MA374 – Lab 10

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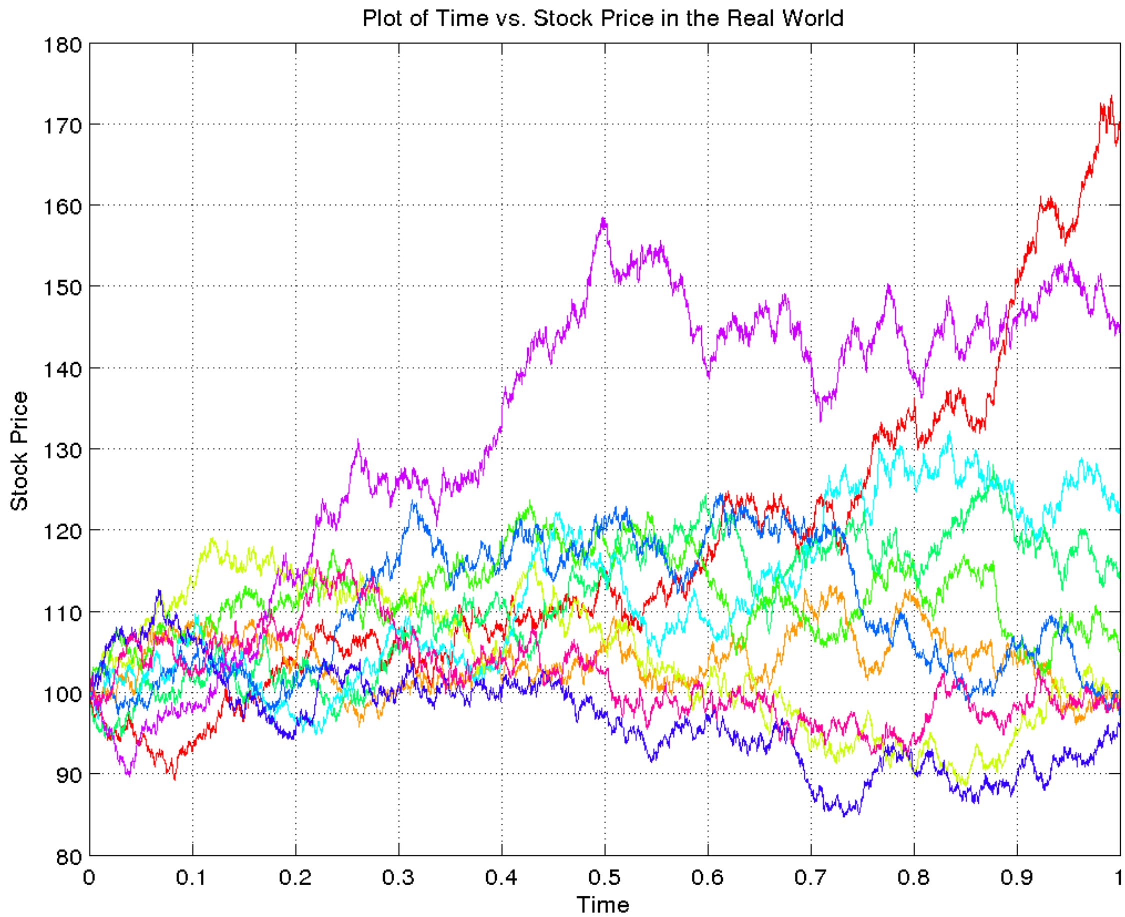
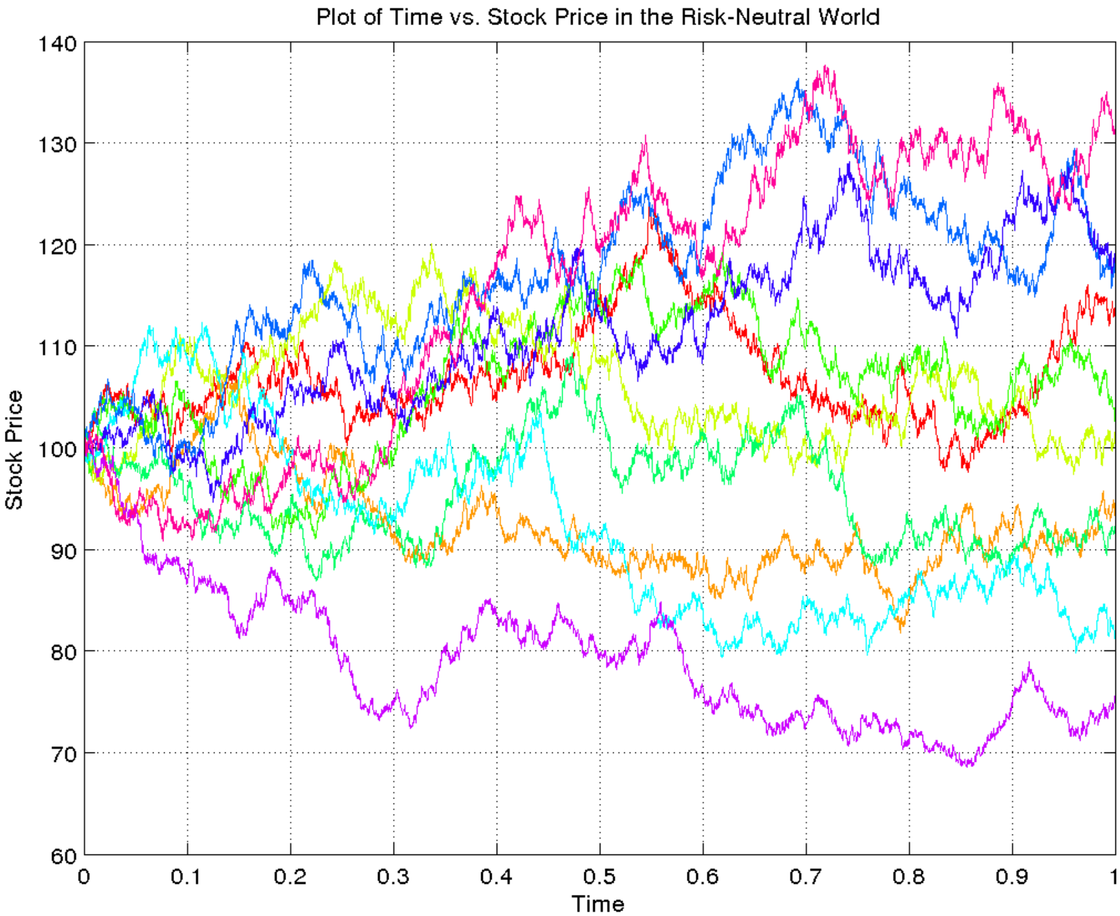
1. Plot of Asset Price in the Real World:-



Plot of Asset Price in the Risk-Neutral World:-



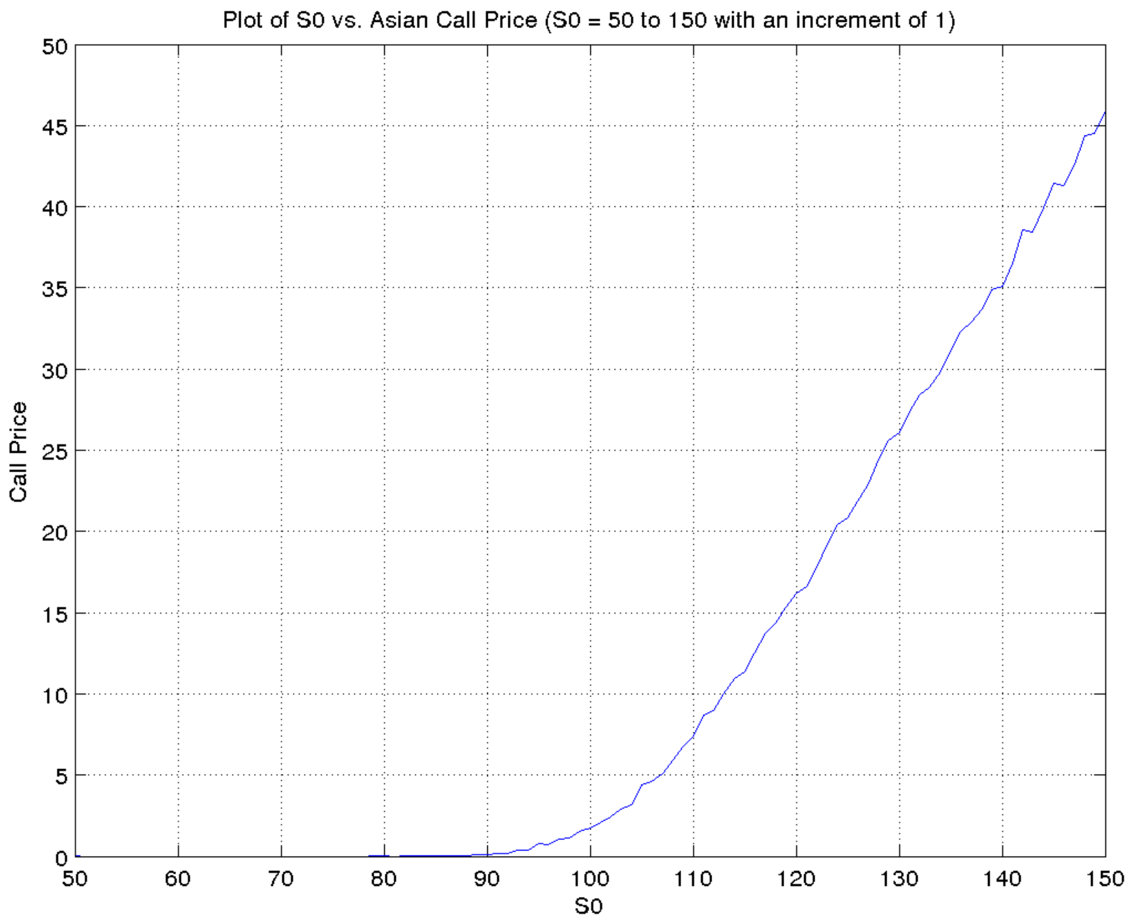
Prices of Asian Options:-
95% Confidence Interval for Asian Call Option with K = 105,
[1.744568, 1.788869]
95% Confidence Interval for Asian Put Option with K = 105,
[5.398761, 5.477017]

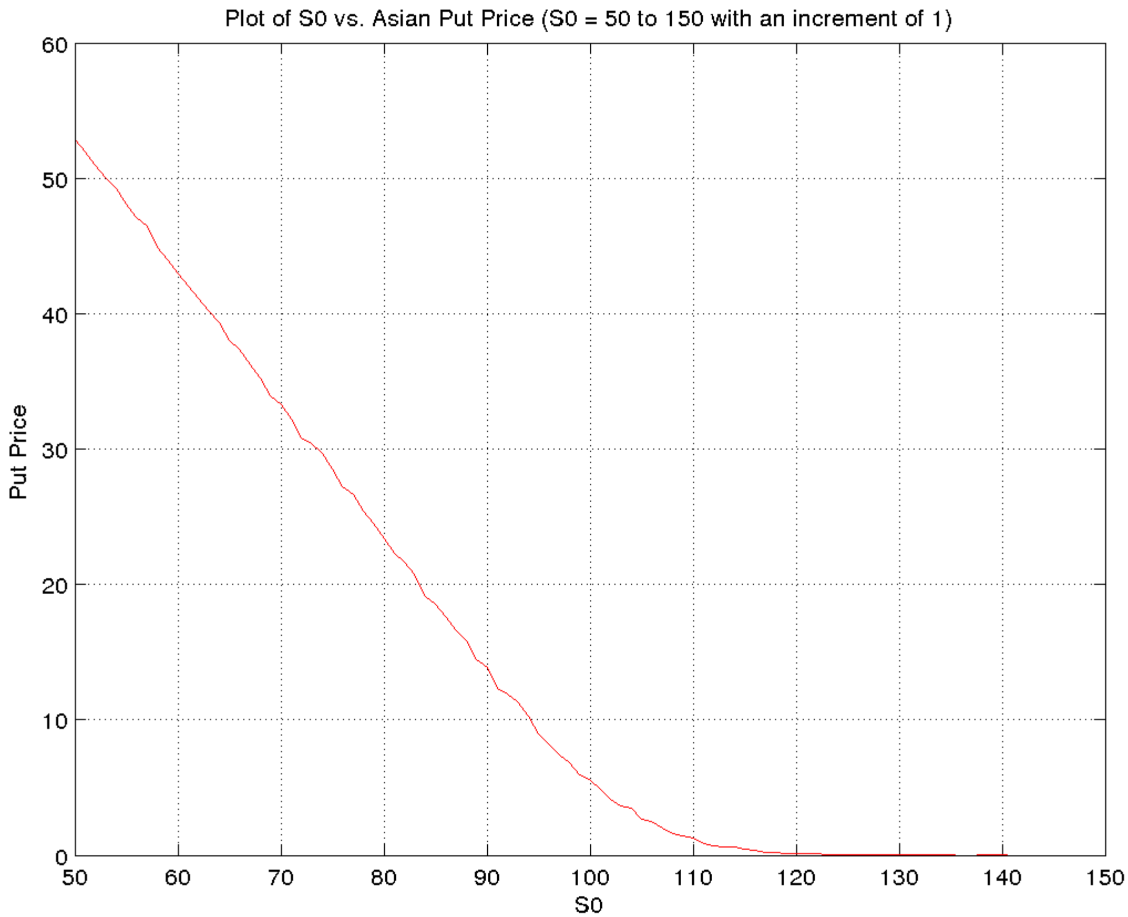
95% Confidence Interval for Asian Call Option with K = 110,
[0.687308, 0.716142]
95% Confidence Interval for Asian Put Option with K = 110,
[9.163448, 9.244487]

95% Confidence Interval for Asian Call Option with K = 90,
[11.165893, 11.261295]
95% Confidence Interval for Asian Put Option with K = 90,
[0.243764, 0.258083]

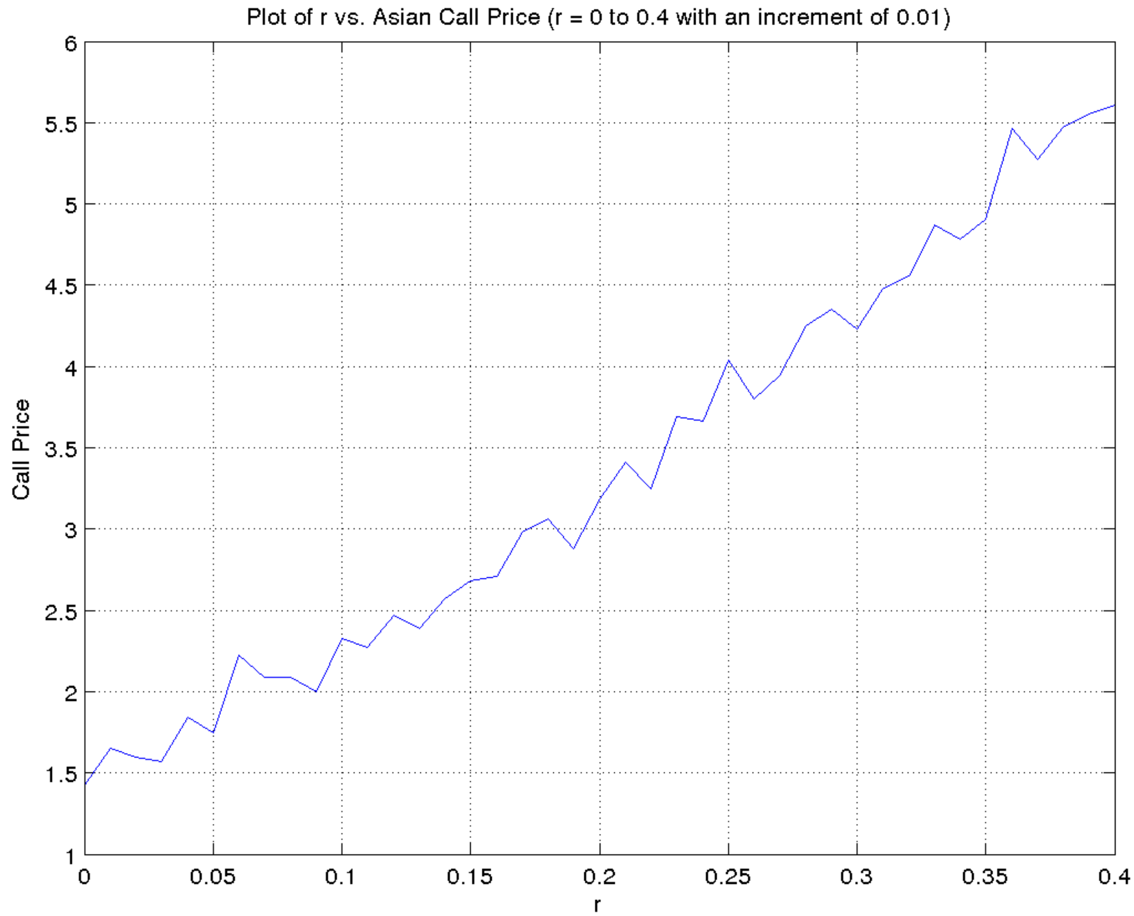
Sensitivity Analysis:-

Varying S0:-

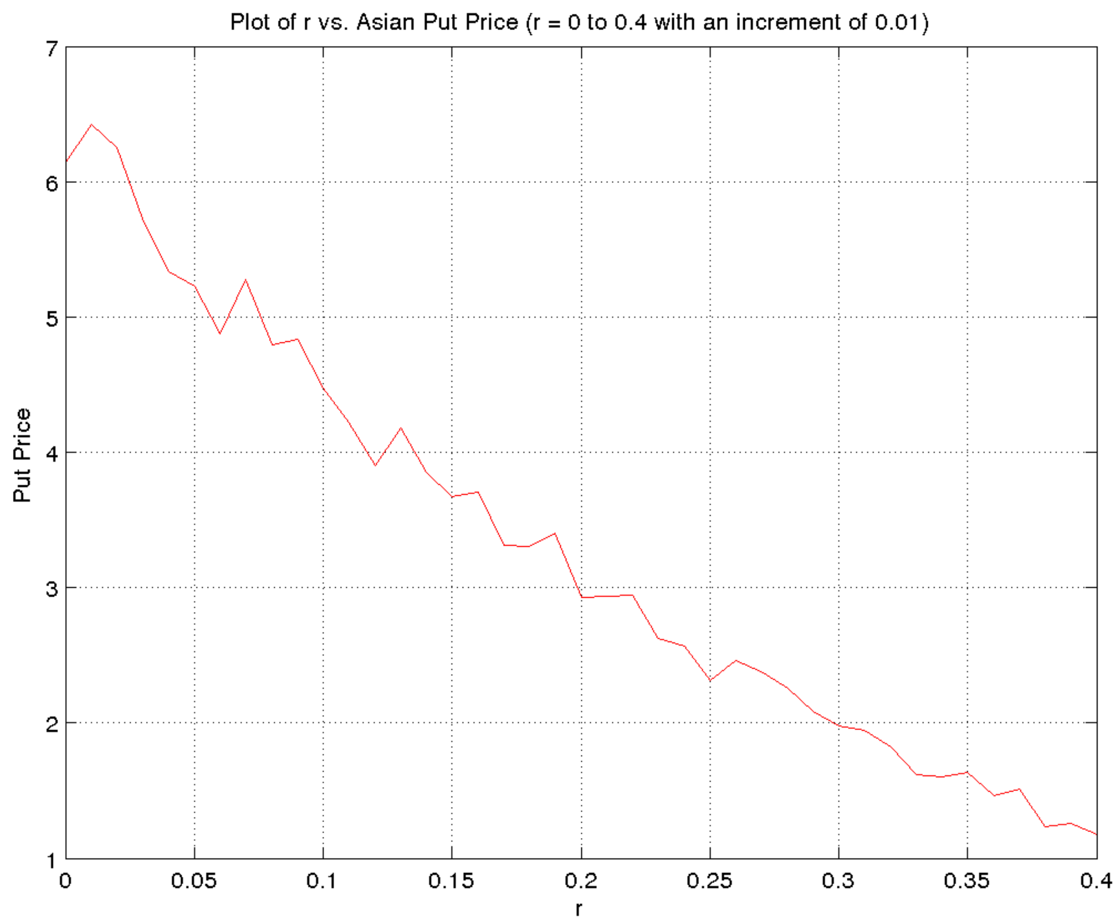



Plot of S0 vs. Asian Put Price (S0 = 50 to 150 with an increment of 1)
Put Price
S0
0
10
20
30
40
50
60
50
60
70
80
90
100
110
120
130
140
150

Varying r:-

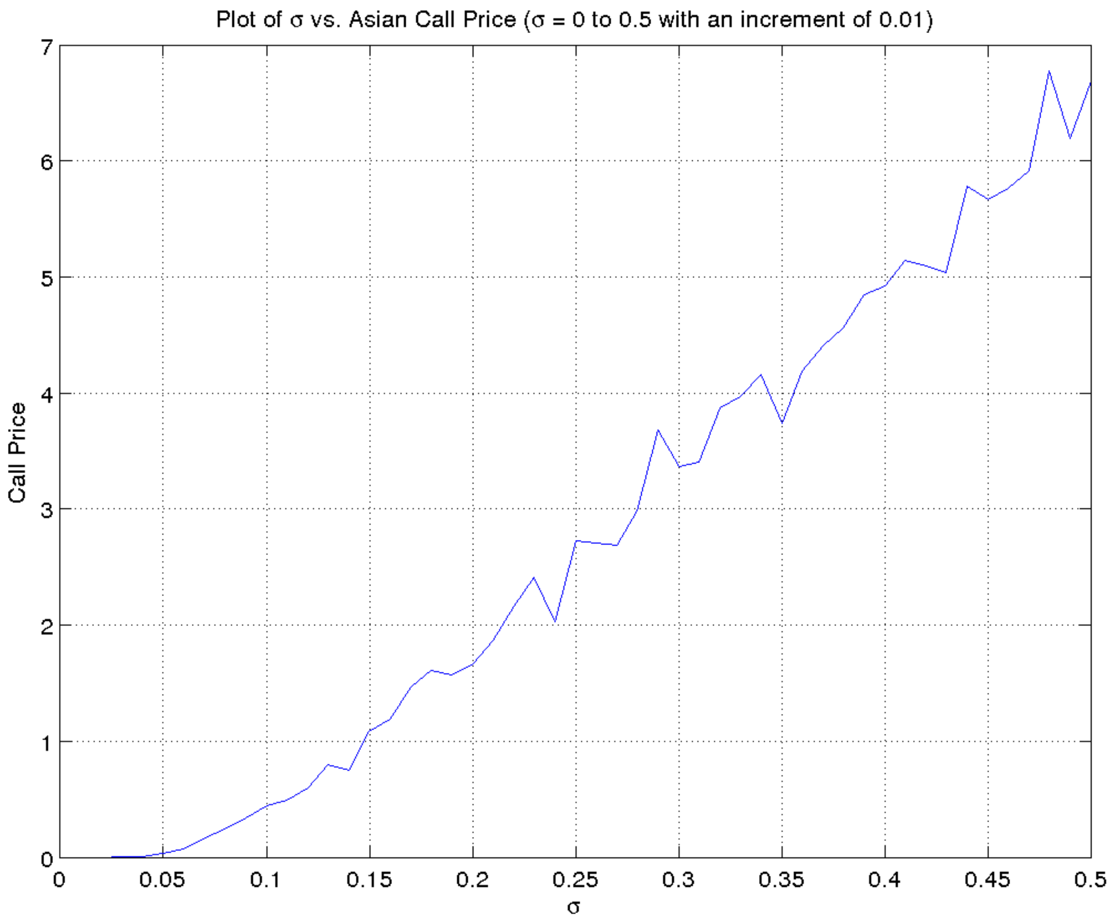


Plot of r vs. Asian Call Price (r = 0 to 0.4 with an increment of 0.01)
Call Price
r
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4

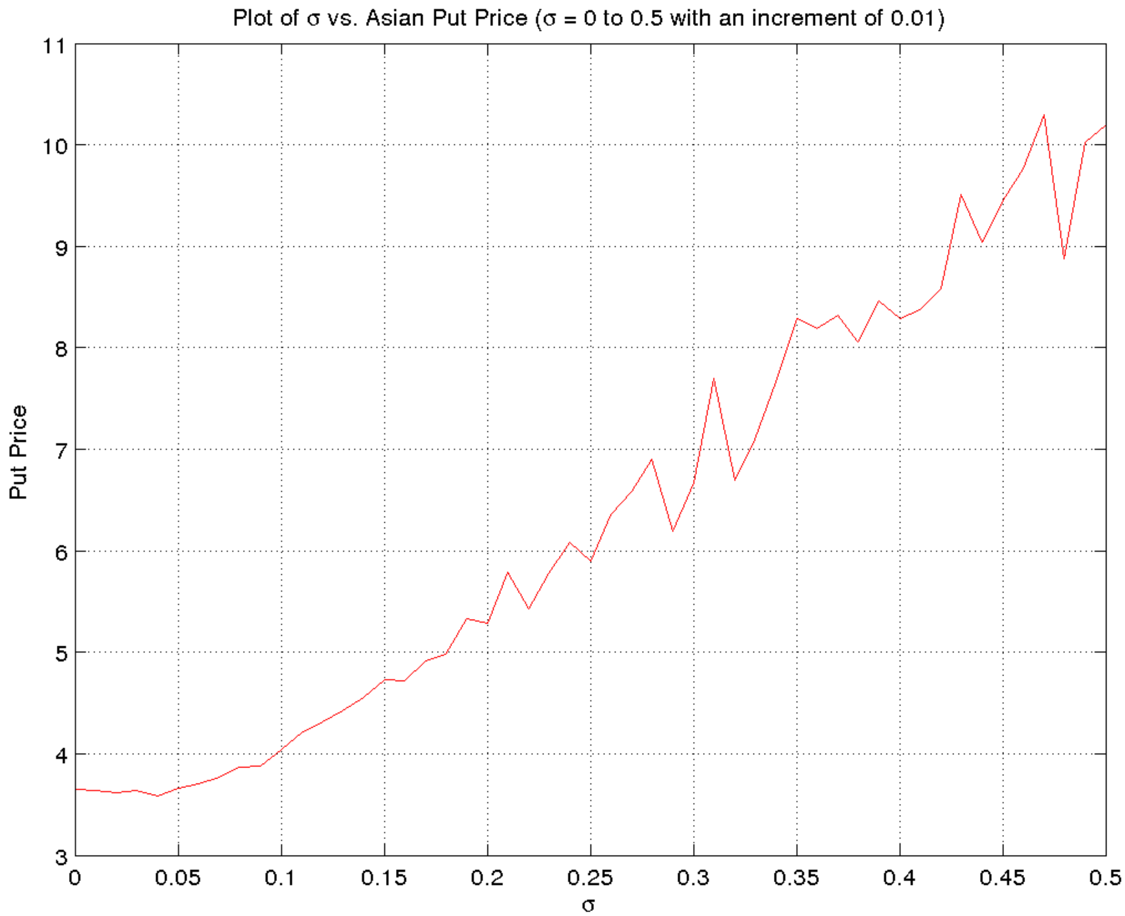


Plot of r vs. Asian Put Price (r = 0 to 0.4 with an increment of 0.01)
Put Price
r
7
6
5
4
3
2
1
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4

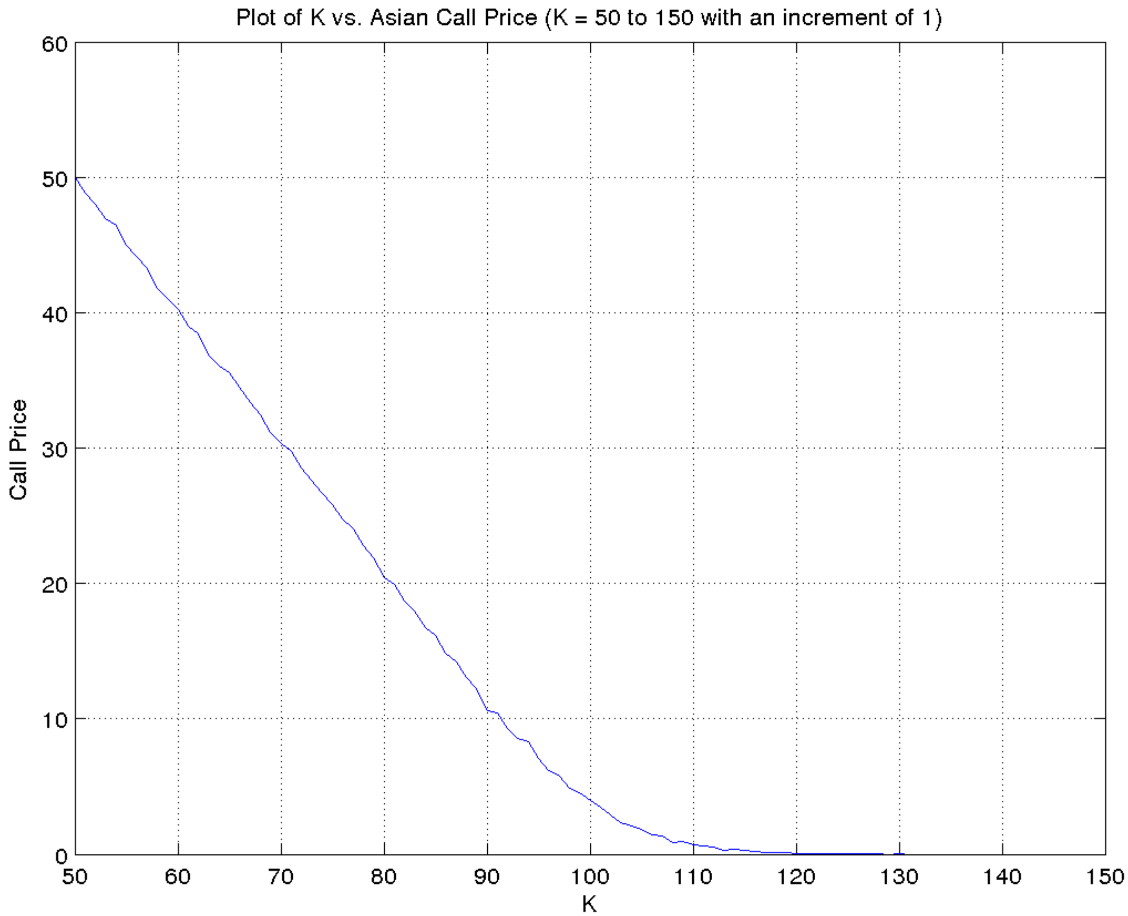
Varying σ:-



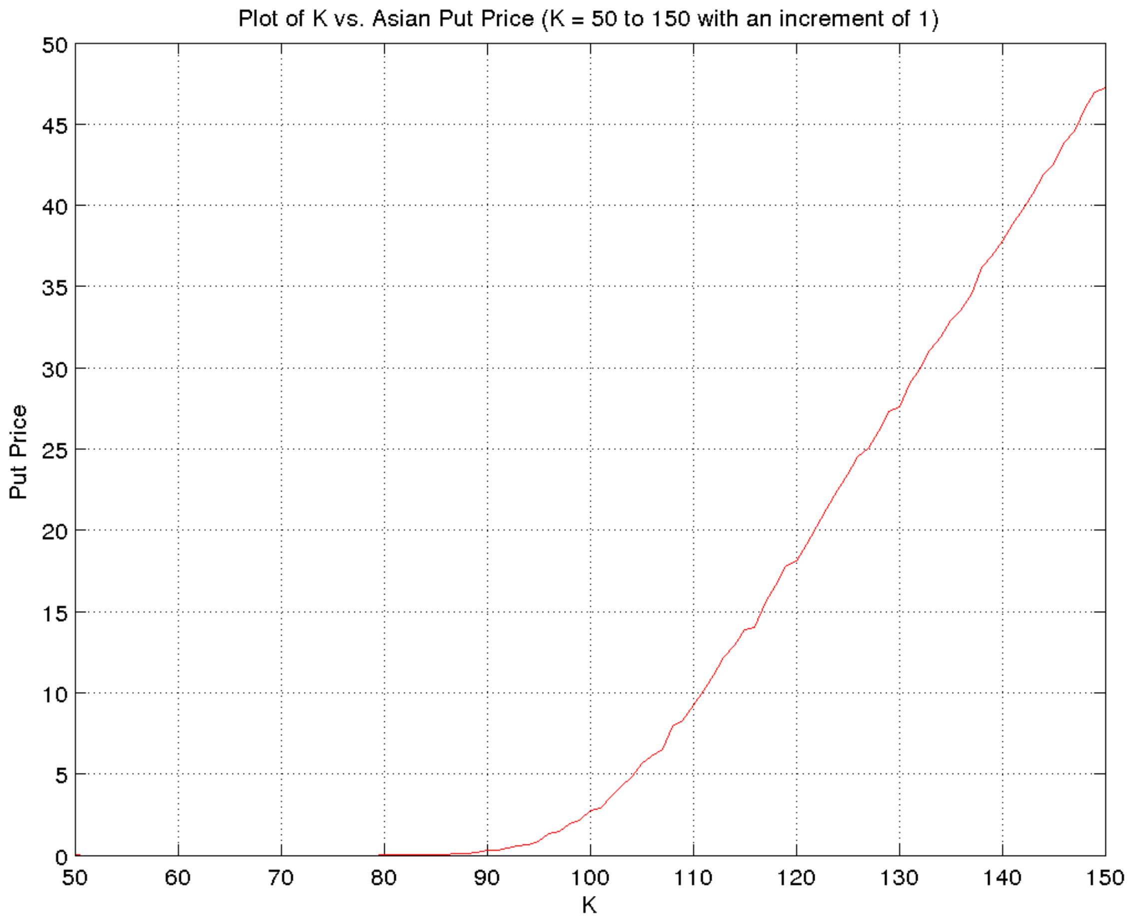
Plot of σ vs. Asian Call Price (σ = 0 to 0.5 with an increment of 0.01)
Call Price
σ
0
1
2
3
4
5
6
7
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5


Plot of σ vs. Asian Put Price (σ = 0 to 0.5 with an increment of 0.01)
Put Price
σ
11
10
9
8
7
6
5
4
3
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5

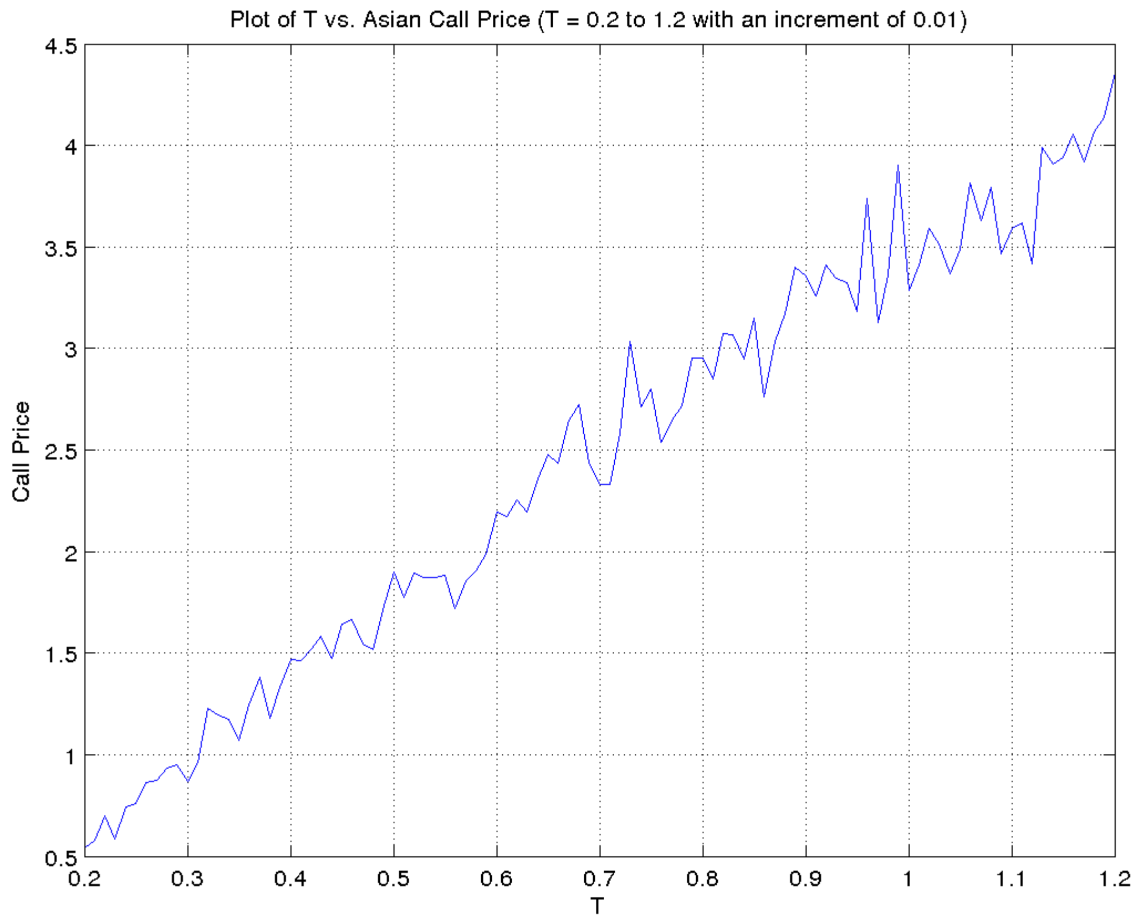
Varying K:-



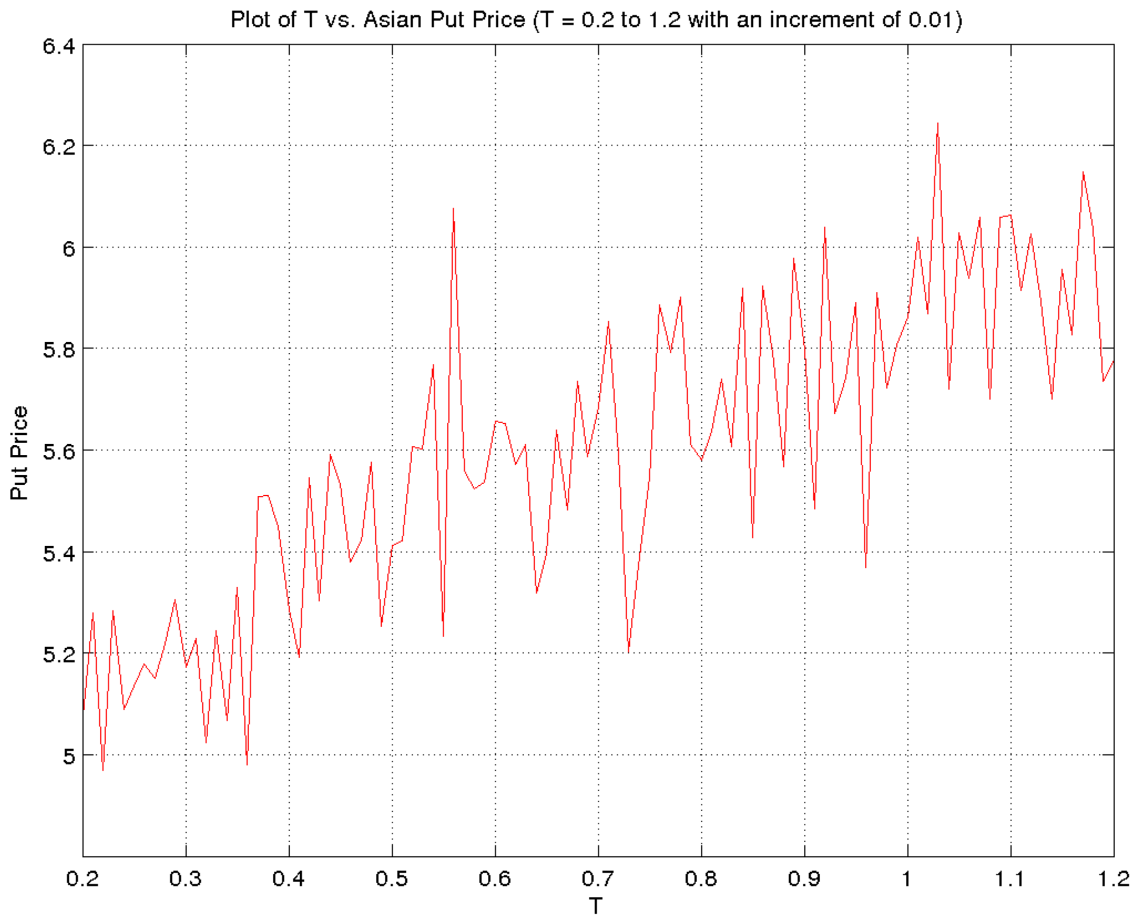
Plot of K vs. Asian Call Price (K = 50 to 150 with an increment of 1)
Call Price
K
0
10
20
30
40
50
60
50
60
70
80
90
100
110
120
130
140
150


Plot of K vs. Asian Put Price (K = 50 to 150 with an increment of 1)
Put Price
K
50
45
40
35
30
25
20
15
10
5
0
50
60
70
80
90
100
110
120
130
140
150

Varying T:-



Plot of T vs. Asian Call Price (T = 0.2 to 1.2 with an increment of 0.01)
Call Price
T
0.5
1
1.5
2
2.5
3
3.5
4
4.5
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2


Plot of T vs. Asian Put Price (T = 0.2 to 1.2 with an increment of 0.01)
6.4
6.2
6
5.8
5.6
5.4
5.2
5
Put Price
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2
T