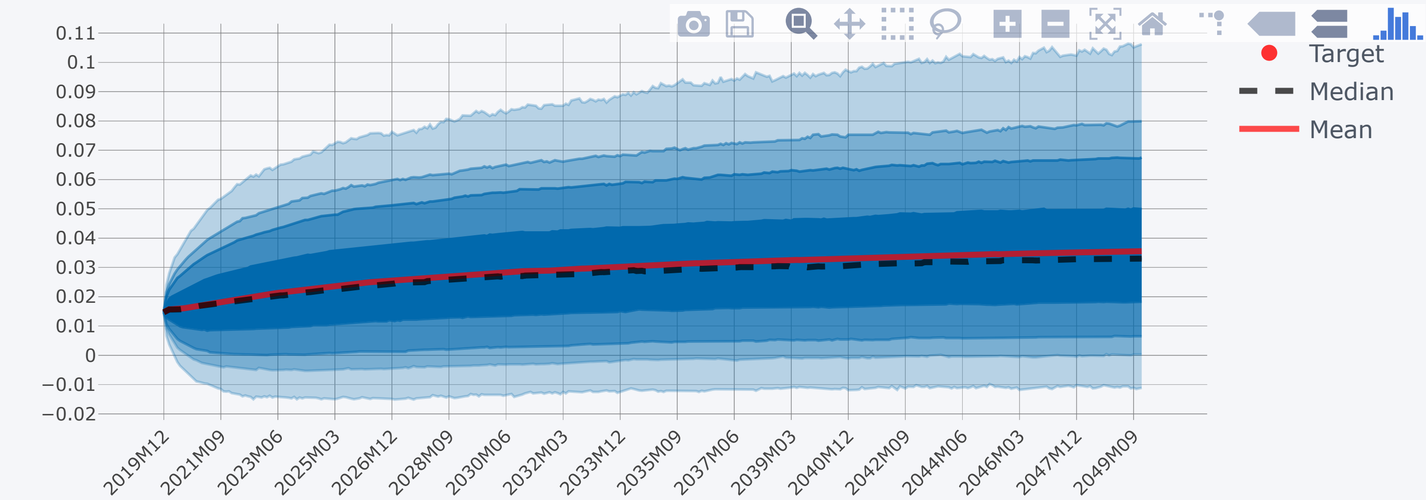
US Treasury 1 Month Yield - Spot

Conning | Risk Solutions

2019 Q4

Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

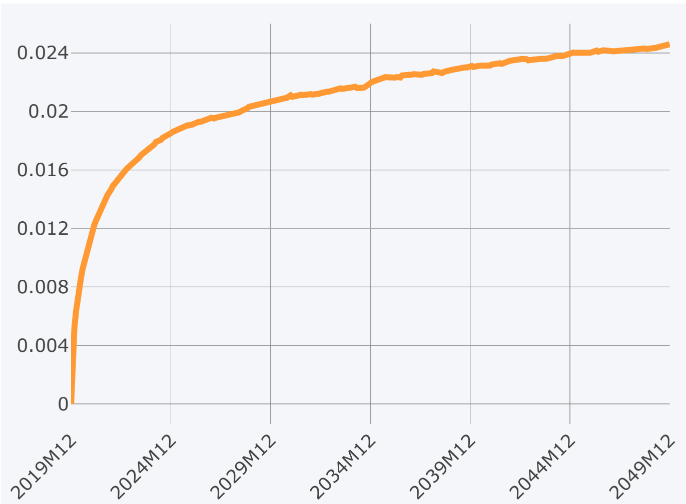
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

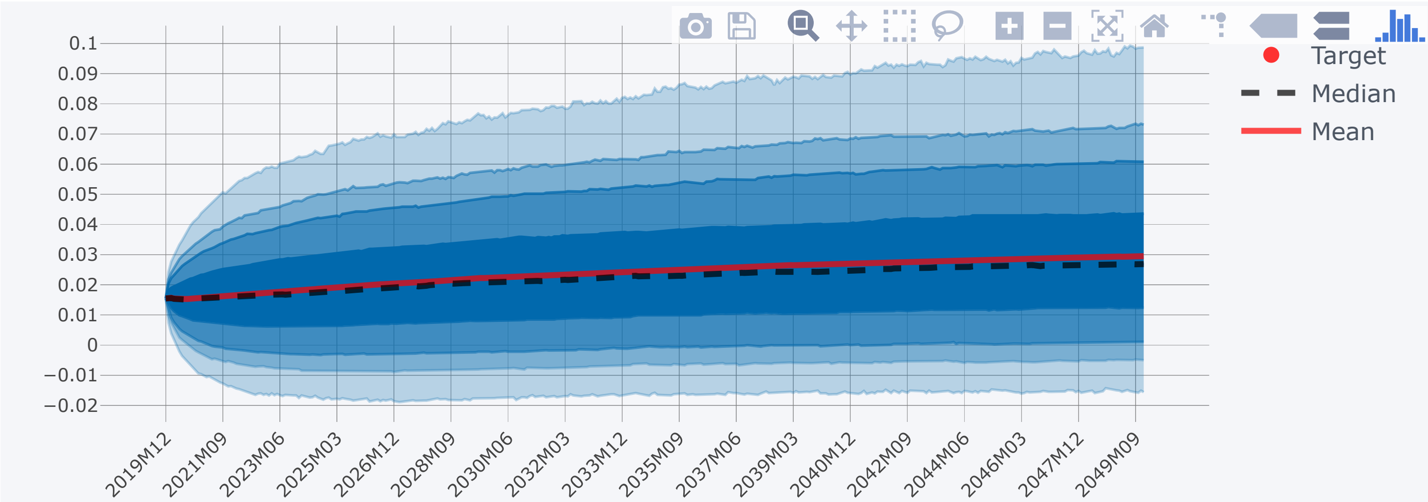
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0168	0.0281	0.0327	0.0355
std	0.0116	0.0207	0.0231	0.0246
min	-0.0233	-0.0337	-0.0317	-0.0296
1%	-0.0089	-0.0135	-0.0112	-0.0111
5%	-0.0017	-0.0031	-0.0008	0.0003
10%	0.0021	0.0025	0.0052	0.0065
25%	0.0089	0.0134	0.0163	0.0183
50%	0.0167	0.0267	0.0303	0.033
75%	0.0245	0.0412	0.0465	0.0499
90%	0.0317	0.0555	0.0633	0.0675
95%	0.036	0.0645	0.0754	0.0799
99%	0.0446	0.0817	0.0953	0.1062
max	0.0693	0.1409	0.1482	0.1748

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

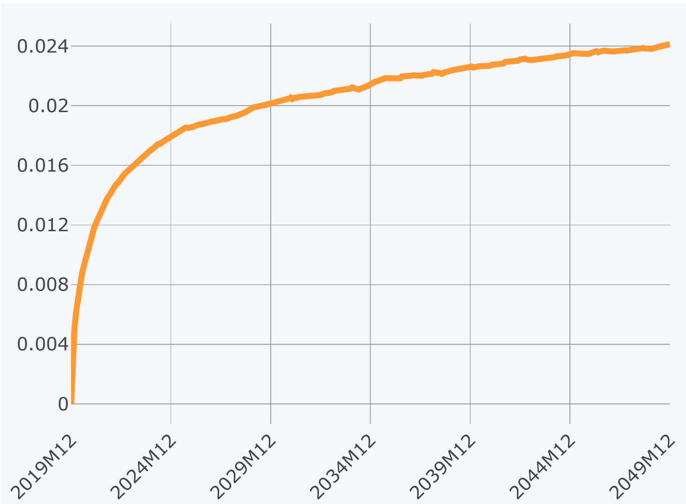
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

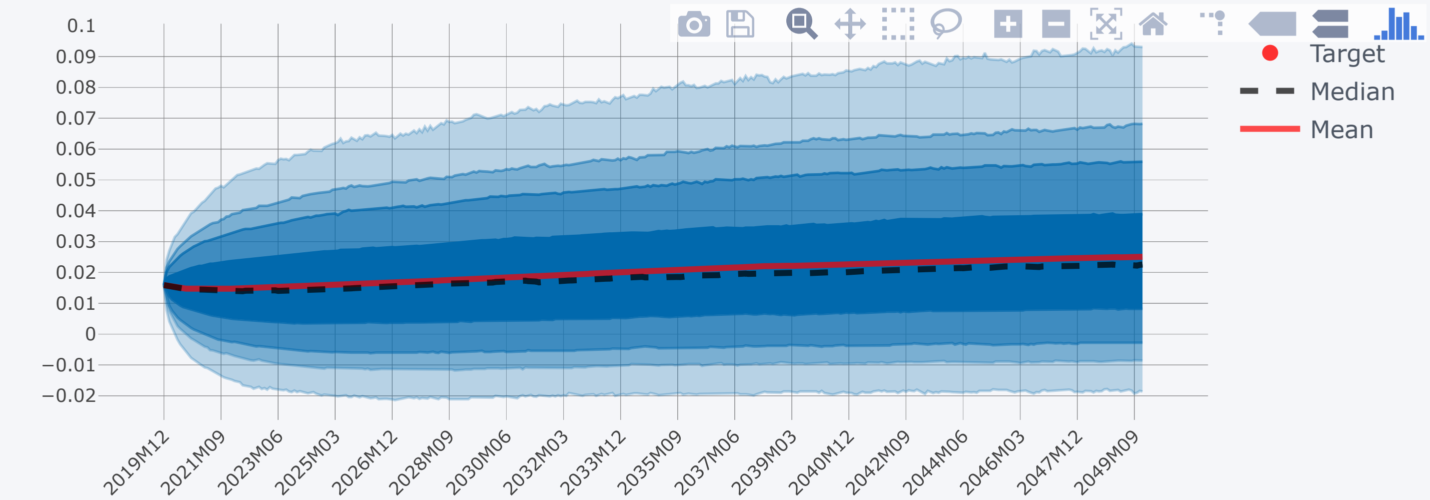
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0156	0.0224	0.0267	0.0295
std	0.0112	0.0201	0.0226	0.0241
min	-0.0229	-0.0373	-0.0338	-0.0351
1%	-0.0094	-0.0177	-0.0151	-0.0156
5%	-0.0024	-0.0077	-0.006	-0.005
10%	0.0014	-0.0024	0	0.0011
25%	0.0079	0.0082	0.0107	0.0124
50%	0.0154	0.0209	0.0243	0.0269
75%	0.023	0.0352	0.04	0.0436
90%	0.0301	0.0492	0.0565	0.0608
95%	0.0342	0.0579	0.0683	0.0731
99%	0.0424	0.0748	0.0882	0.0987
max	0.0674	0.1324	0.1412	0.1698

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

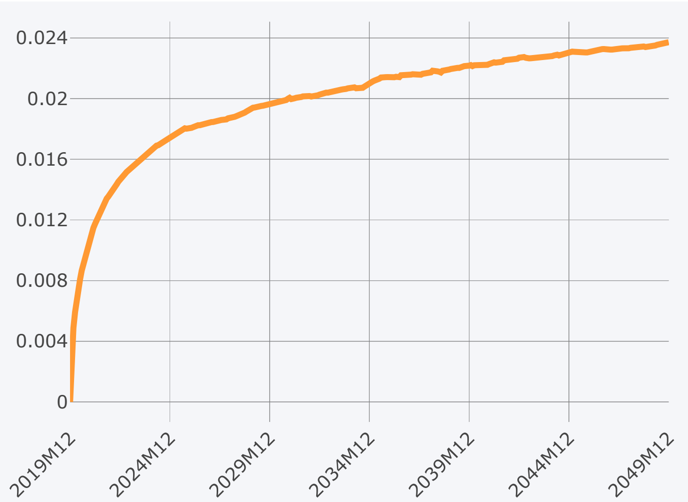
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

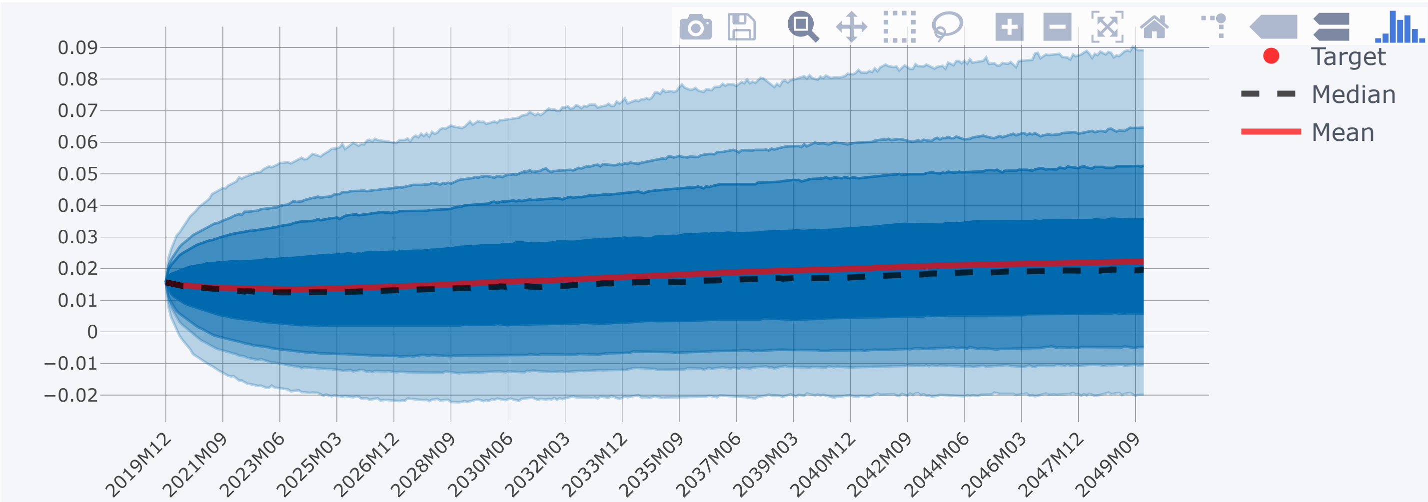
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0147	0.0183	0.0223	0.0251
std	0.0108	0.0196	0.0222	0.0237
min	-0.0222	-0.0394	-0.0348	-0.039
1%	-0.0094	-0.0207	-0.0186	-0.0186
5%	-0.0026	-0.011	-0.0096	-0.0086
10%	0.0011	-0.0058	-0.0038	-0.0028
25%	0.0073	0.0044	0.0067	0.0082
50%	0.0145	0.0167	0.0198	0.0226
75%	0.022	0.0308	0.0354	0.0389
90%	0.0288	0.0446	0.0515	0.0559
95%	0.0328	0.0526	0.0632	0.0682
99%	0.0408	0.07	0.0838	0.0931
max	0.0655	0.1255	0.136	0.166

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

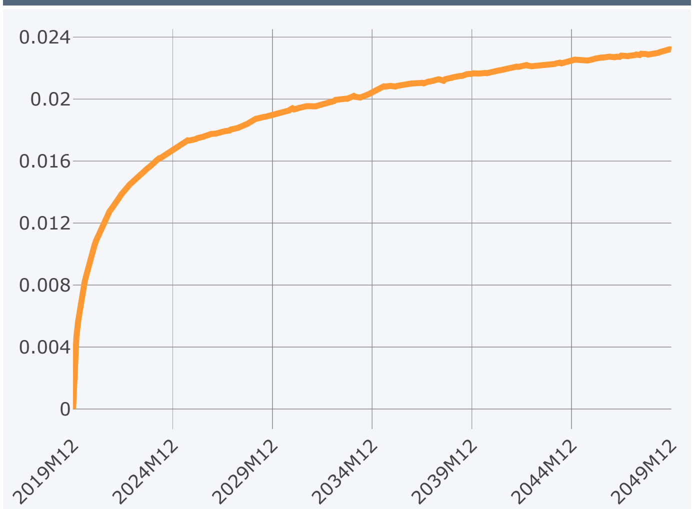
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0143	0.0157	0.0196	0.0223
std	0.0103	0.019	0.0216	0.0232
min	-0.0213	-0.039	-0.0339	-0.0399
1%	-0.0085	-0.0213	-0.0198	-0.0199
5%	-0.002	-0.0125	-0.0113	-0.0105
10%	0.0014	-0.0075	-0.0058	-0.0048
25%	0.0073	0.0023	0.0042	0.0058
50%	0.0141	0.0142	0.017	0.0197
75%	0.0212	0.0277	0.0322	0.0357
90%	0.0277	0.0411	0.0484	0.0526
95%	0.0316	0.0491	0.0596	0.0646
99%	0.0393	0.0662	0.0798	0.0891
max	0.0629	0.1194	0.1332	0.1633

Cross Sectional Volatility Over Time



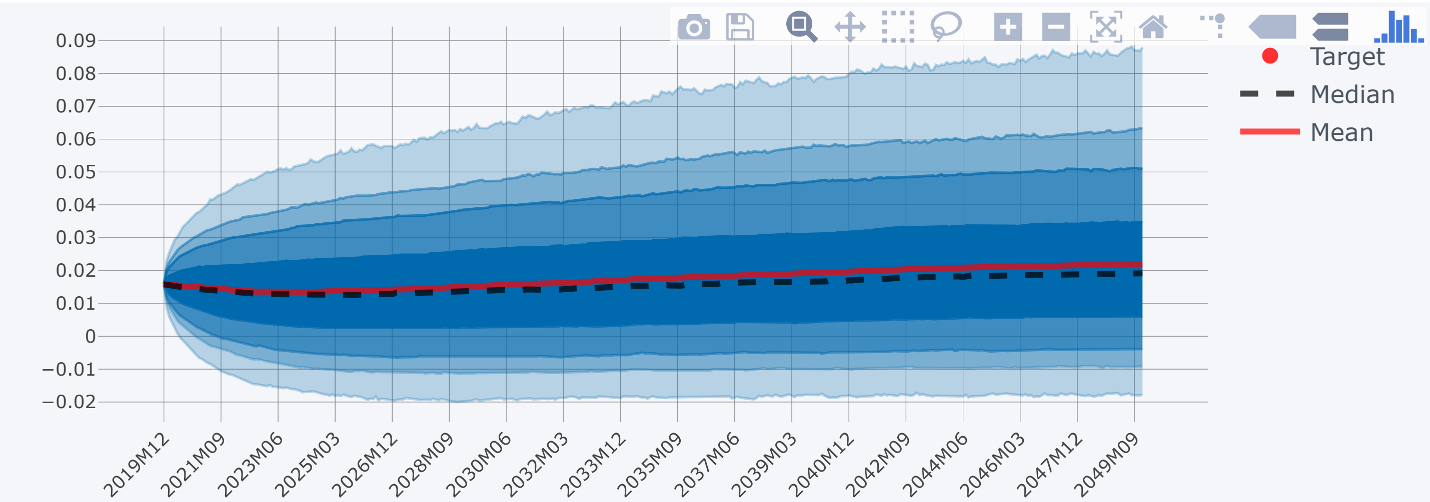
US Treasury 2 Year Yield - Spot

Conning | Risk Solutions

2019 Q4

Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

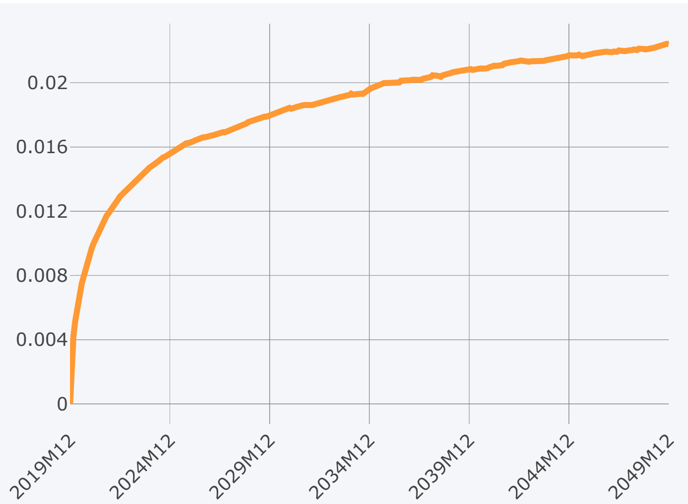
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

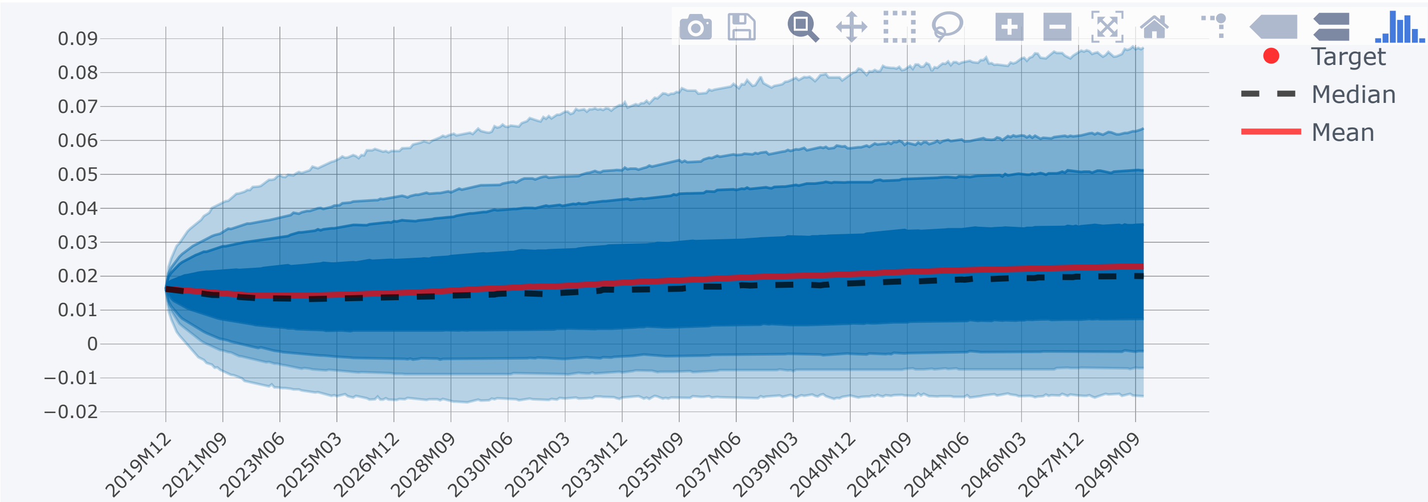
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0147	0.0155	0.0193	0.022
std	0.0094	0.018	0.0208	0.0224
min	-0.0183	-0.035	-0.03	-0.0365
1%	-0.0062	-0.019	-0.0181	-0.0178
5%	-0.0003	-0.0111	-0.0099	-0.0092
10%	0.0029	-0.0064	-0.0048	-0.0039
25%	0.0083	0.0028	0.0045	0.006
50%	0.0145	0.0139	0.0166	0.0192
75%	0.0209	0.0266	0.0313	0.0348
90%	0.0269	0.0395	0.0473	0.0512
95%	0.0304	0.0472	0.0579	0.0633
99%	0.0375	0.0639	0.0783	0.0879
max	0.0591	0.1144	0.1337	0.1619

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

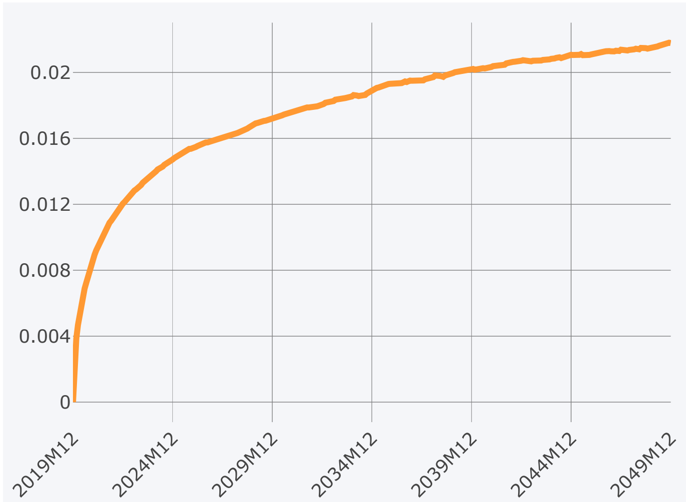
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0152	0.0163	0.0202	0.0229
std	0.0086	0.0172	0.0202	0.0218
min	-0.0154	-0.0307	-0.0262	-0.0323
1%	-0.0039	-0.0161	-0.0155	-0.0154
5%	0.0016	-0.0088	-0.0078	-0.0071
10%	0.0043	-0.0045	-0.003	-0.0021
25%	0.0093	0.0041	0.0058	0.0074
50%	0.0151	0.0147	0.0174	0.02
75%	0.021	0.0268	0.0317	0.0352
90%	0.0265	0.0393	0.0474	0.0512
95%	0.0298	0.0469	0.058	0.0636
99%	0.0362	0.0626	0.0783	0.0874
max	0.0561	0.1136	0.1351	0.1616

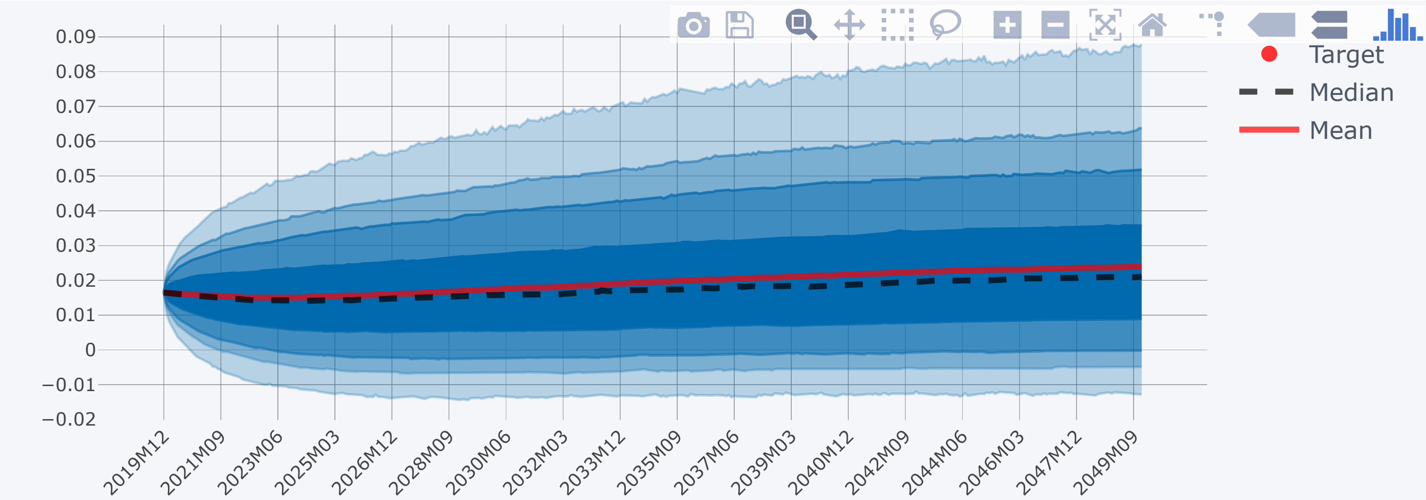
Cross Sectional Volatility Over Time



US Treasury 4 Year Yield - Spot
Conning | Risk Solutions

2019 Q4
Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

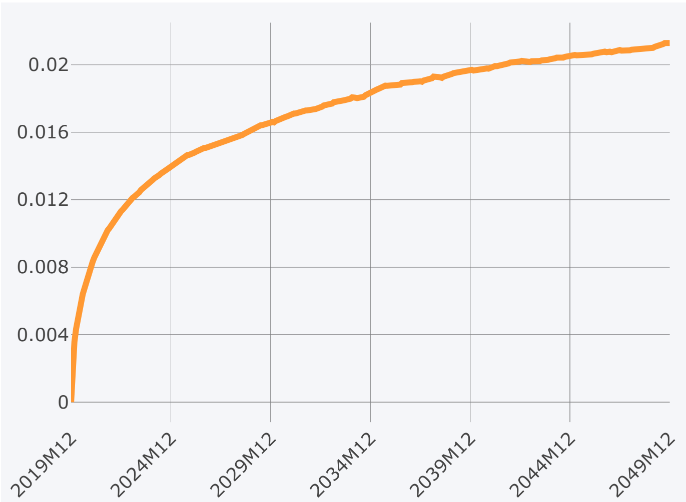
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

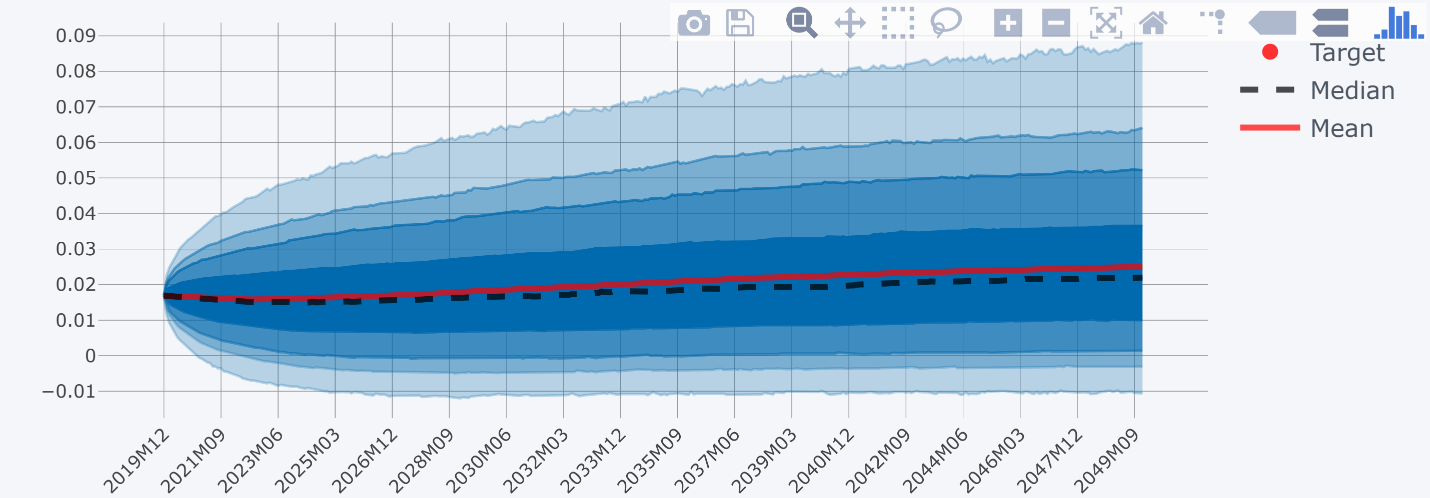
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0158	0.0174	0.0213	0.024
std	0.008	0.0166	0.0197	0.0213
min	-0.0128	-0.0268	-0.0227	-0.0283
1%	-0.0019	-0.0135	-0.0128	-0.0128
5%	0.0032	-0.0067	-0.0057	-0.0049
10%	0.0057	-0.0027	-0.0012	-0.0002
25%	0.0103	0.0056	0.0072	0.0089
50%	0.0156	0.0157	0.0184	0.021
75%	0.0213	0.0273	0.0324	0.0357
90%	0.0262	0.0395	0.0479	0.0518
95%	0.0294	0.047	0.0583	0.0638
99%	0.0352	0.0629	0.079	0.0878
max	0.0536	0.1153	0.1365	0.1615

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

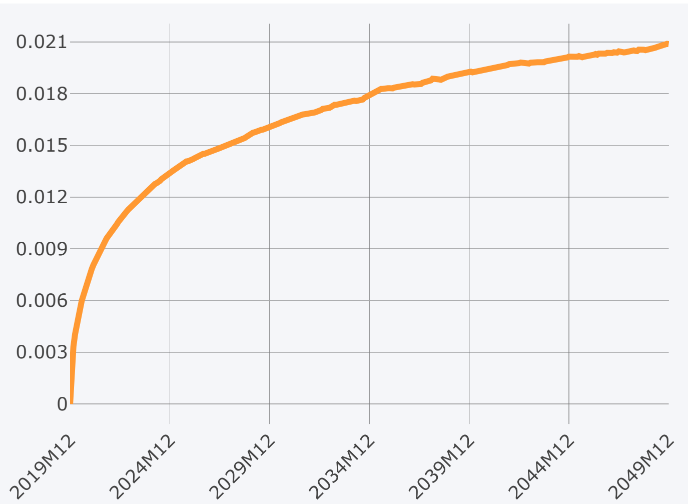
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

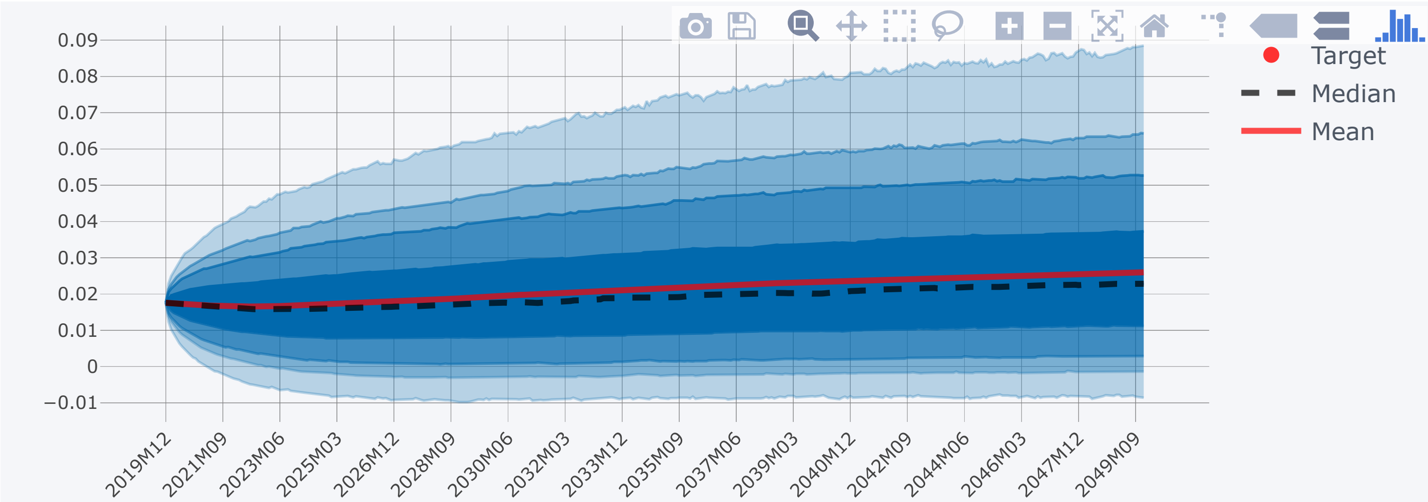
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0164	0.0184	0.0224	0.025
std	0.0076	0.0161	0.0193	0.0209
min	-0.0104	-0.0233	-0.0196	-0.0247
1%	0	-0.0111	-0.0104	-0.0106
5%	0.0045	-0.0047	-0.0038	-0.0031
10%	0.0069	-0.0009	0.0006	0.0014
25%	0.0112	0.0069	0.0085	0.01
50%	0.0162	0.0166	0.0193	0.022
75%	0.0215	0.028	0.0332	0.0365
90%	0.0261	0.0398	0.0484	0.0522
95%	0.0291	0.0472	0.0586	0.0641
99%	0.0346	0.0627	0.0793	0.0881
max	0.0516	0.1168	0.1378	0.1614

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

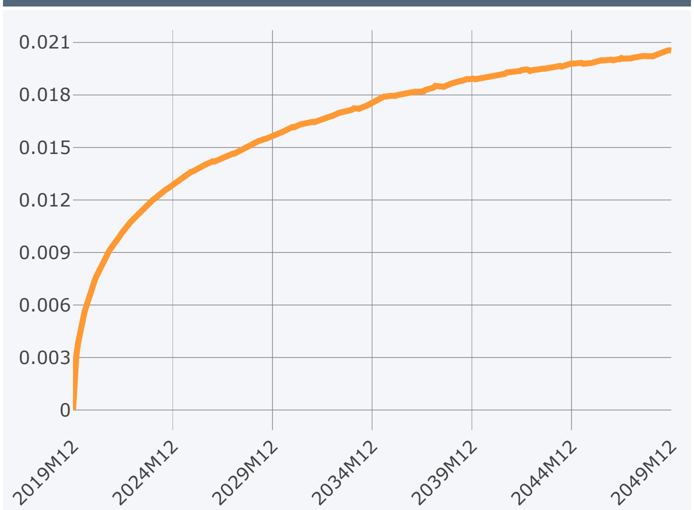
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

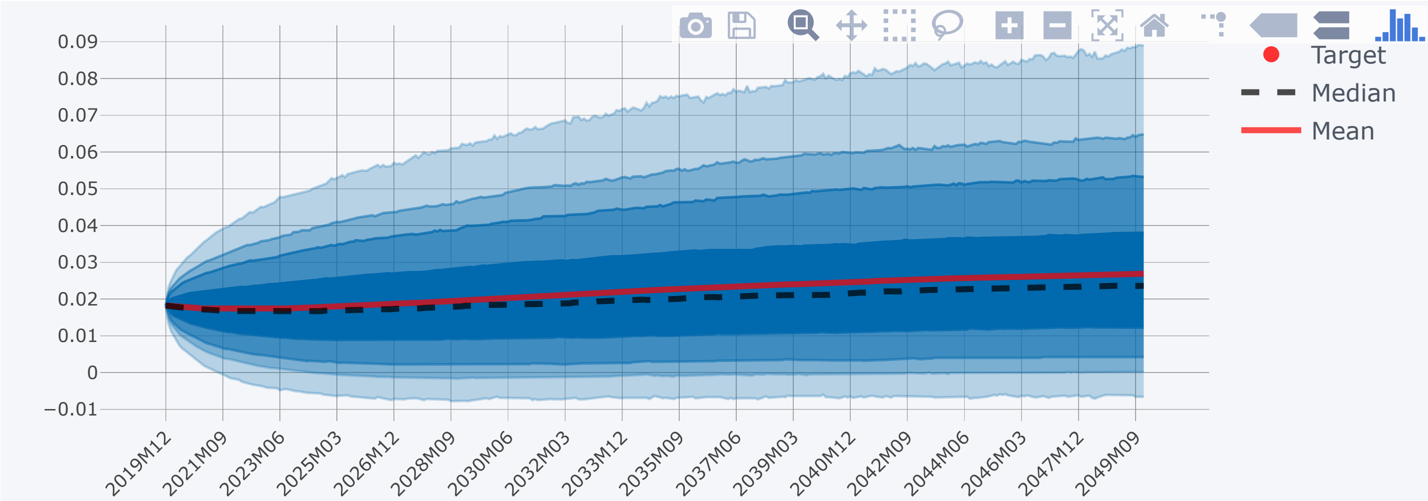
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.017	0.0193	0.0233	0.026
std	0.0071	0.0156	0.0189	0.0205
min	-0.0083	-0.0202	-0.0168	-0.0216
1%	0.0014	-0.0089	-0.0084	-0.0086
5%	0.0057	-0.003	-0.002	-0.0014
10%	0.0079	0.0007	0.0021	0.0029
25%	0.0121	0.0081	0.0098	0.0112
50%	0.0168	0.0176	0.0202	0.0228
75%	0.0218	0.0286	0.0339	0.0373
90%	0.0262	0.0401	0.0489	0.0527
95%	0.029	0.0476	0.0592	0.0643
99%	0.0342	0.0631	0.0798	0.0885
max	0.0499	0.1181	0.1389	0.1613

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

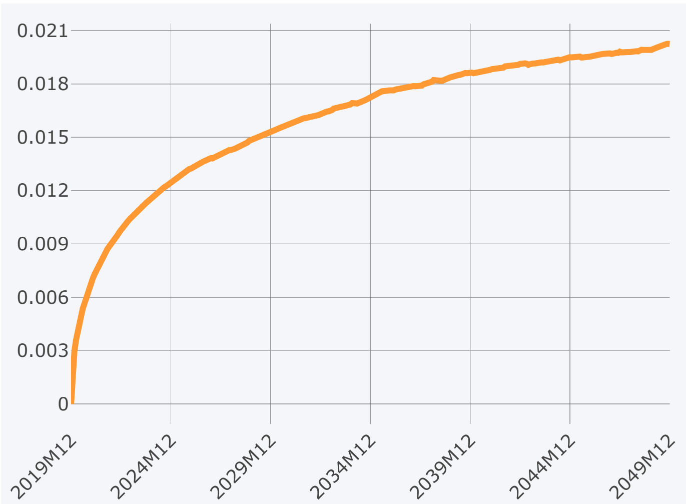
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

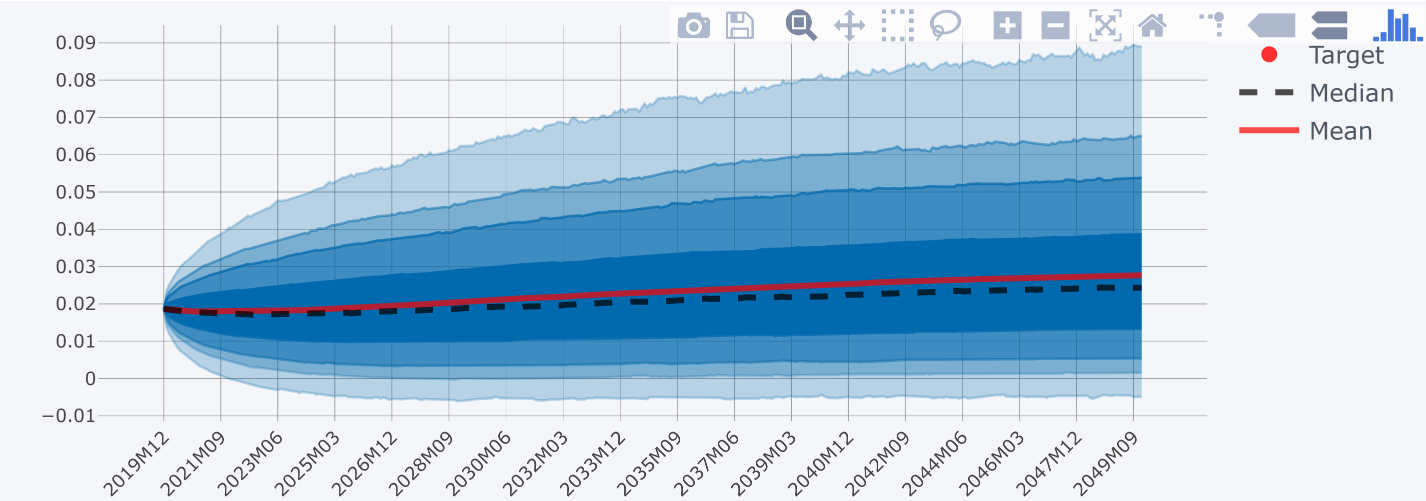
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0175	0.0202	0.0242	0.0269
std	0.0068	0.0153	0.0186	0.0202
min	-0.0064	-0.0174	-0.0144	-0.0188
1%	0.0028	-0.007	-0.0065	-0.0066
5%	0.0068	-0.0015	-0.0005	0.0002
10%	0.0089	0.0021	0.0034	0.0042
25%	0.0128	0.0092	0.0109	0.0122
50%	0.0173	0.0185	0.0209	0.0236
75%	0.022	0.0292	0.0345	0.038
90%	0.0263	0.0405	0.0494	0.0532
95%	0.0289	0.0482	0.0595	0.0648
99%	0.034	0.0634	0.0804	0.089
max	0.0484	0.1192	0.1397	0.1611

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

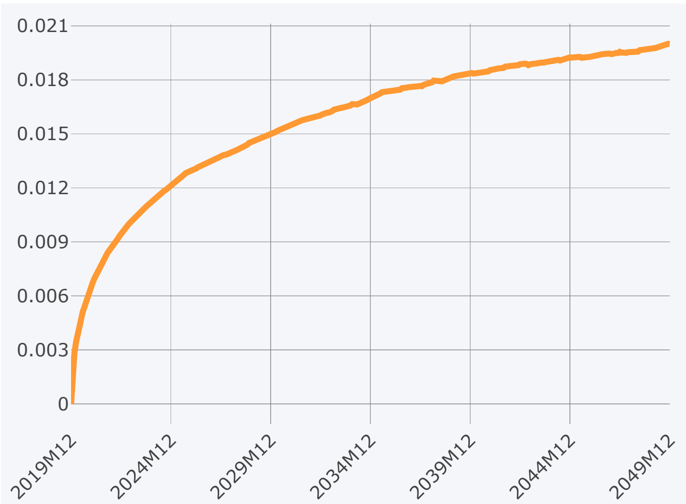
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

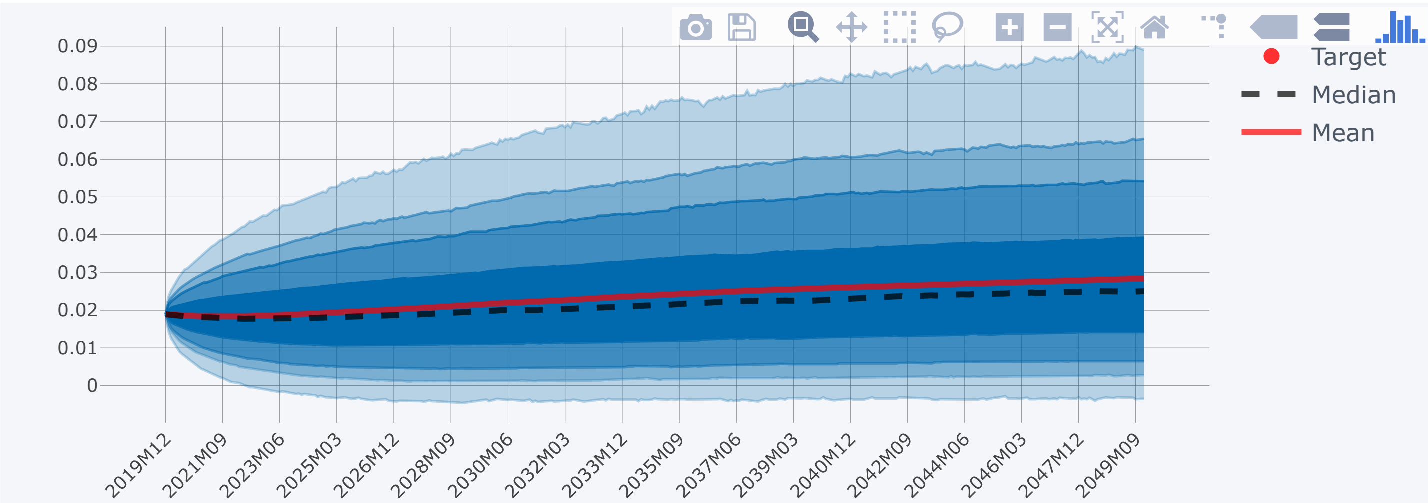
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.018	0.021	0.0251	0.0277
std	0.0065	0.015	0.0184	0.02
min	-0.0048	-0.015	-0.0122	-0.0163
1%	0.004	-0.0053	-0.005	-0.0049
5%	0.0077	-0.0001	0.0008	0.0015
10%	0.0098	0.0034	0.0046	0.0054
25%	0.0135	0.0102	0.0119	0.0133
50%	0.0177	0.0192	0.0217	0.0243
75%	0.0223	0.0298	0.0352	0.0386
90%	0.0264	0.0408	0.0499	0.0538
95%	0.029	0.0485	0.06	0.065
99%	0.0339	0.064	0.0805	0.089
max	0.0471	0.1201	0.1404	0.1609

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

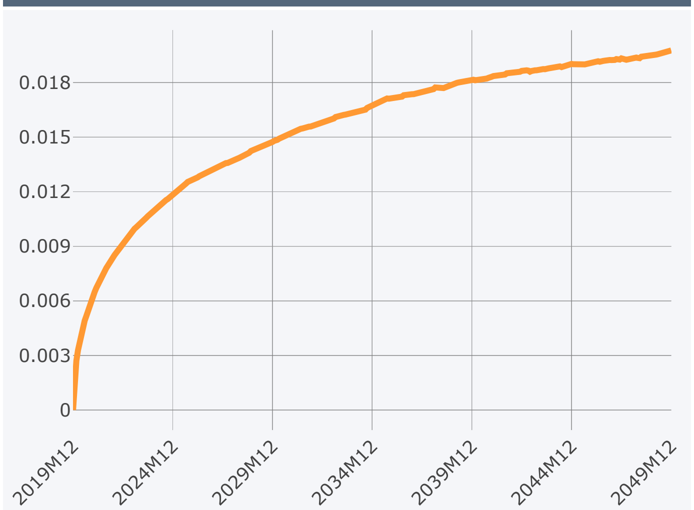
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

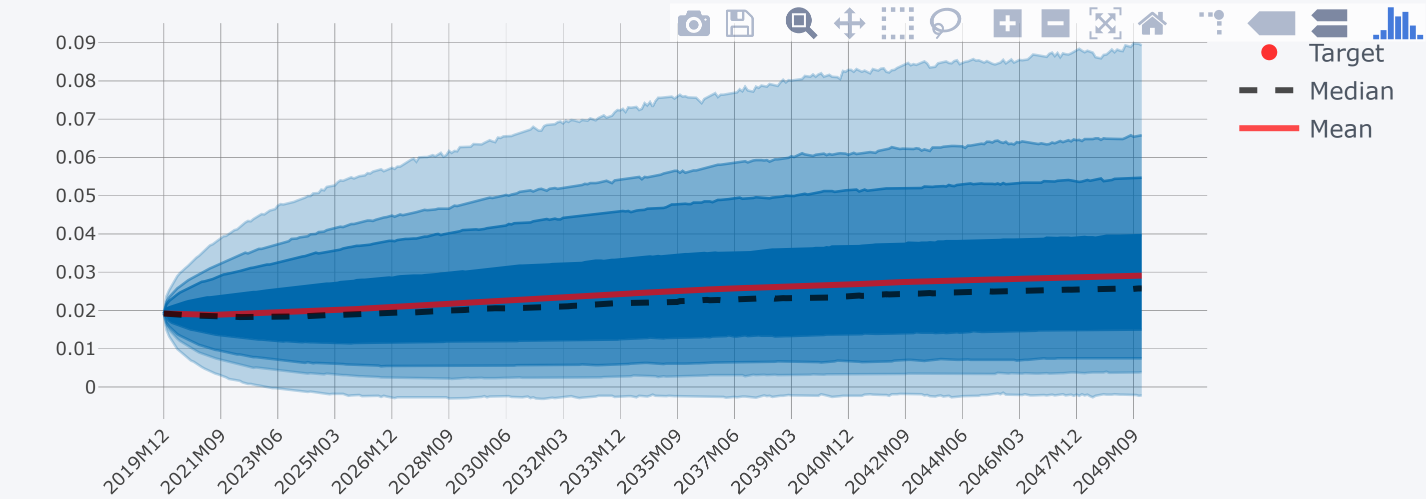
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0184	0.0217	0.0258	0.0284
std	0.0063	0.0147	0.0181	0.0198
min	-0.0033	-0.0128	-0.0103	-0.014
1%	0.005	-0.0038	-0.0036	-0.0035
5%	0.0086	0.0012	0.002	0.0028
10%	0.0106	0.0045	0.0056	0.0065
25%	0.0141	0.0111	0.0128	0.0142
50%	0.0182	0.0199	0.0224	0.0251
75%	0.0226	0.0304	0.0358	0.0392
90%	0.0266	0.0412	0.0504	0.0542
95%	0.029	0.049	0.0603	0.0654
99%	0.0338	0.0644	0.081	0.089
max	0.0461	0.1208	0.141	0.1606

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

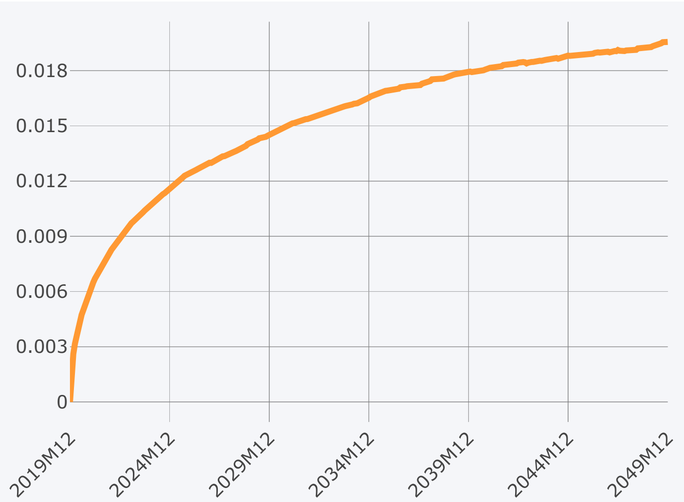
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

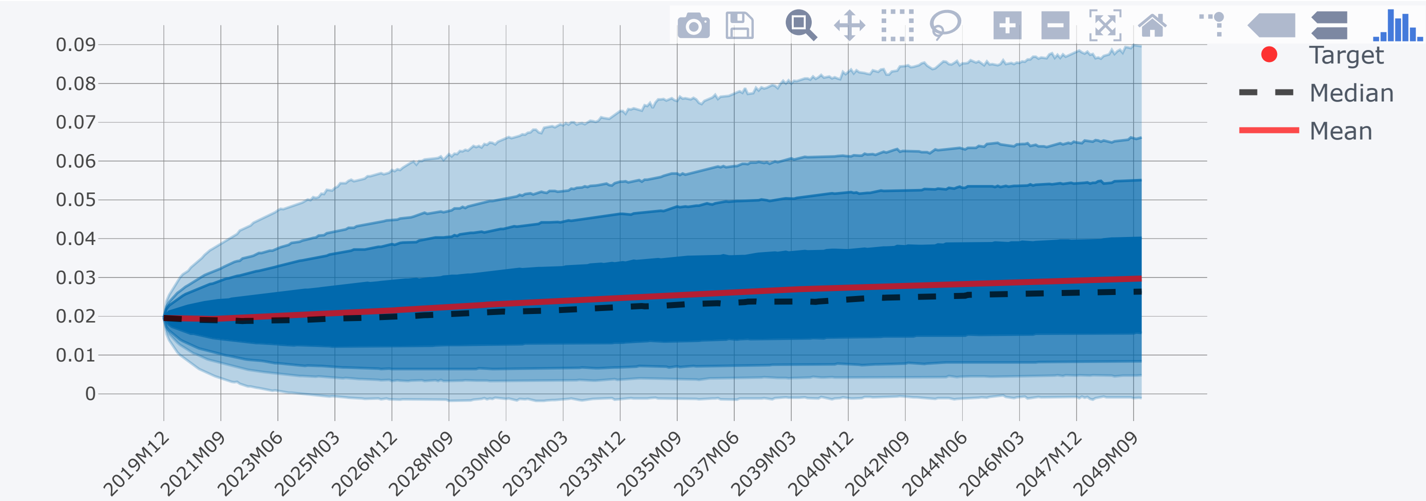
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0189	0.0224	0.0265	0.0291
std	0.006	0.0145	0.0179	0.0196
min	-0.0019	-0.0108	-0.0085	-0.012
1%	0.006	-0.0025	-0.0023	-0.0022
5%	0.0094	0.0023	0.0032	0.0039
10%	0.0113	0.0055	0.0066	0.0075
25%	0.0147	0.0119	0.0136	0.015
50%	0.0186	0.0205	0.023	0.0258
75%	0.0229	0.0309	0.0363	0.0397
90%	0.0267	0.0416	0.0507	0.0547
95%	0.0291	0.0495	0.0607	0.0658
99%	0.0338	0.0645	0.0811	0.0893
max	0.0452	0.1214	0.1413	0.1603

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

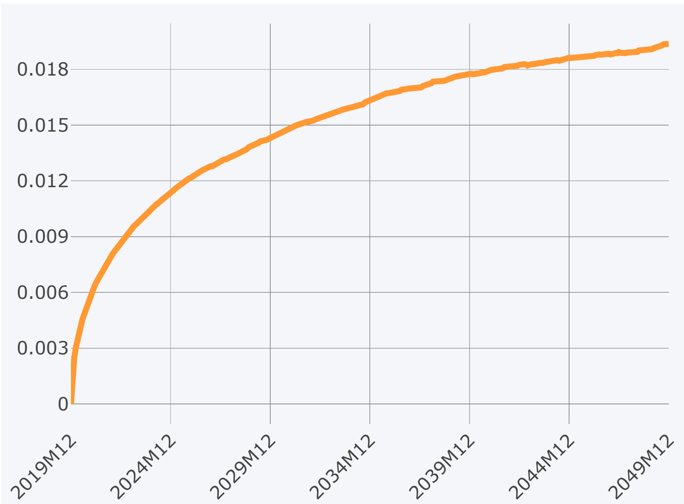
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0193	0.023	0.0271	0.0297
std	0.0059	0.0143	0.0178	0.0194
min	-0.0007	-0.0091	-0.0069	-0.0102
1%	0.0069	-0.0012	-0.0011	-0.0011
5%	0.0102	0.0033	0.0042	0.0048
10%	0.012	0.0064	0.0075	0.0084
25%	0.0153	0.0127	0.0143	0.0157
50%	0.0191	0.0211	0.0237	0.0264
75%	0.0232	0.0314	0.0368	0.0402
90%	0.0269	0.0419	0.0511	0.0551
95%	0.0293	0.0497	0.0612	0.0661
99%	0.0339	0.0648	0.0812	0.0896
max	0.0444	0.1218	0.1416	0.1599

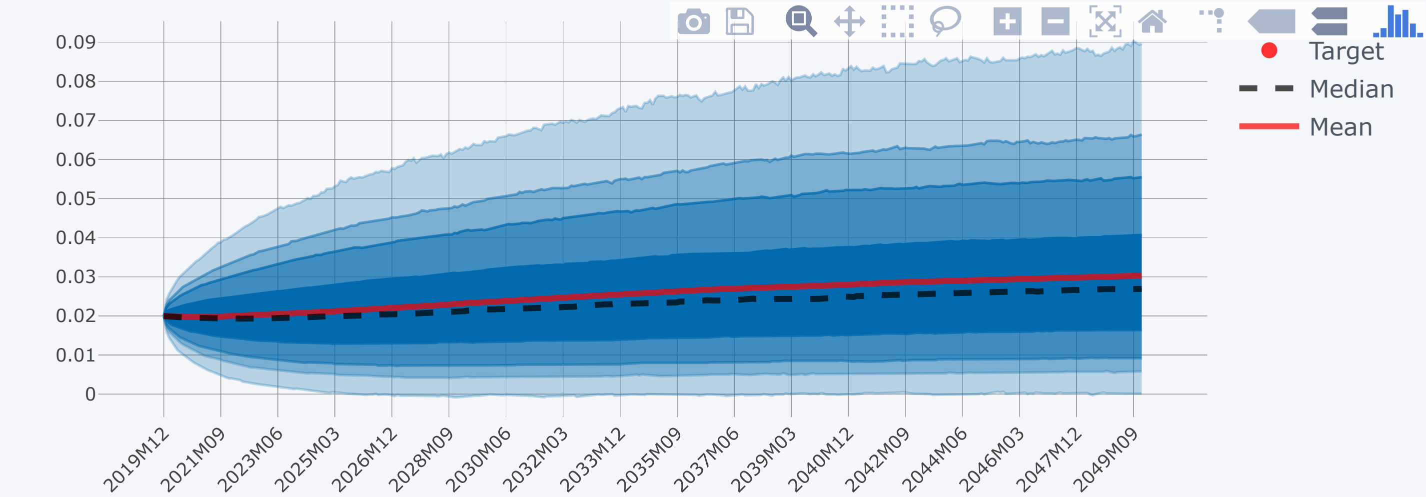
Cross Sectional Volatility Over Time



US Treasury 12 Year Yield - Spot
Conning | Risk Solutions

2019 Q4
Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

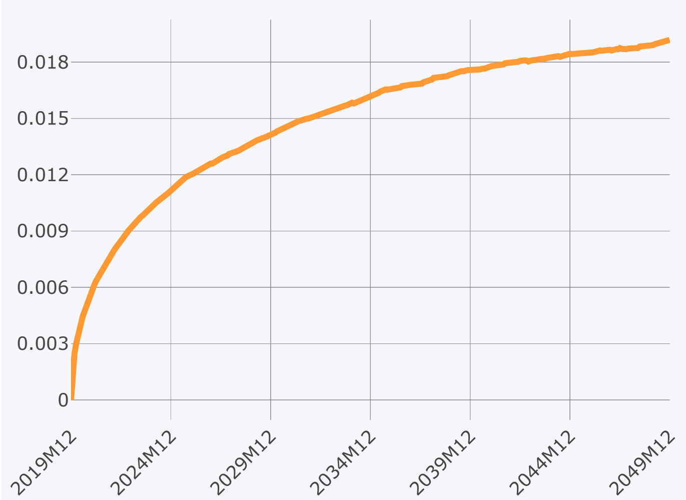
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

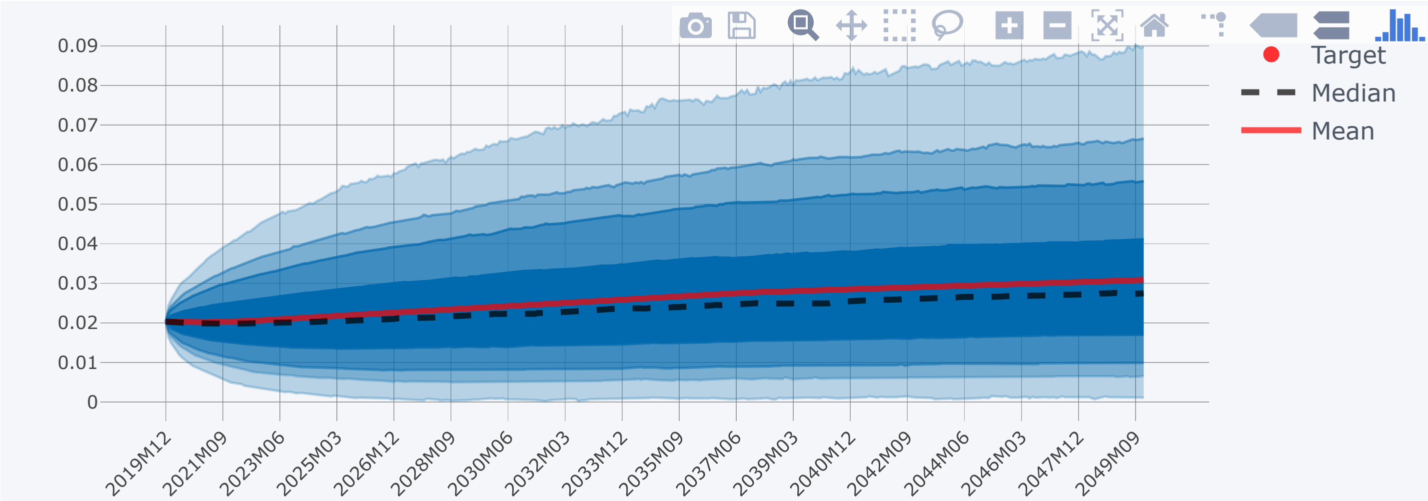
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0197	0.0236	0.0277	0.0303
std	0.0057	0.0141	0.0176	0.0192
min	0.0005	-0.0074	-0.0055	-0.0085
1%	0.0077	-0.0001	0	0.0001
5%	0.0108	0.0043	0.0051	0.0058
10%	0.0126	0.0073	0.0083	0.0092
25%	0.0158	0.0134	0.015	0.0164
50%	0.0194	0.0217	0.0243	0.0269
75%	0.0235	0.0319	0.0372	0.0407
90%	0.0272	0.0423	0.0514	0.0555
95%	0.0295	0.05	0.0615	0.0664
99%	0.034	0.0647	0.0813	0.0896
max	0.0438	0.1221	0.1417	0.1594

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

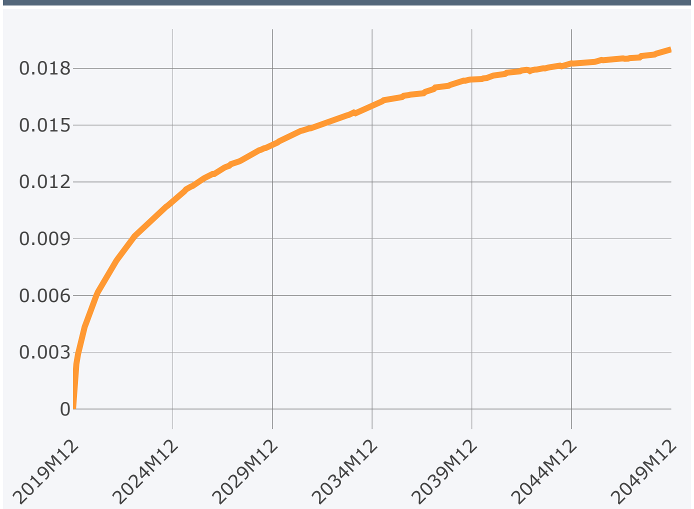
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

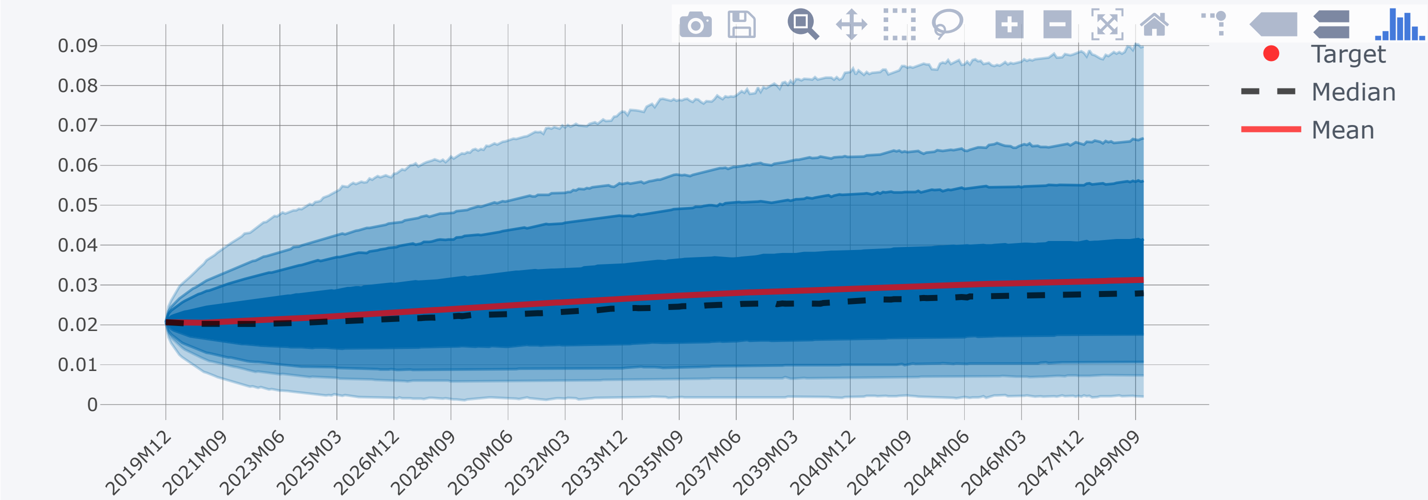
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0201	0.0242	0.0283	0.0308
std	0.0056	0.014	0.0174	0.019
min	0.0015	-0.006	-0.0044	-0.007
1%	0.0084	0.0009	0.0011	0.0011
5%	0.0115	0.0051	0.0059	0.0066
10%	0.0132	0.0082	0.0091	0.0099
25%	0.0163	0.0141	0.0157	0.017
50%	0.0198	0.0221	0.0248	0.0275
75%	0.0238	0.0323	0.0376	0.0411
90%	0.0274	0.0424	0.0518	0.0558
95%	0.0297	0.0503	0.0617	0.0666
99%	0.034	0.065	0.0813	0.0898
max	0.0438	0.1223	0.1417	0.1589

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

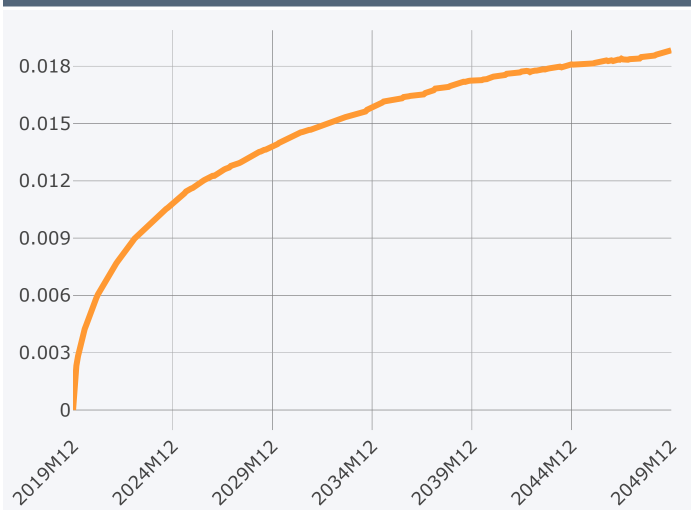
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

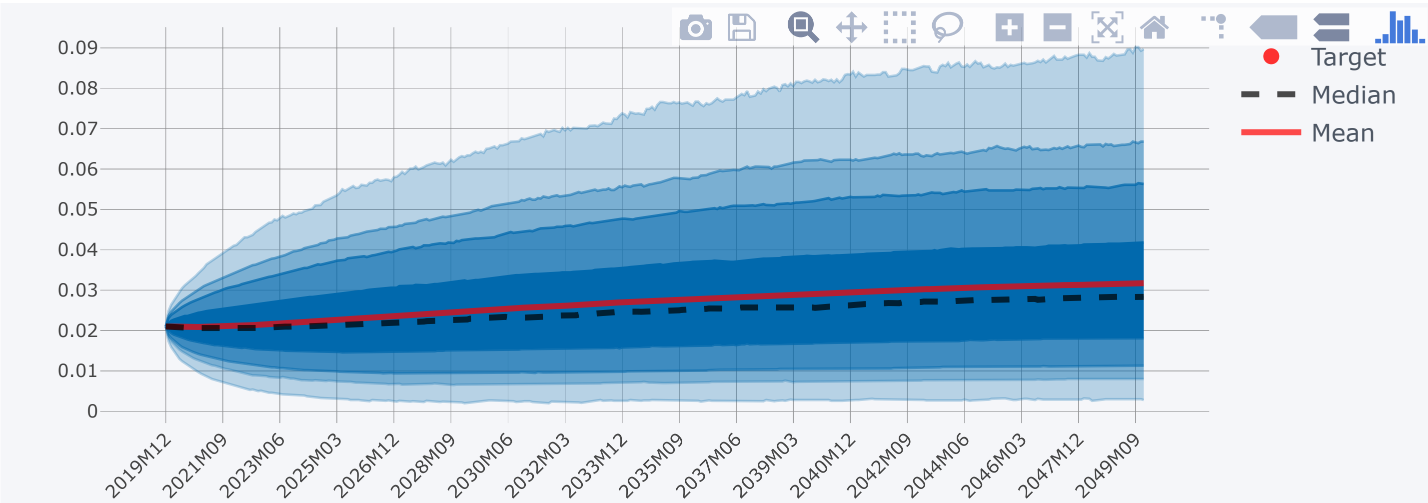
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0205	0.0247	0.0287	0.0313
std	0.0054	0.0138	0.0172	0.0188
min	0.0025	-0.0046	-0.0034	-0.0056
1%	0.009	0.0018	0.002	0.002
5%	0.0121	0.0059	0.0068	0.0073
10%	0.0137	0.0089	0.0098	0.0107
25%	0.0167	0.0147	0.0163	0.0176
50%	0.0202	0.0226	0.0252	0.0279
75%	0.0241	0.0327	0.0381	0.0415
90%	0.0277	0.0427	0.0521	0.0561
95%	0.0299	0.0506	0.0619	0.0668
99%	0.0341	0.0651	0.0815	0.0898
max	0.044	0.1224	0.1416	0.1583

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

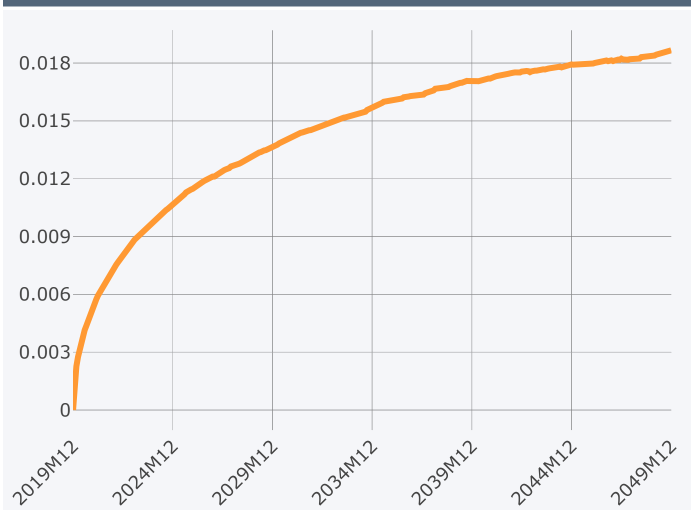
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

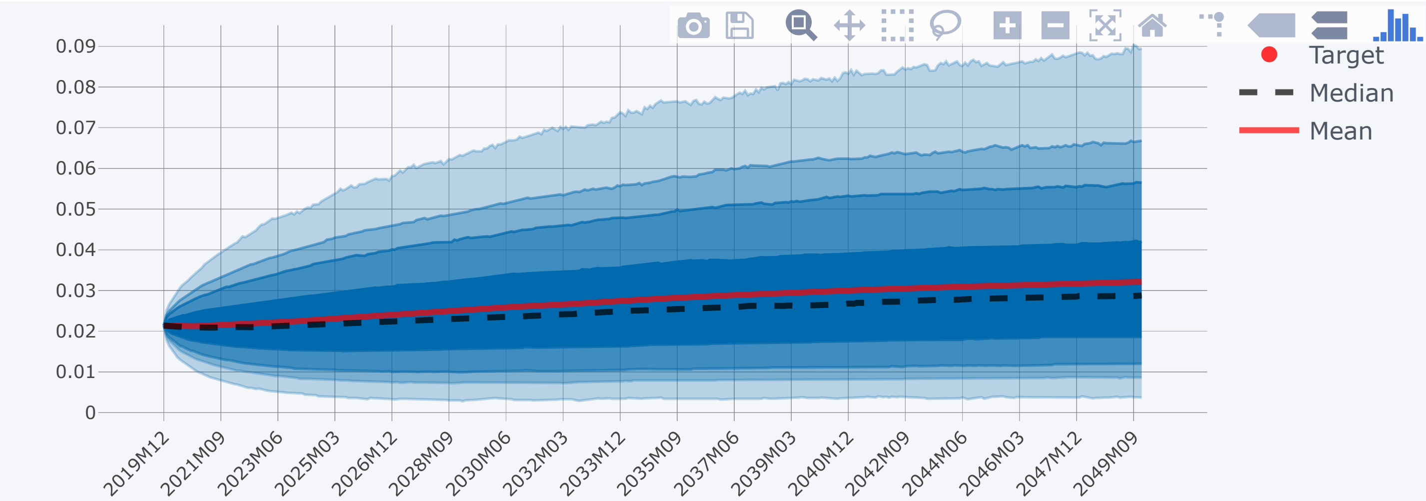
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0209	0.0251	0.0292	0.0317
std	0.0053	0.0136	0.0171	0.0187
min	0.0034	-0.0034	-0.0024	-0.0044
1%	0.0097	0.0027	0.0029	0.0028
5%	0.0126	0.0066	0.0075	0.008
10%	0.0142	0.0095	0.0105	0.0113
25%	0.0172	0.0152	0.0169	0.0181
50%	0.0206	0.0231	0.0257	0.0283
75%	0.0244	0.033	0.0385	0.0418
90%	0.0279	0.043	0.0522	0.0563
95%	0.0301	0.0508	0.0622	0.0668
99%	0.0342	0.0653	0.0815	0.0897
max	0.0442	0.1224	0.1414	0.1577

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

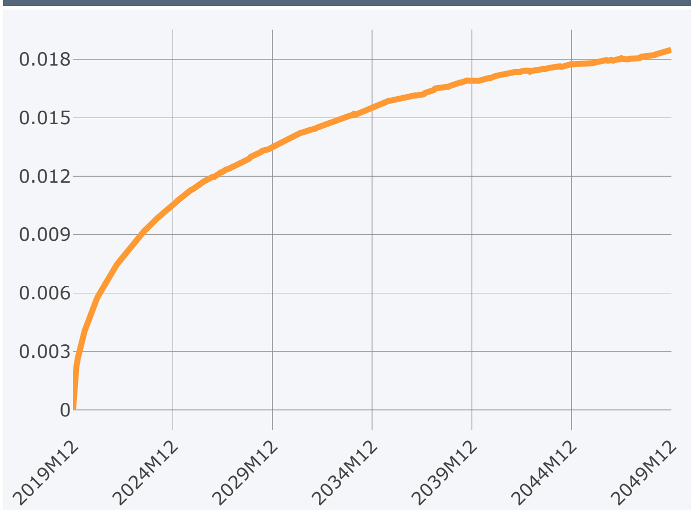
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

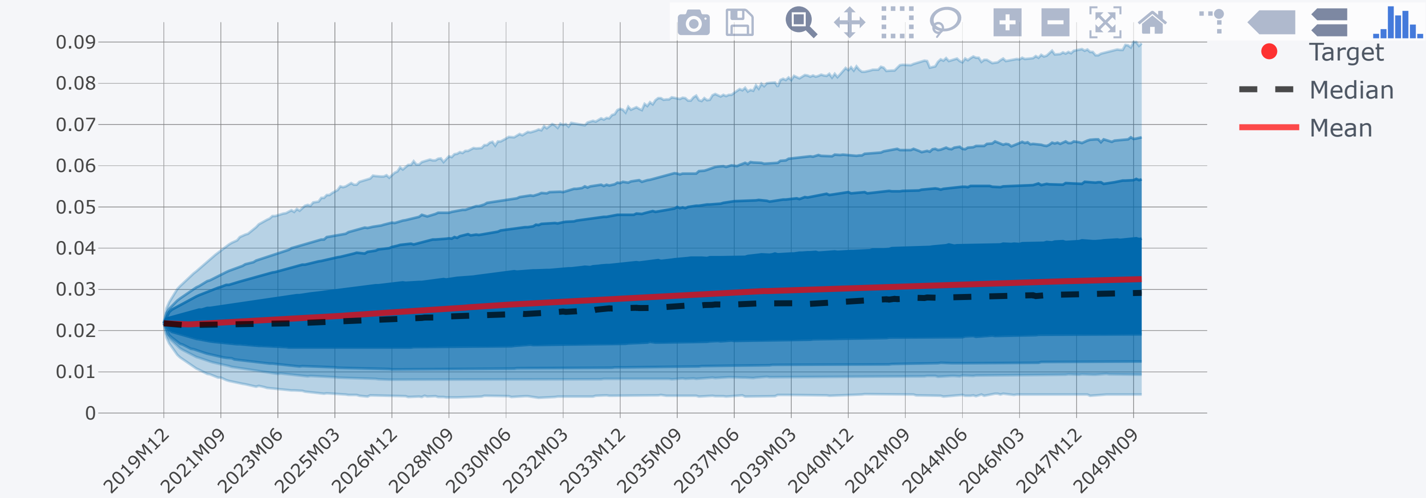
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0212	0.0256	0.0296	0.0321
std	0.0052	0.0135	0.0169	0.0185
min	0.0042	-0.0022	-0.0015	-0.0032
1%	0.0102	0.0034	0.0037	0.0037
5%	0.0131	0.0074	0.0081	0.0086
10%	0.0147	0.0101	0.0111	0.012
25%	0.0176	0.0157	0.0174	0.0186
50%	0.0209	0.0236	0.0261	0.0288
75%	0.0247	0.0333	0.0388	0.042
90%	0.0281	0.0432	0.0525	0.0565
95%	0.0303	0.0509	0.0624	0.0668
99%	0.0343	0.0655	0.0817	0.0895
max	0.0444	0.1223	0.1411	0.157

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

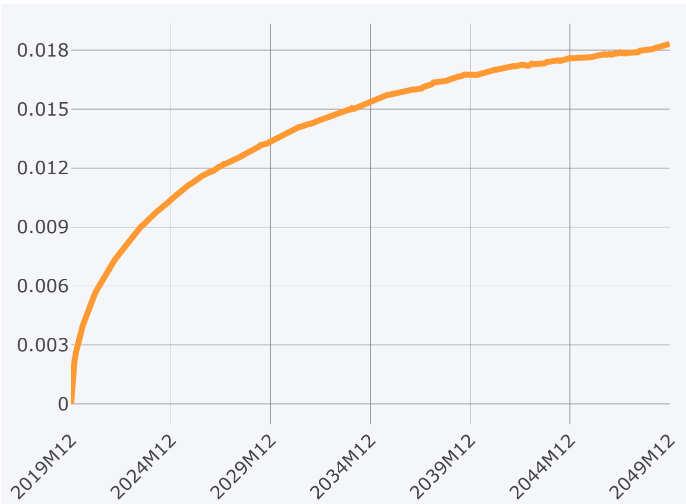
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

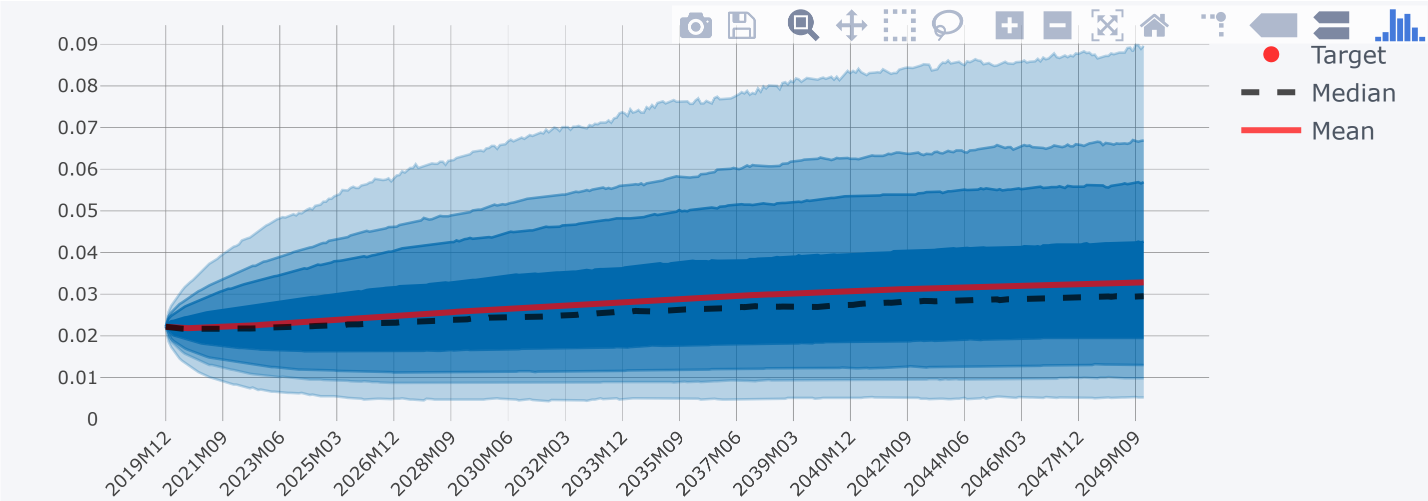
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0216	0.026	0.03	0.0325
std	0.0051	0.0134	0.0168	0.0183
min	0.005	-0.0012	-0.0007	-0.0021
1%	0.0108	0.0042	0.0044	0.0045
5%	0.0136	0.0081	0.0088	0.0093
10%	0.0152	0.0107	0.0117	0.0125
25%	0.018	0.0162	0.0179	0.0191
50%	0.0213	0.024	0.0265	0.0292
75%	0.025	0.0336	0.0391	0.0423
90%	0.0283	0.0434	0.0526	0.0567
95%	0.0305	0.0511	0.0624	0.0669
99%	0.0344	0.0656	0.0816	0.0897
max	0.0445	0.1221	0.1407	0.1562

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

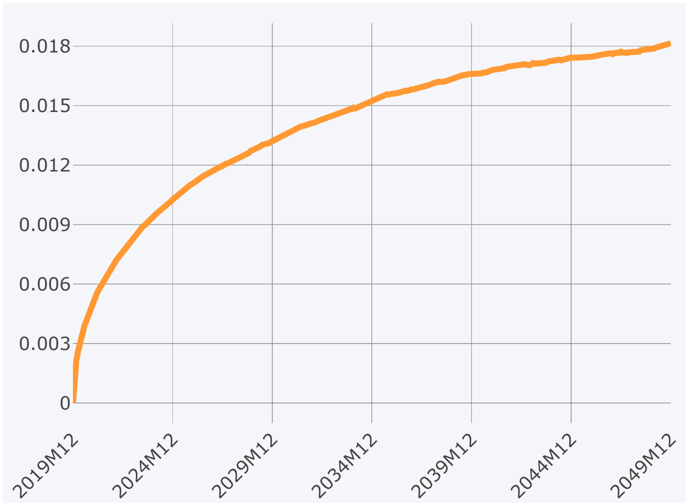
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

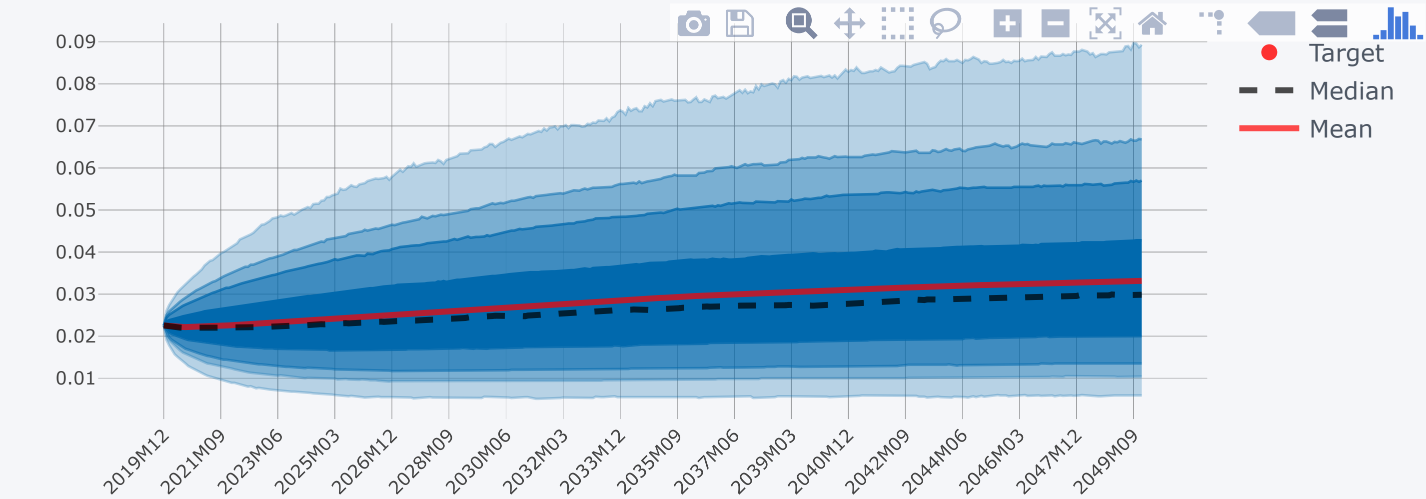
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0219	0.0264	0.0304	0.0328
std	0.0051	0.0132	0.0166	0.0181
min	0.0058	-0.0002	0.0001	-0.0011
1%	0.0113	0.0049	0.0051	0.0052
5%	0.0141	0.0087	0.0094	0.0098
10%	0.0156	0.0112	0.0122	0.013
25%	0.0184	0.0167	0.0183	0.0195
50%	0.0216	0.0244	0.0269	0.0295
75%	0.0252	0.034	0.0394	0.0426
90%	0.0285	0.0436	0.0529	0.0569
95%	0.0307	0.0513	0.0625	0.0669
99%	0.0346	0.0656	0.0815	0.0896
max	0.0446	0.1218	0.1403	0.1555

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

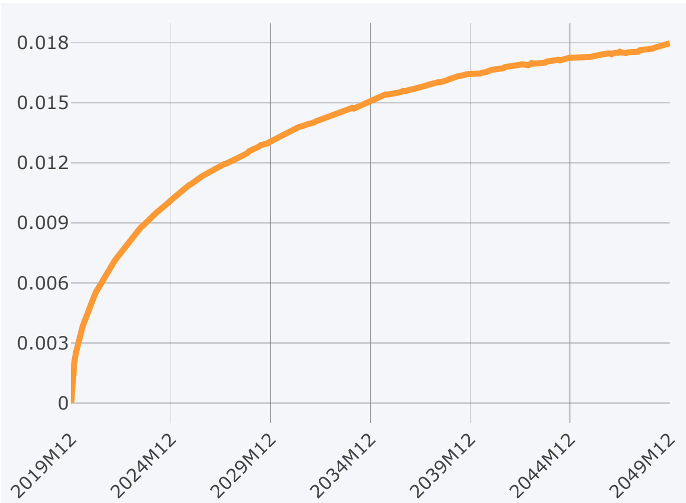
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

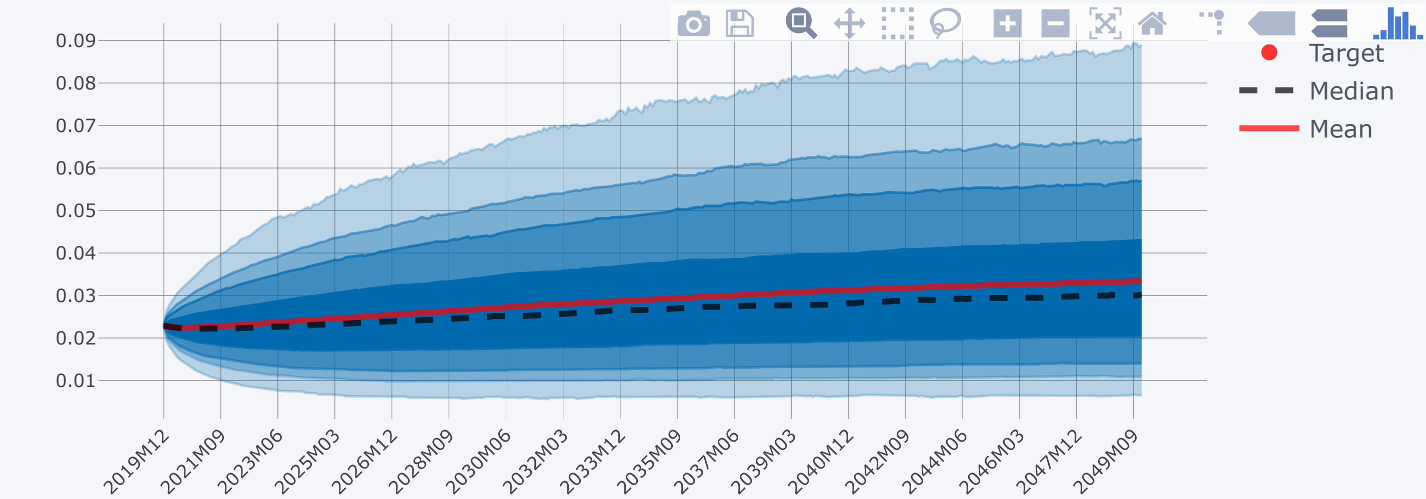
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0222	0.0267	0.0307	0.0331
std	0.005	0.0131	0.0164	0.018
min	0.0065	0.0008	0.0009	-0.0001
1%	0.0118	0.0056	0.0058	0.0059
5%	0.0145	0.0092	0.0099	0.0104
10%	0.0161	0.0118	0.0127	0.0135
25%	0.0187	0.0171	0.0188	0.02
50%	0.0219	0.0247	0.0273	0.0298
75%	0.0255	0.0342	0.0395	0.0428
90%	0.0287	0.0438	0.0529	0.057
95%	0.0309	0.0514	0.0625	0.0668
99%	0.0347	0.0657	0.0815	0.0893
max	0.0448	0.1215	0.1398	0.1546

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

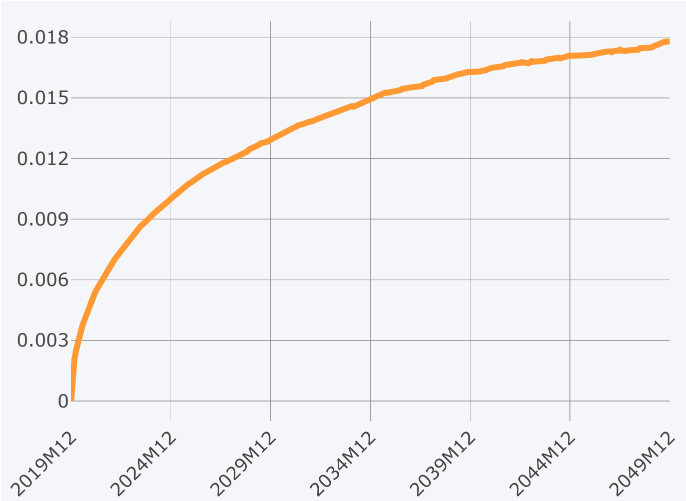
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

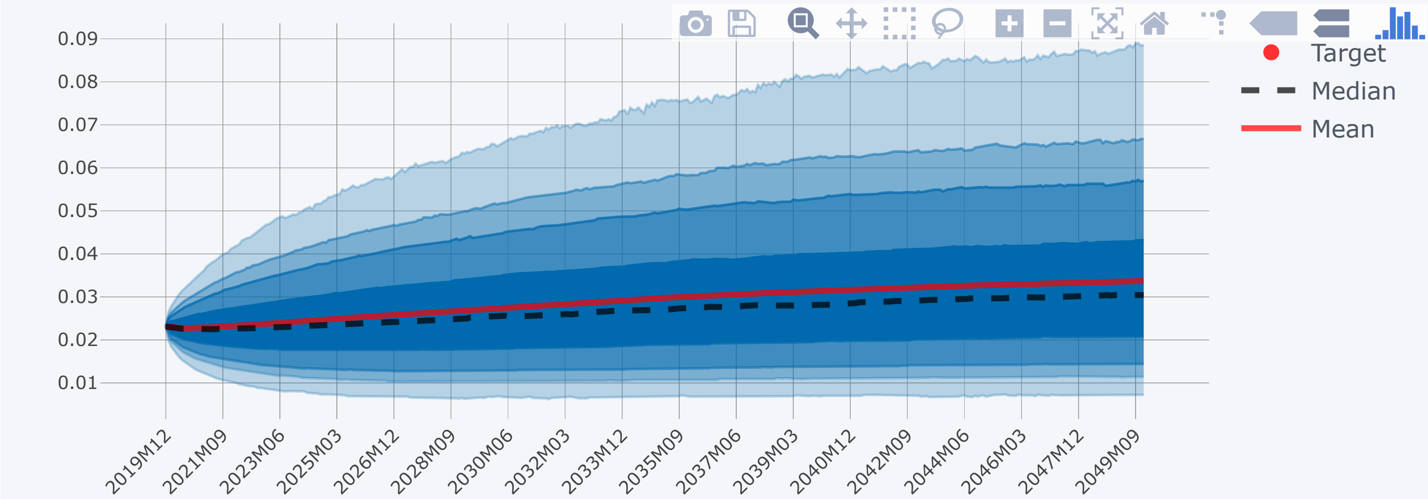
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0225	0.027	0.031	0.0334
std	0.0049	0.0129	0.0163	0.0178
min	0.0072	0.0016	0.0016	0.0008
1%	0.0123	0.0061	0.0064	0.0066
5%	0.015	0.0098	0.0105	0.0109
10%	0.0164	0.0123	0.0132	0.014
25%	0.0191	0.0175	0.0192	0.0204
50%	0.0222	0.0251	0.0276	0.0301
75%	0.0257	0.0344	0.0398	0.043
90%	0.029	0.0439	0.053	0.057
95%	0.0311	0.0515	0.0625	0.0668
99%	0.0349	0.0656	0.0815	0.089
max	0.0449	0.1211	0.1392	0.1537

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

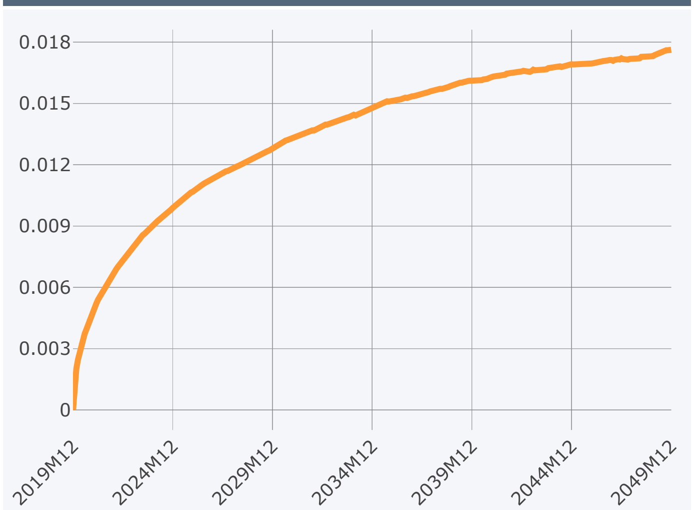
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

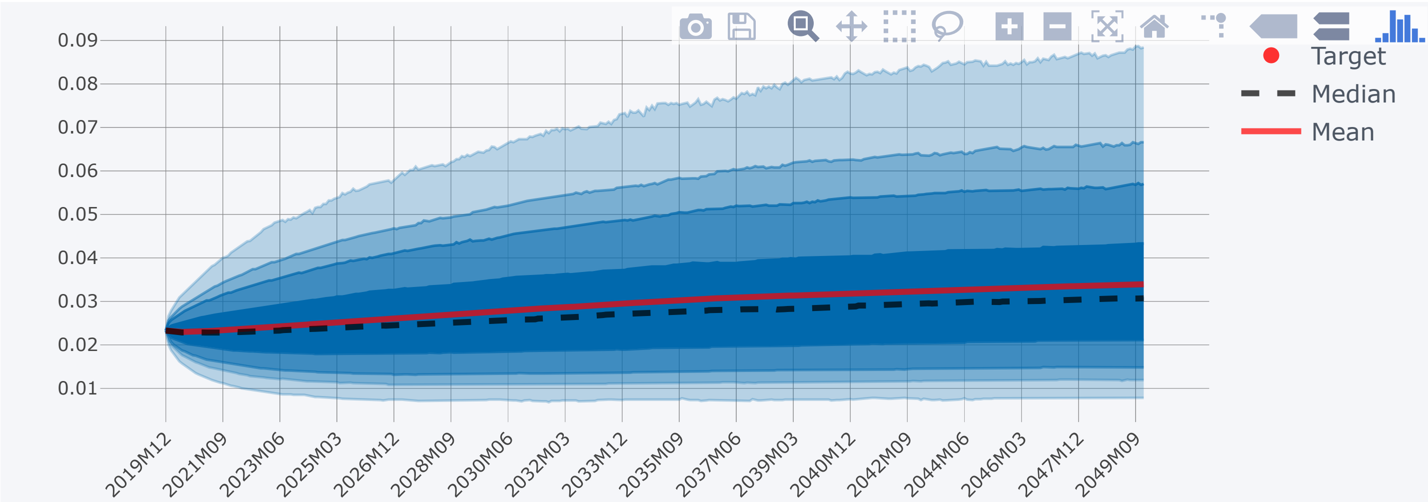
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0228	0.0274	0.0313	0.0337
std	0.0048	0.0128	0.0161	0.0176
min	0.0078	0.0024	0.0023	0.0016
1%	0.0128	0.0067	0.007	0.0072
5%	0.0154	0.0104	0.011	0.0114
10%	0.0168	0.0127	0.0137	0.0144
25%	0.0194	0.0179	0.0197	0.0208
50%	0.0225	0.0254	0.0279	0.0304
75%	0.026	0.0346	0.04	0.0432
90%	0.0292	0.0441	0.0531	0.057
95%	0.0312	0.0516	0.0625	0.0667
99%	0.035	0.0656	0.0814	0.0886
max	0.0449	0.1207	0.1386	0.1528

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

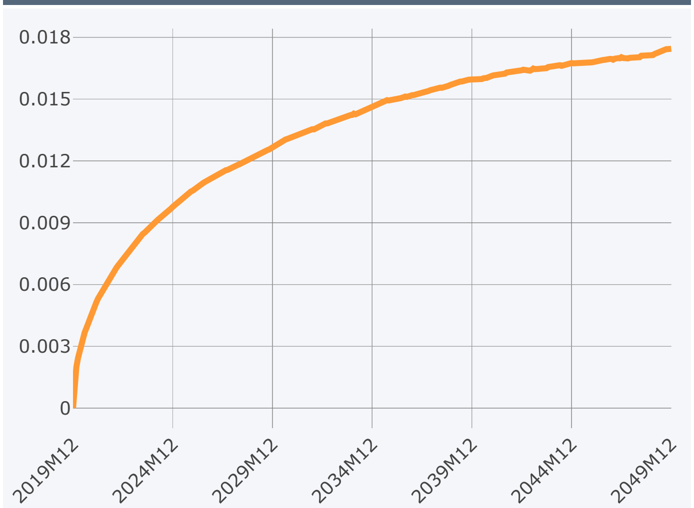
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

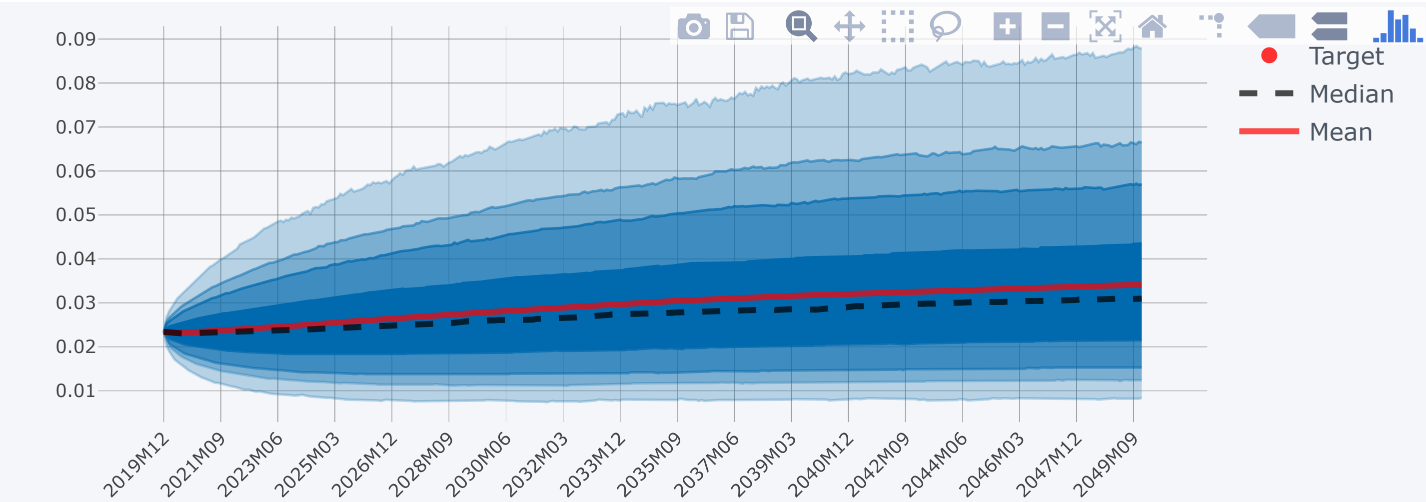
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0231	0.0277	0.0316	0.0339
std	0.0048	0.0127	0.0159	0.0174
min	0.0084	0.0031	0.003	0.0024
1%	0.0132	0.0073	0.0075	0.0078
5%	0.0158	0.0109	0.0114	0.0119
10%	0.0172	0.0132	0.0141	0.0148
25%	0.0197	0.0183	0.02	0.0211
50%	0.0228	0.0257	0.0282	0.0307
75%	0.0262	0.0348	0.0402	0.0433
90%	0.0294	0.0442	0.0532	0.057
95%	0.0313	0.0516	0.0624	0.0666
99%	0.0351	0.0656	0.0813	0.0884
max	0.045	0.1202	0.1379	0.1519

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

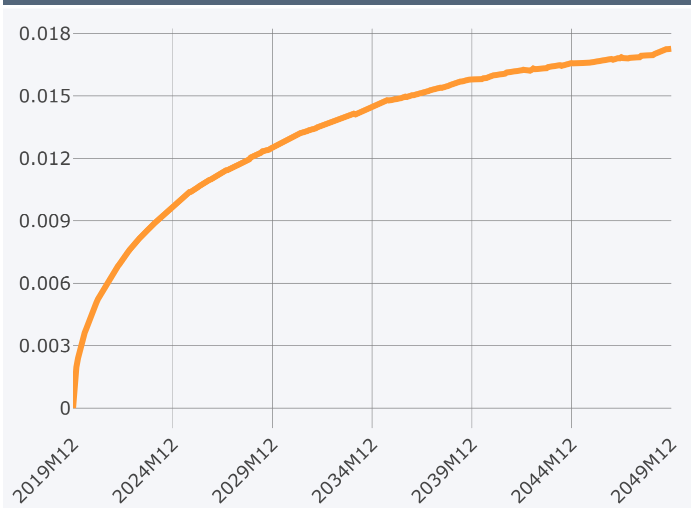
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

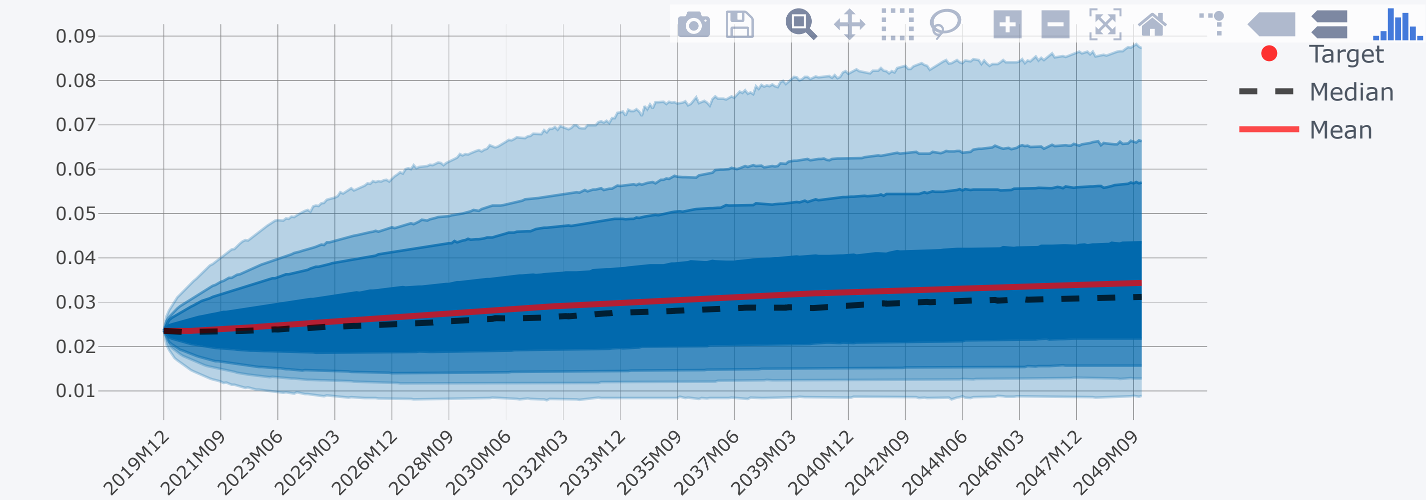
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0233	0.0279	0.0318	0.0342
std	0.0047	0.0125	0.0158	0.0173
min	0.009	0.0038	0.0036	0.0032
1%	0.0136	0.0079	0.0081	0.0084
5%	0.0161	0.0114	0.0119	0.0124
10%	0.0176	0.0136	0.0146	0.0153
25%	0.02	0.0187	0.0204	0.0215
50%	0.0231	0.026	0.0285	0.0309
75%	0.0264	0.0351	0.0403	0.0435
90%	0.0295	0.0444	0.0532	0.057
95%	0.0315	0.0516	0.0624	0.0665
99%	0.0352	0.0655	0.0811	0.0878
max	0.045	0.1197	0.1372	0.1509

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

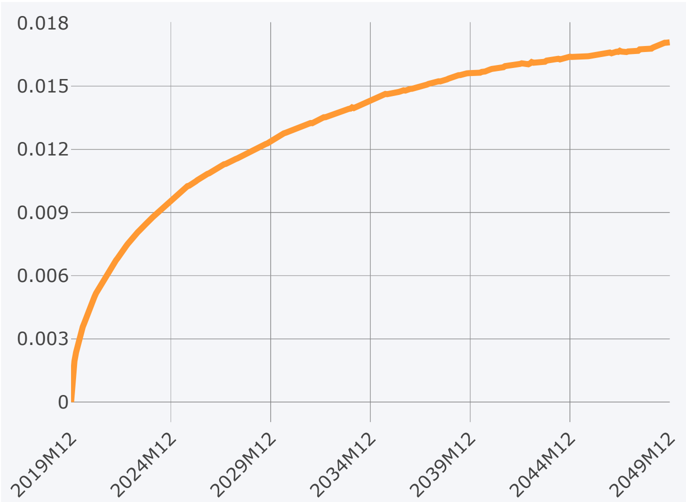
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

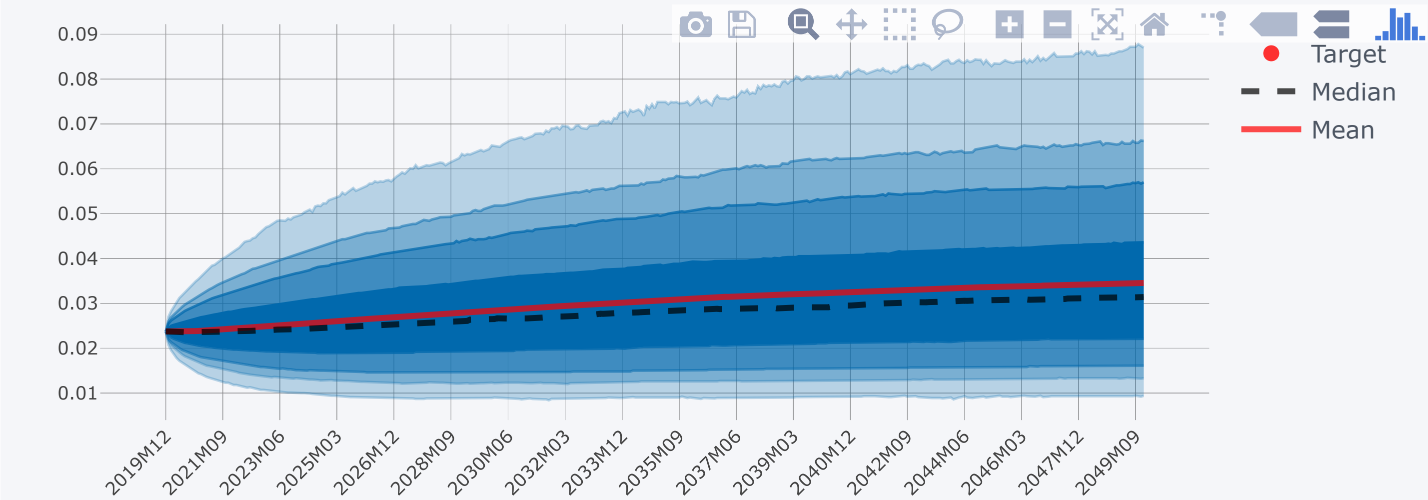
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0236	0.0282	0.032	0.0344
std	0.0046	0.0124	0.0156	0.0171
min	0.0095	0.0044	0.0042	0.0039
1%	0.0141	0.0084	0.0086	0.0089
5%	0.0165	0.0118	0.0123	0.0128
10%	0.0179	0.0141	0.015	0.0157
25%	0.0203	0.0191	0.0208	0.0218
50%	0.0233	0.0263	0.0287	0.0312
75%	0.0266	0.0352	0.0405	0.0435
90%	0.0297	0.0445	0.0532	0.057
95%	0.0316	0.0516	0.0623	0.0663
99%	0.0353	0.0654	0.0809	0.0873
max	0.0451	0.1191	0.1364	0.1498

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

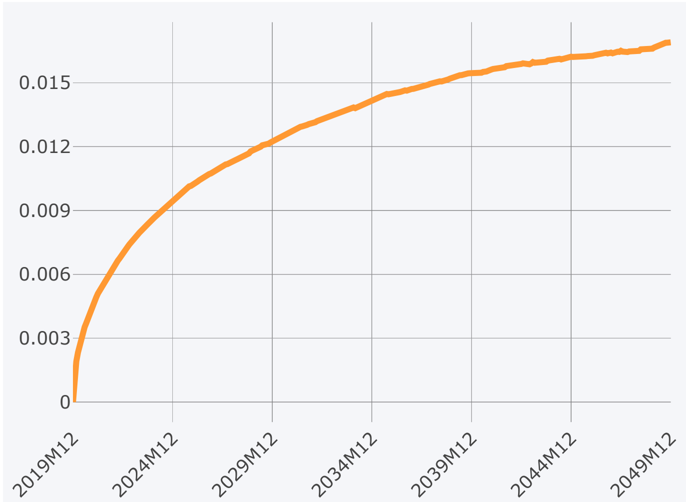
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

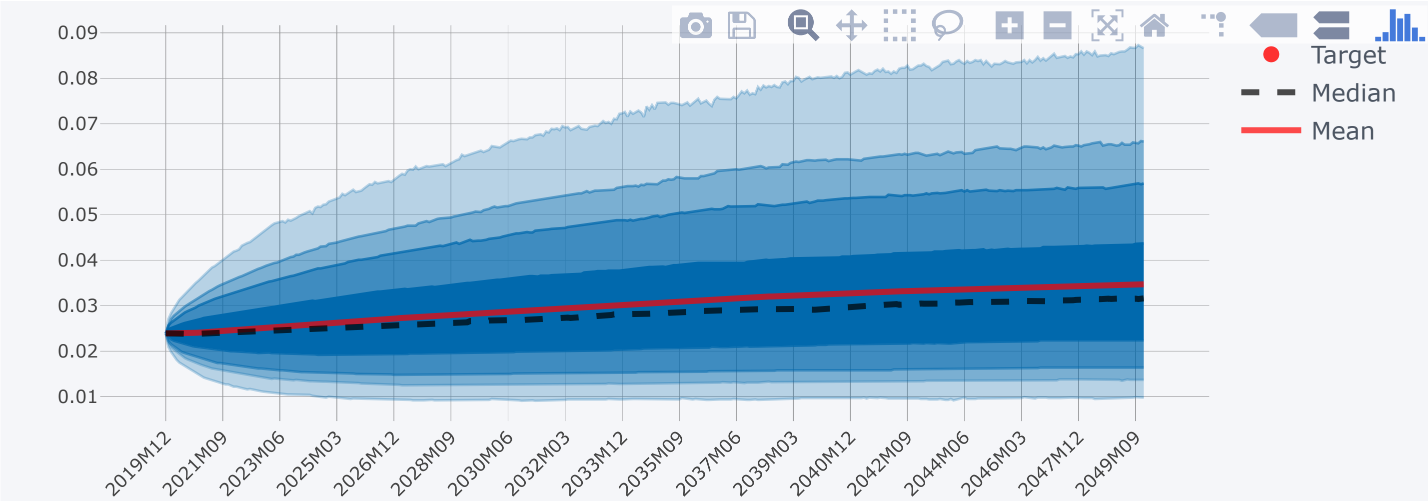
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0238	0.0284	0.0322	0.0345
std	0.0046	0.0122	0.0154	0.0169
min	0.01	0.005	0.0048	0.0046
1%	0.0144	0.0089	0.0091	0.0094
5%	0.0169	0.0123	0.0128	0.0133
10%	0.0182	0.0145	0.0154	0.0161
25%	0.0206	0.0194	0.0211	0.0221
50%	0.0236	0.0265	0.029	0.0314
75%	0.0268	0.0354	0.0406	0.0436
90%	0.0299	0.0446	0.0532	0.057
95%	0.0317	0.0516	0.0622	0.0662
99%	0.0354	0.0652	0.0806	0.087
max	0.0451	0.1185	0.1356	0.1488

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

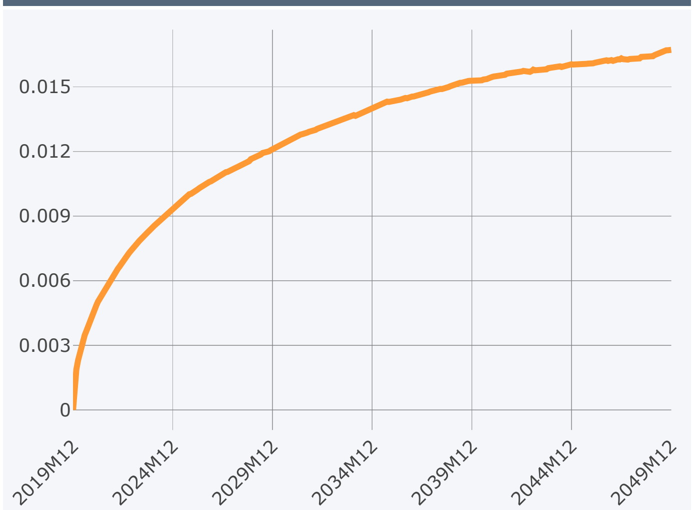
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

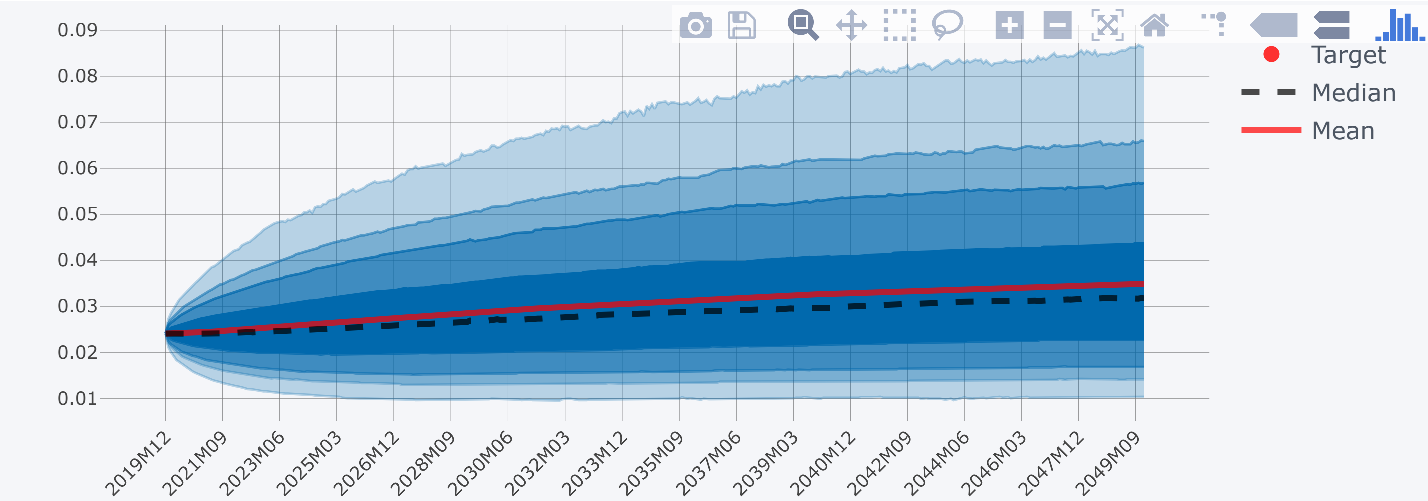
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0241	0.0287	0.0324	0.0347
std	0.0045	0.0121	0.0153	0.0167
min	0.0105	0.0056	0.0054	0.0052
1%	0.0148	0.0095	0.0095	0.0098
5%	0.0172	0.0127	0.0132	0.0137
10%	0.0185	0.0149	0.0158	0.0164
25%	0.0209	0.0197	0.0214	0.0224
50%	0.0238	0.0268	0.0292	0.0316
75%	0.027	0.0355	0.0407	0.0437
90%	0.03	0.0447	0.0531	0.0569
95%	0.0319	0.0516	0.062	0.0661
99%	0.0355	0.0651	0.0802	0.0866
max	0.0451	0.1178	0.1347	0.1477

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

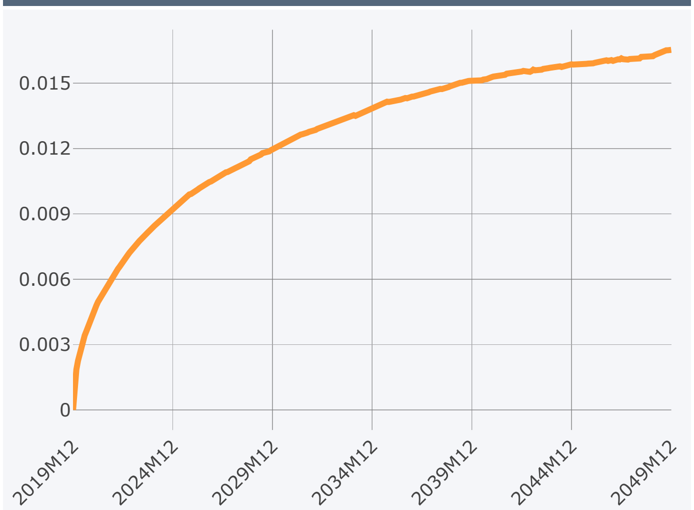
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

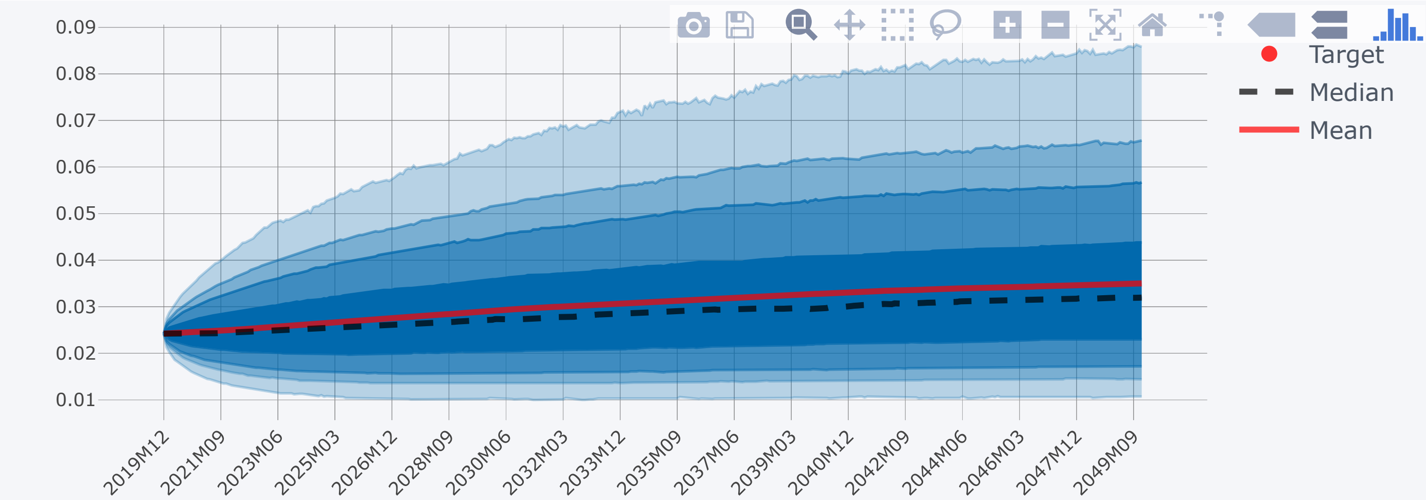
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0243	0.0289	0.0326	0.0349
std	0.0044	0.012	0.0151	0.0165
min	0.011	0.0061	0.0059	0.0059
1%	0.0152	0.0099	0.01	0.0103
5%	0.0175	0.0131	0.0136	0.0141
10%	0.0188	0.0152	0.0162	0.0168
25%	0.0212	0.0201	0.0217	0.0227
50%	0.024	0.027	0.0294	0.0318
75%	0.0272	0.0357	0.0407	0.0437
90%	0.0301	0.0447	0.0531	0.0568
95%	0.032	0.0516	0.0618	0.0659
99%	0.0356	0.0649	0.0798	0.0862
max	0.0451	0.1171	0.1338	0.1466

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

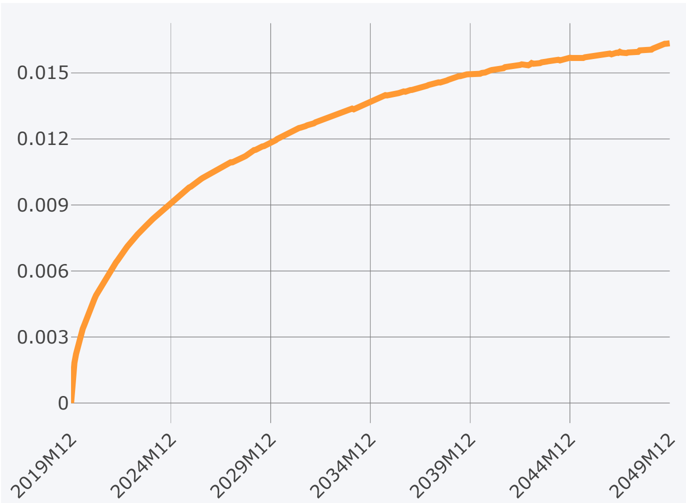
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

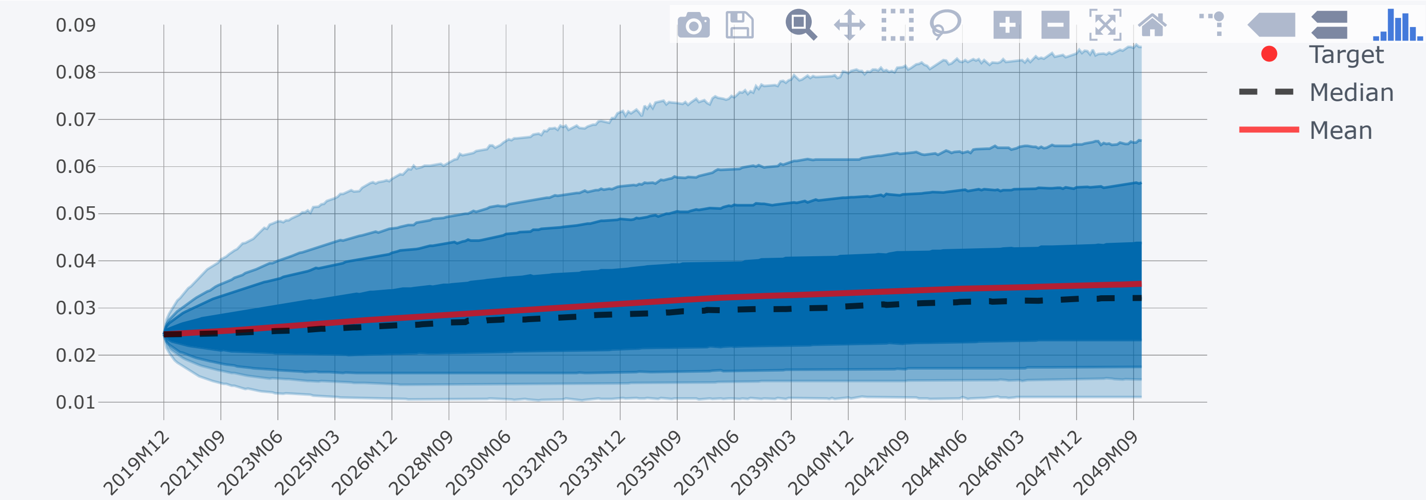
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0245	0.0291	0.0328	0.035
std	0.0044	0.0118	0.0149	0.0163
min	0.0114	0.0067	0.0064	0.0065
1%	0.0155	0.0104	0.0104	0.0107
5%	0.0179	0.0135	0.014	0.0144
10%	0.0191	0.0156	0.0165	0.0172
25%	0.0214	0.0204	0.022	0.023
50%	0.0243	0.0273	0.0296	0.032
75%	0.0274	0.0358	0.0408	0.0438
90%	0.0303	0.0447	0.0531	0.0567
95%	0.0321	0.0515	0.0616	0.0657
99%	0.0356	0.0647	0.0794	0.0858
max	0.0451	0.1164	0.1329	0.1455

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

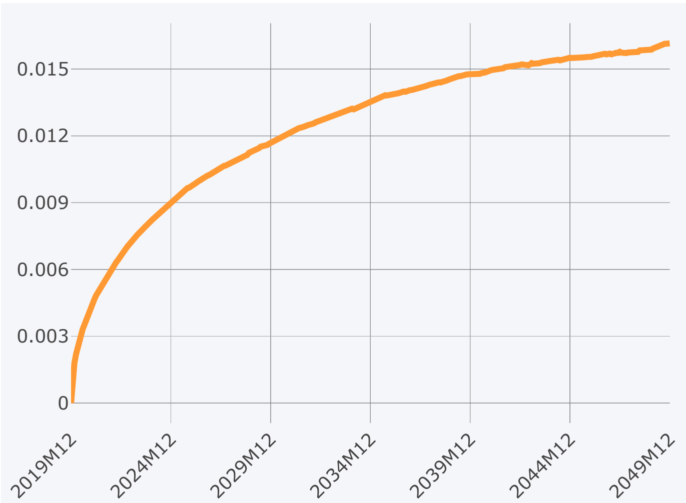
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

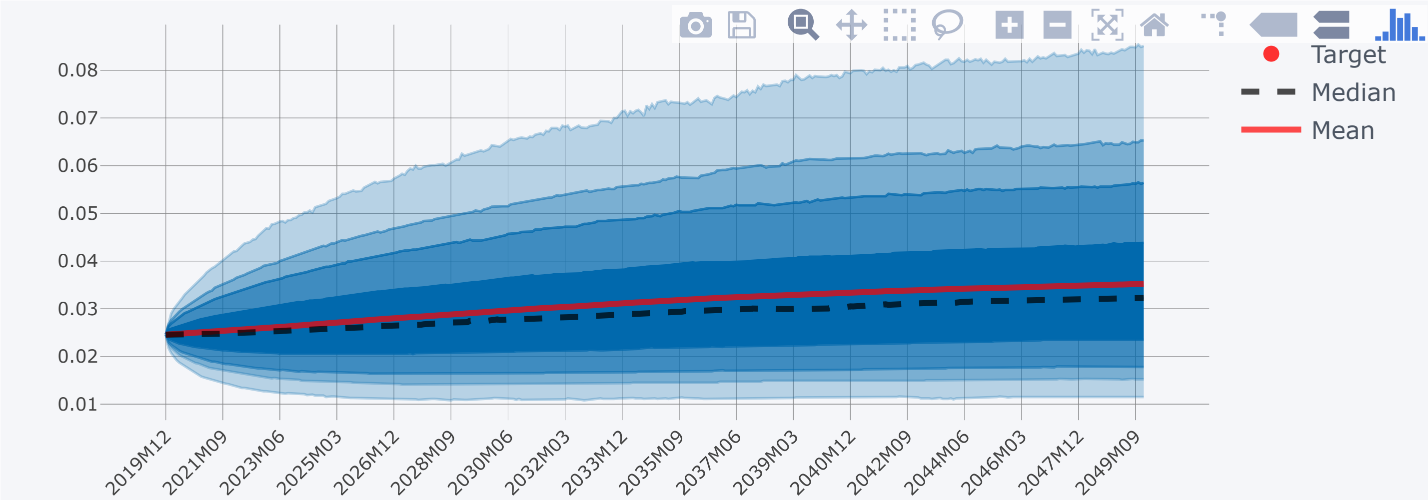
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0247	0.0293	0.0329	0.0351
std	0.0043	0.0117	0.0148	0.0162
min	0.0118	0.0072	0.0069	0.007
1%	0.0159	0.0108	0.0109	0.0111
5%	0.0181	0.0139	0.0144	0.0148
10%	0.0194	0.016	0.0169	0.0175
25%	0.0217	0.0207	0.0222	0.0232
50%	0.0245	0.0275	0.0298	0.0321
75%	0.0275	0.0359	0.0408	0.0438
90%	0.0304	0.0447	0.053	0.0566
95%	0.0322	0.0514	0.0615	0.0655
99%	0.0357	0.0645	0.079	0.0854
max	0.0451	0.1157	0.132	0.1443

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

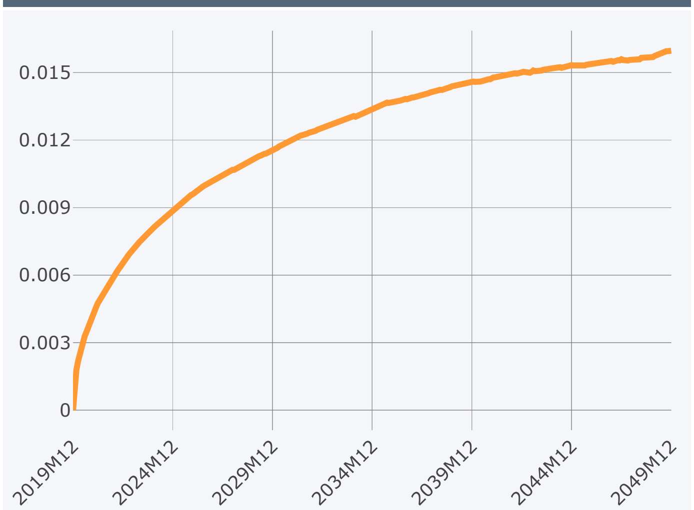
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

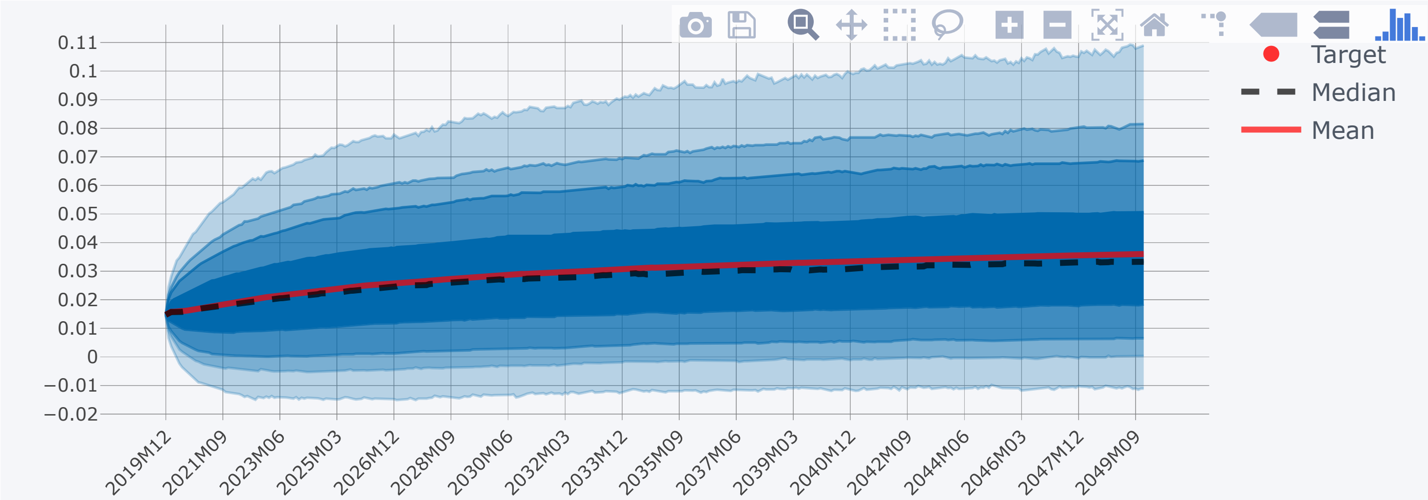
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0249	0.0294	0.0331	0.0352
std	0.0043	0.0115	0.0146	0.016
min	0.0122	0.0077	0.0074	0.0076
1%	0.0162	0.0112	0.0112	0.0115
5%	0.0185	0.0143	0.0148	0.0152
10%	0.0197	0.0163	0.0172	0.0178
25%	0.0219	0.0209	0.0225	0.0235
50%	0.0247	0.0277	0.0299	0.0323
75%	0.0277	0.036	0.0409	0.0438
90%	0.0305	0.0447	0.0529	0.0564
95%	0.0323	0.0514	0.0613	0.0653
99%	0.0357	0.0643	0.0787	0.0851
max	0.045	0.1149	0.131	0.1432

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

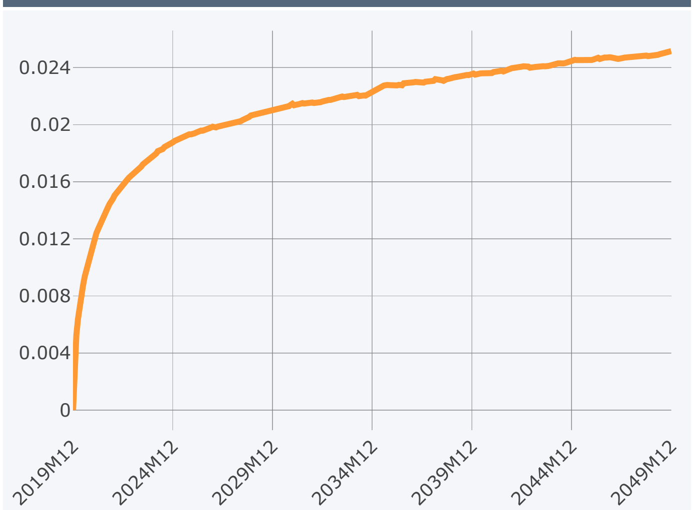
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

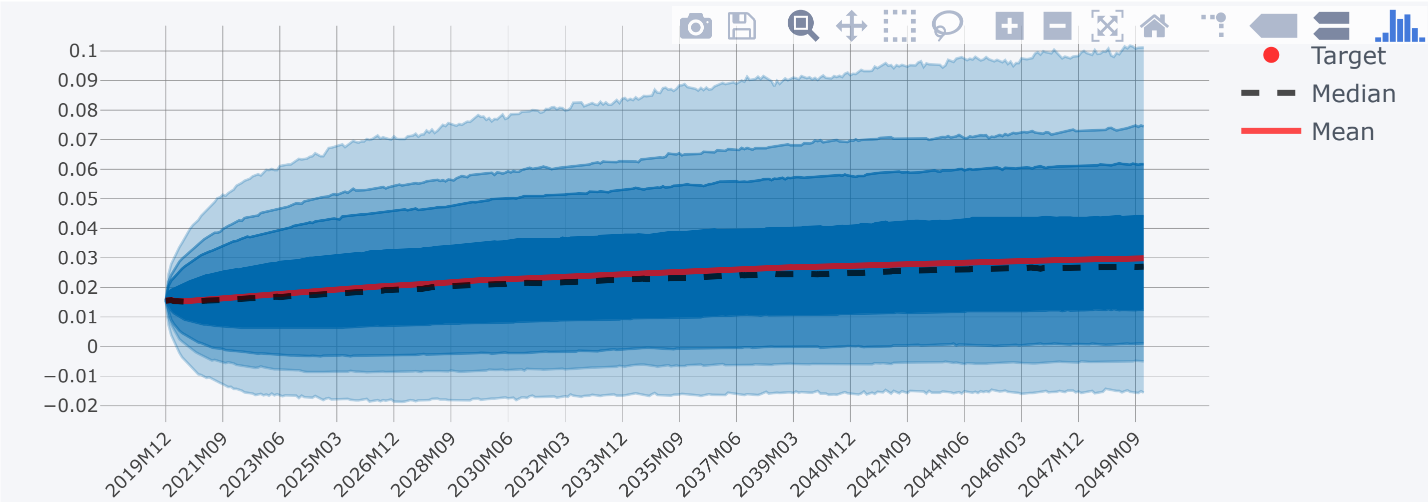
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0169	0.0284	0.0331	0.036
std	0.0117	0.0211	0.0235	0.0252
min	-0.0232	-0.0335	-0.0315	-0.0294
1%	-0.0089	-0.0135	-0.0112	-0.0111
5%	-0.0017	-0.0031	-0.0008	0.0003
10%	0.0021	0.0025	0.0052	0.0065
25%	0.0089	0.0134	0.0164	0.0184
50%	0.0167	0.0269	0.0305	0.0333
75%	0.0246	0.0416	0.0471	0.0506
90%	0.032	0.0563	0.0643	0.0687
95%	0.0363	0.0655	0.0768	0.0815
99%	0.0451	0.0834	0.0976	0.109
max	0.0705	0.146	0.1538	0.1826

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

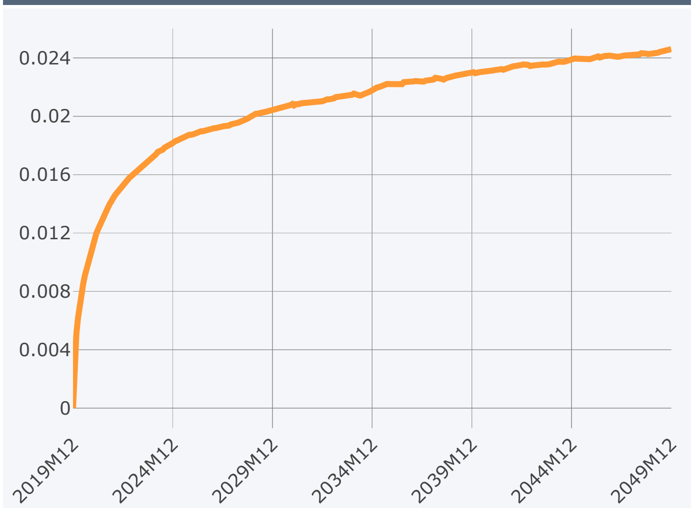
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

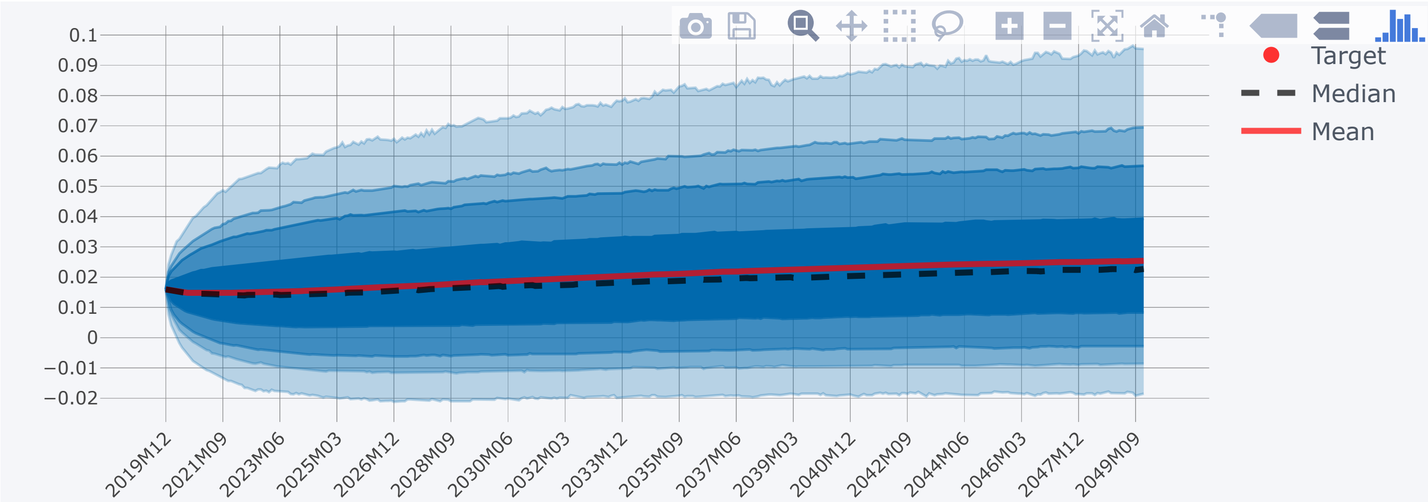
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0157	0.0227	0.027	0.0299
std	0.0113	0.0204	0.023	0.0246
min	-0.0228	-0.037	-0.0336	-0.0349
1%	-0.0094	-0.0176	-0.015	-0.0156
5%	-0.0024	-0.0076	-0.006	-0.005
10%	0.0014	-0.0024	0	0.0011
25%	0.0079	0.0082	0.0107	0.0125
50%	0.0154	0.021	0.0244	0.0271
75%	0.0232	0.0356	0.0404	0.0441
90%	0.0303	0.0499	0.0574	0.0617
95%	0.0345	0.0588	0.0695	0.0745
99%	0.0428	0.0762	0.0902	0.1012
max	0.0686	0.137	0.1464	0.1773

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

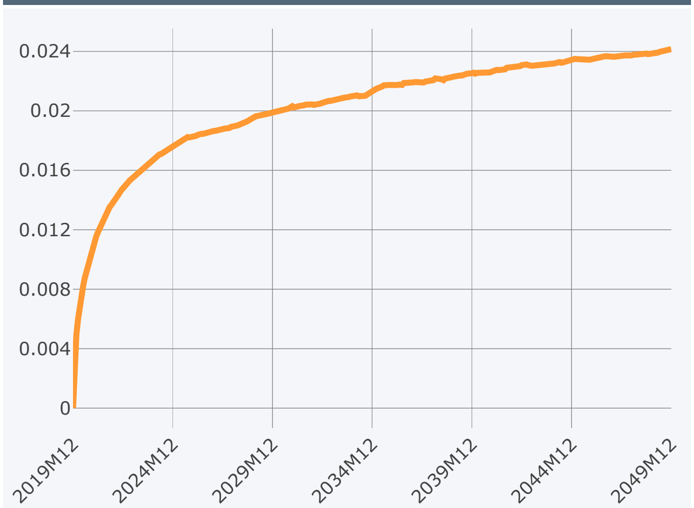
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

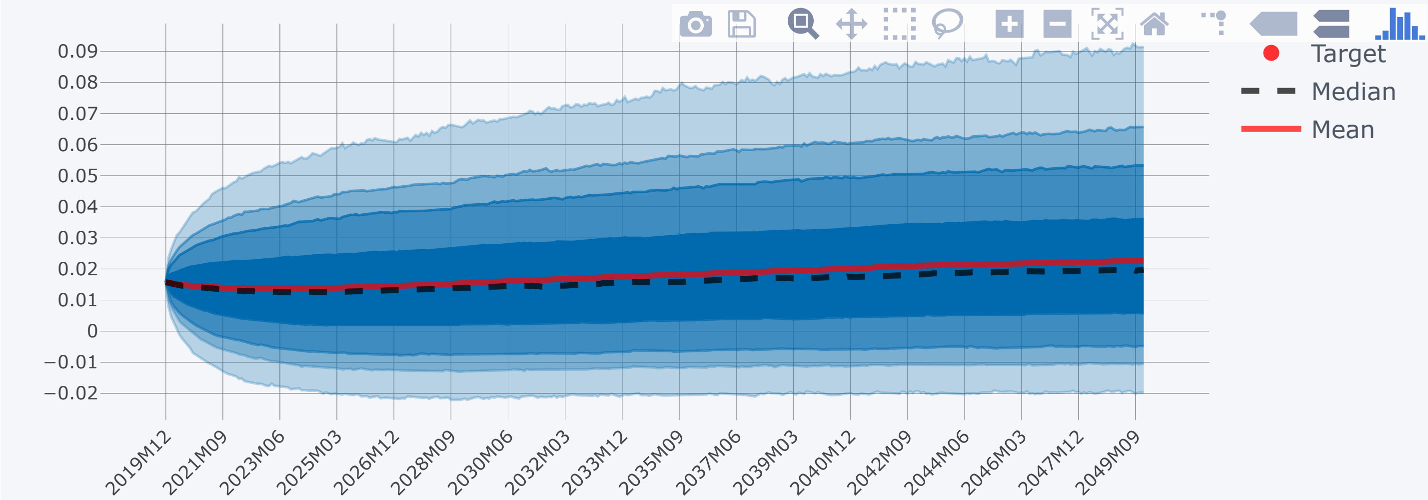
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0148	0.0185	0.0226	0.0254
std	0.0109	0.0199	0.0225	0.0241
min	-0.0221	-0.039	-0.0345	-0.0386
1%	-0.0093	-0.0206	-0.0185	-0.0185
5%	-0.0026	-0.011	-0.0095	-0.0086
10%	0.0011	-0.0058	-0.0038	-0.0028
25%	0.0073	0.0044	0.0067	0.0083
50%	0.0146	0.0168	0.0199	0.0227
75%	0.0221	0.031	0.0358	0.0393
90%	0.029	0.0451	0.0523	0.0568
95%	0.0331	0.0533	0.0643	0.0695
99%	0.0412	0.0713	0.0856	0.0954
max	0.0666	0.1297	0.1409	0.1732

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

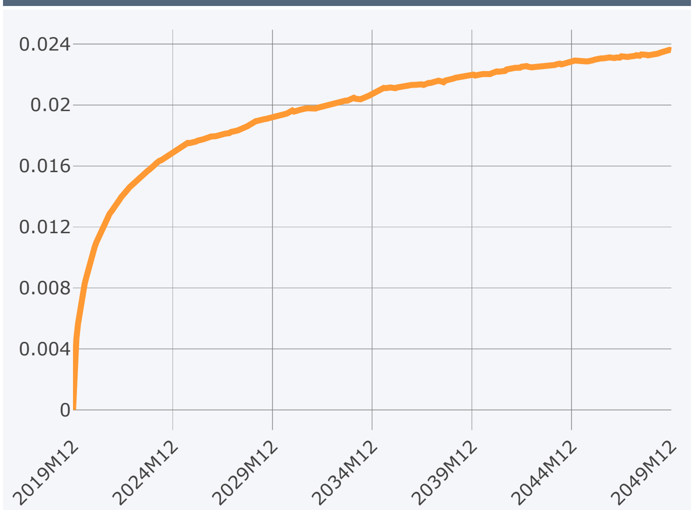
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

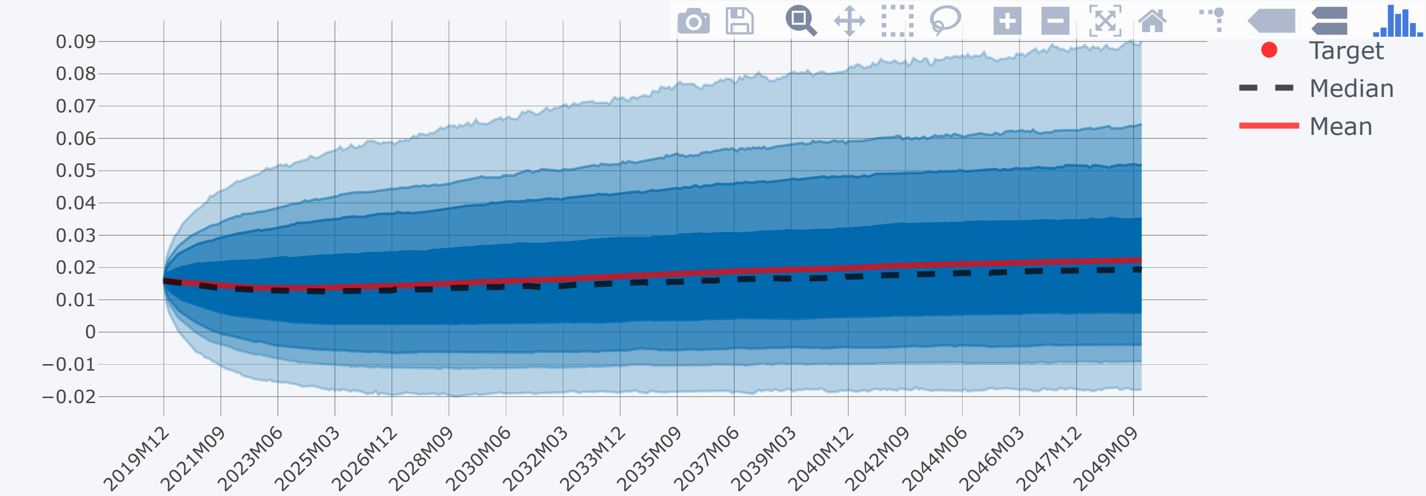
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0144	0.0159	0.0198	0.0226
std	0.0103	0.0192	0.022	0.0236
min	-0.0212	-0.0387	-0.0336	-0.0396
1%	-0.0084	-0.0212	-0.0197	-0.0198
5%	-0.002	-0.0125	-0.0113	-0.0105
10%	0.0014	-0.0075	-0.0058	-0.0048
25%	0.0073	0.0023	0.0042	0.0058
50%	0.0142	0.0142	0.0171	0.0198
75%	0.0213	0.0279	0.0325	0.0361
90%	0.0279	0.0415	0.0491	0.0533
95%	0.0319	0.0498	0.0606	0.0657
99%	0.0397	0.0674	0.0815	0.0914
max	0.064	0.1234	0.1379	0.1703

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

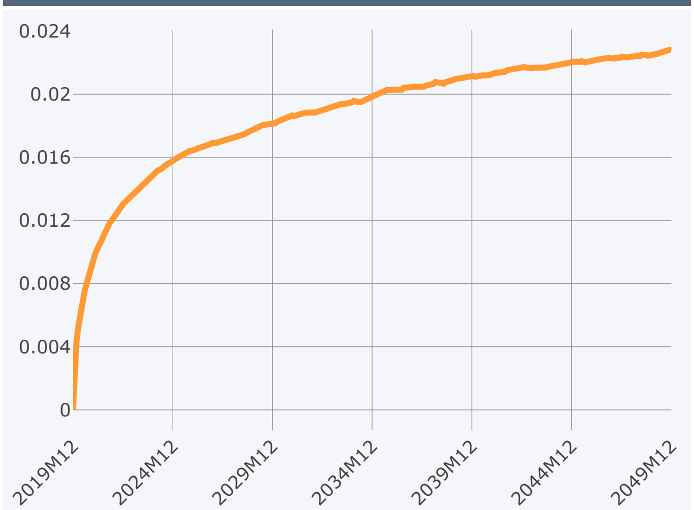
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

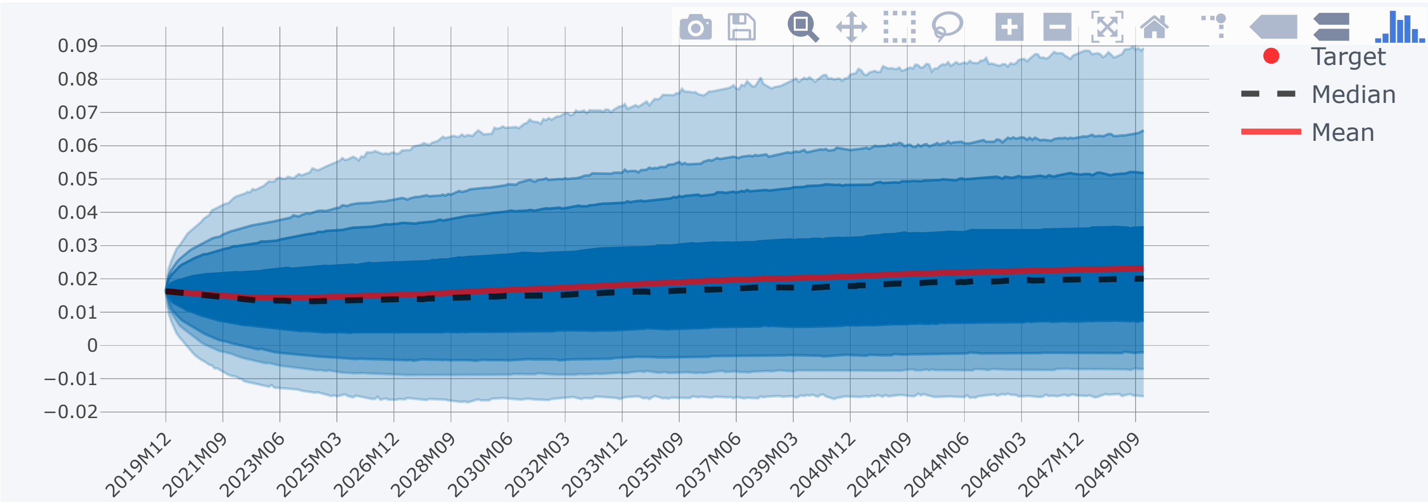
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0148	0.0156	0.0196	0.0223
std	0.0095	0.0182	0.0211	0.0228
min	-0.0182	-0.0346	-0.0297	-0.0361
1%	-0.0062	-0.0189	-0.018	-0.0177
5%	-0.0003	-0.011	-0.0099	-0.0091
10%	0.0029	-0.0064	-0.0048	-0.0039
25%	0.0083	0.0028	0.0045	0.006
50%	0.0145	0.0139	0.0167	0.0193
75%	0.0211	0.0268	0.0316	0.0351
90%	0.0271	0.04	0.0479	0.0519
95%	0.0307	0.0479	0.0588	0.0644
99%	0.0379	0.0649	0.08	0.0901
max	0.0602	0.1182	0.1383	0.1689

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

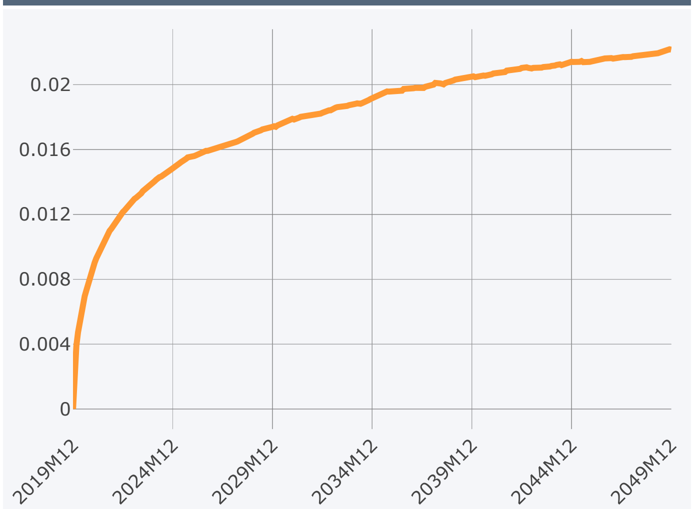
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

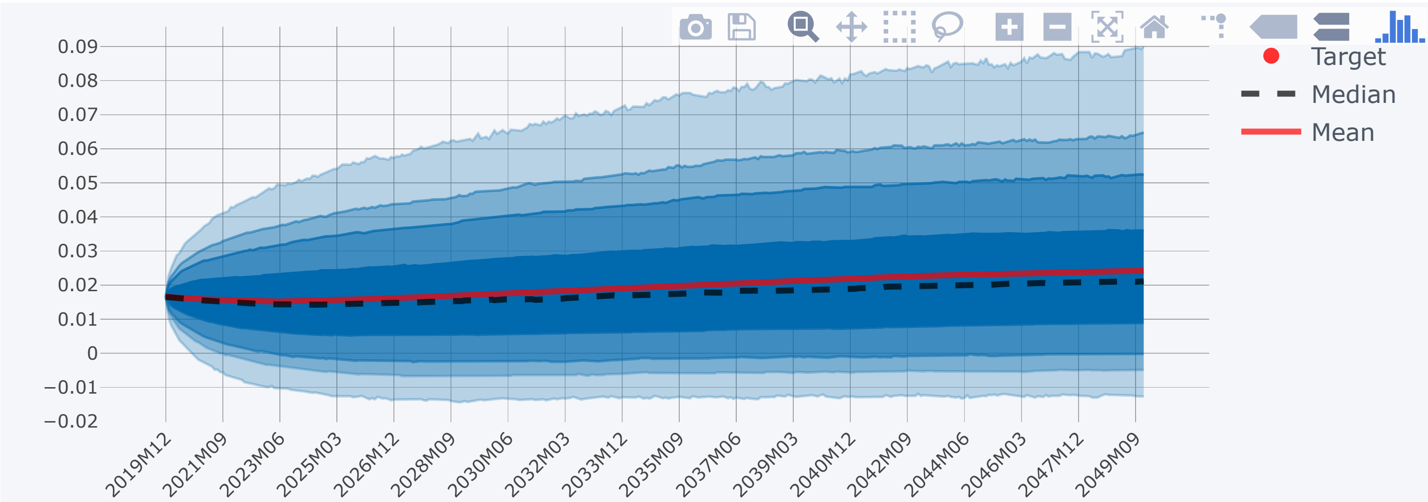
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0153	0.0165	0.0205	0.0232
std	0.0087	0.0174	0.0205	0.0222
min	-0.0153	-0.0303	-0.0258	-0.0318
1%	-0.0039	-0.016	-0.0154	-0.0153
5%	0.0015	-0.0088	-0.0078	-0.0071
10%	0.0043	-0.0045	-0.003	-0.0021
25%	0.0093	0.0041	0.0058	0.0074
50%	0.0151	0.0147	0.0174	0.0201
75%	0.0211	0.027	0.032	0.0355
90%	0.0267	0.0398	0.048	0.0519
95%	0.03	0.0475	0.0589	0.0646
99%	0.0366	0.0636	0.0799	0.0893
max	0.0572	0.1167	0.1396	0.1685

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

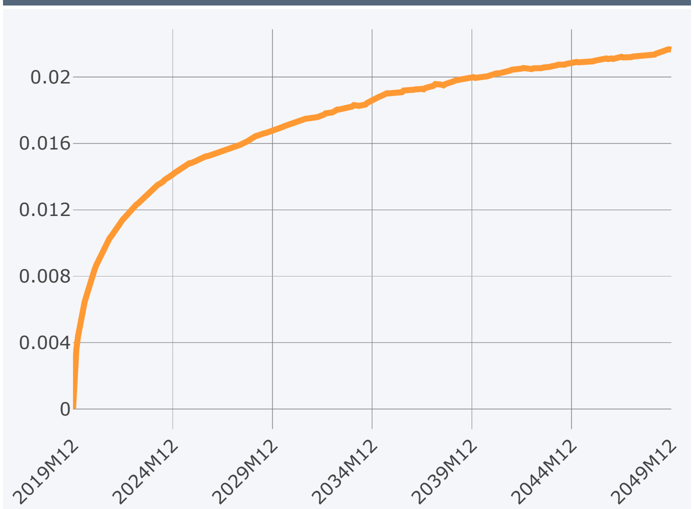
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0159	0.0175	0.0215	0.0242
std	0.0081	0.0168	0.02	0.0217
min	-0.0126	-0.0263	-0.0223	-0.0278
1%	-0.0019	-0.0133	-0.0127	-0.0127
5%	0.0032	-0.0066	-0.0057	-0.0049
10%	0.0057	-0.0026	-0.0011	-0.0002
25%	0.0103	0.0056	0.0072	0.0089
50%	0.0157	0.0157	0.0184	0.0211
75%	0.0214	0.0275	0.0326	0.036
90%	0.0264	0.0399	0.0485	0.0524
95%	0.0297	0.0475	0.0592	0.0648
99%	0.0357	0.064	0.0803	0.09
max	0.0548	0.1182	0.1408	0.1684

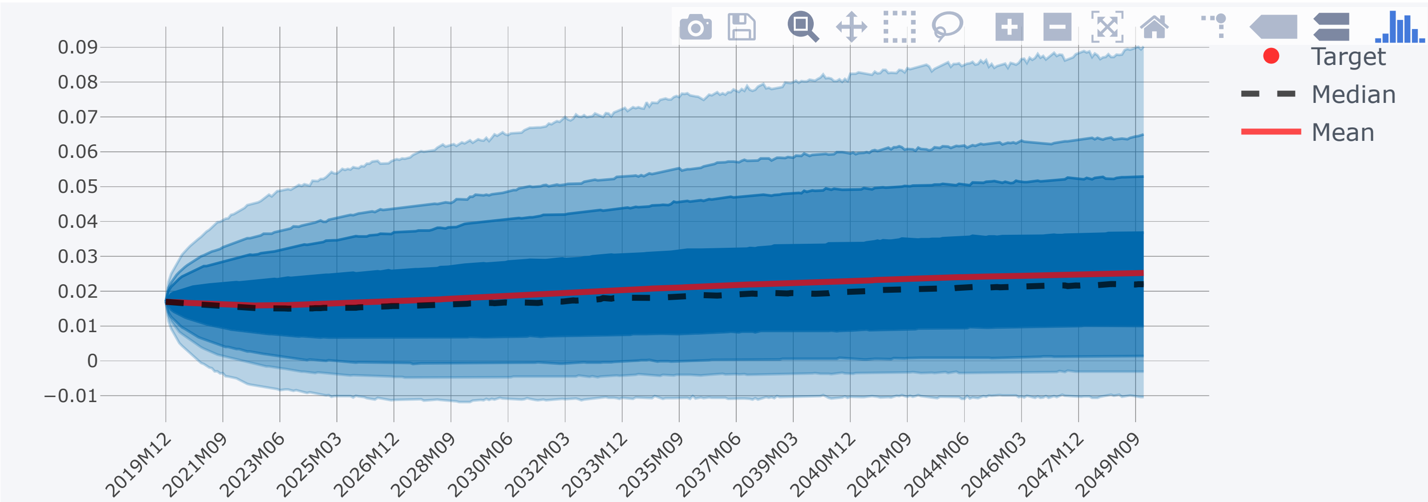
Cross Sectional Volatility Over Time



US Treasury 5 Year Yield - Coupon
Conning | Risk Solutions

2019 Q4
Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

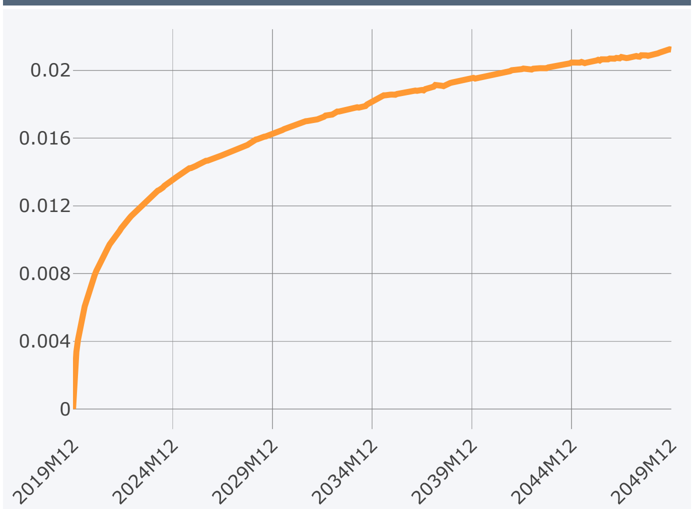
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

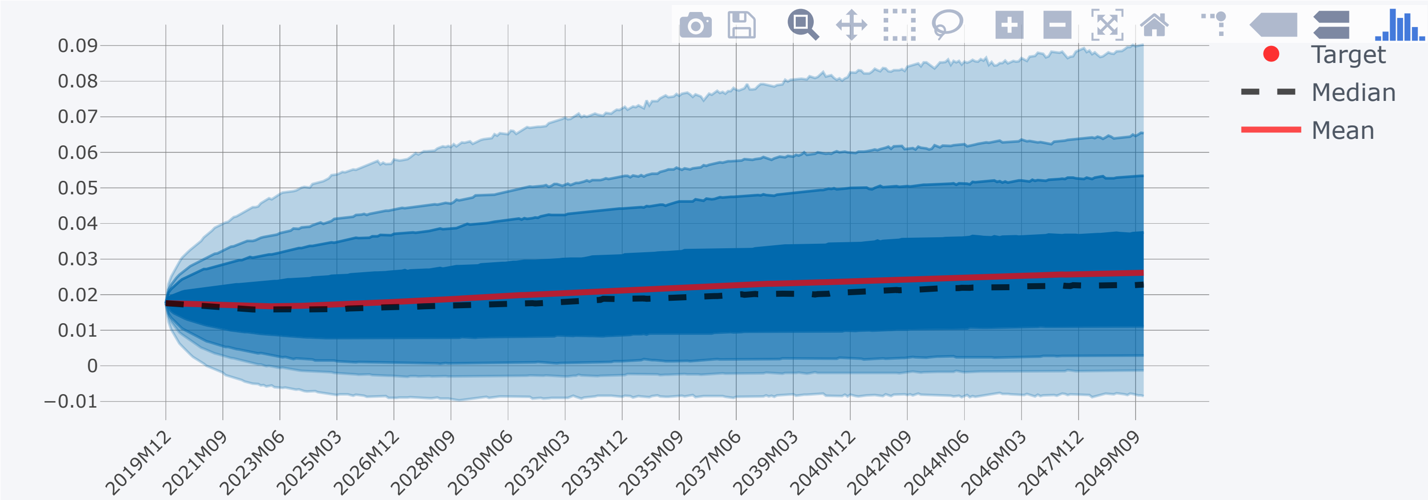
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0165	0.0185	0.0225	0.0252
std	0.0076	0.0162	0.0195	0.0212
min	-0.0103	-0.0228	-0.0192	-0.0242
1%	0	-0.0109	-0.0103	-0.0104
5%	0.0045	-0.0047	-0.0038	-0.0031
10%	0.0068	-0.0009	0.0006	0.0014
25%	0.0112	0.0069	0.0085	0.01
50%	0.0162	0.0166	0.0193	0.022
75%	0.0216	0.0281	0.0334	0.0368
90%	0.0263	0.0402	0.0488	0.0529
95%	0.0294	0.0478	0.0594	0.065
99%	0.035	0.064	0.0809	0.0902
max	0.0528	0.1195	0.1419	0.1683

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

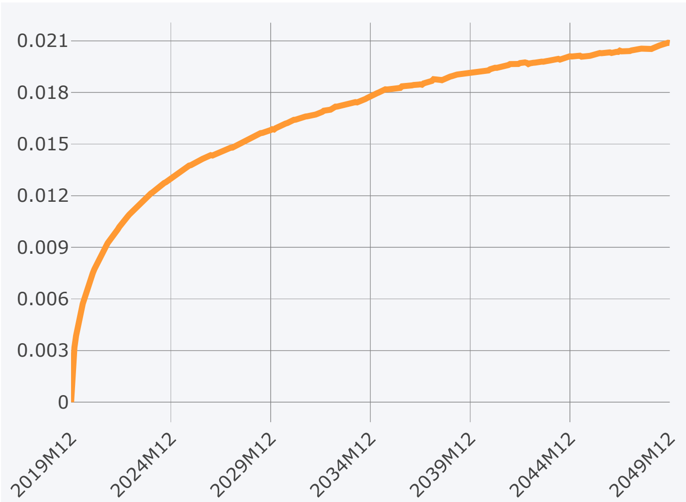
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

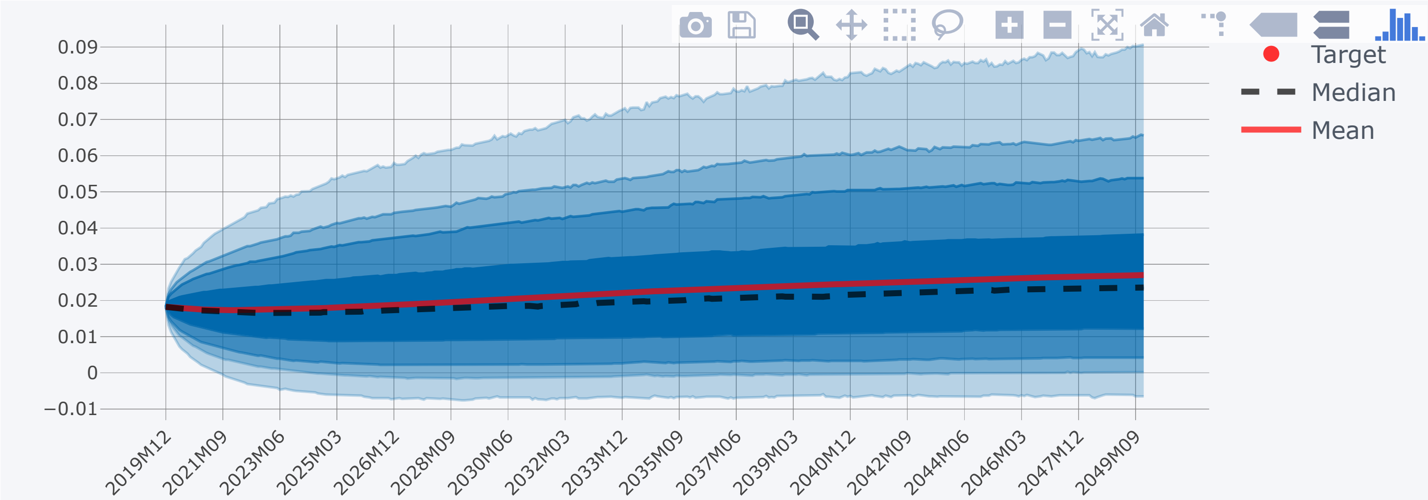
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.017	0.0194	0.0235	0.0262
std	0.0072	0.0158	0.0192	0.0209
min	-0.0082	-0.0196	-0.0164	-0.021
1%	0.0014	-0.0088	-0.0082	-0.0085
5%	0.0056	-0.0029	-0.002	-0.0013
10%	0.0079	0.0007	0.0021	0.0029
25%	0.012	0.0081	0.0097	0.0111
50%	0.0168	0.0176	0.0202	0.0229
75%	0.0219	0.0287	0.0341	0.0375
90%	0.0264	0.0405	0.0495	0.0534
95%	0.0292	0.0481	0.06	0.0654
99%	0.0346	0.064	0.0812	0.0903
max	0.0511	0.1206	0.1428	0.1682

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

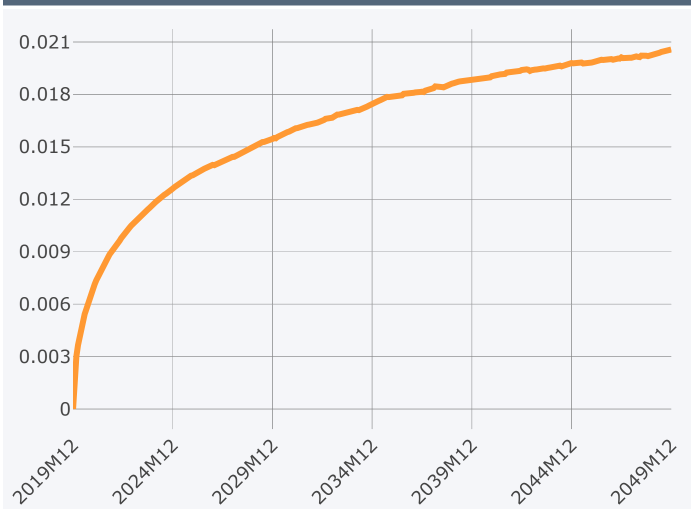
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

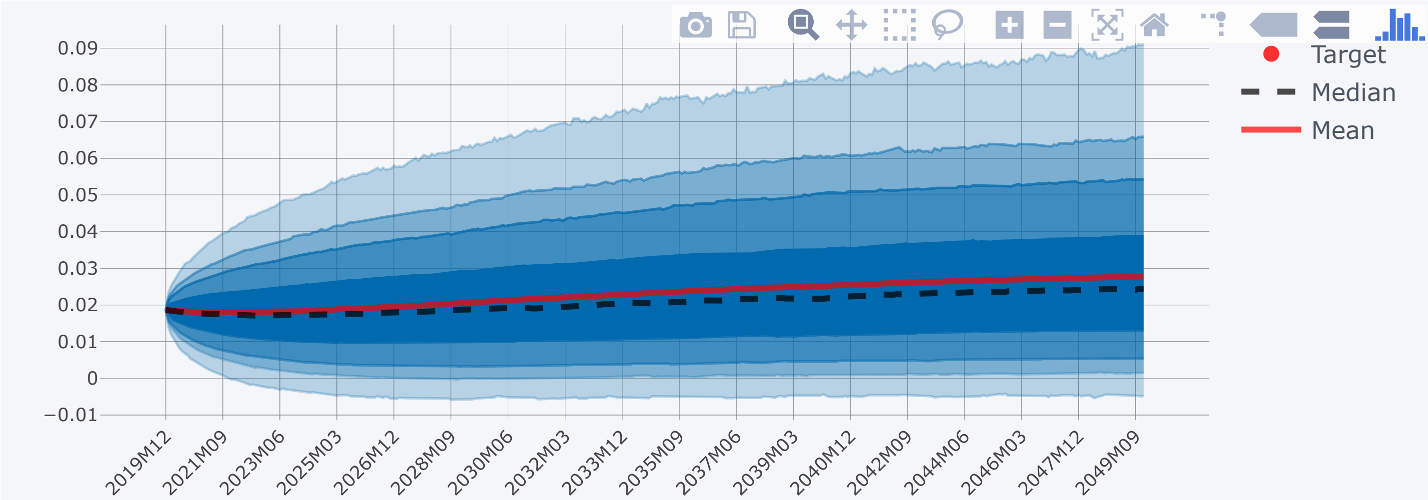
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0175	0.0202	0.0243	0.027
std	0.0069	0.0155	0.0189	0.0206
min	-0.0063	-0.0169	-0.014	-0.0182
1%	0.0028	-0.0069	-0.0064	-0.0065
5%	0.0067	-0.0014	-0.0004	0.0002
10%	0.0089	0.0021	0.0034	0.0042
25%	0.0127	0.0091	0.0109	0.0122
50%	0.0173	0.0184	0.0209	0.0236
75%	0.0221	0.0293	0.0347	0.0382
90%	0.0264	0.0407	0.0499	0.0538
95%	0.0292	0.0487	0.0603	0.0656
99%	0.0343	0.0645	0.0815	0.0907
max	0.0498	0.1215	0.1435	0.168

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

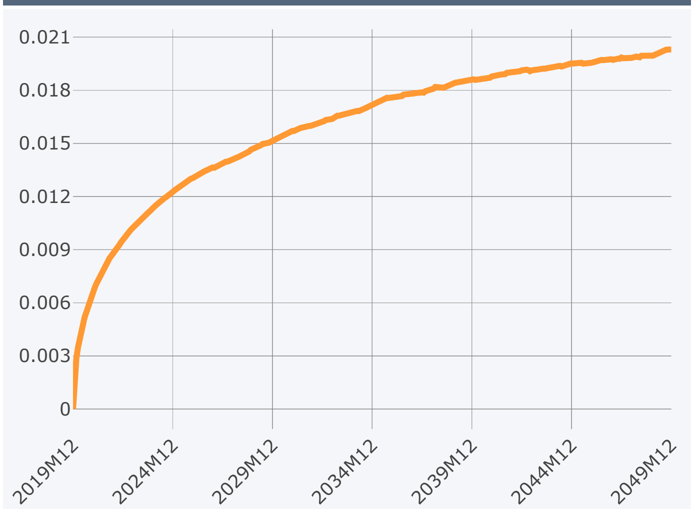
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

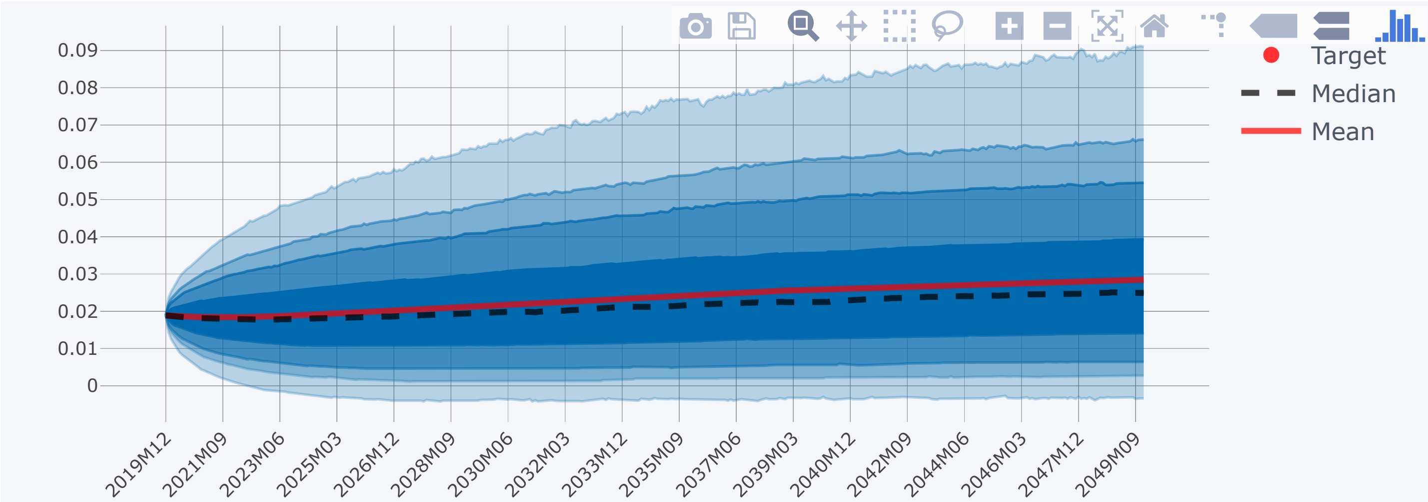
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.018	0.021	0.0251	0.0278
std	0.0066	0.0151	0.0186	0.0203
min	-0.0047	-0.0145	-0.0118	-0.0157
1%	0.0039	-0.0052	-0.0049	-0.0048
5%	0.0076	-0.0001	0.0008	0.0015
10%	0.0097	0.0033	0.0045	0.0054
25%	0.0134	0.0101	0.0118	0.0131
50%	0.0177	0.0191	0.0216	0.0243
75%	0.0224	0.0298	0.0352	0.0388
90%	0.0266	0.0411	0.0502	0.0542
95%	0.0292	0.0489	0.0605	0.0659
99%	0.0343	0.0645	0.0822	0.091
max	0.0486	0.1222	0.144	0.1679

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

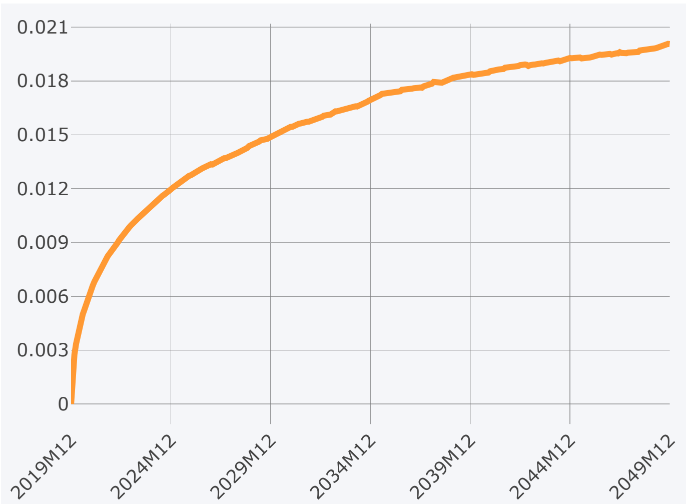
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

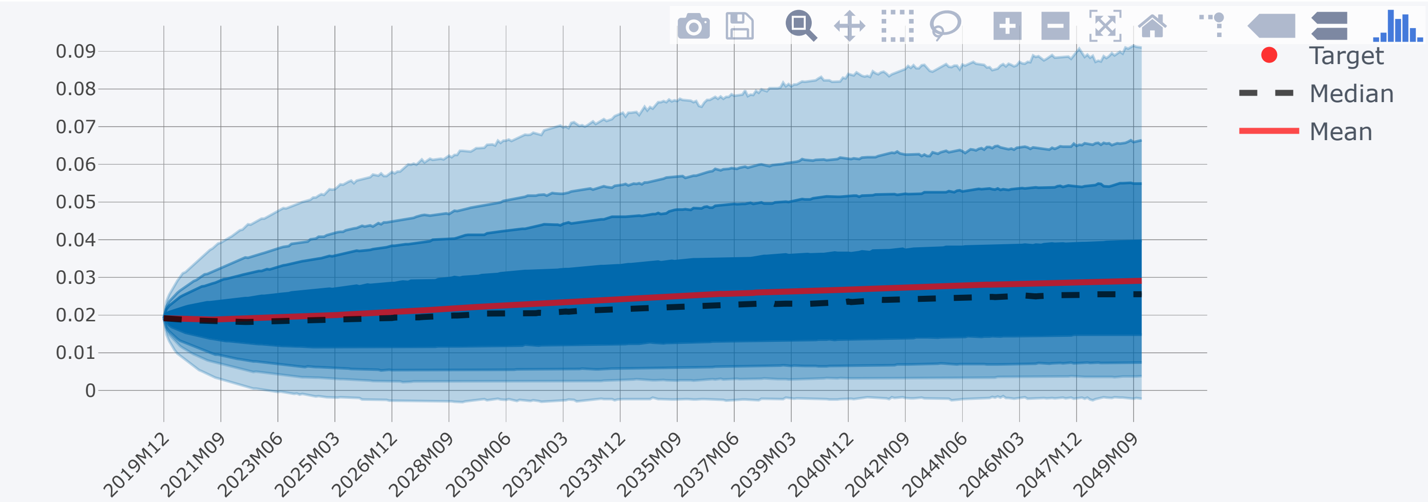
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0184	0.0217	0.0258	0.0285
std	0.0064	0.0149	0.0184	0.0201
min	-0.0032	-0.0123	-0.0099	-0.0135
1%	0.005	-0.0037	-0.0035	-0.0034
5%	0.0085	0.0012	0.002	0.0027
10%	0.0105	0.0045	0.0055	0.0064
25%	0.014	0.0109	0.0127	0.0141
50%	0.0181	0.0198	0.0223	0.0249
75%	0.0227	0.0303	0.0358	0.0393
90%	0.0267	0.0414	0.0507	0.0545
95%	0.0293	0.0492	0.0609	0.0661
99%	0.0343	0.065	0.082	0.091
max	0.0476	0.1227	0.1444	0.1677

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

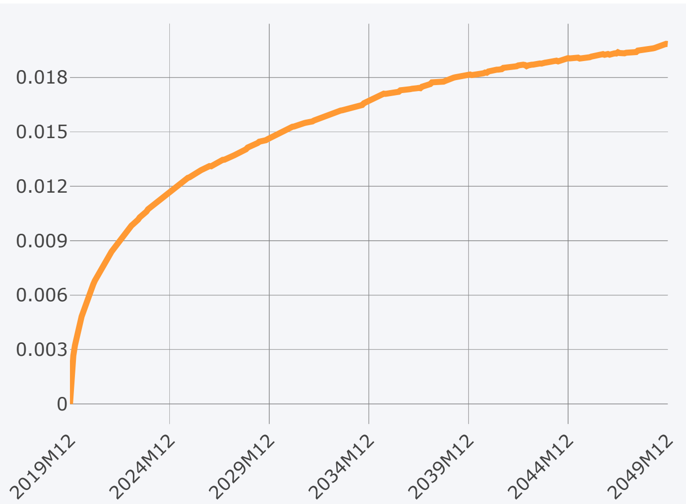
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

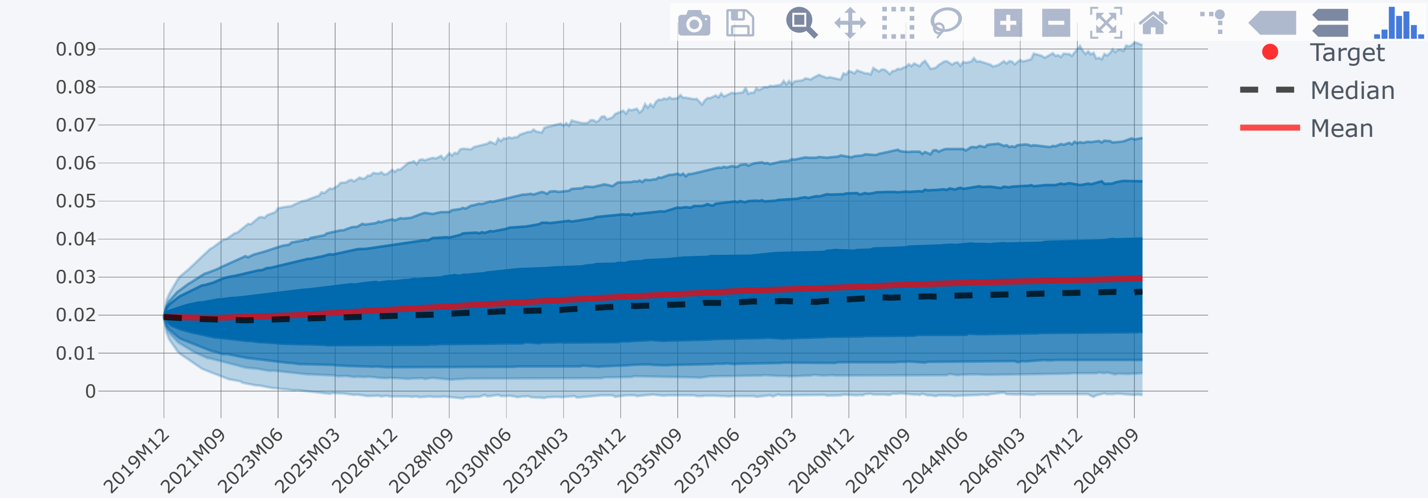
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0189	0.0224	0.0265	0.0291
std	0.0061	0.0146	0.0181	0.0198
min	-0.0019	-0.0104	-0.0082	-0.0115
1%	0.0059	-0.0024	-0.0022	-0.0022
5%	0.0093	0.0022	0.0031	0.0038
10%	0.0112	0.0054	0.0065	0.0074
25%	0.0146	0.0118	0.0134	0.0148
50%	0.0186	0.0204	0.0229	0.0255
75%	0.0229	0.0309	0.0362	0.0397
90%	0.0269	0.0417	0.051	0.0549
95%	0.0293	0.0496	0.0612	0.0664
99%	0.0342	0.0653	0.0823	0.091
max	0.0468	0.1232	0.1446	0.1676

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

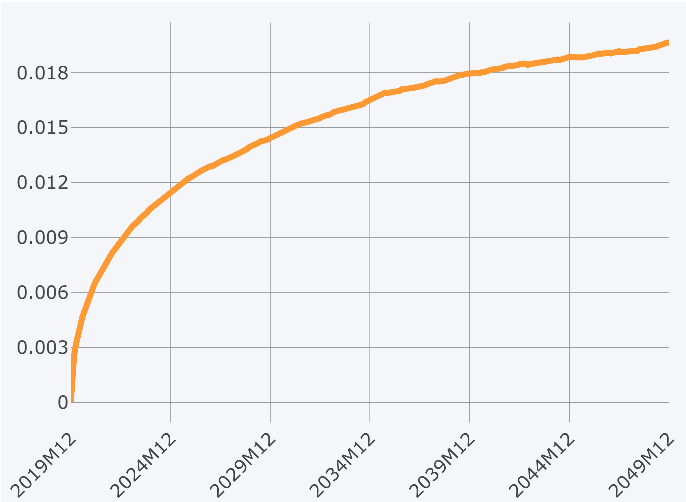
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

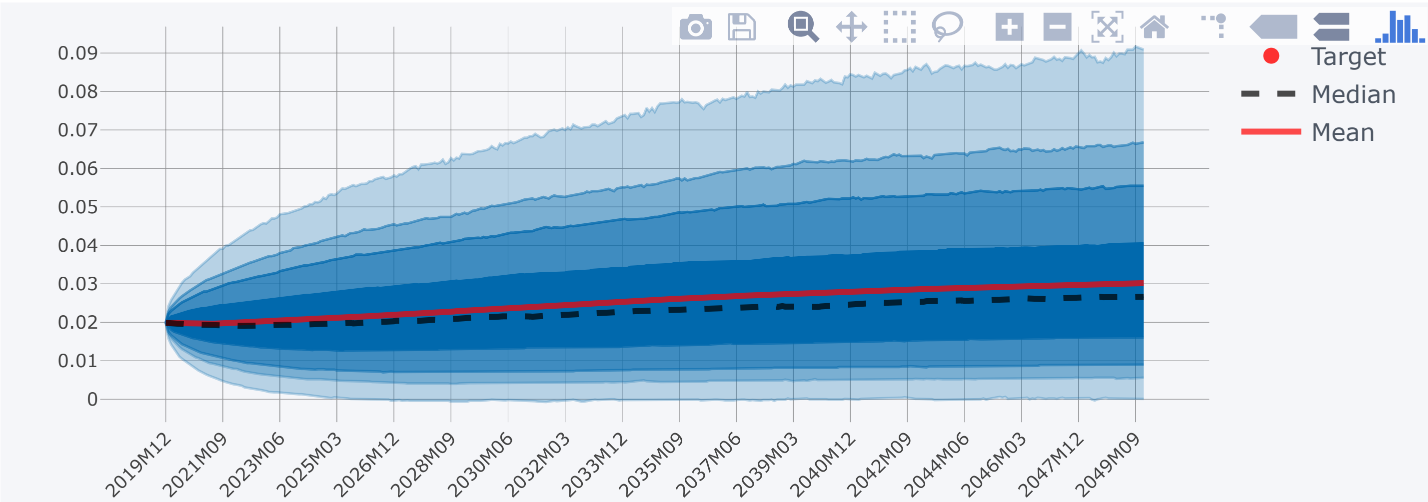
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0193	0.0229	0.0271	0.0297
std	0.006	0.0144	0.018	0.0196
min	-0.0007	-0.0086	-0.0066	-0.0097
1%	0.0067	-0.0012	-0.0011	-0.001
5%	0.01	0.0032	0.0041	0.0047
10%	0.0118	0.0063	0.0073	0.0082
25%	0.0152	0.0125	0.0141	0.0155
50%	0.019	0.0209	0.0234	0.0262
75%	0.0232	0.0313	0.0367	0.0401
90%	0.027	0.0421	0.0513	0.0552
95%	0.0294	0.0499	0.0614	0.0666
99%	0.0342	0.0656	0.0827	0.091
max	0.0461	0.1235	0.1448	0.1674

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

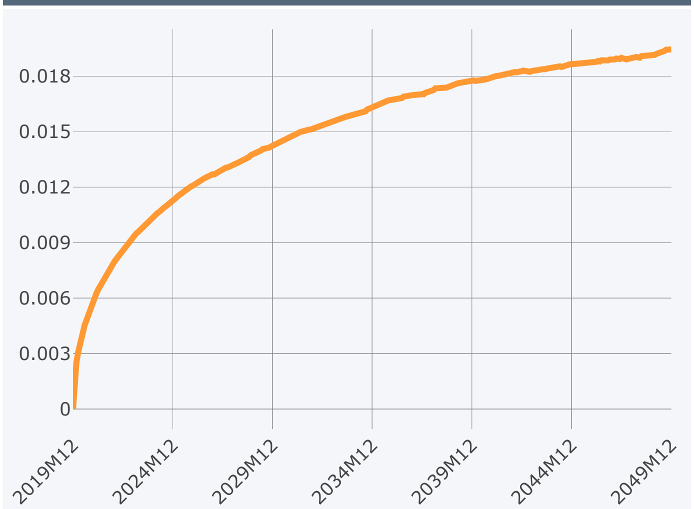
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0197	0.0235	0.0276	0.0302
std	0.0058	0.0142	0.0178	0.0195
min	0.0004	-0.0071	-0.0053	-0.0081
1%	0.0075	-0.0001	0	0.0001
5%	0.0107	0.0042	0.005	0.0056
10%	0.0124	0.0071	0.0082	0.009
25%	0.0156	0.0132	0.0148	0.0161
50%	0.0193	0.0214	0.024	0.0267
75%	0.0234	0.0316	0.0371	0.0405
90%	0.0272	0.0424	0.0516	0.0555
95%	0.0296	0.0503	0.0616	0.0668
99%	0.0343	0.0658	0.0827	0.0909
max	0.0455	0.1237	0.1449	0.1672

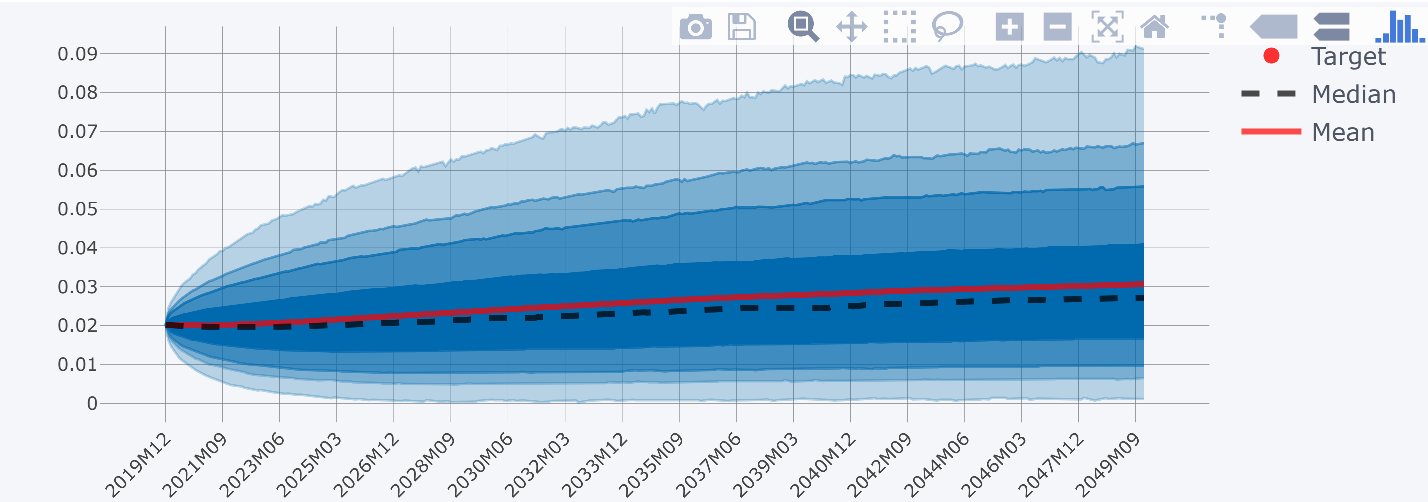
Cross Sectional Volatility Over Time



US Treasury 13 Year Yield - Coupon
Conning | Risk Solutions

2019 Q4
Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

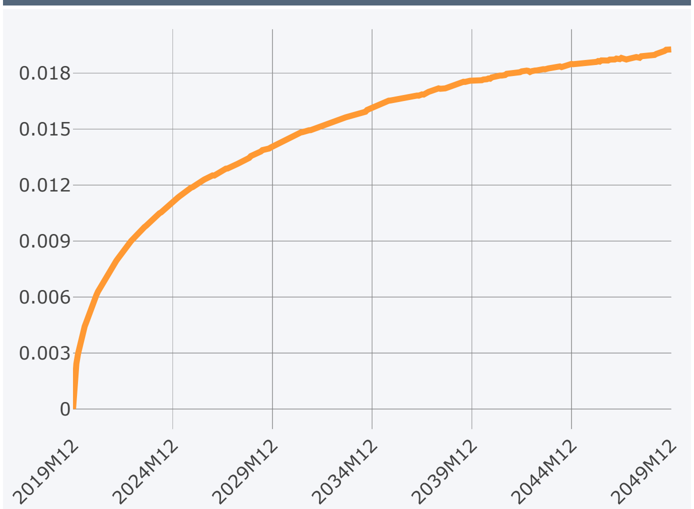
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

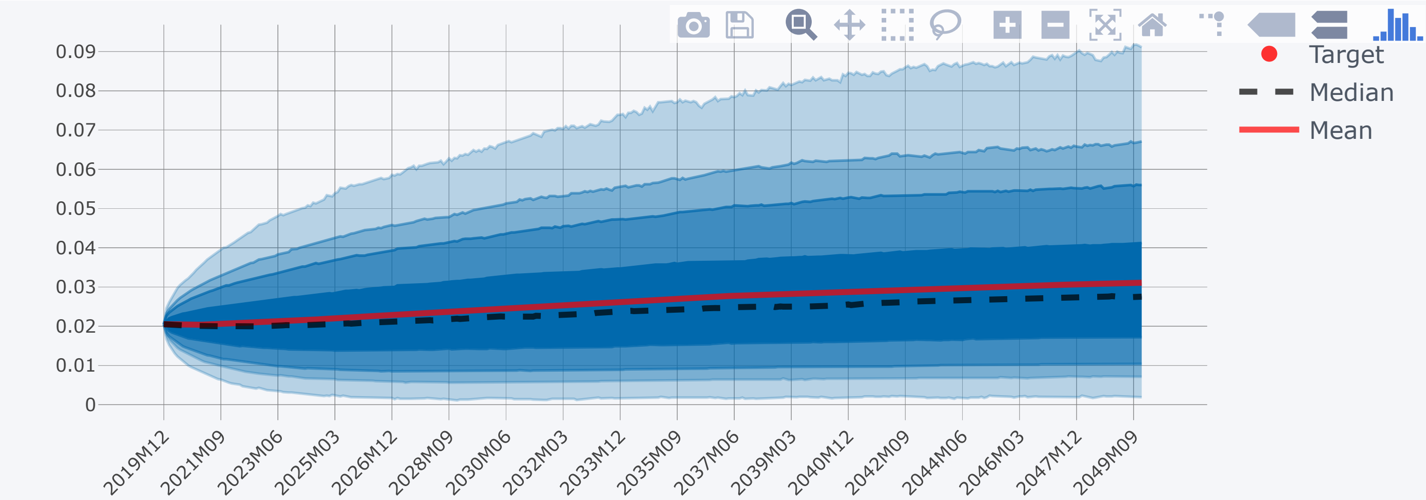
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.02	0.024	0.0281	0.0307
std	0.0057	0.0141	0.0176	0.0193
min	0.0015	-0.0056	-0.0042	-0.0066
1%	0.0082	0.0009	0.001	0.0011
5%	0.0113	0.0049	0.0058	0.0065
10%	0.0129	0.0079	0.0089	0.0097
25%	0.0161	0.0138	0.0154	0.0167
50%	0.0197	0.0219	0.0245	0.0271
75%	0.0237	0.0321	0.0375	0.0409
90%	0.0274	0.0425	0.0517	0.0558
95%	0.0298	0.0505	0.062	0.067
99%	0.0344	0.0657	0.0827	0.0912
max	0.045	0.1239	0.145	0.1669

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

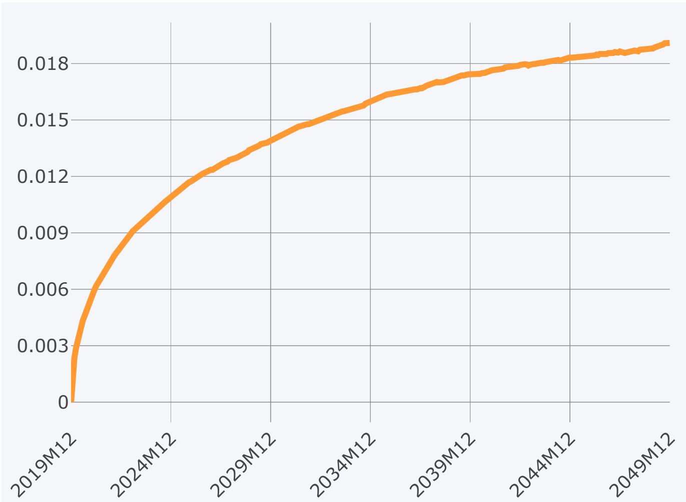
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0204	0.0244	0.0285	0.0311
std	0.0055	0.0139	0.0174	0.0191
min	0.0024	-0.0043	-0.0032	-0.0053
1%	0.0088	0.0017	0.0019	0.0019
5%	0.0118	0.0057	0.0066	0.0071
10%	0.0135	0.0086	0.0096	0.0104
25%	0.0165	0.0144	0.0159	0.0172
50%	0.02	0.0223	0.0249	0.0275
75%	0.024	0.0324	0.0378	0.0412
90%	0.0276	0.0428	0.052	0.056
95%	0.0299	0.0505	0.0622	0.0671
99%	0.0344	0.0659	0.0827	0.0911
max	0.0445	0.124	0.145	0.1667

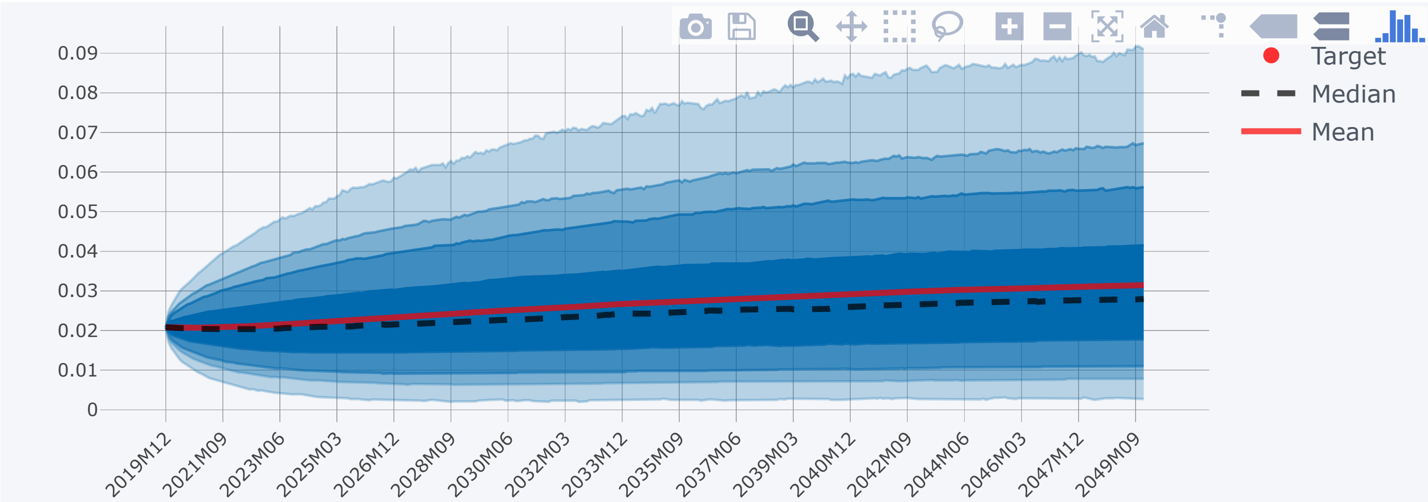
Cross Sectional Volatility Over Time



US Treasury 15 Year Yield - Coupon
Conning | Risk Solutions

2019 Q4
Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

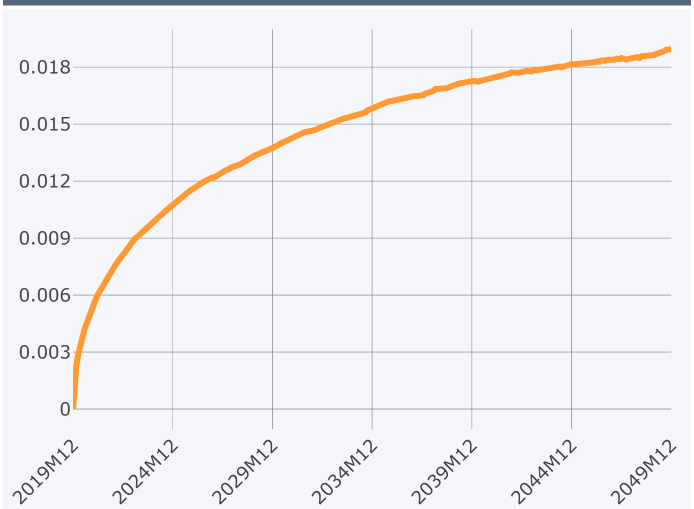
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

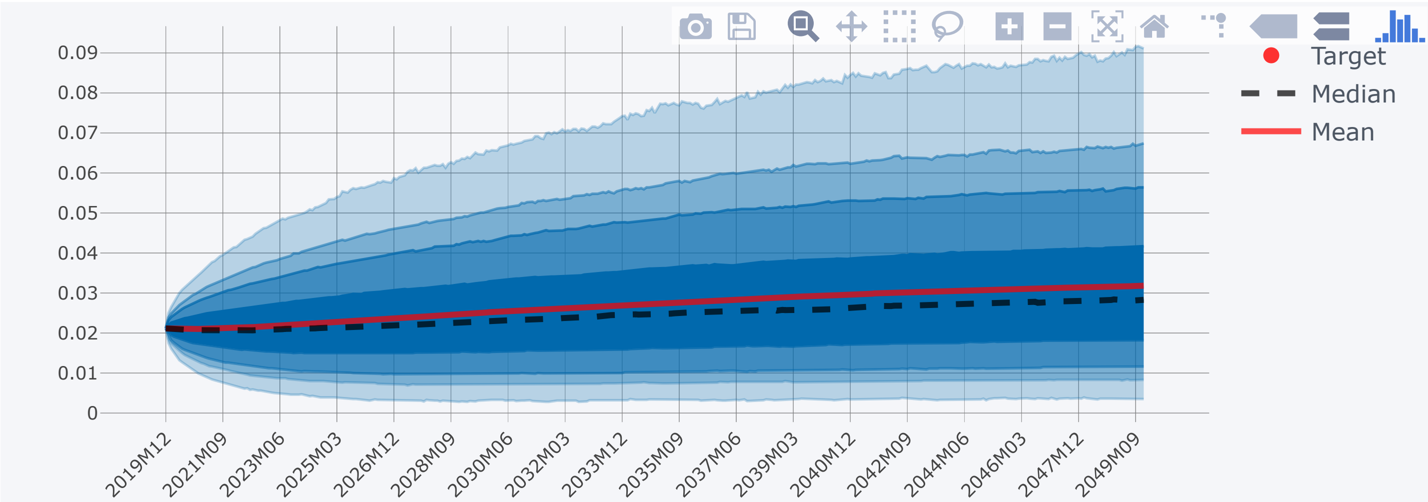
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0207	0.0248	0.0289	0.0315
std	0.0054	0.0137	0.0173	0.0189
min	0.0032	-0.0032	-0.0023	-0.0041
1%	0.0094	0.0025	0.0027	0.0027
5%	0.0123	0.0064	0.0072	0.0078
10%	0.0139	0.0092	0.0102	0.011
25%	0.0169	0.0149	0.0164	0.0178
50%	0.0204	0.0227	0.0253	0.0279
75%	0.0242	0.0327	0.038	0.0415
90%	0.0278	0.0429	0.0522	0.0562
95%	0.0301	0.0508	0.0623	0.0673
99%	0.0345	0.0657	0.0827	0.091
max	0.0442	0.124	0.145	0.1665

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

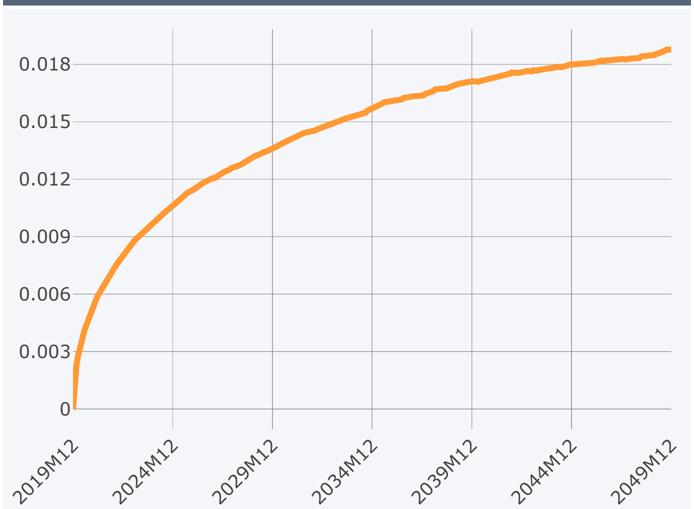
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

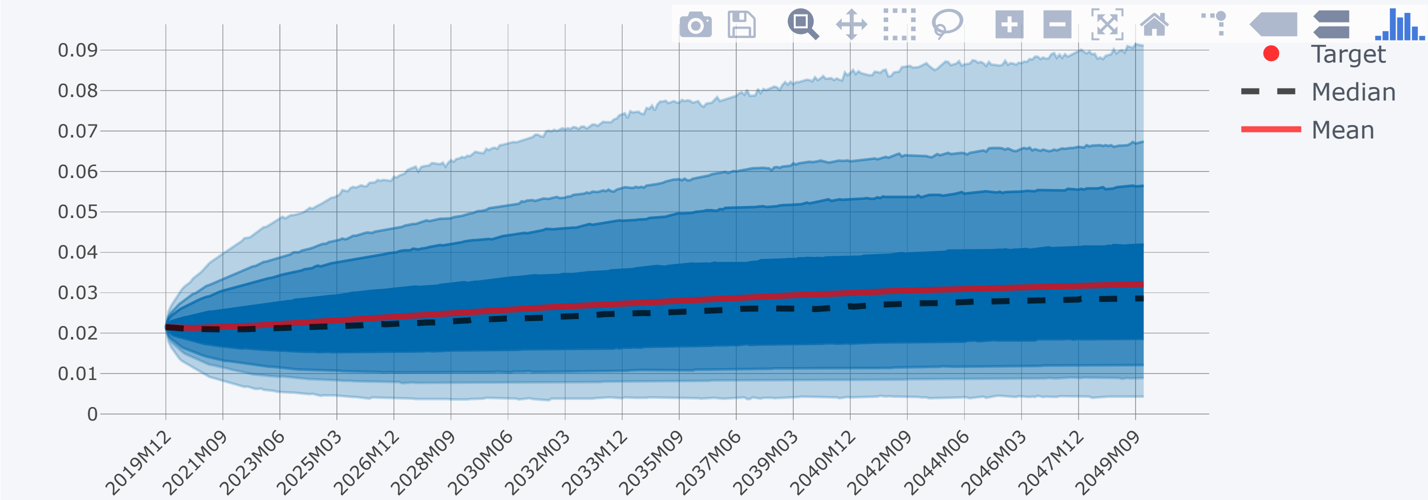
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.021	0.0252	0.0293	0.0318
std	0.0053	0.0136	0.0171	0.0188
min	0.004	-0.0021	-0.0014	-0.003
1%	0.0099	0.0033	0.0036	0.0035
5%	0.0128	0.0071	0.0079	0.0083
10%	0.0144	0.0098	0.0107	0.0116
25%	0.0173	0.0153	0.017	0.0182
50%	0.0207	0.0231	0.0257	0.0283
75%	0.0245	0.033	0.0383	0.0417
90%	0.028	0.043	0.0523	0.0564
95%	0.0303	0.0509	0.0624	0.0674
99%	0.0345	0.0657	0.0827	0.0911
max	0.0444	0.124	0.1449	0.1663

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

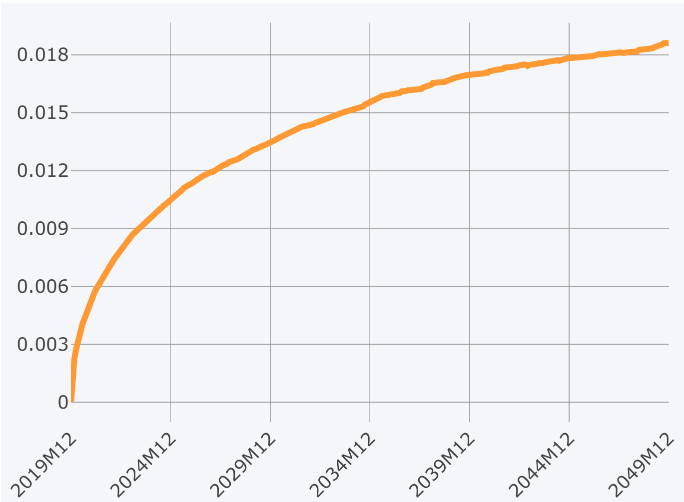
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

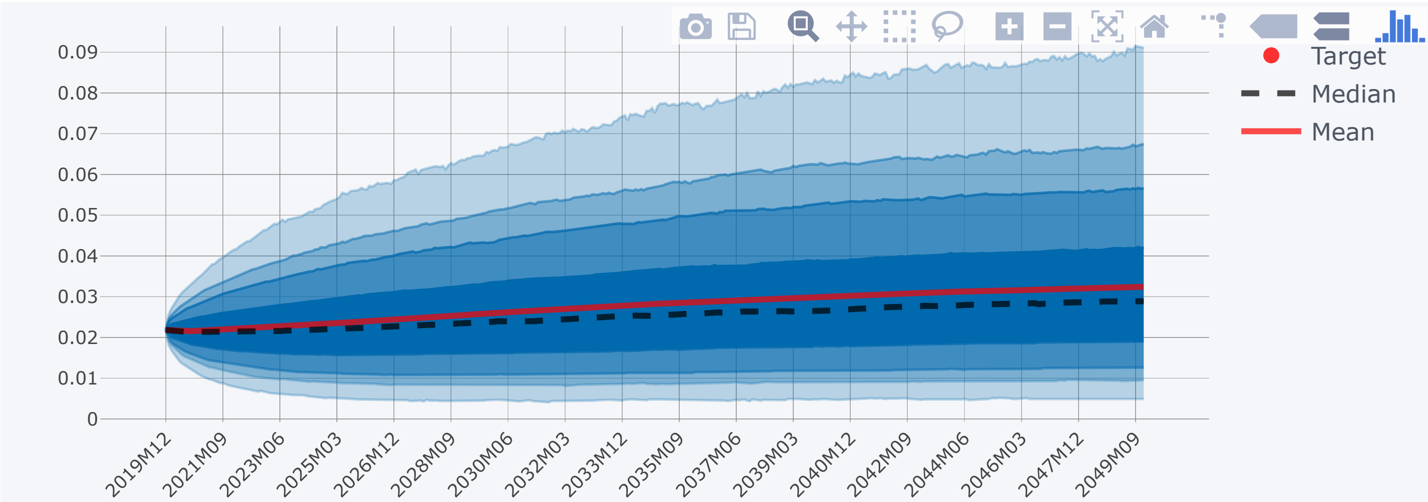
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0213	0.0256	0.0296	0.0321
std	0.0052	0.0135	0.017	0.0186
min	0.0048	-0.0011	-0.0006	-0.0019
1%	0.0104	0.004	0.0042	0.0043
5%	0.0133	0.0077	0.0084	0.0089
10%	0.0148	0.0104	0.0113	0.0121
25%	0.0176	0.0158	0.0174	0.0186
50%	0.021	0.0235	0.026	0.0286
75%	0.0247	0.0332	0.0386	0.0419
90%	0.0282	0.0432	0.0525	0.0565
95%	0.0304	0.051	0.0625	0.0674
99%	0.0346	0.0657	0.0826	0.0911
max	0.0445	0.124	0.1448	0.1661

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

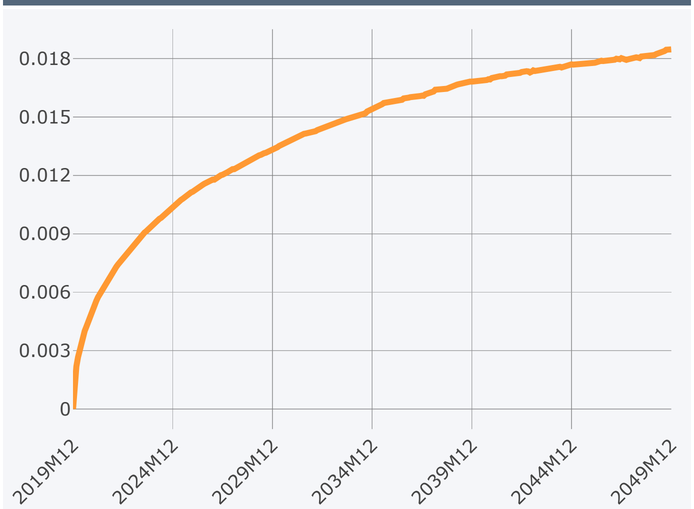
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

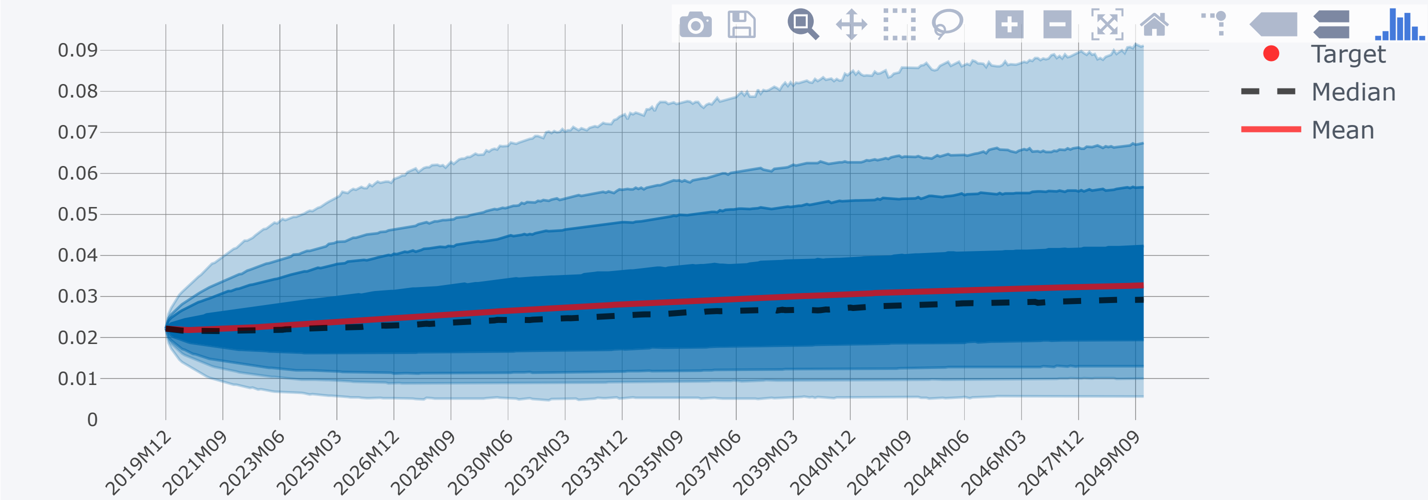
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0216	0.0259	0.0299	0.0324
std	0.0052	0.0133	0.0168	0.0185
min	0.0055	-0.0002	0.0001	-0.001
1%	0.011	0.0047	0.0049	0.0049
5%	0.0137	0.0083	0.009	0.0095
10%	0.0152	0.0108	0.0118	0.0126
25%	0.018	0.0162	0.0178	0.019
50%	0.0213	0.0238	0.0263	0.0289
75%	0.025	0.0335	0.0389	0.0421
90%	0.0284	0.0433	0.0526	0.0566
95%	0.0306	0.0511	0.0624	0.0675
99%	0.0347	0.0658	0.0826	0.0911
max	0.0446	0.124	0.1447	0.1659

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

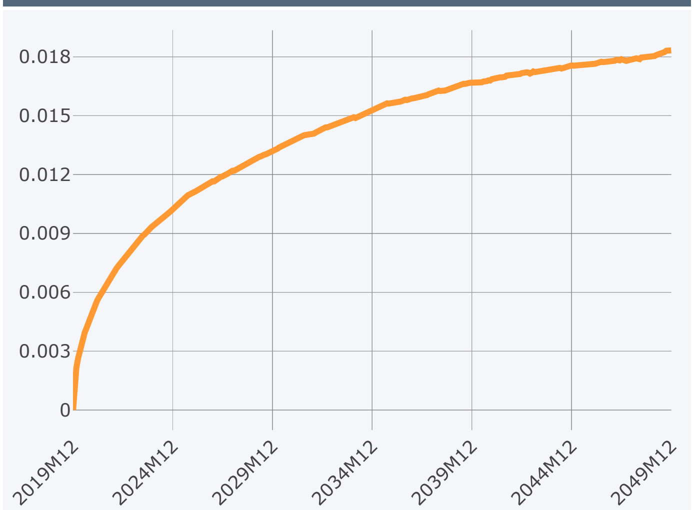
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

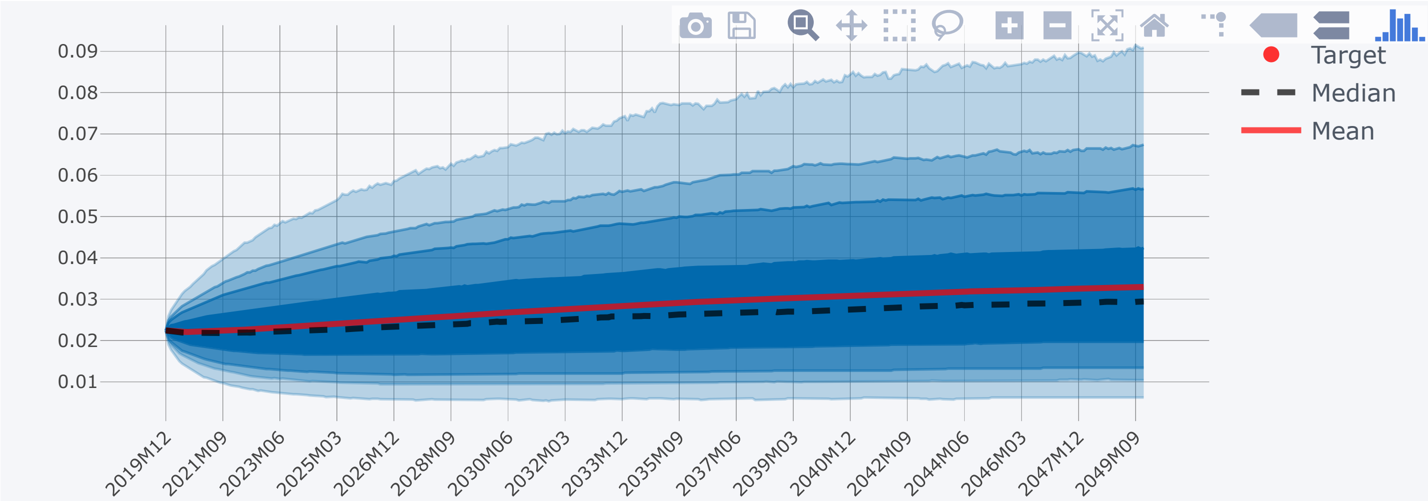
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0219	0.0262	0.0302	0.0327
std	0.0051	0.0132	0.0167	0.0183
min	0.0061	0.0007	0.0008	-0.0001
1%	0.0114	0.0053	0.0055	0.0056
5%	0.0141	0.0089	0.0095	0.01
10%	0.0156	0.0113	0.0123	0.013
25%	0.0183	0.0166	0.0182	0.0194
50%	0.0216	0.0241	0.0266	0.0292
75%	0.0252	0.0337	0.0391	0.0423
90%	0.0286	0.0434	0.0527	0.0566
95%	0.0307	0.0512	0.0625	0.0674
99%	0.0348	0.0658	0.0825	0.0911
max	0.0447	0.1239	0.1446	0.1657

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

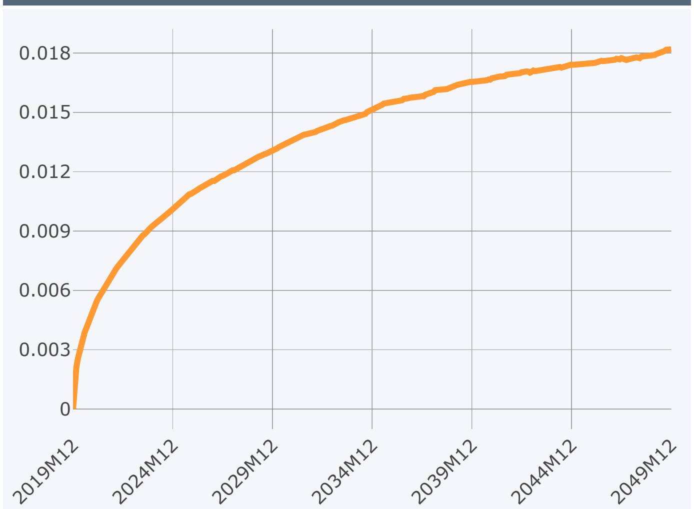
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

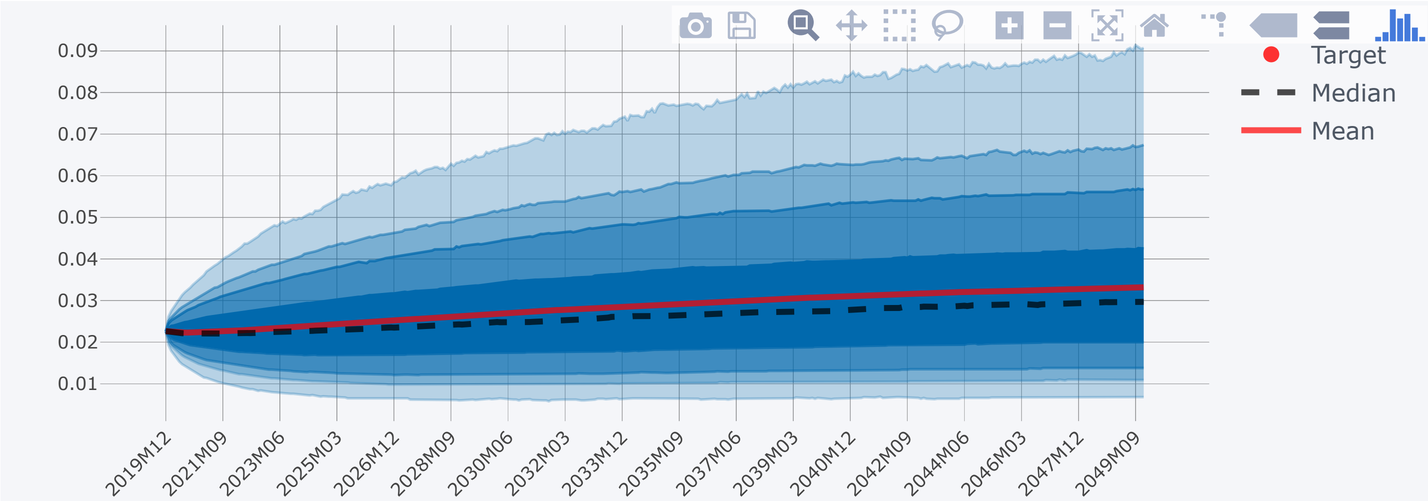
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0221	0.0265	0.0305	0.033
std	0.005	0.0131	0.0165	0.0182
min	0.0067	0.0015	0.0015	0.0007
1%	0.0119	0.0058	0.0061	0.0062
5%	0.0145	0.0094	0.01	0.0104
10%	0.016	0.0118	0.0127	0.0134
25%	0.0186	0.017	0.0186	0.0197
50%	0.0218	0.0244	0.0269	0.0295
75%	0.0254	0.0339	0.0392	0.0424
90%	0.0287	0.0436	0.0527	0.0567
95%	0.0308	0.0513	0.0626	0.0674
99%	0.0348	0.0658	0.0824	0.0909
max	0.0448	0.1238	0.1445	0.1655

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

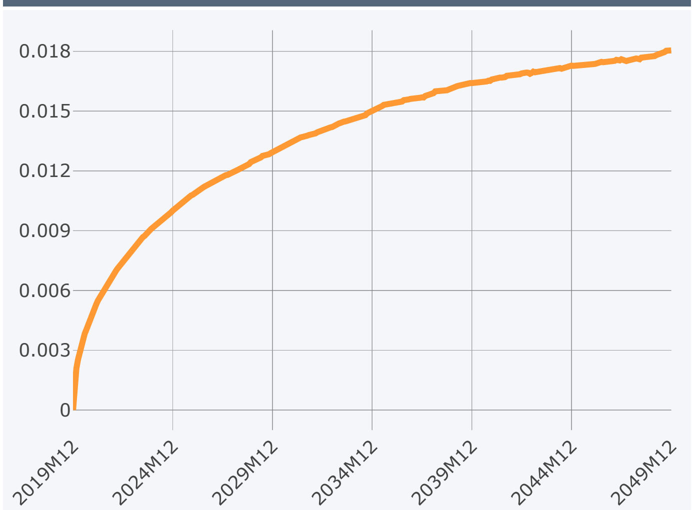
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

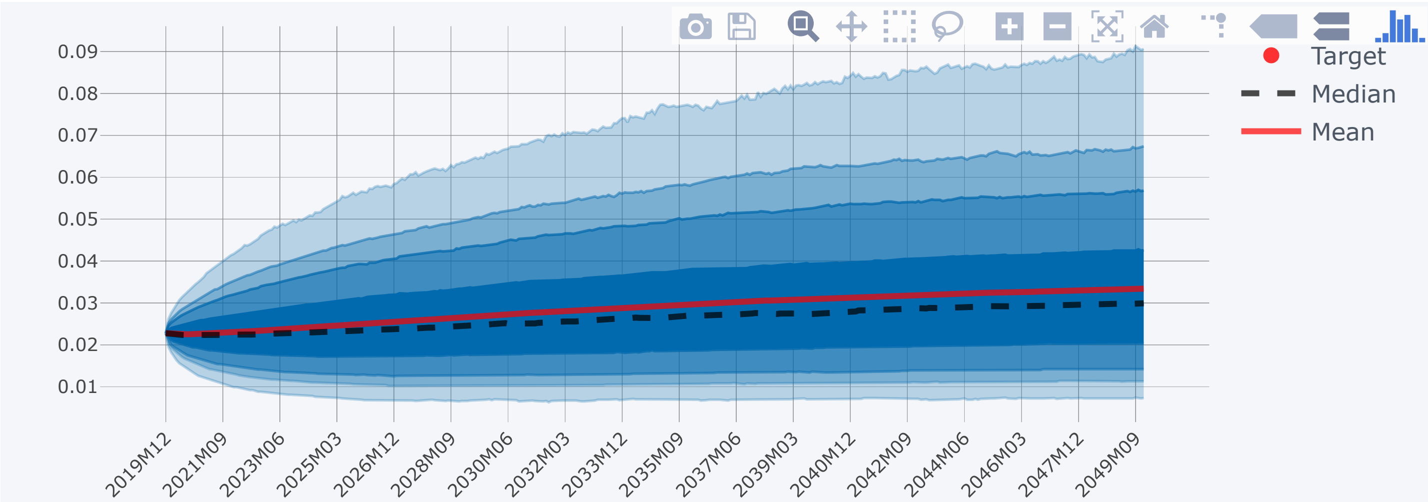
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0224	0.0268	0.0307	0.0332
std	0.0049	0.0129	0.0164	0.018
min	0.0073	0.0022	0.0022	0.0015
1%	0.0123	0.0063	0.0066	0.0068
5%	0.0148	0.0098	0.0105	0.0109
10%	0.0163	0.0122	0.0131	0.0138
25%	0.0189	0.0173	0.0189	0.02
50%	0.022	0.0247	0.0271	0.0297
75%	0.0256	0.034	0.0394	0.0425
90%	0.0289	0.0437	0.0528	0.0568
95%	0.031	0.0514	0.0626	0.0674
99%	0.0349	0.0658	0.0822	0.0907
max	0.0448	0.1237	0.1444	0.1653

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

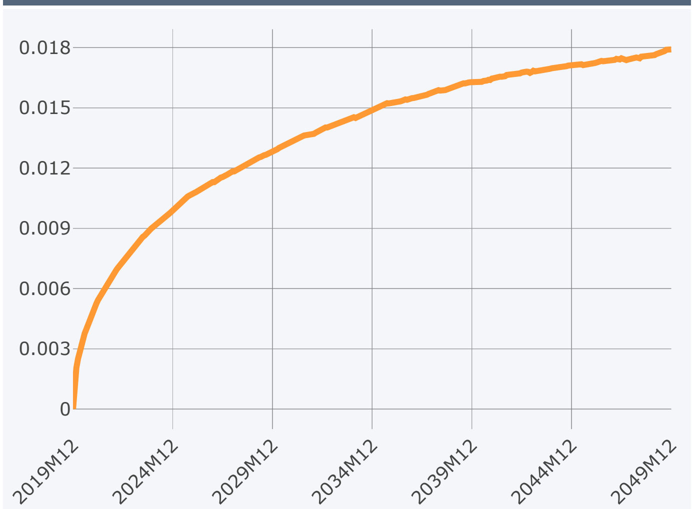
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

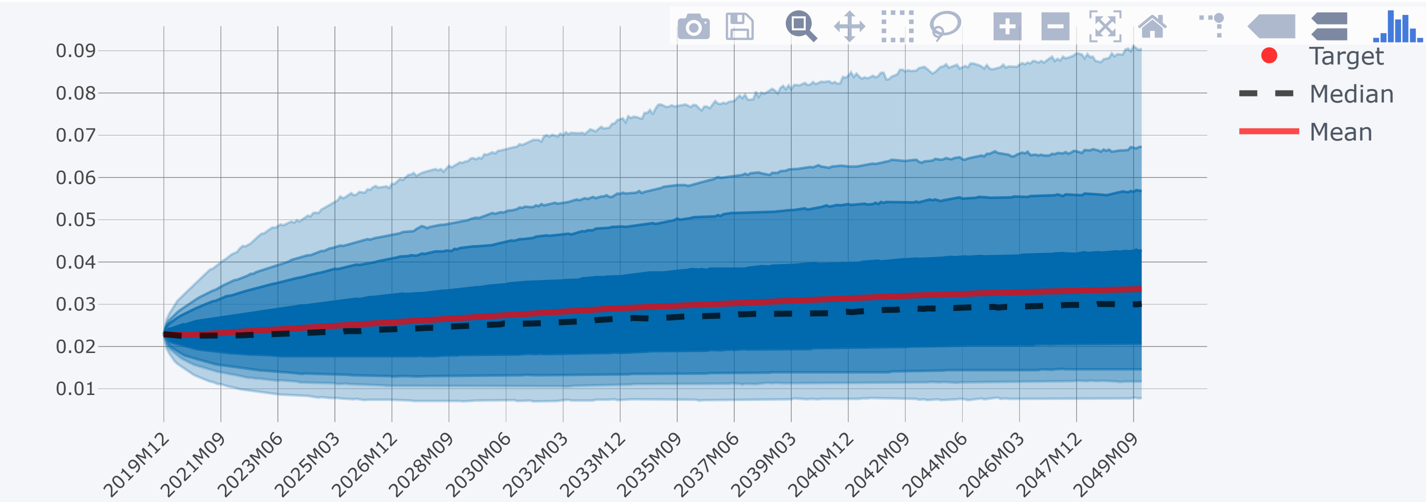
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0226	0.027	0.031	0.0334
std	0.0049	0.0128	0.0163	0.0179
min	0.0078	0.0029	0.0028	0.0022
1%	0.0126	0.0068	0.0071	0.0073
5%	0.0152	0.0103	0.0109	0.0113
10%	0.0166	0.0126	0.0135	0.0142
25%	0.0192	0.0176	0.0192	0.0204
50%	0.0223	0.025	0.0274	0.0299
75%	0.0258	0.0342	0.0396	0.0426
90%	0.029	0.0437	0.0528	0.0568
95%	0.0311	0.0514	0.0626	0.0674
99%	0.035	0.0658	0.0822	0.0906
max	0.0449	0.1236	0.1443	0.1651

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

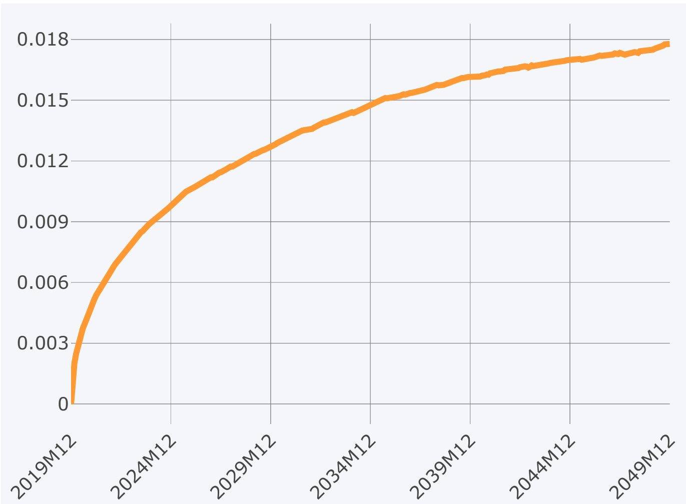
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

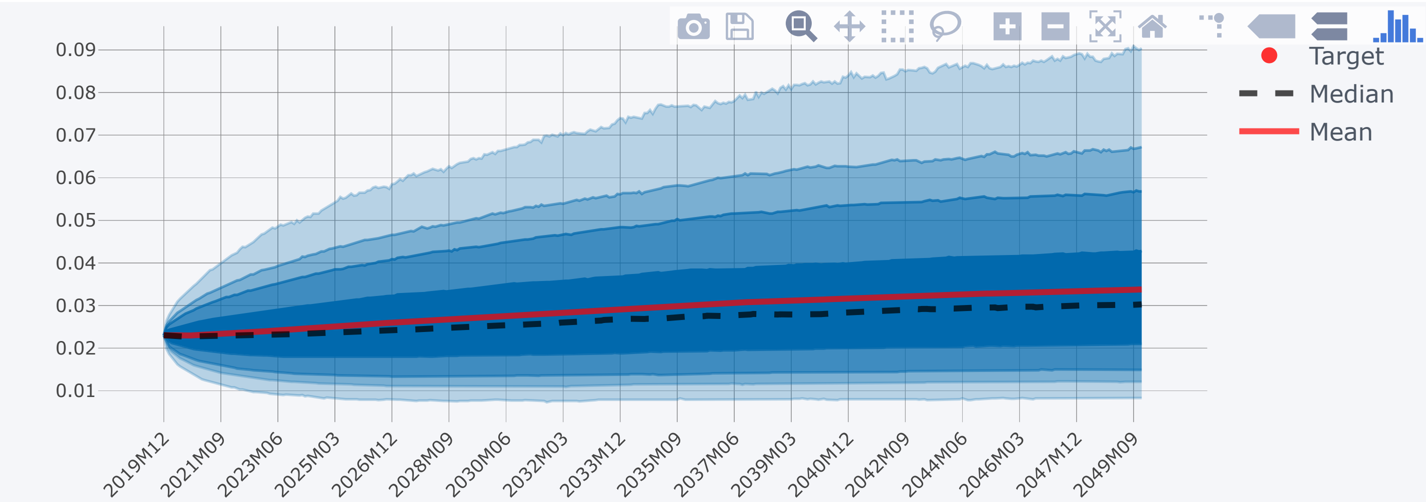
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0228	0.0273	0.0312	0.0336
std	0.0048	0.0127	0.0161	0.0178
min	0.0083	0.0035	0.0033	0.0029
1%	0.013	0.0073	0.0076	0.0078
5%	0.0155	0.0107	0.0113	0.0117
10%	0.0169	0.013	0.0139	0.0146
25%	0.0194	0.0179	0.0196	0.0207
50%	0.0225	0.0252	0.0276	0.0301
75%	0.026	0.0344	0.0397	0.0428
90%	0.0291	0.0438	0.0529	0.0568
95%	0.0312	0.0514	0.0626	0.0673
99%	0.035	0.0656	0.0821	0.0905
max	0.0449	0.1235	0.1441	0.1649

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

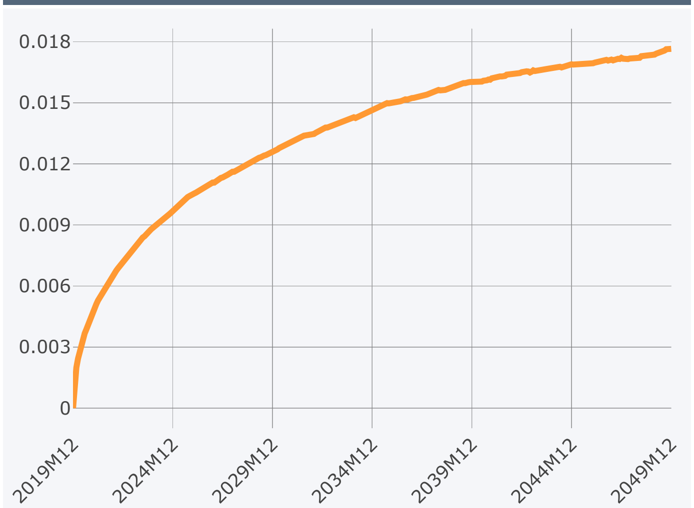
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

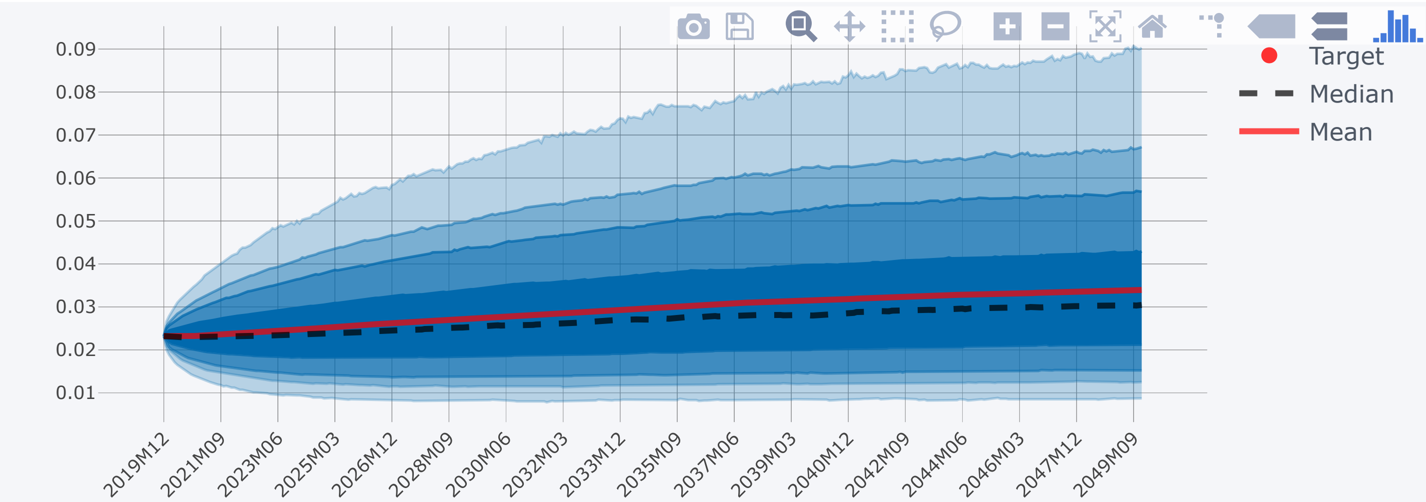
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.023	0.0275	0.0314	0.0338
std	0.0047	0.0126	0.016	0.0177
min	0.0088	0.0041	0.0039	0.0035
1%	0.0134	0.0078	0.008	0.0083
5%	0.0158	0.0111	0.0117	0.0121
10%	0.0172	0.0133	0.0143	0.0149
25%	0.0197	0.0182	0.0199	0.021
50%	0.0227	0.0254	0.0278	0.0303
75%	0.0261	0.0345	0.0398	0.0428
90%	0.0293	0.0439	0.0529	0.0568
95%	0.0313	0.0514	0.0626	0.0672
99%	0.0351	0.0656	0.0819	0.0904
max	0.045	0.1234	0.144	0.1647

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

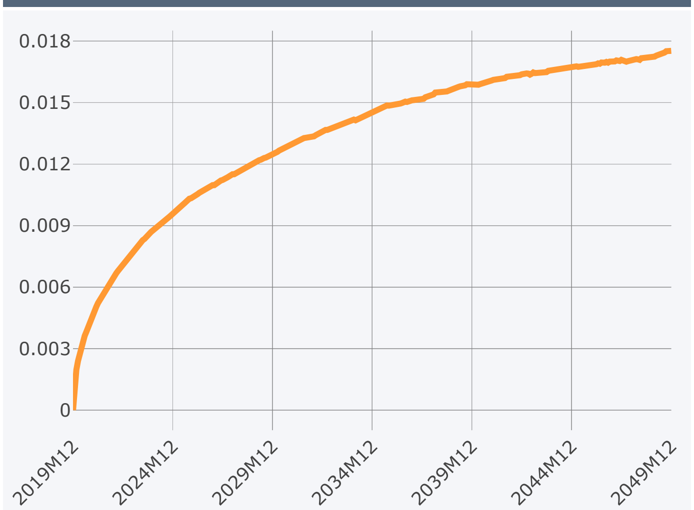
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

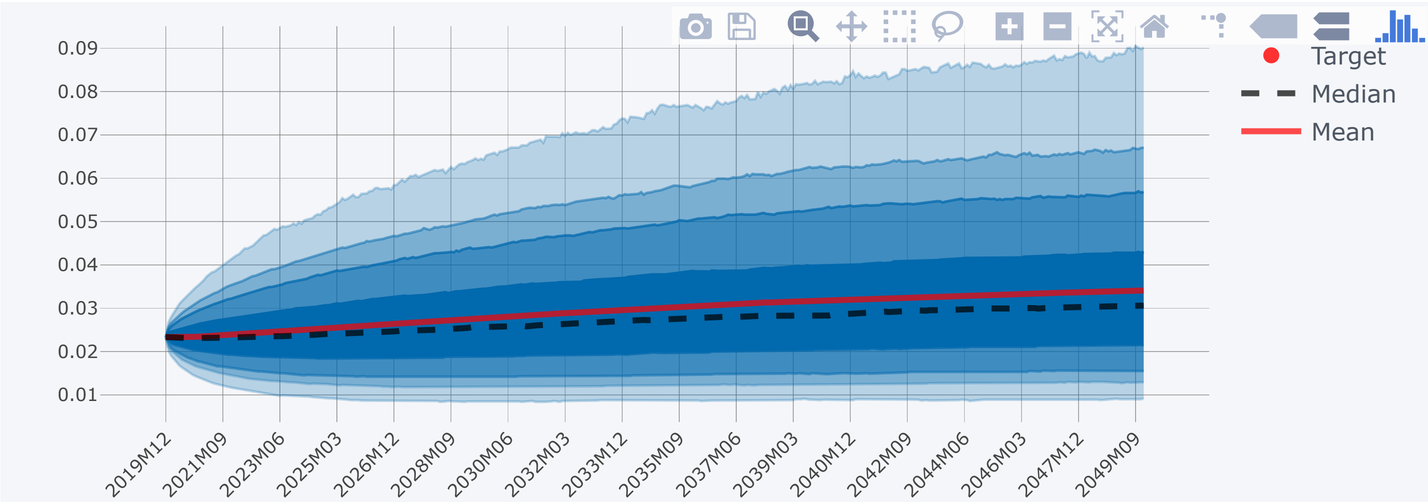
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0232	0.0277	0.0316	0.0339
std	0.0047	0.0125	0.0159	0.0175
min	0.0093	0.0046	0.0044	0.0041
1%	0.0137	0.0083	0.0085	0.0087
5%	0.0161	0.0115	0.0121	0.0125
10%	0.0175	0.0137	0.0146	0.0152
25%	0.0199	0.0185	0.0201	0.0212
50%	0.0229	0.0256	0.028	0.0305
75%	0.0263	0.0347	0.0398	0.0429
90%	0.0294	0.0439	0.053	0.0568
95%	0.0315	0.0514	0.0626	0.0672
99%	0.0352	0.0656	0.0818	0.0903
max	0.045	0.1233	0.1439	0.1646

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

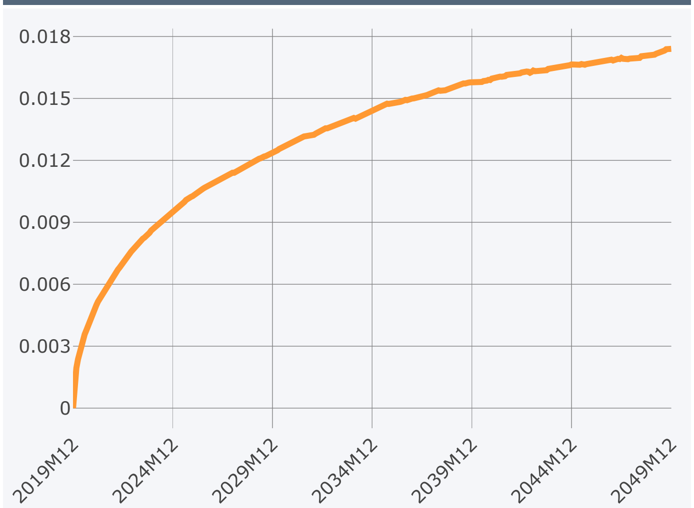
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0234	0.0279	0.0317	0.0341
std	0.0046	0.0124	0.0158	0.0174
min	0.0097	0.0051	0.0049	0.0047
1%	0.014	0.0087	0.0089	0.0092
5%	0.0164	0.0119	0.0124	0.0129
10%	0.0177	0.014	0.0149	0.0155
25%	0.0202	0.0188	0.0204	0.0215
50%	0.0231	0.0258	0.0282	0.0306
75%	0.0264	0.0348	0.0399	0.043
90%	0.0295	0.044	0.0529	0.0568
95%	0.0315	0.0514	0.0625	0.0671
99%	0.0353	0.0655	0.0817	0.0902
max	0.045	0.1231	0.1437	0.1644

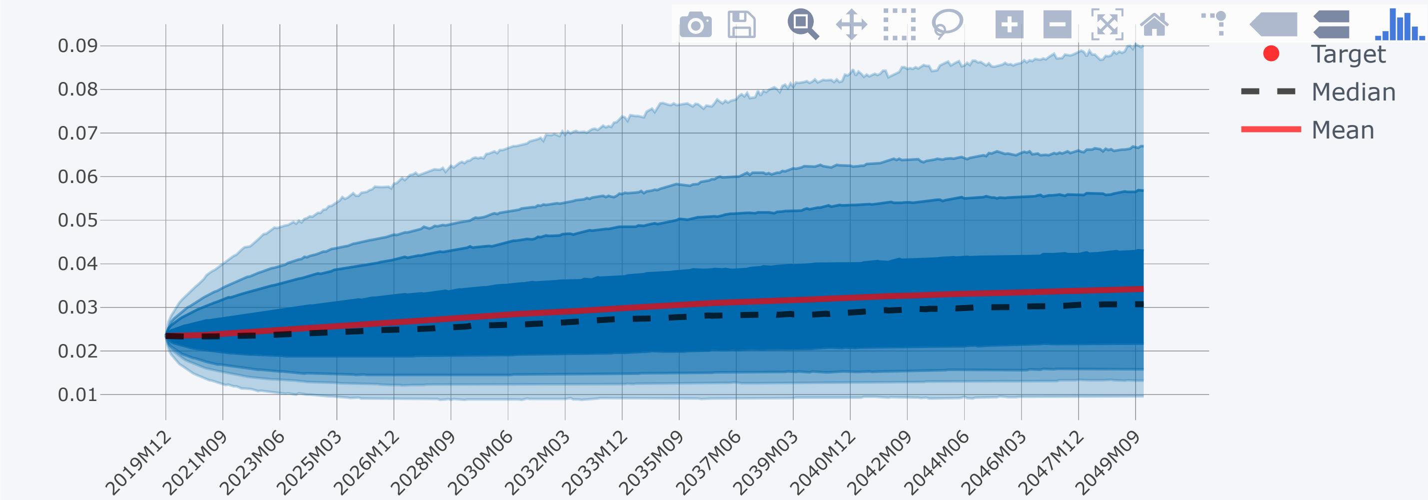
Cross Sectional Volatility Over Time



US Treasury 27 Year Yield - Coupon
Conning | Risk Solutions

2019 Q4
Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

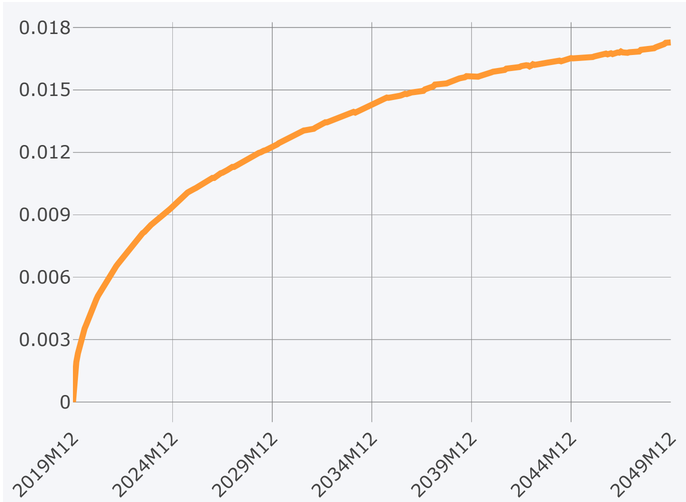
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0236	0.0281	0.0319	0.0342
std	0.0046	0.0123	0.0157	0.0173
min	0.0101	0.0056	0.0054	0.0052
1%	0.0143	0.0091	0.0093	0.0096
5%	0.0167	0.0123	0.0127	0.0132
10%	0.018	0.0143	0.0152	0.0158
25%	0.0204	0.019	0.0207	0.0217
50%	0.0233	0.026	0.0284	0.0307
75%	0.0266	0.0349	0.04	0.043
90%	0.0296	0.044	0.0529	0.0568
95%	0.0316	0.0514	0.0625	0.067
99%	0.0353	0.0655	0.0816	0.0901
max	0.045	0.123	0.1436	0.1643

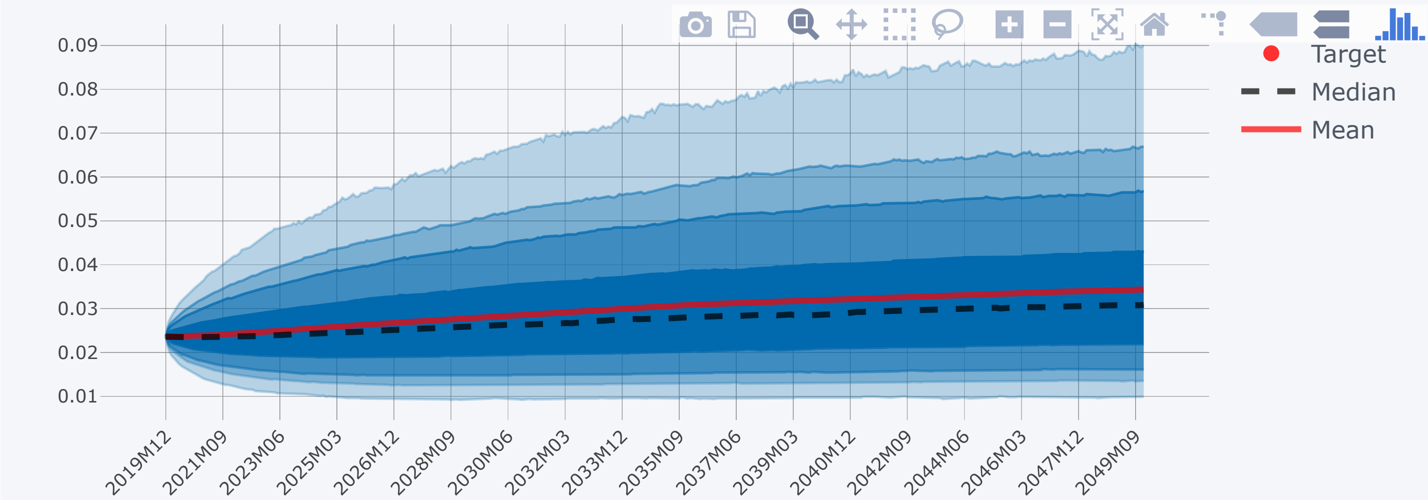
Cross Sectional Volatility Over Time



US Treasury 28 Year Yield - Coupon
Conning | Risk Solutions

2019 Q4
Validation Report

Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

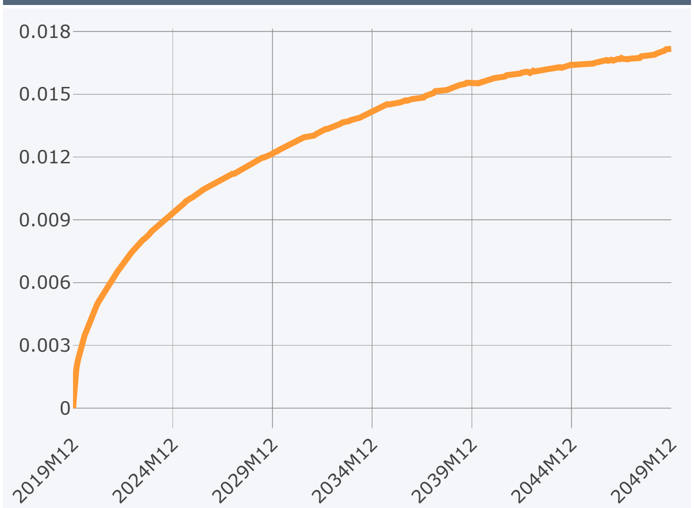
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

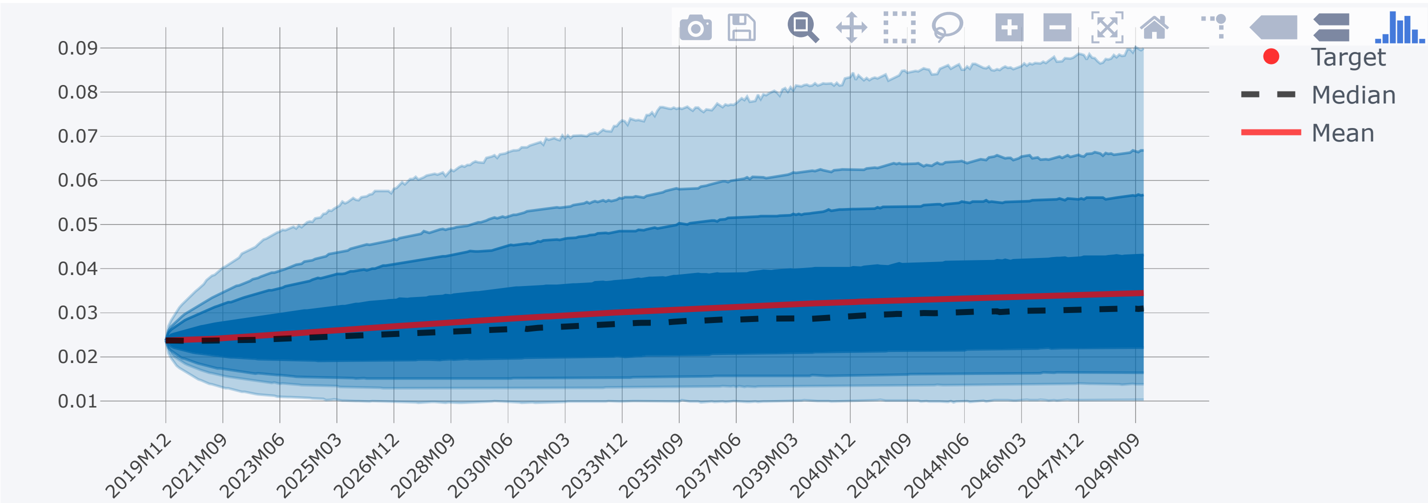
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0238	0.0282	0.032	0.0344
std	0.0045	0.0122	0.0156	0.0172
min	0.0105	0.006	0.0058	0.0057
1%	0.0146	0.0095	0.0097	0.0099
5%	0.0169	0.0126	0.013	0.0135
10%	0.0182	0.0147	0.0155	0.0161
25%	0.0206	0.0193	0.0209	0.0219
50%	0.0235	0.0262	0.0285	0.0309
75%	0.0267	0.0349	0.04	0.0431
90%	0.0297	0.0441	0.0529	0.0568
95%	0.0317	0.0514	0.0624	0.0669
99%	0.0354	0.0655	0.0816	0.09
max	0.045	0.1229	0.1435	0.1642

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

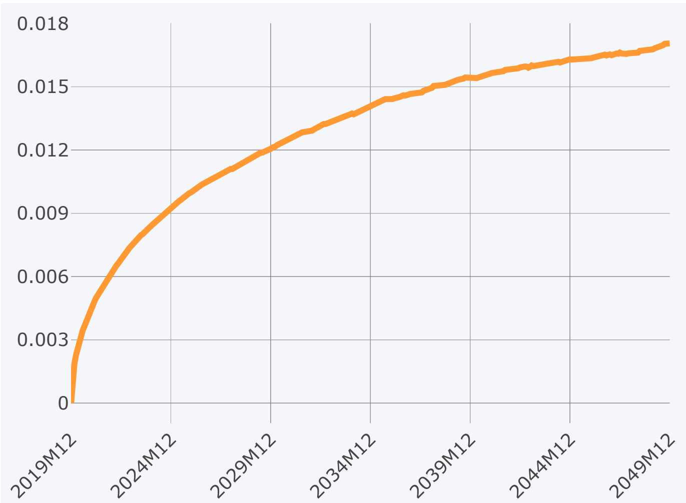
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

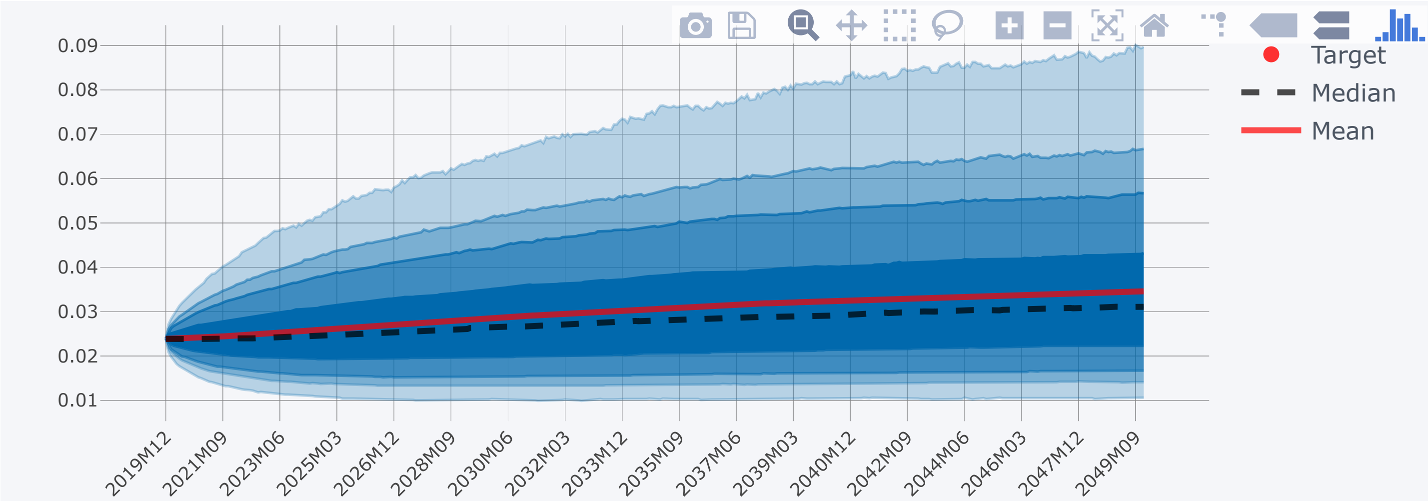
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0239	0.0284	0.0322	0.0345
std	0.0045	0.0121	0.0154	0.0171
min	0.0109	0.0065	0.0063	0.0062
1%	0.0149	0.0099	0.01	0.0103
5%	0.0172	0.0129	0.0134	0.0138
10%	0.0185	0.015	0.0158	0.0164
25%	0.0208	0.0195	0.0211	0.0221
50%	0.0236	0.0264	0.0287	0.031
75%	0.0268	0.035	0.0401	0.0431
90%	0.0298	0.0441	0.0528	0.0567
95%	0.0318	0.0514	0.0624	0.0668
99%	0.0354	0.0654	0.0815	0.0899
max	0.045	0.1228	0.1434	0.164

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

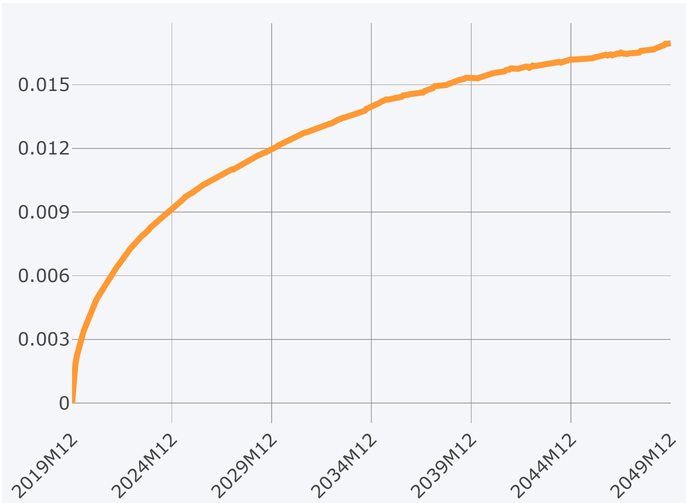
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

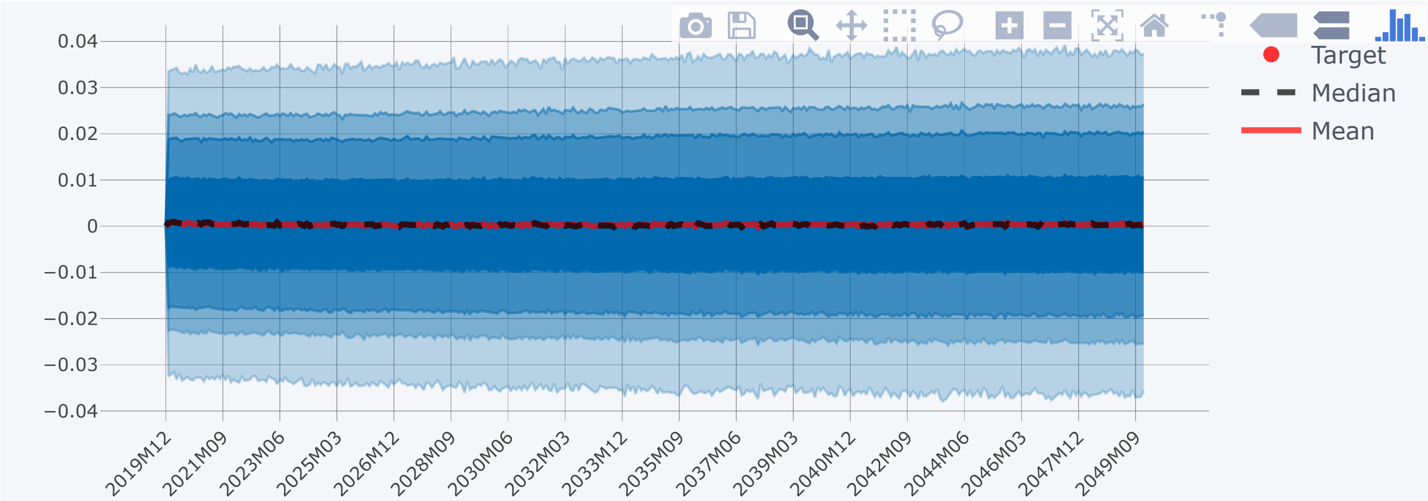
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0241	0.0285	0.0323	0.0346
std	0.0044	0.012	0.0153	0.0169
min	0.0112	0.0069	0.0067	0.0067
1%	0.0152	0.0103	0.0104	0.0106
5%	0.0174	0.0132	0.0137	0.0141
10%	0.0187	0.0152	0.0161	0.0167
25%	0.021	0.0198	0.0213	0.0223
50%	0.0238	0.0265	0.0288	0.0311
75%	0.027	0.0351	0.0401	0.0432
90%	0.0299	0.0441	0.0528	0.0567
95%	0.0319	0.0514	0.0623	0.0667
99%	0.0355	0.0653	0.0813	0.0897
max	0.045	0.1227	0.1433	0.1639

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

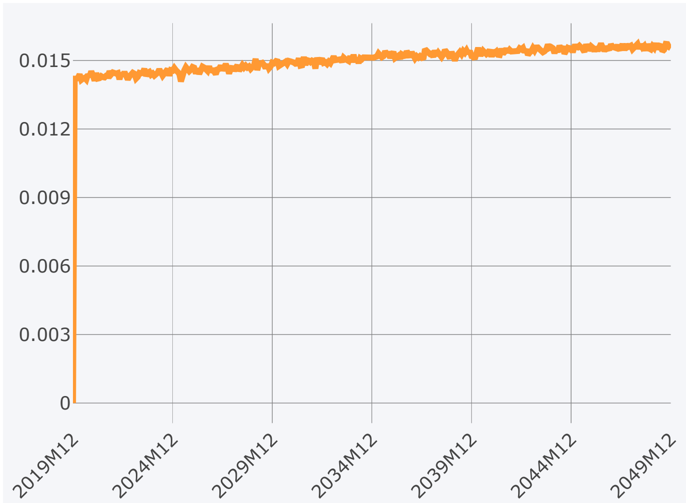
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

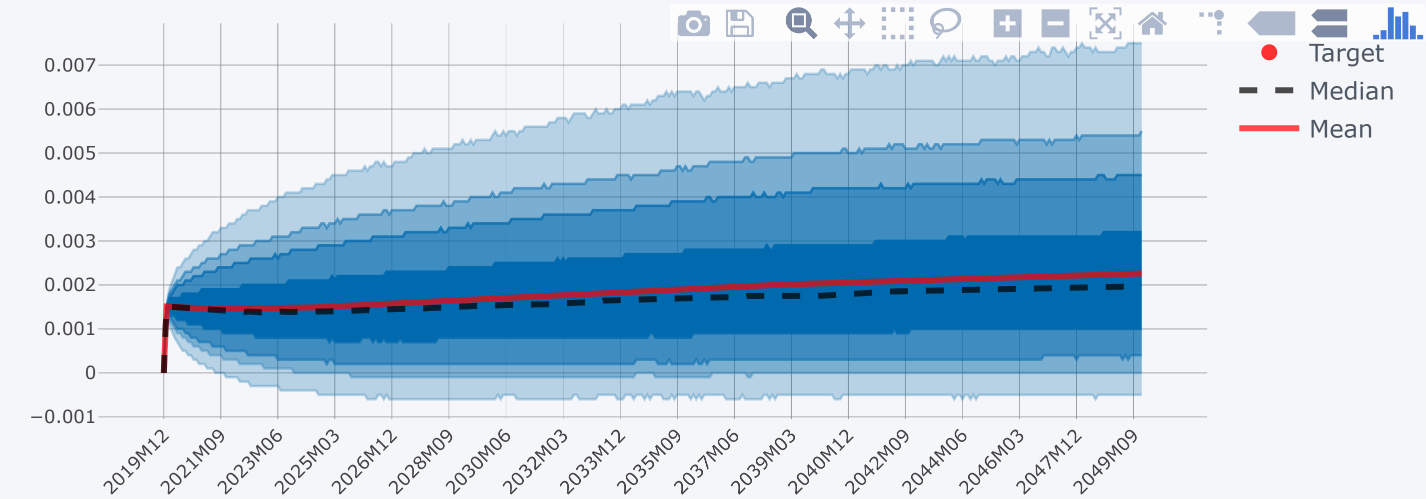
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0006	0.0003	0.0004	0.0004
std	0.0143	0.0149	0.0152	0.0155
min	-0.0594	-0.0569	-0.0685	-0.0599
1%	-0.0329	-0.0354	-0.0348	-0.0356
5%	-0.0234	-0.0241	-0.0246	-0.0254
10%	-0.0178	-0.0185	-0.0189	-0.0192
25%	-0.0091	-0.0095	-0.0097	-0.01
50%	0.0007	0.0002	0.0004	0.0003
75%	0.0103	0.01	0.0103	0.0106
90%	0.019	0.0194	0.0197	0.0204
95%	0.0238	0.0246	0.0253	0.0264
99%	0.0336	0.0361	0.0371	0.0374
max	0.0571	0.0686	0.0574	0.0658

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

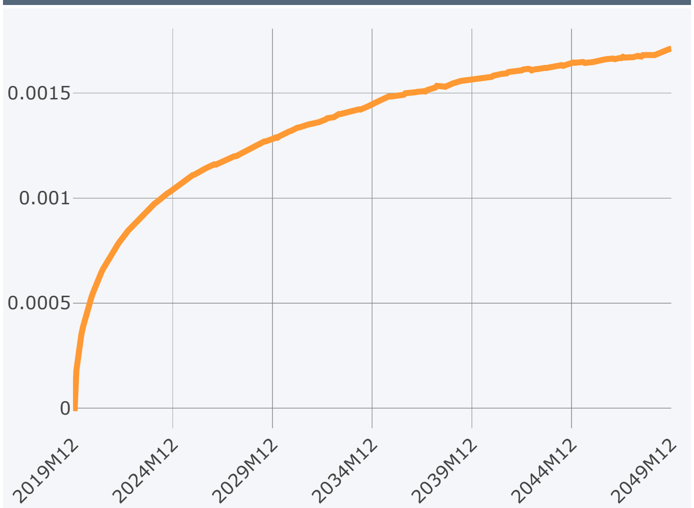
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

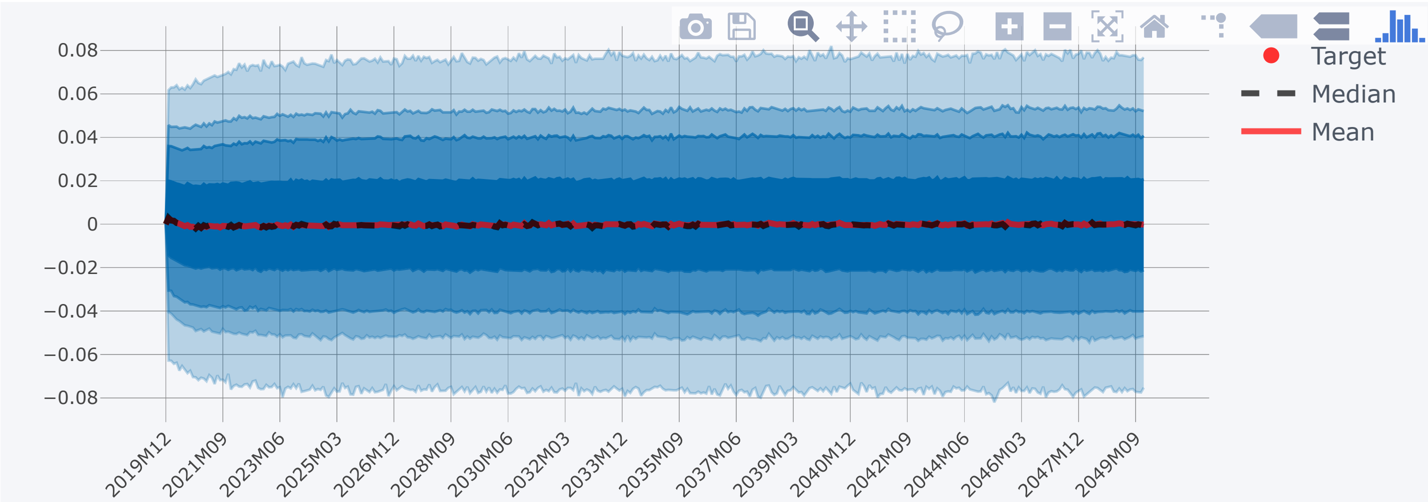
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0015	0.0017	0.002	0.0023
std	0.0005	0.0013	0.0016	0.0017
min	-0.0003	-0.0014	-0.0012	-0.0015
1%	0.0003	-0.0006	-0.0005	-0.0005
5%	0.0006	-0.0001	0	0
10%	0.0008	0.0002	0.0003	0.0004
25%	0.0011	0.0008	0.0009	0.001
50%	0.0014	0.0015	0.0017	0.002
75%	0.0018	0.0024	0.0029	0.0032
90%	0.0022	0.0034	0.0042	0.0045
95%	0.0024	0.004	0.005	0.0055
99%	0.0028	0.0053	0.0068	0.0075
max	0.0039	0.0103	0.0125	0.0137

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

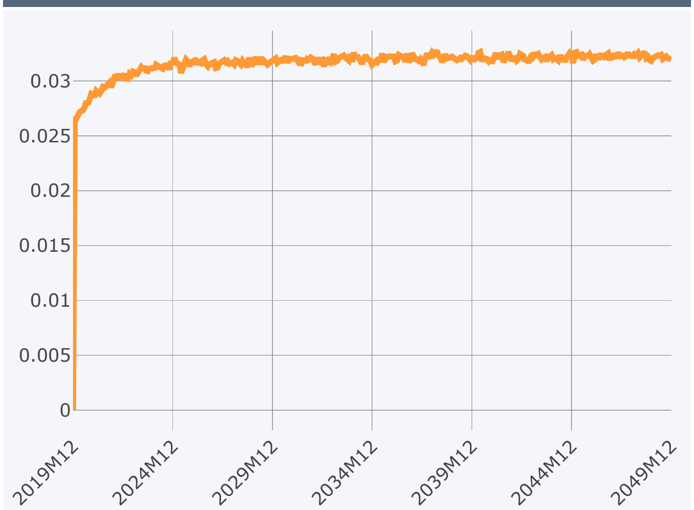
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

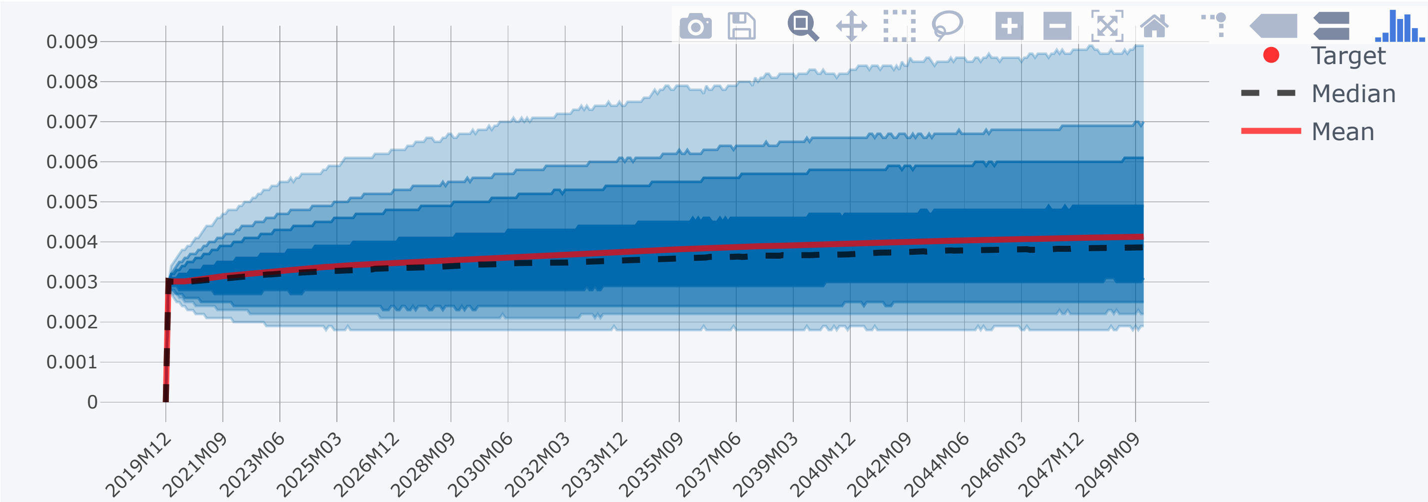
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	-0.0012	-0.0005	0	-0.0001
std	0.0288	0.0318	0.0323	0.0319
min	-0.1328	-0.1654	-0.1475	-0.1396
1%	-0.0718	-0.0777	-0.0768	-0.0753
5%	-0.0489	-0.0525	-0.0528	-0.0516
10%	-0.0378	-0.0393	-0.0406	-0.0402
25%	-0.02	-0.0213	-0.0212	-0.0212
50%	-0.0007	-0.0005	-0.0002	-0.0007
75%	0.0178	0.0199	0.0211	0.0207
90%	0.035	0.0396	0.0407	0.0407
95%	0.0453	0.0528	0.0524	0.0521
99%	0.065	0.0763	0.079	0.0768
max	0.12	0.1363	0.1338	0.1932

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

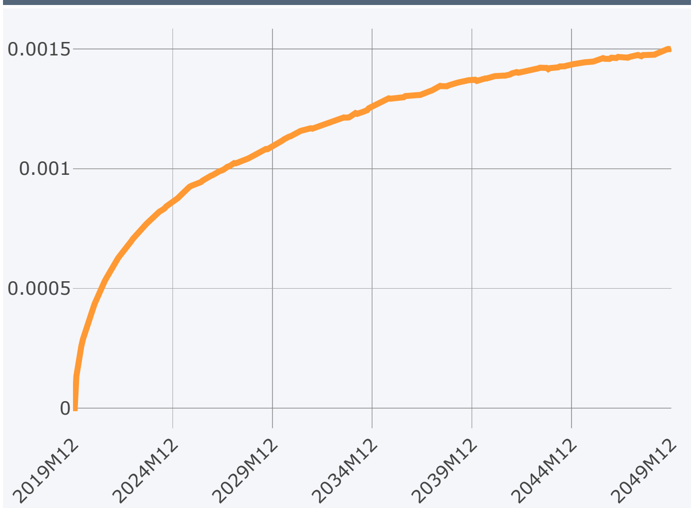
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

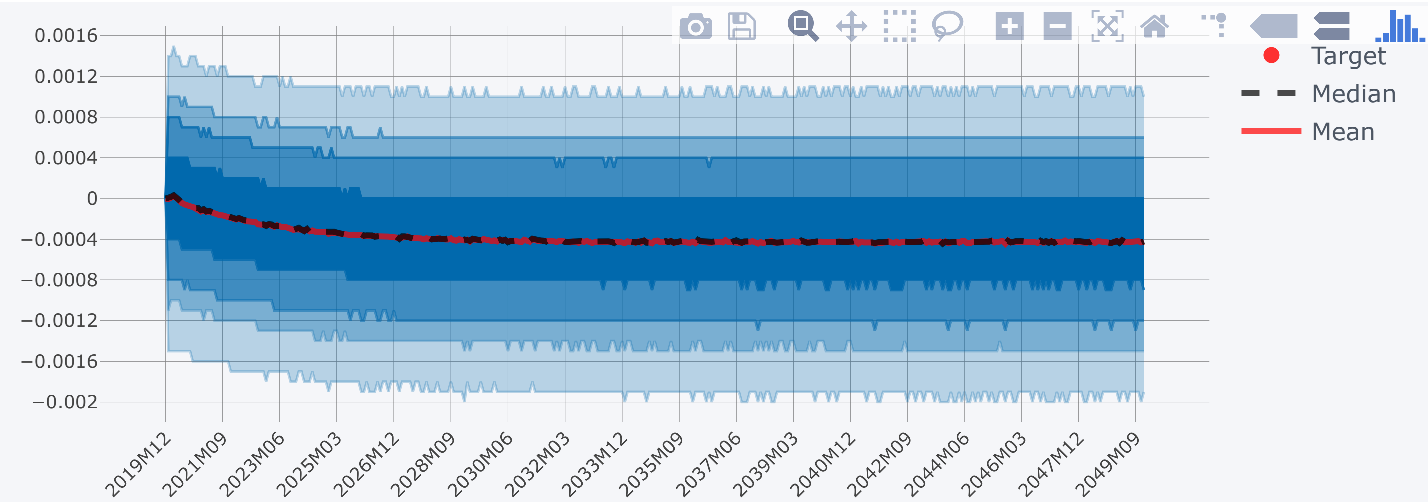
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0031	0.0036	0.0039	0.0041
std	0.0004	0.0011	0.0014	0.0015
min	0.0018	0.0014	0.0013	0.0014
1%	0.0022	0.0018	0.0018	0.0019
5%	0.0024	0.0021	0.0022	0.0022
10%	0.0026	0.0024	0.0024	0.0025
25%	0.0028	0.0028	0.0029	0.0031
50%	0.003	0.0034	0.0037	0.0039
75%	0.0033	0.0042	0.0047	0.0049
90%	0.0036	0.0051	0.0058	0.0061
95%	0.0038	0.0056	0.0066	0.007
99%	0.0041	0.0068	0.0082	0.0089
max	0.0051	0.0114	0.0137	0.0144

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

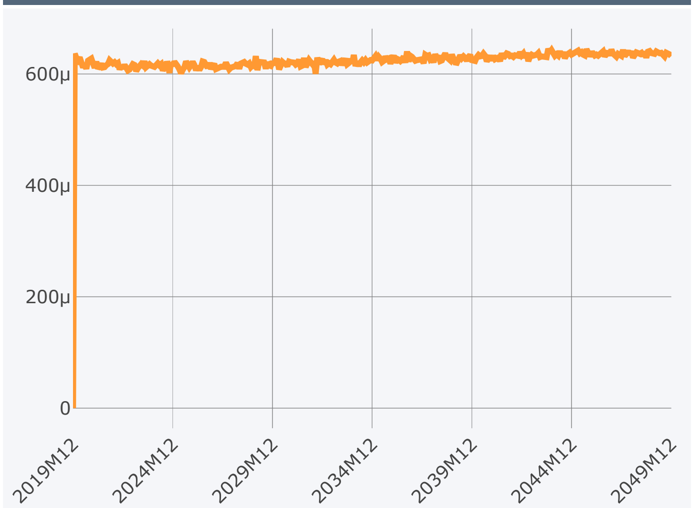
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

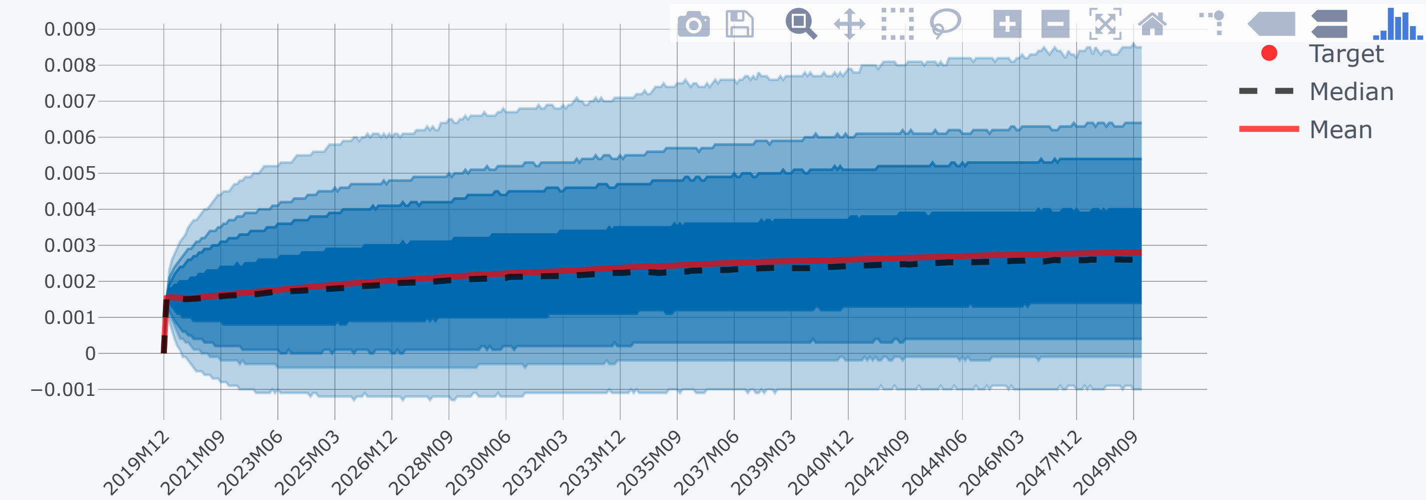
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	-0.0001	-0.0004	-0.0004	-0.0004
std	0.0006	0.0006	0.0006	0.0006
min	-0.0033	-0.0034	-0.0034	-0.0032
1%	-0.0016	-0.0019	-0.0019	-0.0019
5%	-0.0011	-0.0014	-0.0014	-0.0015
10%	-0.0009	-0.0012	-0.0012	-0.0012
25%	-0.0005	-0.0008	-0.0008	-0.0009
50%	-0.0001	-0.0004	-0.0004	-0.0004
75%	0.0003	0	0	0
90%	0.0007	0.0004	0.0004	0.0004
95%	0.0009	0.0006	0.0006	0.0006
99%	0.0013	0.001	0.001	0.001
max	0.0021	0.002	0.0021	0.002

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

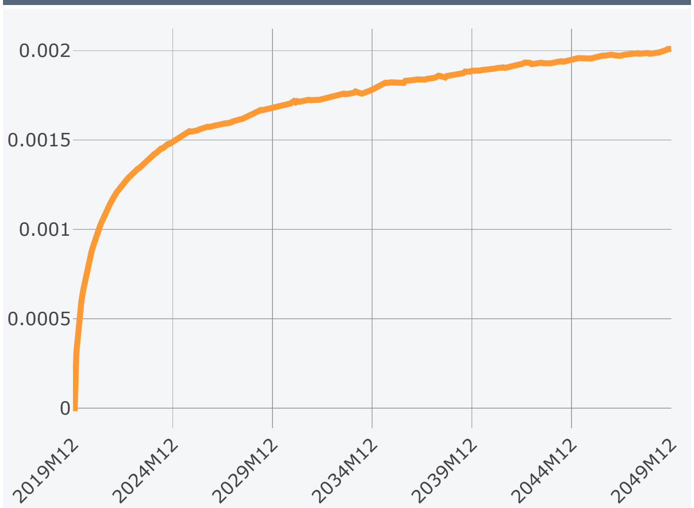
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

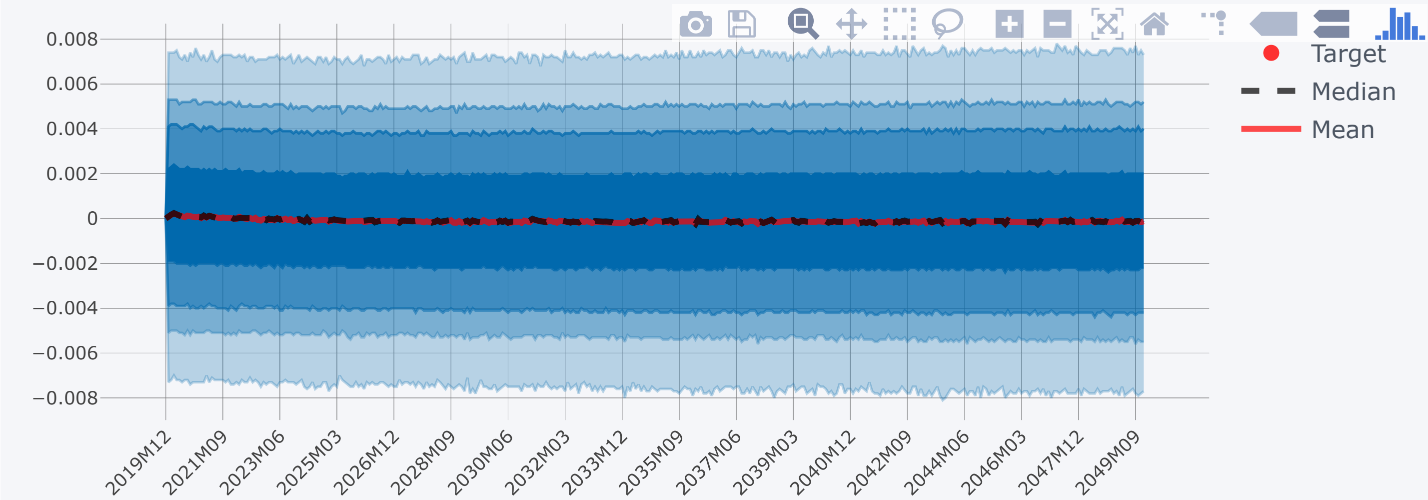
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0015	0.0022	0.0026	0.0028
std	0.0009	0.0017	0.0019	0.002
min	-0.0016	-0.003	-0.0023	-0.0027
1%	-0.0005	-0.0012	-0.001	-0.001
5%	0.0001	-0.0003	-0.0002	-0.0001
10%	0.0004	0.0002	0.0003	0.0004
25%	0.0009	0.001	0.0013	0.0014
50%	0.0015	0.0021	0.0024	0.0026
75%	0.0021	0.0032	0.0037	0.004
90%	0.0027	0.0044	0.0051	0.0054
95%	0.0031	0.0051	0.0061	0.0064
99%	0.0037	0.0066	0.0077	0.0085
max	0.0053	0.0117	0.0125	0.0141

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

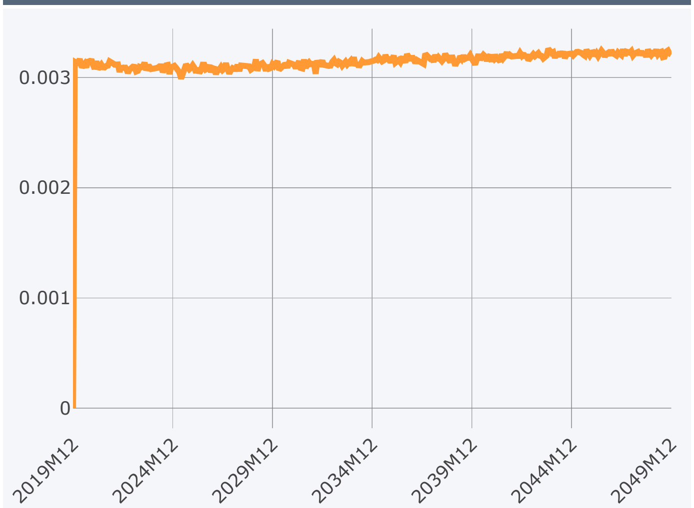
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

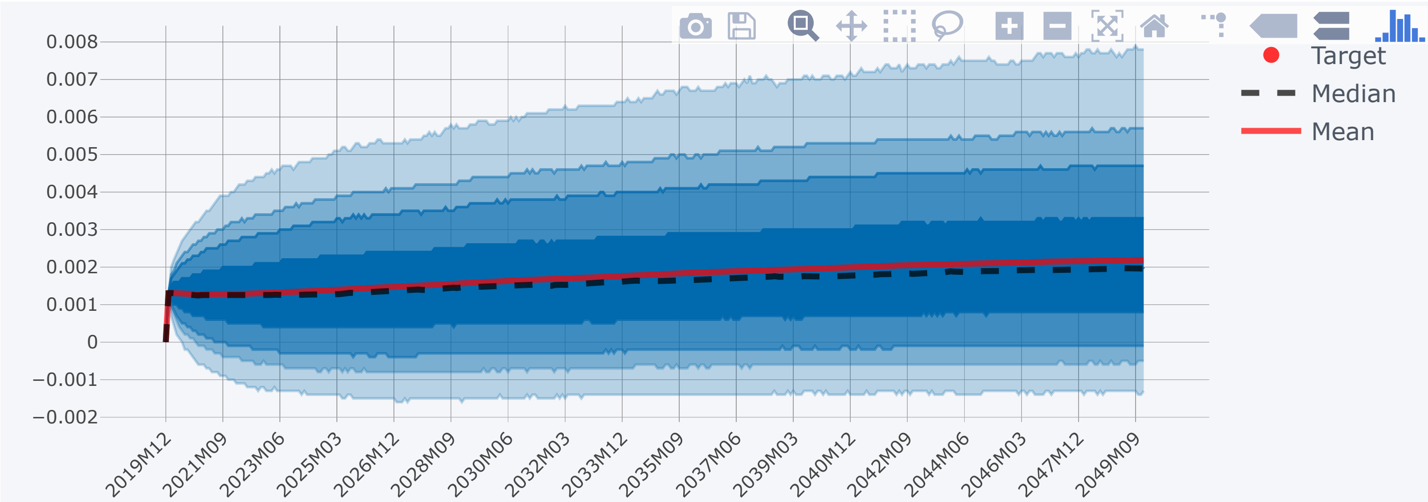
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0001	-0.0001	-0.0001	-0.0001
std	0.0031	0.0031	0.0032	0.0032
min	-0.0136	-0.0115	-0.0163	-0.0136
1%	-0.0073	-0.0076	-0.0074	-0.0077
5%	-0.0051	-0.0053	-0.0052	-0.0055
10%	-0.004	-0.0041	-0.0041	-0.0042
25%	-0.002	-0.0022	-0.0022	-0.0022
50%	0.0001	-0.0001	-0.0001	-0.0001
75%	0.0022	0.0019	0.002	0.002
90%	0.004	0.0038	0.0039	0.004
95%	0.0051	0.005	0.0051	0.0052
99%	0.0073	0.0073	0.0073	0.0073
max	0.0128	0.0127	0.012	0.0133

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

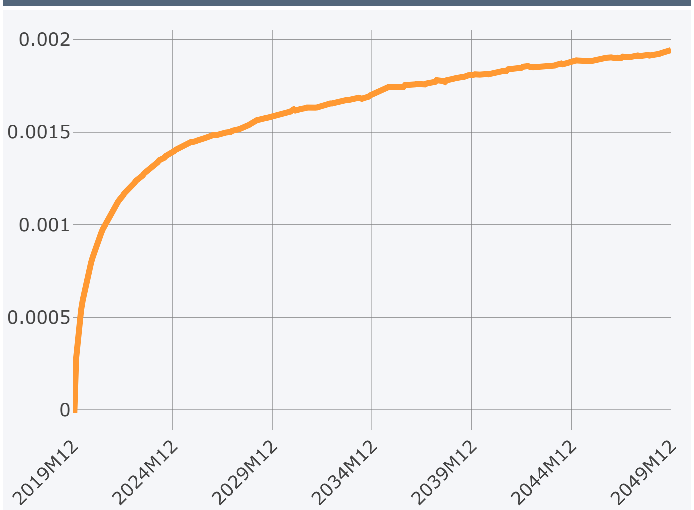
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

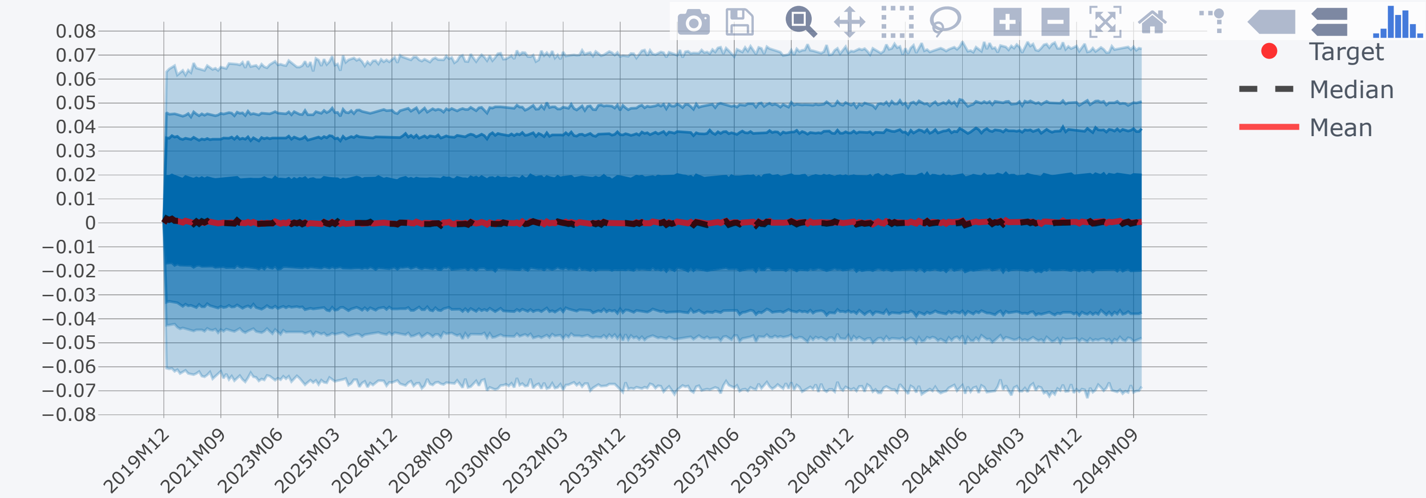
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0013	0.0016	0.002	0.0022
std	0.0008	0.0016	0.0018	0.0019
min	-0.0016	-0.003	-0.0026	-0.003
1%	-0.0006	-0.0015	-0.0013	-0.0013
5%	-0.0001	-0.0007	-0.0006	-0.0005
10%	0.0002	-0.0003	-0.0002	-0.0001
25%	0.0007	0.0005	0.0007	0.0008
50%	0.0012	0.0015	0.0017	0.002
75%	0.0018	0.0026	0.003	0.0033
90%	0.0023	0.0037	0.0044	0.0047
95%	0.0027	0.0044	0.0053	0.0057
99%	0.0032	0.0058	0.007	0.0078
max	0.0049	0.0105	0.0122	0.0138

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

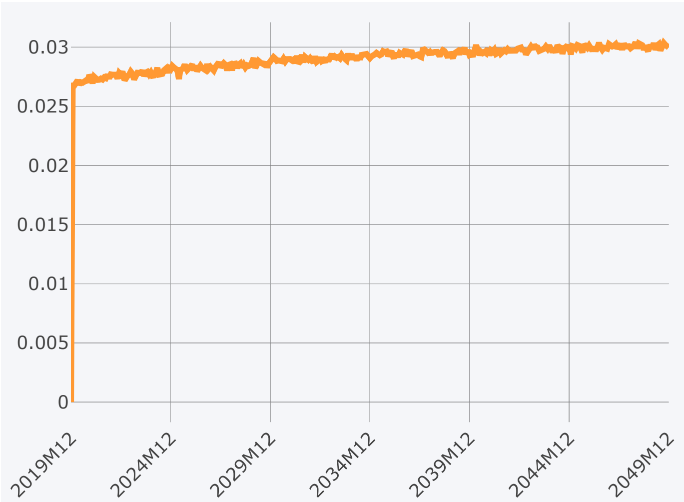
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

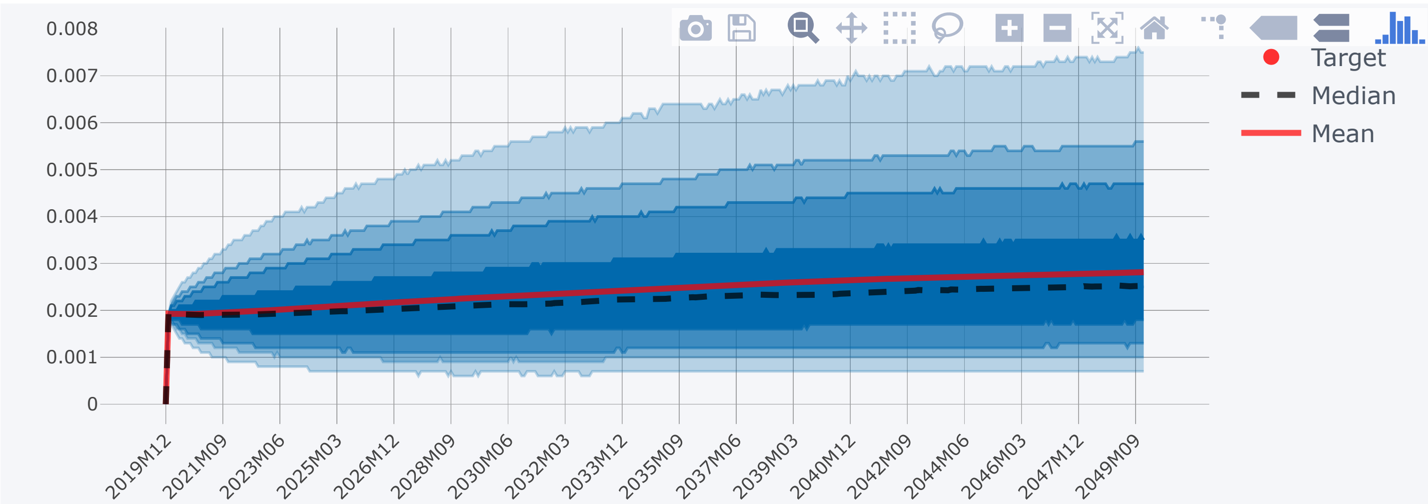
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0004	0.0002	0.0003	0.0004
std	0.0274	0.0288	0.0294	0.03
min	-0.0967	-0.1164	-0.1178	-0.1136
1%	-0.0628	-0.0686	-0.0674	-0.0683
5%	-0.0446	-0.0461	-0.0476	-0.048
10%	-0.0353	-0.0356	-0.0369	-0.0373
25%	-0.0178	-0.019	-0.0192	-0.0198
50%	0.0006	-0.0001	0.0001	-0.0002
75%	0.0188	0.0188	0.0198	0.02
90%	0.0352	0.0369	0.0374	0.0393
95%	0.0454	0.0481	0.0495	0.0506
99%	0.0646	0.0698	0.0715	0.0726
max	0.1025	0.1311	0.1062	0.1166

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

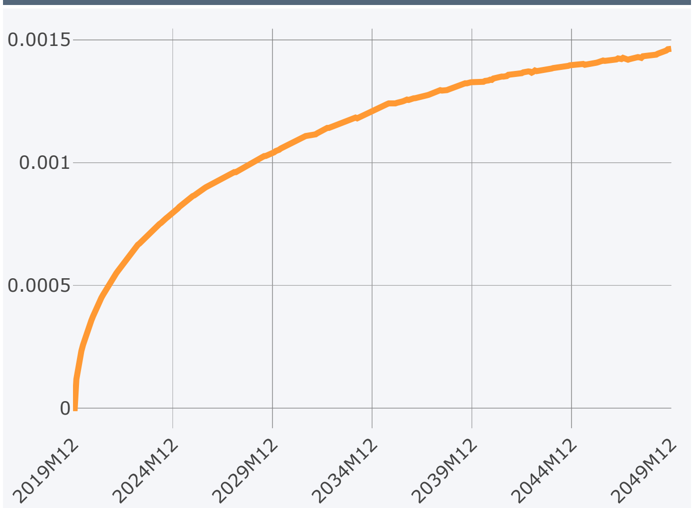
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

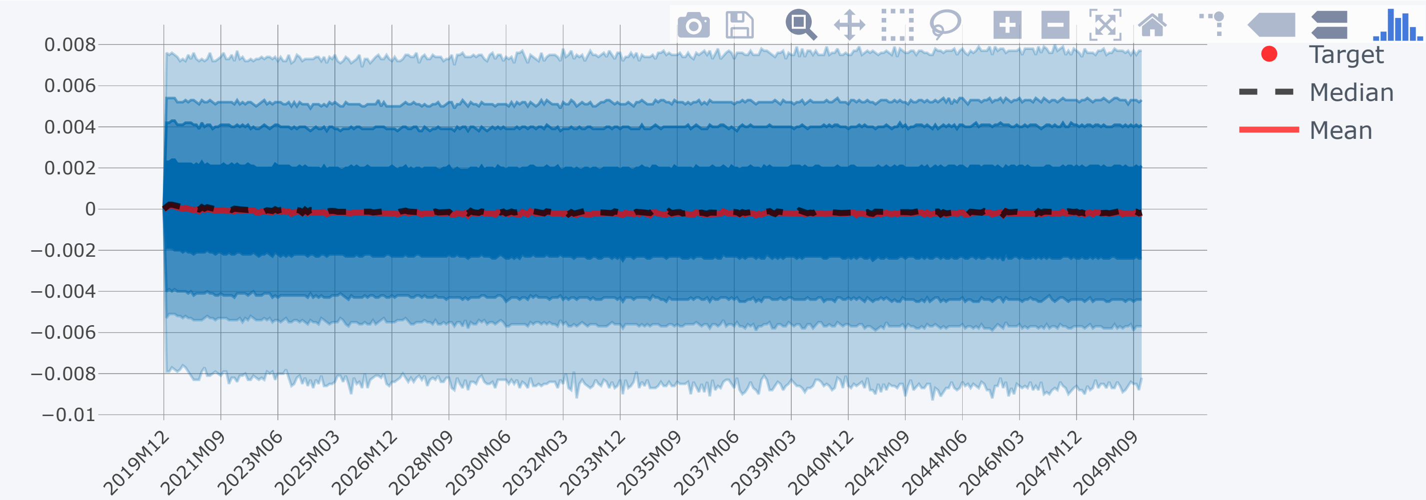
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0019	0.0023	0.0026	0.0028
std	0.0004	0.001	0.0013	0.0015
min	0.0009	0.0003	0.0003	0.0003
1%	0.0012	0.0007	0.0007	0.0007
5%	0.0013	0.0009	0.001	0.001
10%	0.0015	0.0011	0.0012	0.0013
25%	0.0017	0.0015	0.0017	0.0018
50%	0.0019	0.0021	0.0023	0.0025
75%	0.0022	0.0029	0.0033	0.0035
90%	0.0024	0.0037	0.0044	0.0047
95%	0.0026	0.0043	0.0052	0.0056
99%	0.0029	0.0054	0.0069	0.0075
max	0.0036	0.0104	0.0125	0.0134

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

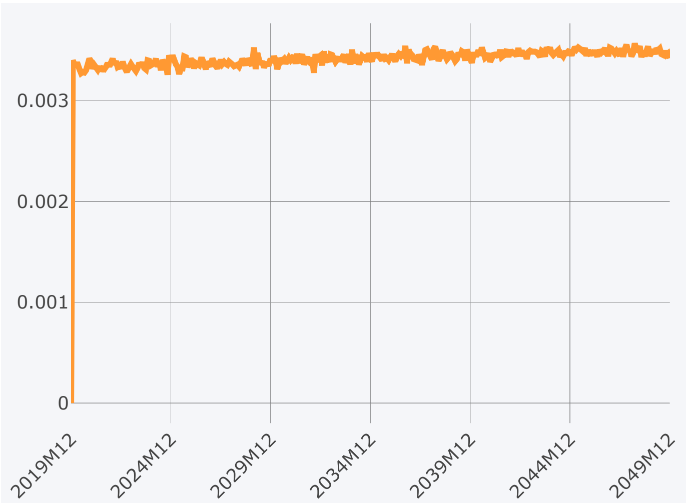
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

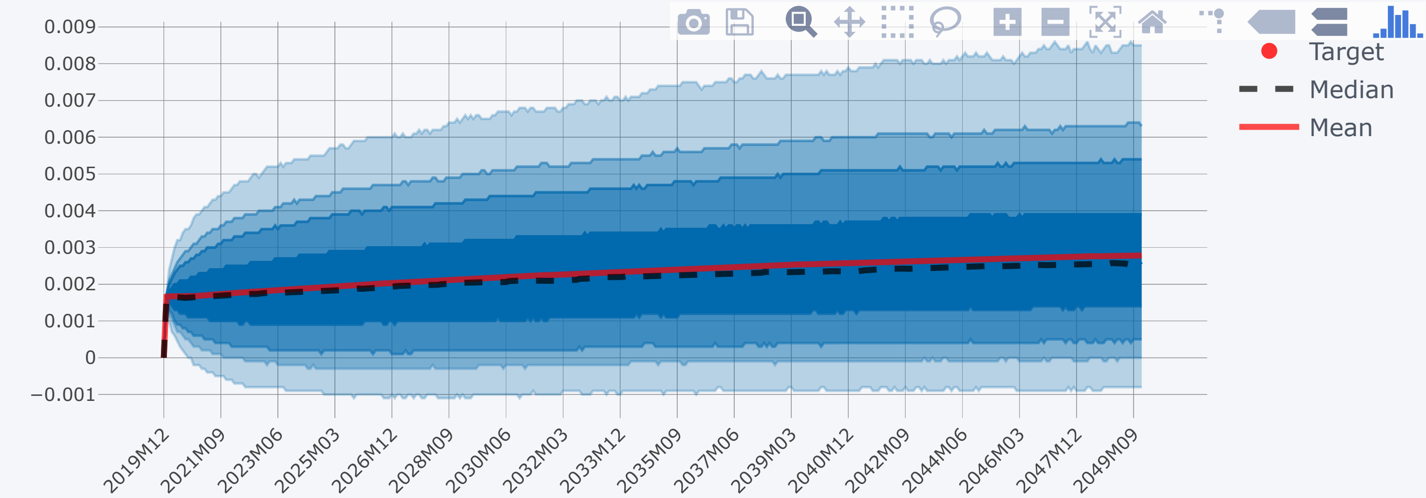
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0	-0.0002	-0.0002	-0.0002
std	0.0034	0.0034	0.0035	0.0034
min	-0.0298	-0.0295	-0.0247	-0.032
1%	-0.0083	-0.0085	-0.0083	-0.0082
5%	-0.0054	-0.0055	-0.0056	-0.0057
10%	-0.0041	-0.0043	-0.0044	-0.0044
25%	-0.0021	-0.0023	-0.0023	-0.0024
50%	0.0001	-0.0002	-0.0001	-0.0002
75%	0.0022	0.002	0.0021	0.0021
90%	0.0041	0.0039	0.004	0.0041
95%	0.0052	0.0051	0.0052	0.0053
99%	0.0073	0.0075	0.0077	0.0077
max	0.0122	0.0126	0.0122	0.0133

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

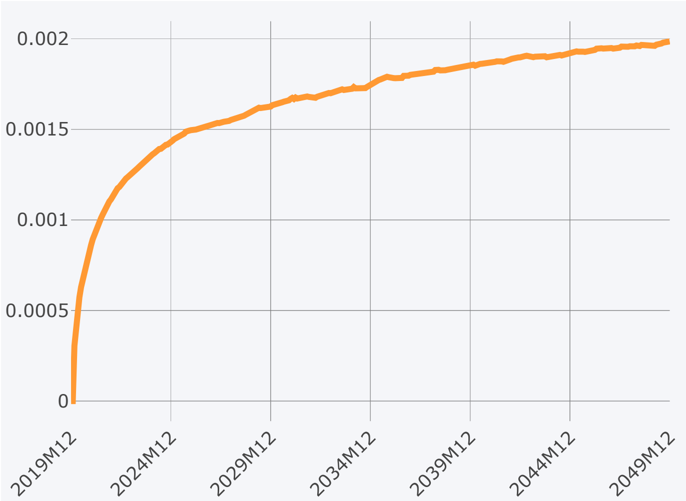
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

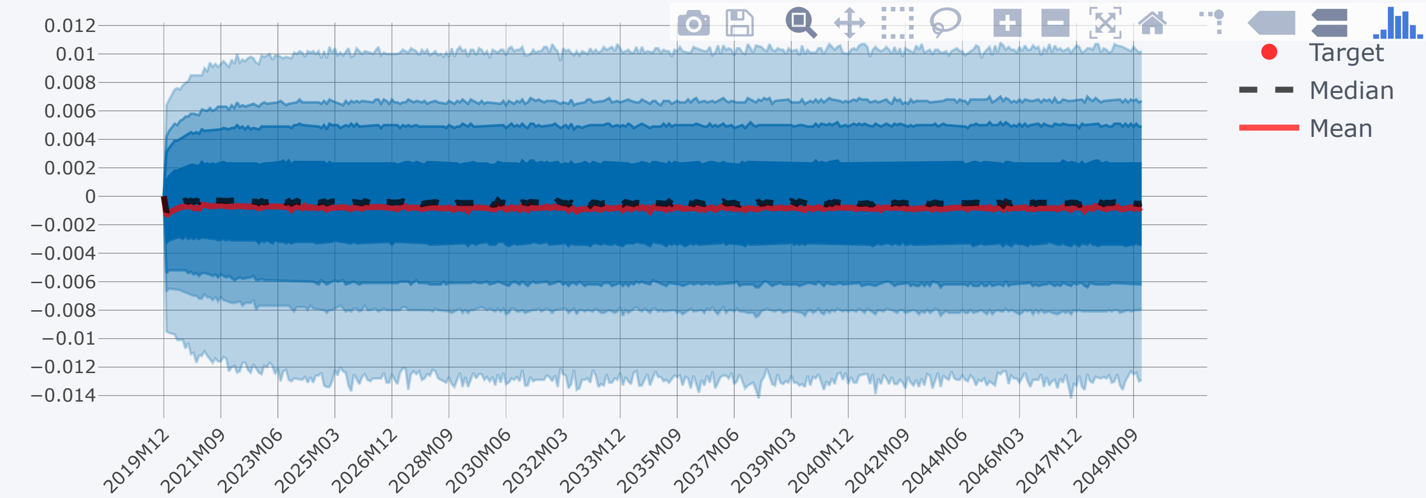
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0017	0.0022	0.0026	0.0028
std	0.0009	0.0016	0.0019	0.002
min	-0.0012	-0.0026	-0.0021	-0.0024
1%	-0.0002	-0.001	-0.0009	-0.0008
5%	0.0003	-0.0002	-0.0001	0
10%	0.0006	0.0002	0.0004	0.0005
25%	0.0011	0.001	0.0013	0.0014
50%	0.0016	0.0021	0.0023	0.0026
75%	0.0022	0.0032	0.0037	0.0039
90%	0.0028	0.0044	0.005	0.0054
95%	0.0031	0.005	0.006	0.0063
99%	0.0039	0.0065	0.0077	0.0085
max	0.0057	0.0113	0.0128	0.0144

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

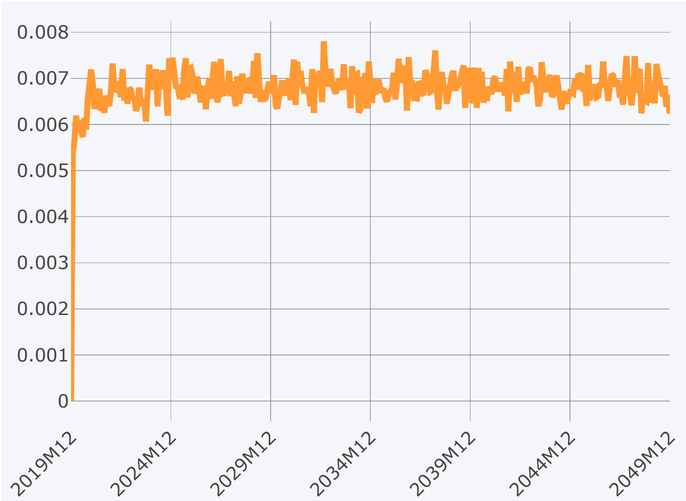
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

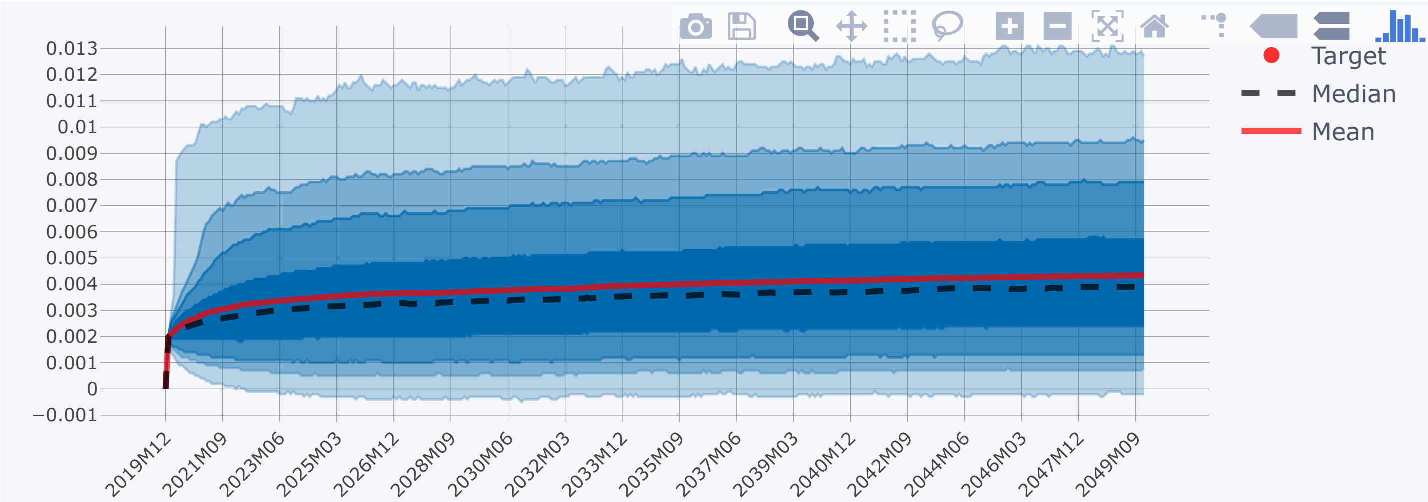
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	-0.0008	-0.0009	-0.0008	-0.0008
std	0.0072	0.0067	0.007	0.0062
min	-0.1514	-0.0937	-0.0921	-0.0852
1%	-0.0117	-0.013	-0.0128	-0.0129
5%	-0.007	-0.0079	-0.0081	-0.0079
10%	-0.0054	-0.0062	-0.0062	-0.0062
25%	-0.0029	-0.0034	-0.0034	-0.0034
50%	-0.0003	-0.0005	-0.0004	-0.0005
75%	0.0022	0.0022	0.0025	0.0023
90%	0.0045	0.0049	0.0051	0.0049
95%	0.0058	0.0066	0.0068	0.0067
99%	0.0086	0.0097	0.0101	0.0102
max	0.0167	0.0185	0.0208	0.0298

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

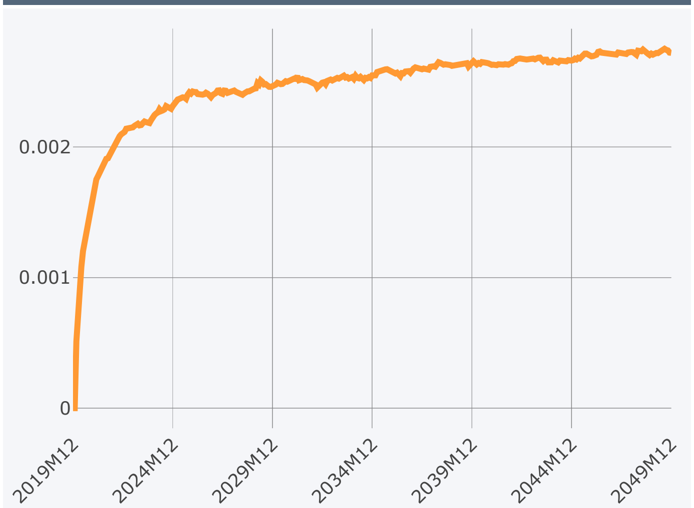
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

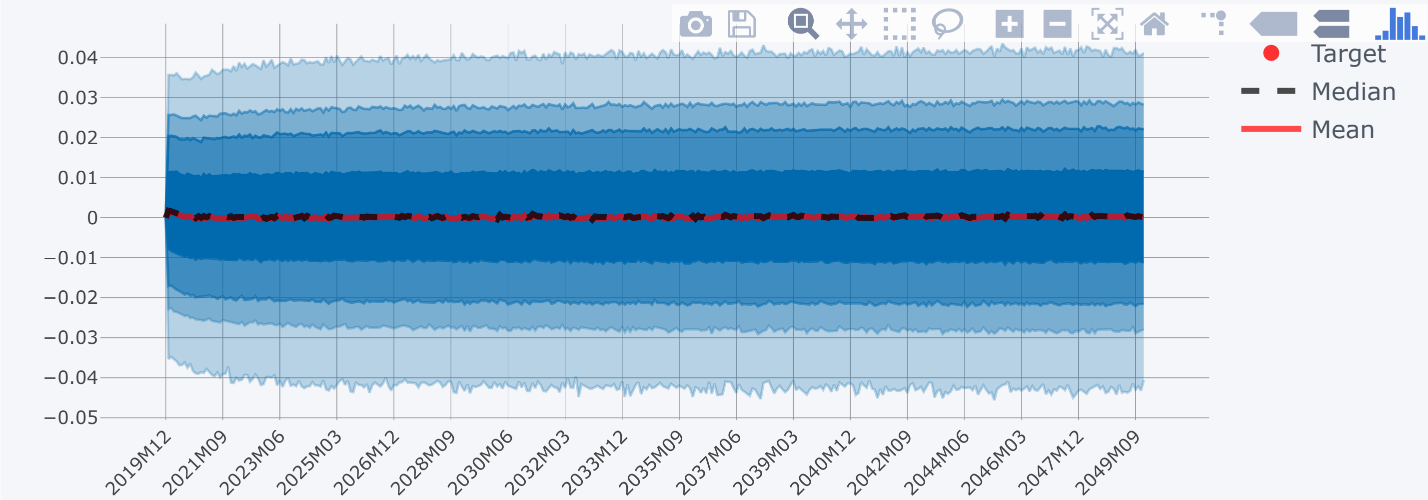
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0028	0.0038	0.0041	0.0043
std	0.0016	0.0025	0.0026	0.0027
min	-0.0008	-0.0016	-0.0014	-0.0018
1%	0.0005	-0.0003	-0.0002	-0.0002
5%	0.001	0.0005	0.0006	0.0008
10%	0.0013	0.001	0.0012	0.0013
25%	0.0019	0.0021	0.0023	0.0024
50%	0.0025	0.0034	0.0037	0.0039
75%	0.0032	0.005	0.0055	0.0057
90%	0.0041	0.0069	0.0077	0.0079
95%	0.0051	0.0085	0.0091	0.0095
99%	0.0097	0.0117	0.0123	0.0127
max	0.0193	0.0234	0.0252	0.0259

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

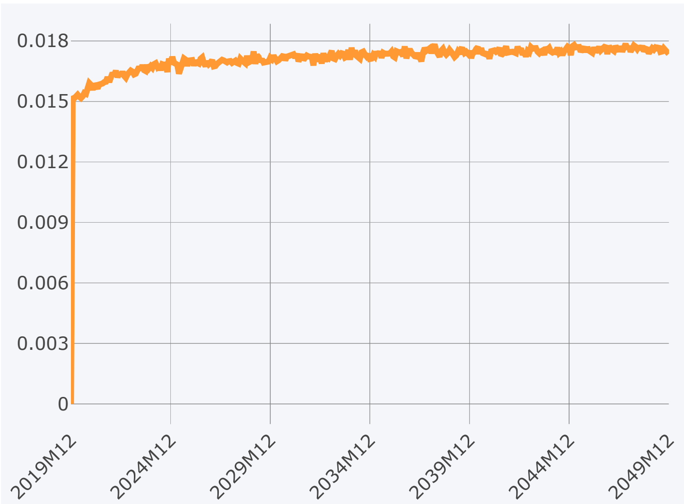
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

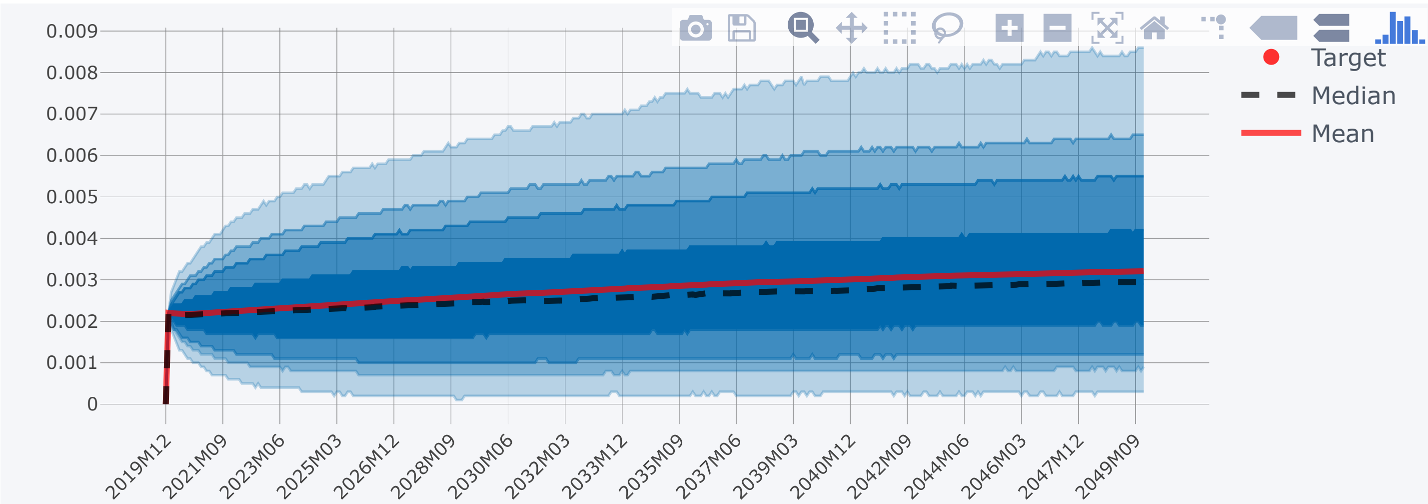
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0	0	0.0002	0.0002
std	0.0158	0.0172	0.0175	0.0174
min	-0.098	-0.1111	-0.1049	-0.1142
1%	-0.039	-0.0425	-0.0426	-0.0406
5%	-0.0257	-0.0276	-0.0283	-0.028
10%	-0.0198	-0.0206	-0.0215	-0.0215
25%	-0.01	-0.0109	-0.0109	-0.0112
50%	0.0004	0	0.0004	0.0001
75%	0.0105	0.011	0.0117	0.0116
90%	0.0196	0.0214	0.022	0.0221
95%	0.0249	0.0278	0.0283	0.0282
99%	0.0356	0.0401	0.0417	0.0412
max	0.0598	0.0746	0.0702	0.1013

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

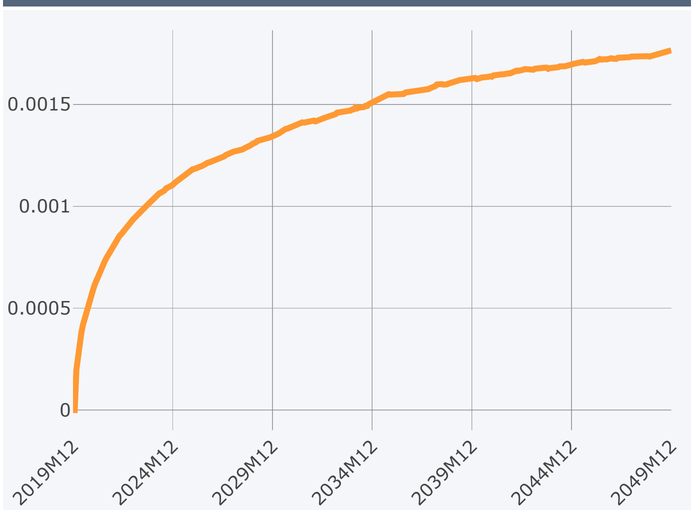
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

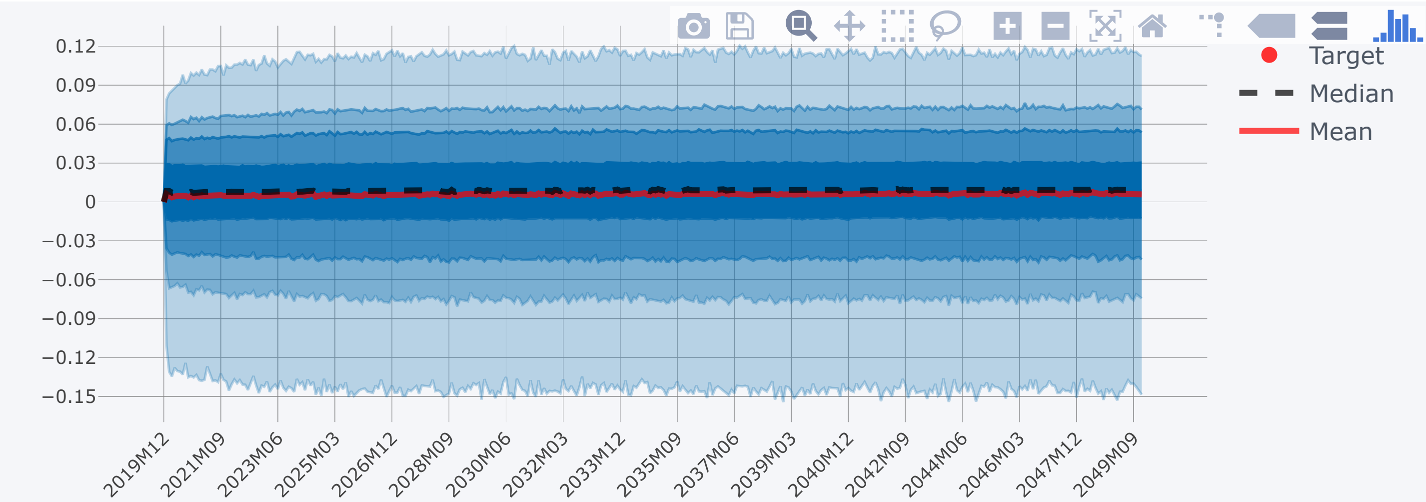
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0022	0.0026	0.003	0.0032
std	0.0006	0.0013	0.0016	0.0018
min	0.0002	-0.0006	-0.0005	-0.0006
1%	0.001	0.0002	0.0002	0.0003
5%	0.0013	0.0007	0.0008	0.0009
10%	0.0015	0.001	0.0011	0.0012
25%	0.0018	0.0017	0.0018	0.0019
50%	0.0022	0.0025	0.0027	0.0029
75%	0.0026	0.0034	0.0039	0.0042
90%	0.003	0.0044	0.0052	0.0055
95%	0.0032	0.0051	0.0061	0.0065
99%	0.0037	0.0064	0.0078	0.0086
max	0.0051	0.011	0.0135	0.0145

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

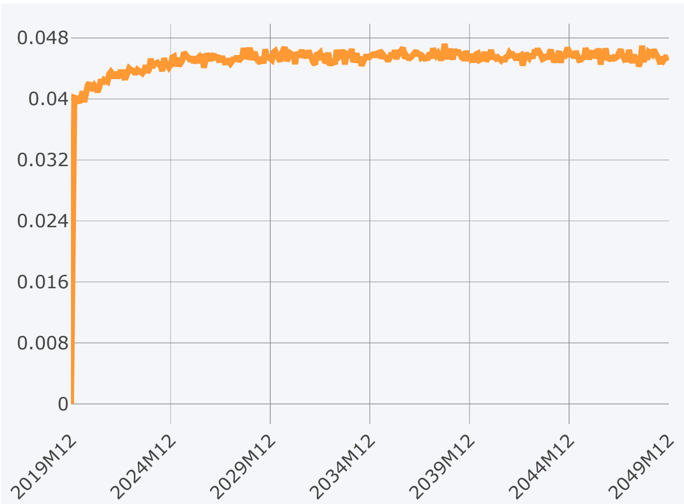
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

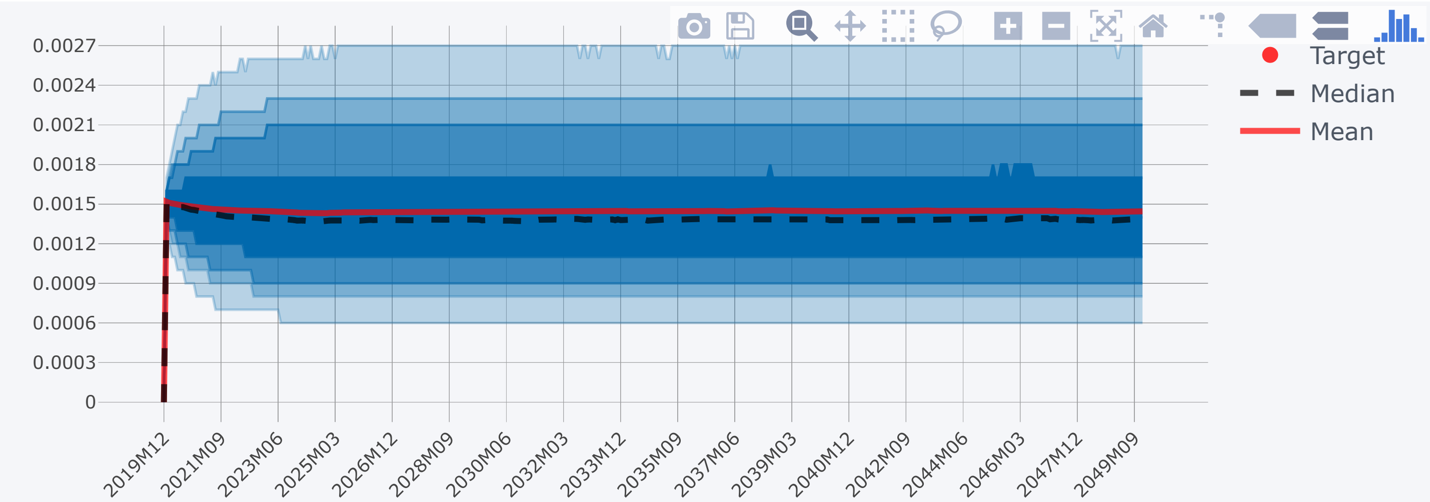
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0047	0.005	0.0061	0.0058
std	0.0412	0.0453	0.0459	0.0455
min	-0.2512	-0.2886	-0.3088	-0.318
1%	-0.1334	-0.1482	-0.1457	-0.1486
5%	-0.0674	-0.0756	-0.0744	-0.0744
10%	-0.0406	-0.0436	-0.0429	-0.0445
25%	-0.0134	-0.0136	-0.0126	-0.0126
50%	0.0073	0.0083	0.0086	0.0092
75%	0.0277	0.0287	0.0305	0.0303
90%	0.0491	0.0524	0.0552	0.0537
95%	0.0649	0.0692	0.0719	0.0712
99%	0.0997	0.1163	0.1125	0.1125
max	0.1973	0.2314	0.2491	0.2133

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

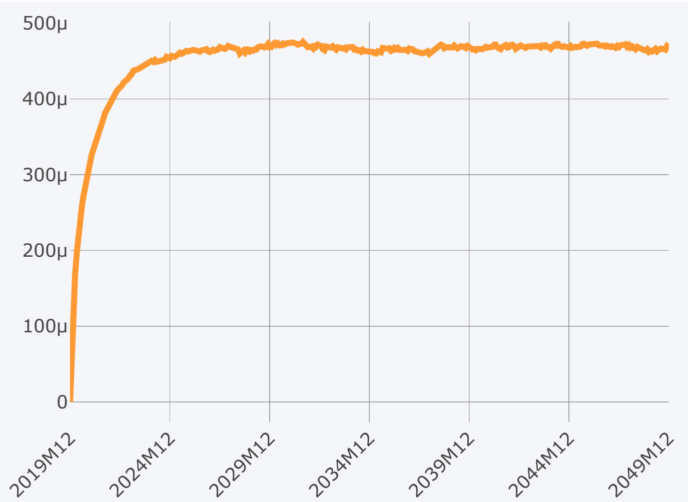
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

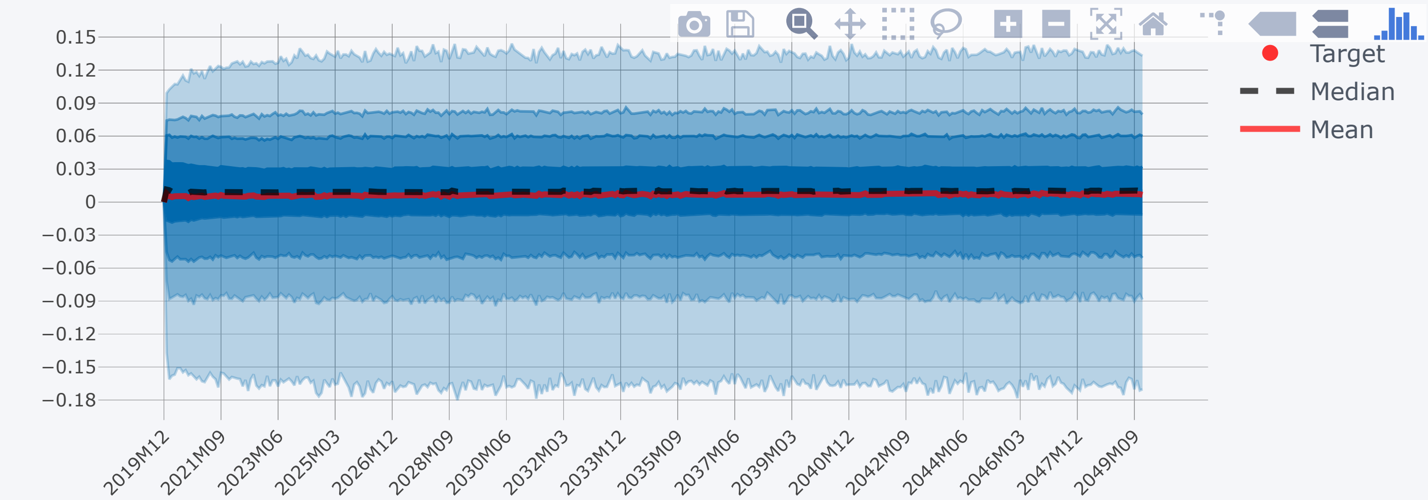
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0015	0.0014	0.0015	0.0014
std	0.0003	0.0005	0.0005	0.0005
min	0.0005	0.0004	0.0003	0.0003
1%	0.0008	0.0006	0.0006	0.0006
5%	0.001	0.0008	0.0008	0.0008
10%	0.0011	0.0009	0.0009	0.0009
25%	0.0012	0.0011	0.0011	0.0011
50%	0.0014	0.0014	0.0014	0.0014
75%	0.0017	0.0017	0.0017	0.0017
90%	0.0019	0.0021	0.0021	0.0021
95%	0.002	0.0023	0.0023	0.0023
99%	0.0023	0.0027	0.0027	0.0027
max	0.0029	0.0033	0.0034	0.0034

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

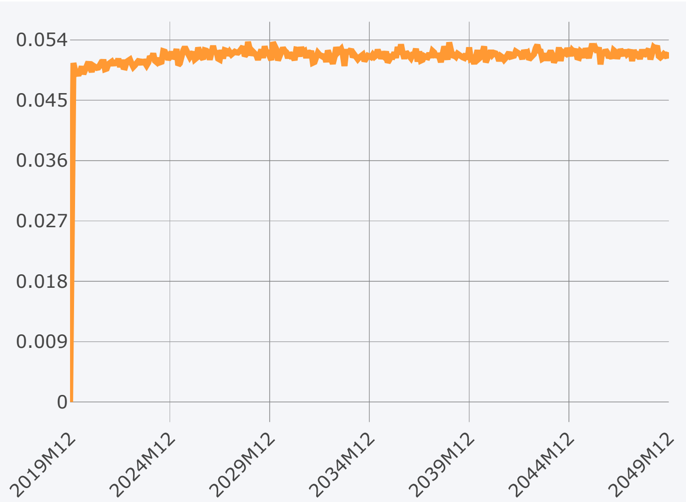
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

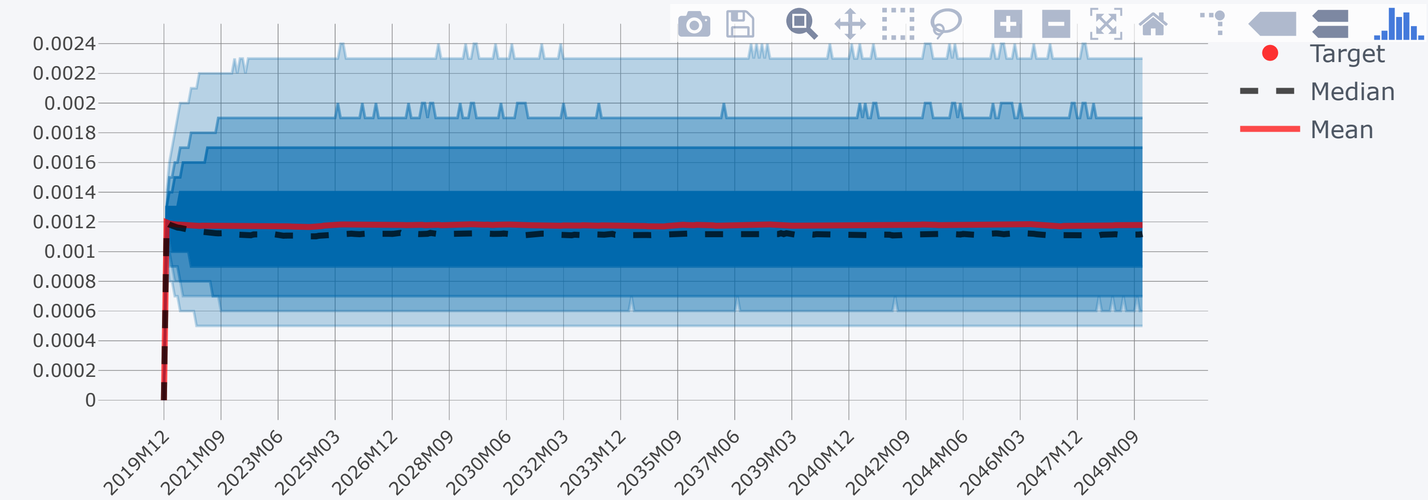
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0053	0.0055	0.0069	0.0066
std	0.0499	0.0516	0.0529	0.0522
min	-0.2837	-0.311	-0.4122	-0.3471
1%	-0.1611	-0.1665	-0.1706	-0.1702
5%	-0.085	-0.0888	-0.0884	-0.0887
10%	-0.0519	-0.0501	-0.0473	-0.0507
25%	-0.0155	-0.0124	-0.0116	-0.0113
50%	0.0092	0.0092	0.0099	0.0104
75%	0.0328	0.0293	0.0311	0.032
90%	0.0594	0.0577	0.0616	0.0601
95%	0.0774	0.0793	0.0849	0.0797
99%	0.1183	0.1347	0.136	0.133
max	0.2328	0.3286	0.361	0.2871

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

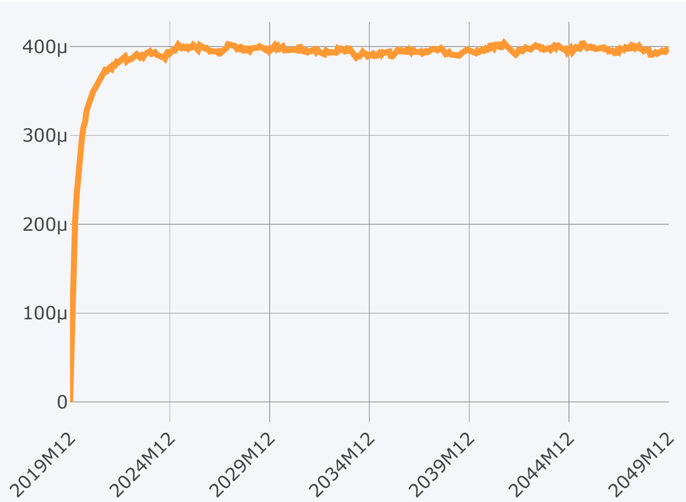
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

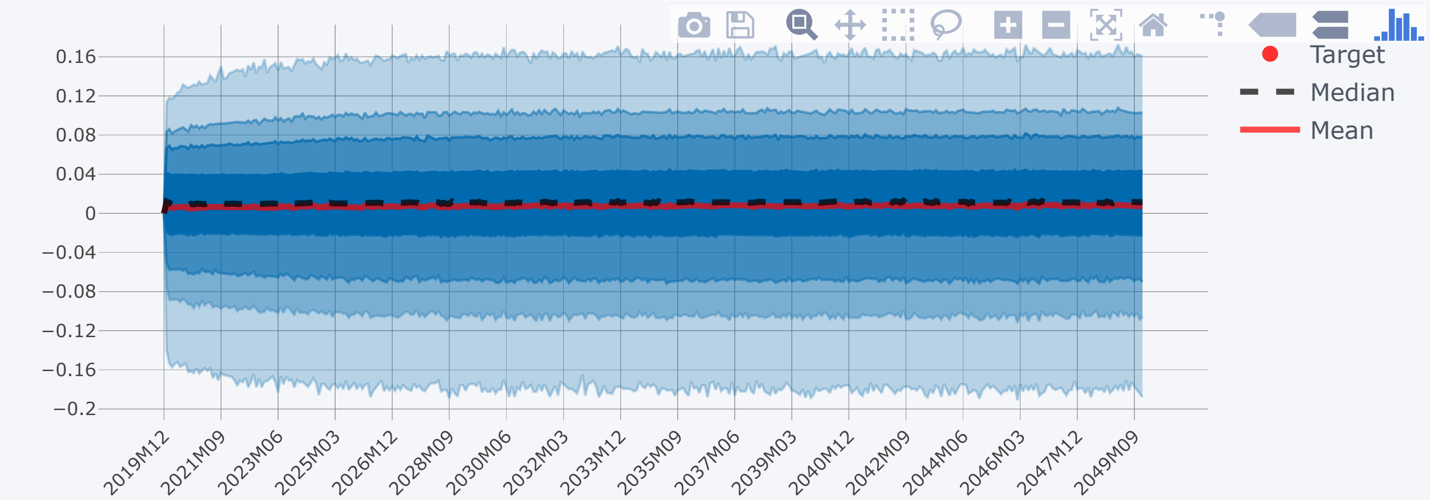
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0012	0.0012	0.0012	0.0012
std	0.0003	0.0004	0.0004	0.0004
min	0.0003	0.0003	0.0003	0.0002
1%	0.0005	0.0005	0.0005	0.0005
5%	0.0007	0.0006	0.0006	0.0006
10%	0.0008	0.0007	0.0007	0.0007
25%	0.0009	0.0009	0.0009	0.0009
50%	0.0011	0.0011	0.0011	0.0011
75%	0.0014	0.0014	0.0014	0.0014
90%	0.0016	0.0017	0.0017	0.0017
95%	0.0018	0.0019	0.0019	0.0019
99%	0.0021	0.0023	0.0023	0.0023
max	0.0028	0.0035	0.0032	0.0038

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

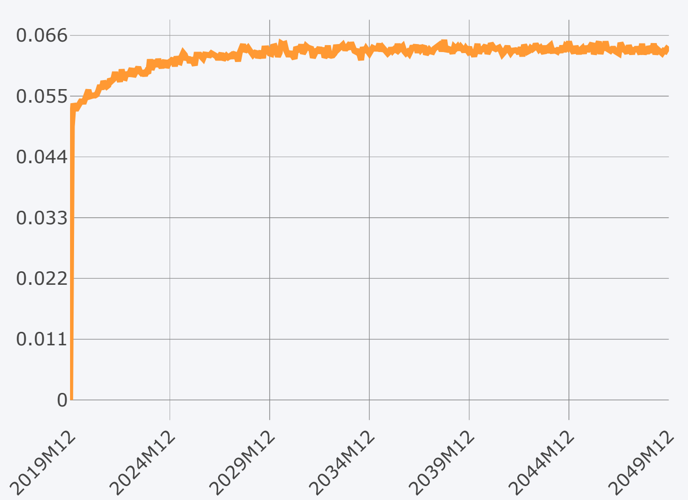
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

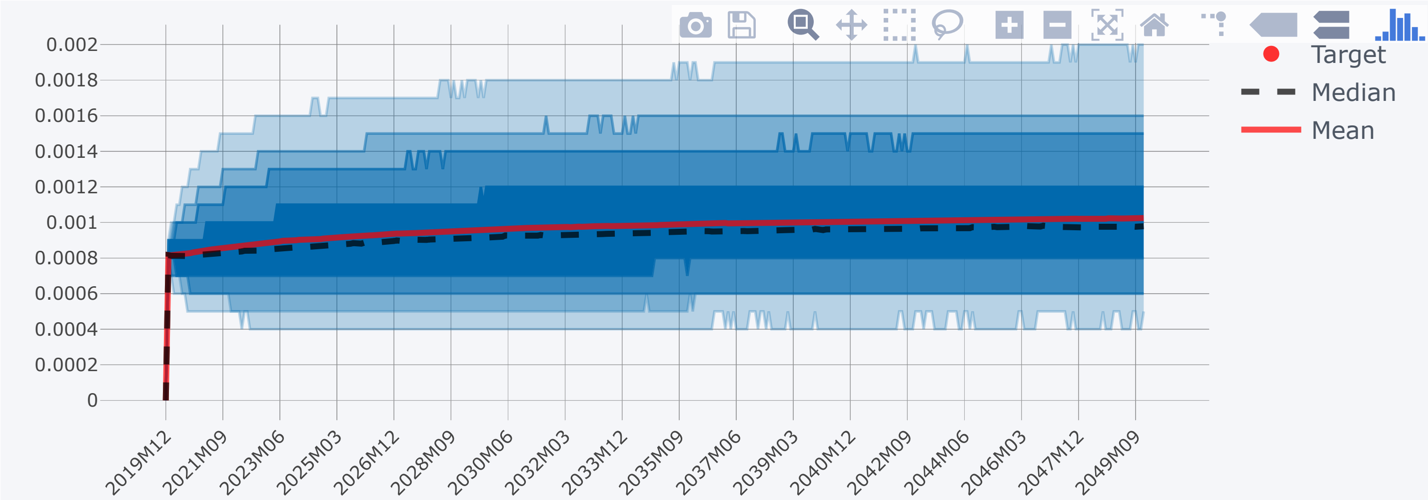
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0062	0.0063	0.0083	0.0071
std	0.055	0.0627	0.0639	0.064
min	-0.3244	-0.3104	-0.4092	-0.3643
1%	-0.1584	-0.1824	-0.1785	-0.1879
5%	-0.0914	-0.1047	-0.1052	-0.1057
10%	-0.0607	-0.0682	-0.068	-0.07
25%	-0.0211	-0.0235	-0.0228	-0.0228
50%	0.01	0.0104	0.0117	0.0114
75%	0.0381	0.0409	0.0442	0.0433
90%	0.0688	0.0746	0.079	0.0773
95%	0.0897	0.101	0.1049	0.1029
99%	0.1308	0.1614	0.167	0.1609
max	0.2531	0.3629	0.4265	0.3263

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

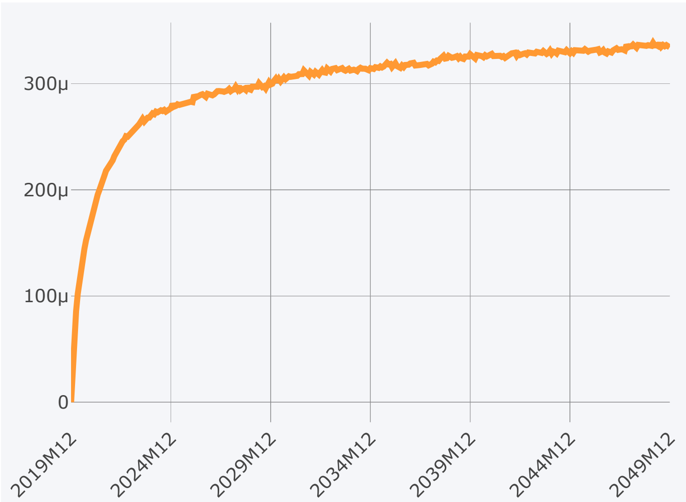
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

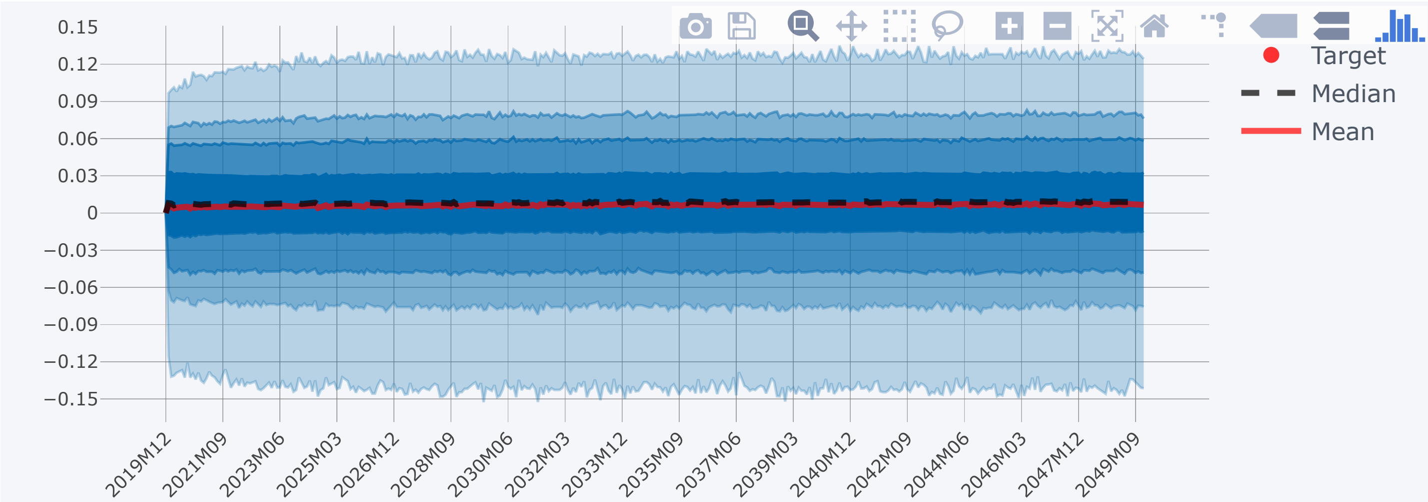
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0008	0.001	0.001	0.001
std	0.0002	0.0003	0.0003	0.0003
min	0.0004	0.0003	0.0003	0.0003
1%	0.0005	0.0004	0.0004	0.0005
5%	0.0006	0.0005	0.0006	0.0006
10%	0.0006	0.0006	0.0006	0.0006
25%	0.0007	0.0007	0.0008	0.0008
50%	0.0008	0.0009	0.001	0.001
75%	0.0009	0.0012	0.0012	0.0012
90%	0.0011	0.0014	0.0015	0.0015
95%	0.0012	0.0015	0.0016	0.0016
99%	0.0013	0.0018	0.0019	0.002
max	0.0018	0.0023	0.0027	0.0025

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

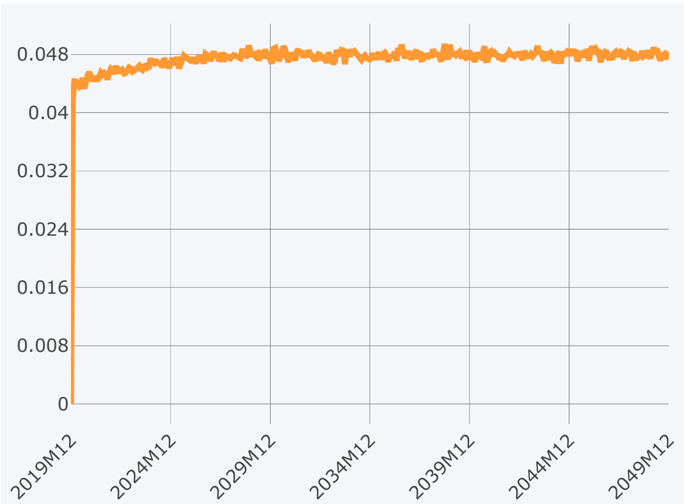
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

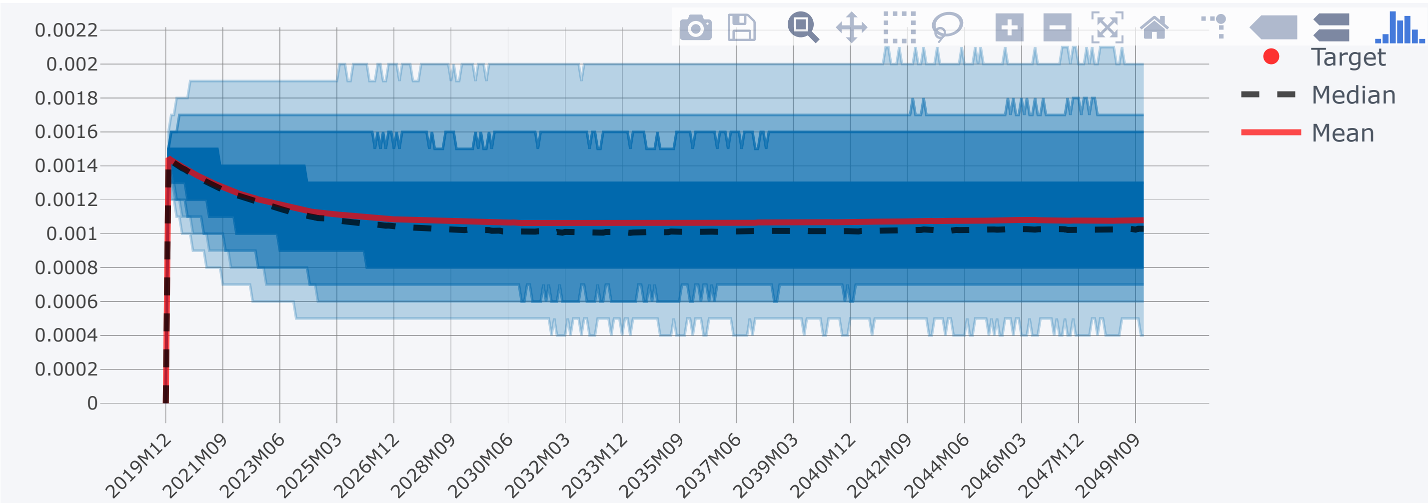
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.005	0.0055	0.0065	0.0065
std	0.0446	0.0473	0.0485	0.0477
min	-0.2619	-0.2727	-0.3065	-0.3262
1%	-0.1288	-0.1434	-0.1475	-0.1414
5%	-0.0705	-0.0747	-0.0769	-0.0757
10%	-0.0467	-0.0472	-0.0465	-0.0479
25%	-0.0171	-0.0156	-0.0152	-0.0144
50%	0.0066	0.0077	0.0084	0.0088
75%	0.0311	0.03	0.0316	0.0324
90%	0.0554	0.0567	0.0592	0.0583
95%	0.0725	0.0767	0.0789	0.0762
99%	0.1111	0.1267	0.1265	0.1243
max	0.2208	0.2625	0.3362	0.2362

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

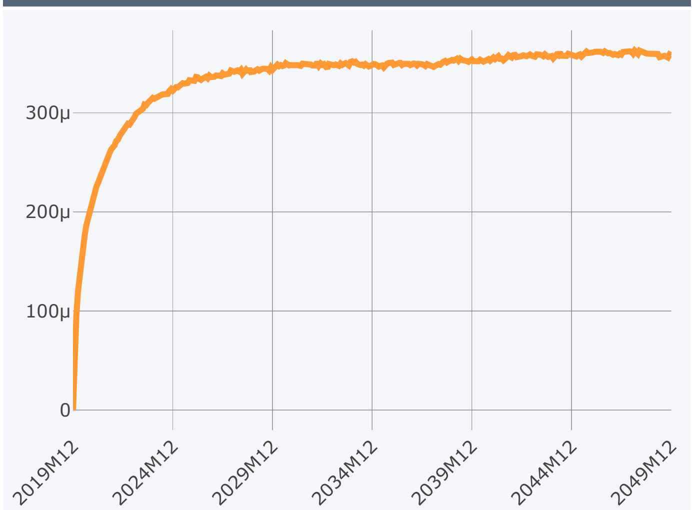
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

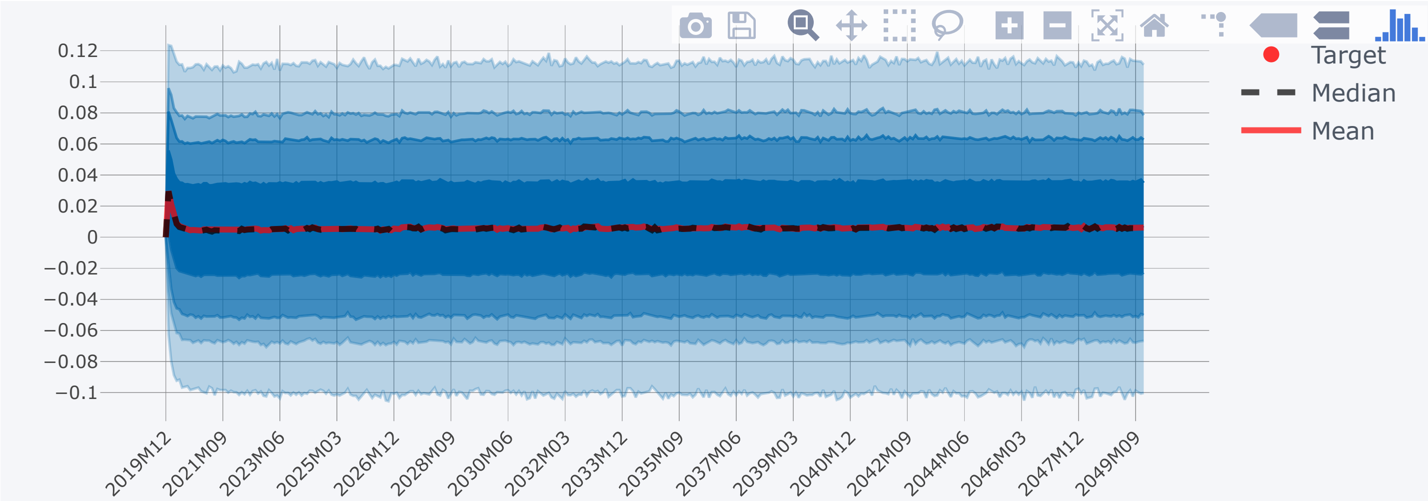
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0013	0.0011	0.0011	0.0011
std	0.0002	0.0003	0.0004	0.0004
min	0.0007	0.0003	0.0003	0.0003
1%	0.0009	0.0005	0.0005	0.0004
5%	0.001	0.0006	0.0006	0.0006
10%	0.0011	0.0007	0.0007	0.0007
25%	0.0012	0.0008	0.0008	0.0008
50%	0.0013	0.001	0.001	0.001
75%	0.0015	0.0013	0.0013	0.0013
90%	0.0016	0.0015	0.0016	0.0016
95%	0.0017	0.0017	0.0017	0.0017
99%	0.0019	0.002	0.002	0.002
max	0.0024	0.0025	0.0028	0.0026

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

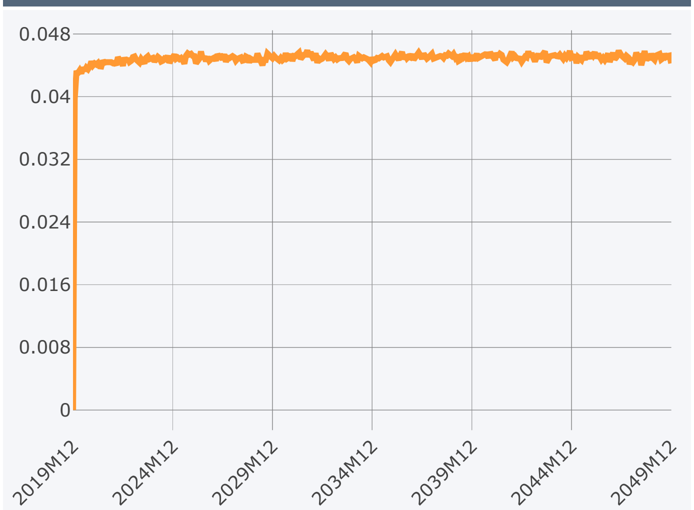
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

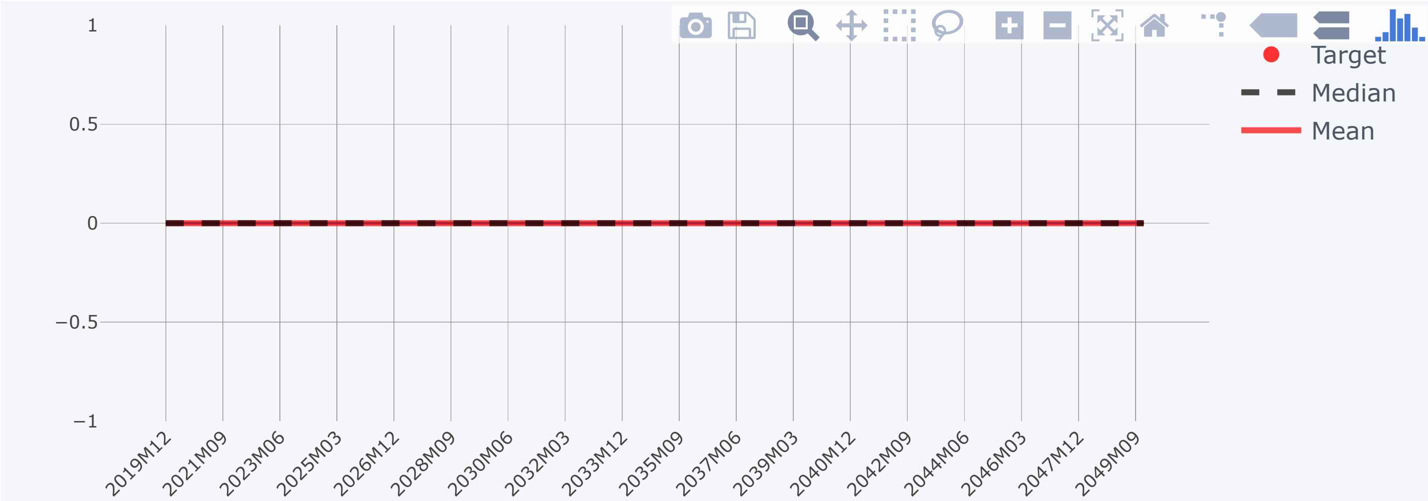
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0049	0.0064	0.0062	0.0062
std	0.044	0.0449	0.0453	0.0443
min	-0.1971	-0.1802	-0.1878	-0.1857
1%	-0.0968	-0.1009	-0.1002	-0.1002
5%	-0.0665	-0.0665	-0.0677	-0.0667
10%	-0.0509	-0.0497	-0.0513	-0.0501
25%	-0.0243	-0.0231	-0.0233	-0.0228
50%	0.0044	0.0061	0.0061	0.0062
75%	0.034	0.0358	0.0357	0.035
90%	0.061	0.0641	0.0643	0.0628
95%	0.0778	0.0809	0.0804	0.0785
99%	0.1114	0.1145	0.1126	0.111
max	0.1804	0.1764	0.192	0.1857

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

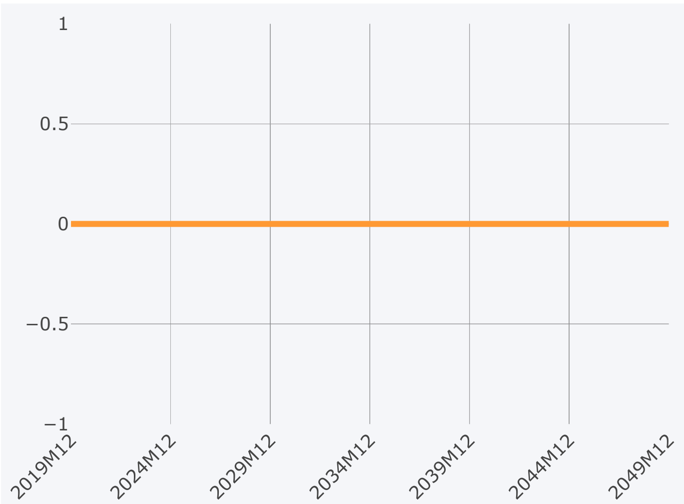
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

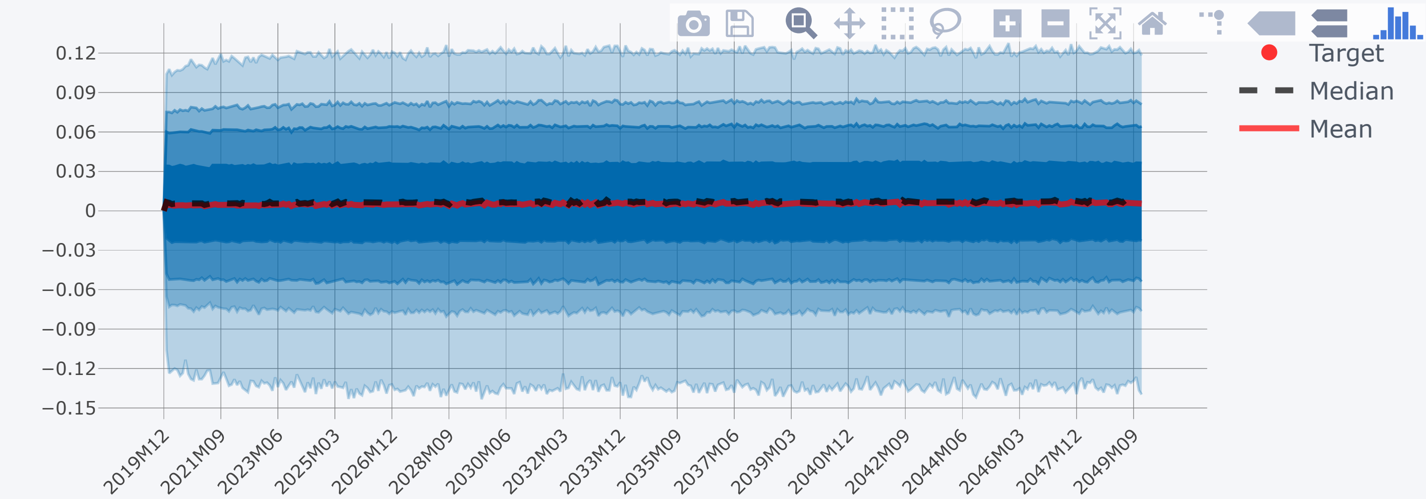
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0	0	0	0
std	0	0	0	0
min	0	0	0	0
1%	0	0	0	0
5%	0	0	0	0
10%	0	0	0	0
25%	0	0	0	0
50%	0	0	0	0
75%	0	0	0	0
90%	0	0	0	0
95%	0	0	0	0
99%	0	0	0	0
max	0	0	0	0

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

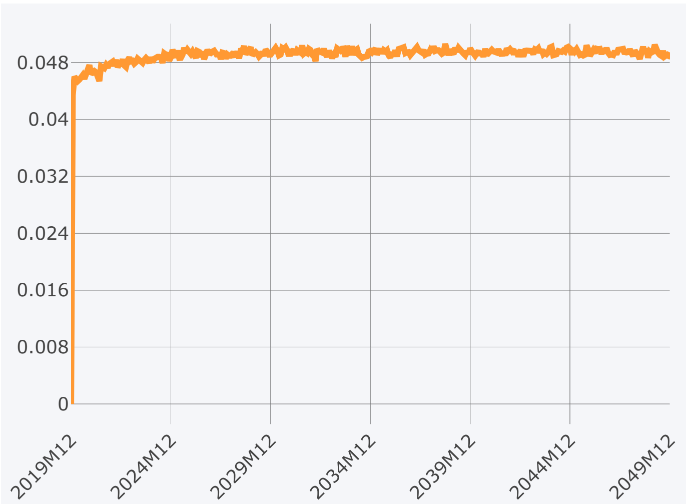
Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

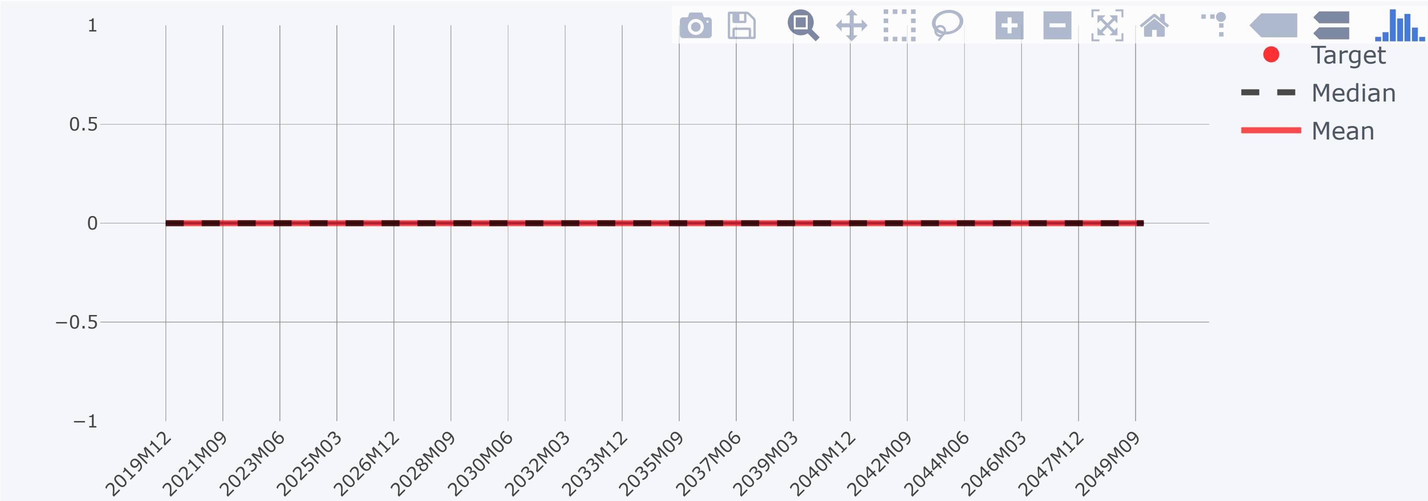
Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0.0045	0.0048	0.005	0.0055
std	0.0464	0.0491	0.05	0.0494
min	-0.2211	-0.2745	-0.2763	-0.2826
1%	-0.1208	-0.1386	-0.138	-0.1398
5%	-0.0737	-0.0769	-0.0792	-0.0764
10%	-0.0521	-0.0534	-0.0538	-0.0538
25%	-0.0238	-0.0229	-0.0233	-0.0227
50%	0.0063	0.006	0.0062	0.007
75%	0.034	0.0353	0.0362	0.0364
90%	0.0605	0.0625	0.0643	0.0642
95%	0.0783	0.0802	0.0819	0.081
99%	0.1093	0.1196	0.1238	0.1183
max	0.2088	0.2405	0.2977	0.2156

Cross Sectional Volatility Over Time



Simulated Data in Percentiles



Simulated Data: There are 360 Time Periods. Percentiles, Mean and Median are calculated across 10000 PATHS.

Percentiles Plotted :1%, 5%, 10%, 25%, 50%, 75%, 90%, 95%, 99%

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

Simulation Summary

	2020-12-31	2029-12-31	2039-12-31	2049-12-31
mean	0	0	0	0
std	0	0	0	0
min	0	0	0	0
1%	0	0	0	0
5%	0	0	0	0
10%	0	0	0	0
25%	0	0	0	0
50%	0	0	0	0
75%	0	0	0	0
90%	0	0	0	0
95%	0	0	0	0
99%	0	0	0	0
max	0	0	0	0

Cross Sectional Volatility Over Time