Options

2024-03-01

Binomial Lattice

Consider the $N-$period binomial model with $0 < d < e^{r\Delta t} < u$. Suppose the derivative payout at maturity V_N is a random variable with known distribution.

Idea: Starting from the leaves (known V_N), we will recursively go down levels $n = N-1, \ldots, 0$ computing discounted expected values:
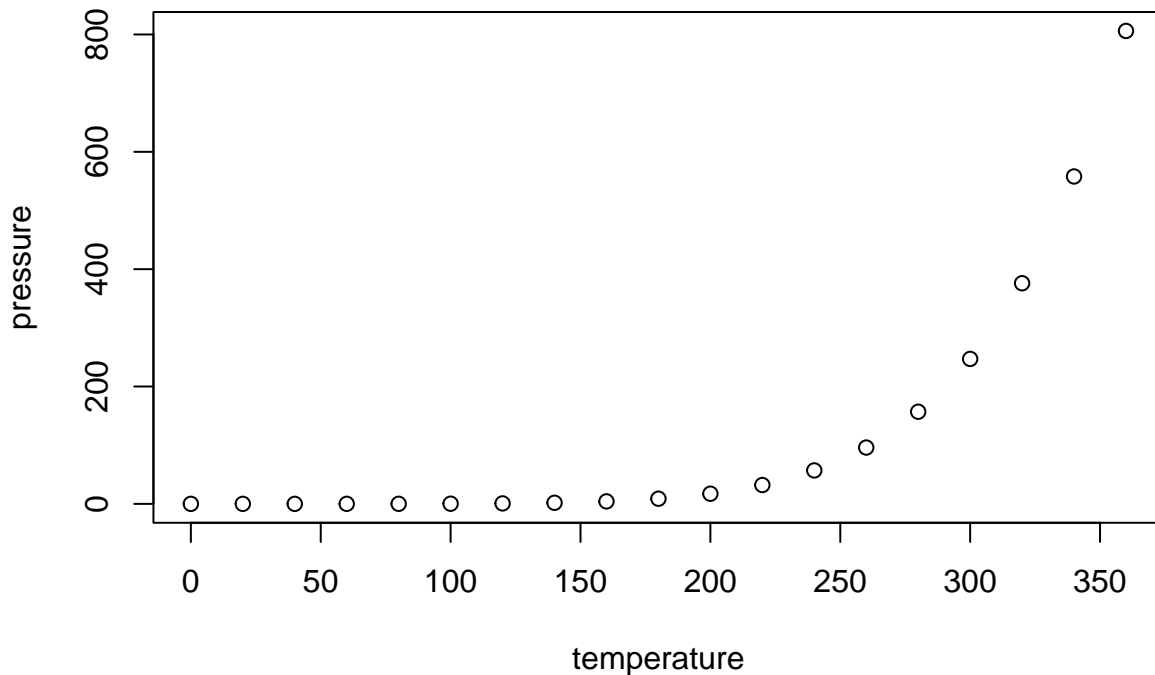
$$V_n(\omega_1, \ldots, \omega_n) = e^{-r\Delta T}\mathbb{E}^{\mathbb{Q}}(V_{n+1}|\mathcal{F}_n)$$

```
summary(cars)
```

```
##      speed           dist
##  Min.   : 4.0   Min.   :  2.00
##  1st Qu.:12.0   1st Qu.: 26.00
##  Median :15.0   Median : 36.00
##  Mean   :15.4   Mean   : 42.98
##  3rd Qu.:19.0   3rd Qu.: 56.00
##  Max.   :25.0   Max.   :120.00
```

Including Plots

You can also embed plots, for example:

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.