MF728 Homework1
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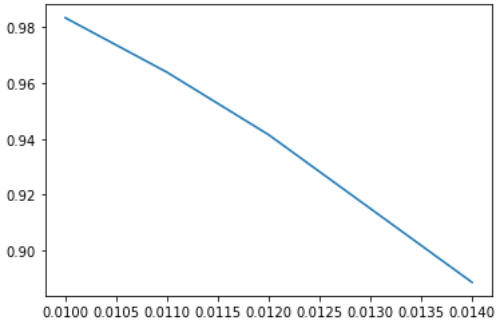
MF728

Problem Set#1

1. CDS Pricing:

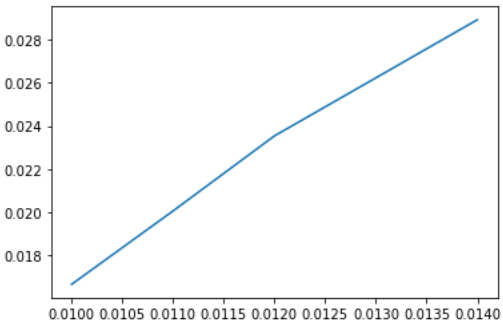
(a) According to the formular, the survival probability and its plot are about:

```
In [5]: p
Out[5]: [0.983471074380165, 0.963933911595499, 0.941504563188096, 0.888588374795576]
```



And the Hazard rate and the plot are about:

```
In [6]: h
Out[6]:
[0.016667052485212098,
 0.020065490672683334,
 0.023543541017487984,
 0.028922543498673865]
```



(b) A fair spread for a 4y CDS, that starts today is about: **132.527061971762.**

(c) If I had bought a 5y CDS exactly one year ago with the contractual spread of 80bps, the price I want others to buy is about: **189.266680464000** (Mark-to-Market)

(d) The results are shown below:

```
DV01 wrt to CDS curve  (0.158805201684944, 0.152250664299889, 0.145952625288485,
0.139922045689772)
```

These 4 values represent the each DV01 of hazard rate we got in (a).

(e) The dv01 wrt the interest rate curve is about: **-0.00293729017247779.**

(f) The sensitivity wrt R is about: **-0.0220878436619706**.

PS: All of my detailed process and calculation for these computations are contained in .py documents of the attachment uploaded.