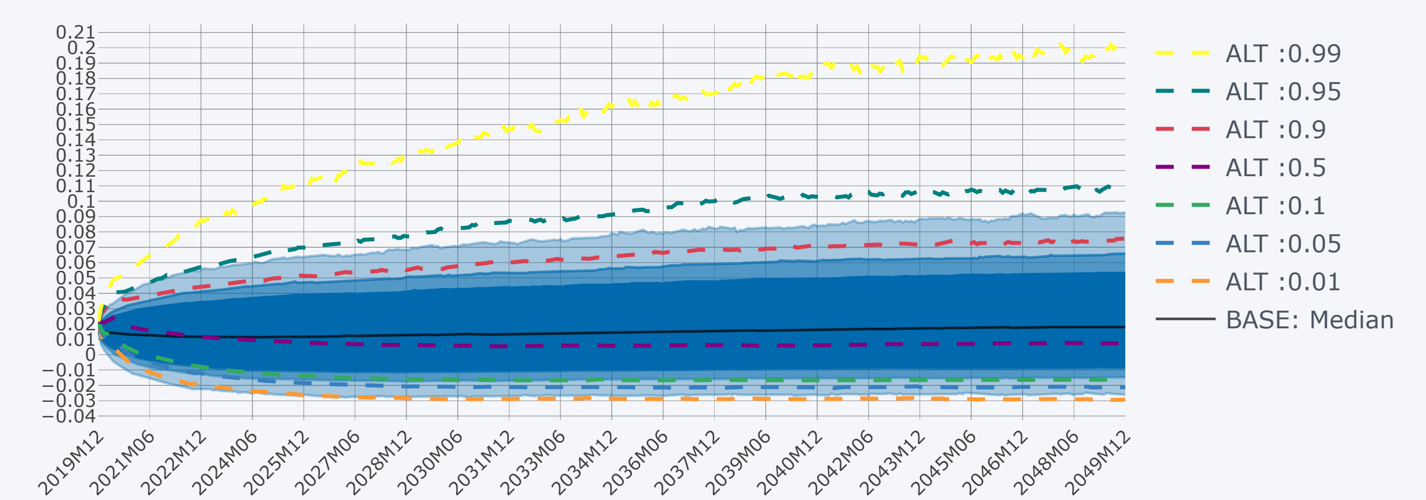
US Treasury 1 Month Yield - Coupon

Conning | Risk Solutions

2019 Q4

Validation Report

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



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

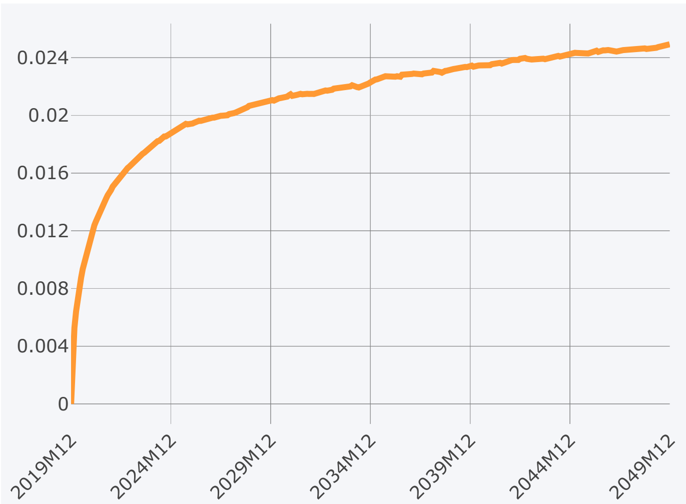
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

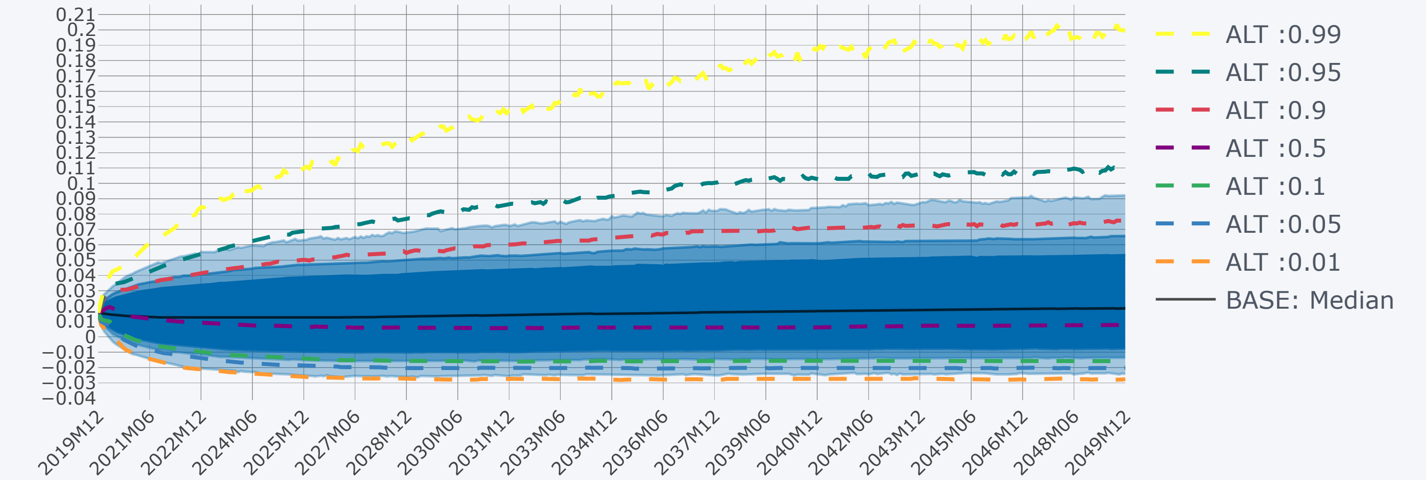
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0134	0.0207	0.0188	0.0213
std	0.0117	0.0249	0.0135	0.0464
min	-0.0266	-0.0459	-0.0198	-0.0411
1%	-0.0124	-0.0261	-0.0073	-0.0292
5%	-0.0052	-0.0148	-0.001	-0.0212
10%	-0.0014	-0.0085	0.0027	-0.0163
50%	0.0132	0.018	0.0175	0.0074
90%	0.0285	0.0532	0.0366	0.0756
95%	0.0328	0.0658	0.043	0.1101
99%	0.0416	0.0927	0.0552	0.1992
max	0.0671	0.1666	0.0909	0.5297

Cross Sectional Volatility Over Time : BASE



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



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

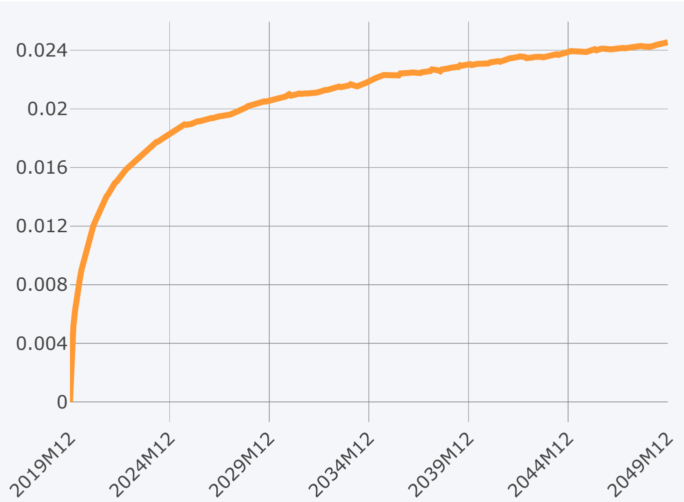
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0138	0.0213	0.0144	0.0216
std	0.0113	0.0245	0.0133	0.0463
min	-0.0247	-0.0451	-0.0228	-0.0408
1%	-0.0113	-0.0242	-0.0111	-0.0275
5%	-0.0043	-0.0136	-0.0048	-0.0202
10%	-0.0005	-0.0076	-0.0014	-0.0155
50%	0.0135	0.0186	0.013	0.0077
90%	0.0285	0.0532	0.0319	0.0757
95%	0.0327	0.0657	0.0384	0.1101
99%	0.0411	0.0922	0.0503	0.1994
max	0.0669	0.1681	0.086	0.5308

Cross Sectional Volatility Over Time : BASE



US Treasury 6 Month Yield - Coupon

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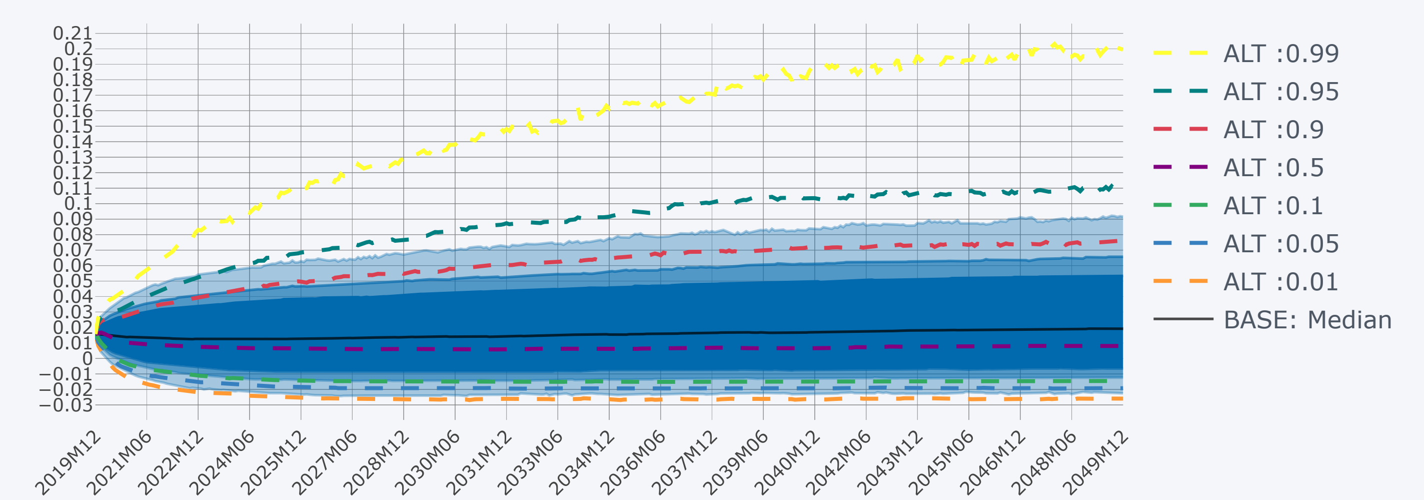
Simulated Data in Percentiles : US Treasury 6 Month Yield - Coupon



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

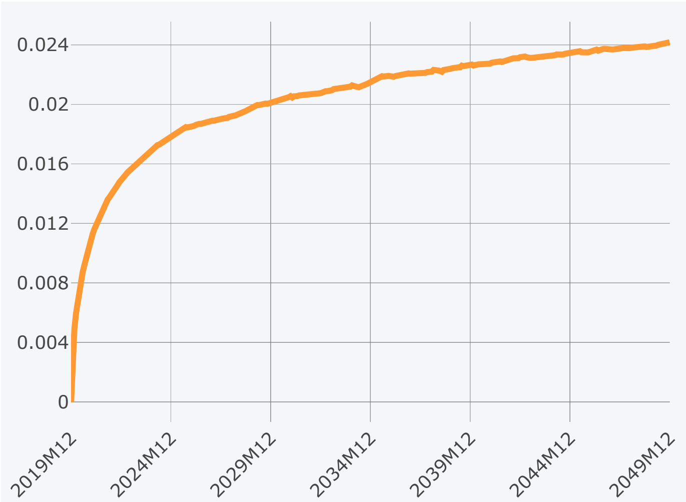
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

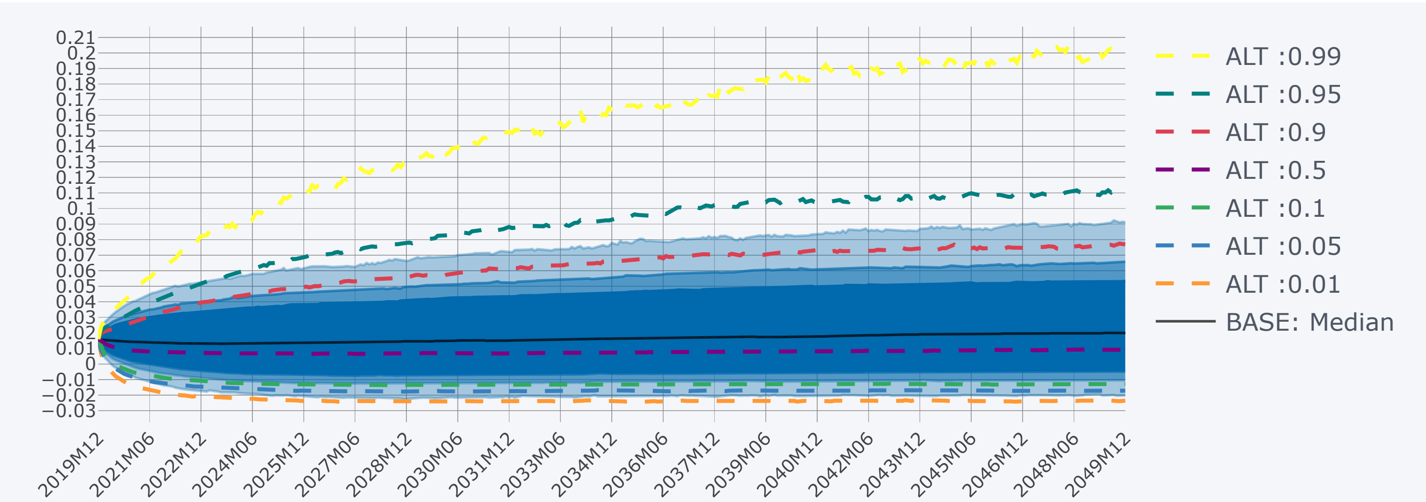
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0141	0.0218	0.0115	0.0223
std	0.0109	0.0242	0.0131	0.0462
min	-0.0229	-0.0438	-0.0245	-0.0397
1%	-0.0101	-0.0225	-0.0133	-0.0259
5%	-0.0033	-0.0124	-0.0073	-0.0192
10%	0.0004	-0.0065	-0.0041	-0.0145
50%	0.0139	0.0192	0.01	0.0081
90%	0.0284	0.0533	0.0287	0.0762
95%	0.0325	0.0657	0.0352	0.1104
99%	0.0407	0.0916	0.0472	0.1995
max	0.0661	0.1691	0.0827	0.5318

Cross Sectional Volatility Over Time : BASE



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



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

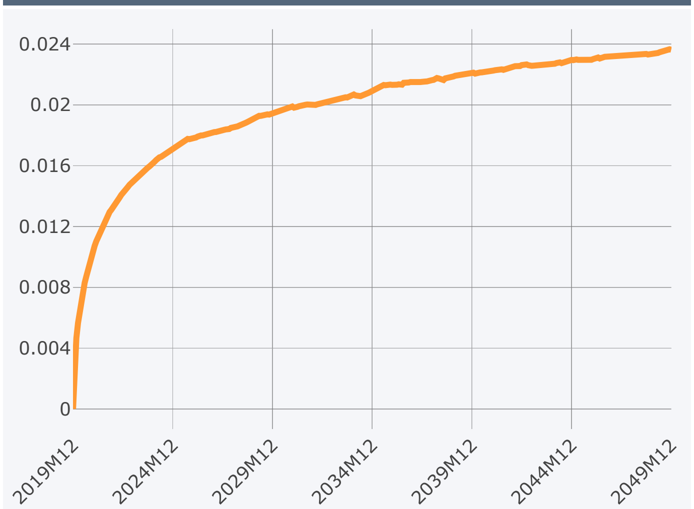
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0146	0.0227	0.0101	0.0235
std	0.0104	0.0236	0.0128	0.046
min	-0.0211	-0.041	-0.0248	-0.037
1%	-0.0083	-0.0202	-0.0139	-0.0235
5%	-0.0019	-0.0105	-0.0082	-0.0171
10%	0.0016	-0.0048	-0.0052	-0.0128
50%	0.0144	0.02	0.0086	0.0091
90%	0.0281	0.0535	0.0271	0.0769
95%	0.0322	0.0658	0.0333	0.1112
99%	0.0401	0.0913	0.0453	0.2007
max	0.0644	0.1698	0.081	0.5326

Cross Sectional Volatility Over Time : BASE



US Treasury 2 Year Yield - Coupon

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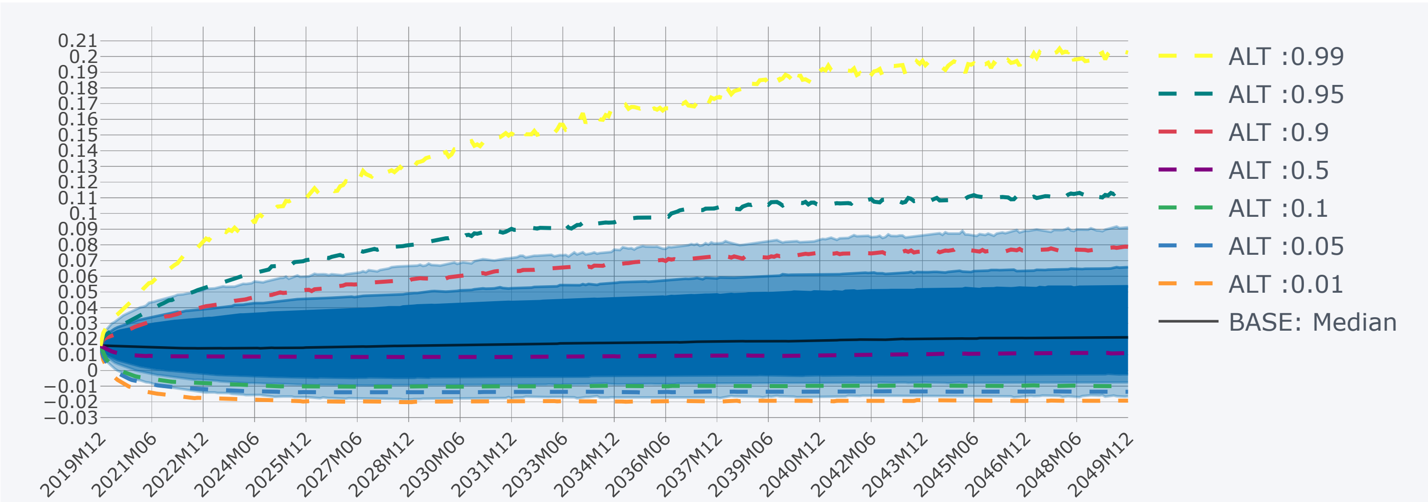
Simulated Data in Percentiles : US Treasury 2 Year Yield - Coupon



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

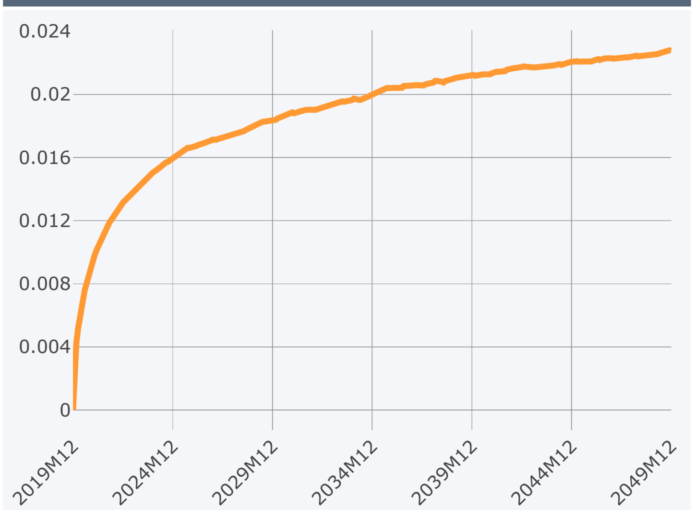
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

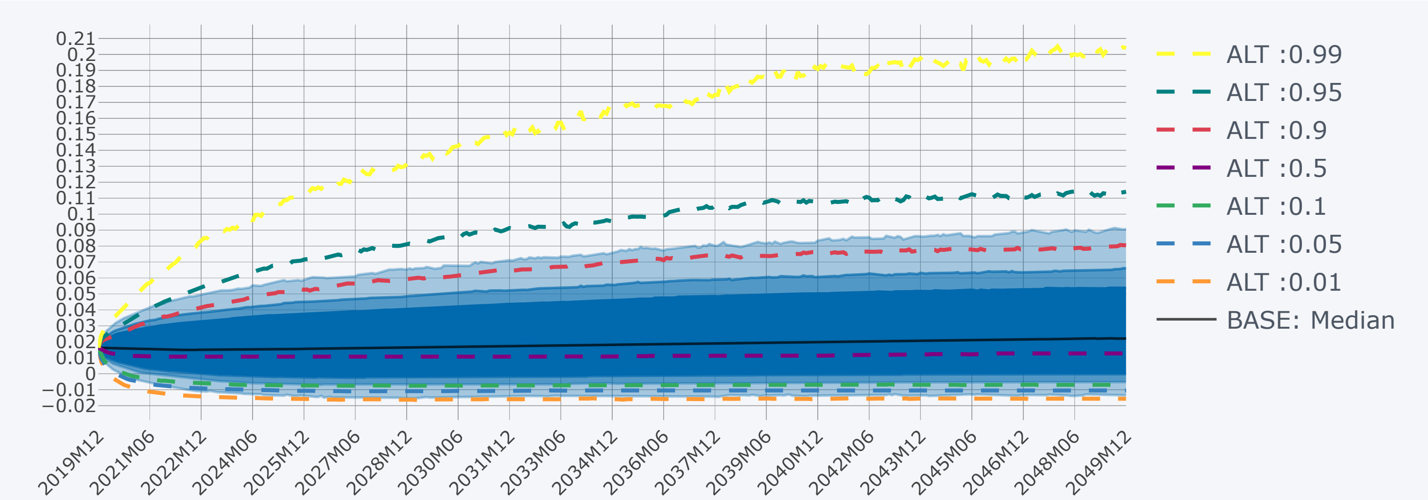
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0154	0.024	0.0111	0.0258
std	0.0095	0.0228	0.0125	0.0456
min	-0.0177	-0.0356	-0.0219	-0.0315
1%	-0.0057	-0.0165	-0.0116	-0.0192
5%	0.0002	-0.0077	-0.0065	-0.0136
10%	0.0034	-0.0024	-0.0036	-0.0096
50%	0.0152	0.0211	0.0095	0.0111
90%	0.0278	0.0536	0.0277	0.0788
95%	0.0313	0.0658	0.0337	0.113
99%	0.0386	0.0912	0.0458	0.2025
max	0.0609	0.1699	0.0816	0.5325

Cross Sectional Volatility Over Time : BASE



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



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

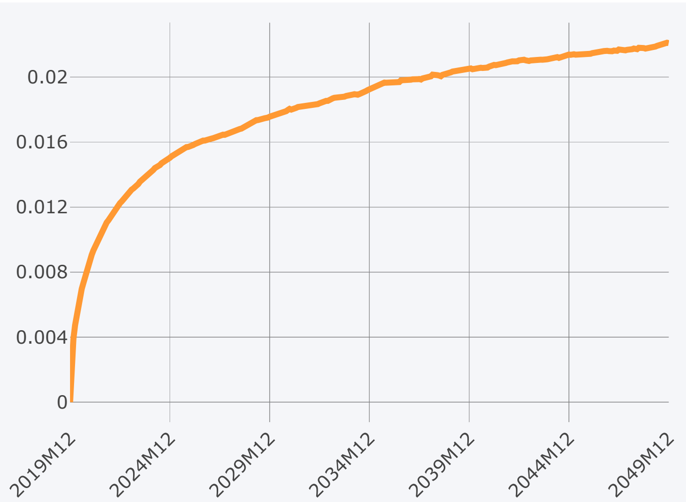
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

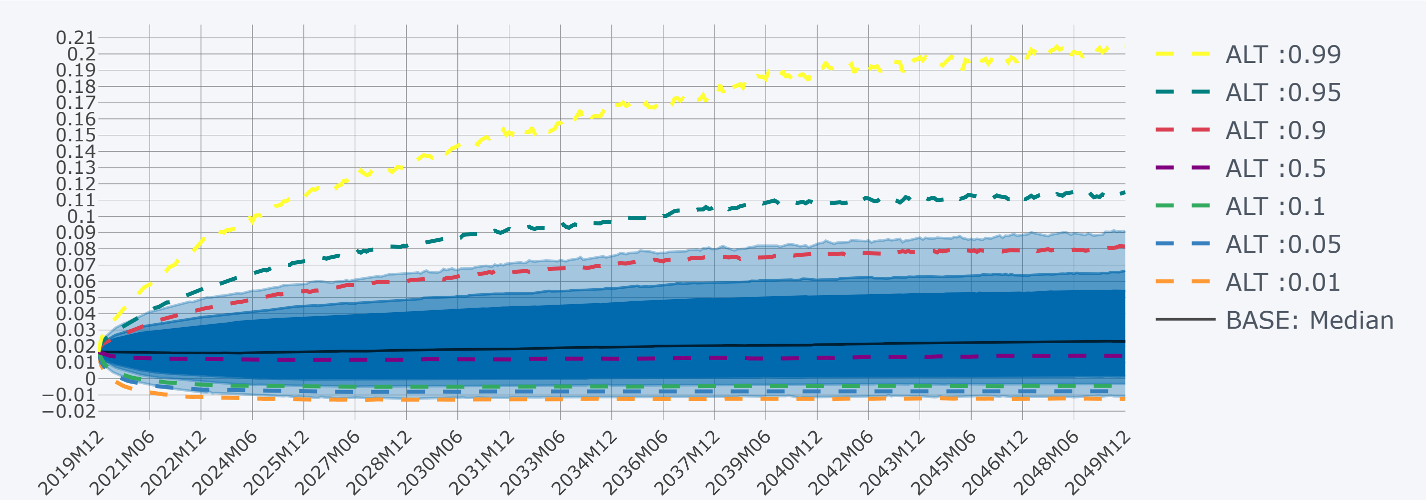
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.016	0.0251	0.0127	0.0277
std	0.0088	0.0221	0.0121	0.0451
min	-0.0147	-0.0309	-0.0185	-0.0267
1%	-0.0033	-0.0135	-0.009	-0.0156
5%	0.0021	-0.0052	-0.0042	-0.0105
10%	0.0049	-0.0002	-0.0015	-0.0069
50%	0.0158	0.0221	0.0111	0.0127
90%	0.0273	0.0538	0.0289	0.0804
95%	0.0308	0.0661	0.0348	0.114
99%	0.0373	0.0907	0.0469	0.2039
max	0.058	0.1697	0.0826	0.5313

Cross Sectional Volatility Over Time : BASE



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



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

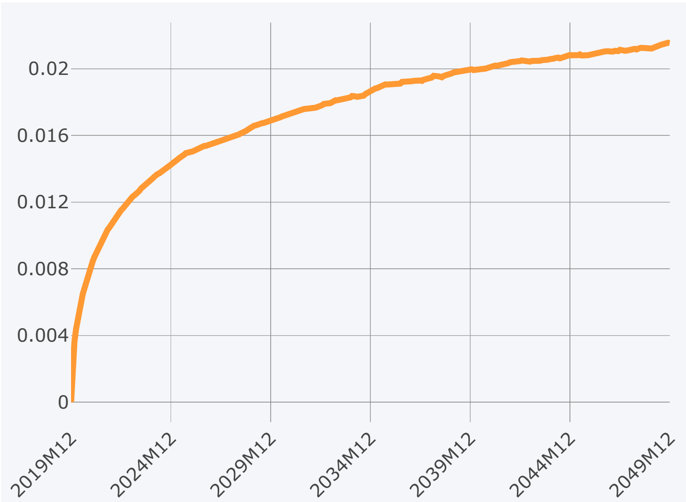
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0165	0.026	0.0143	0.0292
std	0.0082	0.0215	0.0118	0.0446
min	-0.0121	-0.0269	-0.0153	-0.0224
1%	-0.0013	-0.0109	-0.0064	-0.0125
5%	0.0037	-0.0032	-0.0021	-0.0078
10%	0.0063	0.0016	0.0006	-0.0044
50%	0.0163	0.0229	0.0128	0.014
90%	0.0271	0.054	0.0301	0.0814
95%	0.0303	0.0664	0.0358	0.1149
99%	0.0364	0.0911	0.048	0.2045
max	0.0556	0.1695	0.0836	0.5296

Cross Sectional Volatility Over Time : BASE



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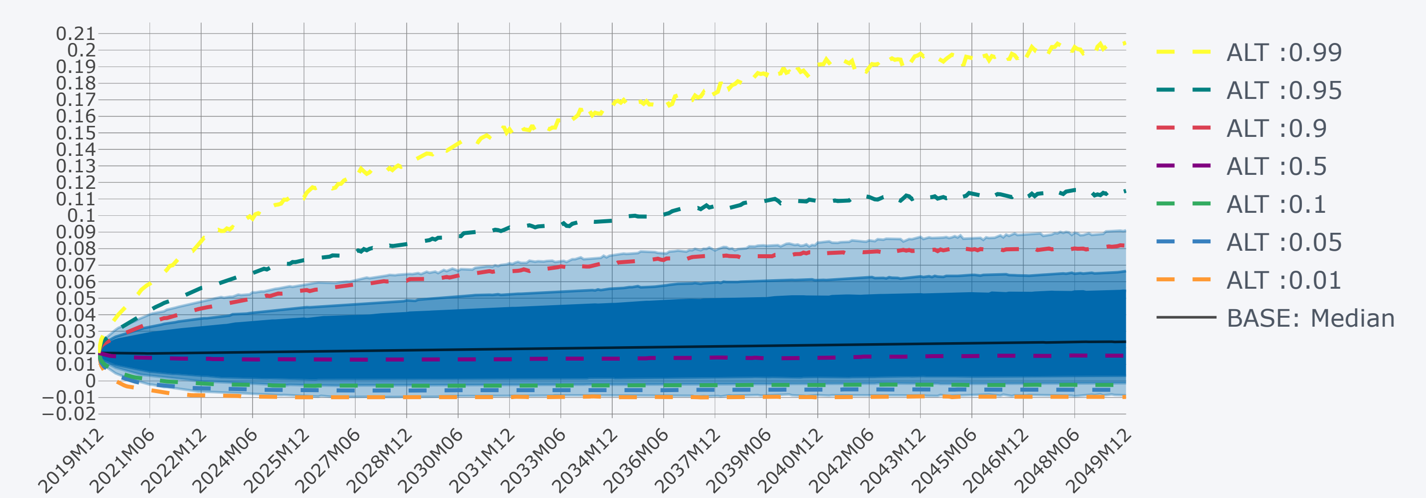
Simulated Data in Percentiles : US Treasury 5 Year Yield - Coupon



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

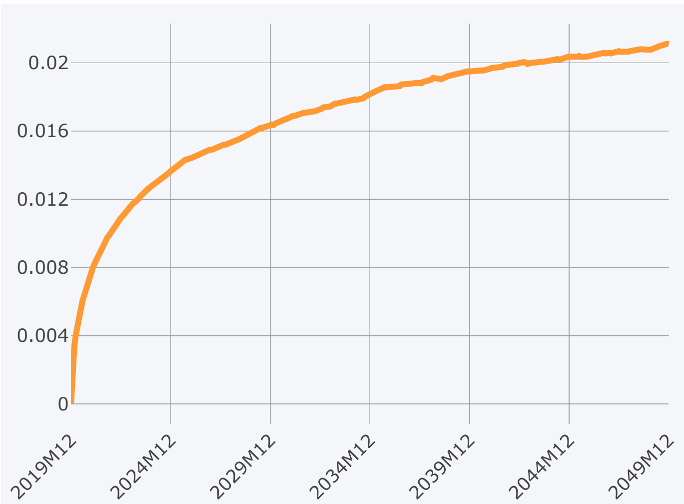
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

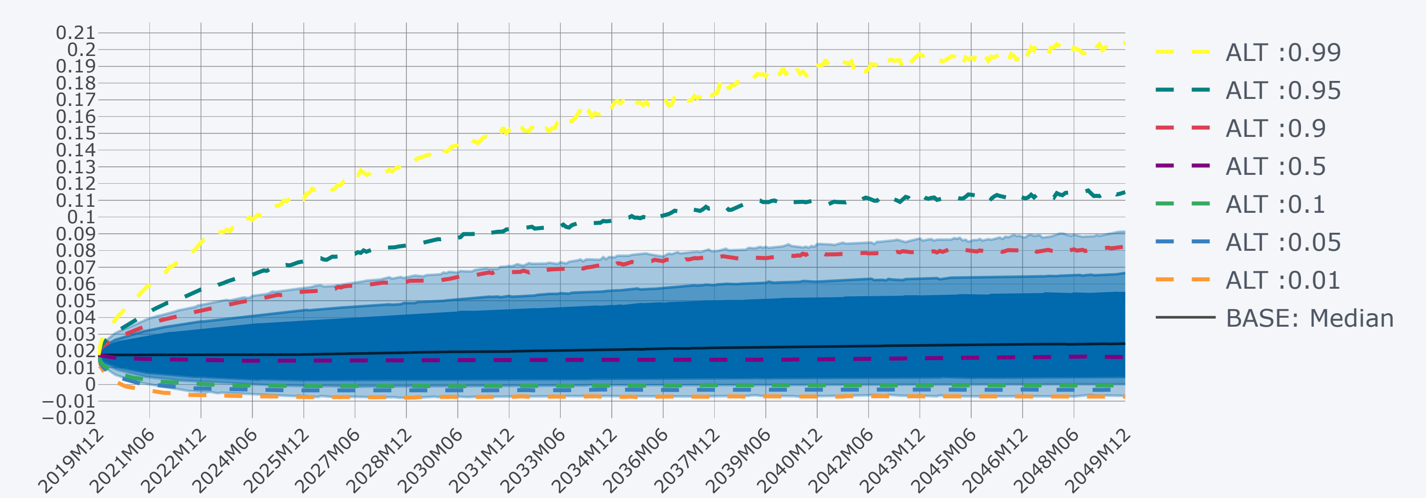
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0171	0.0268	0.0158	0.0305
std	0.0077	0.0211	0.0116	0.0441
min	-0.0098	-0.0233	-0.0124	-0.0187
1%	0.0005	-0.0087	-0.0042	-0.0097
5%	0.005	-0.0014	-0.0001	-0.0054
10%	0.0074	0.0032	0.0024	-0.0024
50%	0.0168	0.0237	0.0142	0.0153
90%	0.0269	0.0544	0.0312	0.0818
95%	0.03	0.0664	0.0368	0.1149
99%	0.0357	0.0911	0.0488	0.2046
max	0.0535	0.1692	0.0842	0.5277

Cross Sectional Volatility Over Time : BASE



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



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

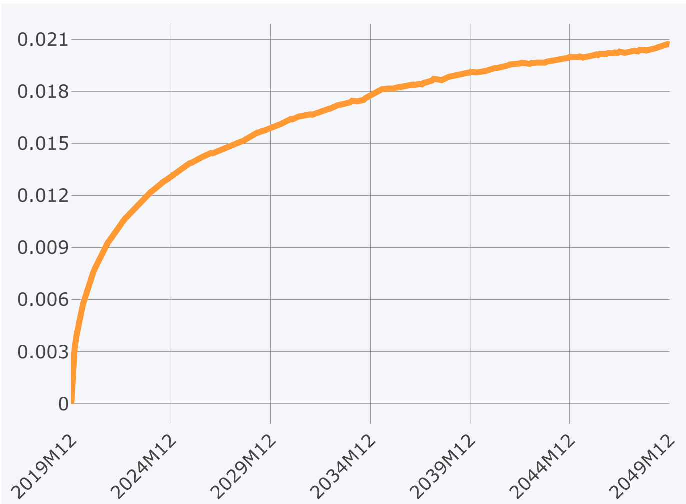
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

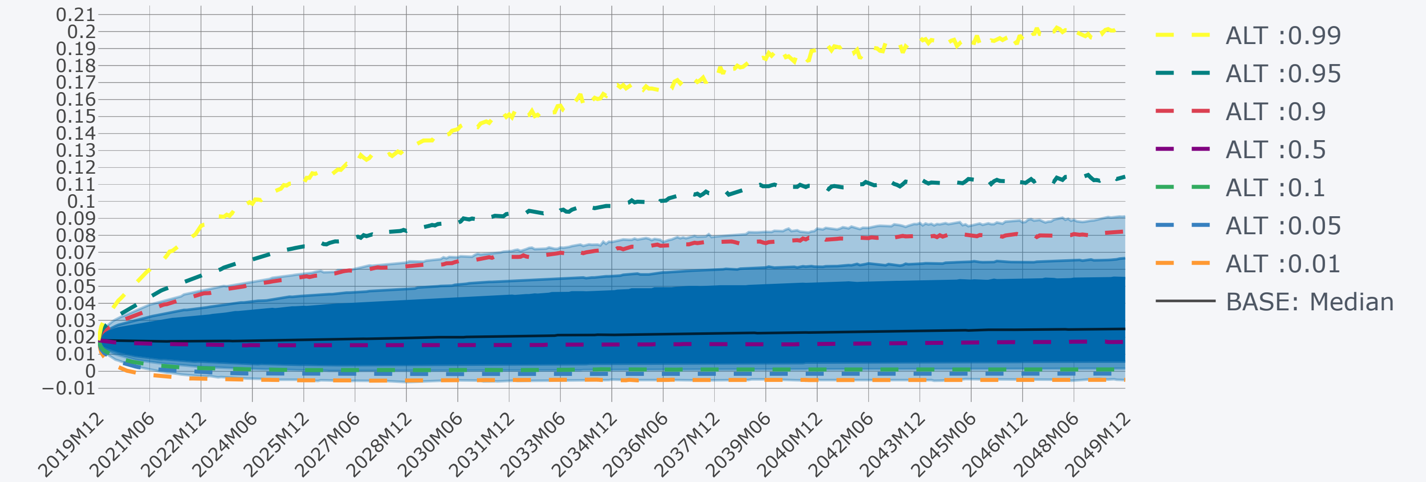
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0176	0.0276	0.0171	0.0316
std	0.0073	0.0207	0.0113	0.0435
min	-0.0077	-0.0202	-0.0098	-0.0154
1%	0.0019	-0.0068	-0.0022	-0.0072
5%	0.0061	0.0002	0.0016	-0.0032
10%	0.0084	0.0045	0.0041	-0.0006
50%	0.0173	0.0243	0.0155	0.0163
90%	0.0269	0.0545	0.0321	0.0824
95%	0.0298	0.0666	0.0376	0.1149
99%	0.0351	0.0913	0.0495	0.2042
max	0.0518	0.1689	0.0845	0.5259

Cross Sectional Volatility Over Time : BASE



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



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

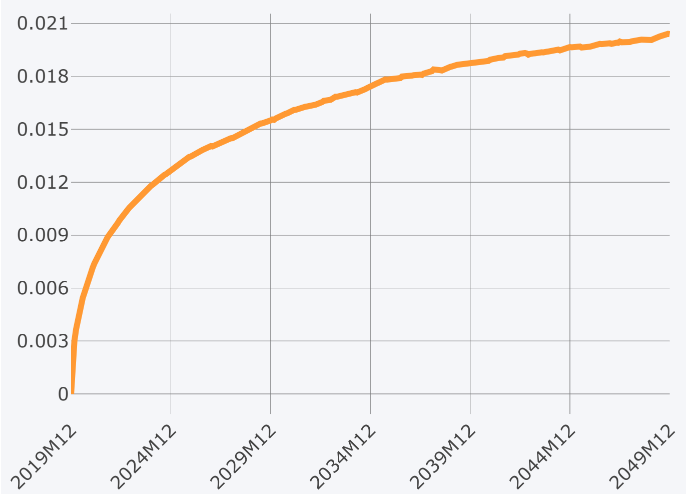
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

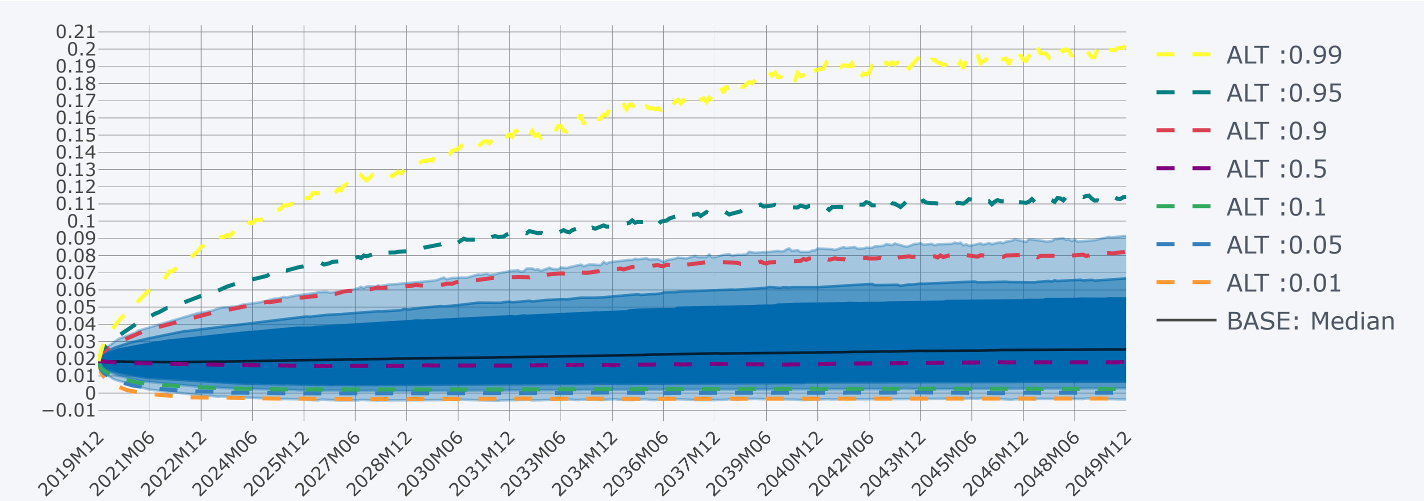
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.018	0.0282	0.0181	0.0325
std	0.0069	0.0204	0.011	0.043
min	-0.0059	-0.0174	-0.0075	-0.0126
1%	0.0032	-0.0052	-0.0005	-0.005
5%	0.0072	0.0015	0.0031	-0.0014
10%	0.0093	0.0057	0.0055	0.0011
50%	0.0178	0.0249	0.0166	0.0173
90%	0.027	0.0548	0.0327	0.0823
95%	0.0297	0.0666	0.0383	0.1146
99%	0.0348	0.0912	0.0498	0.2035
max	0.0504	0.1686	0.0846	0.5243

Cross Sectional Volatility Over Time : BASE



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



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

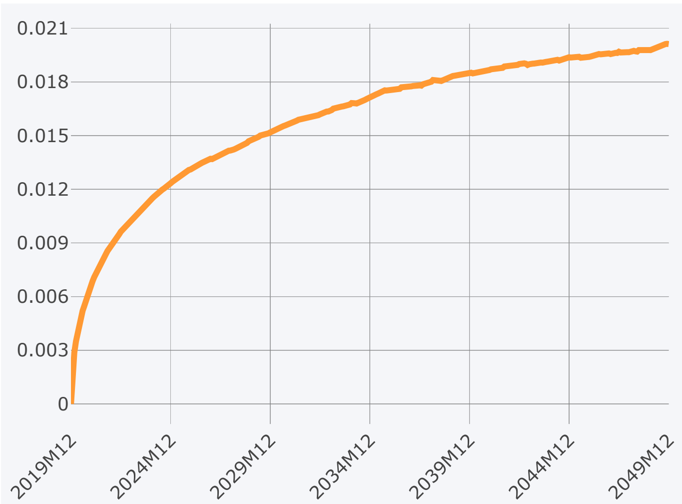
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

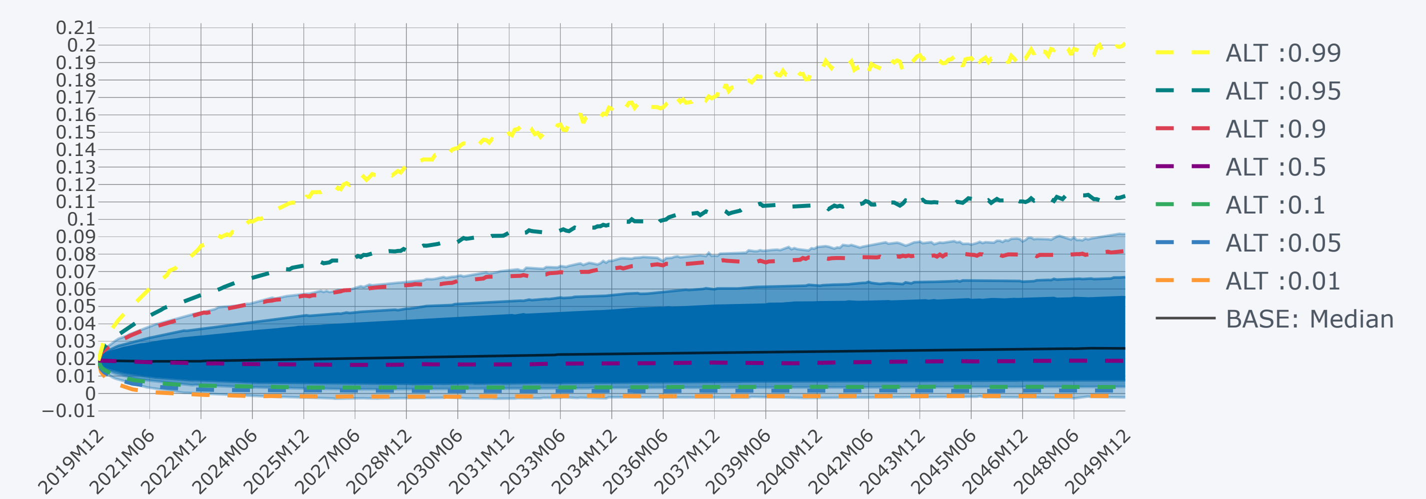
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0184	0.0289	0.0191	0.0332
std	0.0066	0.0201	0.0108	0.0424
min	-0.0043	-0.015	-0.0055	-0.0101
1%	0.0044	-0.0037	0.001	-0.0031
5%	0.0081	0.0028	0.0045	0.0002
10%	0.0101	0.0066	0.0067	0.0024
50%	0.0182	0.0254	0.0175	0.0181
90%	0.027	0.055	0.0334	0.0822
95%	0.0297	0.0667	0.0388	0.114
99%	0.0347	0.0914	0.0502	0.2023
max	0.0492	0.1684	0.0845	0.5228

Cross Sectional Volatility Over Time : BASE



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



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

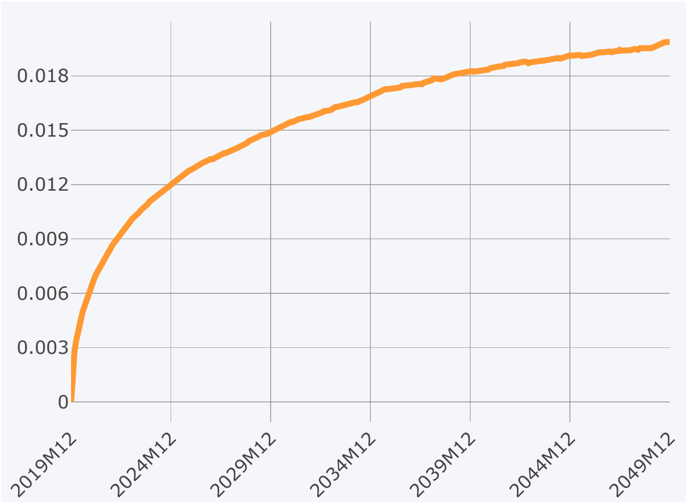
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

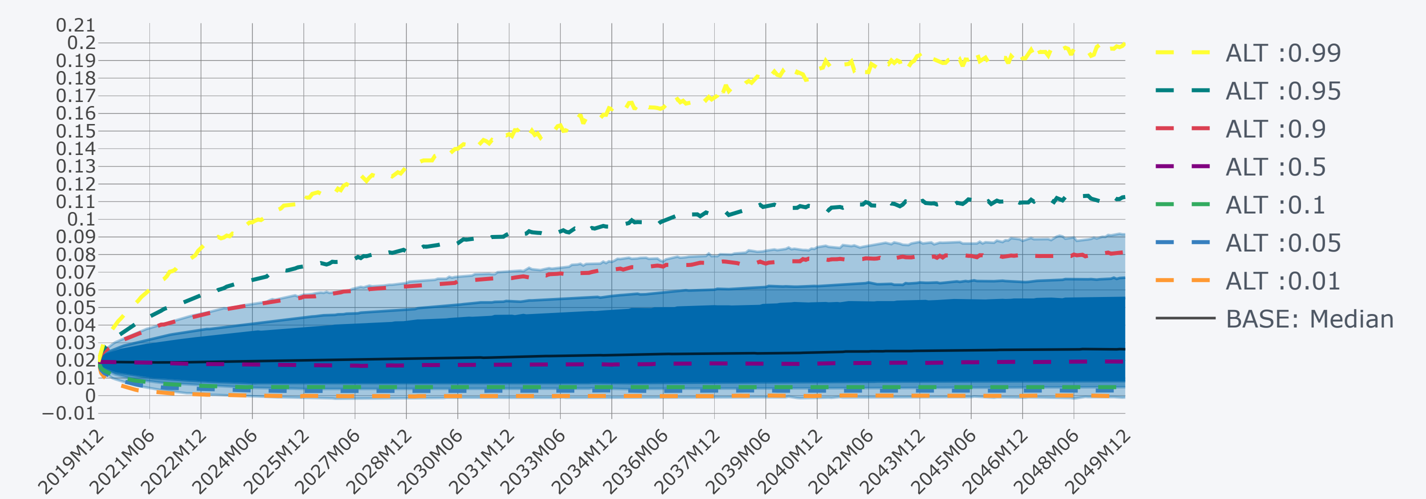
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0189	0.0294	0.0199	0.0338
std	0.0064	0.0199	0.0105	0.0418
min	-0.0029	-0.0128	-0.0037	-0.0079
1%	0.0053	-0.0023	0.0024	-0.0014
5%	0.0089	0.0038	0.0056	0.0017
10%	0.0109	0.0076	0.0078	0.0037
50%	0.0186	0.0259	0.0183	0.0187
90%	0.0272	0.0552	0.0339	0.0818
95%	0.0297	0.0668	0.0392	0.1134
99%	0.0347	0.0916	0.0505	0.2012
max	0.0481	0.1681	0.0842	0.5216

Cross Sectional Volatility Over Time : BASE



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



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

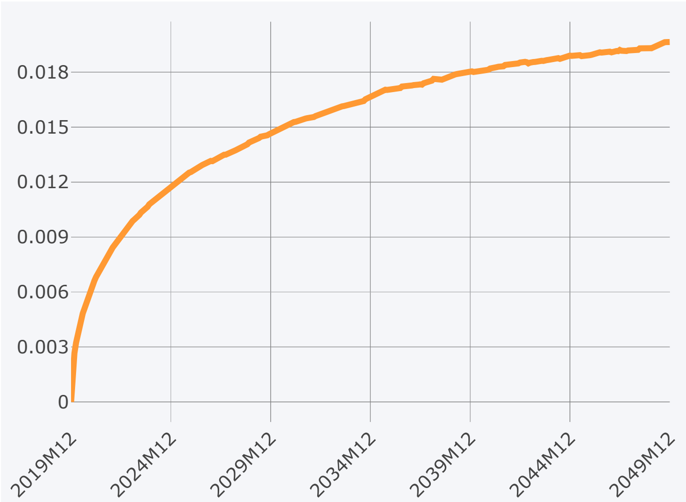
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

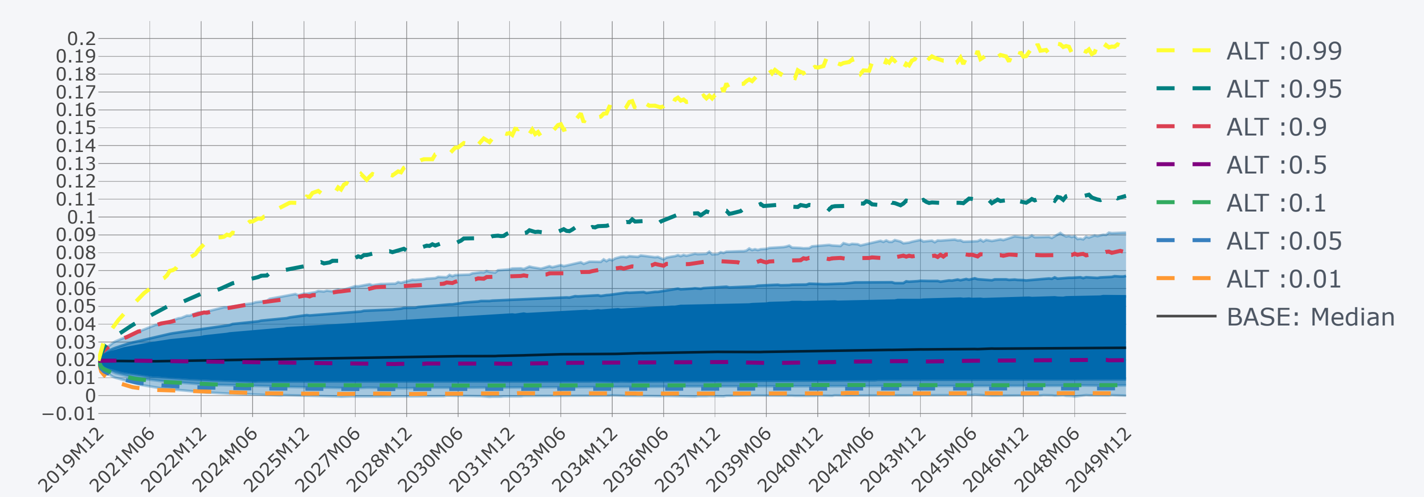
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0192	0.0299	0.0205	0.0342
std	0.0062	0.0196	0.0103	0.0413
min	-0.0016	-0.0109	-0.0021	-0.0059
1%	0.0062	-0.001	0.0036	0.0001
5%	0.0097	0.0048	0.0067	0.003
10%	0.0115	0.0083	0.0088	0.0048
50%	0.0189	0.0263	0.019	0.0193
90%	0.0273	0.0554	0.0343	0.0814
95%	0.0297	0.0669	0.0394	0.1126
99%	0.0346	0.0915	0.0505	0.1999
max	0.0473	0.1678	0.0838	0.5206

Cross Sectional Volatility Over Time : BASE



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



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

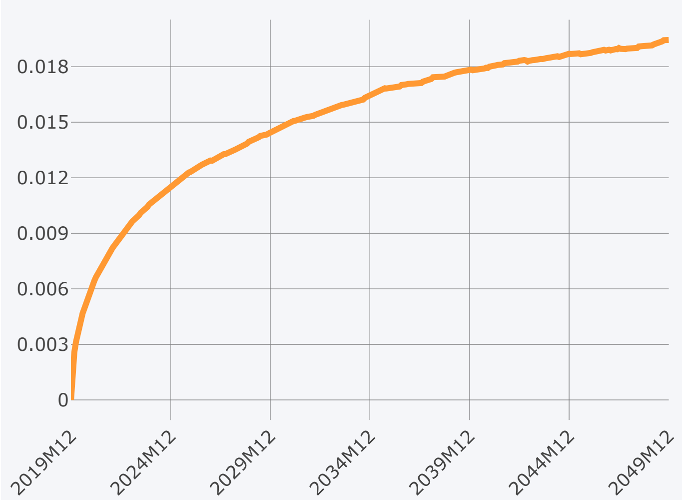
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

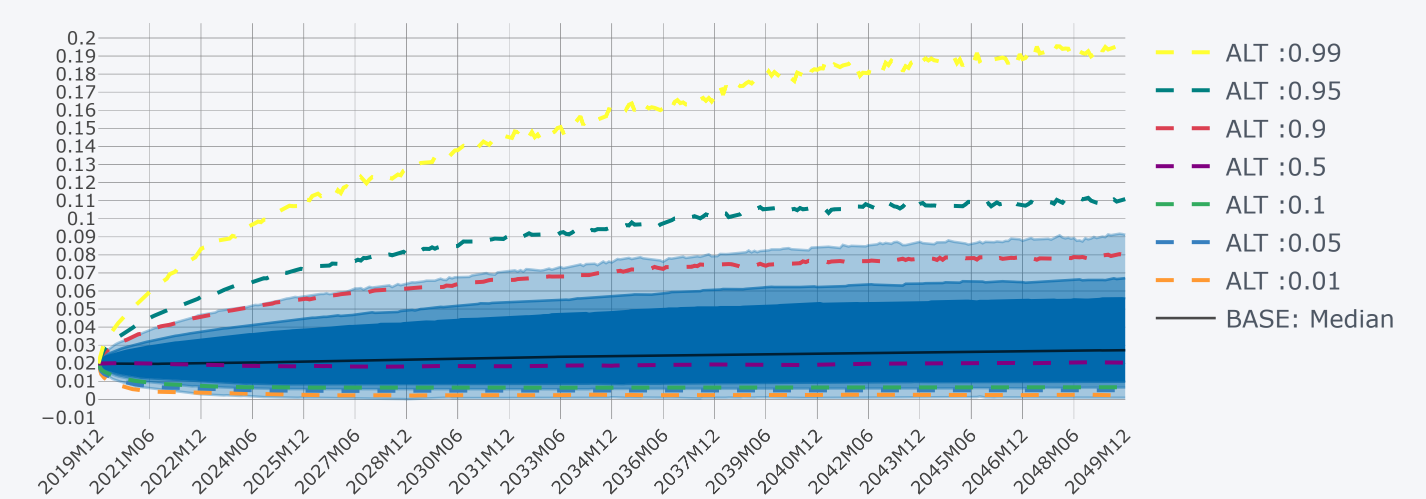
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0196	0.0303	0.0211	0.0346
std	0.006	0.0194	0.01	0.0407
min	-0.0004	-0.0092	-0.0007	-0.0042
1%	0.0071	0	0.0047	0.0014
5%	0.0103	0.0057	0.0077	0.0041
10%	0.0122	0.0091	0.0097	0.0058
50%	0.0193	0.0268	0.0196	0.0199
90%	0.0274	0.0556	0.0345	0.0809
95%	0.0298	0.067	0.0396	0.1119
99%	0.0346	0.0913	0.0506	0.1985
max	0.0465	0.1675	0.0833	0.5197

Cross Sectional Volatility Over Time : BASE



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



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

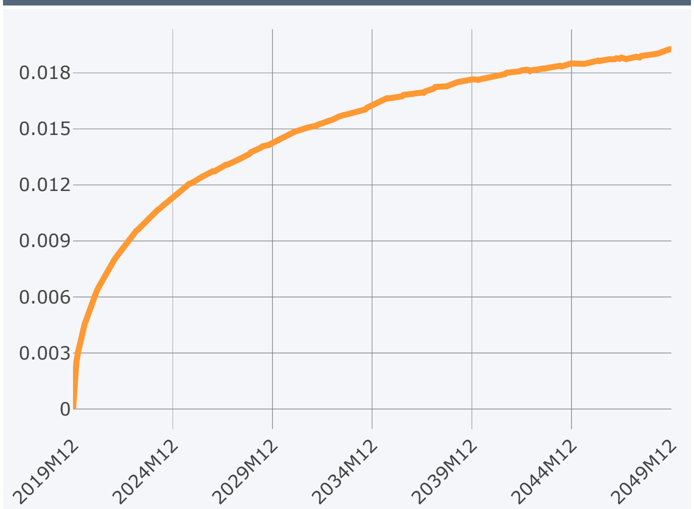
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

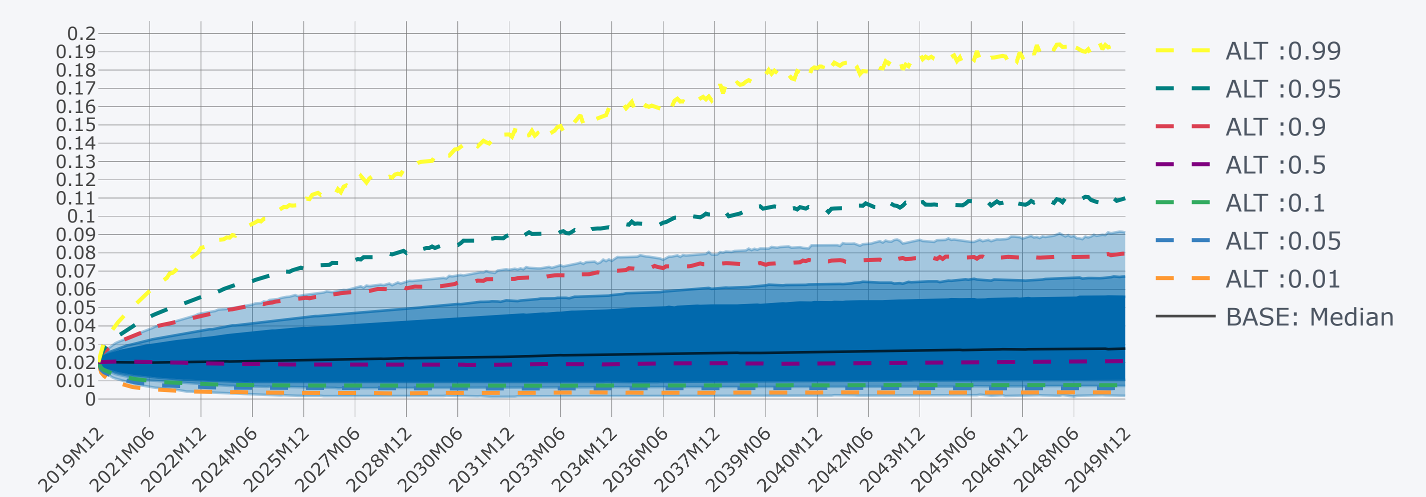
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.02	0.0308	0.0216	0.0349
std	0.0058	0.0193	0.0098	0.0402
min	0.0007	-0.0076	0.0006	-0.0026
1%	0.0078	0.0009	0.0057	0.0026
5%	0.011	0.0065	0.0086	0.0051
10%	0.0127	0.0098	0.0105	0.0067
50%	0.0197	0.0272	0.0201	0.0203
90%	0.0276	0.0557	0.0347	0.0802
95%	0.03	0.0671	0.0396	0.1108
99%	0.0346	0.0911	0.0505	0.1972
max	0.0459	0.1673	0.0827	0.5189

Cross Sectional Volatility Over Time : BASE



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



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

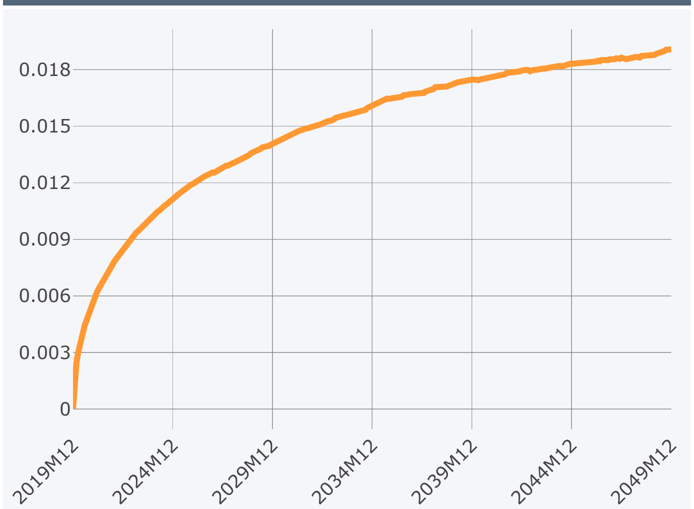
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

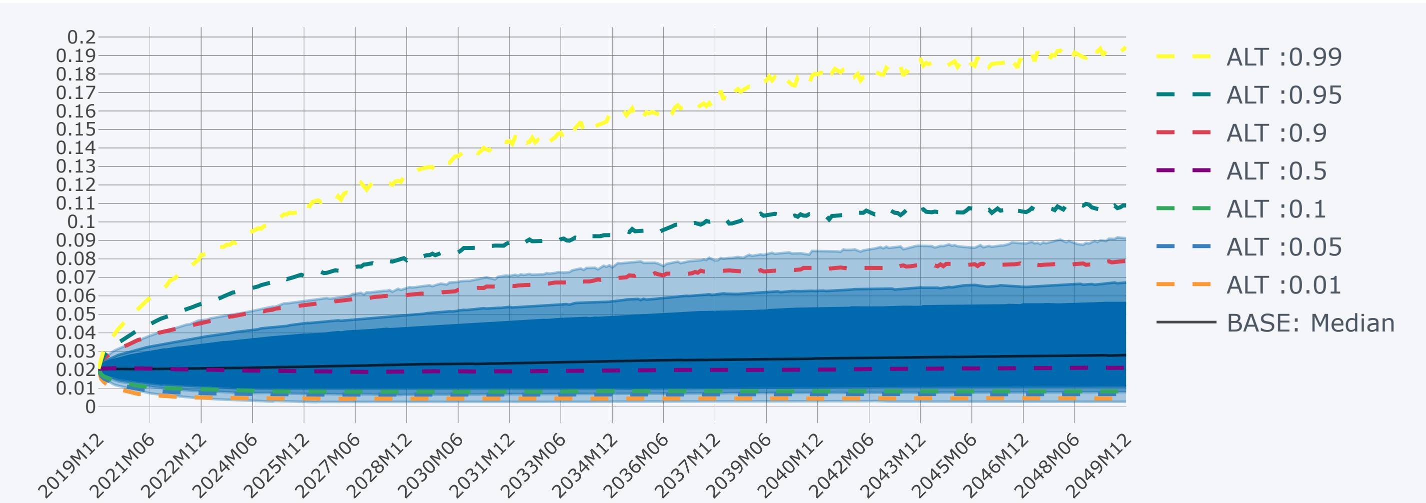
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0203	0.0311	0.022	0.0351
std	0.0057	0.0191	0.0096	0.0397
min	0.0017	-0.0062	0.0018	-0.0012
1%	0.0085	0.0018	0.0066	0.0036
5%	0.0115	0.0072	0.0094	0.006
10%	0.0132	0.0105	0.0112	0.0076
50%	0.02	0.0276	0.0205	0.0208
90%	0.0277	0.0559	0.0349	0.0796
95%	0.0301	0.0671	0.0397	0.1099
99%	0.0347	0.0911	0.0503	0.1959
max	0.0454	0.167	0.082	0.5183

Cross Sectional Volatility Over Time : BASE



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



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

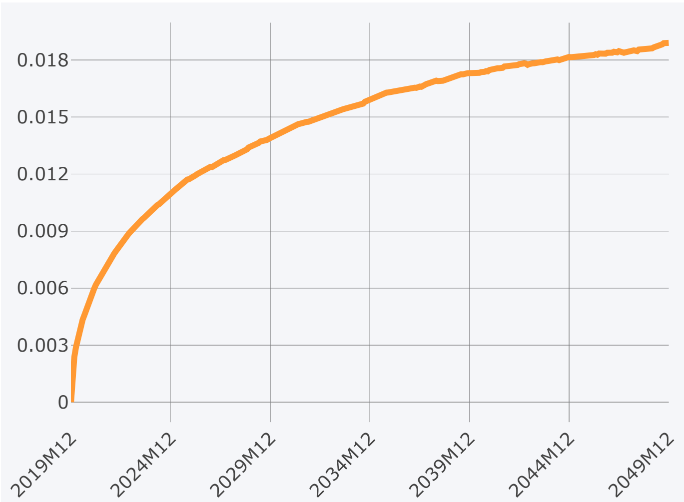
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0207	0.0315	0.0224	0.0353
std	0.0056	0.0189	0.0093	0.0392
min	0.0026	-0.0049	0.0028	0
1%	0.009	0.0027	0.0074	0.0046
5%	0.0121	0.0079	0.0101	0.0068
10%	0.0137	0.011	0.0118	0.0083
50%	0.0203	0.0279	0.0209	0.0211
90%	0.0279	0.0561	0.0349	0.0789
95%	0.0302	0.0672	0.0396	0.1089
99%	0.0347	0.0911	0.0501	0.1946
max	0.0449	0.1667	0.0813	0.5178

Cross Sectional Volatility Over Time : BASE



US Treasury 15 Year Yield - Coupon

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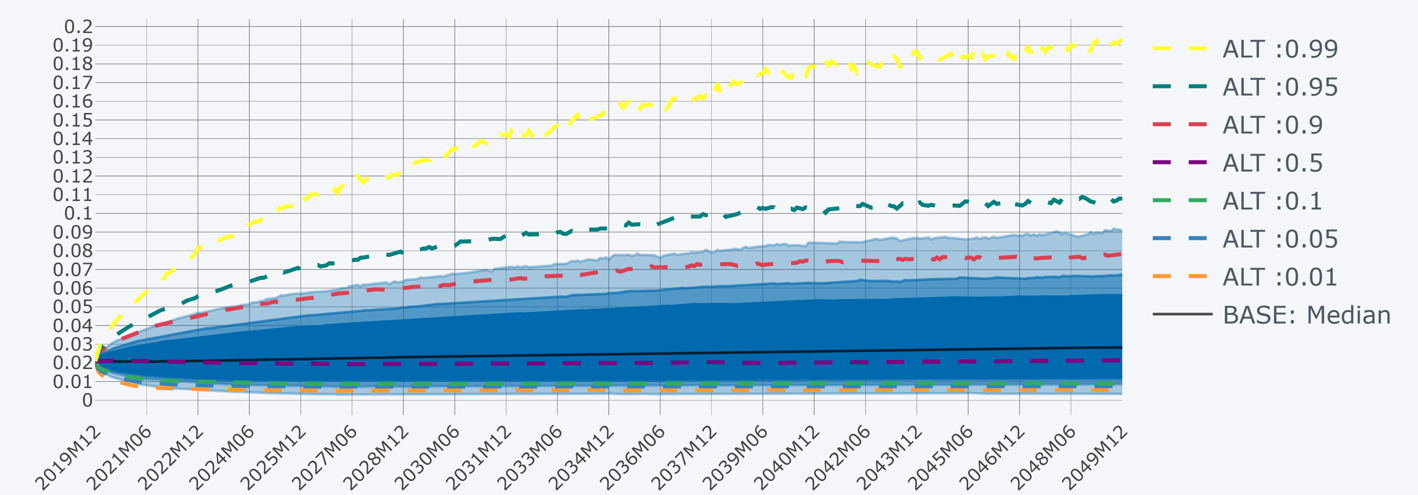
2019 Q4

Validation Report

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



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

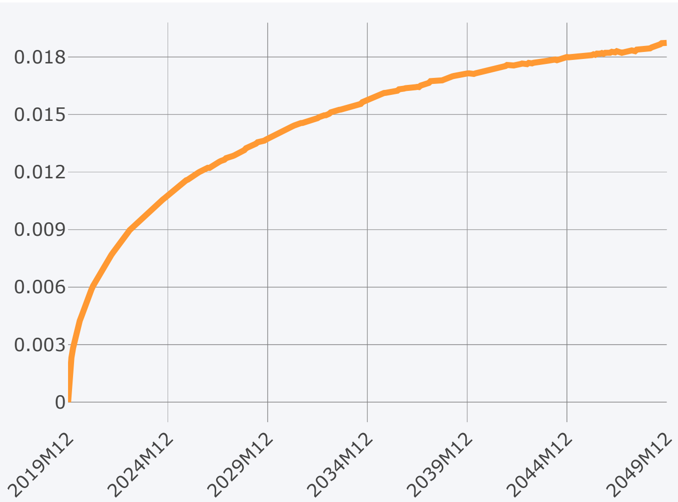
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

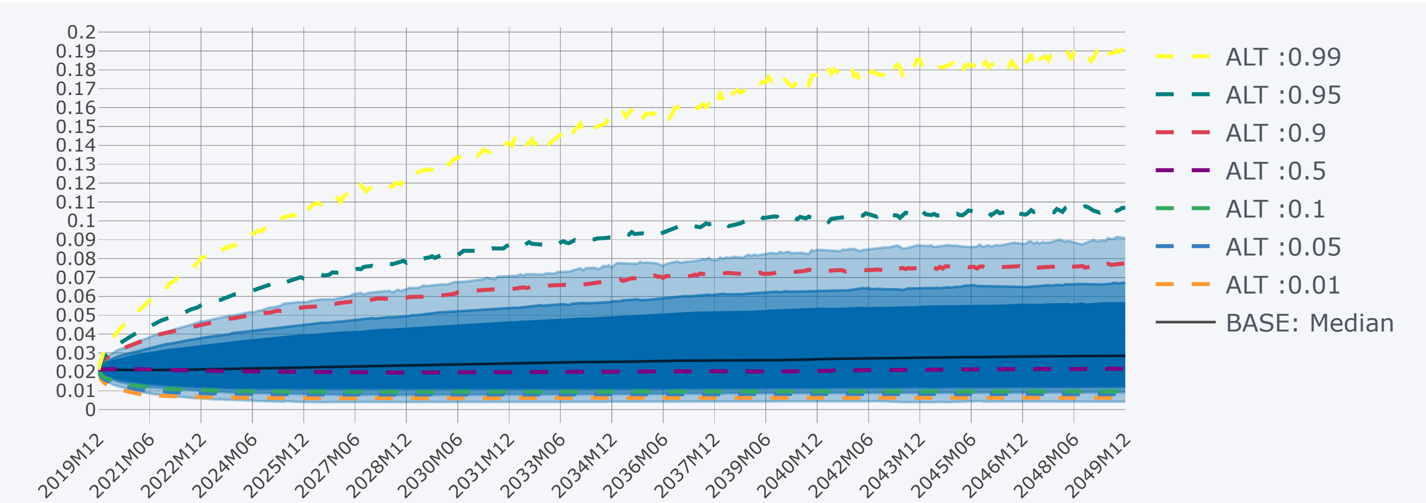
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.021	0.0318	0.0227	0.0354
std	0.0054	0.0187	0.0091	0.0387
min	0.0034	-0.0038	0.0038	0.0011
1%	0.0096	0.0034	0.0081	0.0055
5%	0.0126	0.0085	0.0107	0.0076
10%	0.0142	0.0116	0.0124	0.009
50%	0.0206	0.0282	0.0212	0.0214
90%	0.0281	0.0562	0.0349	0.0782
95%	0.0304	0.0673	0.0396	0.1078
99%	0.0347	0.091	0.0498	0.1933
max	0.0445	0.1665	0.0806	0.5174

Cross Sectional Volatility Over Time : BASE



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



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

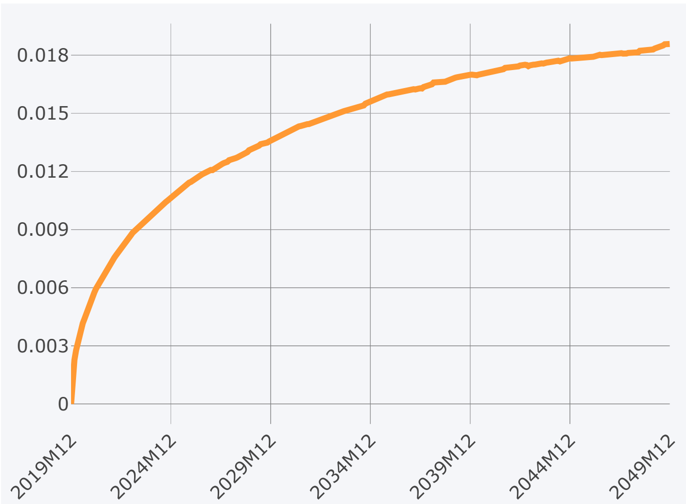
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

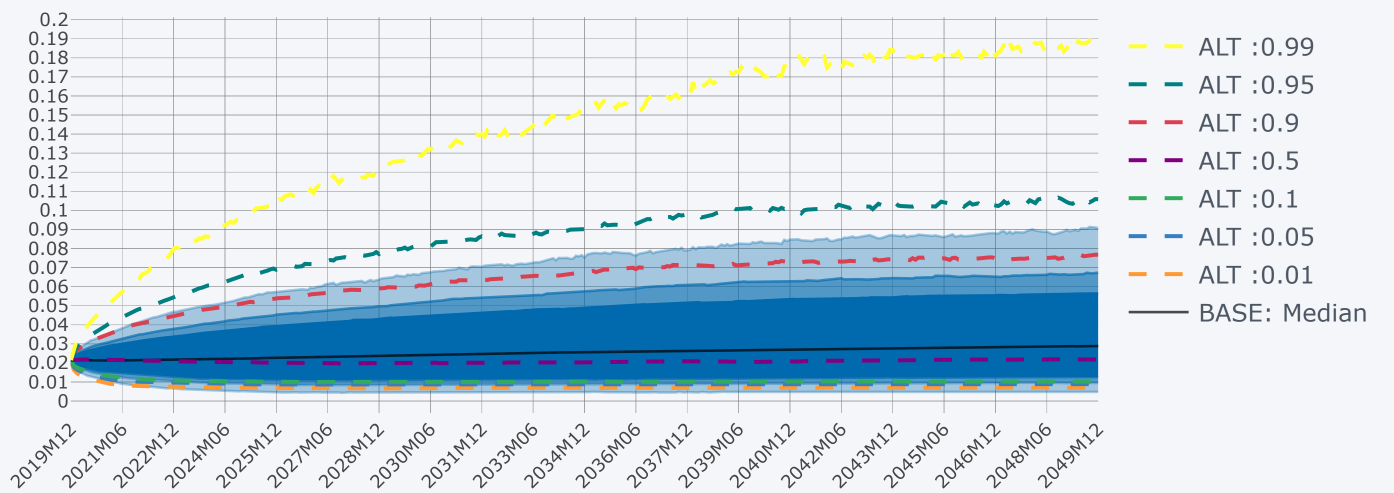
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0213	0.0321	0.023	0.0355
std	0.0053	0.0186	0.0089	0.0383
min	0.0042	-0.0027	0.0047	0.0022
1%	0.0102	0.0042	0.0088	0.0063
5%	0.013	0.0091	0.0113	0.0083
10%	0.0146	0.0121	0.0129	0.0096
50%	0.0209	0.0285	0.0215	0.0216
90%	0.0283	0.0563	0.0349	0.0775
95%	0.0305	0.0672	0.0394	0.1068
99%	0.0348	0.0909	0.0494	0.1921
max	0.0446	0.1662	0.0798	0.517

Cross Sectional Volatility Over Time : BASE



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



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

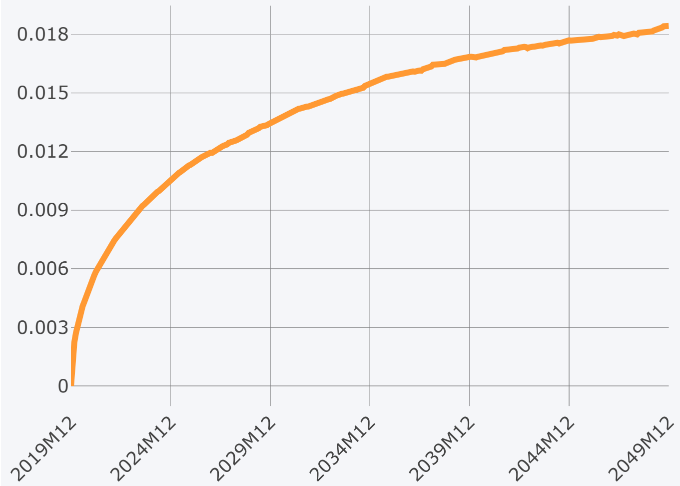
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

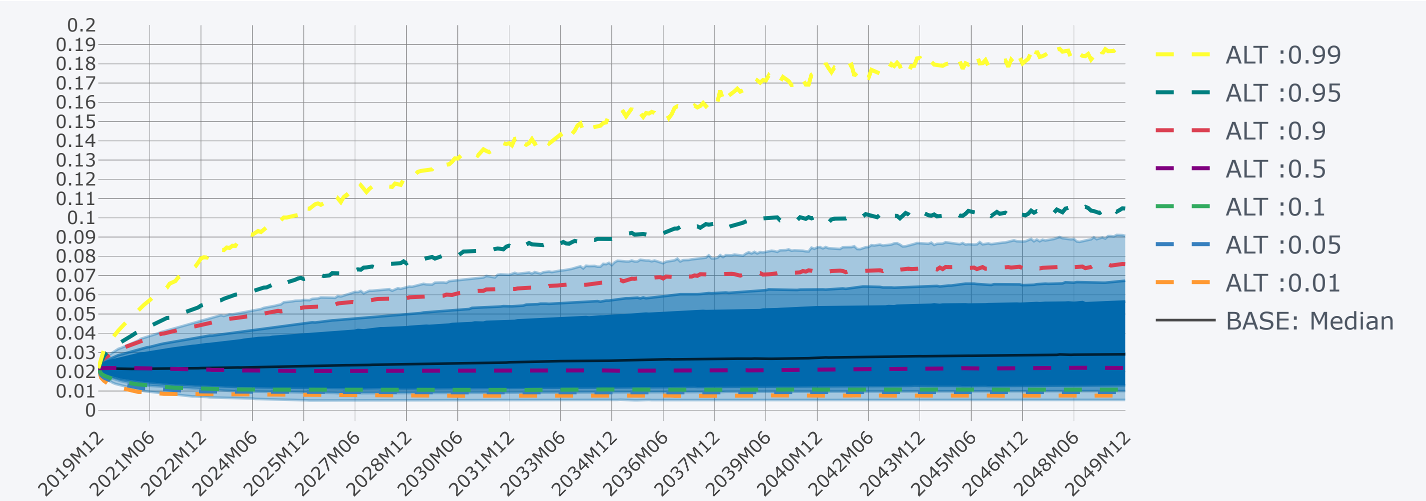
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0216	0.0324	0.0232	0.0356
std	0.0053	0.0184	0.0087	0.0379
min	0.005	-0.0017	0.0055	0.0031
1%	0.0107	0.0048	0.0094	0.007
5%	0.0135	0.0095	0.0118	0.0089
10%	0.015	0.0126	0.0134	0.0102
50%	0.0212	0.0288	0.0217	0.0218
90%	0.0285	0.0564	0.0348	0.0767
95%	0.0307	0.0673	0.0392	0.1058
99%	0.0349	0.0907	0.0491	0.1909
max	0.0448	0.166	0.0791	0.5166

Cross Sectional Volatility Over Time : BASE



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



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

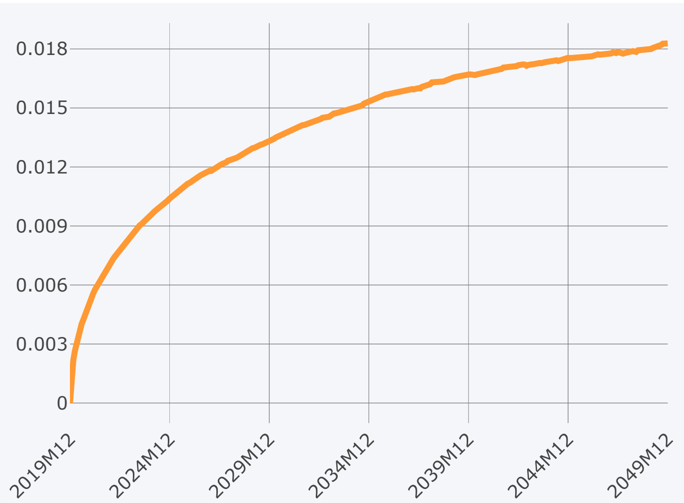
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

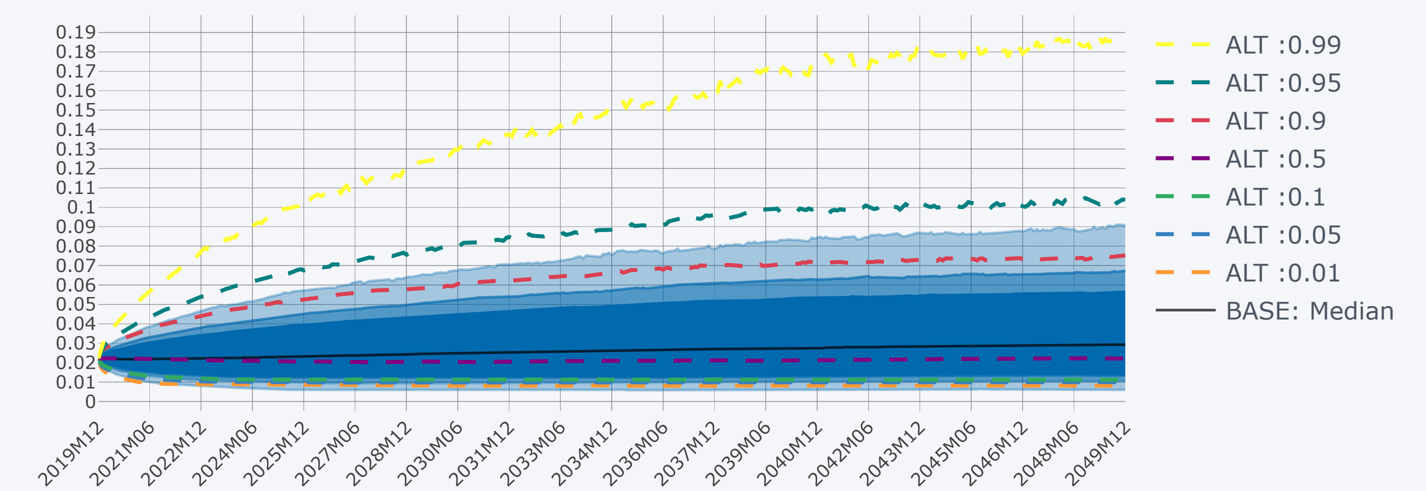
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0218	0.0326	0.0234	0.0356
std	0.0052	0.0183	0.0085	0.0374
min	0.0056	-0.0008	0.0062	0.0039
1%	0.0112	0.0054	0.01	0.0077
5%	0.0139	0.01	0.0123	0.0095
10%	0.0154	0.013	0.0139	0.0107
50%	0.0215	0.0291	0.0219	0.022
90%	0.0286	0.0565	0.0347	0.0759
95%	0.0308	0.0673	0.039	0.1048
99%	0.035	0.0906	0.0487	0.1897
max	0.0449	0.1657	0.0783	0.5164

Cross Sectional Volatility Over Time : BASE



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



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

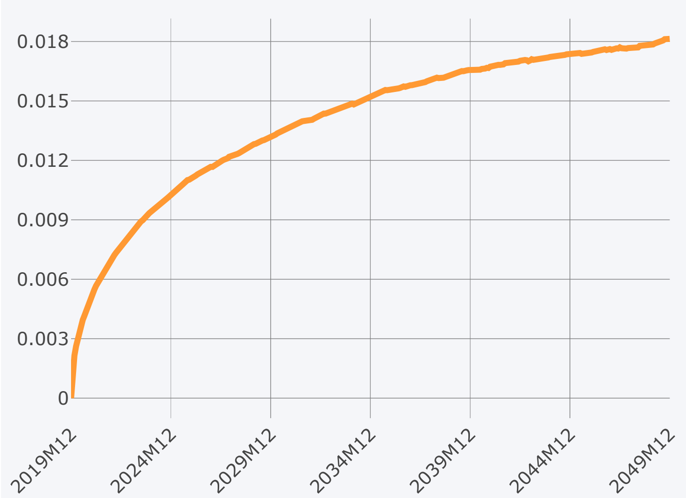
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

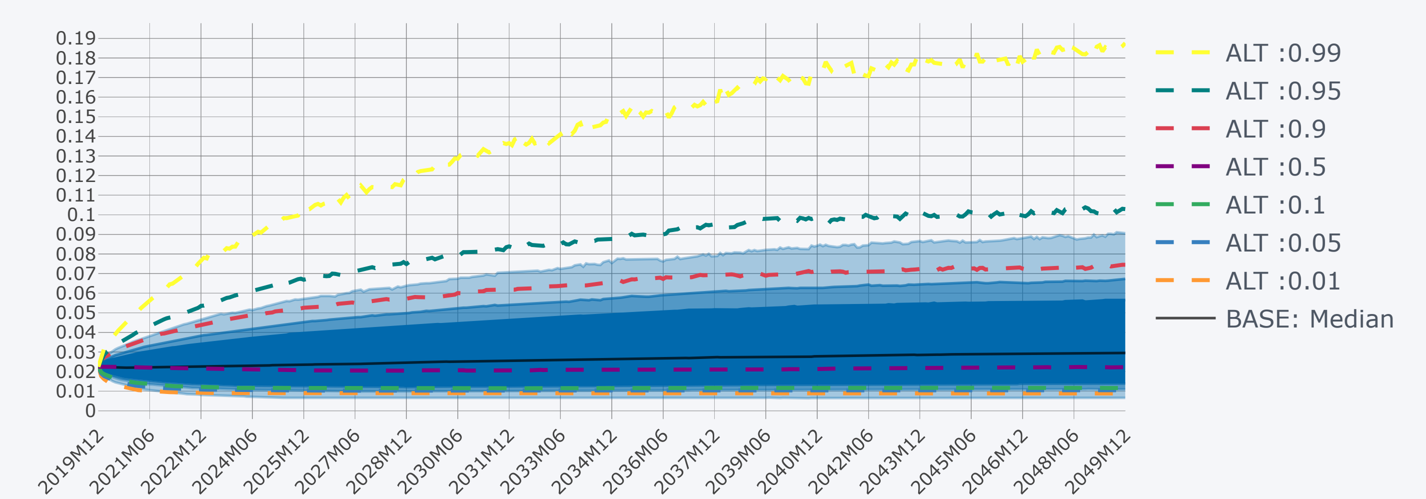
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0221	0.0328	0.0236	0.0356
std	0.0051	0.0181	0.0083	0.0371
min	0.0063	0.0001	0.0069	0.0047
1%	0.0116	0.006	0.0106	0.0083
5%	0.0143	0.0104	0.0127	0.01
10%	0.0158	0.0134	0.0142	0.0112
50%	0.0218	0.0293	0.0221	0.0221
90%	0.0288	0.0565	0.0346	0.0752
95%	0.0309	0.0673	0.0388	0.1038
99%	0.035	0.0906	0.0483	0.1886
max	0.0449	0.1655	0.0776	0.5161

Cross Sectional Volatility Over Time : BASE



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



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

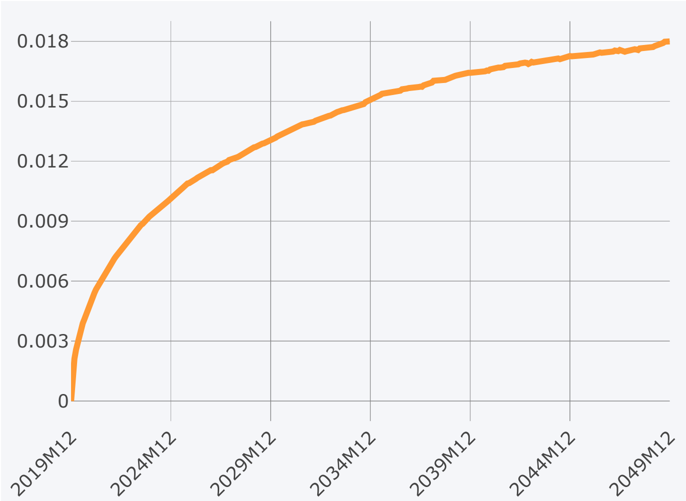
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

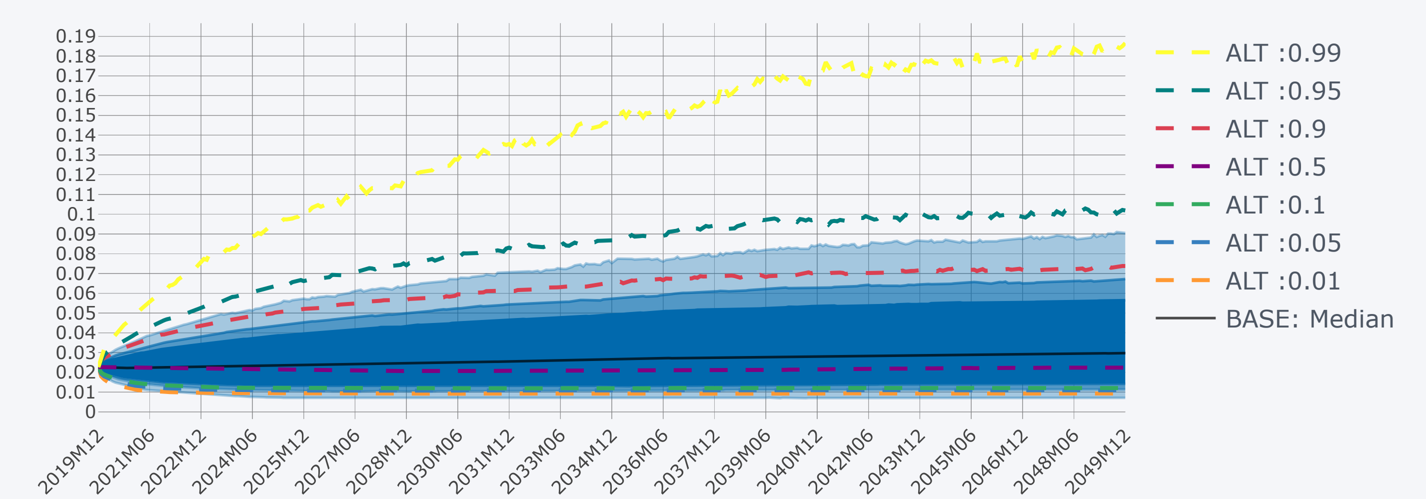
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0223	0.0331	0.0237	0.0356
std	0.005	0.018	0.0081	0.0367
min	0.0069	0.0009	0.0075	0.0054
1%	0.012	0.0066	0.011	0.0088
5%	0.0147	0.0109	0.0132	0.0105
10%	0.0162	0.0139	0.0146	0.0116
50%	0.022	0.0295	0.0223	0.0223
90%	0.0289	0.0565	0.0345	0.0745
95%	0.0311	0.0673	0.0386	0.1029
99%	0.0351	0.0906	0.048	0.1876
max	0.045	0.1653	0.0768	0.5159

Cross Sectional Volatility Over Time : BASE



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



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

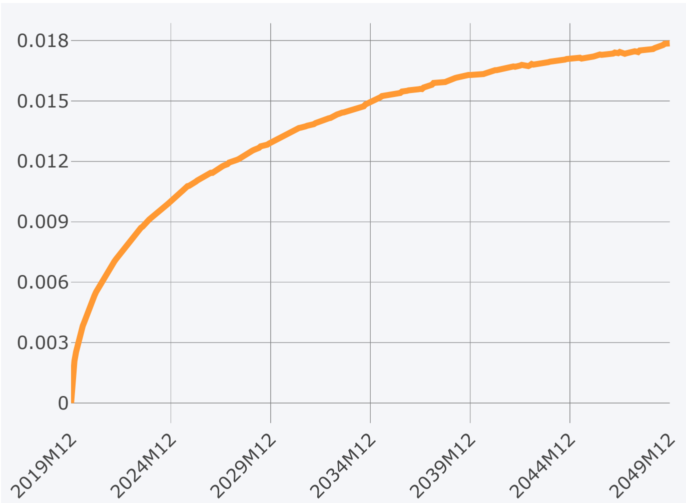
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

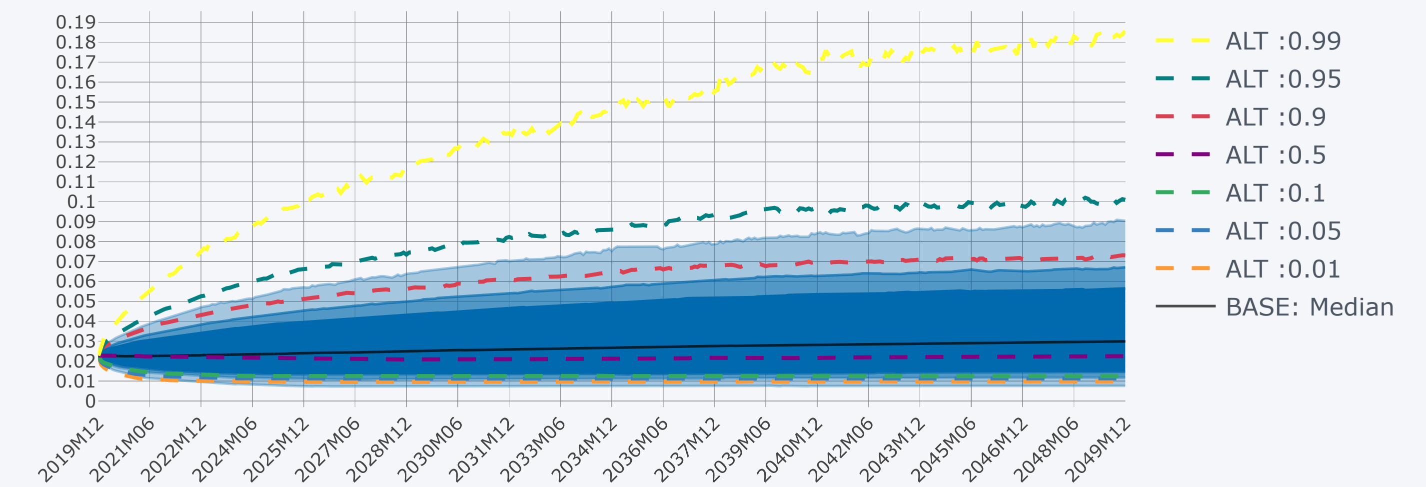
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0226	0.0333	0.0238	0.0356
std	0.0049	0.0179	0.0079	0.0363
min	0.0074	0.0016	0.0081	0.0061
1%	0.0124	0.0071	0.0115	0.0094
5%	0.015	0.0113	0.0135	0.011
10%	0.0165	0.0142	0.0149	0.0121
50%	0.0222	0.0297	0.0224	0.0224
90%	0.0291	0.0565	0.0343	0.0738
95%	0.0312	0.0672	0.0384	0.1019
99%	0.0351	0.0905	0.0476	0.1866
max	0.0451	0.1651	0.0761	0.5157

Cross Sectional Volatility Over Time : BASE



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



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

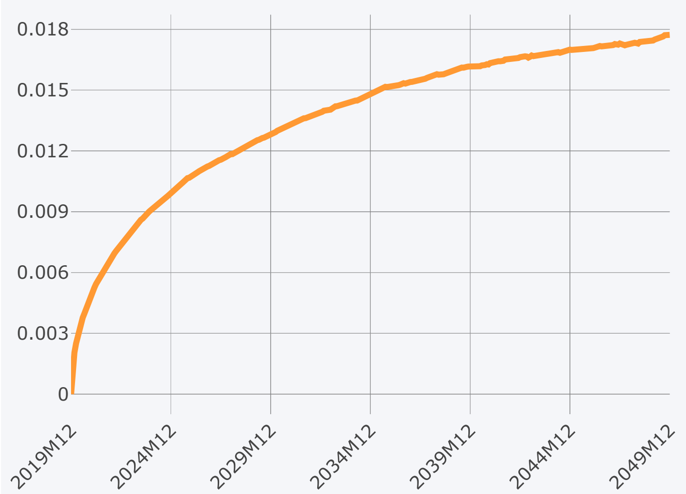
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

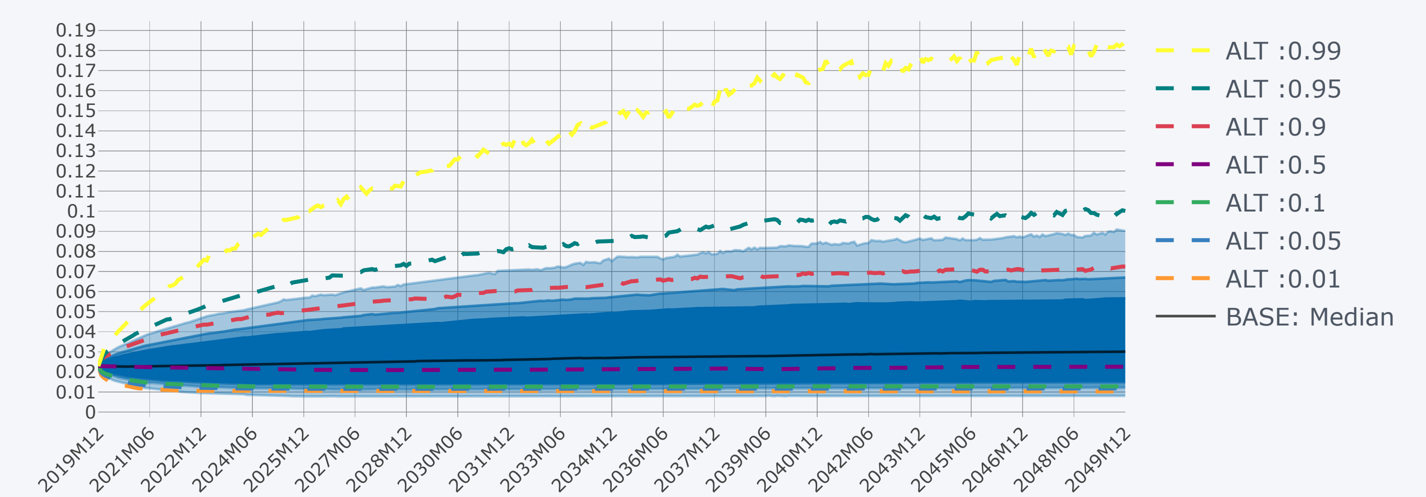
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0228	0.0334	0.0239	0.0356
std	0.0049	0.0177	0.0078	0.036
min	0.008	0.0023	0.0086	0.0067
1%	0.0128	0.0076	0.0119	0.0098
5%	0.0153	0.0117	0.0139	0.0114
10%	0.0168	0.0146	0.0152	0.0125
50%	0.0225	0.0299	0.0225	0.0225
90%	0.0292	0.0565	0.0342	0.0731
95%	0.0313	0.0671	0.0382	0.101
99%	0.0352	0.0904	0.0472	0.1856
max	0.0451	0.1649	0.0754	0.5155

Cross Sectional Volatility Over Time : BASE



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



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

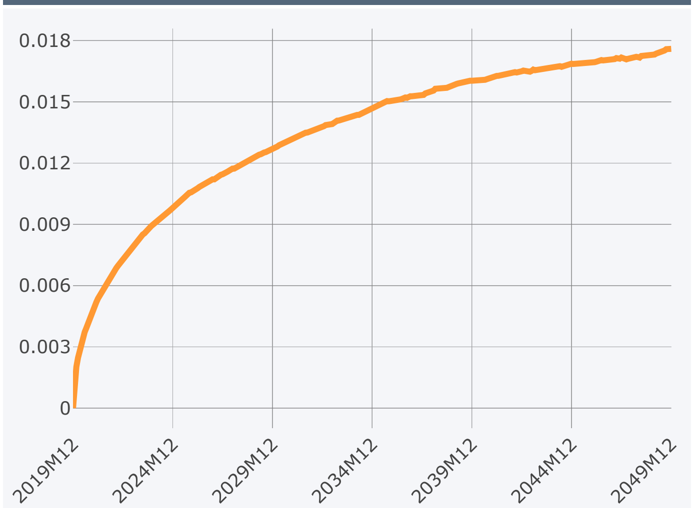
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

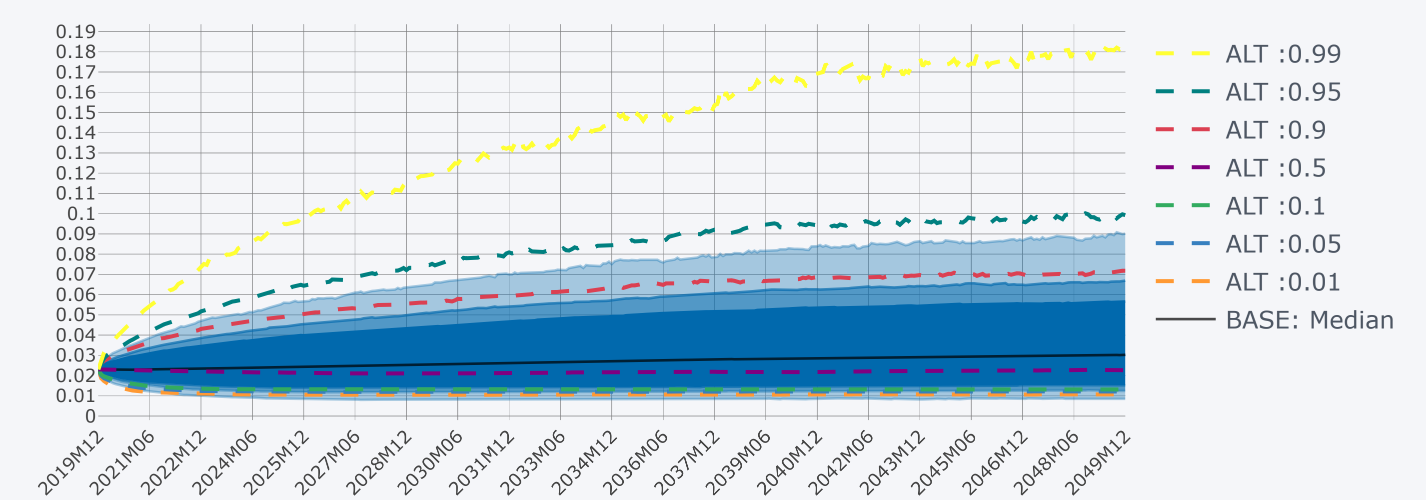
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.023	0.0336	0.024	0.0355
std	0.0048	0.0176	0.0076	0.0357
min	0.0085	0.003	0.0091	0.0072
1%	0.0132	0.0081	0.0122	0.0103
5%	0.0157	0.0121	0.0142	0.0118
10%	0.0171	0.0149	0.0155	0.0128
50%	0.0227	0.0301	0.0226	0.0226
90%	0.0293	0.0566	0.034	0.0724
95%	0.0314	0.067	0.038	0.1001
99%	0.0352	0.0902	0.0469	0.1847
max	0.0451	0.1647	0.0747	0.5153

Cross Sectional Volatility Over Time : BASE



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



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

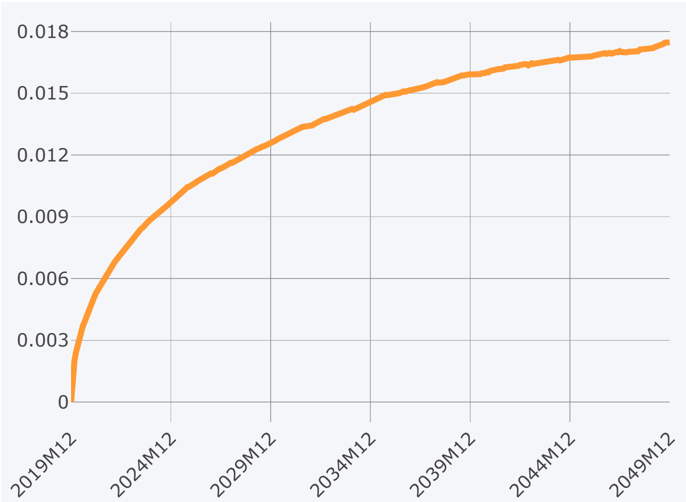
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

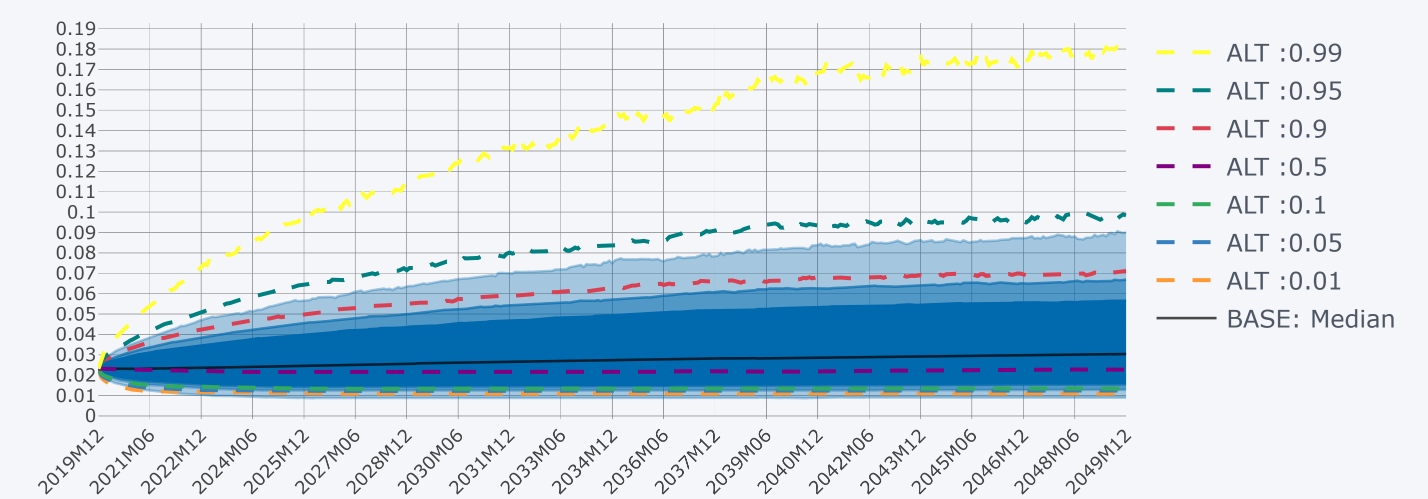
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0232	0.0338	0.0241	0.0355
std	0.0047	0.0175	0.0074	0.0354
min	0.0089	0.0036	0.0096	0.0078
1%	0.0135	0.0085	0.0126	0.0107
5%	0.016	0.0124	0.0145	0.0121
10%	0.0174	0.0152	0.0158	0.0131
50%	0.0229	0.0302	0.0227	0.0227
90%	0.0295	0.0566	0.0339	0.0718
95%	0.0315	0.0669	0.0377	0.0993
99%	0.0353	0.0901	0.0465	0.1838
max	0.0452	0.1645	0.074	0.5152

Cross Sectional Volatility Over Time : BASE



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



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

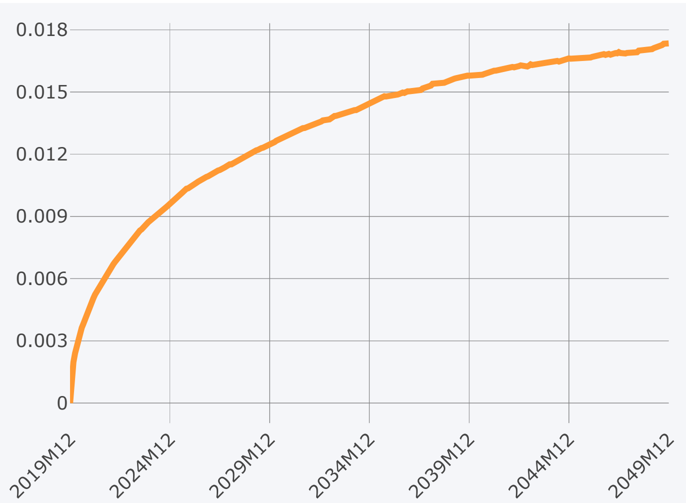
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

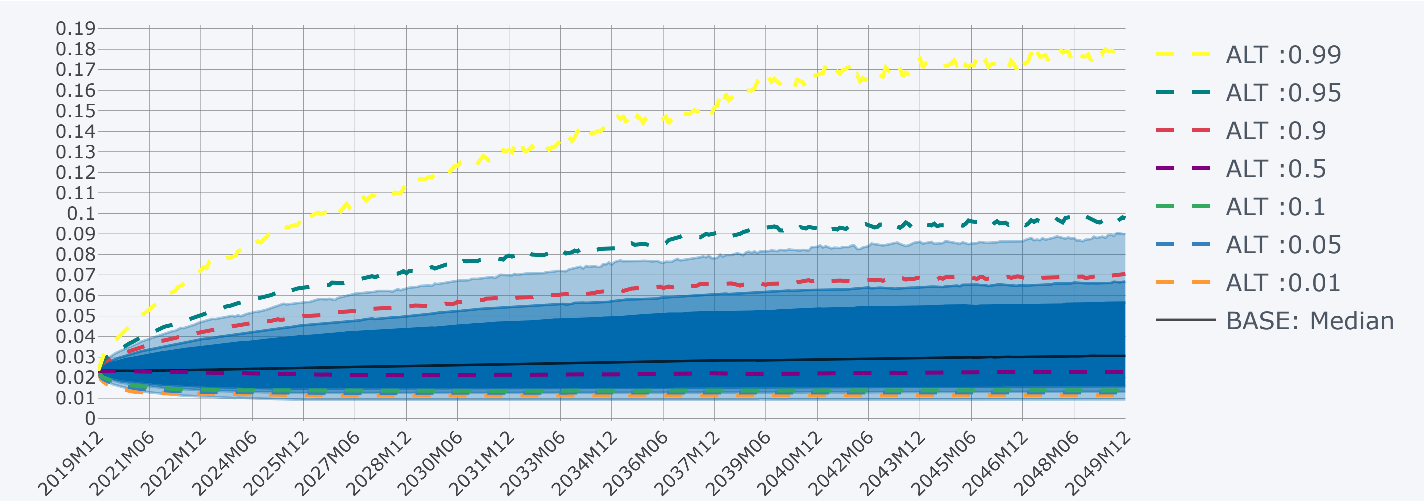
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0234	0.0339	0.0241	0.0354
std	0.0047	0.0173	0.0073	0.0351
min	0.0094	0.0042	0.01	0.0082
1%	0.0138	0.009	0.0129	0.0111
5%	0.0163	0.0128	0.0148	0.0125
10%	0.0176	0.0155	0.016	0.0134
50%	0.0231	0.0304	0.0228	0.0227
90%	0.0296	0.0565	0.0337	0.0711
95%	0.0316	0.0669	0.0375	0.0984
99%	0.0354	0.09	0.0462	0.1829
max	0.0452	0.1644	0.0734	0.515

Cross Sectional Volatility Over Time : BASE



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



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

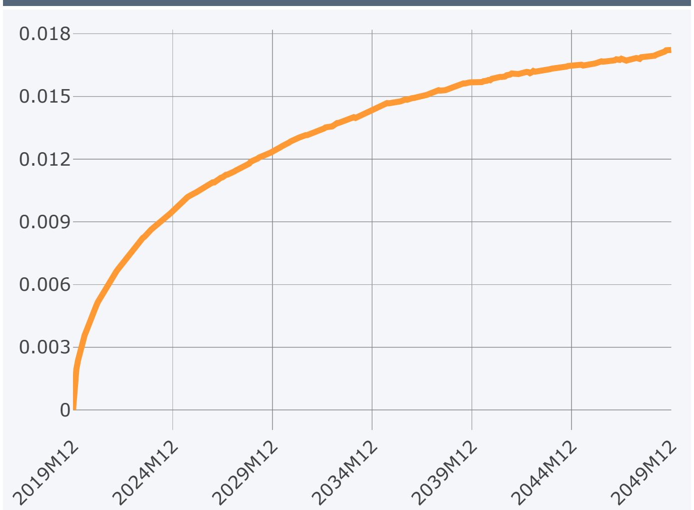
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

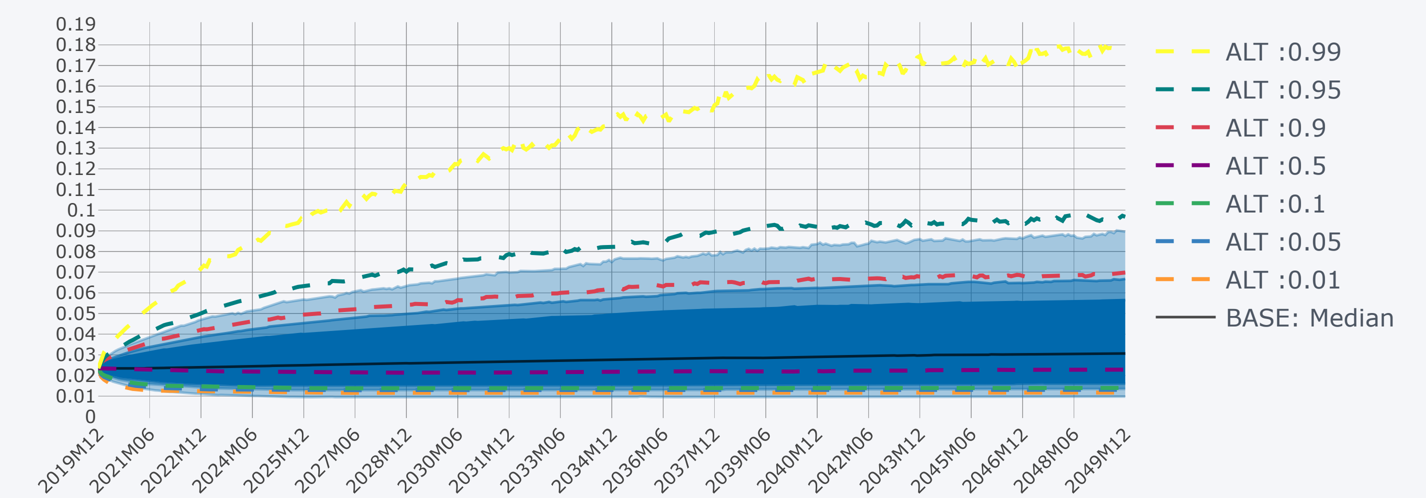
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0236	0.034	0.0242	0.0354
std	0.0046	0.0172	0.0071	0.0348
min	0.0098	0.0048	0.0104	0.0087
1%	0.0141	0.0094	0.0132	0.0114
5%	0.0165	0.0131	0.015	0.0128
10%	0.0179	0.0158	0.0163	0.0137
50%	0.0233	0.0306	0.0229	0.0228
90%	0.0297	0.0565	0.0336	0.0705
95%	0.0317	0.0668	0.0373	0.0976
99%	0.0354	0.0898	0.0458	0.1821
max	0.0452	0.1642	0.0727	0.5149

Cross Sectional Volatility Over Time : BASE



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



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

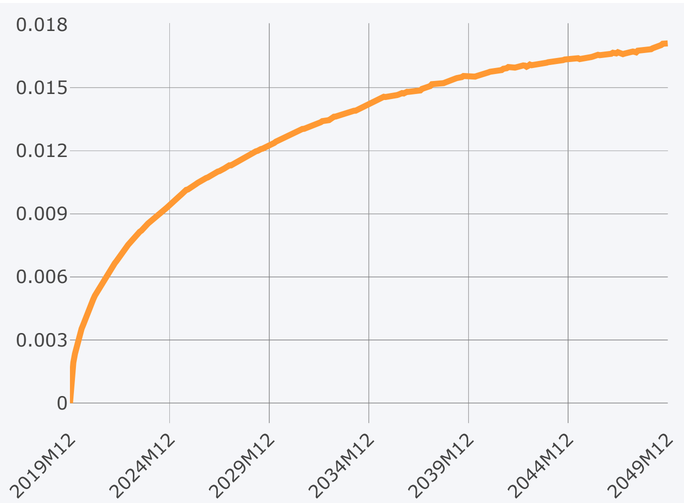
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

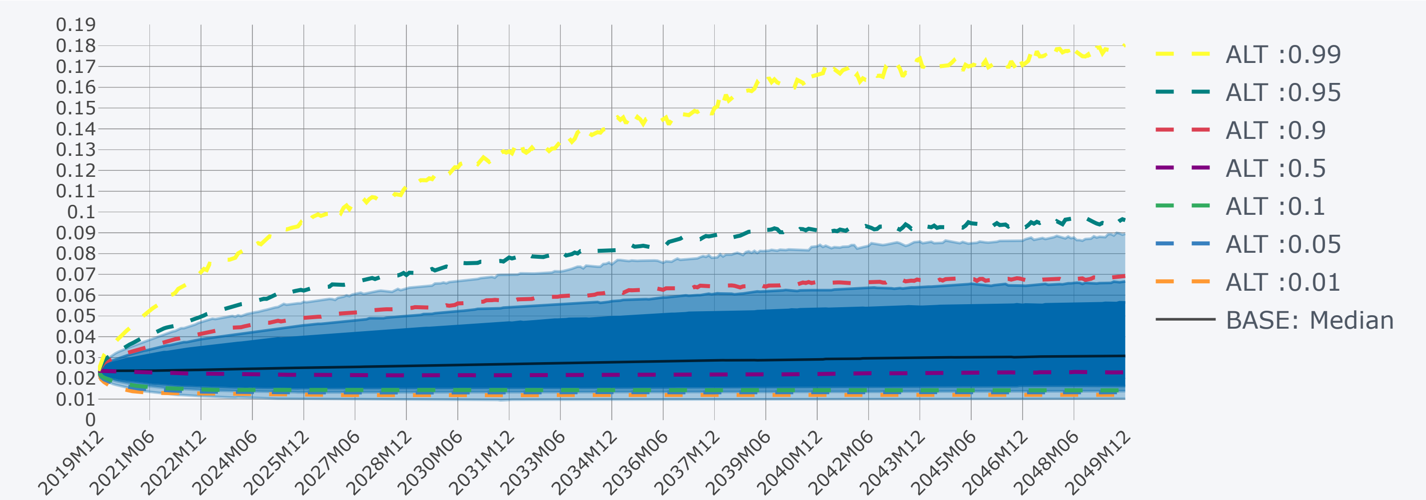
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0238	0.0342	0.0242	0.0353
std	0.0046	0.0171	0.007	0.0346
min	0.0102	0.0053	0.0107	0.0091
1%	0.0144	0.0098	0.0135	0.0117
5%	0.0168	0.0135	0.0152	0.0131
10%	0.0181	0.0161	0.0165	0.014
50%	0.0234	0.0307	0.0229	0.0228
90%	0.0298	0.0565	0.0335	0.0698
95%	0.0318	0.0667	0.0371	0.0968
99%	0.0355	0.0896	0.0455	0.1813
max	0.0452	0.164	0.0721	0.5148

Cross Sectional Volatility Over Time : BASE



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



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

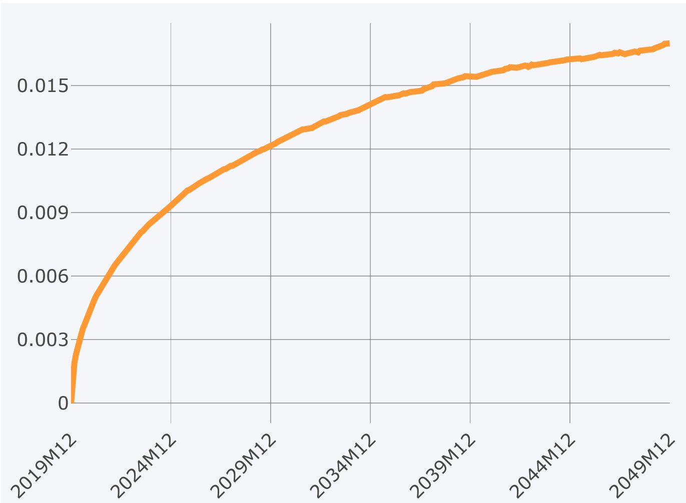
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0239	0.0343	0.0243	0.0353
std	0.0045	0.017	0.0069	0.0343
min	0.0106	0.0058	0.0111	0.0095
1%	0.0148	0.0102	0.0138	0.0121
5%	0.0171	0.0138	0.0155	0.0133
10%	0.0184	0.0163	0.0167	0.0142
50%	0.0236	0.0308	0.023	0.0229
90%	0.0299	0.0565	0.0333	0.0692
95%	0.0319	0.0666	0.0369	0.0961
99%	0.0355	0.0895	0.0452	0.1806
max	0.0452	0.1639	0.0715	0.5147

Cross Sectional Volatility Over Time : BASE



US Treasury 29 Year Yield - Coupon | 2019 Q4
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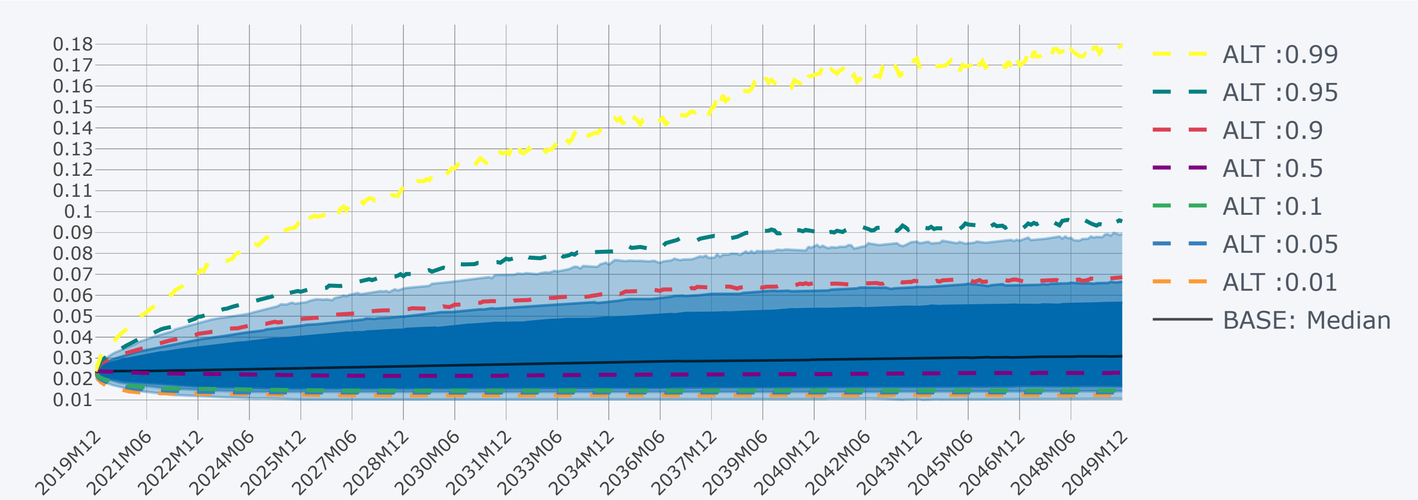
Simulated Data in Percentiles : US Treasury 29 Year Yield - Coupon



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

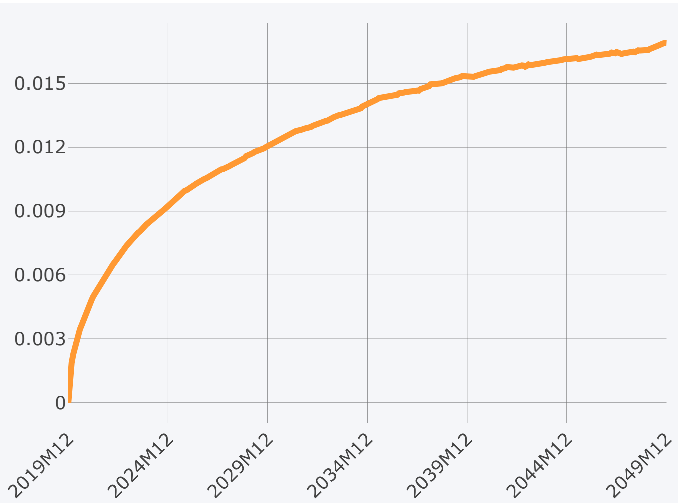
Percentiles Plotted :1%, 5%, 10%, 50%, 90%, 95%, 99%

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

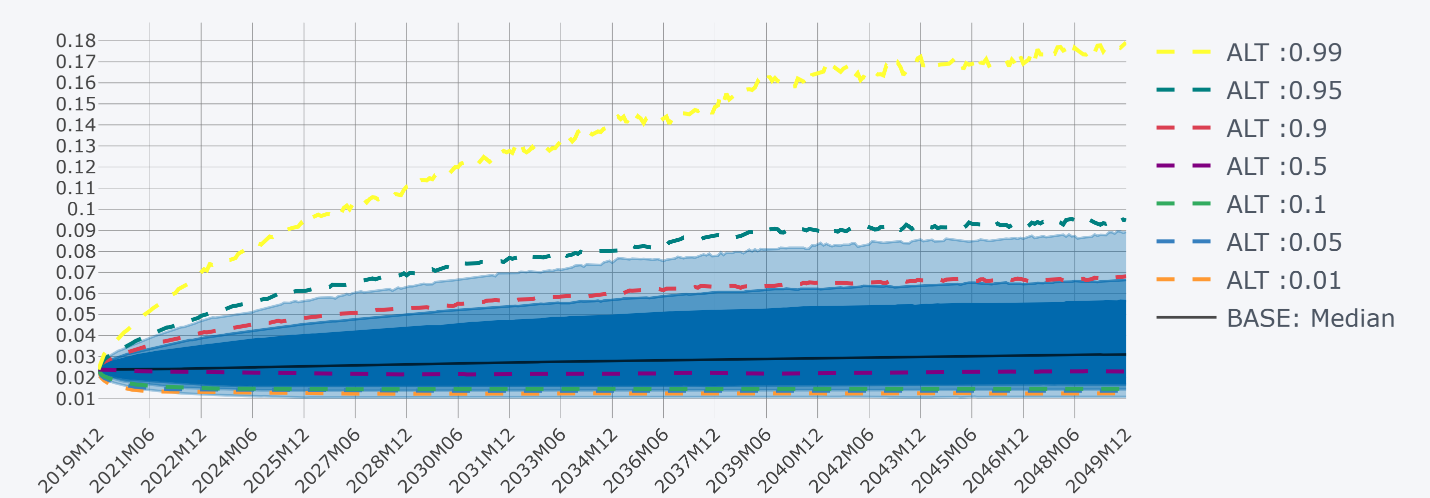
Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0241	0.0344	0.0243	0.0352
std	0.0045	0.0169	0.0067	0.0341
min	0.011	0.0063	0.0114	0.0098
1%	0.015	0.0106	0.014	0.0123
5%	0.0173	0.0141	0.0157	0.0136
10%	0.0186	0.0166	0.0168	0.0145
50%	0.0238	0.0309	0.023	0.0229
90%	0.03	0.0564	0.0332	0.0687
95%	0.0319	0.0665	0.0367	0.0954
99%	0.0356	0.0893	0.0448	0.1798
max	0.0452	0.1638	0.0709	0.5146

Cross Sectional Volatility Over Time : BASE



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



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

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

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

Simulation Summary

	BASE: 2020M12	BASE: 2049M12	ALT :2020M12	ALT :2049M12
mean	0.0242	0.0345	0.0243	0.0351
std	0.0044	0.0168	0.0066	0.0339
min	0.0113	0.0067	0.0117	0.0102
1%	0.0153	0.0109	0.0143	0.0126
5%	0.0175	0.0144	0.0159	0.0138
10%	0.0188	0.0168	0.017	0.0147
50%	0.0239	0.031	0.0231	0.023
90%	0.0301	0.0564	0.0331	0.0681
95%	0.032	0.0664	0.0365	0.0947
99%	0.0356	0.0892	0.0446	0.1791
max	0.0452	0.1636	0.0704	0.5145

Cross Sectional Volatility Over Time : BASE