Lab 11 Output

Kartik Sethi

Roll no – 170123057

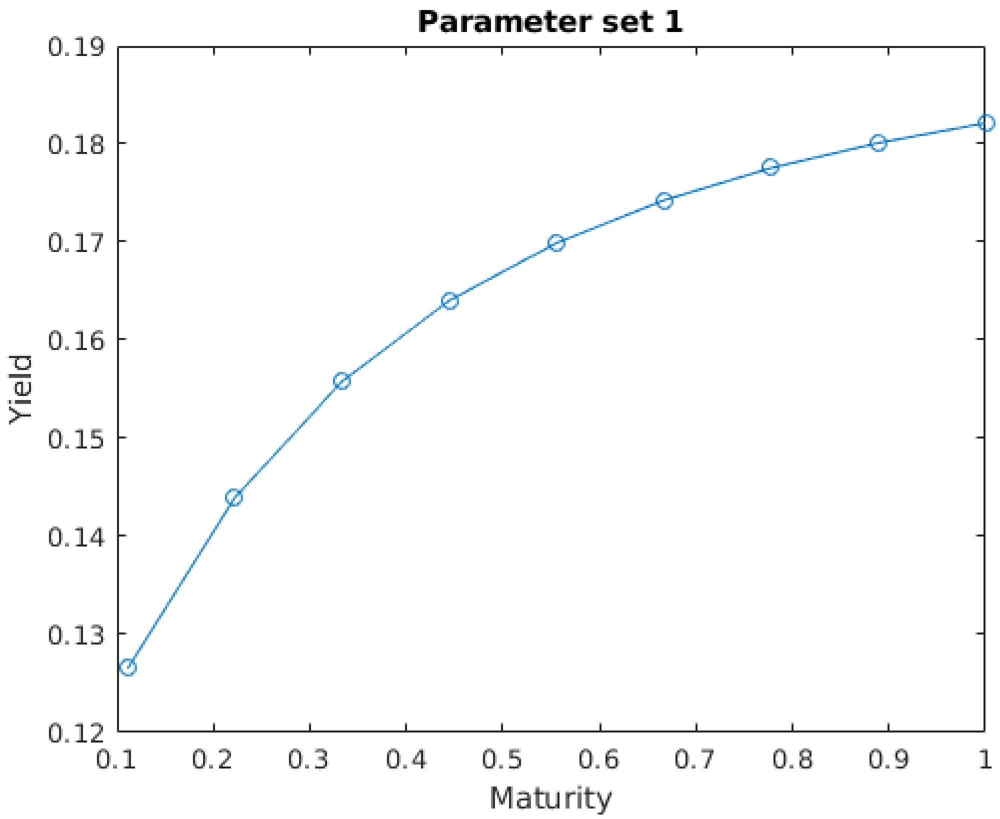
Continuously compounded **zero coupon yield** is given by

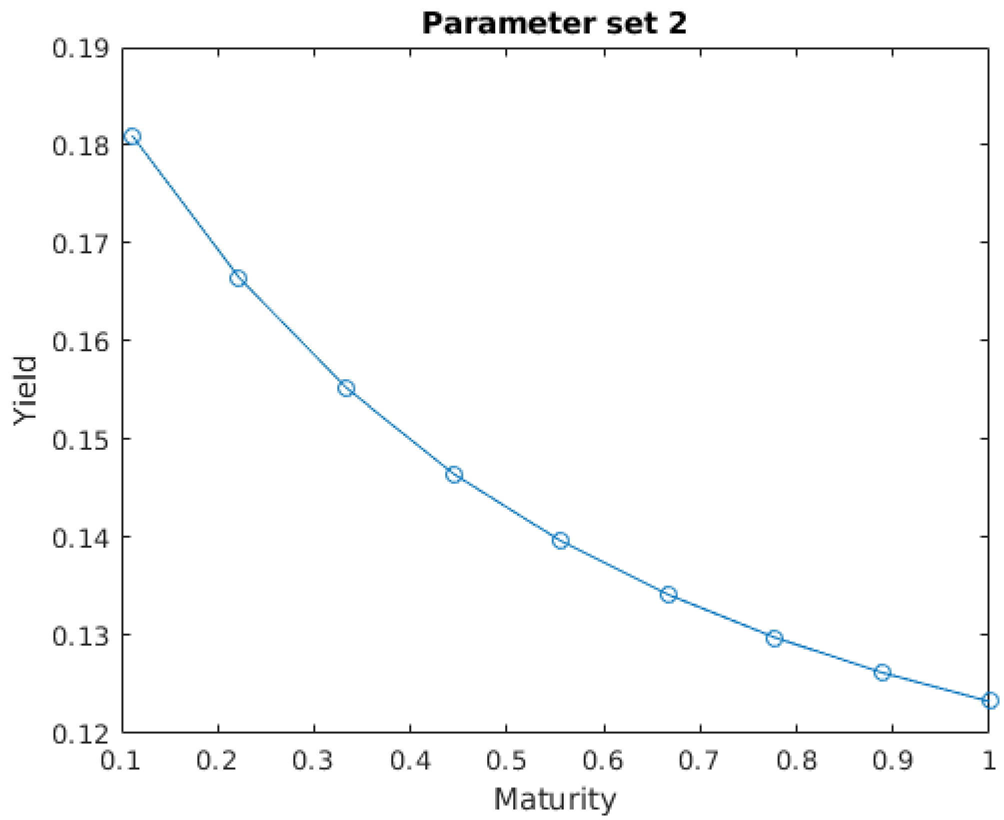
$$y(t,T) = -\frac{log(p(t,T))}{T-t}$$

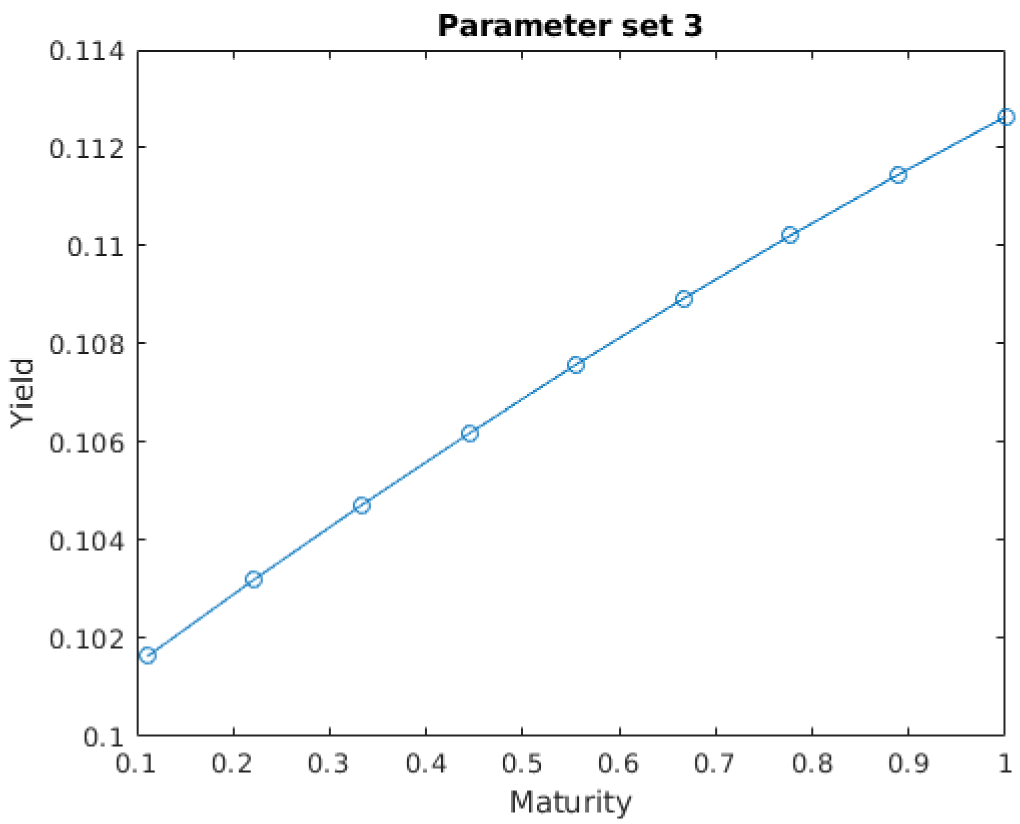
where $p(t,T)$ is zero coupon bond price , which is calculated using different short rate models like Vasiček model or Cox-Ingersoll-Ross (CIR) model.

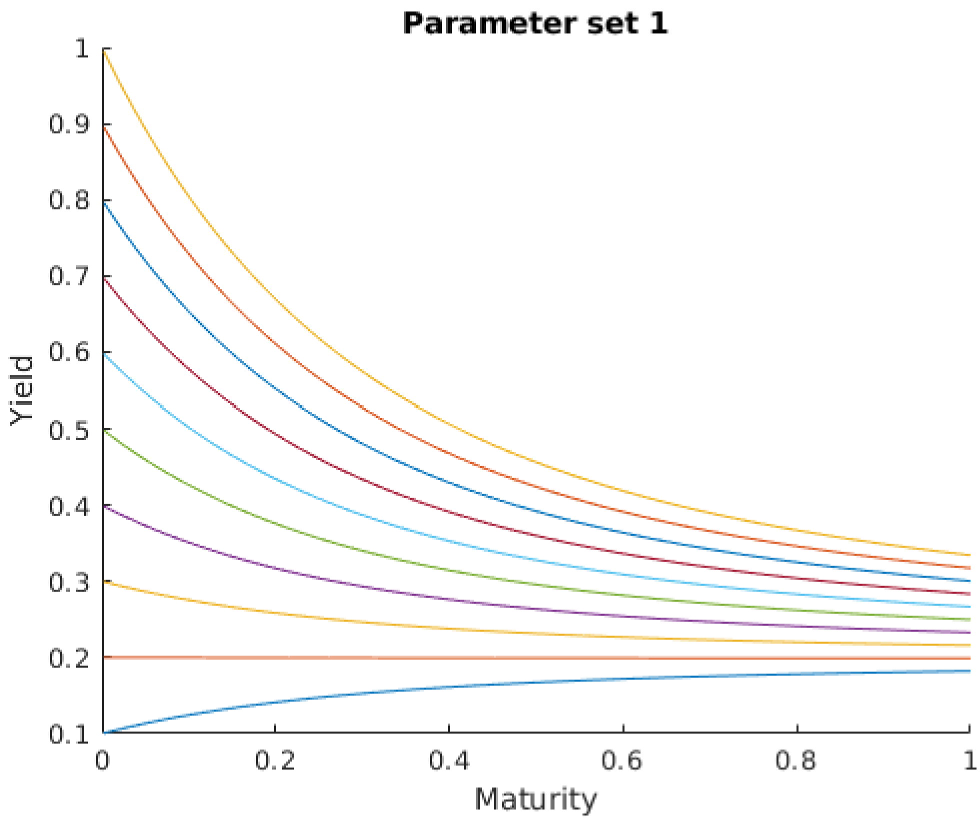
Q1.

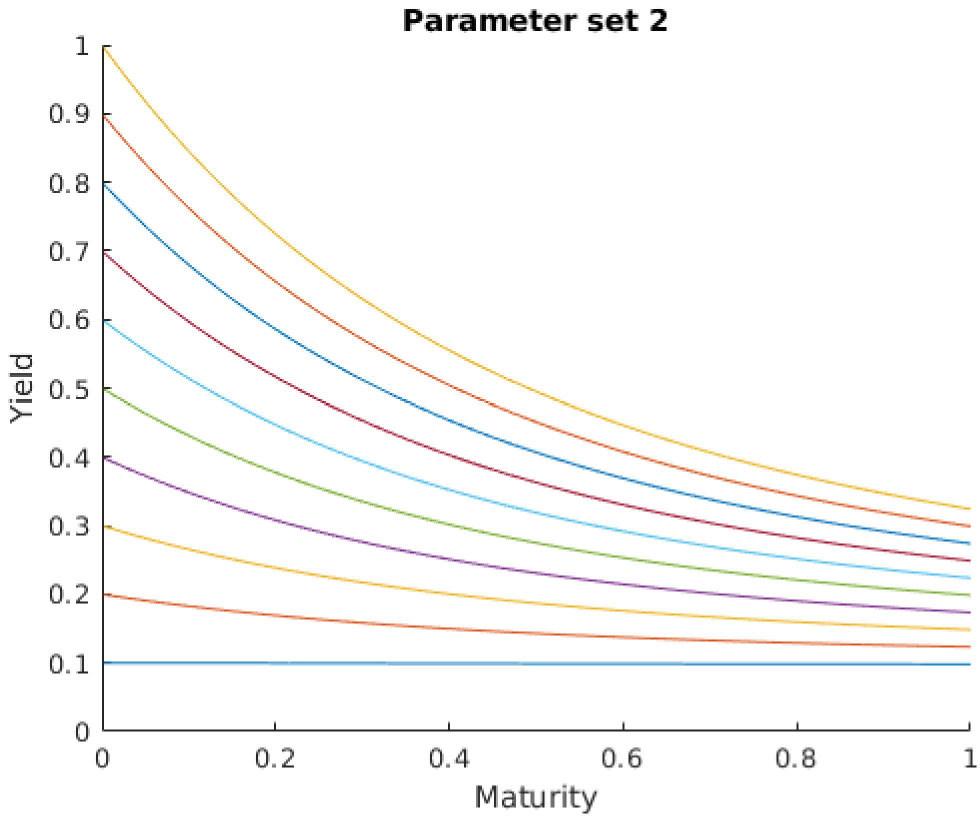
Vasicek Model

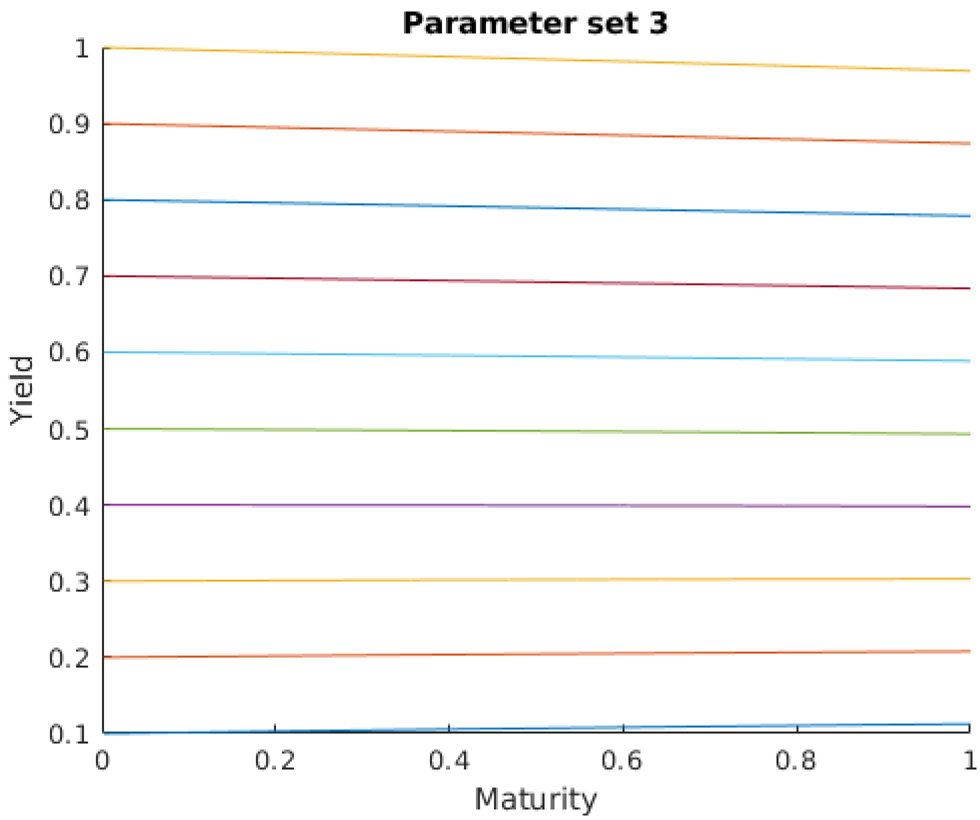



Parameter set 2
Yield
Maturity
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


Parameter set 3
Yield
Maturity
0.114
0.112
0.11
0.108
0.106
0.104
0.102
0.1
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1

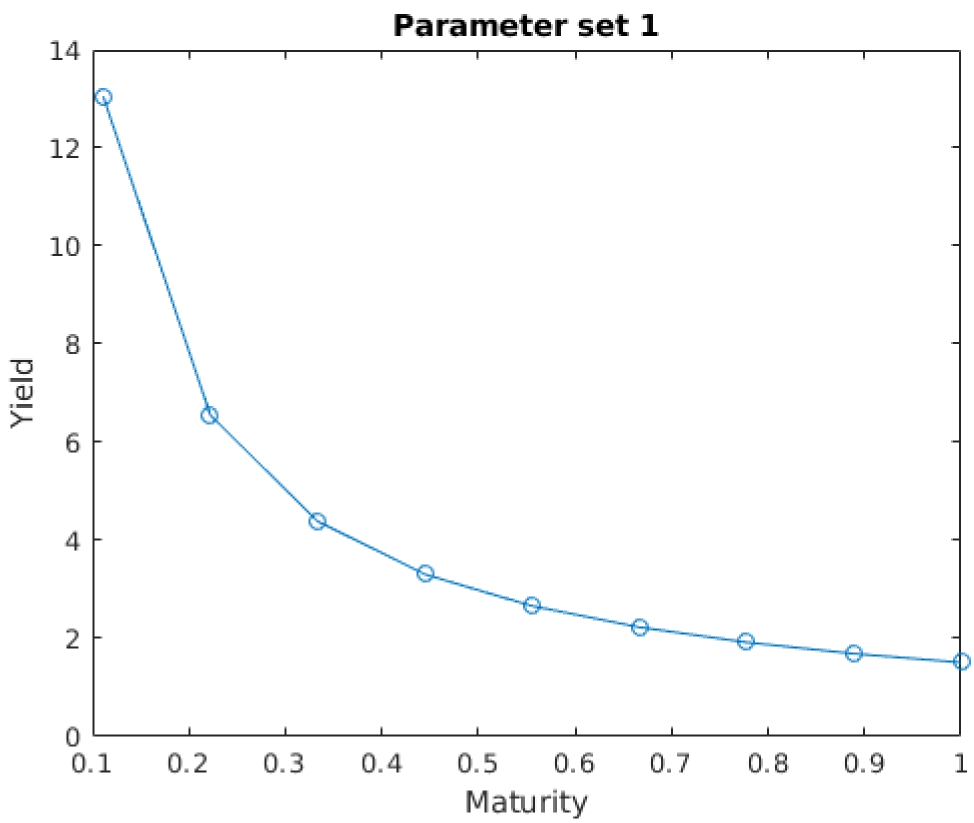

Parameter set 1
Yield
Maturity
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.2
0.4
0.6
0.8
1

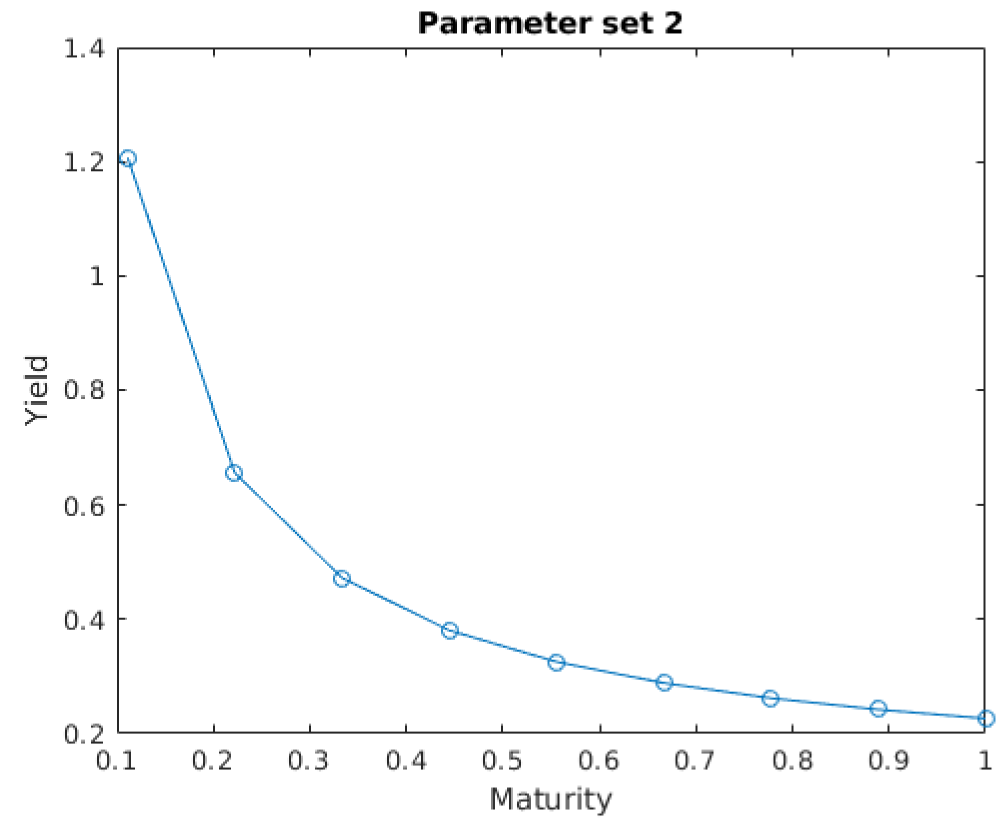

Parameter set 2
Yield
Maturity
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
0.2
0.4
0.6
0.8
1



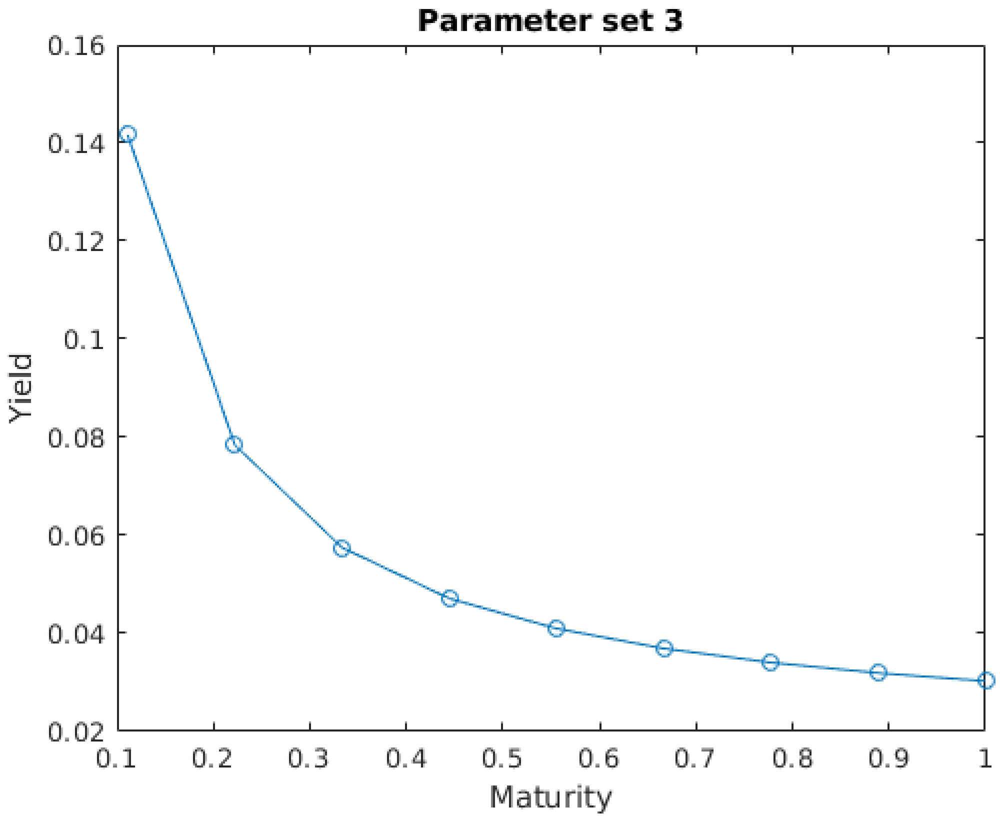
Q2.

`Cox-Ingersoll-Ross Model`

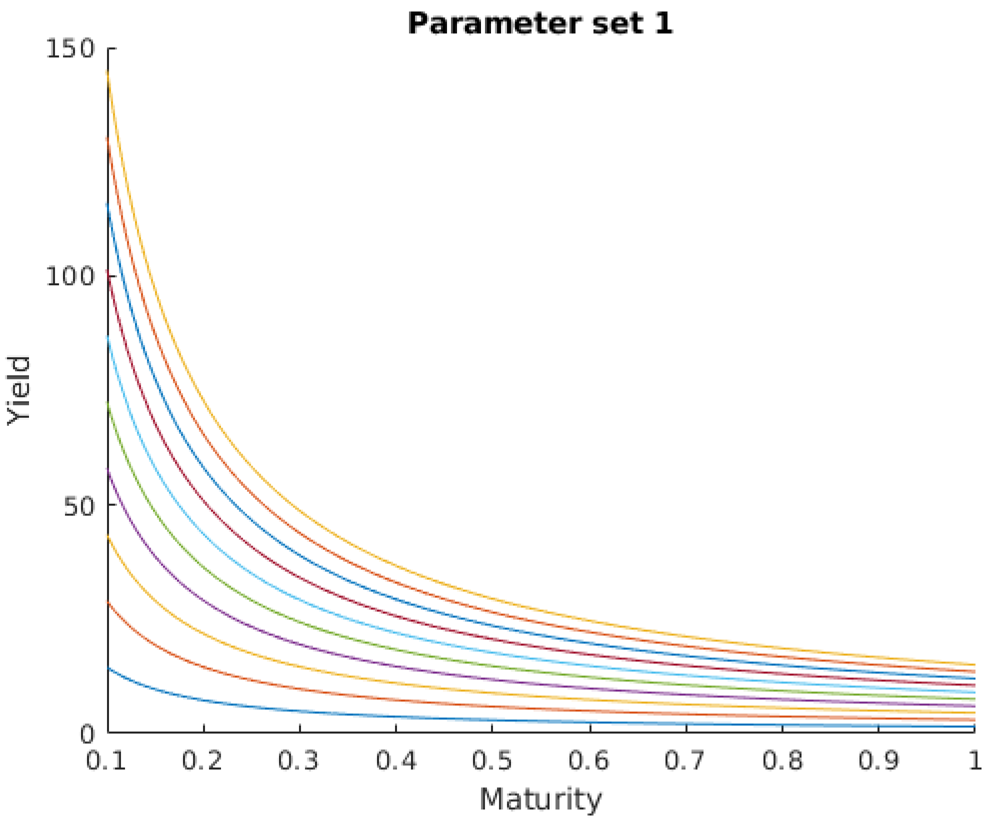


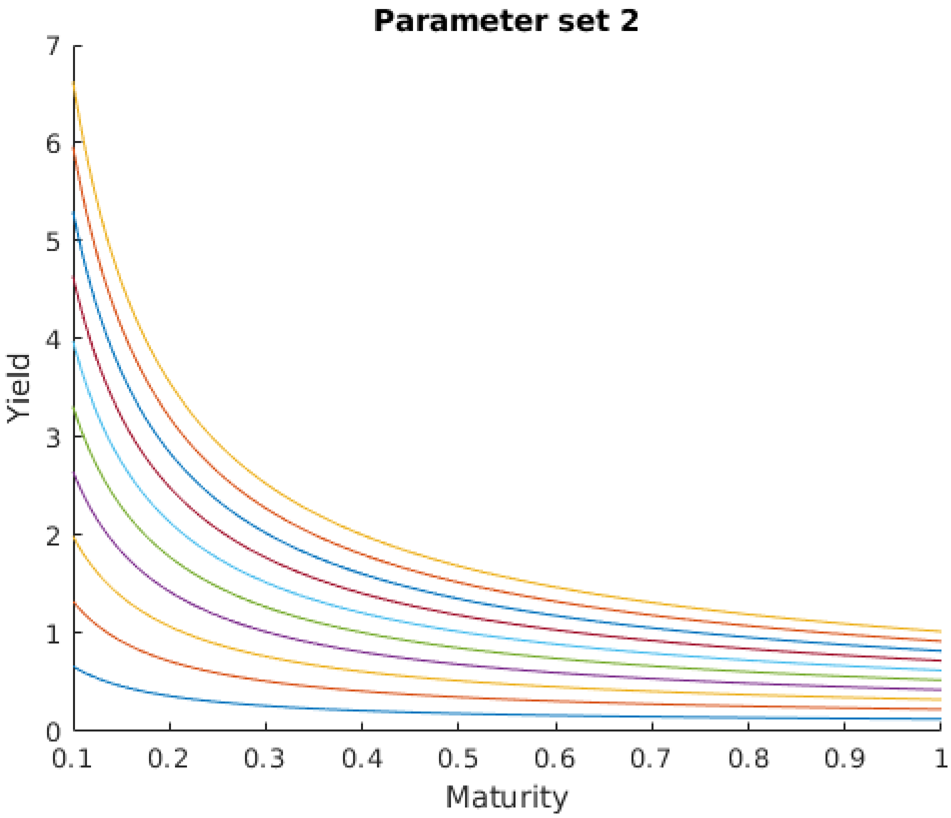


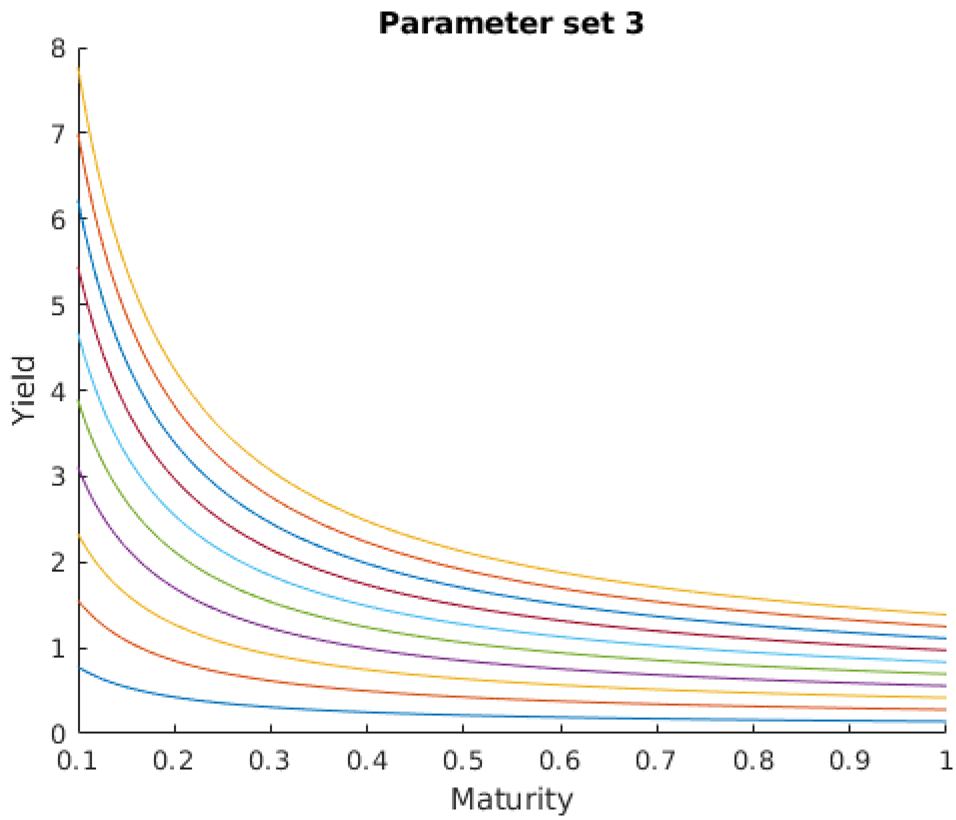
Parameter set 2
Yield
Maturity
1.4
1.2
1
0.8
0.6
0.4
0.2
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1



Parameter set 3
Yield
Maturity
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


Parameter set 1
Yield
Maturity
0
50
100
150
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


Parameter set 2
Yield
Maturity
0
1
2
3
4
5
6
7
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


Parameter set 3
Yield
Maturity
0
1
2
3
4
5
6
7
8
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1