.0024	-0.0031
1%	-0.0007	-0.0009
5%	0.0000	-0.0003
10%	0.0004	-0.0001
50%	0.0017	0.0011
90%	0.0032	0.0038
95%	0.0036	0.0047
99%	0.0046	0.0065
max	0.0067	0.0104

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Money Market Income

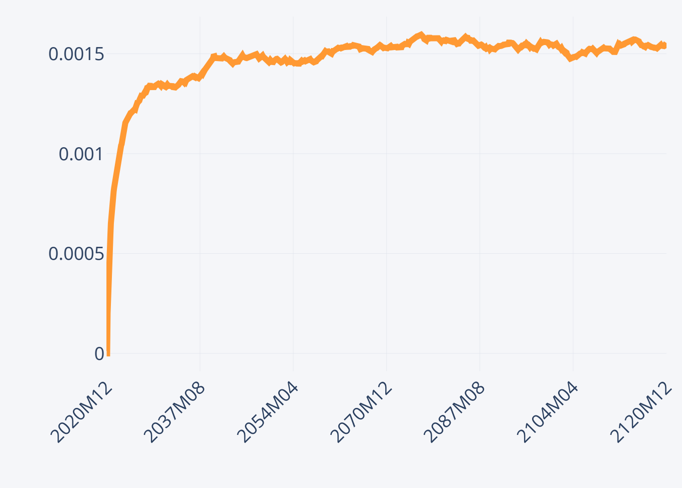


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0021	0.0018
std	0.0007	0.0015
min	0.0001	-0.0002
1%	0.0005	0.0000
5%	0.0009	0.0002
10%	0.0011	0.0003
50%	0.0021	0.0015
90%	0.0030	0.0039
95%	0.0033	0.0047
99%	0.0039	0.0062
max	0.0054	0.0101

Cross Sectional Volatility Over Time : BASE



Short Govt Bonds Price

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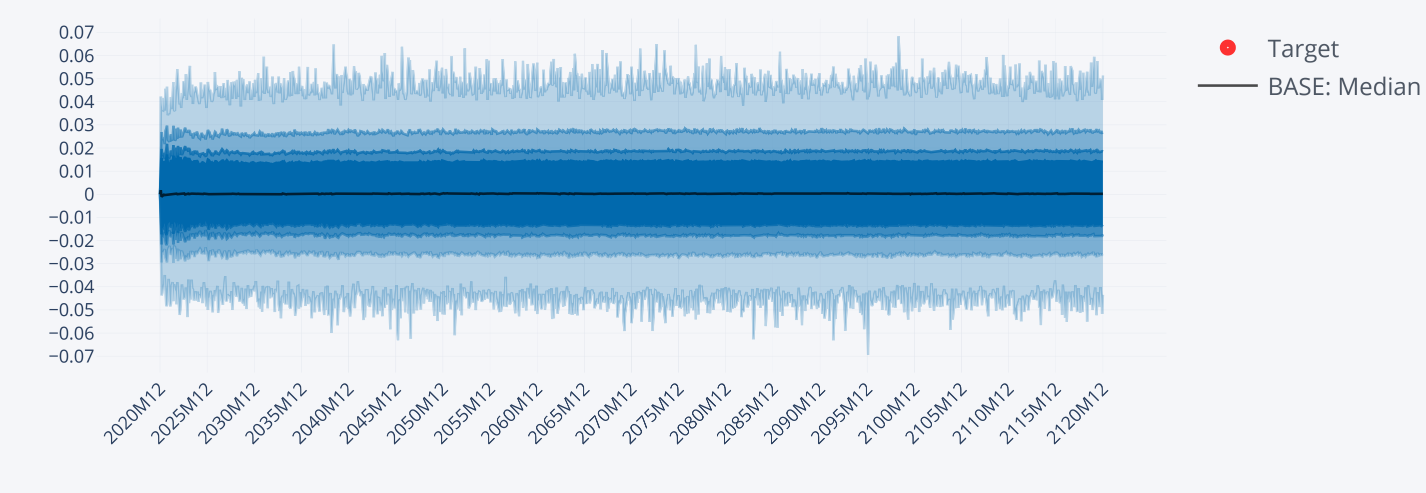
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Short Govt Bonds Price

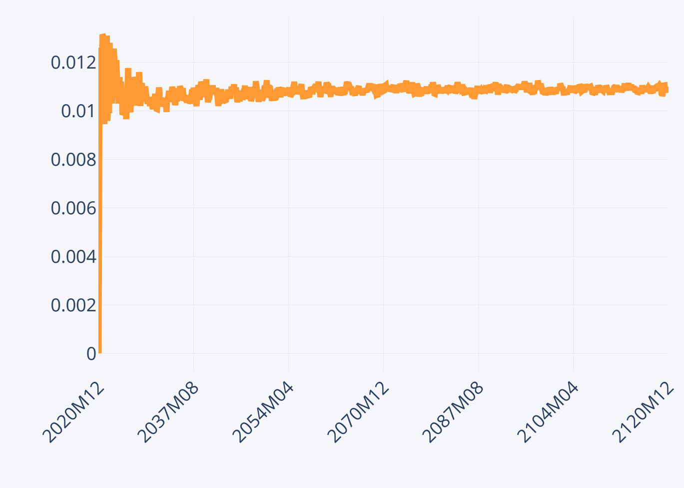


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

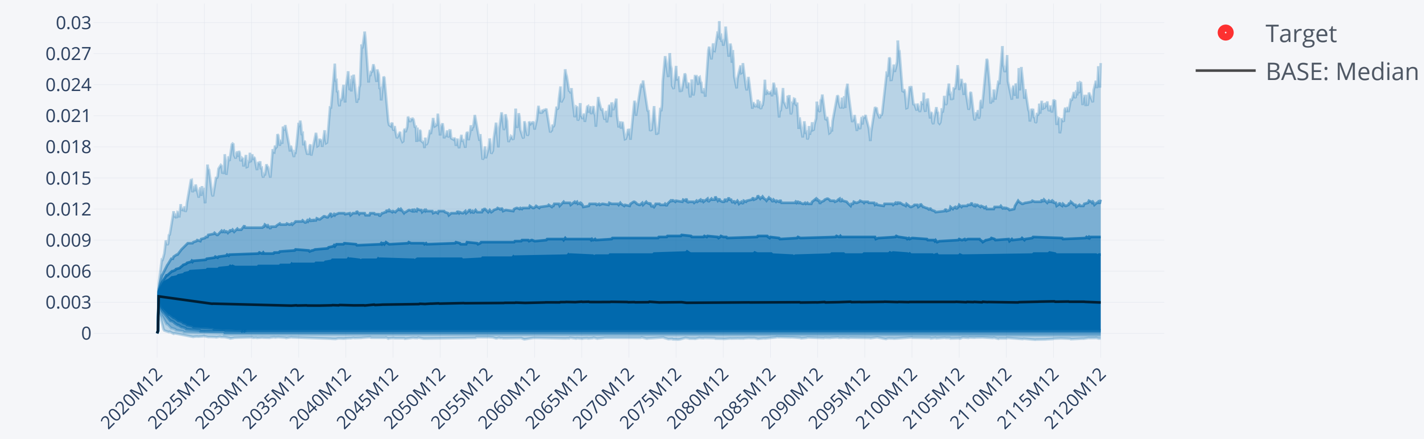
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	-0.0000	0.0003
std	0.0095	0.0110
min	-0.0418	-0.0519
1%	-0.0223	-0.0266
5%	-0.0157	-0.0176
10%	-0.0120	-0.0136
50%	-0.0000	0.0002
90%	0.0118	0.0144
95%	0.0159	0.0190
99%	0.0227	0.0280
max	0.0352	0.0436

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Short Govt Bonds Income

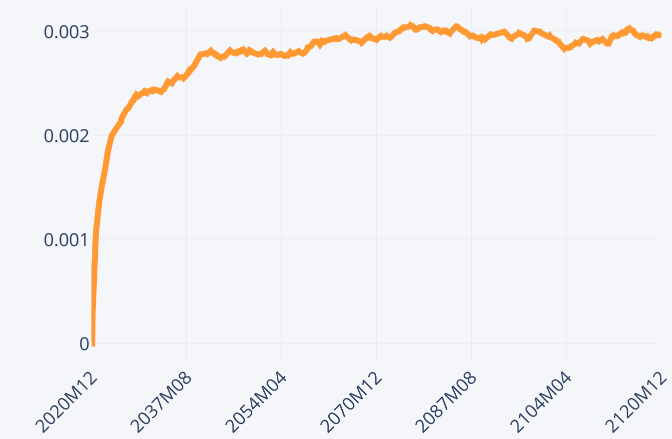


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0035	0.0034
std	0.0012	0.0028
min	0.0002	-0.0005
1%	0.0009	-0.0001
5%	0.0016	0.0001
10%	0.0020	0.0002
50%	0.0035	0.0029
90%	0.0051	0.0073
95%	0.0056	0.0086
99%	0.0065	0.0119
max	0.0087	0.0191

Cross Sectional Volatility Over Time : BASE



Int Govt Bonds Price
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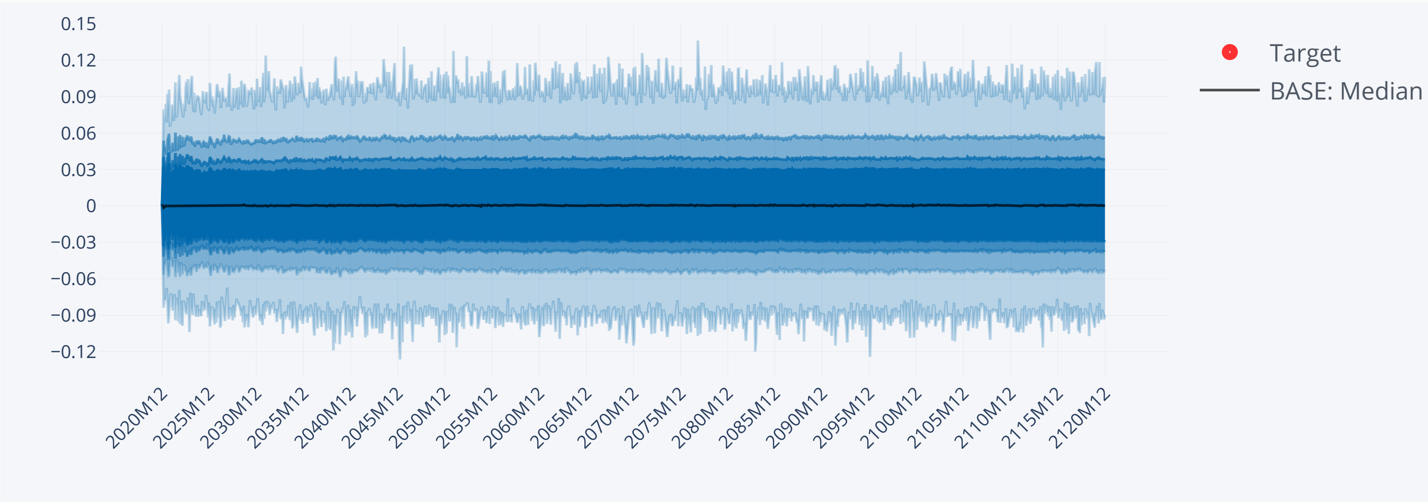
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Int Govt Bonds Price

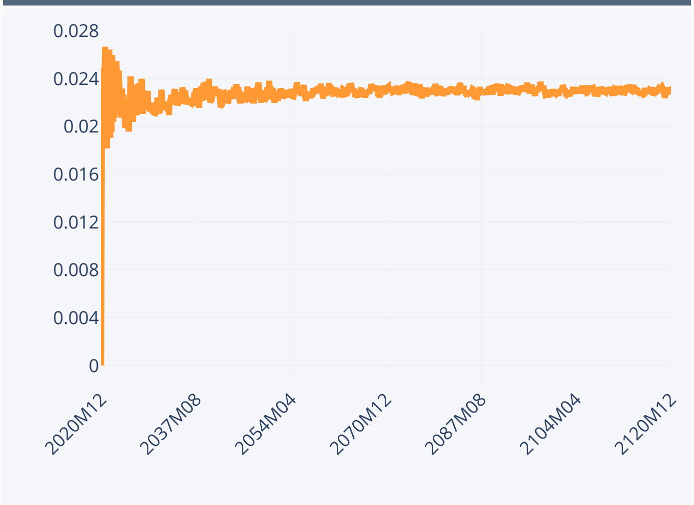


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

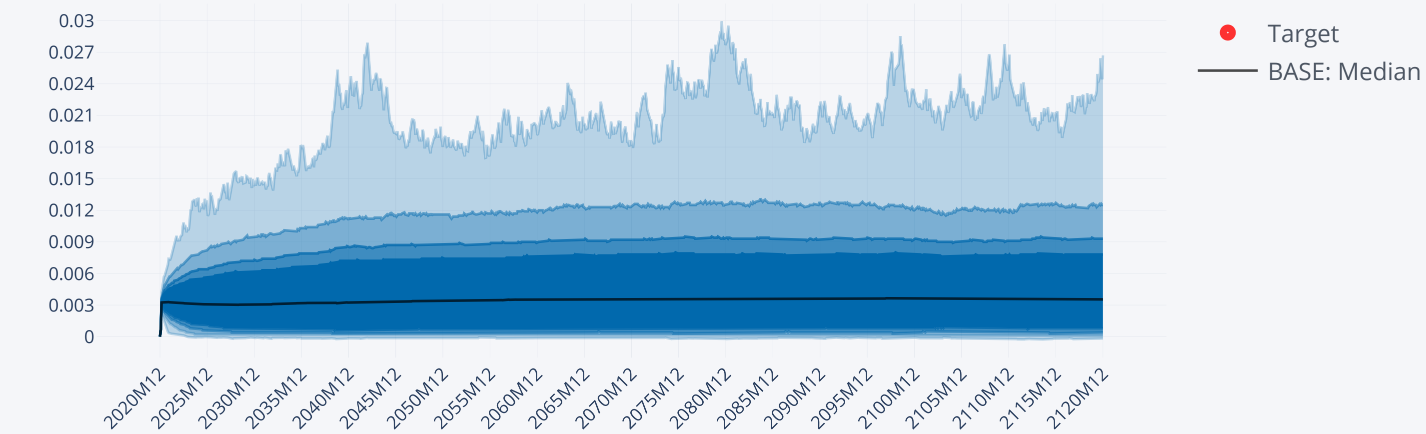
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	-0.0000	0.0007
std	0.0182	0.0231
min	-0.0740	-0.1062
1%	-0.0422	-0.0541
5%	-0.0299	-0.0372
10%	-0.0227	-0.0286
50%	0.0000	0.0005
90%	0.0229	0.0302
95%	0.0304	0.0398
99%	0.0442	0.0573
max	0.0733	0.0881

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Int Govt Bonds Income

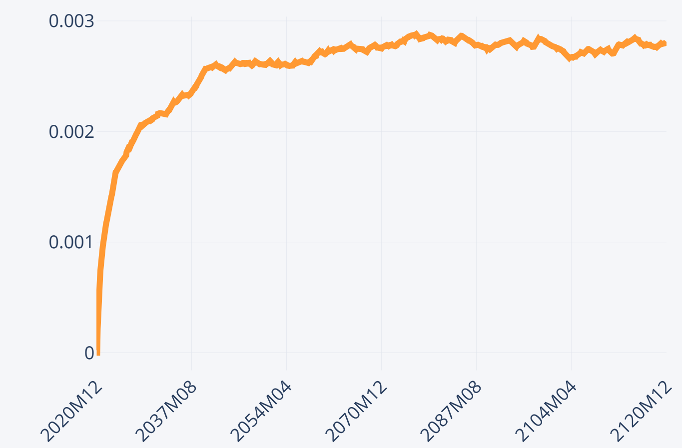


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

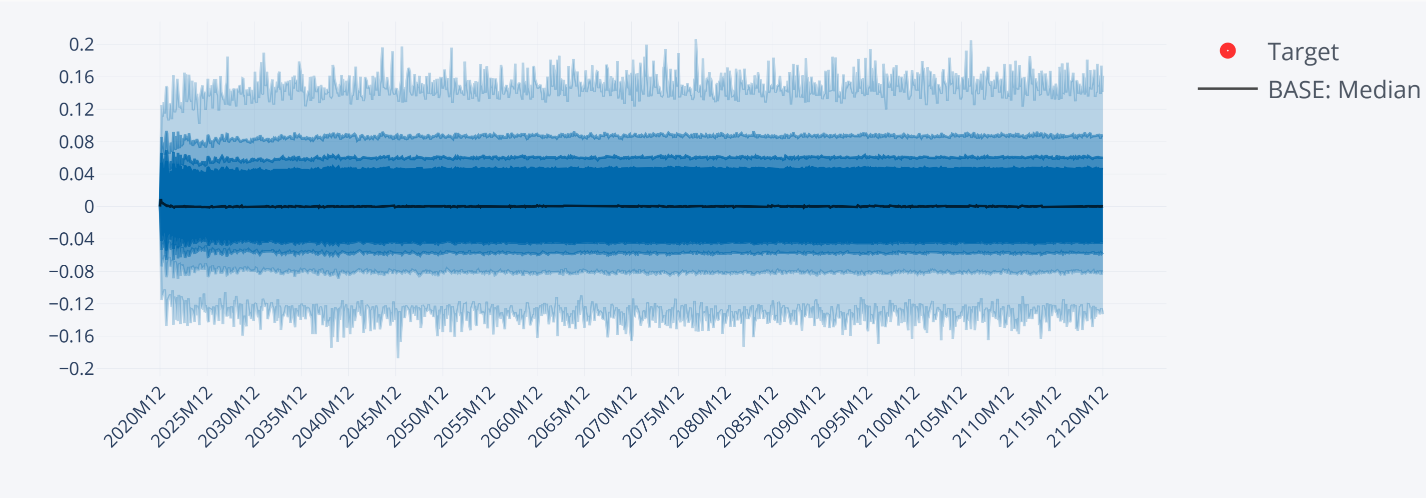
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0033	0.0038
std	0.0010	0.0026
min	0.0004	-0.0002
1%	0.0013	0.0001
5%	0.0018	0.0004
10%	0.0021	0.0007
50%	0.0033	0.0034
90%	0.0046	0.0074
95%	0.0049	0.0087
99%	0.0057	0.0116
max	0.0073	0.0180

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Long Govt Bonds Price

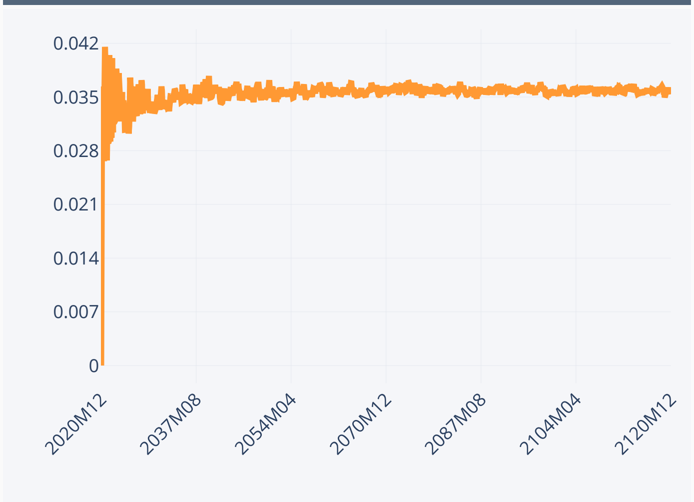


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	-0.0000	0.0010
std	0.0268	0.0361
min	-0.1107	-0.1548
1%	-0.0622	-0.0822
5%	-0.0435	-0.0569
10%	-0.0335	-0.0440
50%	-0.0003	0.0005
90%	0.0340	0.0476
95%	0.0449	0.0623
99%	0.0651	0.0875
max	0.1176	0.1454

Cross Sectional Volatility Over Time : BASE



Long Govt Bonds Income
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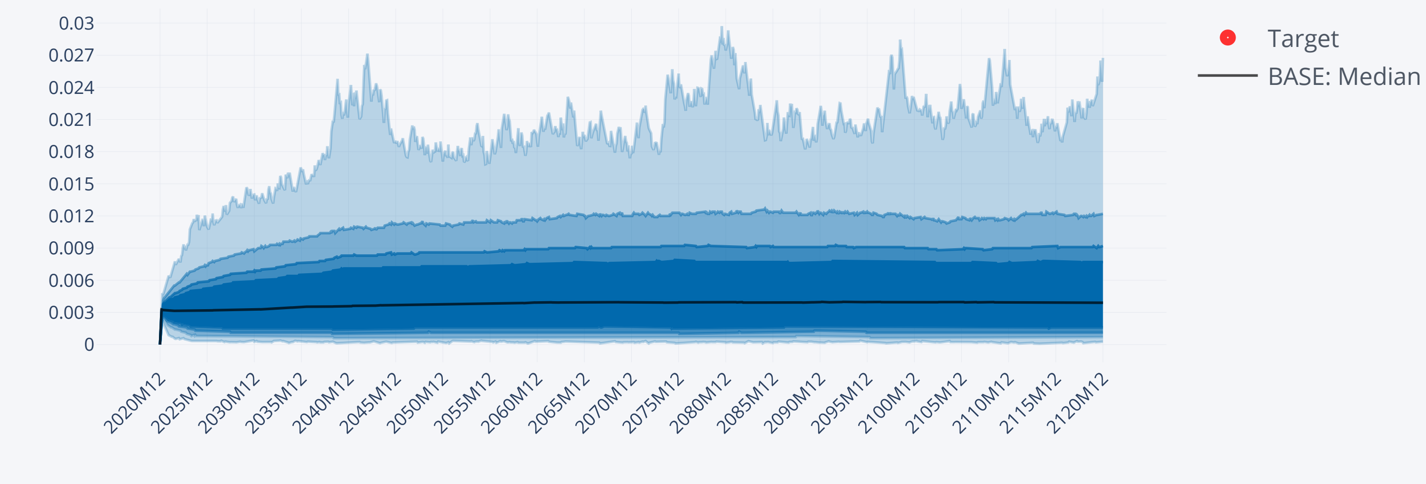
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Long Govt Bonds Income

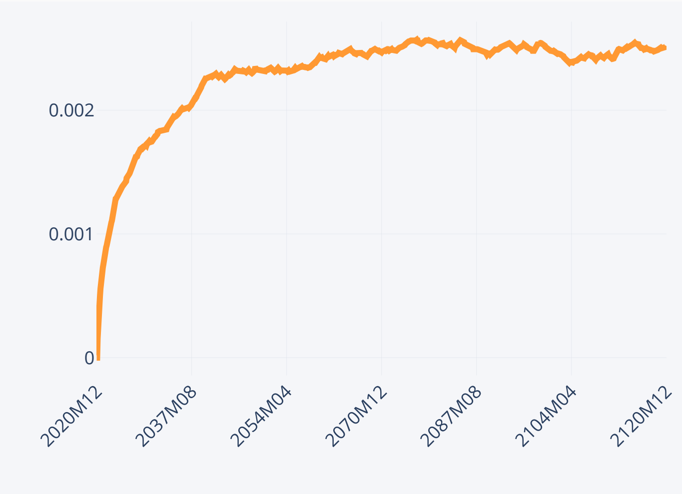


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

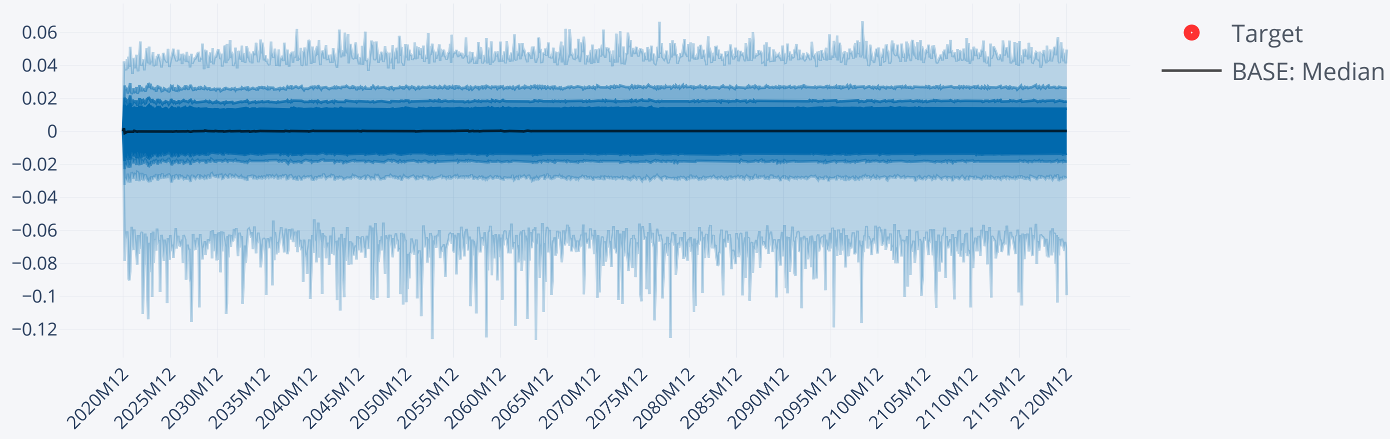
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0032	0.0042
std	0.0007	0.0023
min	0.0008	0.0002
1%	0.0017	0.0007
5%	0.0021	0.0011
10%	0.0023	0.0015
50%	0.0032	0.0038
90%	0.0041	0.0074
95%	0.0044	0.0085
99%	0.0050	0.0112
max	0.0063	0.0171

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Short Inv Corp Bonds Price

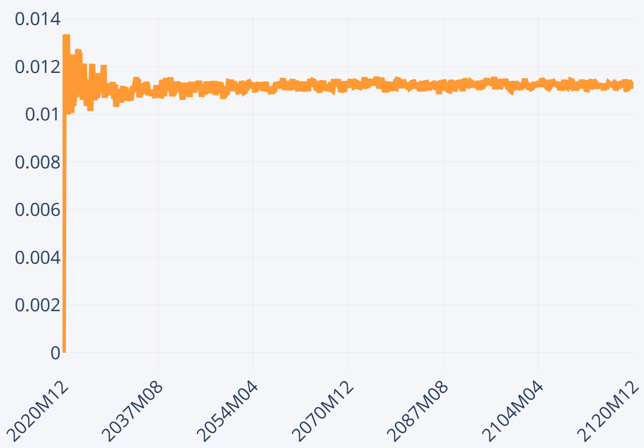


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	-0.0003	0.0001
std	0.0104	0.0114
min	-0.0699	-0.1036
1%	-0.0260	-0.0278
5%	-0.0168	-0.0181
10%	-0.0131	-0.0137
50%	-0.0003	0.0001
90%	0.0125	0.0140
95%	0.0166	0.0188
99%	0.0236	0.0275
max	0.0348	0.0447

Cross Sectional Volatility Over Time : BASE



Short Inv Corp Bonds Income
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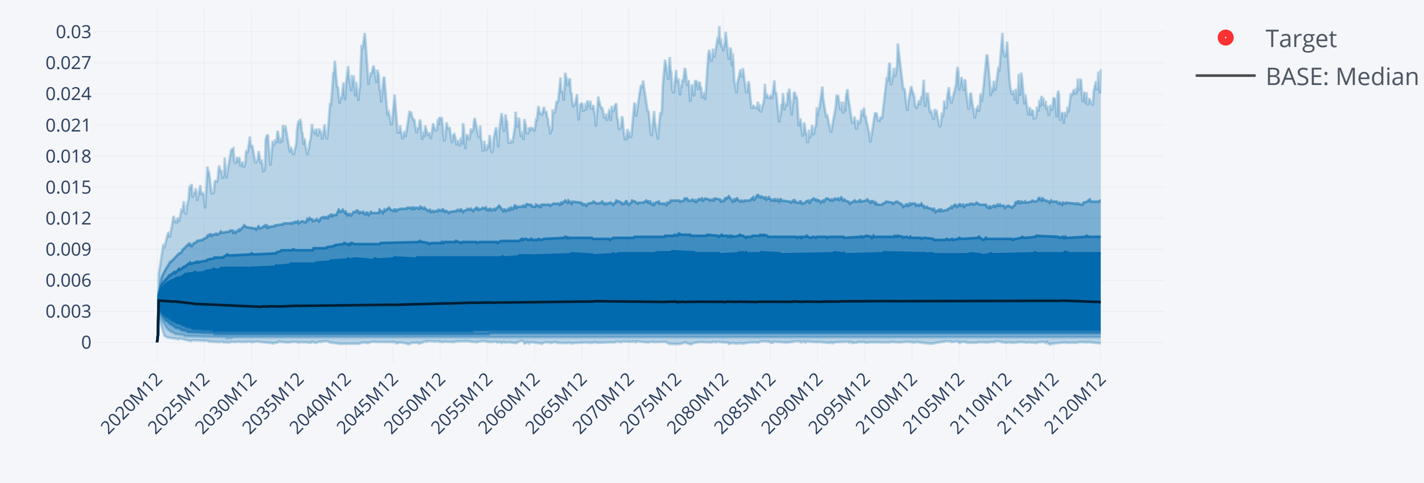
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Short Inv Corp Bonds Income

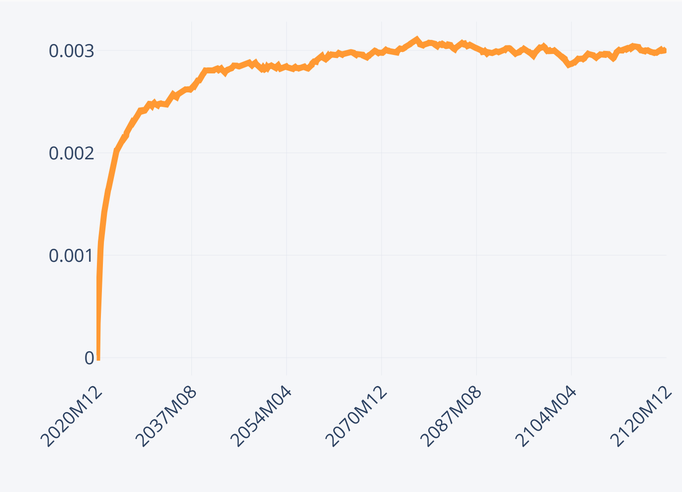


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0040	0.0043
std	0.0013	0.0028
min	0.0005	0.0001
1%	0.0014	0.0005
5%	0.0021	0.0008
10%	0.0025	0.0011
50%	0.0040	0.0038
90%	0.0057	0.0082
95%	0.0062	0.0096
99%	0.0072	0.0128
max	0.0097	0.0217

Cross Sectional Volatility Over Time : BASE



Int Inv Corp Bonds Price
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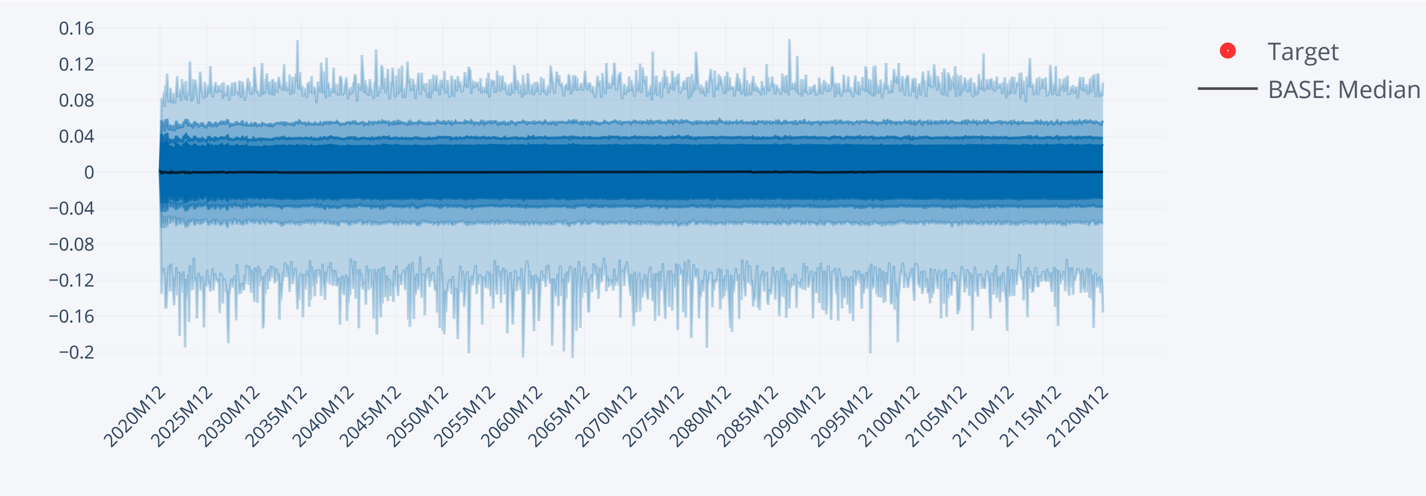
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Int Inv Corp Bonds Price

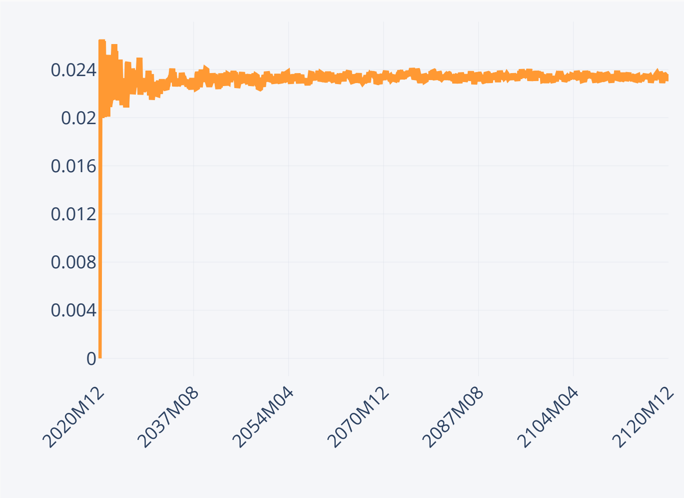


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	-0.0006	0.0001
std	0.0204	0.0236
min	-0.1228	-0.1764
1%	-0.0501	-0.0565
5%	-0.0331	-0.0380
10%	-0.0260	-0.0291
50%	-0.0007	0.0001
90%	0.0251	0.0301
95%	0.0327	0.0389
99%	0.0483	0.0562
max	0.0819	0.0921

Cross Sectional Volatility Over Time : BASE



Int Inv Corp Bonds Income
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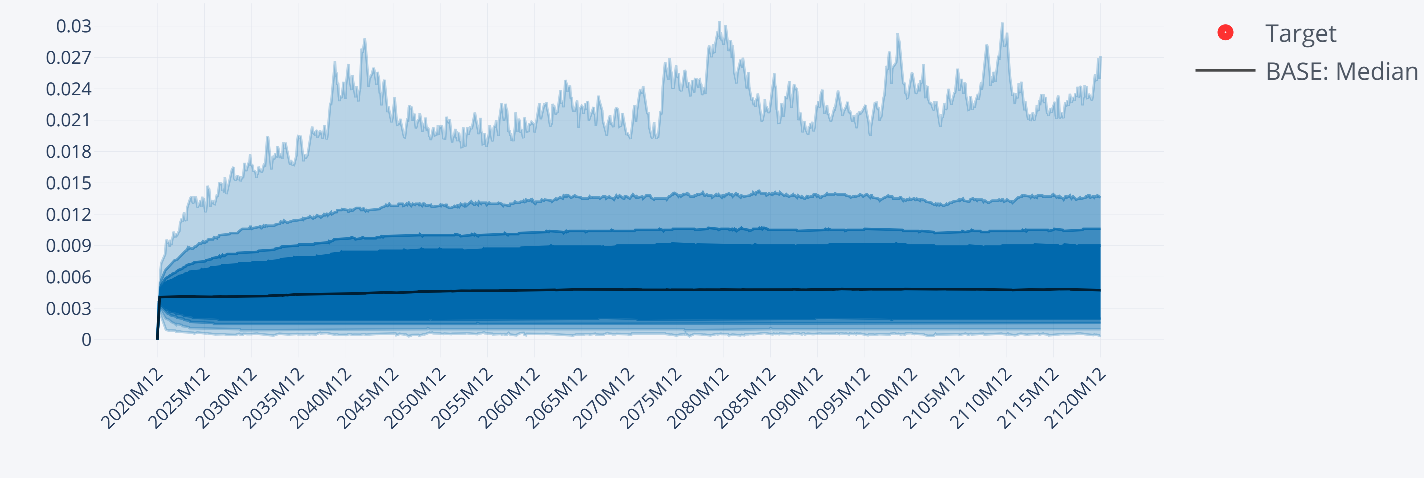
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Int Inv Corp Bonds Income

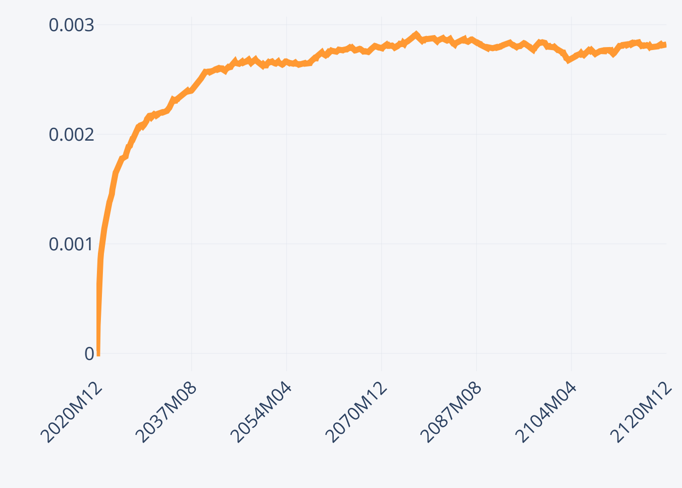


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

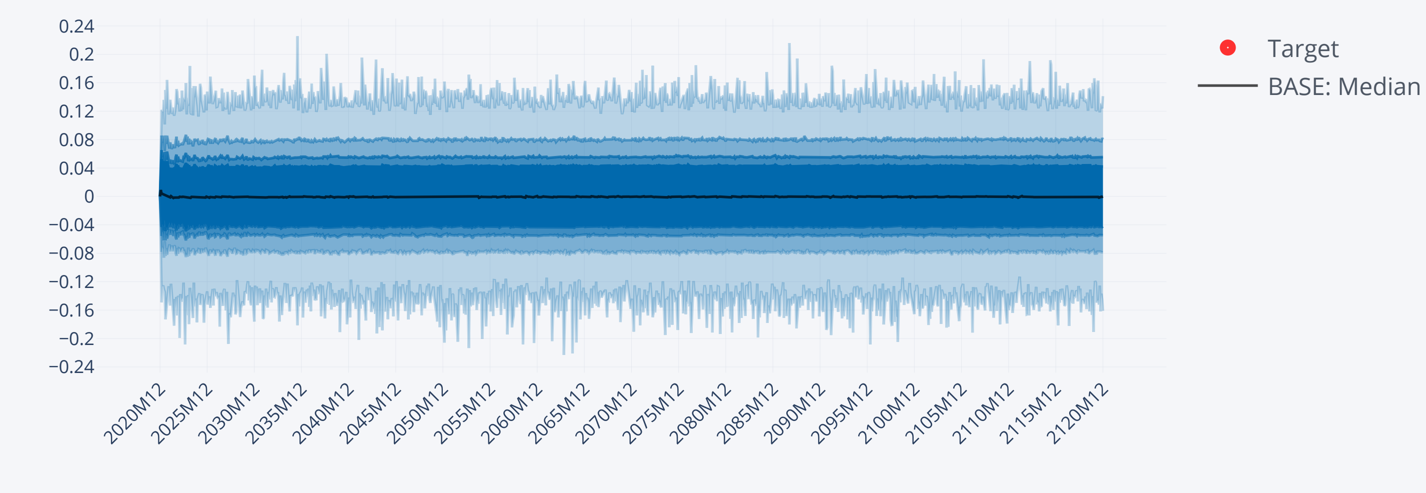
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0042	0.0050
std	0.0010	0.0026
min	0.0009	0.0006
1%	0.0020	0.0010
5%	0.0026	0.0015
10%	0.0029	0.0019
50%	0.0041	0.0046
90%	0.0055	0.0086
95%	0.0059	0.0099
99%	0.0068	0.0129
max	0.0096	0.0203

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Long Inv Corp Bonds Price

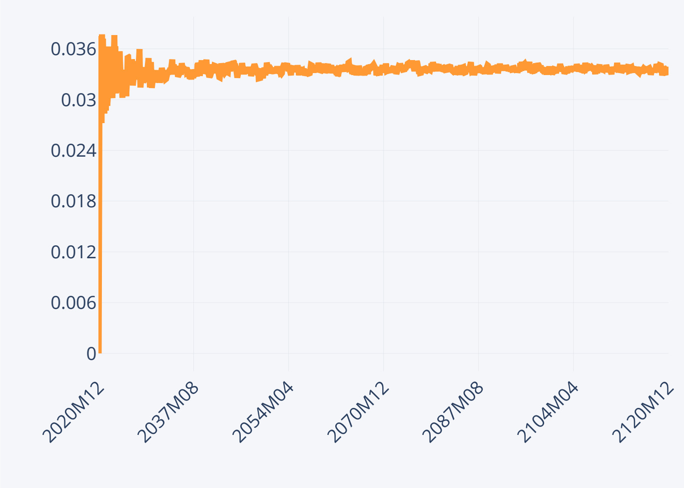


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	-0.0009	-0.0000
std	0.0283	0.0338
min	-0.1399	-0.1954
1%	-0.0675	-0.0789
5%	-0.0463	-0.0546
10%	-0.0365	-0.0423
50%	-0.0010	-0.0004
90%	0.0352	0.0436
95%	0.0463	0.0559
99%	0.0674	0.0802
max	0.1223	0.1402

Cross Sectional Volatility Over Time : BASE



Long Inv Corp Bonds Income
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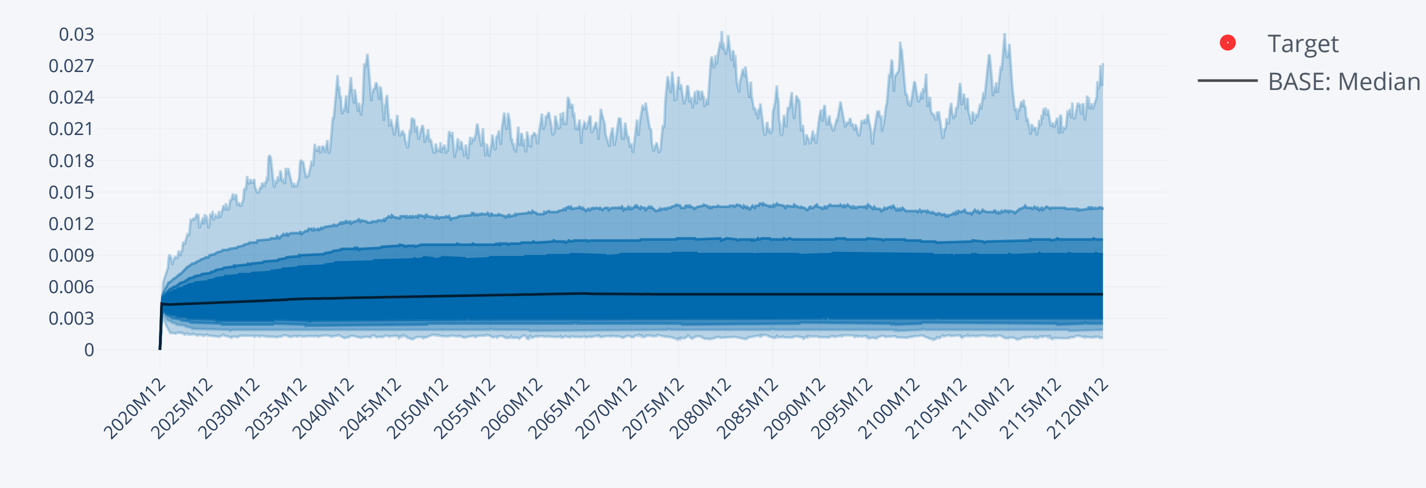
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Long Inv Corp Bonds Income

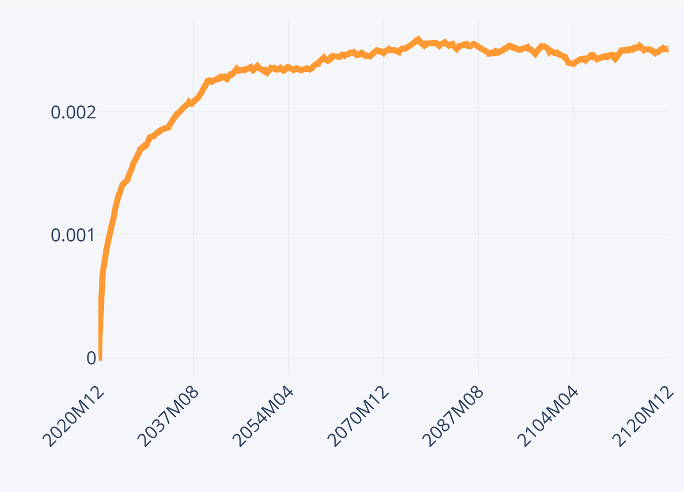


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0044	0.0056
std	0.0008	0.0023
min	0.0017	0.0014
1%	0.0027	0.0019
5%	0.0032	0.0024
10%	0.0034	0.0029
50%	0.0043	0.0052
90%	0.0054	0.0088
95%	0.0057	0.0100
99%	0.0064	0.0125
max	0.0091	0.0192

Cross Sectional Volatility Over Time : BASE



High Yield Corp Bonds Price
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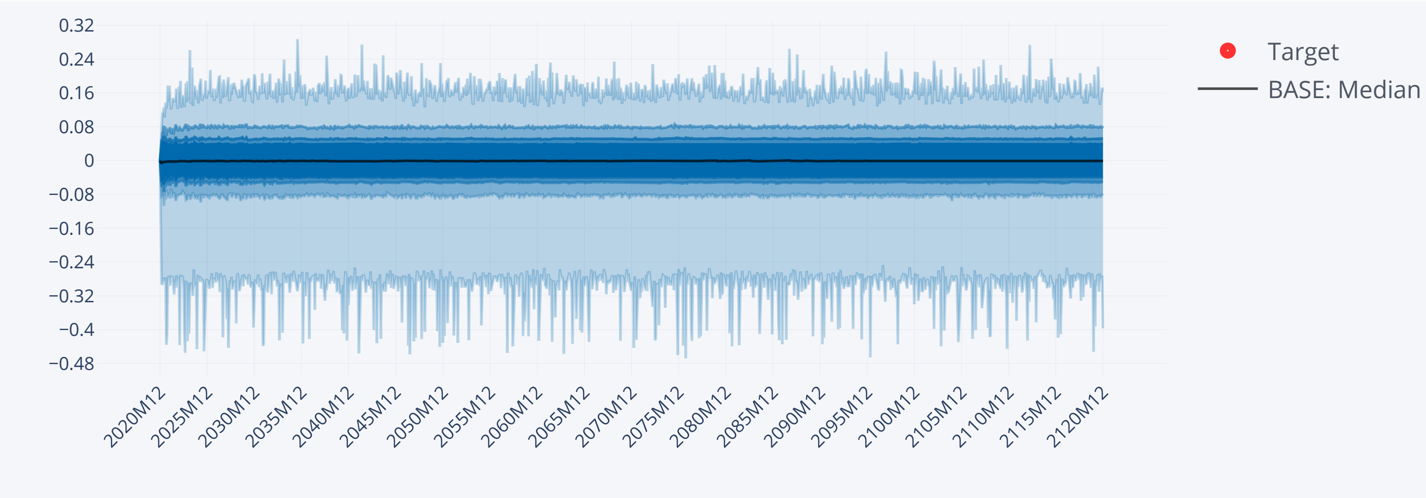
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : High Yield Corp Bonds Price

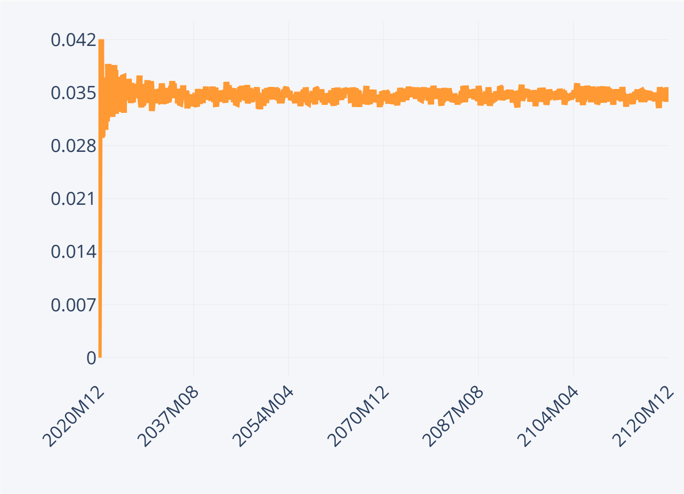


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

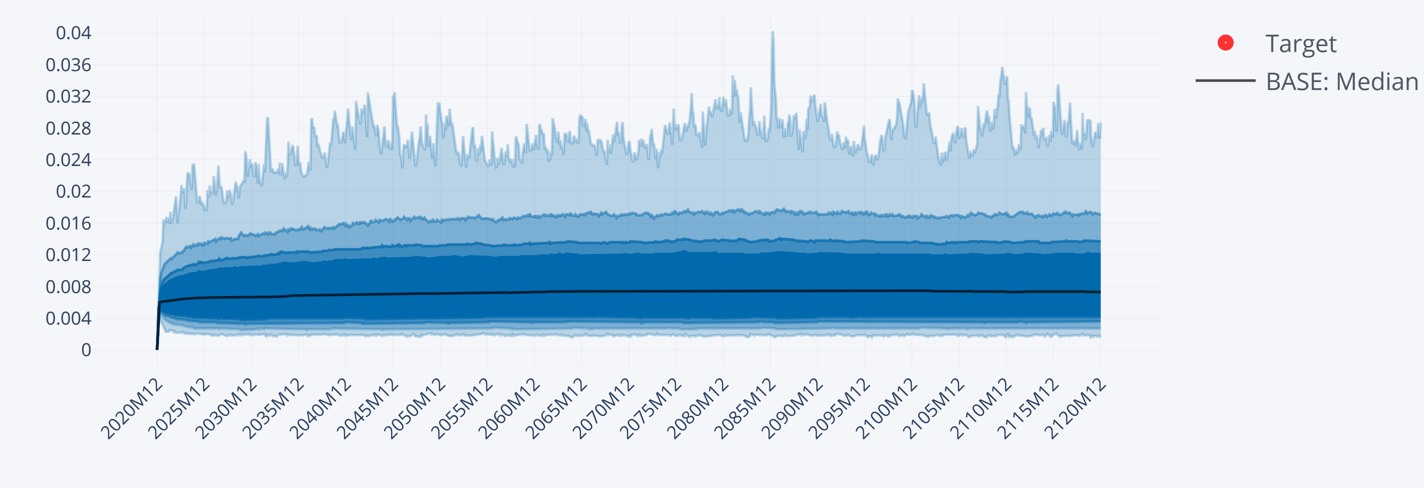
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	-0.0029	-0.0013
std	0.0338	0.0348
min	-0.2813	-0.4307
1%	-0.0763	-0.0816
5%	-0.0505	-0.0520
10%	-0.0391	-0.0395
50%	-0.0023	-0.0010
90%	0.0353	0.0385
95%	0.0475	0.0521
99%	0.0721	0.0782
max	0.1771	0.1552

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : High Yield Corp Bonds Income

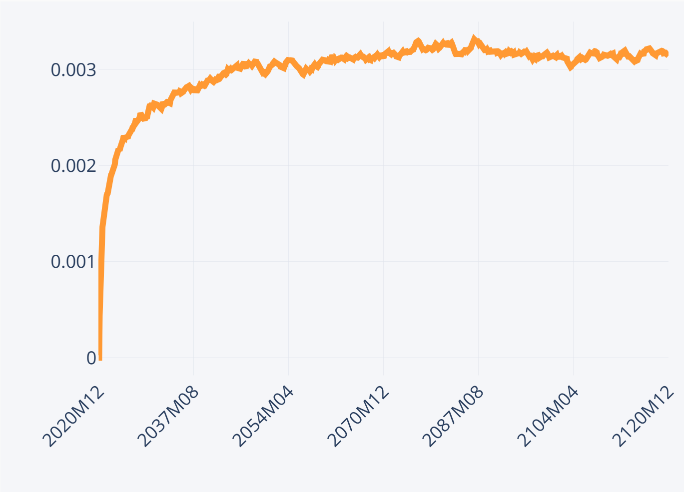


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

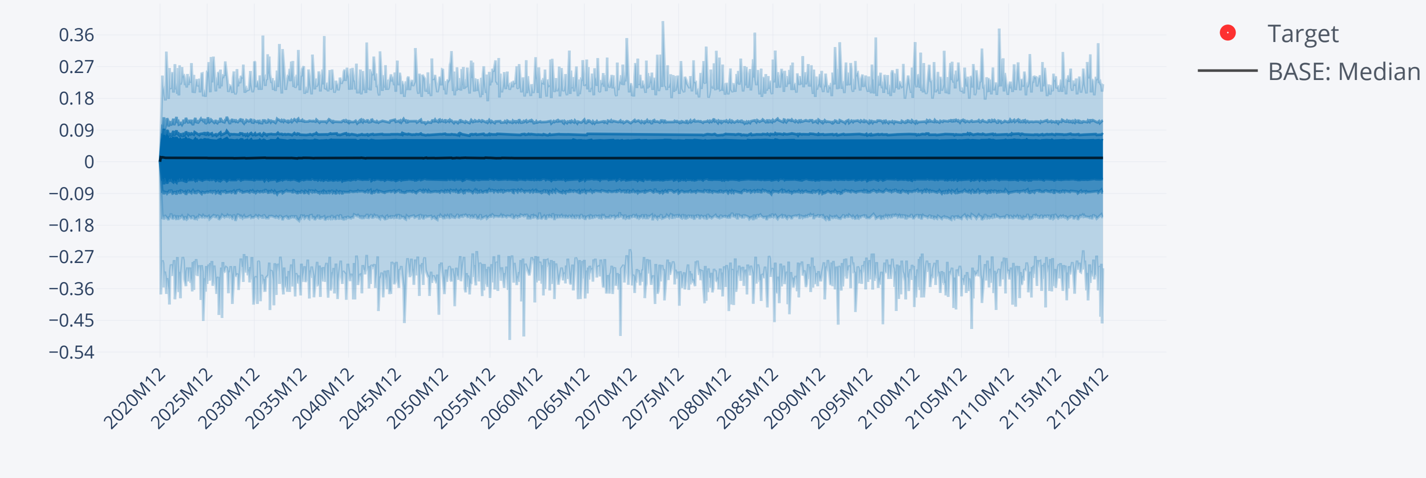
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0064	0.0076
std	0.0015	0.0030
min	0.0023	0.0018
1%	0.0036	0.0026
5%	0.0043	0.0034
10%	0.0047	0.0040
50%	0.0062	0.0072
90%	0.0084	0.0117
95%	0.0092	0.0132
99%	0.0111	0.0162
max	0.0168	0.0301

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Small Cap Price

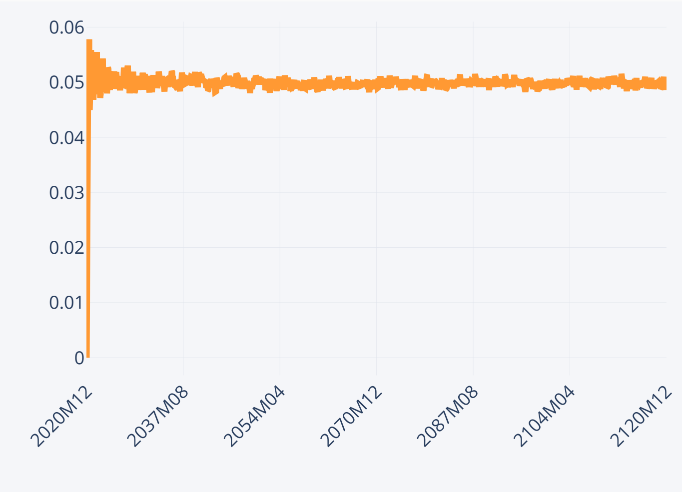


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

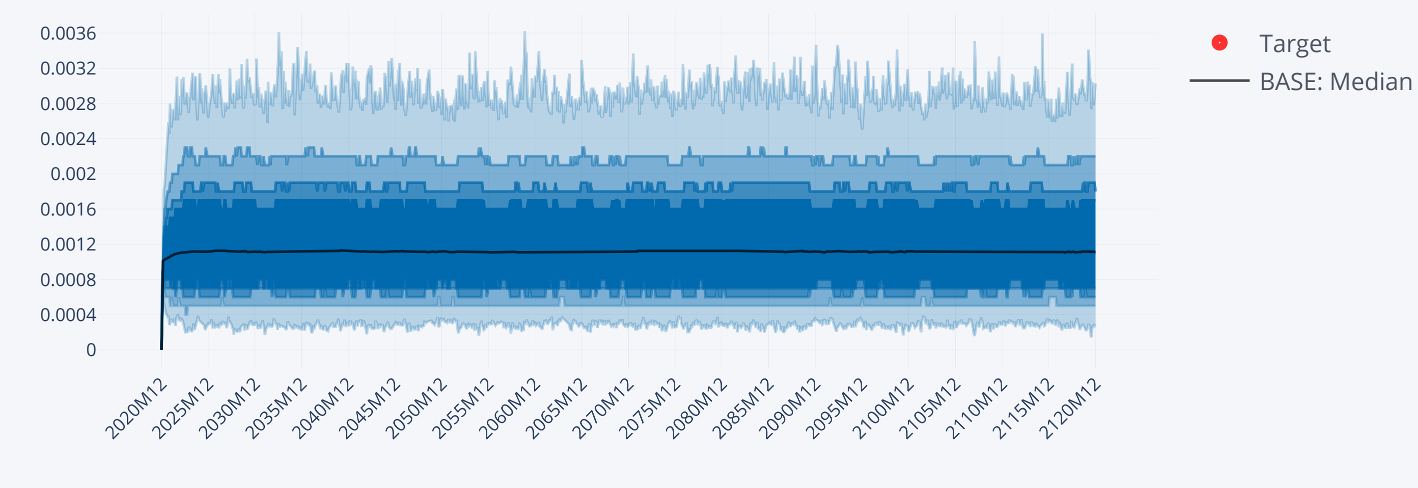
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0073	0.0065
std	0.0494	0.0507
min	-0.4051	-0.3303
1%	-0.1553	-0.1587
5%	-0.0803	-0.0856
10%	-0.0484	-0.0514
50%	0.0111	0.0107
90%	0.0624	0.0615
95%	0.0770	0.0790
99%	0.1103	0.1133
max	0.2660	0.2608

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Small Cap Income

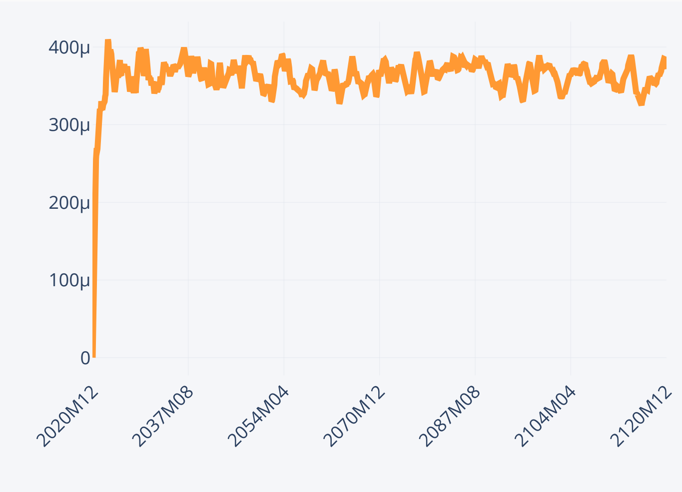


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

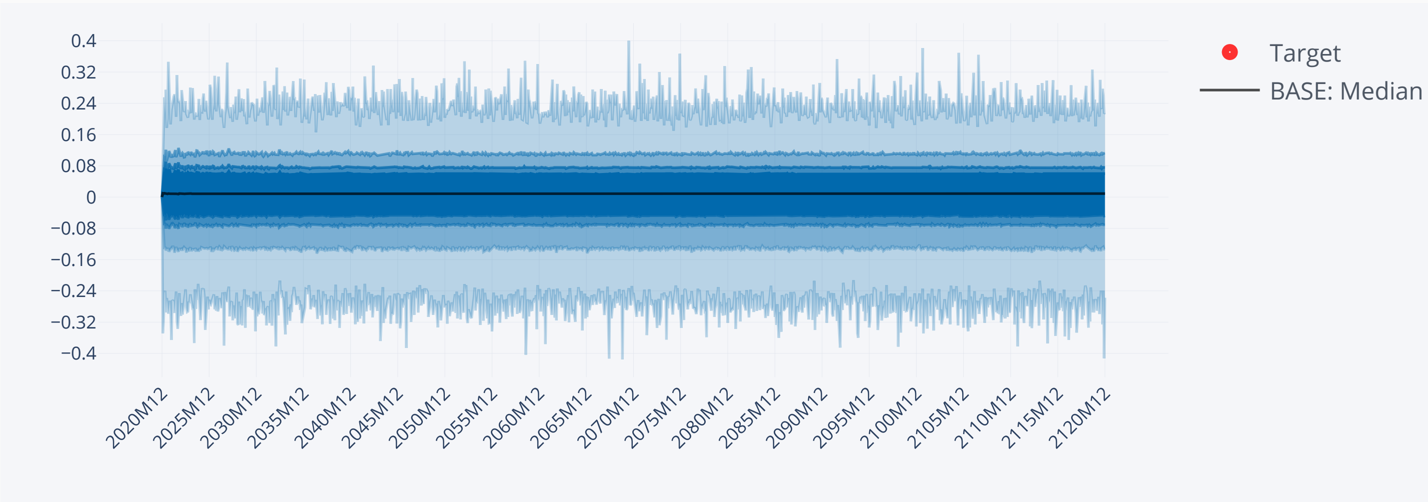
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0011	0.0012
std	0.0003	0.0003
min	0.0003	0.0004
1%	0.0005	0.0005
5%	0.0007	0.0007
10%	0.0007	0.0008
50%	0.0011	0.0011
90%	0.0015	0.0016
95%	0.0016	0.0018
99%	0.0019	0.0021
max	0.0026	0.0027

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Mid Cap Price

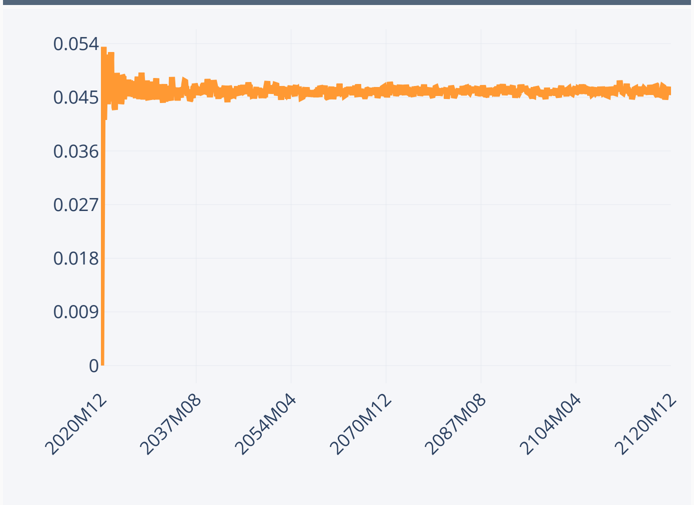


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

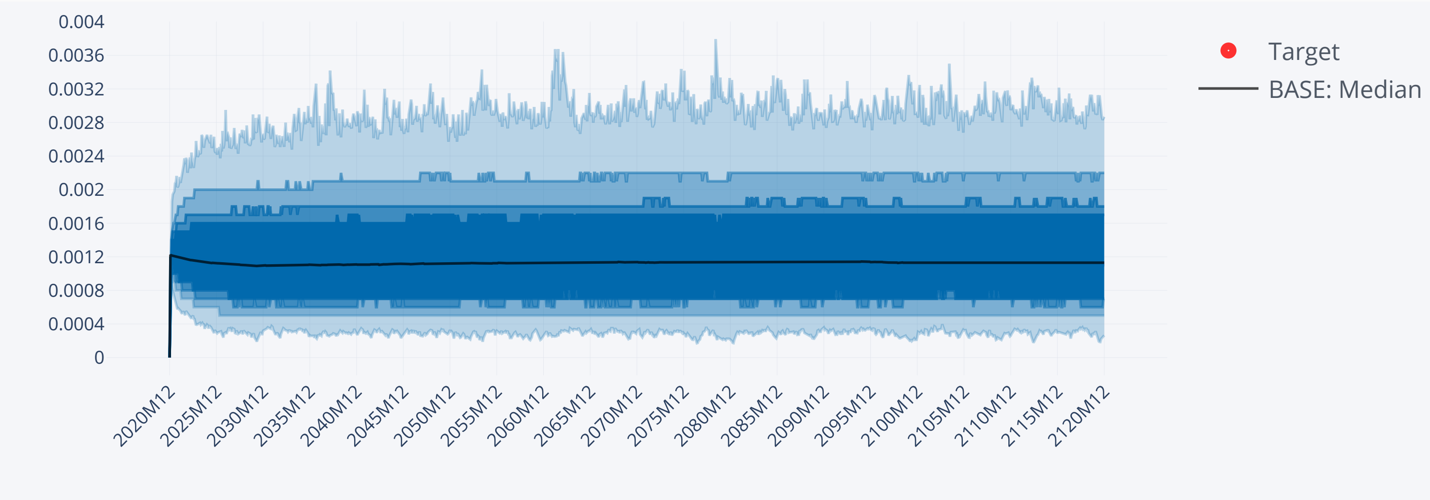
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0062	0.0063
std	0.0445	0.0464
min	-0.3657	-0.2821
1%	-0.1300	-0.1334
5%	-0.0693	-0.0718
10%	-0.0464	-0.0491
50%	0.0085	0.0085
90%	0.0577	0.0593
95%	0.0718	0.0754
99%	0.1046	0.1111
max	0.2234	0.2031

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Mid Cap Income

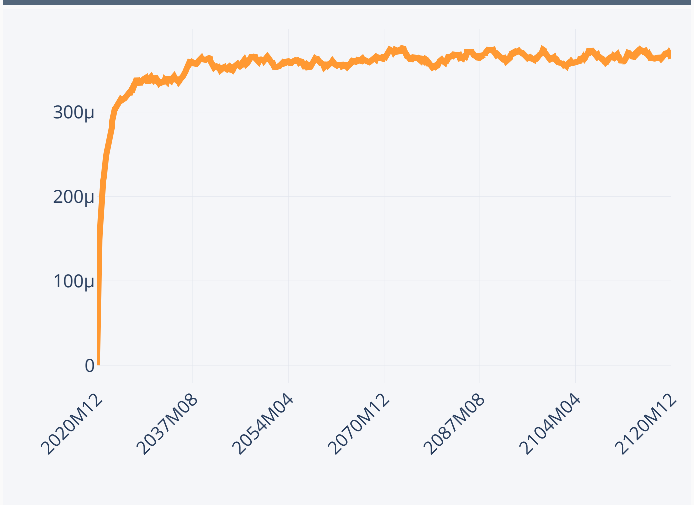


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0012	0.0012
std	0.0002	0.0004
min	0.0006	0.0003
1%	0.0008	0.0005
5%	0.0009	0.0006
10%	0.0009	0.0007
50%	0.0012	0.0011
90%	0.0015	0.0017
95%	0.0016	0.0018
99%	0.0018	0.0022
max	0.0021	0.0027

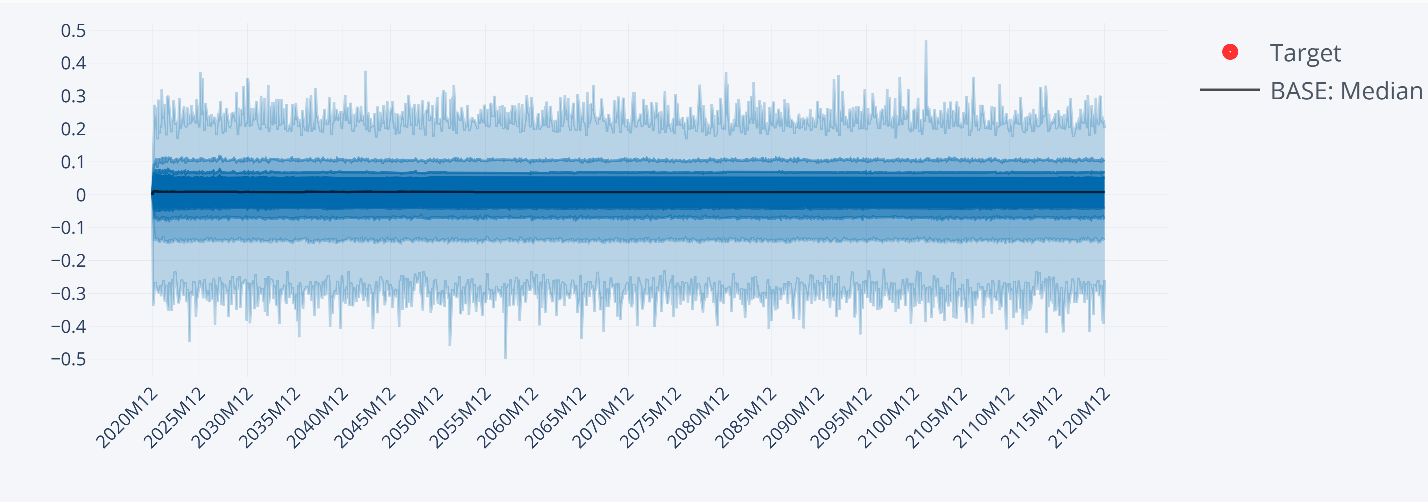
Cross Sectional Volatility Over Time : BASE



Large Cap Price
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Large Cap Price

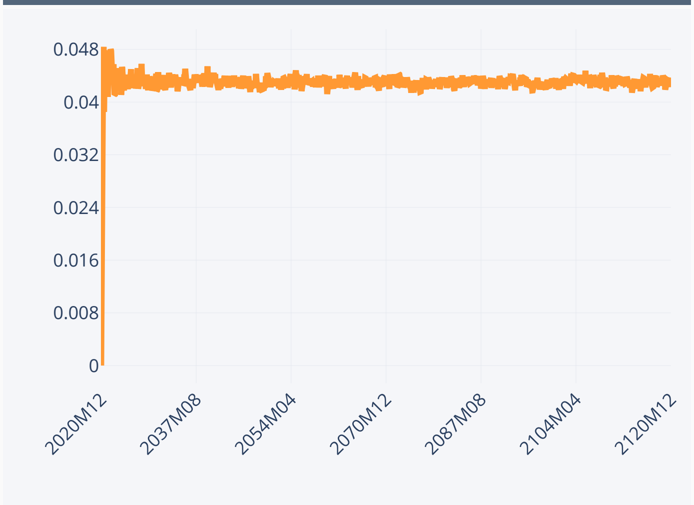


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

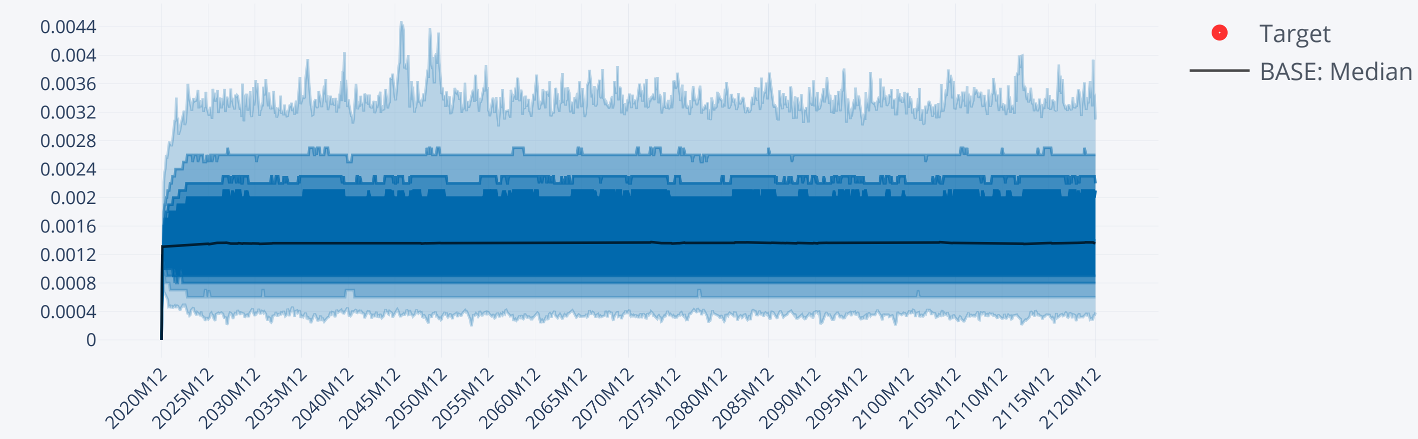
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0066	0.0056
std	0.0444	0.0433
min	-0.2855	-0.3310
1%	-0.1356	-0.1392
5%	-0.0689	-0.0696
10%	-0.0419	-0.0414
50%	0.0089	0.0086
90%	0.0566	0.0514
95%	0.0711	0.0676
99%	0.1060	0.1028
max	0.3205	0.2220

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Large Cap Income

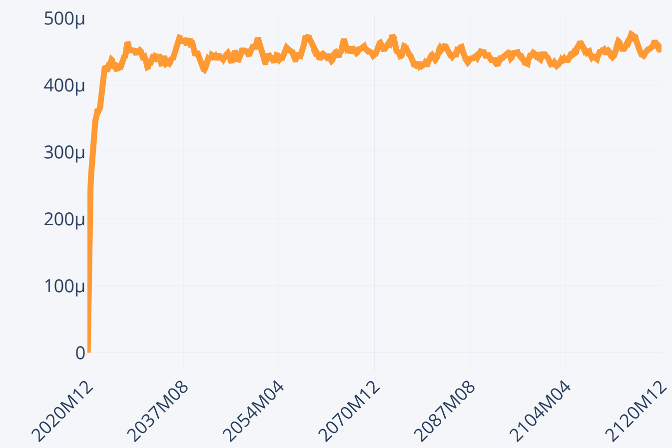


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

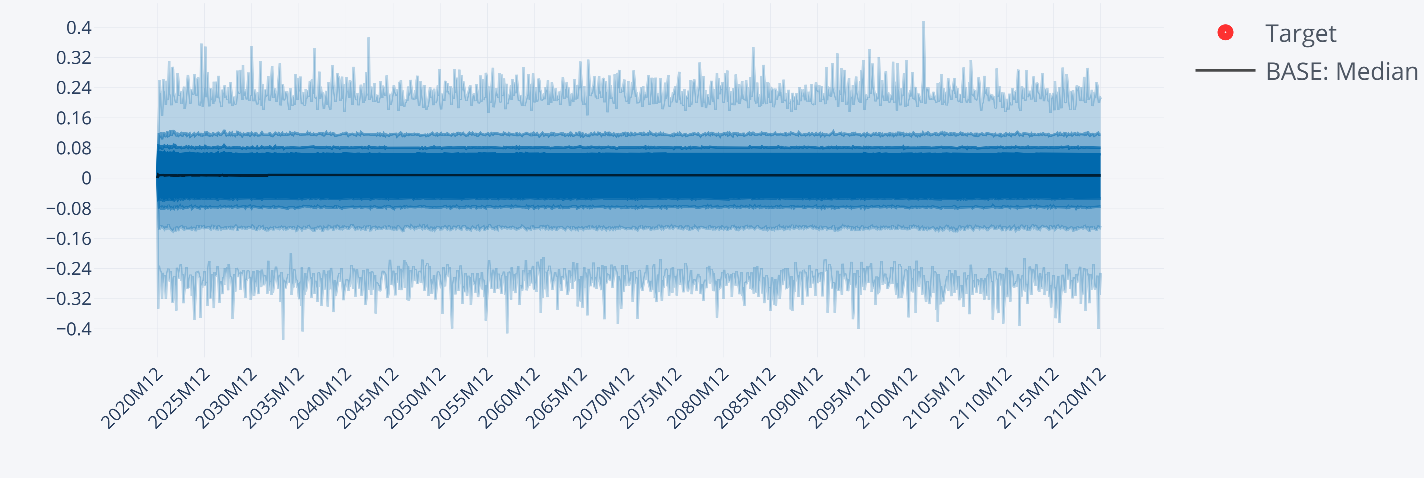
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0013	0.0014
std	0.0003	0.0005
min	0.0004	0.0003
1%	0.0007	0.0006
5%	0.0009	0.0008
10%	0.0010	0.0009
50%	0.0013	0.0014
90%	0.0018	0.0021
95%	0.0019	0.0023
99%	0.0022	0.0026
max	0.0028	0.0035

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : International Diversified Equity Price

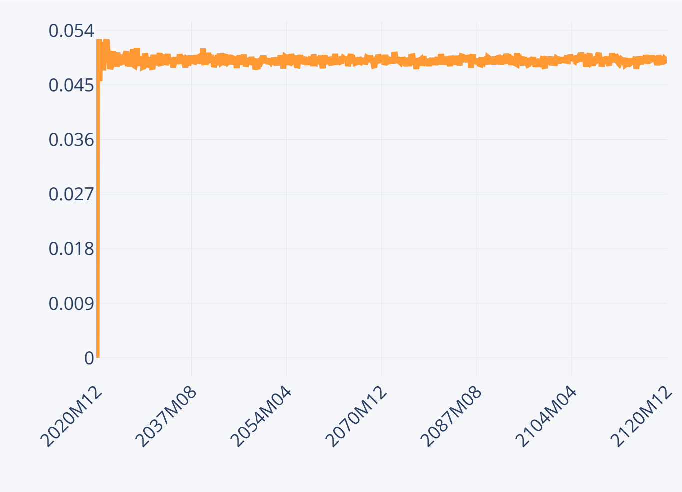


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0063	0.0047
std	0.0500	0.0494
min	-0.2608	-0.2915
1%	-0.1317	-0.1360
5%	-0.0784	-0.0779
10%	-0.0550	-0.0553
50%	0.0084	0.0072
90%	0.0659	0.0634
95%	0.0827	0.0812
99%	0.1181	0.1163
max	0.2585	0.2022

Cross Sectional Volatility Over Time : BASE



International Diversified Equity Income

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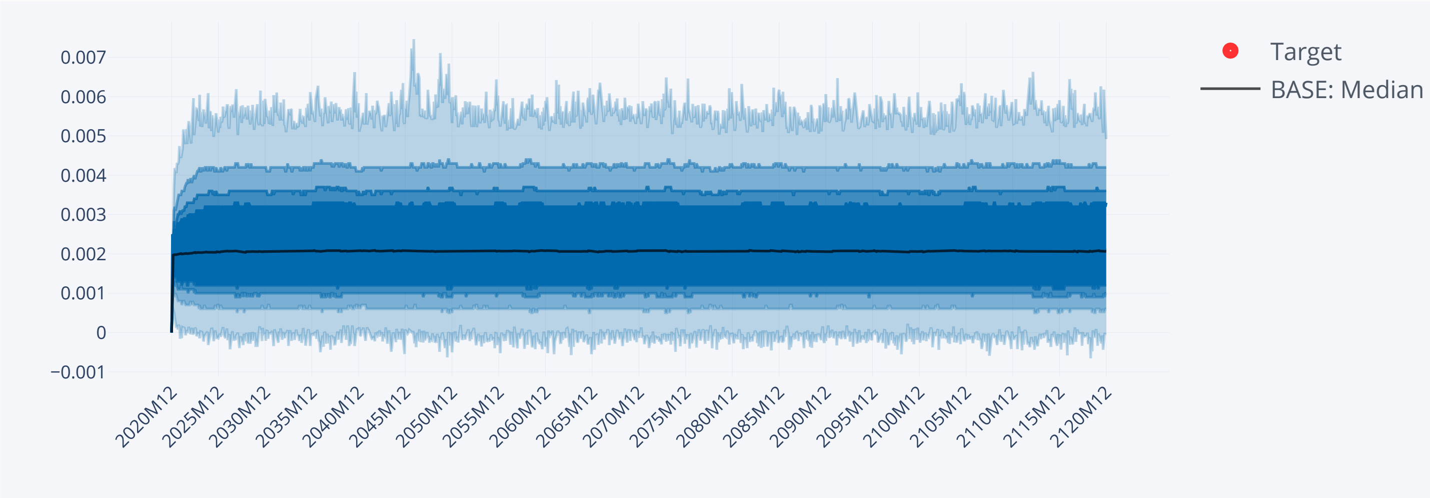
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : International Diversified Equity Income

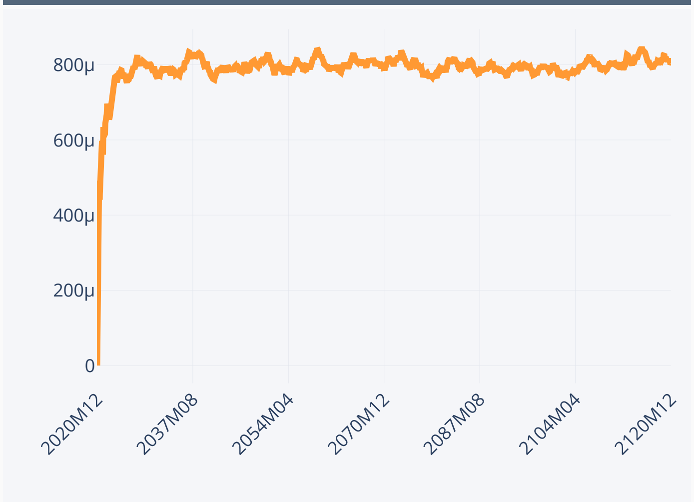


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0020	0.0021
std	0.0006	0.0008
min	0.0001	-0.0005
1%	0.0008	0.0005
5%	0.0012	0.0009
10%	0.0013	0.0012
50%	0.0020	0.0021
90%	0.0028	0.0033
95%	0.0030	0.0037
99%	0.0035	0.0043
max	0.0044	0.0053

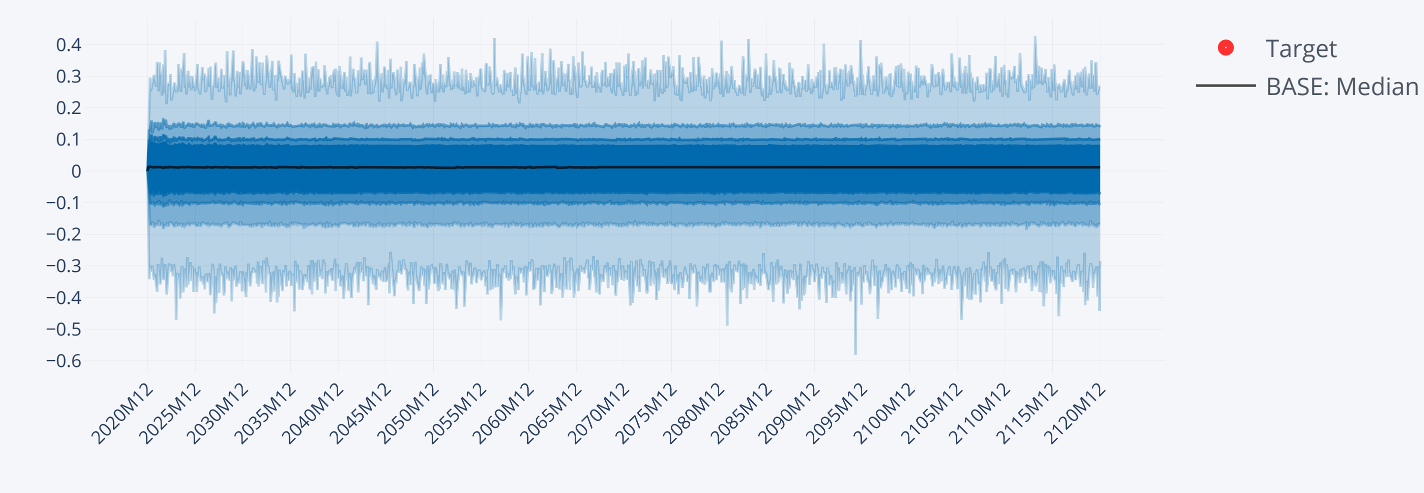
Cross Sectional Volatility Over Time : BASE



Aggressive US Equity Price
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Aggressive US Equity Price

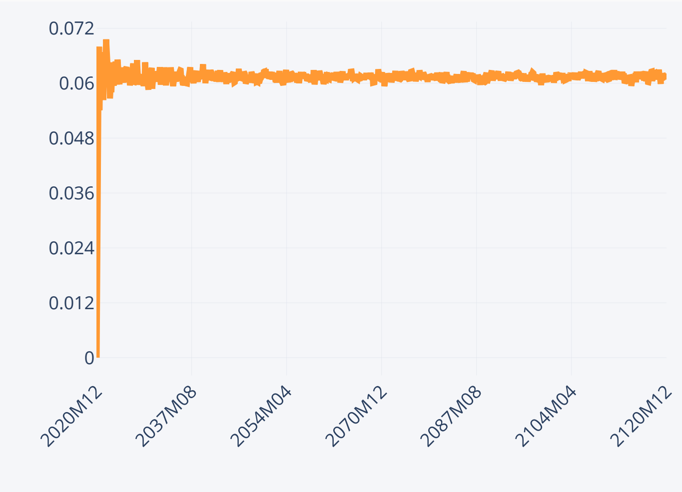


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0081	0.0079
std	0.0622	0.0620
min	-0.3816	-0.3065
1%	-0.1676	-0.1678
5%	-0.0991	-0.1018
10%	-0.0689	-0.0695
50%	0.0115	0.0116
90%	0.0826	0.0800
95%	0.1018	0.1019
99%	0.1414	0.1446
max	0.3450	0.2762

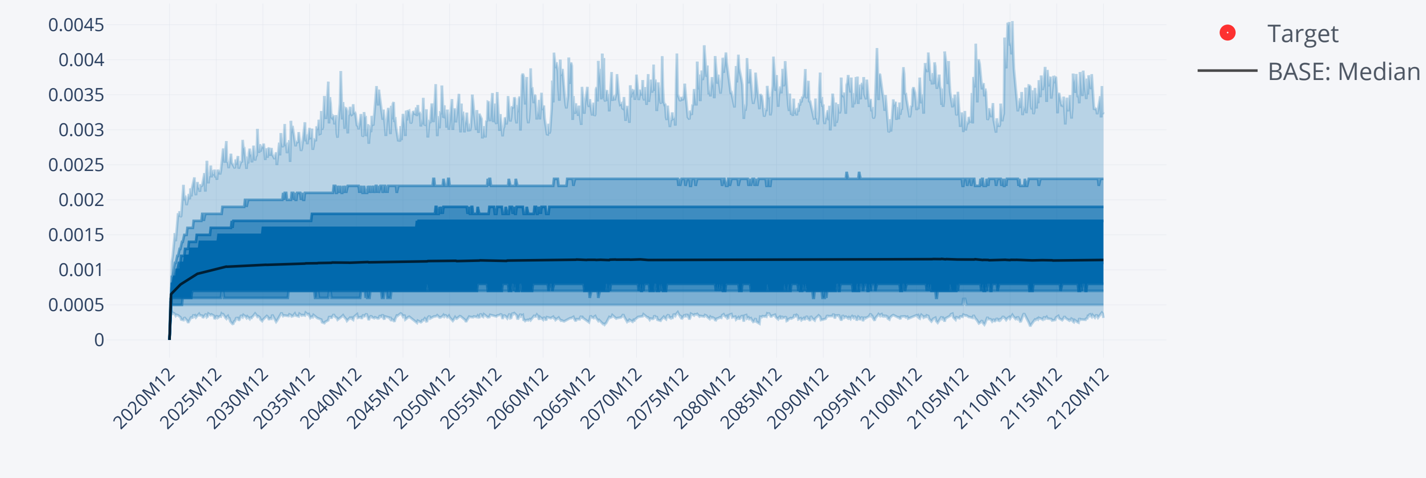
Cross Sectional Volatility Over Time : BASE



Aggressive US Equity Income
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Aggressive US Equity Income

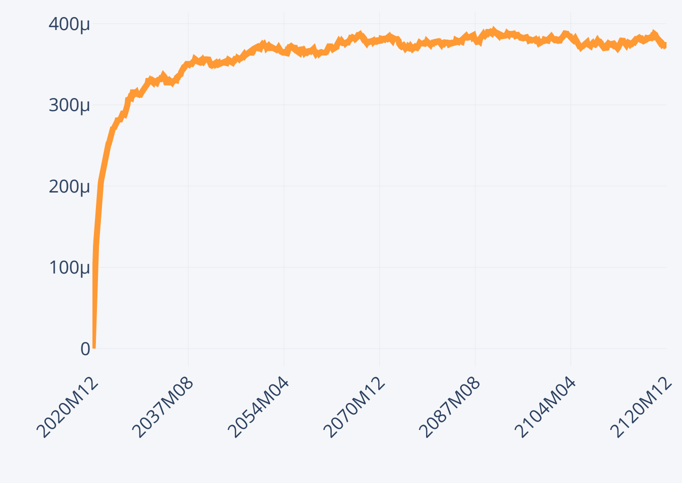


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

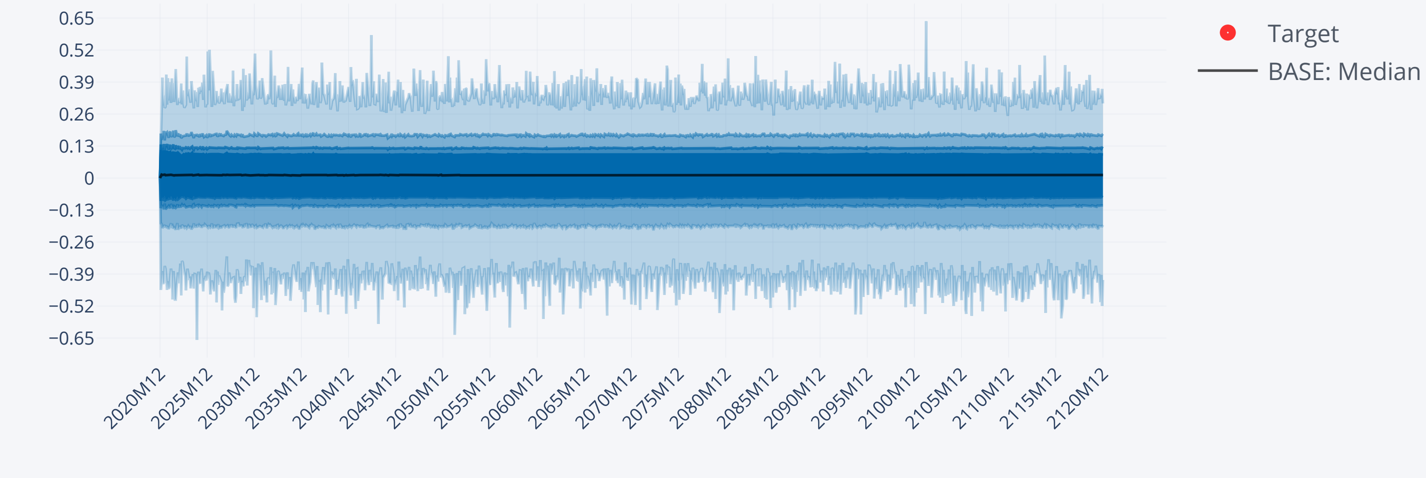
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0008	0.0012
std	0.0002	0.0004
min	0.0003	0.0003
1%	0.0005	0.0005
5%	0.0005	0.0007
10%	0.0006	0.0007
50%	0.0008	0.0011
90%	0.0010	0.0017
95%	0.0011	0.0019
99%	0.0013	0.0022
max	0.0018	0.0031

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Aggressive Foreign Equity Price

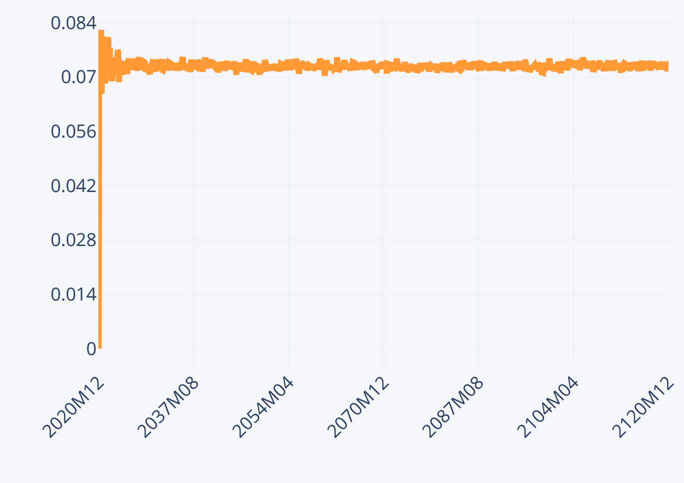


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0113	0.0080
std	0.0767	0.0728
min	-0.4431	-0.4064
1%	-0.1915	-0.2014
5%	-0.1167	-0.1143
10%	-0.0832	-0.0794
50%	0.0135	0.0110
90%	0.1043	0.0943
95%	0.1317	0.1223
99%	0.1836	0.1714
max	0.3429	0.3078

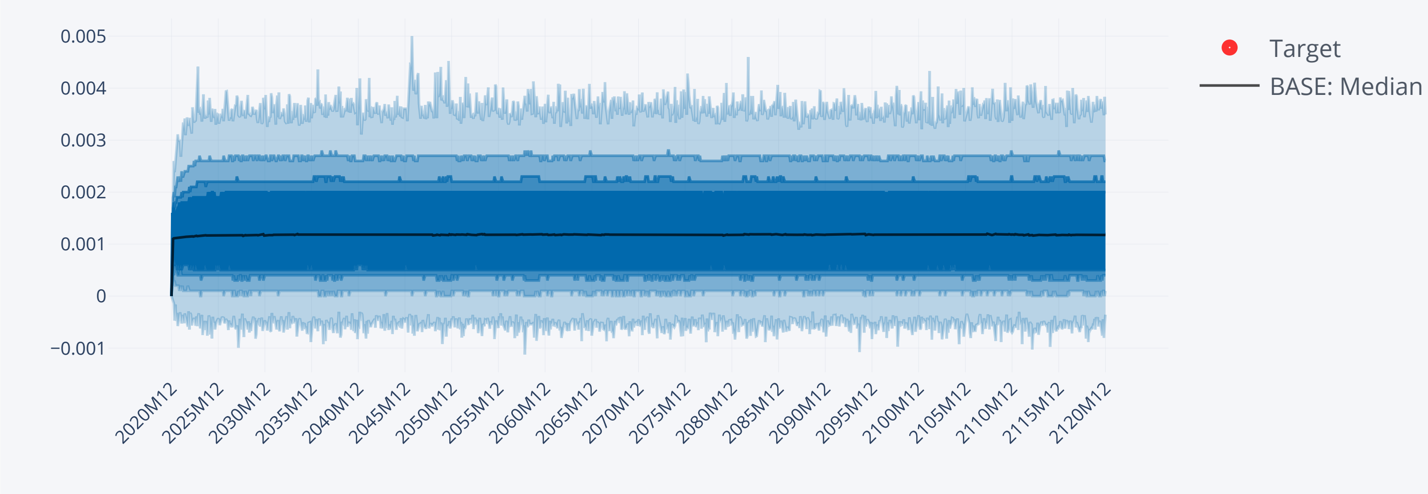
Cross Sectional Volatility Over Time : BASE



Aggressive Foreign Equity Income
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Aggressive Foreign Equity Income

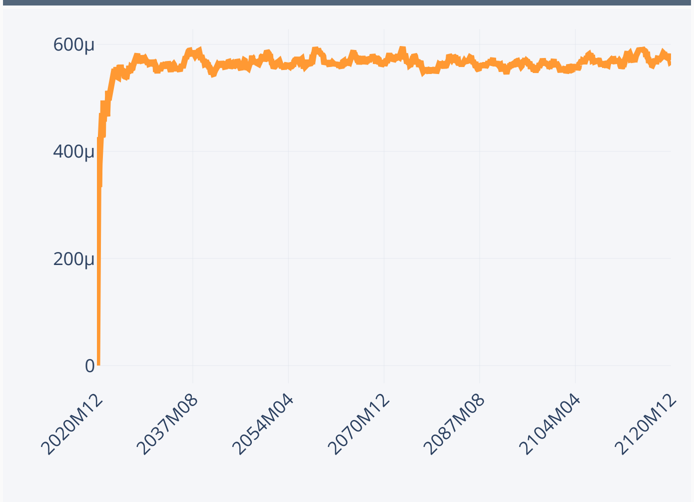


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0012	0.0012
std	0.0004	0.0006
min	-0.0004	-0.0004
1%	0.0002	0.0001
5%	0.0005	0.0004
10%	0.0006	0.0005
50%	0.0011	0.0012
90%	0.0017	0.0020
95%	0.0019	0.0022
99%	0.0022	0.0027
max	0.0027	0.0036

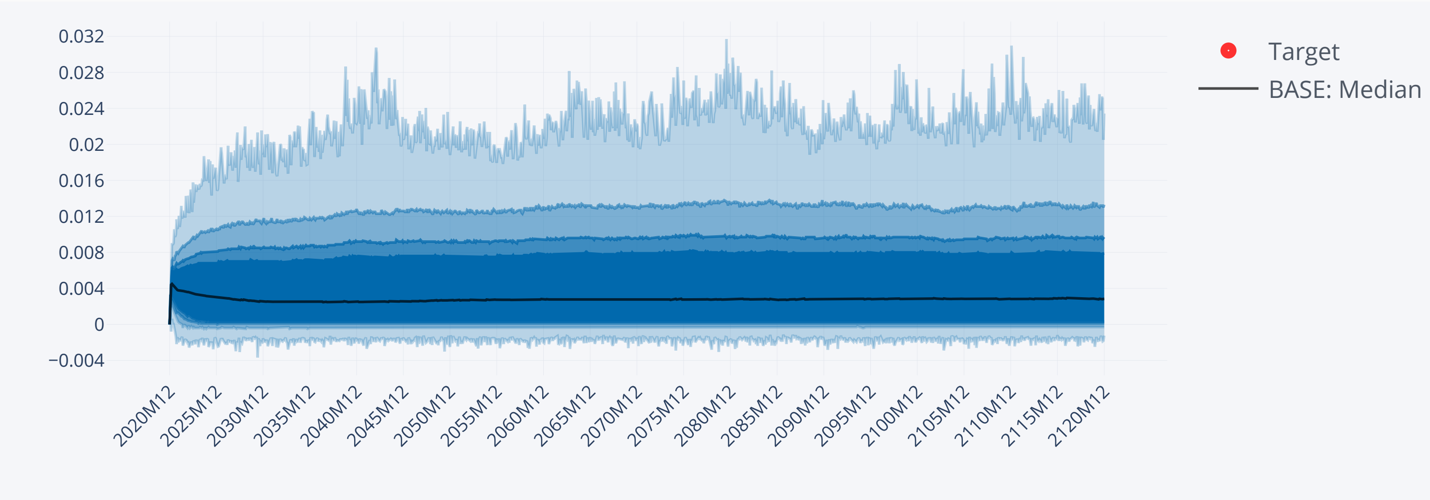
Cross Sectional Volatility Over Time : BASE



Money Market Total Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Money Market Total Return

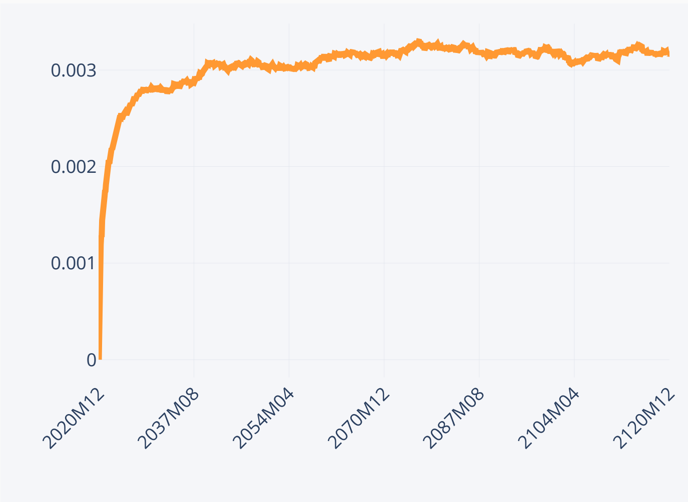


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0038	0.0033
std	0.0017	0.0030
min	-0.0016	-0.0025
1%	0.0002	-0.0003
5%	0.0011	0.0000
10%	0.0017	0.0002
50%	0.0038	0.0027
90%	0.0060	0.0076
95%	0.0067	0.0092
99%	0.0081	0.0126
max	0.0121	0.0188

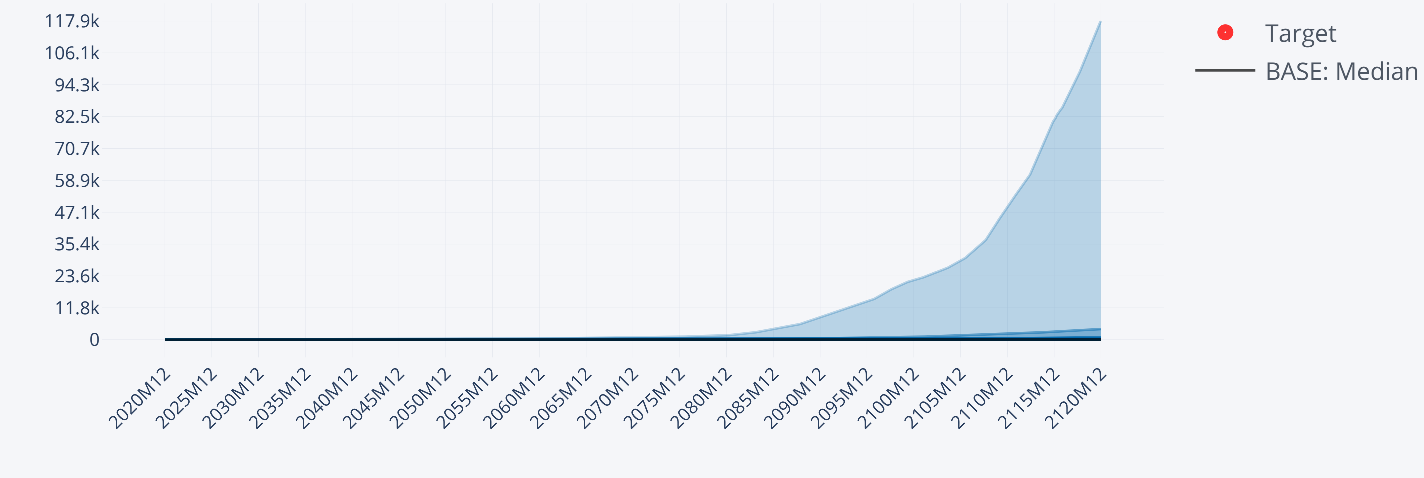
Cross Sectional Volatility Over Time : BASE



Money Market Cumulative Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Money Market Cumulative Return

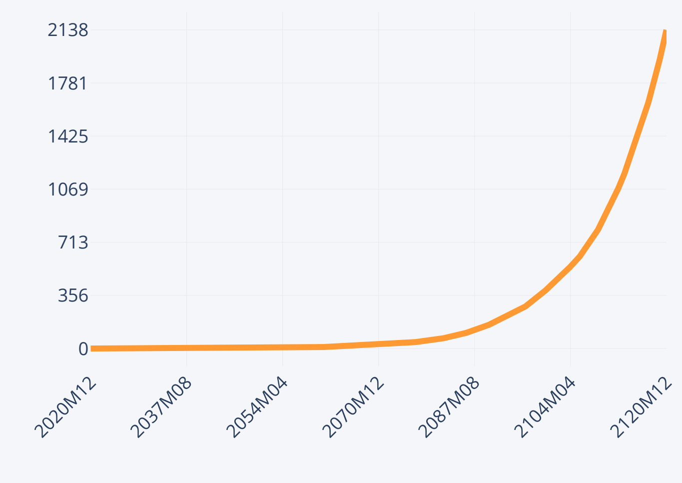


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

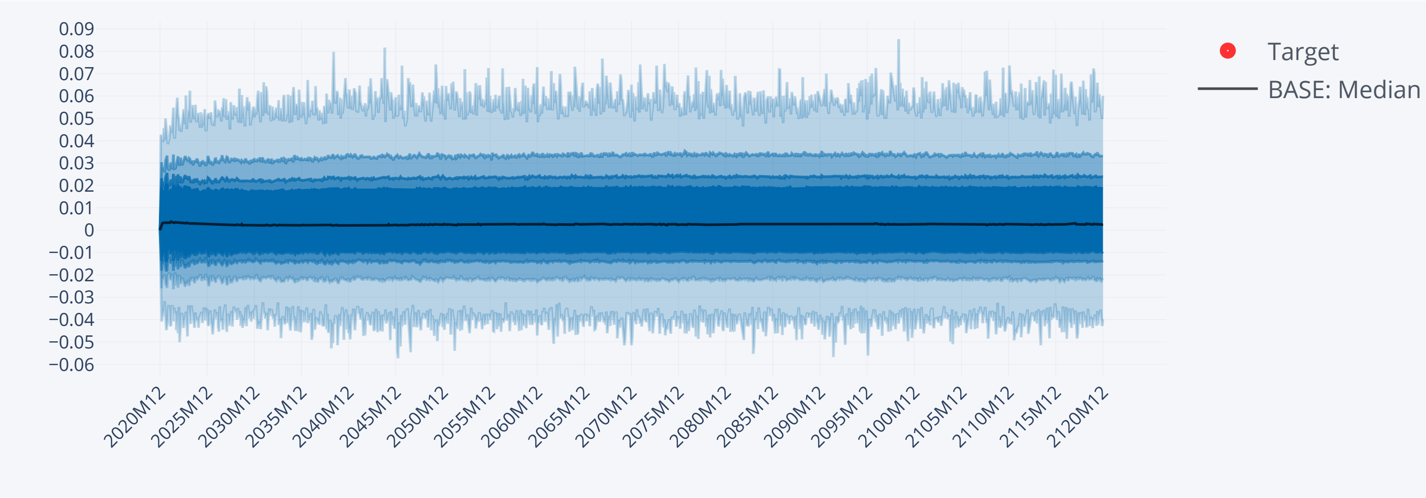
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0506	3.0298
std	0.0076	3.6994
min	0.0263	0.0373
1%	0.0338	0.2625
5%	0.0383	0.4532
10%	0.0408	0.6150
50%	0.0505	1.9451
90%	0.0605	6.4028
95%	0.0635	9.1283
99%	0.0691	17.3699
max	0.0822	103.6923

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Short Govt Bonds Total Return

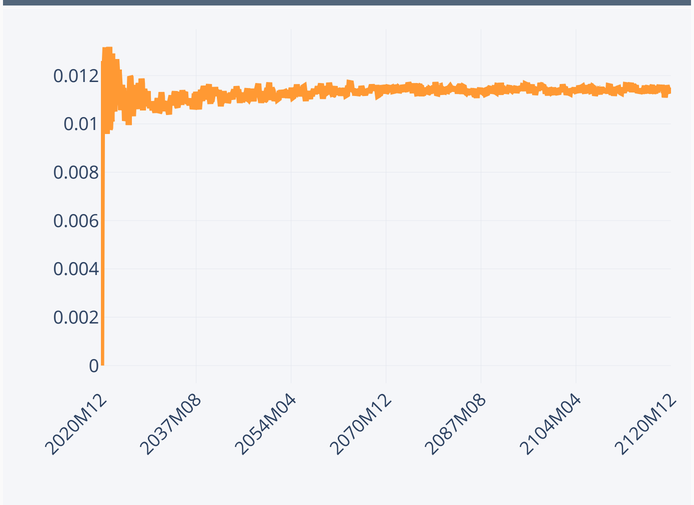


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0035	0.0037
std	0.0096	0.0114
min	-0.0353	-0.0433
1%	-0.0190	-0.0227
5%	-0.0121	-0.0140
10%	-0.0085	-0.0101
50%	0.0034	0.0024
90%	0.0156	0.0188
95%	0.0196	0.0243
99%	0.0268	0.0335
max	0.0412	0.0568

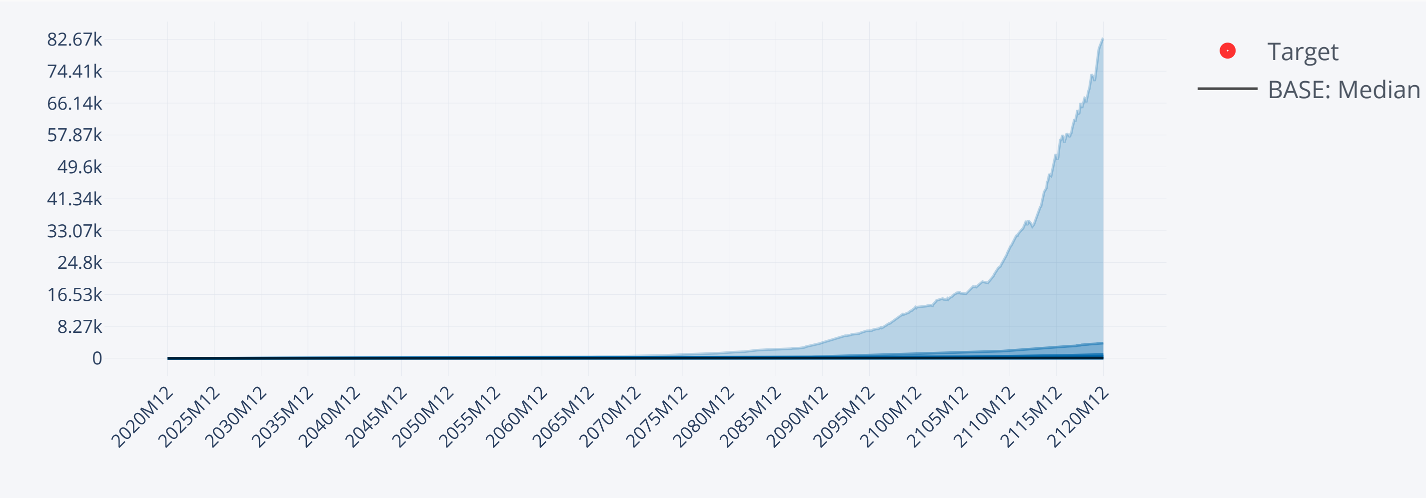
Cross Sectional Volatility Over Time : BASE



Short Govt Bonds Cumulative Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Short Govt Bonds Cumulative Return

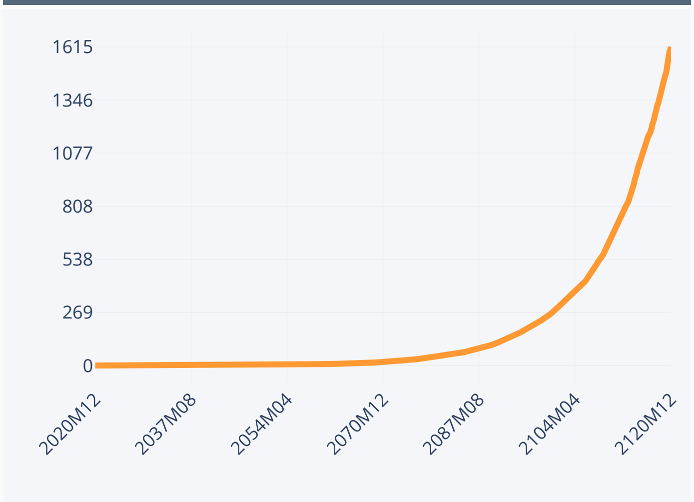


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

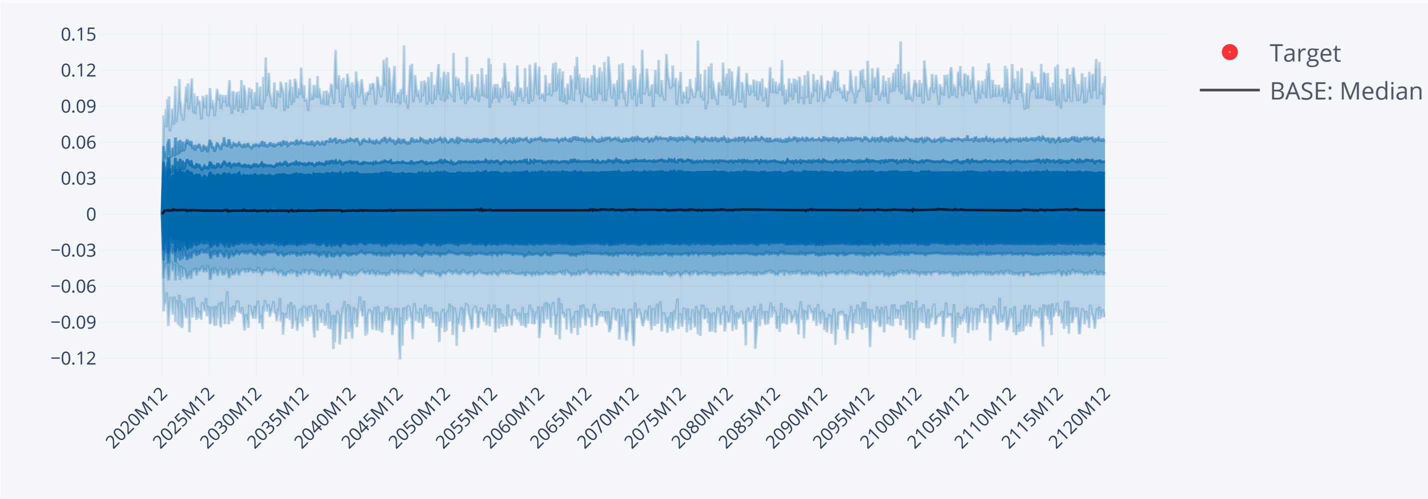
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0379	2.8372
std	0.0312	2.5377
min	-0.0788	0.1993
1%	-0.0350	0.4552
5%	-0.0138	0.6862
10%	-0.0024	0.8684
50%	0.0379	2.1529
90%	0.0778	5.4527
95%	0.0898	7.2347
99%	0.1089	12.5668
max	0.1357	57.3728

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Int Govt Bonds Total Return

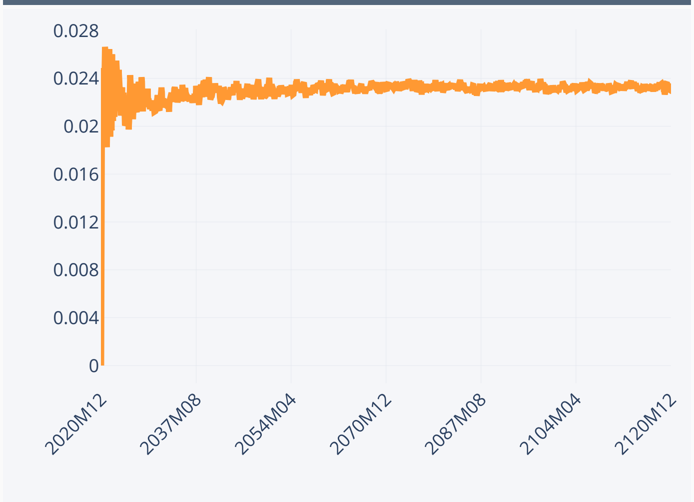


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0033	0.0045
std	0.0183	0.0234
min	-0.0708	-0.0980
1%	-0.0390	-0.0500
5%	-0.0267	-0.0328
10%	-0.0196	-0.0245
50%	0.0032	0.0035
90%	0.0263	0.0349
95%	0.0340	0.0449
99%	0.0477	0.0630
max	0.0786	0.0938

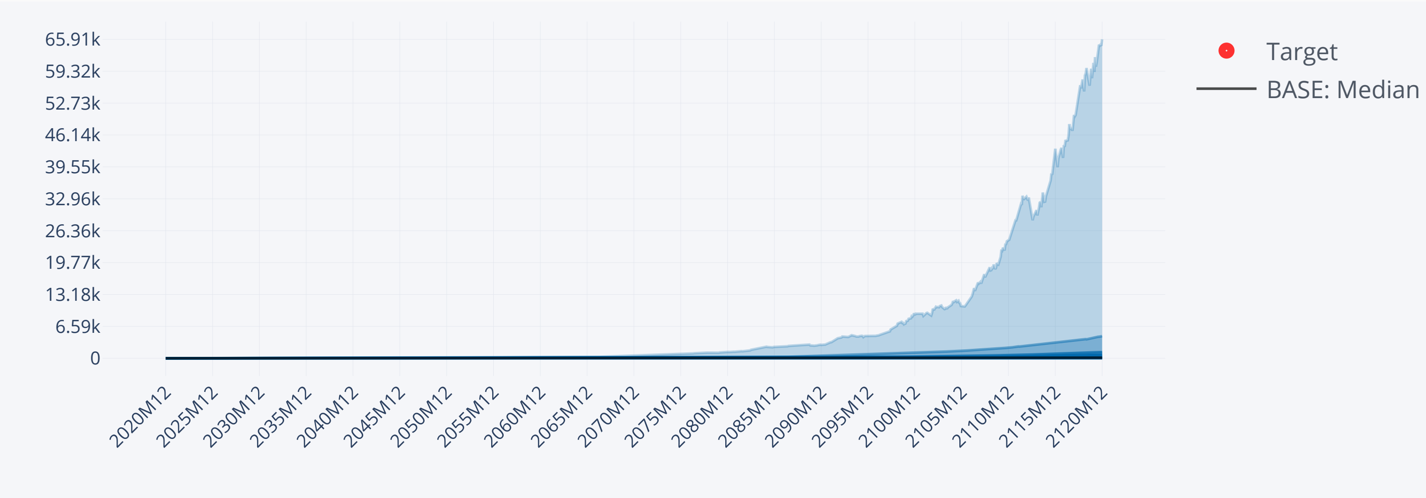
Cross Sectional Volatility Over Time : BASE



Int Govt Bonds Cumulative Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Int Govt Bonds Cumulative Return

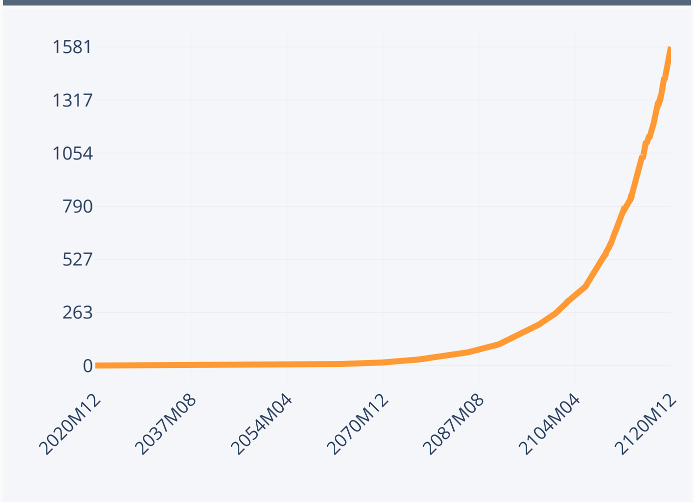


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0359	2.9590
std	0.0687	1.9328
min	-0.2002	0.4016
1%	-0.1194	0.7893
5%	-0.0737	1.0919
10%	-0.0520	1.3032
50%	0.0343	2.4770
90%	0.1244	5.0748
95%	0.1515	6.3710
99%	0.1984	10.1720
max	0.3006	33.8200

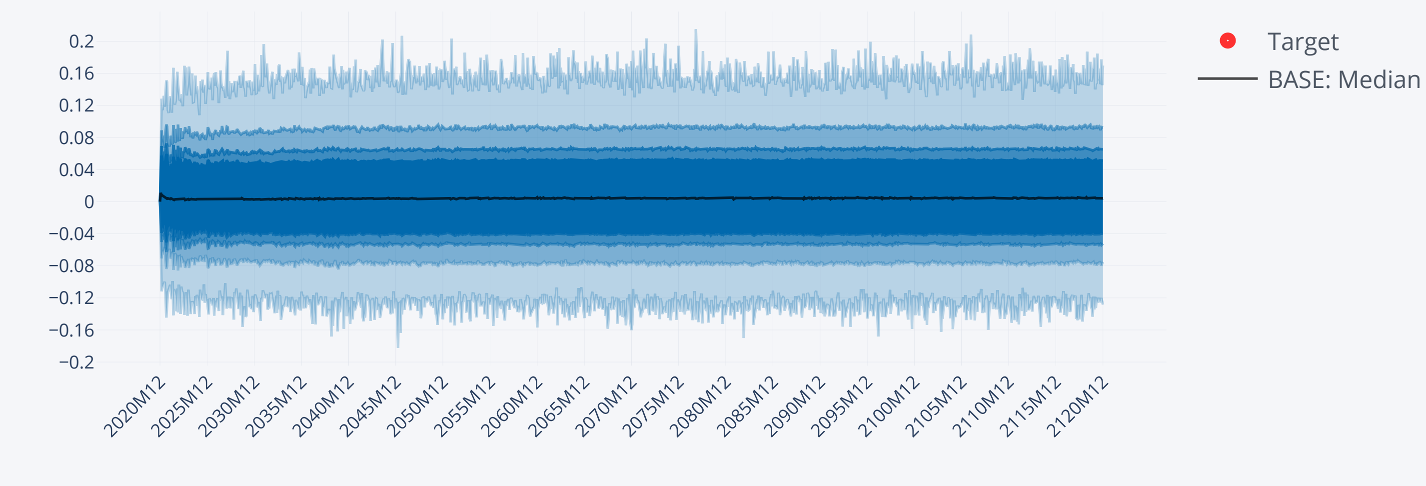
Cross Sectional Volatility Over Time : BASE



Long Govt Bonds Total Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Long Govt Bonds Total Return

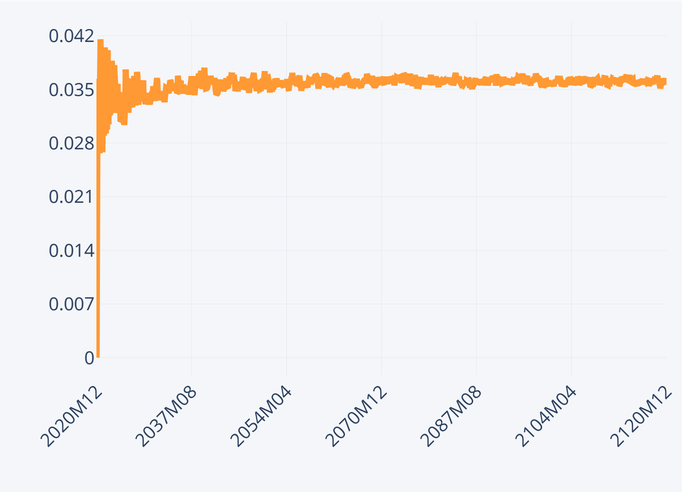


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0032	0.0051
std	0.0268	0.0363
min	-0.1075	-0.1468
1%	-0.0589	-0.0780
5%	-0.0403	-0.0524
10%	-0.0305	-0.0399
50%	0.0029	0.0045
90%	0.0373	0.0522
95%	0.0482	0.0670
99%	0.0687	0.0937
max	0.1223	0.1492

Cross Sectional Volatility Over Time : BASE



Long Govt Bonds Cumulative Return

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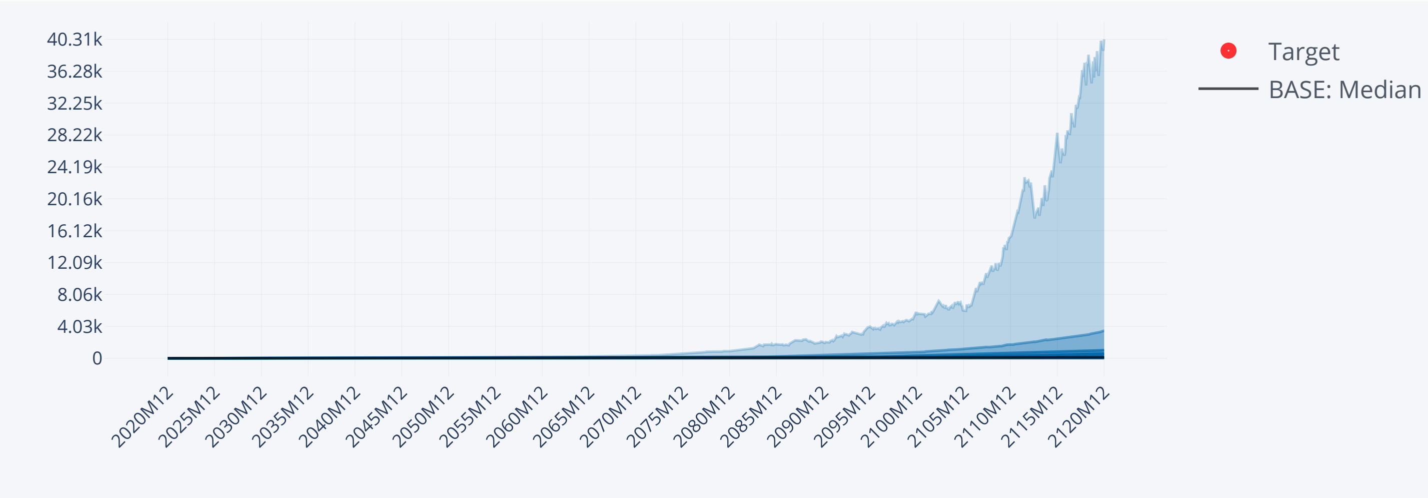
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Long Govt Bonds Cumulative Return

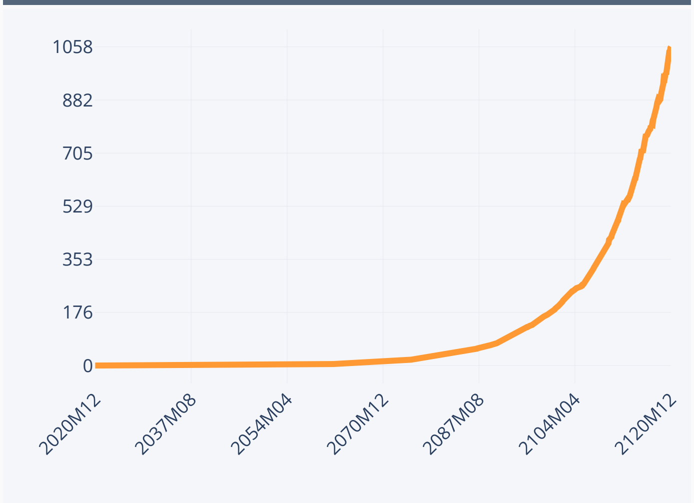


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0712	2.7232
std	0.1093	1.4765
min	-0.2661	0.2929
1%	-0.1667	0.8062
5%	-0.1011	1.1403
10%	-0.0671	1.3543
50%	0.0674	2.4103
90%	0.2123	4.4272
95%	0.2575	5.3381
99%	0.3360	7.9956
max	0.5813	22.1692

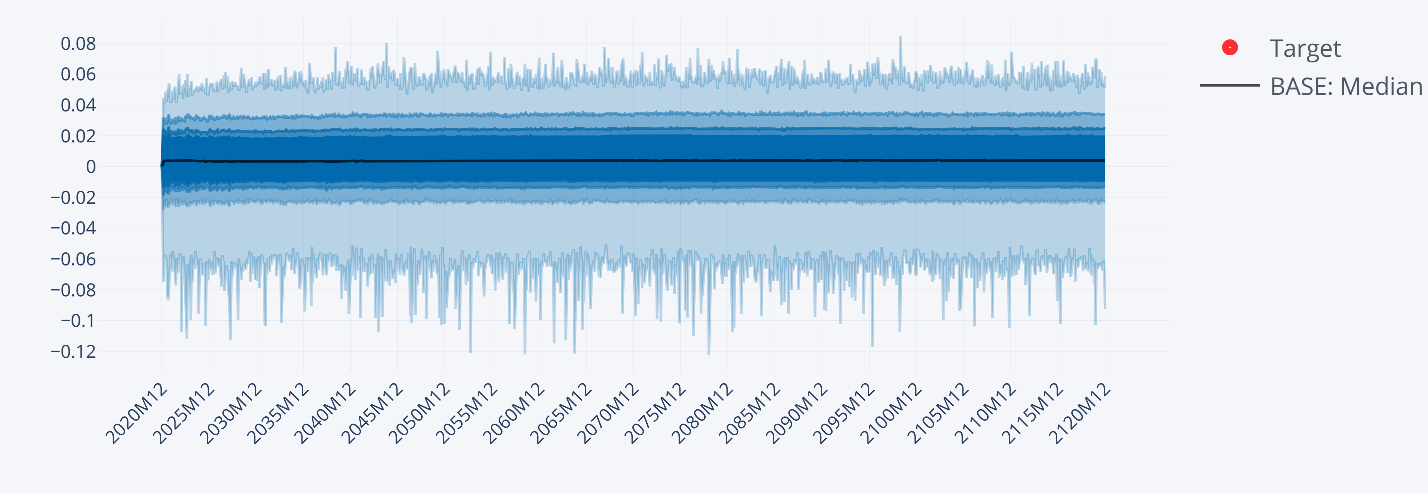
Cross Sectional Volatility Over Time : BASE



Short Inv Corp Bonds Total Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Short Inv Corp Bonds Total Return

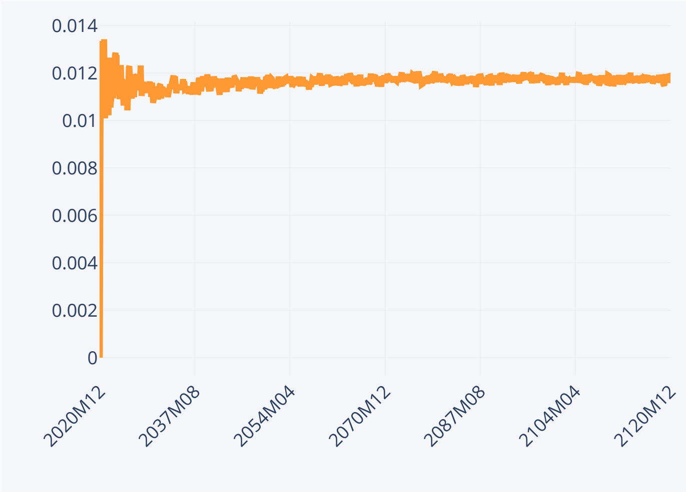


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0037	0.0043
std	0.0106	0.0118
min	-0.0648	-0.1023
1%	-0.0217	-0.0232
5%	-0.0129	-0.0137
10%	-0.0091	-0.0094
50%	0.0037	0.0036
90%	0.0167	0.0194
95%	0.0210	0.0246
99%	0.0285	0.0340
max	0.0413	0.0568

Cross Sectional Volatility Over Time : BASE



Short Inv Corp Bonds Cumulative Return
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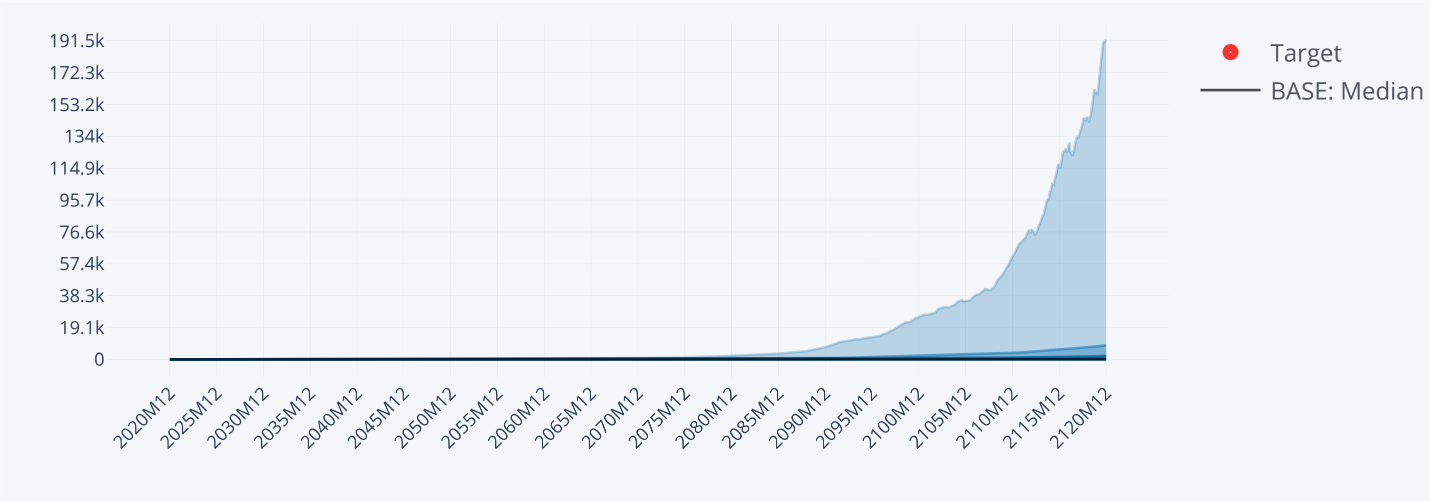
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Short Inv Corp Bonds Cumulative Return

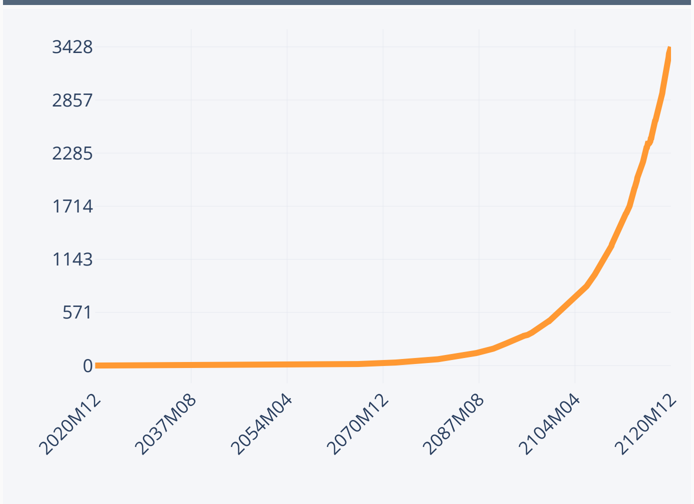


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

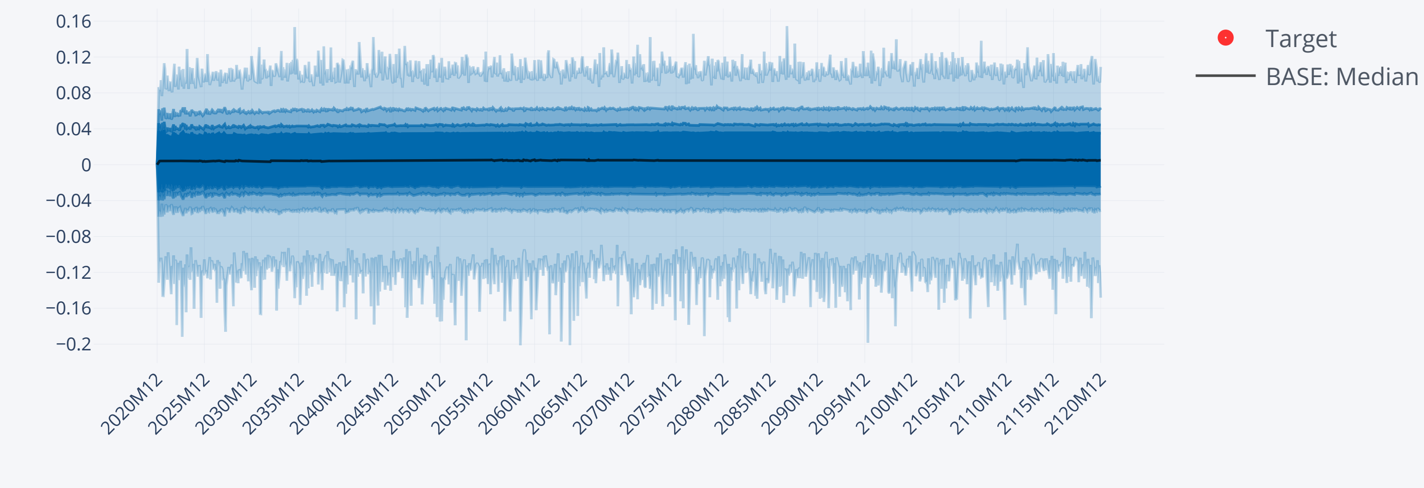
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0411	3.6682
std	0.0329	3.0958
min	-0.1004	0.4546
1%	-0.0378	0.7607
5%	-0.0143	1.0321
10%	-0.0011	1.2590
50%	0.0419	2.8415
90%	0.0823	6.8827
95%	0.0948	9.0544
99%	0.1146	15.2791
max	0.1466	71.2177

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Int Inv Corp Bonds Total Return

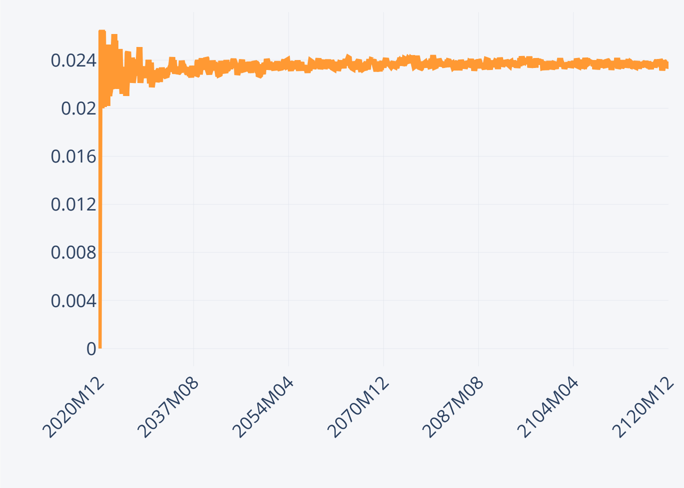


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0035	0.0051
std	0.0205	0.0238
min	-0.1181	-0.1747
1%	-0.0458	-0.0517
5%	-0.0290	-0.0326
10%	-0.0220	-0.0240
50%	0.0035	0.0046
90%	0.0294	0.0354
95%	0.0372	0.0450
99%	0.0524	0.0624
max	0.0853	0.0971

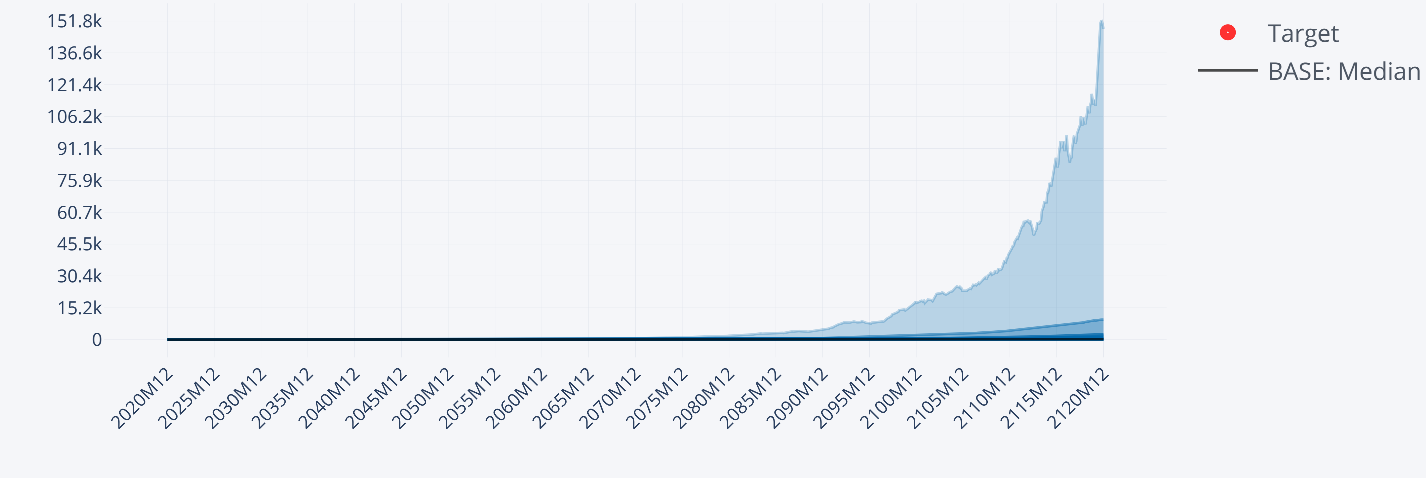
Cross Sectional Volatility Over Time : BASE



Int Inv Corp Bonds Cumulative Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Int Inv Corp Bonds Cumulative Return

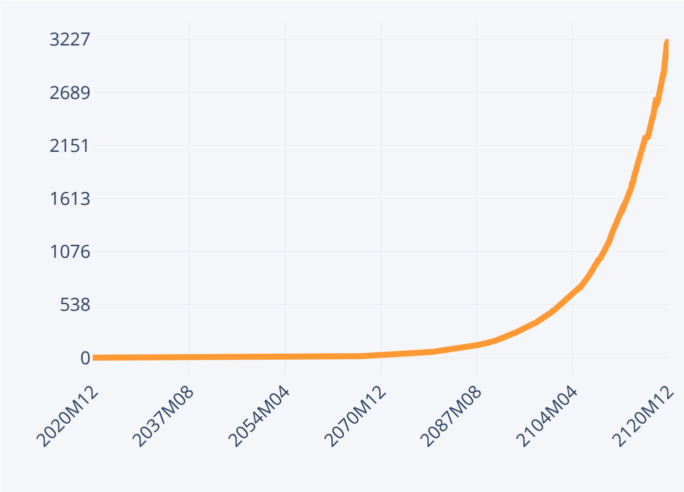


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

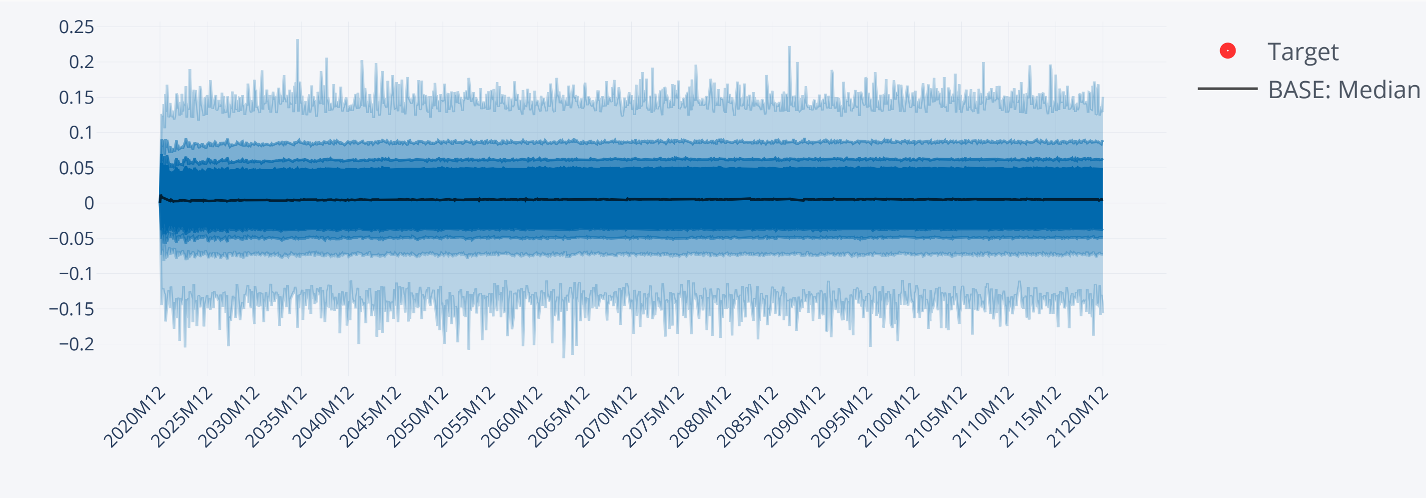
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0415	3.7864
std	0.0725	2.3670
min	-0.2408	0.5806
1%	-0.1282	1.0776
5%	-0.0776	1.4853
10%	-0.0510	1.7533
50%	0.0411	3.2137
90%	0.1345	6.3707
95%	0.1618	7.9943
99%	0.2100	12.6532
max	0.3318	42.5244

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Long Inv Corp Bonds Total Return

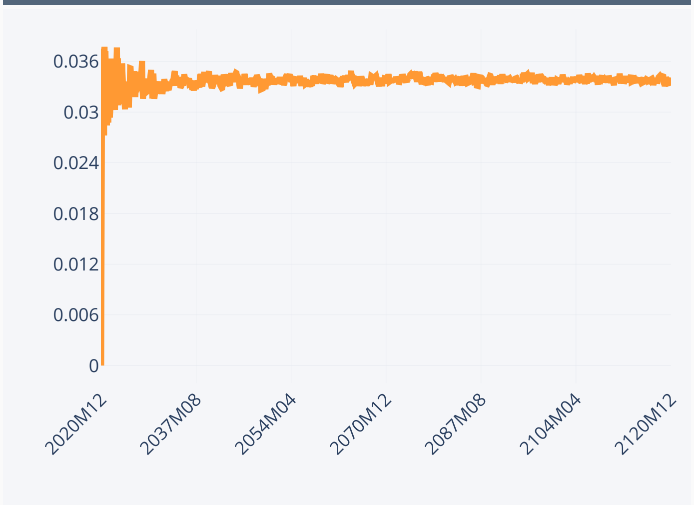


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0034	0.0055
std	0.0284	0.0339
min	-0.1348	-0.1930
1%	-0.0630	-0.0735
5%	-0.0418	-0.0494
10%	-0.0322	-0.0369
50%	0.0034	0.0048
90%	0.0396	0.0495
95%	0.0505	0.0619
99%	0.0716	0.0866
max	0.1263	0.1453

Cross Sectional Volatility Over Time : BASE



Long Inv Corp Bonds Cumulative Return
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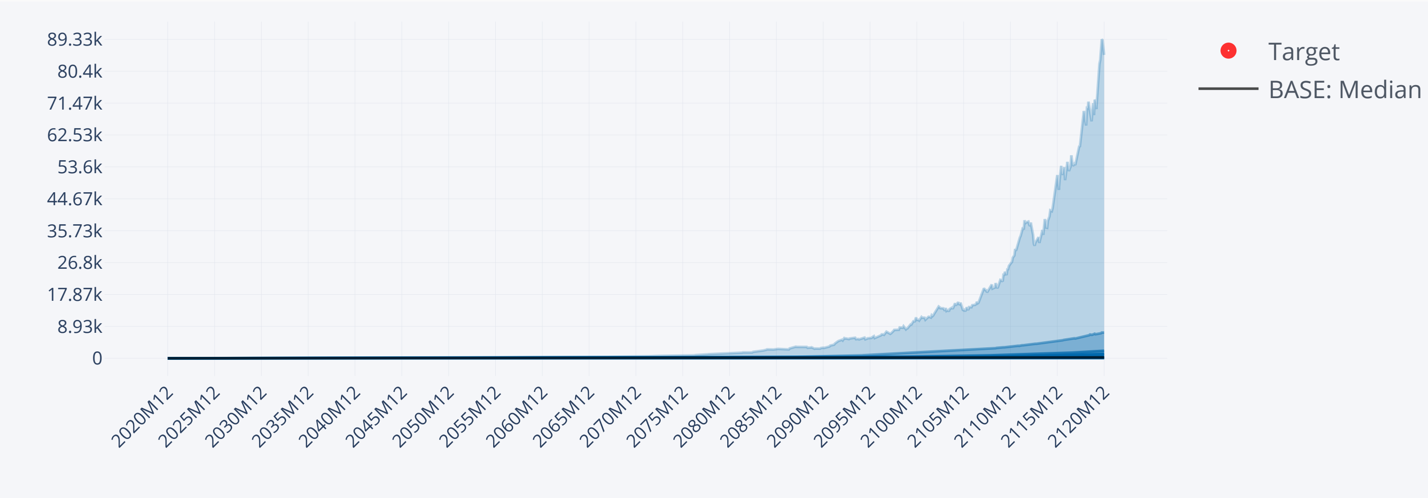
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Long Inv Corp Bonds Cumulative Return

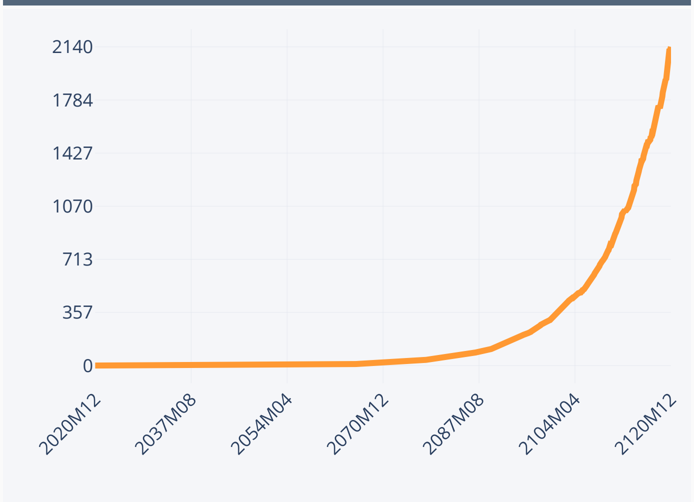


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0712	3.4978
std	0.1075	1.8424
min	-0.3355	0.4825
1%	-0.1694	1.1195
5%	-0.1016	1.5559
10%	-0.0644	1.8101
50%	0.0677	3.0876
90%	0.2099	5.6041
95%	0.2524	6.8153
99%	0.3294	10.2002
max	0.5901	29.1435

Cross Sectional Volatility Over Time : BASE



High Yield Corp Bonds Total Return

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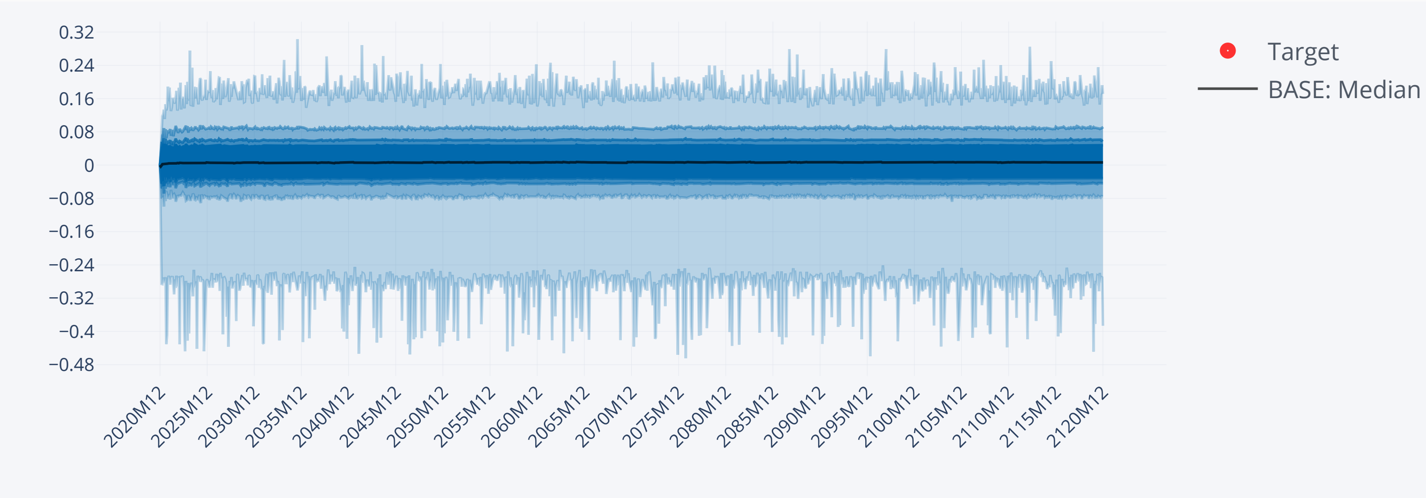
Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : High Yield Corp Bonds Total Return

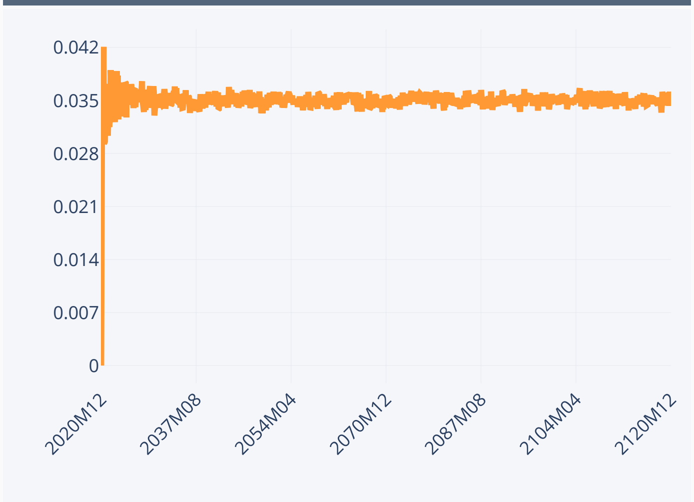


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0035	0.0063
std	0.0340	0.0352
min	-0.2736	-0.4264
1%	-0.0701	-0.0735
5%	-0.0444	-0.0446
10%	-0.0329	-0.0324
50%	0.0038	0.0063
90%	0.0422	0.0473
95%	0.0547	0.0610
99%	0.0805	0.0884
max	0.1864	0.1603

Cross Sectional Volatility Over Time : BASE



High Yield Corp Bonds Cumulative Return
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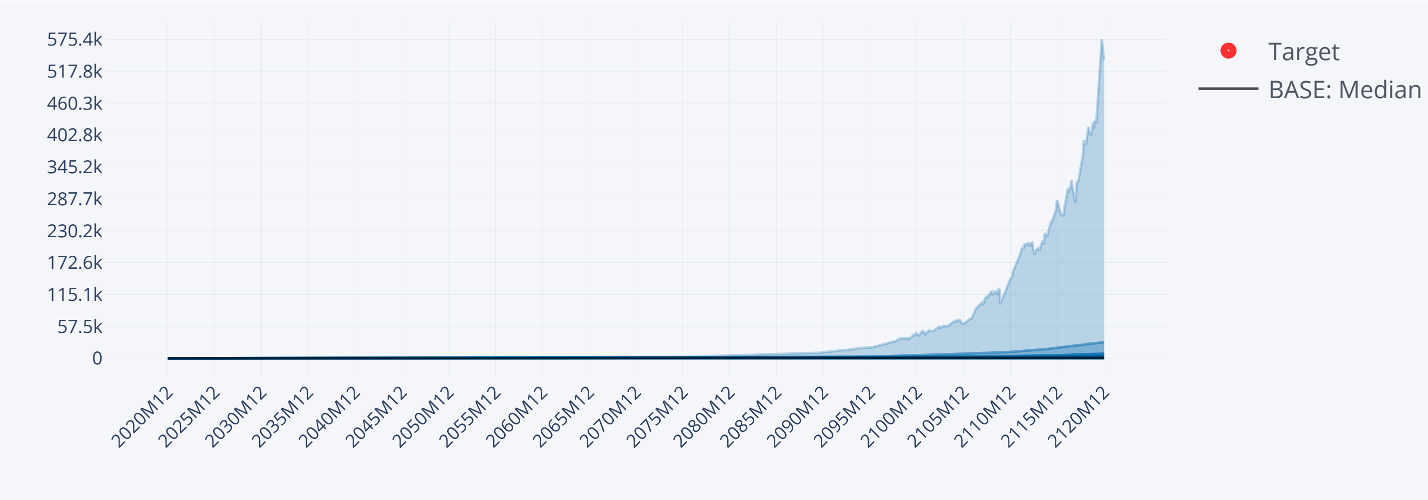
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : High Yield Corp Bonds Cumulative Return

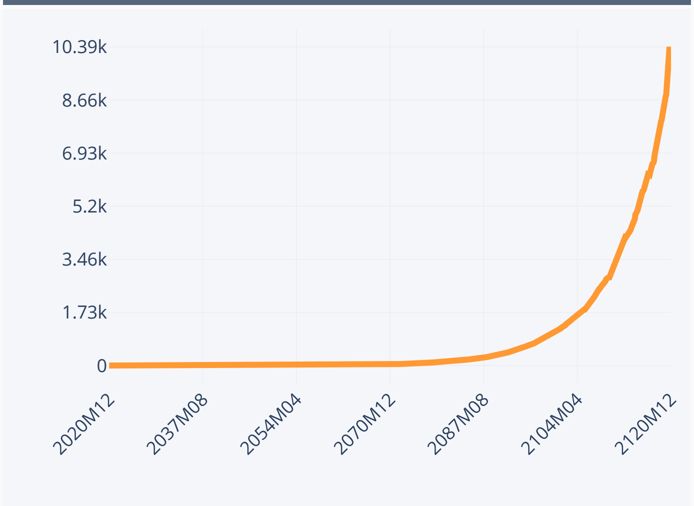


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

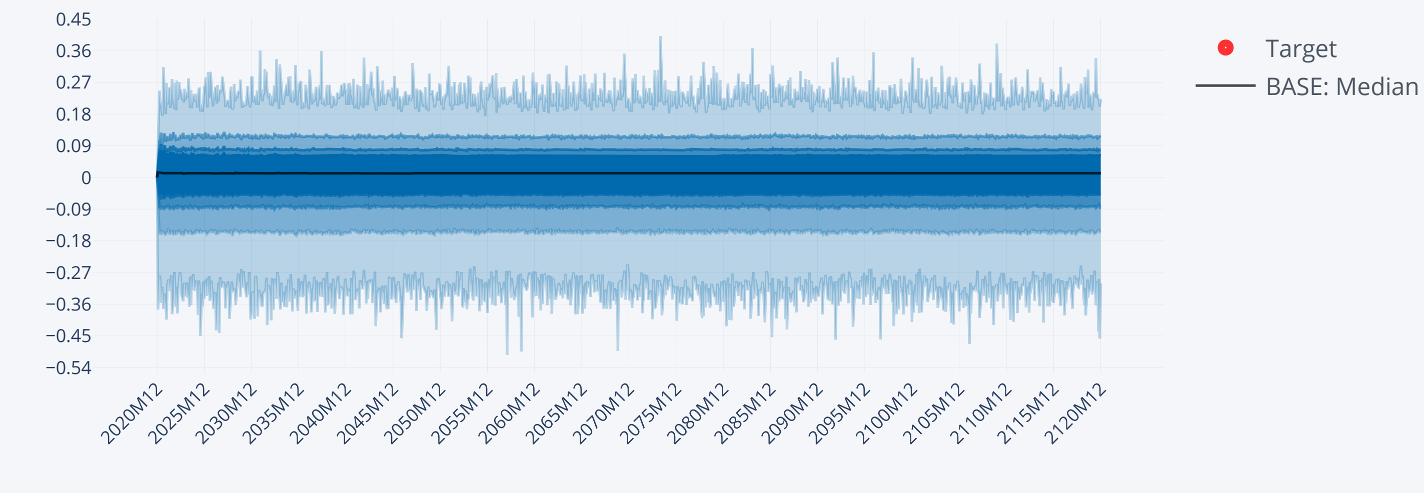
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0166	5.5919
std	0.0914	3.6235
min	-0.4149	0.3836
1%	-0.2203	1.4444
5%	-0.1453	2.0786
10%	-0.1022	2.4523
50%	0.0229	4.6699
90%	0.1279	9.6967
95%	0.1559	12.1073
99%	0.2119	18.8252
max	0.3401	67.2976

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Small Cap Total Return

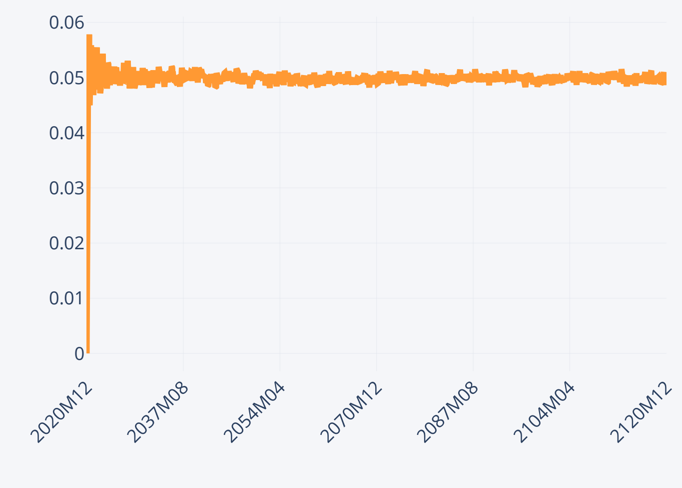


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0084	0.0077
std	0.0494	0.0507
min	-0.4037	-0.3286
1%	-0.1543	-0.1574
5%	-0.0790	-0.0842
10%	-0.0473	-0.0502
50%	0.0122	0.0118
90%	0.0636	0.0627
95%	0.0782	0.0802
99%	0.1117	0.1149
max	0.2679	0.2625

Cross Sectional Volatility Over Time : BASE



Small Cap Cumulative Return
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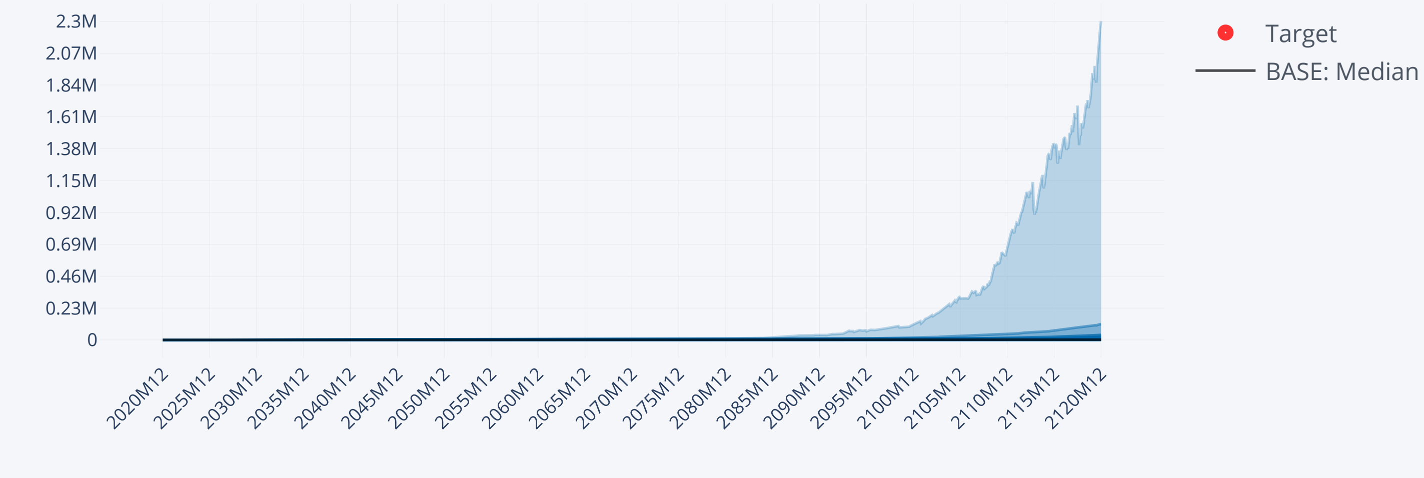
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Small Cap Cumulative Return

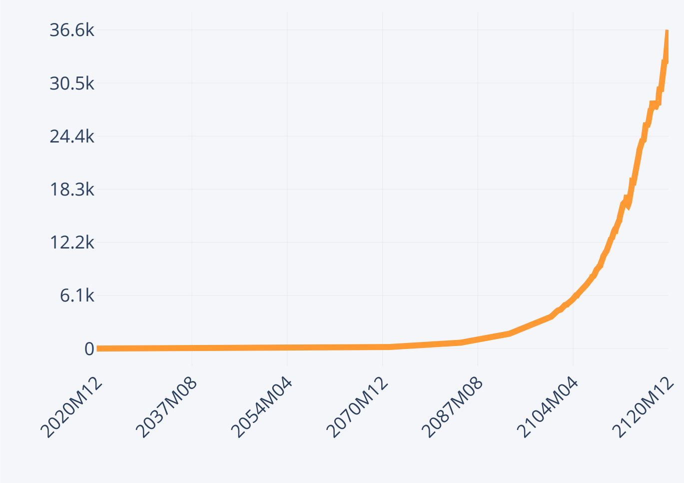


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

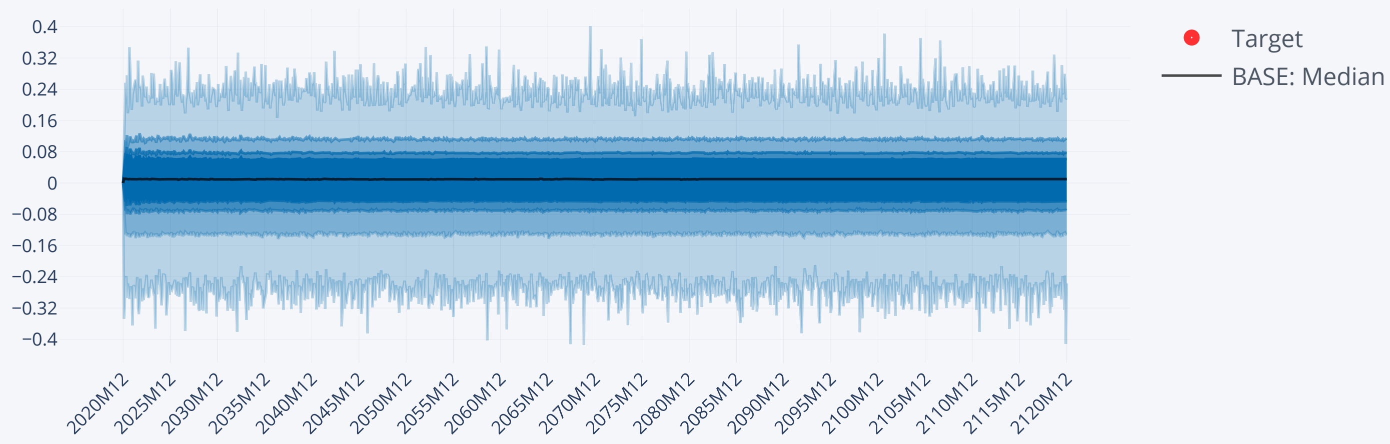
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.1002	13.9421
std	0.1895	15.2631
min	-0.5459	-0.9319
1%	-0.3366	-0.2754
5%	-0.2112	0.6657
10%	-0.1502	1.6251
50%	0.1047	9.2212
90%	0.3381	31.4805
95%	0.4076	42.4147
99%	0.5425	75.1615
max	0.8385	182.6275

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Mid Cap Total Return

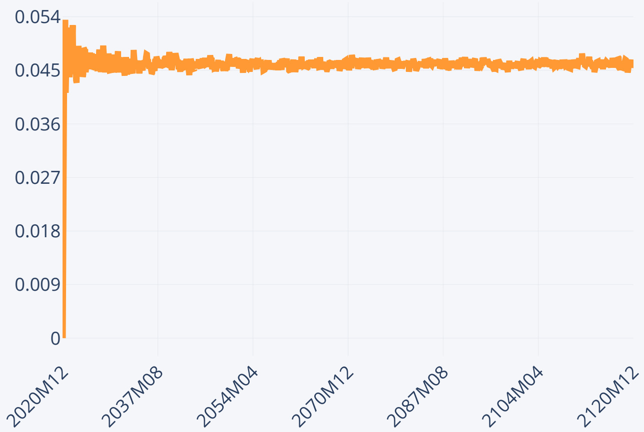


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0074	0.0074
std	0.0445	0.0464
min	-0.3644	-0.2802
1%	-0.1292	-0.1320
5%	-0.0681	-0.0705
10%	-0.0452	-0.0480
50%	0.0098	0.0097
90%	0.0590	0.0607
95%	0.0730	0.0769
99%	0.1058	0.1120
max	0.2252	0.2044

Cross Sectional Volatility Over Time : BASE



Mid Cap Cumulative Return
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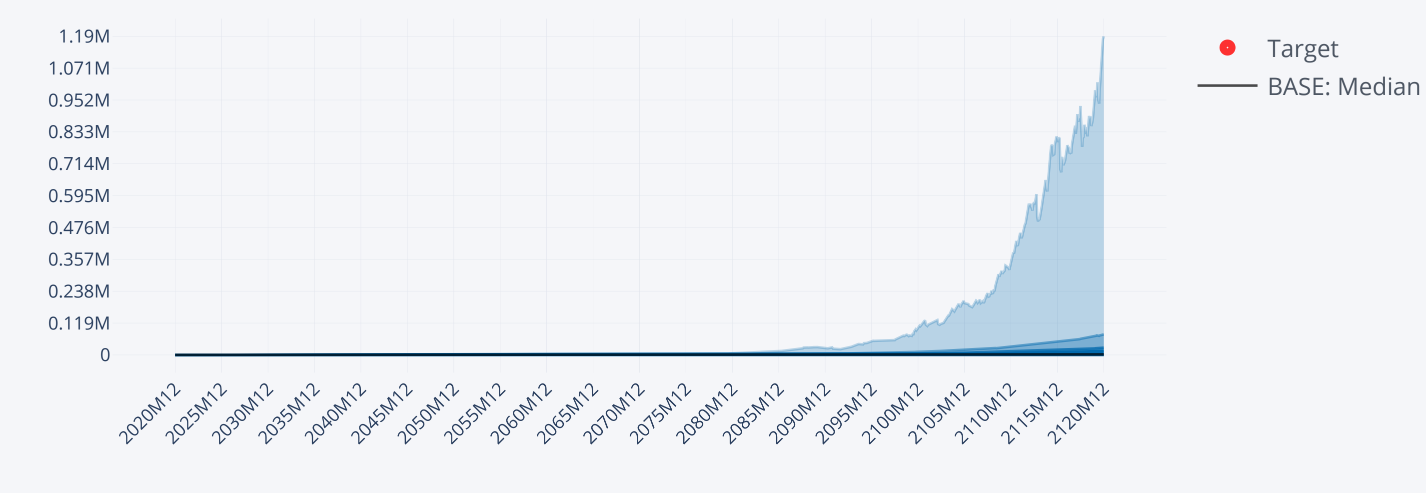
Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Mid Cap Cumulative Return

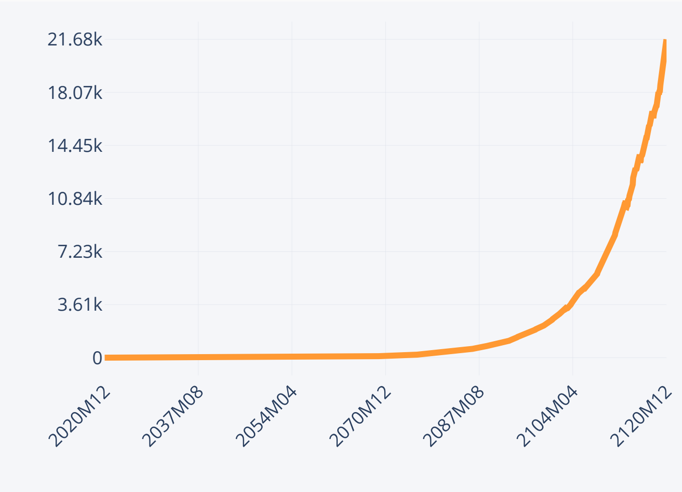


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

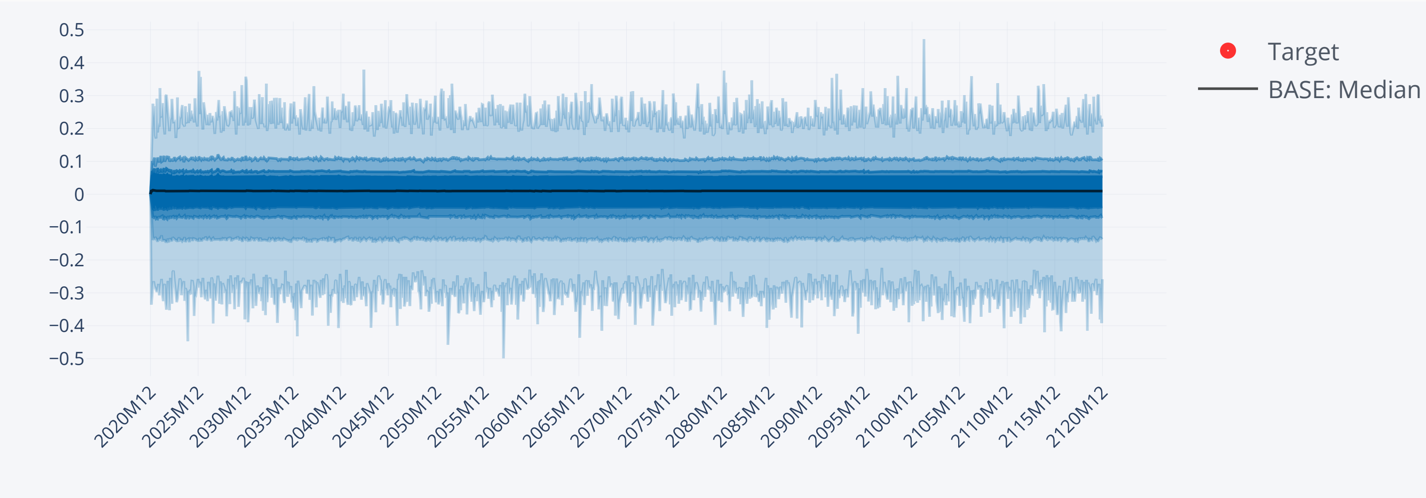
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0956	12.8594
std	0.1734	13.0559
min	-0.4735	-0.9109
1%	-0.2919	-0.0301
5%	-0.1832	1.0789
10%	-0.1254	2.0078
50%	0.0934	9.0075
90%	0.3166	28.4069
95%	0.3832	37.9848
99%	0.5191	63.2072
max	0.8825	167.3034

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Large Cap Total Return

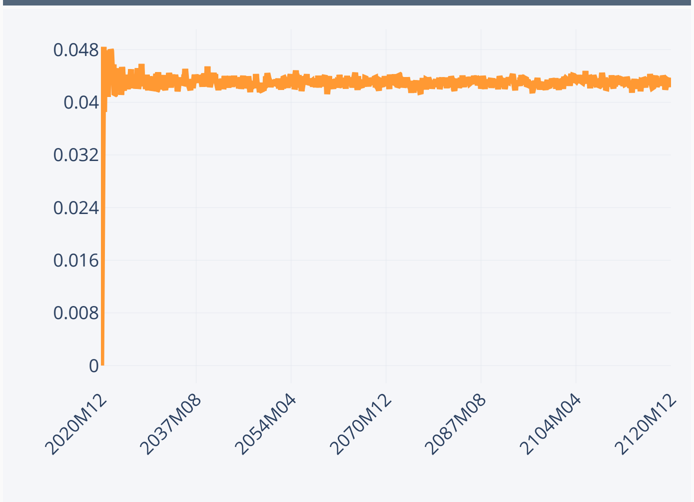


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

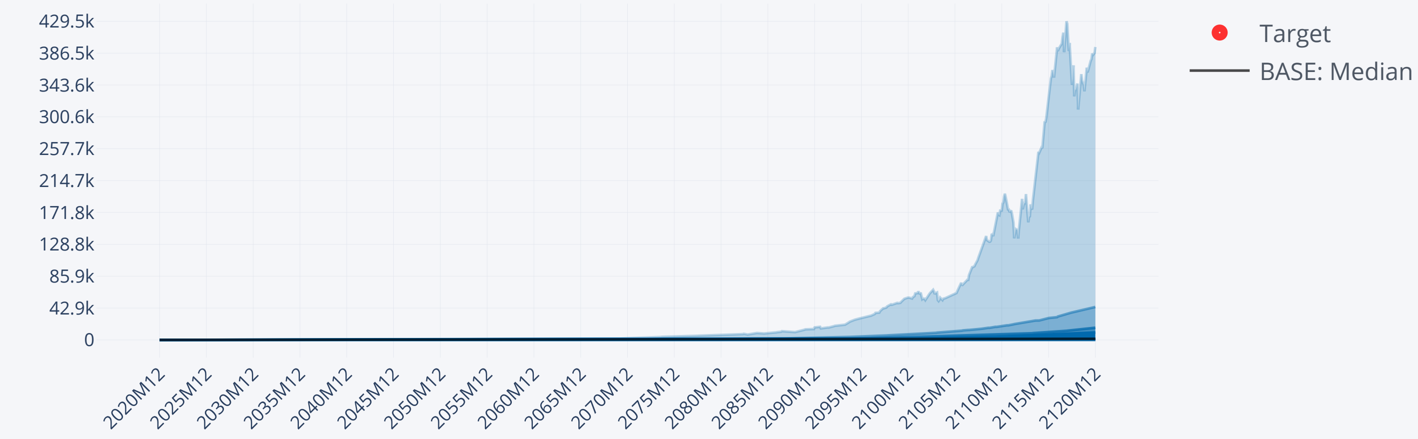
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0079	0.0070
std	0.0444	0.0433
min	-0.2837	-0.3288
1%	-0.1345	-0.1376
5%	-0.0678	-0.0681
10%	-0.0406	-0.0399
50%	0.0102	0.0100
90%	0.0579	0.0530
95%	0.0725	0.0691
99%	0.1074	0.1041
max	0.3228	0.2239

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Large Cap Cumulative Return

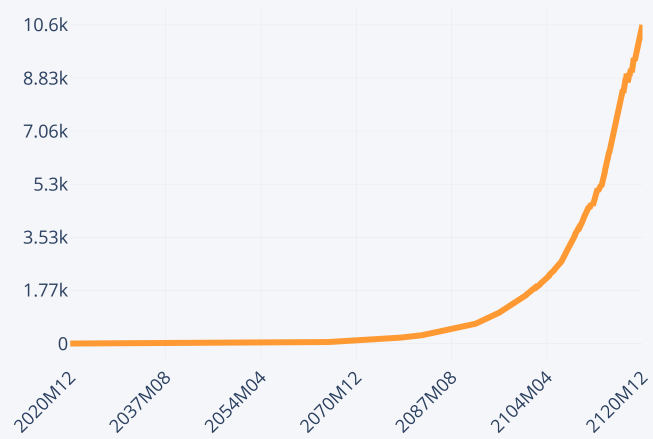


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

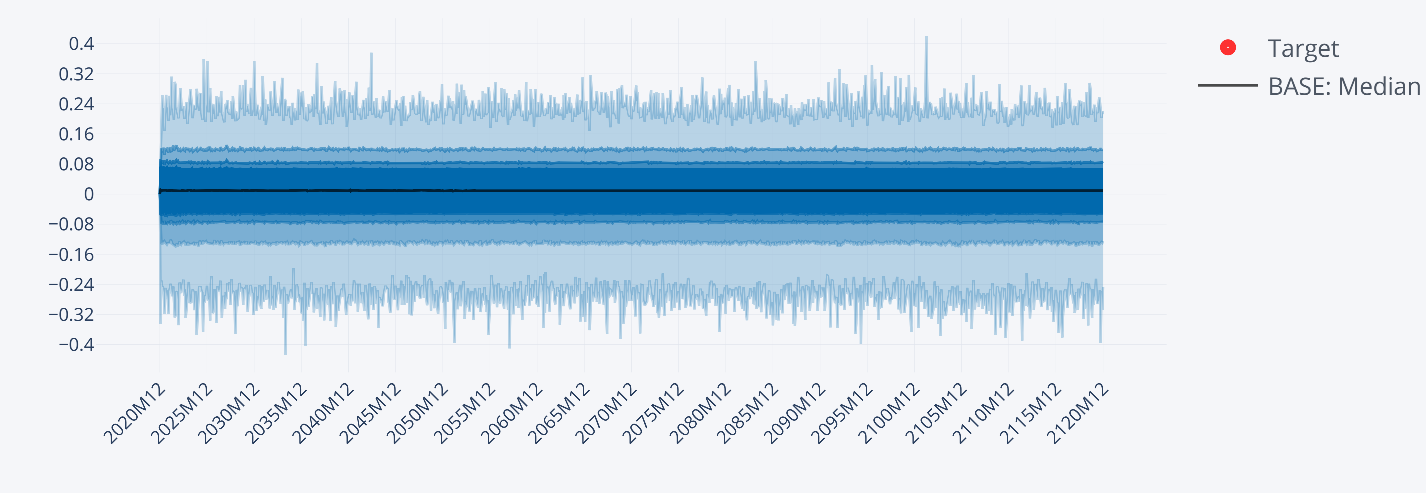
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0943	11.2532
std	0.1627	10.6085
min	-0.5068	-0.8309
1%	-0.2958	-0.0633
5%	-0.1796	1.0279
10%	-0.1180	1.9331
50%	0.0996	8.2779
90%	0.2953	24.0788
95%	0.3561	31.5262
99%	0.4698	49.5596
max	0.8170	119.0665

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : International Diversified Equity Total Return

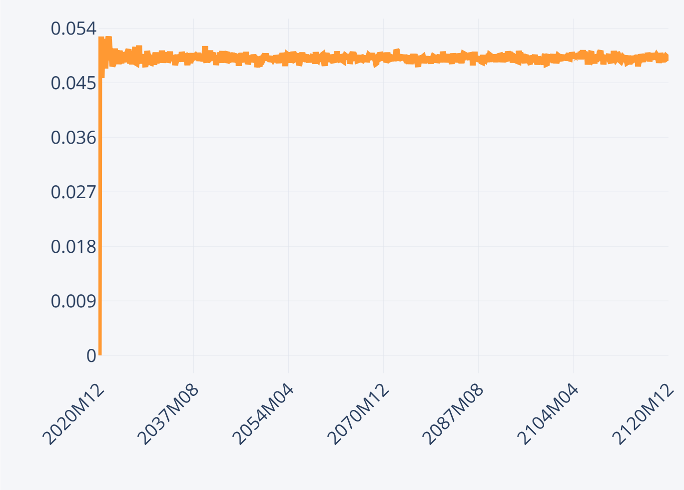


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0083	0.0069
std	0.0501	0.0494
min	-0.2587	-0.2881
1%	-0.1294	-0.1339
5%	-0.0768	-0.0758
10%	-0.0530	-0.0532
50%	0.0103	0.0093
90%	0.0682	0.0653
95%	0.0849	0.0830
99%	0.1205	0.1187
max	0.2616	0.2057

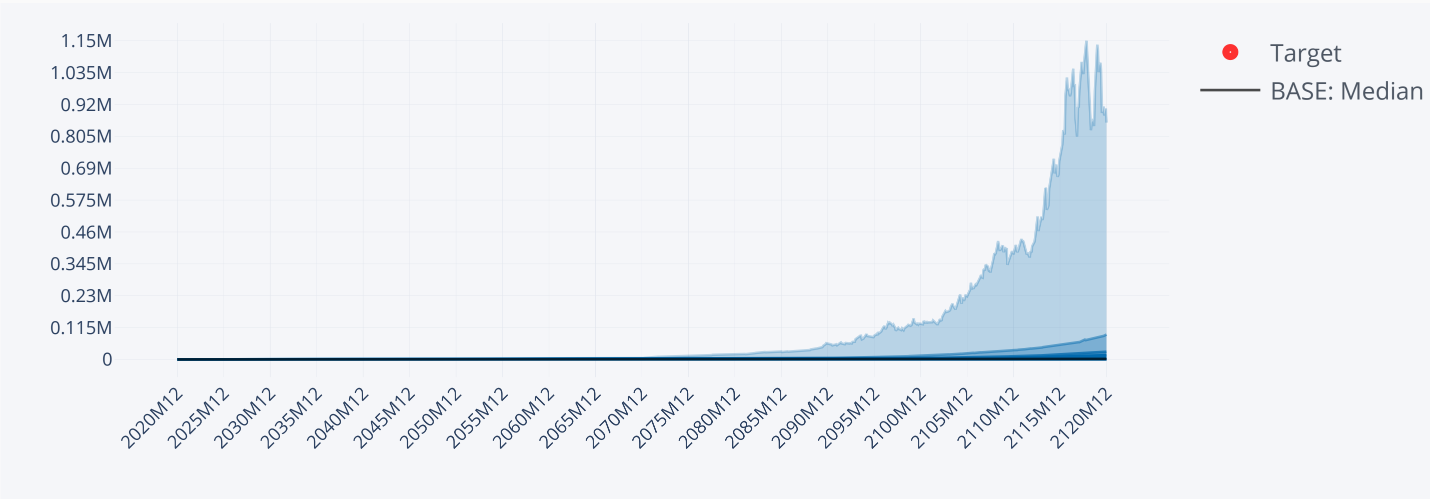
Cross Sectional Volatility Over Time : BASE



International Diversified Equity Cumulative Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : International Diversified Equity Cumulative Return

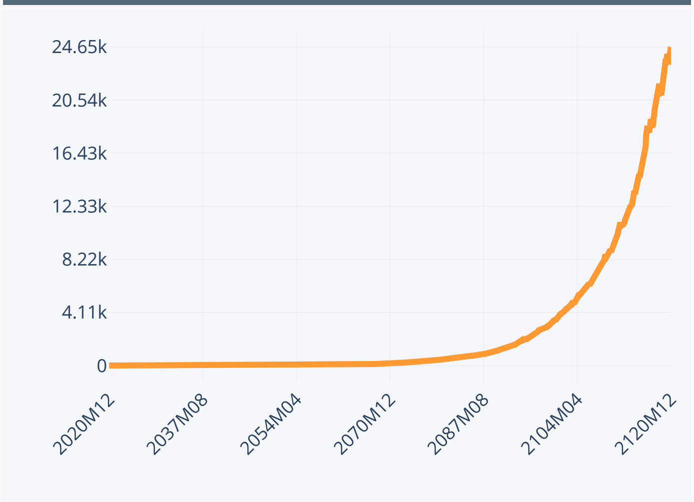


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

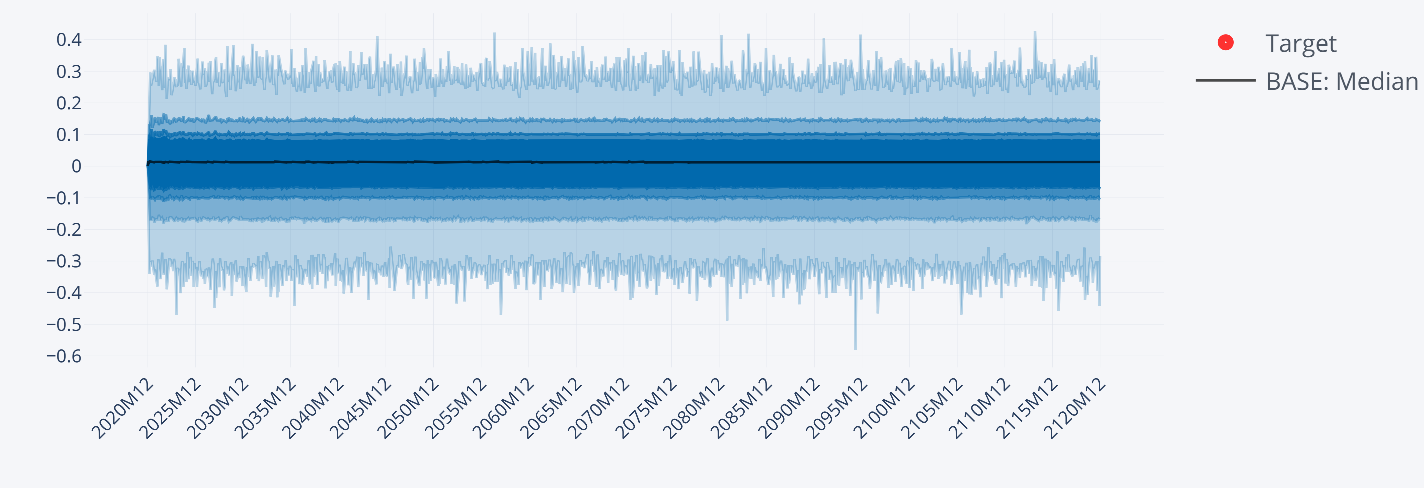
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0984	13.3999
std	0.1920	15.6464
min	-0.4832	-0.9127
1%	-0.3083	-0.0174
5%	-0.2021	0.9614
10%	-0.1431	1.8483
50%	0.0907	8.8520
90%	0.3480	29.8325
95%	0.4300	40.7292
99%	0.5785	71.9094
max	0.9585	399.9414

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Aggressive US Equity Total Return

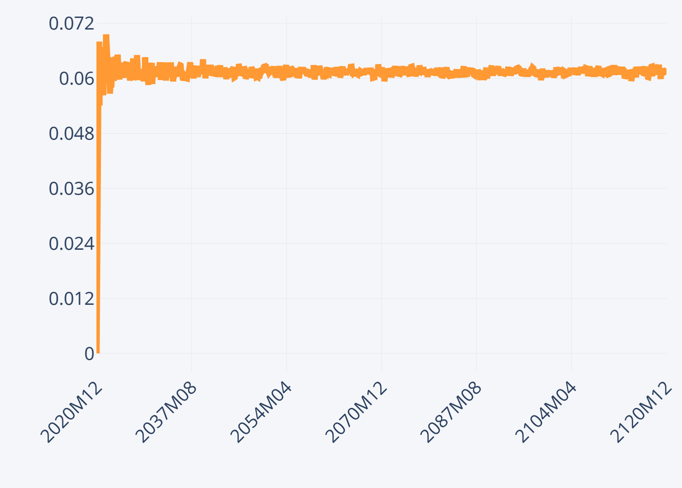


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0089	0.0090
std	0.0622	0.0620
min	-0.3805	-0.3053
1%	-0.1668	-0.1666
5%	-0.0982	-0.1004
10%	-0.0681	-0.0683
50%	0.0123	0.0127
90%	0.0834	0.0812
95%	0.1027	0.1033
99%	0.1422	0.1461
max	0.3467	0.2774

Cross Sectional Volatility Over Time : BASE

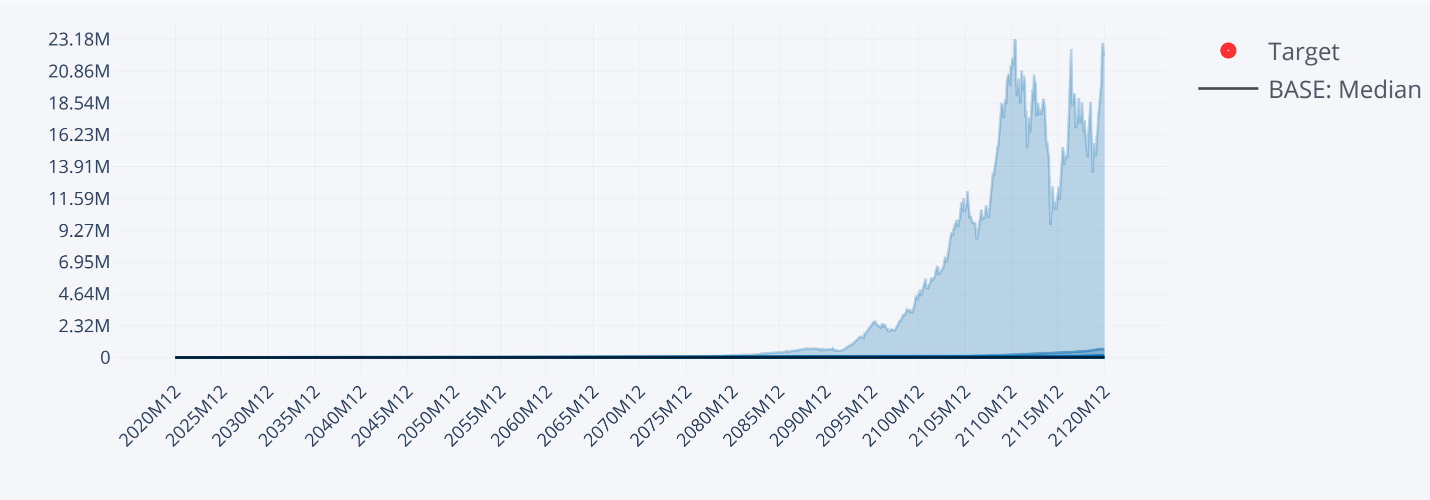


Aggressive US Equity Cumulative Return

Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads Validation Report

Simulated Data in Percentiles : Aggressive US Equity Cumulative Return



Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

Simulation Summary

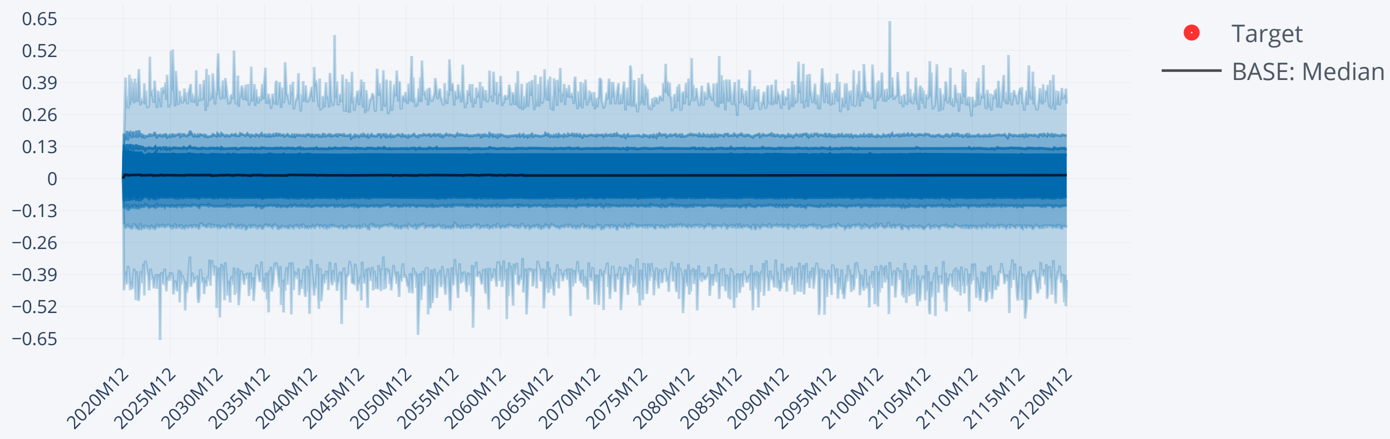
	BASE: 2021M12	BASE: 2050M12
mean	0.1185	22.7657
std	0.2337	33.3815
min	-0.5775	-0.9356
1%	-0.3674	-0.3744
5%	-0.2425	0.5880
10%	-0.1786	1.5393
50%	0.1078	11.7433
90%	0.4252	55.4958
95%	0.5238	79.3341
99%	0.7064	162.9492
max	1.2402	539.3221

Cross Sectional Volatility Over Time : BASE

Aggressive Foreign Equity Total Return
Conning | Risk Solutions

Dec 2023 - Lower Corp Spreads
Validation Report

Simulated Data in Percentiles : Aggressive Foreign Equity Total Return

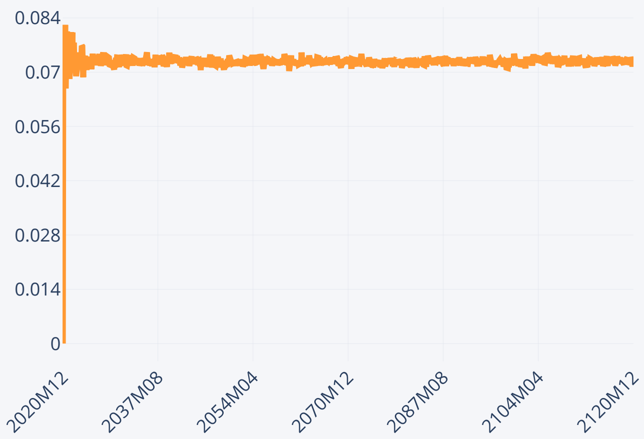


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

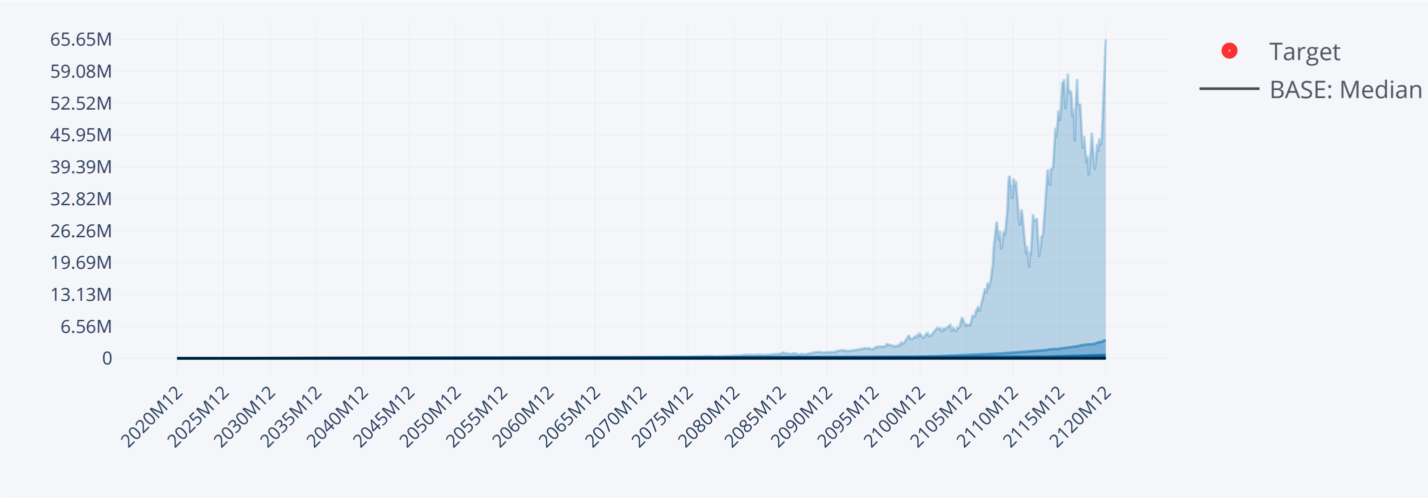
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.0124	0.0092
std	0.0767	0.0728
min	-0.4423	-0.4043
1%	-0.1911	-0.1999
5%	-0.1158	-0.1126
10%	-0.0820	-0.0781
50%	0.0146	0.0122
90%	0.1057	0.0954
95%	0.1329	0.1235
99%	0.1848	0.1723
max	0.3448	0.3088

Cross Sectional Volatility Over Time : BASE



Simulated Data in Percentiles : Aggressive Foreign Equity Cumulative Return

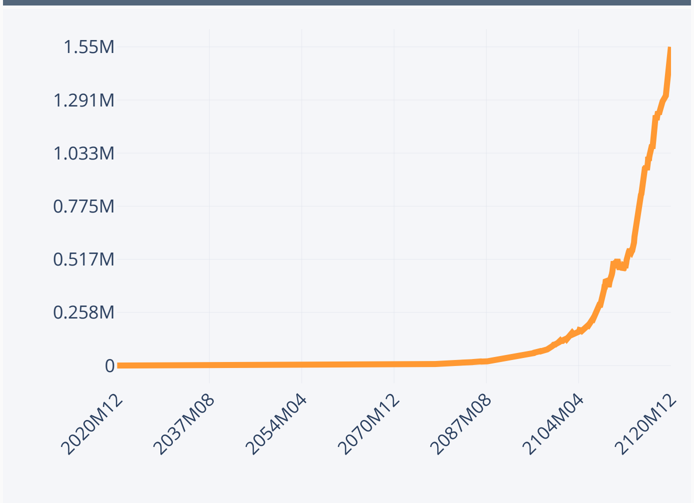


Simulated Data: There are 1200 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.
Percentiles Plotted : Min, 1%, 5%, 10%, 50%, 90%, 95%, 99%, Max
The distributions shown are across the paths for a given time period.

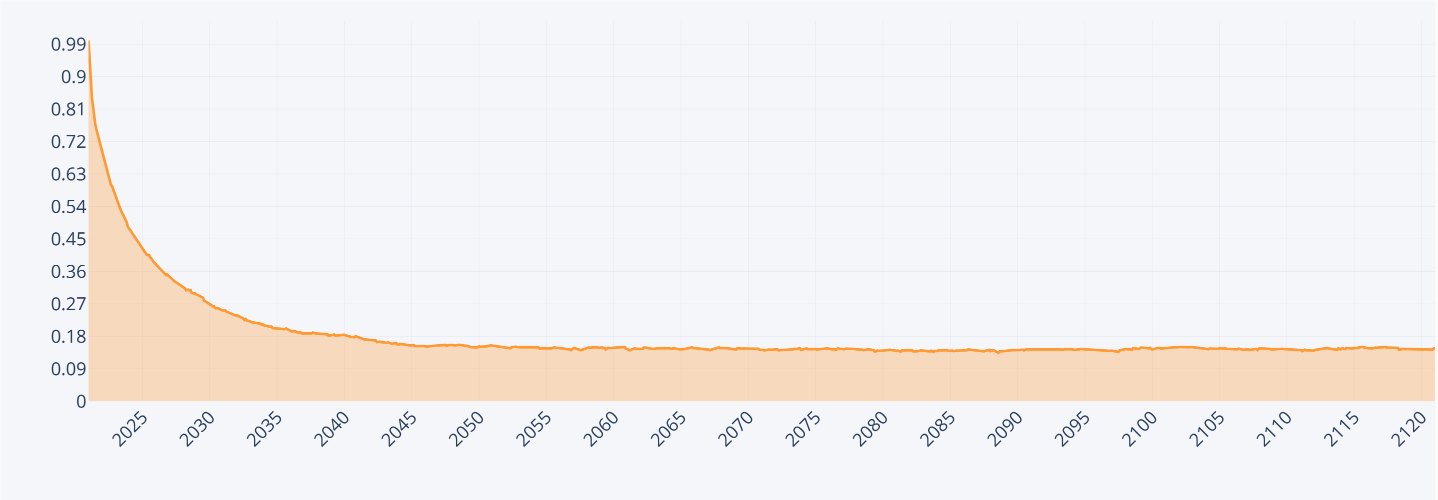
Simulation Summary

	BASE: 2021M12	BASE: 2050M12
mean	0.1436	39.4375
std	0.3015	78.6625
min	-0.6873	-0.9880
1%	-0.4633	-0.5207
5%	-0.3079	0.3229
10%	-0.2199	1.4340
50%	0.1211	15.2756
90%	0.5403	96.1864
95%	0.6794	155.5389
99%	0.9390	359.9836
max	1.6141	1648.5250

Cross Sectional Volatility Over Time : BASE

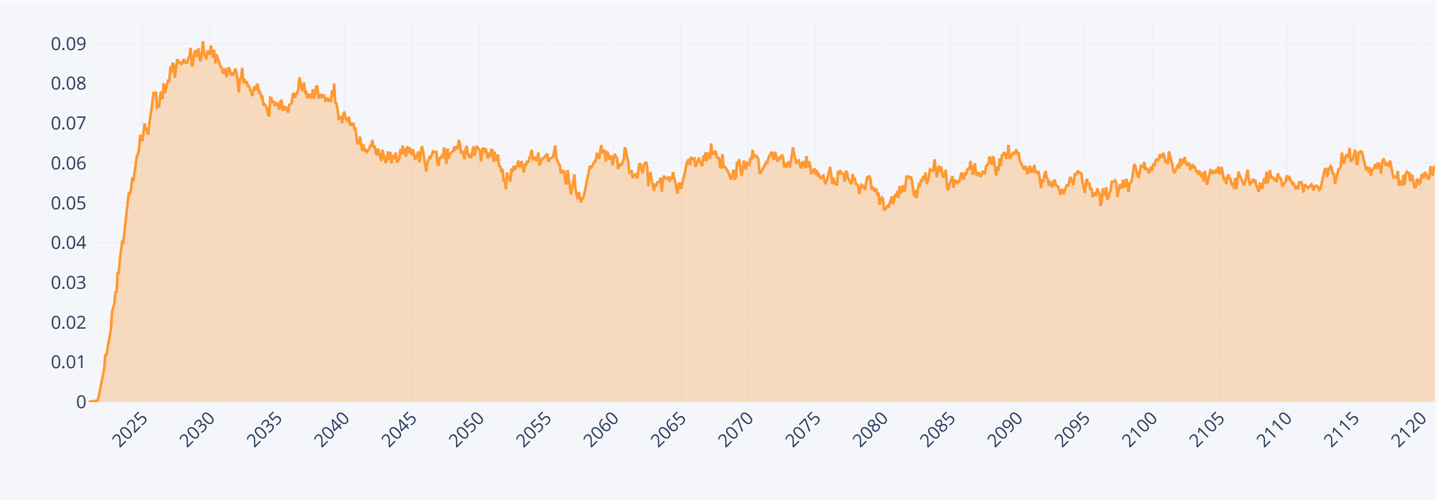


Term Structure Inversion Probability



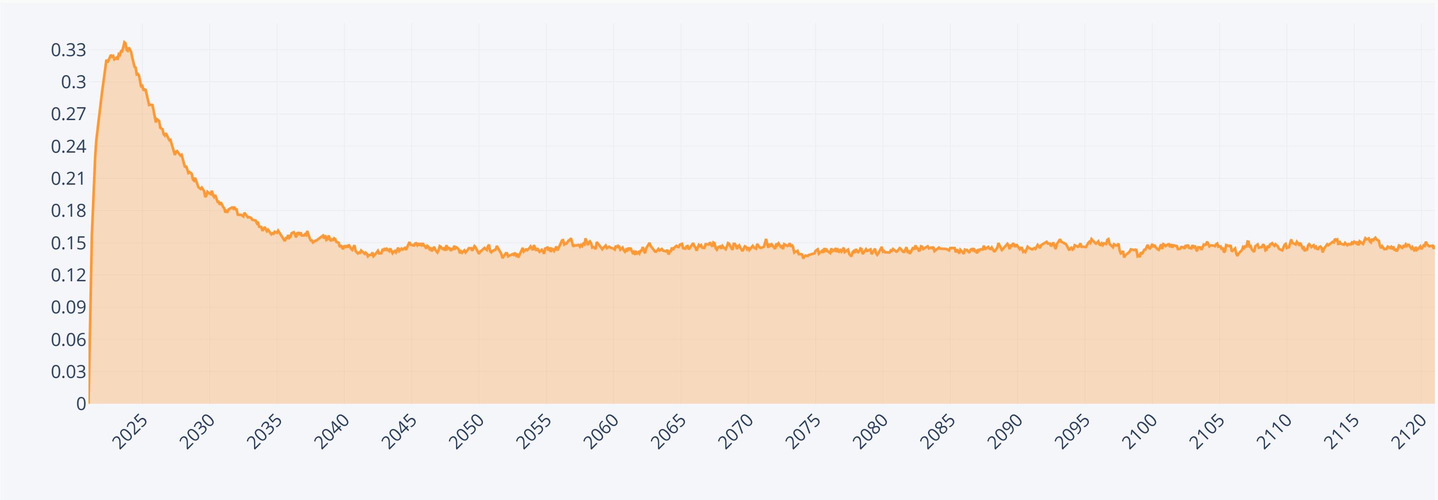
Probability that 1 Year yield is higher than 20 Year Yield.

Term Structure Hump Probability



Probability that 1 Year Yield is higher than both 1 month and 20 Year Yield.

Term Structure Bowl Probability



Probability that 1 Year Yield is lower than than both 1 month and 20 Year Yield.

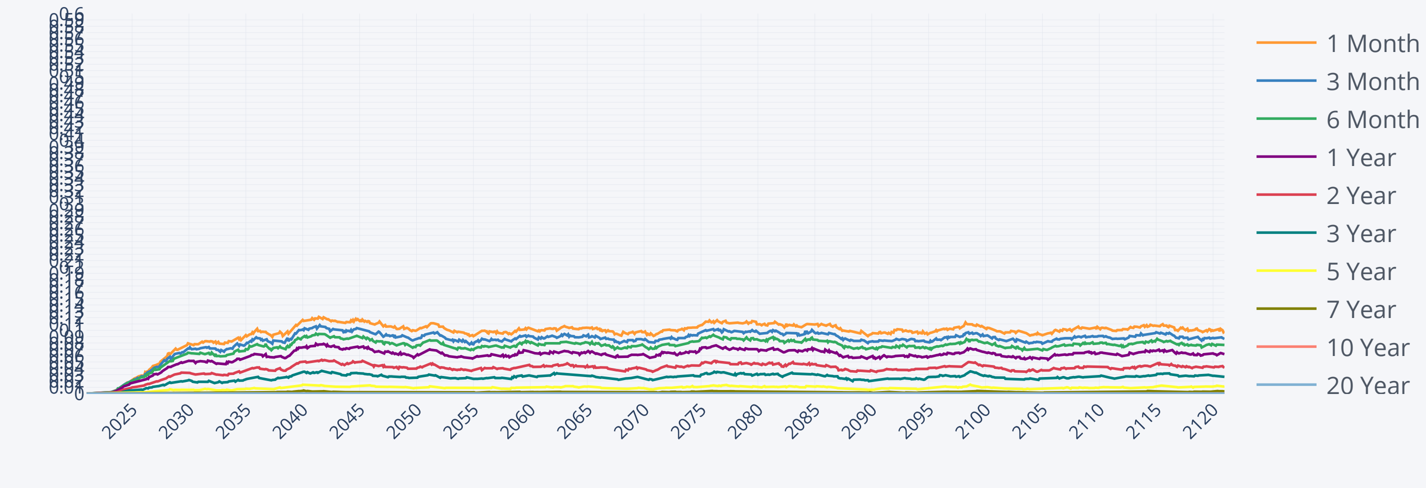
Correlation Matrix of Total Return in the 1st Simulation Year

	Aggressive Foreign Equity	Aggressive US Equity	High Yield Corp Bonds	Int Govt Bonds	Int Inv Corp Bonds	International Diversified Equity	Large Cap	Long Govt Bonds	Long Inv Corp Bonds	Mid Cap	Money Market	Short Govt Bonds	Short Inv Corp Bonds	Small Cap
Aggressive Foreign Equity	1.00	0.60	0.31	0.02	0.16	0.75	0.76	-0.01	0.17	0.72	-0.14	0.04	0.13	0.70
Aggressive US Equity	0.60	1.00	0.40	0.01	0.20	0.60	0.82	-0.02	0.22	0.80	-0.14	0.02	0.15	0.82
High Yield Corp Bonds	0.31	0.40	1.00	0.69	0.90	0.33	0.41	0.64	0.89	0.42	-0.54	0.69	0.87	0.40
Int Govt Bonds	0.02	0.01	0.69	1.00	0.93	0.02	0.02	0.97	0.91	0.03	-0.68	0.99	0.93	0.03
Int Inv Corp Bonds	0.16	0.20	0.90	0.93	1.00	0.17	0.21	0.89	0.98	0.22	-0.67	0.93	0.98	0.21
International Diversified Equity	0.75	0.60	0.33	0.02	0.17	1.00	0.78	-0.02	0.18	0.71	-0.12	0.03	0.13	0.70
Large Cap	0.76	0.82	0.41	0.02	0.21	0.78	1.00	-0.01	0.23	0.90	-0.14	0.03	0.16	0.90
Long Govt Bonds	-0.01	-0.02	0.64	0.97	0.89	-0.02	-0.01	1.00	0.91	-0.01	-0.62	0.92	0.87	0.00
Long Inv Corp Bonds	0.17	0.22	0.89	0.91	0.98	0.18	0.23	0.91	1.00	0.24	-0.63	0.88	0.93	0.23
Mid Cap	0.72	0.80	0.42	0.03	0.22	0.71	0.90	-0.01	0.24	1.00	-0.13	0.04	0.17	0.93
Money Market	-0.14	-0.14	-0.54	-0.68	-0.67	-0.12	-0.14	-0.62	-0.63	-0.13	1.00	-0.64	-0.63	-0.13
Short Govt Bonds	0.04	0.02	0.69	0.99	0.93	0.03	0.03	0.92	0.88	0.04	-0.64	1.00	0.95	0.04
Short Inv Corp Bonds	0.13	0.15	0.87	0.93	0.98	0.13	0.16	0.87	0.93	0.17	-0.63	0.95	1.00	0.16
Small Cap	0.70	0.82	0.40	0.03	0.21	0.70	0.90	0.00	0.23	0.93	-0.13	0.04	0.16	1.00

Correlation Matrix of Total Return in the 30th Simulation Year

	Aggressive Foreign Equity	Aggressive US Equity	High Yield Corp Bonds	Int Govt Bonds	Int Inv Corp Bonds	International Diversified Equity	Large Cap	Long Govt Bonds	Long Inv Corp Bonds	Mid Cap	Money Market	Short Govt Bonds	Short Inv Corp Bonds	Small Cap
Aggressive Foreign Equity	1.00	0.65	0.24	-0.08	0.09	0.57	0.79	-0.10	0.10	0.70	0.01	-0.05	0.04	0.69
Aggressive US Equity	0.65	1.00	0.29	-0.12	0.09	0.63	0.82	-0.14	0.11	0.82	0.01	-0.08	0.04	0.82
High Yield Corp Bonds	0.24	0.29	1.00	0.54	0.81	0.23	0.30	0.51	0.81	0.31	0.25	0.53	0.71	0.28
Int Govt Bonds	-0.08	-0.12	0.54	1.00	0.91	-0.09	-0.10	0.98	0.89	-0.11	0.37	0.93	0.87	-0.11
Int Inv Corp Bonds	0.09	0.09	0.81	0.91	1.00	0.08	0.12	0.87	0.98	0.11	0.37	0.86	0.93	0.10
International Diversified Equity	0.57	0.63	0.23	-0.09	0.08	1.00	0.76	-0.11	0.09	0.68	0.01	-0.05	0.04	0.67
Large Cap	0.79	0.82	0.30	-0.10	0.12	0.76	1.00	-0.13	0.13	0.89	0.01	-0.06	0.06	0.88
Long Govt Bonds	-0.10	-0.14	0.51	0.98	0.87	-0.11	-0.13	1.00	0.89	-0.14	0.23	0.84	0.78	-0.13
Long Inv Corp Bonds	0.10	0.11	0.81	0.89	0.98	0.09	0.13	0.89	1.00	0.13	0.25	0.78	0.85	0.11
Mid Cap	0.70	0.82	0.31	-0.11	0.11	0.68	0.89	-0.14	0.13	1.00	0.01	-0.06	0.06	0.92
Money Market	0.01	0.01	0.25	0.37	0.37	0.01	0.01	0.23	0.25	0.01	1.00	0.67	0.67	0.01
Short Govt Bonds	-0.05	-0.08	0.53	0.93	0.86	-0.05	-0.06	0.84	0.78	-0.06	0.67	1.00	0.96	-0.07
Short Inv Corp Bonds	0.04	0.04	0.71	0.87	0.93	0.04	0.06	0.78	0.85	0.06	0.67	0.96	1.00	0.05
Small Cap	0.69	0.82	0.28	-0.11	0.10	0.67	0.88	-0.13	0.11	0.92	0.01	-0.07	0.05	1.00

Negative Yields Probability



The above plot shows percent of negative yields across the scenarios for each time period.

Negative Probability Summary

	2021-12-31T00:00:00	2030-12-31T00:00:00	2040-12-31T00:00:00	2050-12-31T00:00:00
1 Month	0.0000	0.0801	0.1166	0.1075
3 Month	0.0000	0.0717	0.1047	0.0941
6 Month	0.0000	0.0646	0.0930	0.0844
1 Year	0.0000	0.0513	0.0761	0.0691
2 Year	0.0000	0.0327	0.0515	0.0451
3 Year	0.0000	0.0186	0.0327	0.0290
5 Year	0.0000	0.0064	0.0138	0.0096
7 Year	0.0000	0.0014	0.0031	0.0021
10 Year	0.0000	0.0000	0.0001	0.0002
20 Year	0.0000	0.0000	0.0000	0.0000
30 Year	0.0000	0.0000	0.0000	0.0000