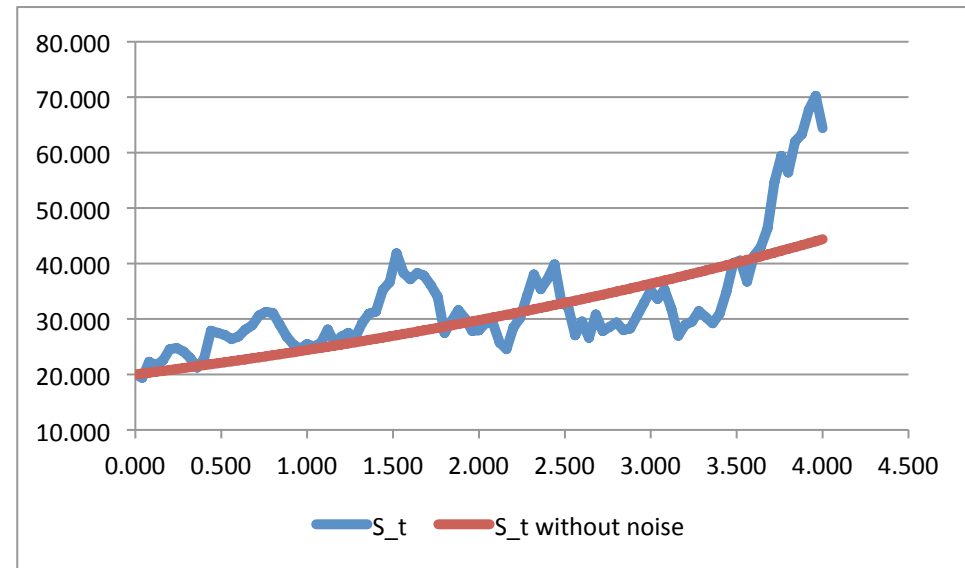


Simulating a geometric Brownian motion

Simulate $S(t)$ over $[0,T]$ where $dS = \mu S dt + \sigma S dW$

T	40			
N	1000			
delta t	0.04			
S0	20			
mu	0.2			
sigma	0.4			
t	rand()	sample number from N(0,1)	S_t	S_t without noise
0.000			20.000	20.000
0.040	0.315	-0.481	19.390	20.160
0.080	0.961	1.764	22.281	20.321
0.120	0.330	-0.441	21.673	20.484
0.160	0.650	0.384	22.513	20.648
0.200	0.850	1.038	24.563	20.813
0.240	0.501	0.003	24.764	20.979
0.280	0.339	-0.415	24.139	21.147
0.320	0.241	-0.702	22.978	21.316
0.360	0.149	-1.040	21.250	21.487
0.400	0.793	0.816	22.808	21.659
0.440	0.996	2.677	27.874	21.832
0.480	0.393	-0.271	27.494	22.007
0.520	0.396	-0.264	27.132	22.183



0.560	0.327	-0.449	26.376	22.360
0.600	0.547	0.118	26.836	22.539
0.640	0.683	0.477	28.075	22.719
0.680	0.597	0.245	28.850	22.901
0.720	0.750	0.675	30.639	23.084
0.760	0.564	0.162	31.281	23.269
0.800	0.427	-0.185	31.068	23.455
0.840	0.174	-0.938	28.987	23.643
0.880	0.153	-1.024	26.844	23.832
0.920	0.214	-0.792	25.358	24.023
0.960	0.326	-0.451	24.645	24.215
1.000	0.626	0.321	25.476	24.409
1.040	0.380	-0.305	25.059	24.604
1.080	0.583	0.209	25.678	24.801
1.120	0.861	1.083	28.108	24.999
1.160	0.122	-1.167	25.709	25.199
1.200	0.675	0.455	26.851	25.401
1.240	0.580	0.201	27.498	25.604
1.280	0.309	-0.498	26.623	25.809
1.320	0.876	1.154	29.293	26.015
1.360	0.730	0.612	30.960	26.223
1.400	0.521	0.053	31.340	26.433
1.440	0.926	1.449	35.224	26.645
1.480	0.657	0.404	36.646	26.858
1.520	0.953	1.670	41.836	27.073
1.560	0.125	-1.148	38.328	27.289
1.600	0.315	-0.482	37.157	27.508
1.640	0.611	0.281	38.290	27.728
1.680	0.403	-0.246	37.844	27.949
1.720	0.250	-0.674	36.107	28.173

1.760	0.203	-0.832	33.994	28.398
1.800	0.006	-2.499	27.469	28.626
1.840	0.809	0.873	29.607	28.855
1.880	0.770	0.738	31.590	29.085
1.920	0.242	-0.701	30.071	29.318
1.960	0.152	-1.026	27.844	29.553
2.000	0.480	-0.050	27.954	29.789
2.040	0.693	0.506	29.308	30.027
2.080	0.469	-0.077	29.361	30.268
2.120	0.050	-1.641	25.742	30.510
2.160	0.250	-0.674	24.561	30.754
2.200	0.970	1.879	28.448	31.000
2.240	0.753	0.684	30.233	31.248
2.280	0.940	1.556	34.239	31.498
2.320	0.901	1.288	38.040	31.750
2.360	0.165	-0.975	35.377	32.004
2.400	0.711	0.555	37.231	32.260
2.440	0.783	0.781	39.856	32.518
2.480	0.013	-2.235	33.049	32.778
2.520	0.320	-0.467	32.080	33.040
2.560	0.020	-2.047	27.082	33.305
2.600	0.851	1.041	29.555	33.571
2.640	0.089	-1.349	26.601	33.840
2.680	0.970	1.885	30.825	34.110
2.720	0.094	-1.318	27.821	34.383
2.760	0.591	0.230	28.556	34.658
2.800	0.603	0.261	29.379	34.936
2.840	0.247	-0.685	28.005	35.215
2.880	0.511	0.029	28.293	35.497
2.920	0.817	0.906	30.569	35.781

2.960	0.803	0.851	32.895	36.067
3.000	0.777	0.761	35.162	36.355
3.040	0.258	-0.650	33.616	36.646
3.080	0.708	0.546	35.355	36.939
3.120	0.090	-1.339	31.851	37.235
3.160	0.022	-2.005	26.996	37.533
3.200	0.789	0.804	28.948	37.833
3.240	0.559	0.149	29.525	38.136
3.280	0.759	0.704	31.424	38.441
3.320	0.297	-0.533	30.336	38.748
3.360	0.290	-0.554	29.234	39.058
3.400	0.729	0.610	30.894	39.371
3.440	0.936	1.520	34.899	39.686
3.480	0.961	1.761	40.094	40.003
3.520	0.517	0.043	40.553	40.323
3.560	0.101	-1.275	36.742	40.646
3.600	0.930	1.478	41.381	40.971
3.640	0.651	0.388	42.997	41.299
3.680	0.809	0.876	46.353	41.629
3.720	0.984	2.145	54.679	41.962
3.760	0.837	0.981	59.408	42.298
3.800	0.232	-0.731	56.409	42.636
3.840	0.874	1.144	62.020	42.977
3.880	0.566	0.165	63.335	43.321
3.920	0.779	0.769	67.740	43.668
3.960	0.641	0.362	70.243	44.017
4.000	0.127	-1.139	64.405	44.369