

LAB 11

◆ Question 1

For 4 pairs of μ and σ $\{ (0.6,0.1) , (0.6,0.2) , (-0.04,0.1) , (-0.04,0.2) \}$ and $S(0)$ (or S_0) = 100, 10 sample paths of the stock price $S(T)$ were generated and the following graphs and values were observed for the distribution of $S(5)$:

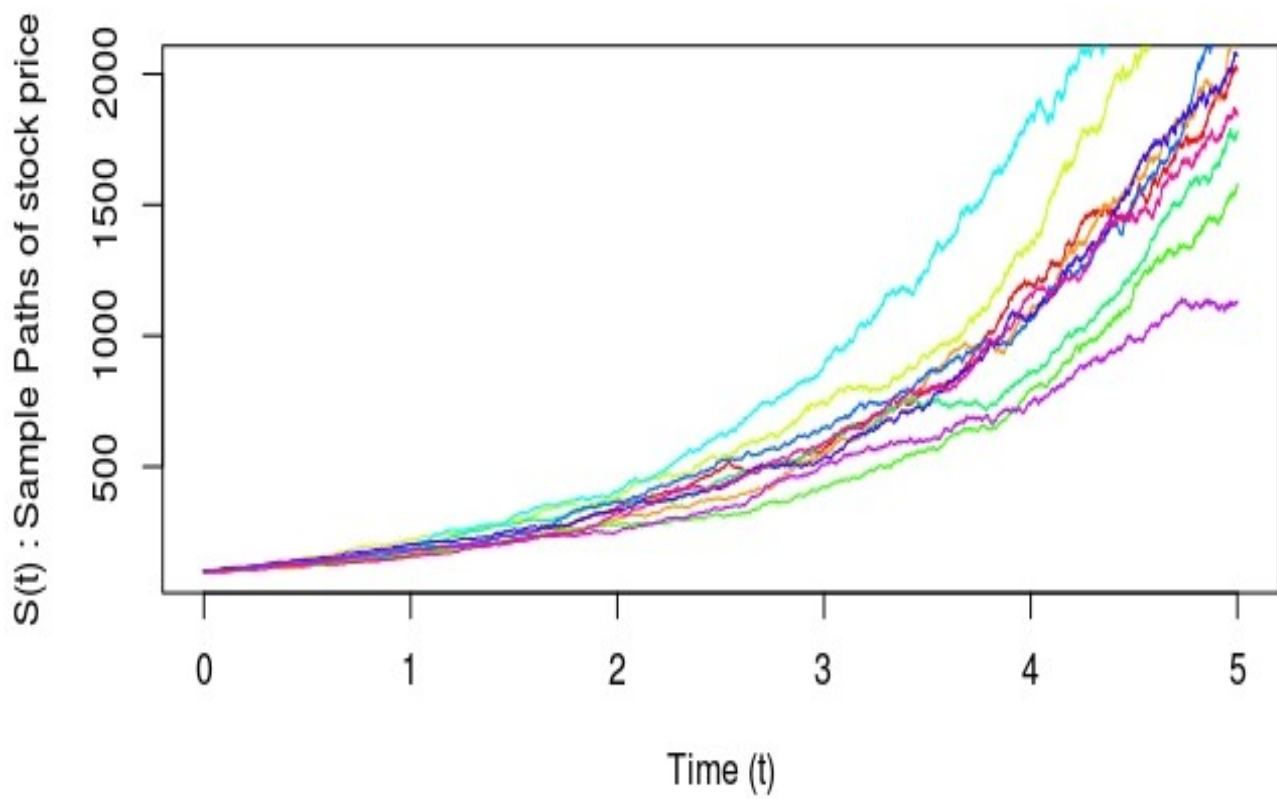
for μ and σ = 0.6 and 0.1
Theoretical $\text{Exp}[S(5)]$ = 2008.554 Theoretical $\text{Var}[S(5)]$ = 206842.4
Observed $\text{Exp}[S(5)]$ = 2099.151
Observed $\text{Var}[S(5)]$ = 402951.2

for μ and σ = 0.6 and 0.2
Theoretical $\text{Exp}[S(5)]$ = 2008.554 Theoretical $\text{Var}[S(5)]$ = 893202.5
Observed $\text{Exp}[S(5)]$ = 2075.176
Observed $\text{Var}[S(5)]$ = 750259.6

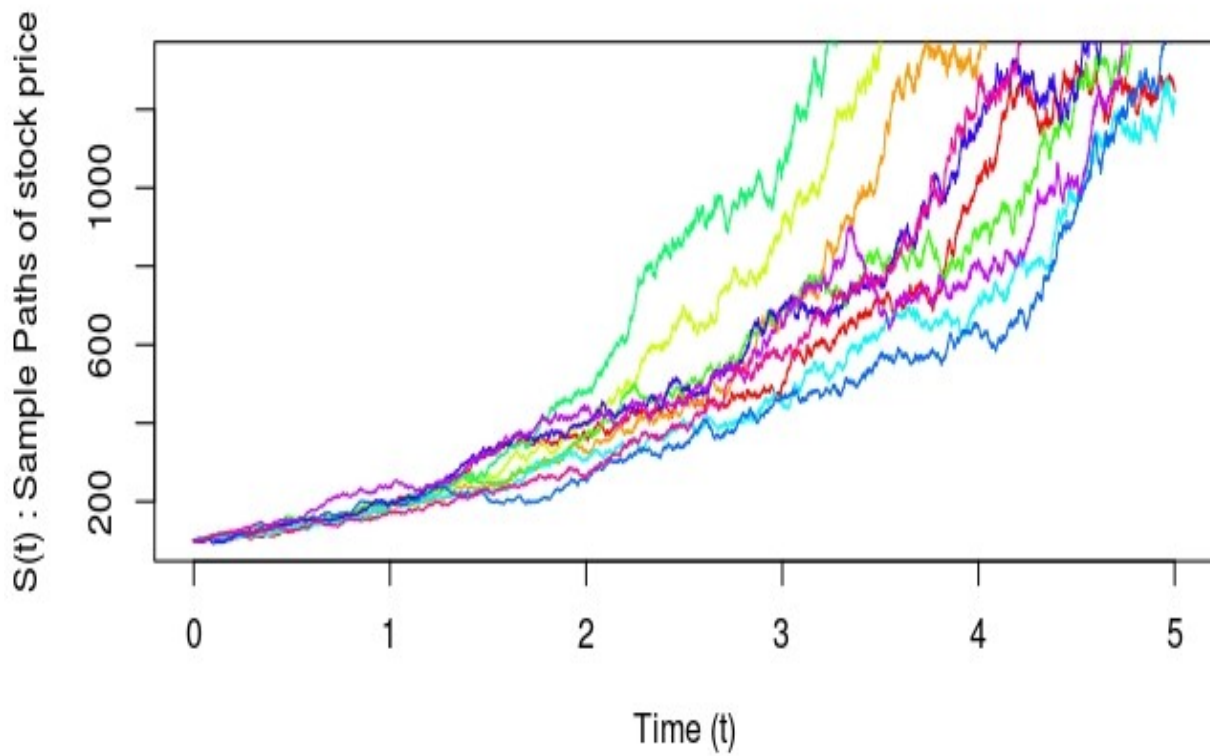
for μ and σ = -0.04 and 0.1
Theoretical $\text{Exp}[S(5)]$ = 81.87308 Theoretical $\text{Var}[S(5)]$ = 343.6804
Observed $\text{Exp}[S(5)]$ = 81.12735
Observed $\text{Var}[S(5)]$ = 371.9891

for μ and σ = -0.04 and 0.2
Theoretical $\text{Exp}[S(5)]$ = 81.87308 Theoretical $\text{Var}[S(5)]$ = 1484.107
Observed $\text{Exp}[S(5)]$ = 94.91483
Observed $\text{Var}[S(5)]$ = 2065.998

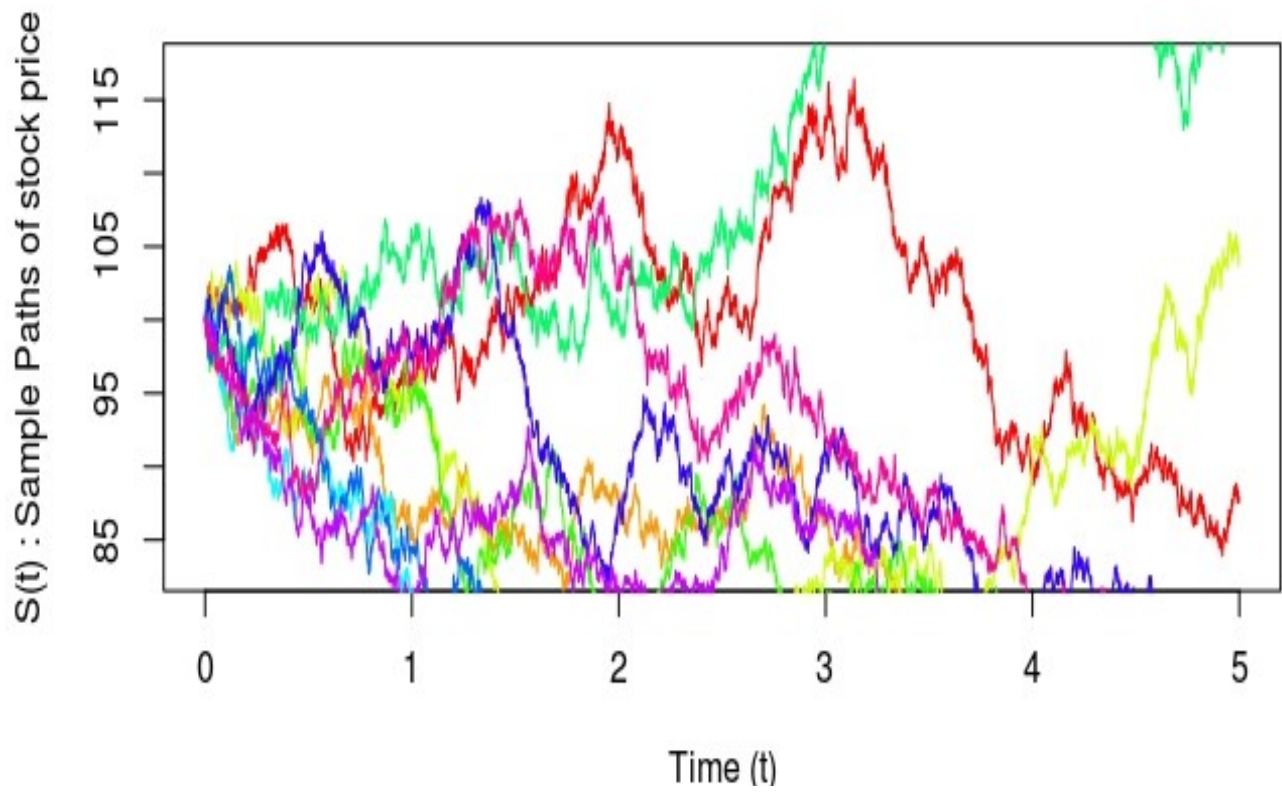
For $\mu: 0.6$ & $\sigma: 0.1$



For $\mu: 0.6$ & $\sigma: 0.2$



For μ : -0.04 & σ : 0.1



For μ : -0.04 & σ : 0.2

