Figure 1: FFT Verification Against Black-Scholes

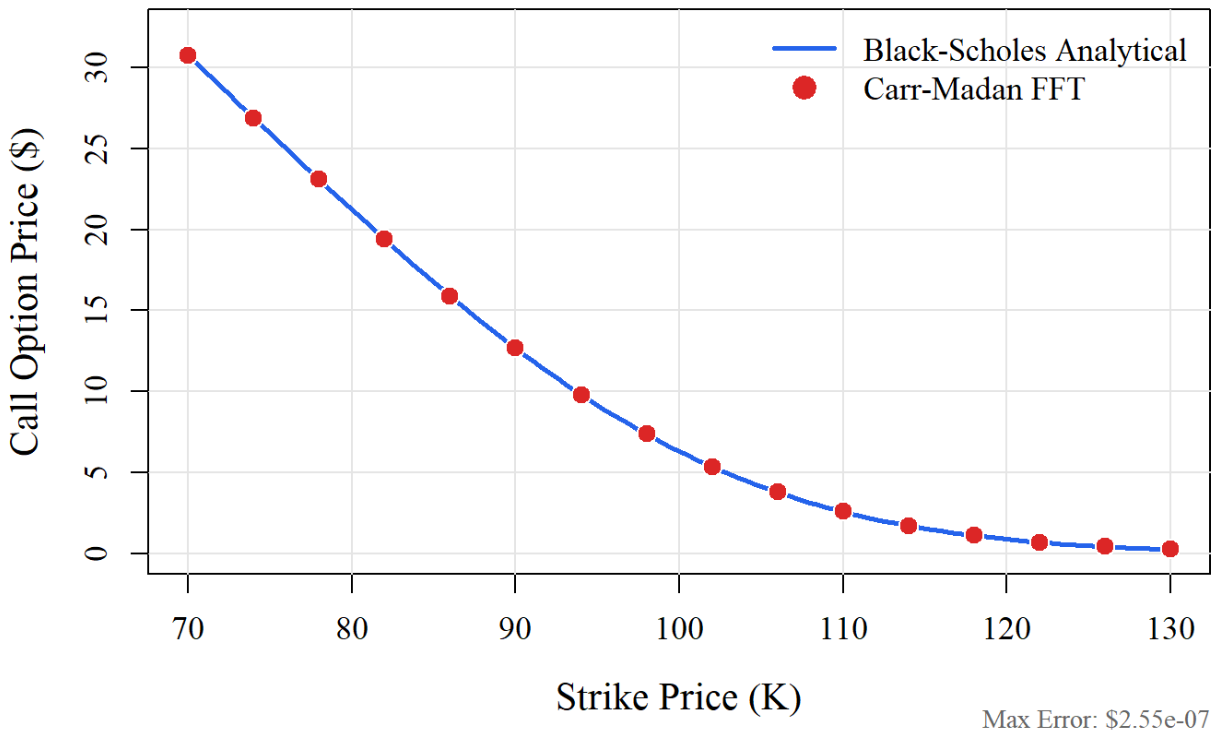


Figure 2: Merton Jump-Diffusion Implied Volatility

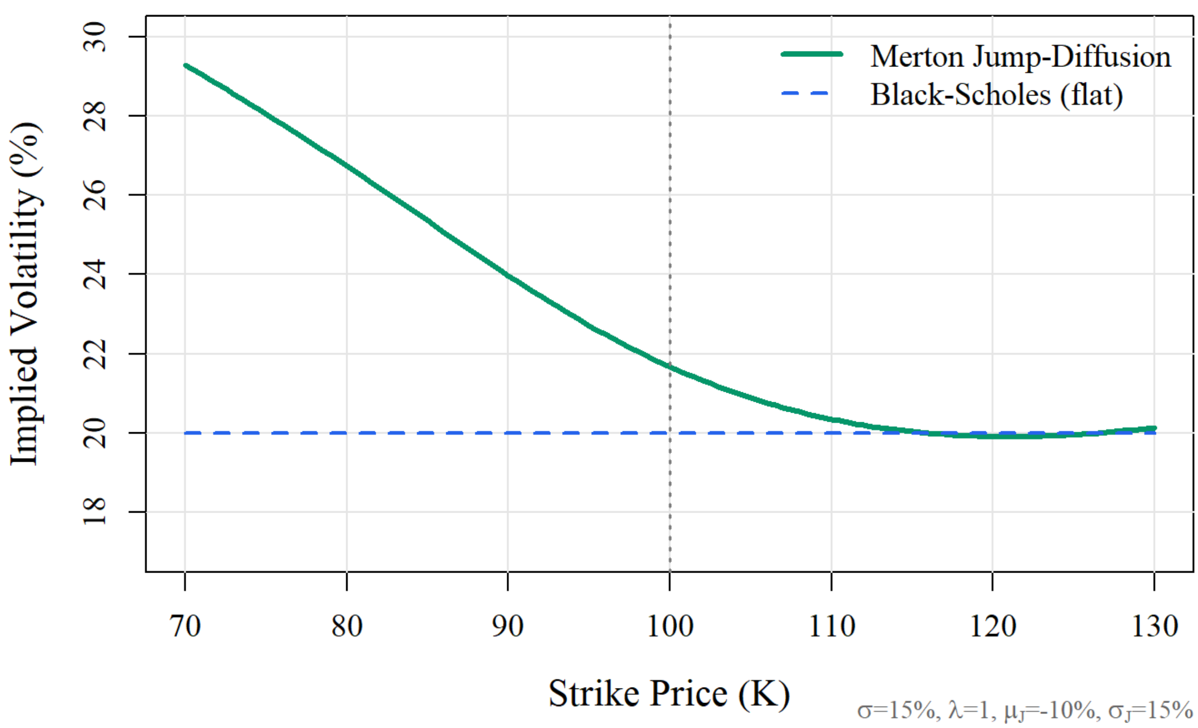


Figure 3: Heston Stochastic Volatility Implied Volatility

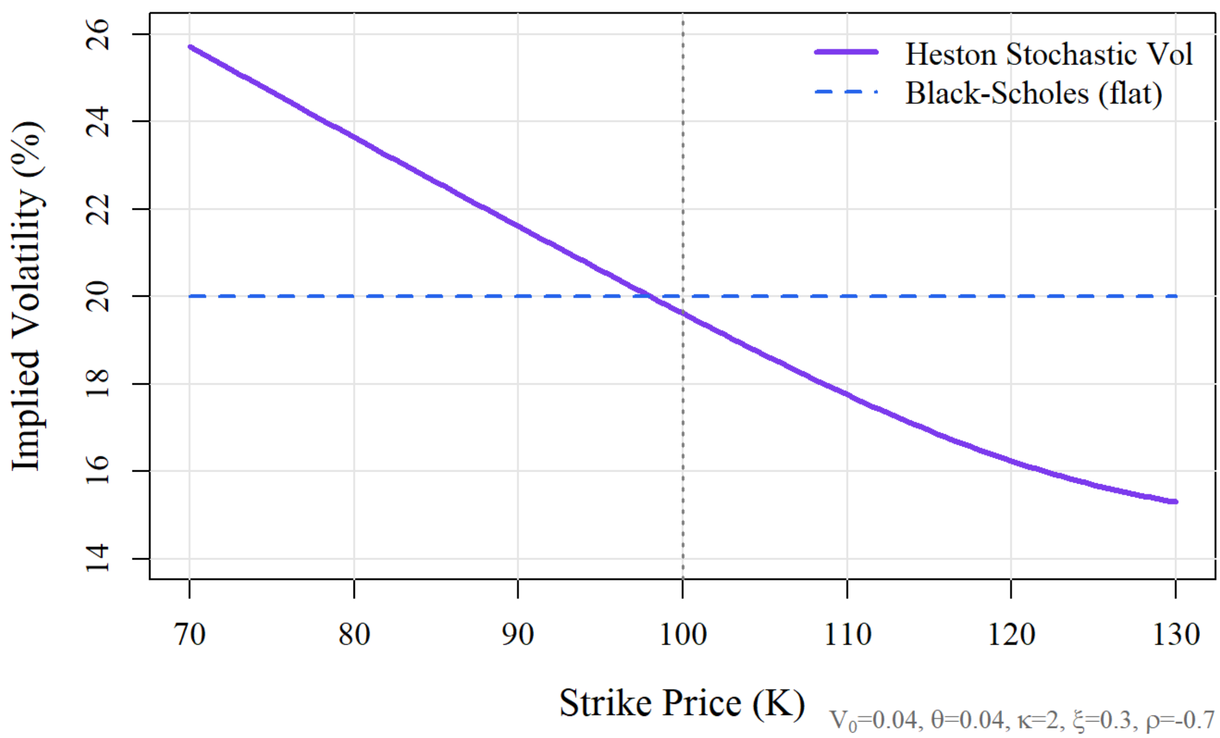


Figure 4: Implied Volatility Comparison

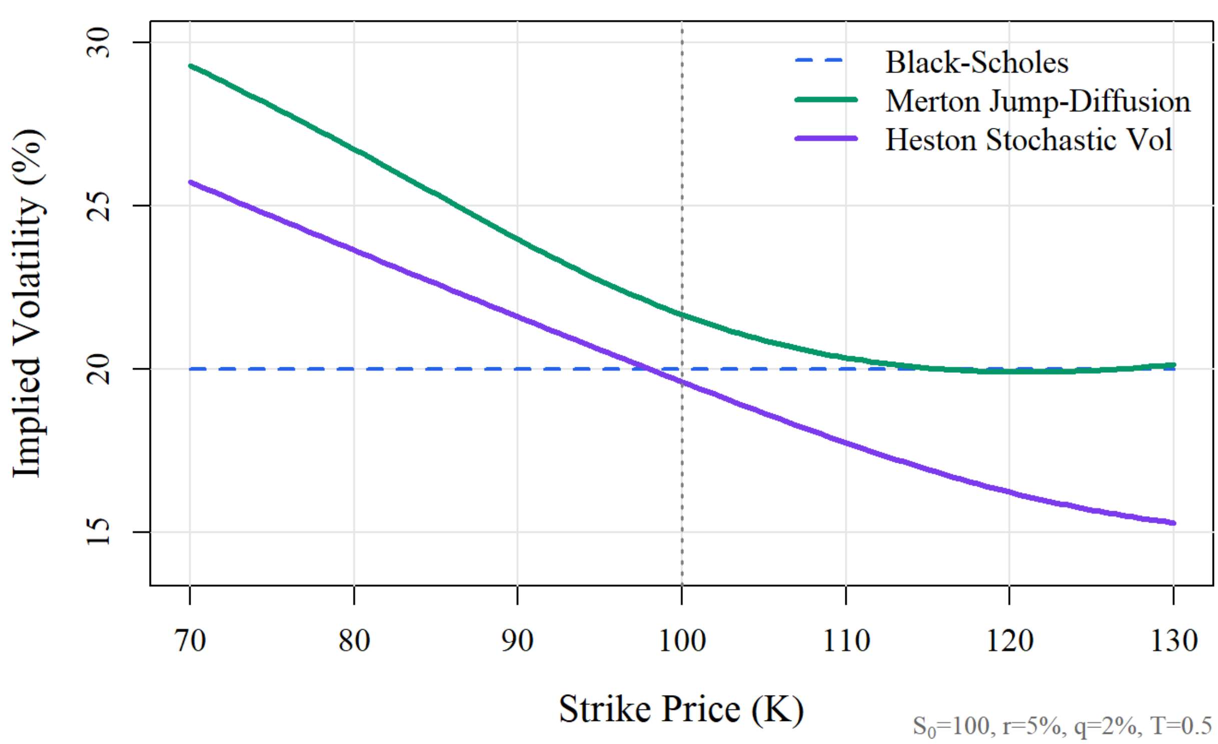
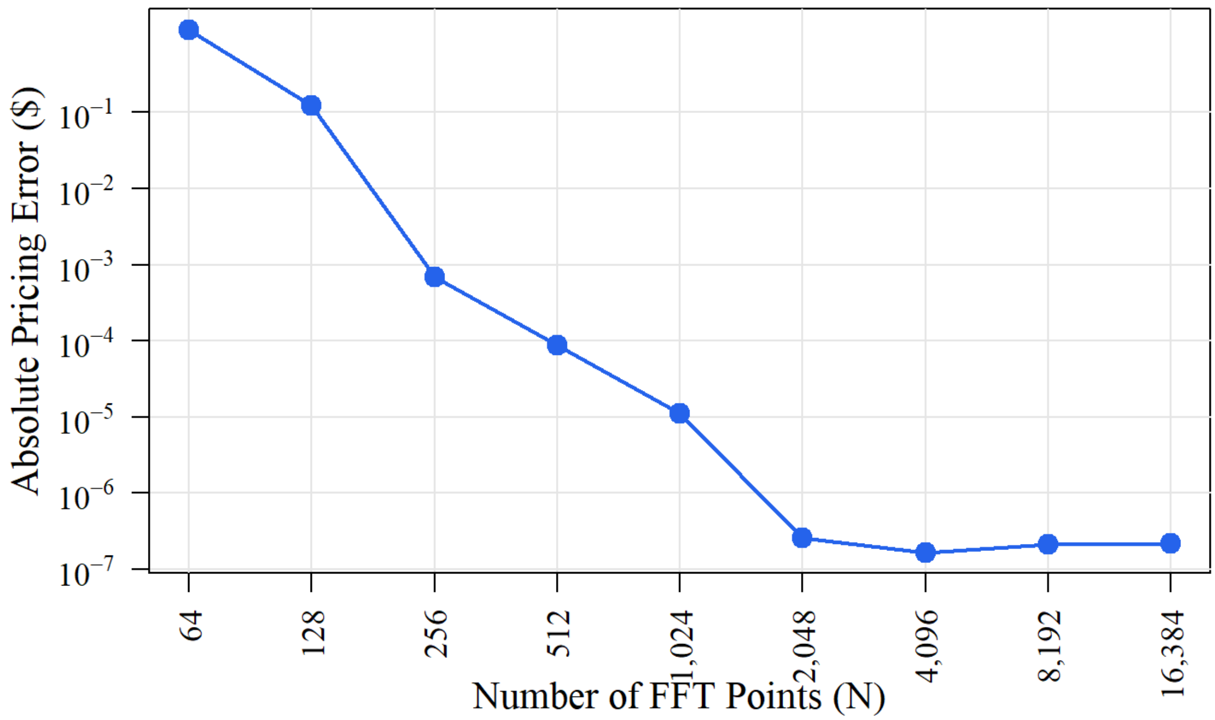
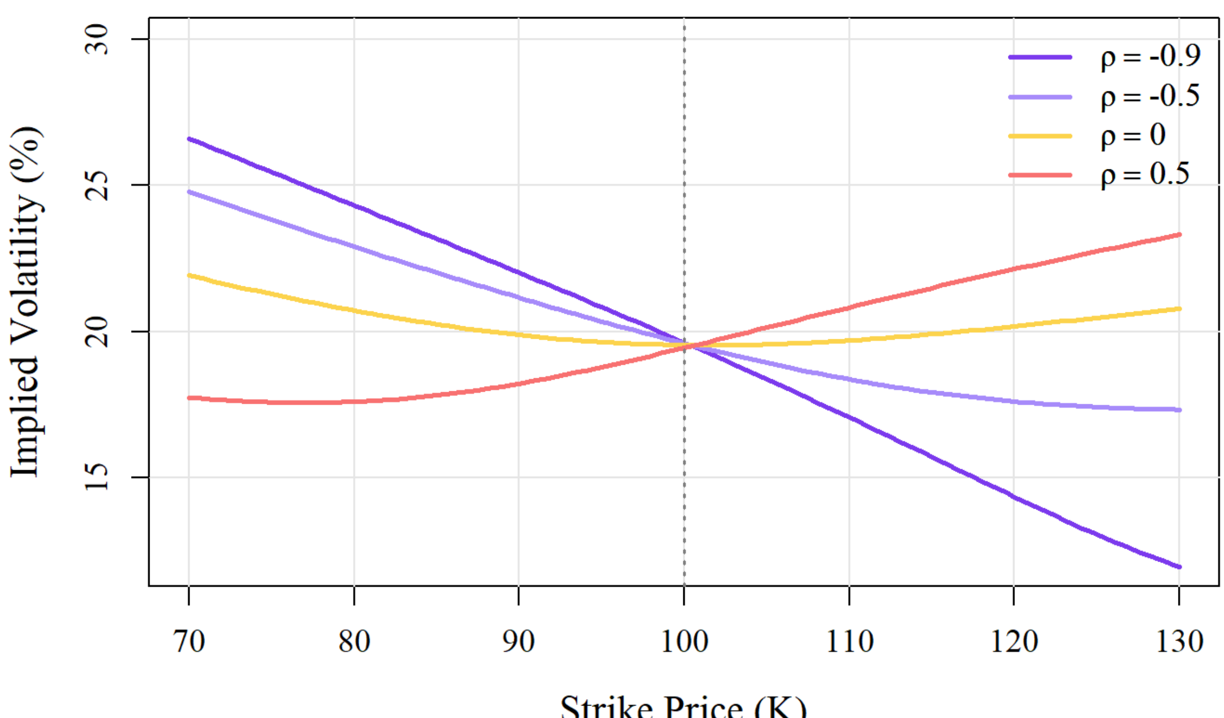


Figure 5: FFT Convergence

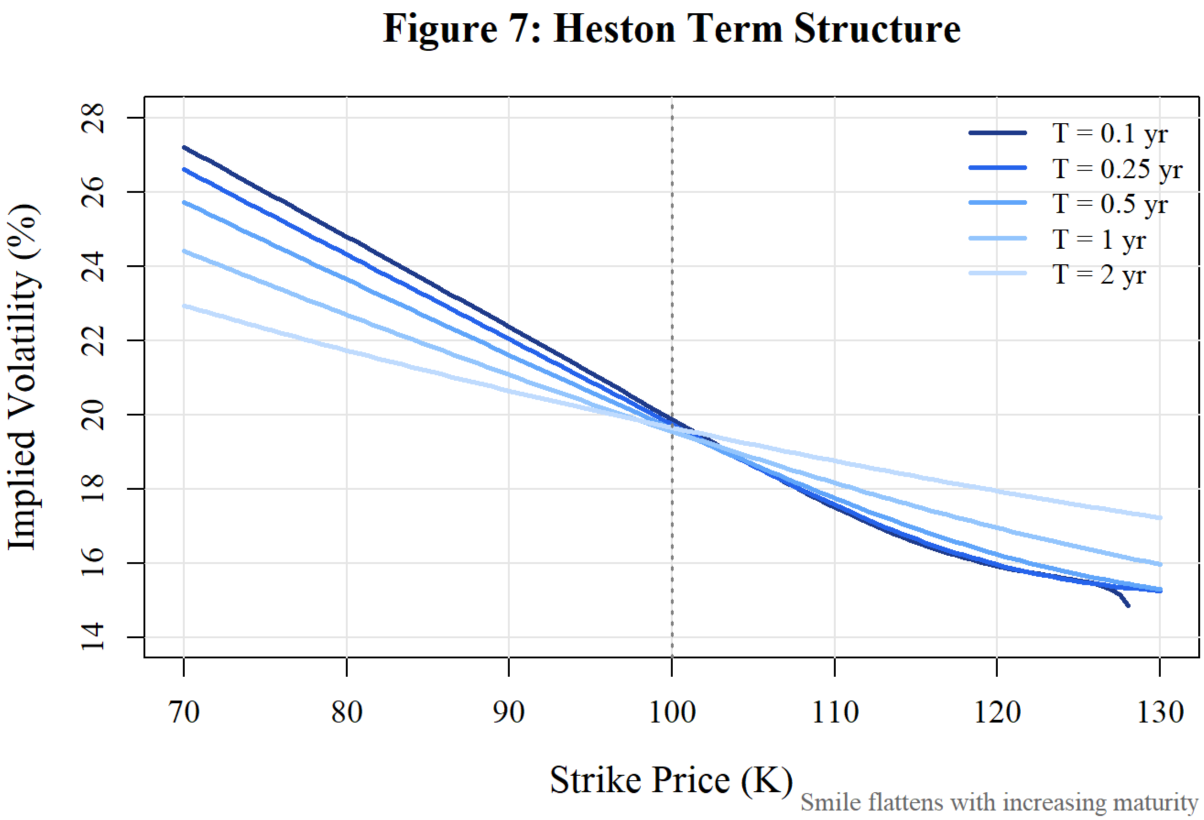


ATM Call (K=100) vs Black-Scholes Analytical

Figure 6: Heston Sensitivity to Correlation (ρ)



Negative correlation increases skew (leverage effect)



> table_1

	Strike	BS_Analytical	FFT_Price	Abs_Error
1	70	30.7488	30.7488	2.21e-07
2	75	25.9262	25.9262	2.24e-07
3	80	21.2161	21.2161	2.18e-07
4	85	16.7436	16.7436	2.15e-07
5	90	12.6719	12.6719	1.95e-07
6	95	9.1590	9.1590	2.01e-07
7	100	6.3076	6.3076	1.66e-07
8	105	4.1367	4.1367	1.78e-07
9	110	2.5859	2.5859	2.15e-07
10	115	1.5438	1.5438	2.25e-07
11	120	0.8825	0.8825	2.32e-07
12	125	0.4846	0.4846	2.21e-07
13	130	0.2563	0.2563	2.41e-07

Figure A.1: BS prices and errors

> table_2

	Strike	Call_Price	Implied_Vol
1	70	30.9789	29.29%
2	75	26.3209	28.05%
3	80	21.8012	26.73%
4	85	17.4787	25.35%
5	90	13.4426	23.97%
6	95	9.8233	22.72%
7	100	6.7682	21.67%
8	105	4.3822	20.89%
9	110	2.6734	20.35%
10	115	1.5513	20.04%
11	120	0.8696	19.91%
12	125	0.4803	19.96%
13	130	0.2666	20.15%

Figure A.2: Merton prices and vols

> table_3

	Strike	Call_Price	Implied_Vol
1	70	30.8460	25.73%
2	75	26.1055	24.68%
3	80	21.4893	23.64%
4	85	17.0766	22.62%
5	90	12.9732	21.61%
6	95	9.3053	20.6%
7	100	6.2023	19.62%
8	105	3.7683	18.66%
9	110	2.0426	17.75%
10	115	0.9691	16.94%
11	120	0.3989	16.24%
12	125	0.1435	15.7%
13	130	0.0463	15.31%

Figure A.3: Heston prices and vols