

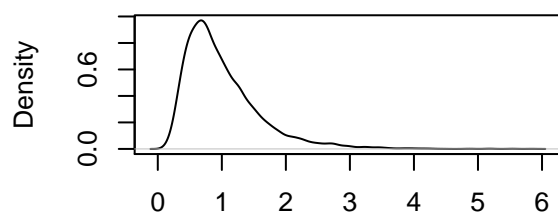
R Notebook

```
knitr::opts_chunk$set(echo=F)
```

Simulations

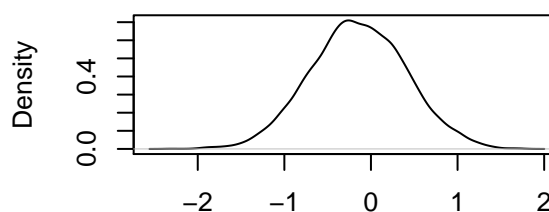
Situation 1

distribution of cumulative product



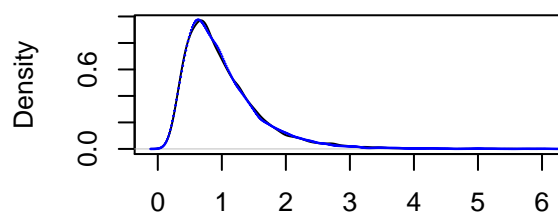
N = 10000 Bandwidth = 0.0709

log distribution of the left



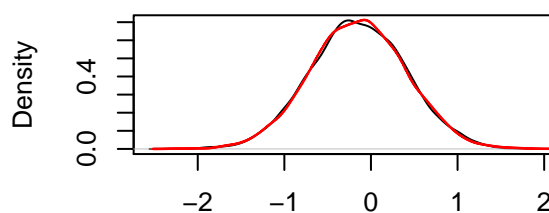
N = 10000 Bandwidth = 0.07894

distribution of cumulative product



N = 10000 Bandwidth = 0.0709

log distribution of the left

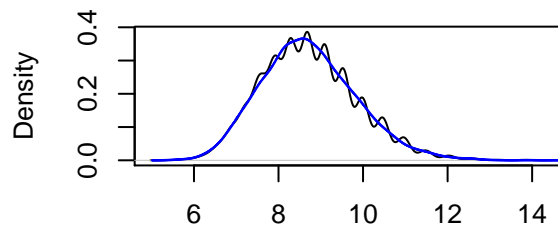


N = 10000 Bandwidth = 0.07894

```
## lognormal(simulated vs fitted)
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.09821 0.59491 0.85882 1.00596 1.26100 5.83824
##
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.1025 0.5966 0.8657 1.0095 1.2568 7.9309
##
## normal(simulated vs fitted)
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -2.3206 -0.5193 -0.1522 -0.1464 0.2319 1.7644
##
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -2.2781 -0.5166 -0.1442 -0.1446 0.2286 2.0708
```

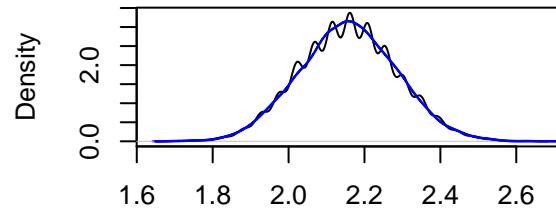
Situation2

cumulative product, period 30



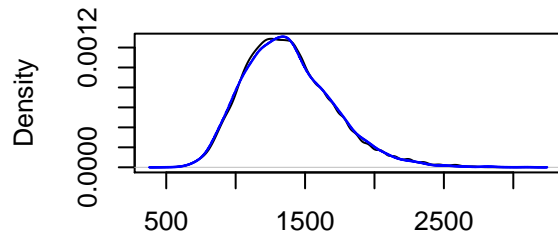
N = 10000 Bandwidth = 0.161

log distribution, period 30



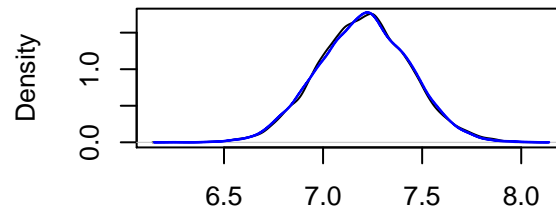
N = 10000 Bandwidth = 0.01833

cumulative product, period 100



N = 10000 Bandwidth = 40.13

log distribution, period 100

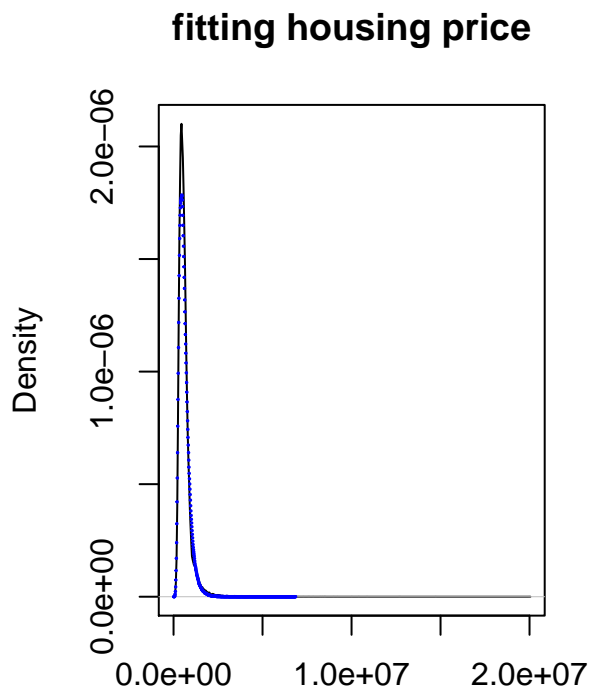


N = 10000 Bandwidth = 0.02971

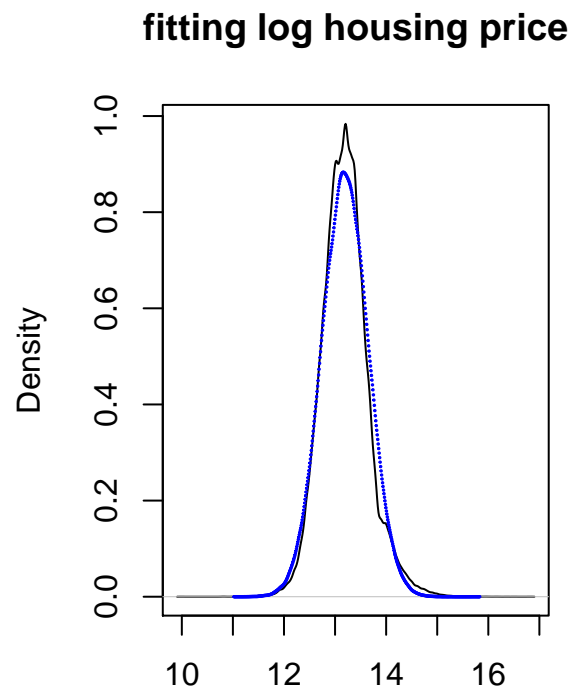
```
##
## period 30(simulated vs fitted)
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  5.454  7.913   8.684   8.717  9.531  13.828
##
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  5.499  7.946   8.649   8.724  9.437  14.825
##
##
## period 100(simulated vs fitted)
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  506.8 1170.8 1346.2 1383.3 1547.8 3110.0
##
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  516.8 1153.3 1351.3 1383.2 1579.4 3106.3
```

Housing Price

Fitting raw housing prices with lognormal



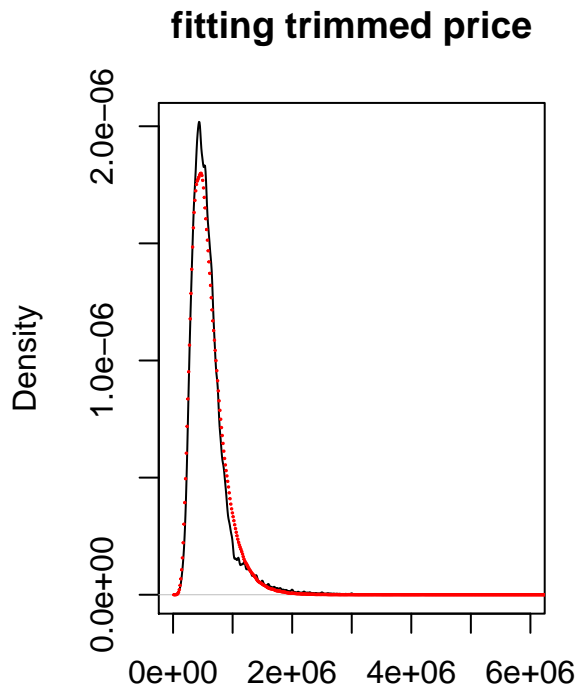
N = 281506 Bandwidth = 1.638e+04



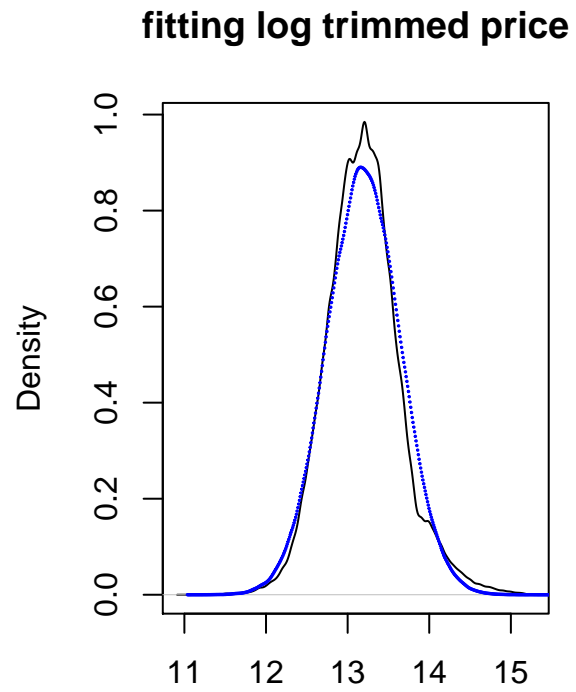
N = 281506 Bandwidth = 0.03056

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
## House price	22000.0	400000.0	530000	601999.7	700000.0	20000000
## Fitted distribution	67625.4	395968.9	538346	596965.1	731516.4	6799310

Fitting trimmed housing prices with lognormal



N = 281321 Bandwidth = 1.638e+04



N = 281321 Bandwidth = 0.03056

##		Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	Trimmed house_price	60000.00	400000.0	530000.0	599008.7	700000.0	3980000
##	Fitted distribution	68667.07	396406.5	537614.3	595169.9	728726.9	6653286