Economics G6222

Advanced Macroeconomics

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Computng the Equilibrium of a Small Open Endowment Economy: Notes on Assigment 1

The Problem

$$\max E_0 \sum_{t=0}^{\infty} \beta^t \left[\frac{c_t^{1-\sigma} - 1}{1-\sigma} \right],$$

subject to

$$c_t + d_t = y_t + \frac{d_{t+1}}{1+r}$$

$$d_{t+1} \leq \bar{d},$$

Calibration

$$\beta = 0.75$$

$$\sigma = 5$$

$$r = 0.2$$

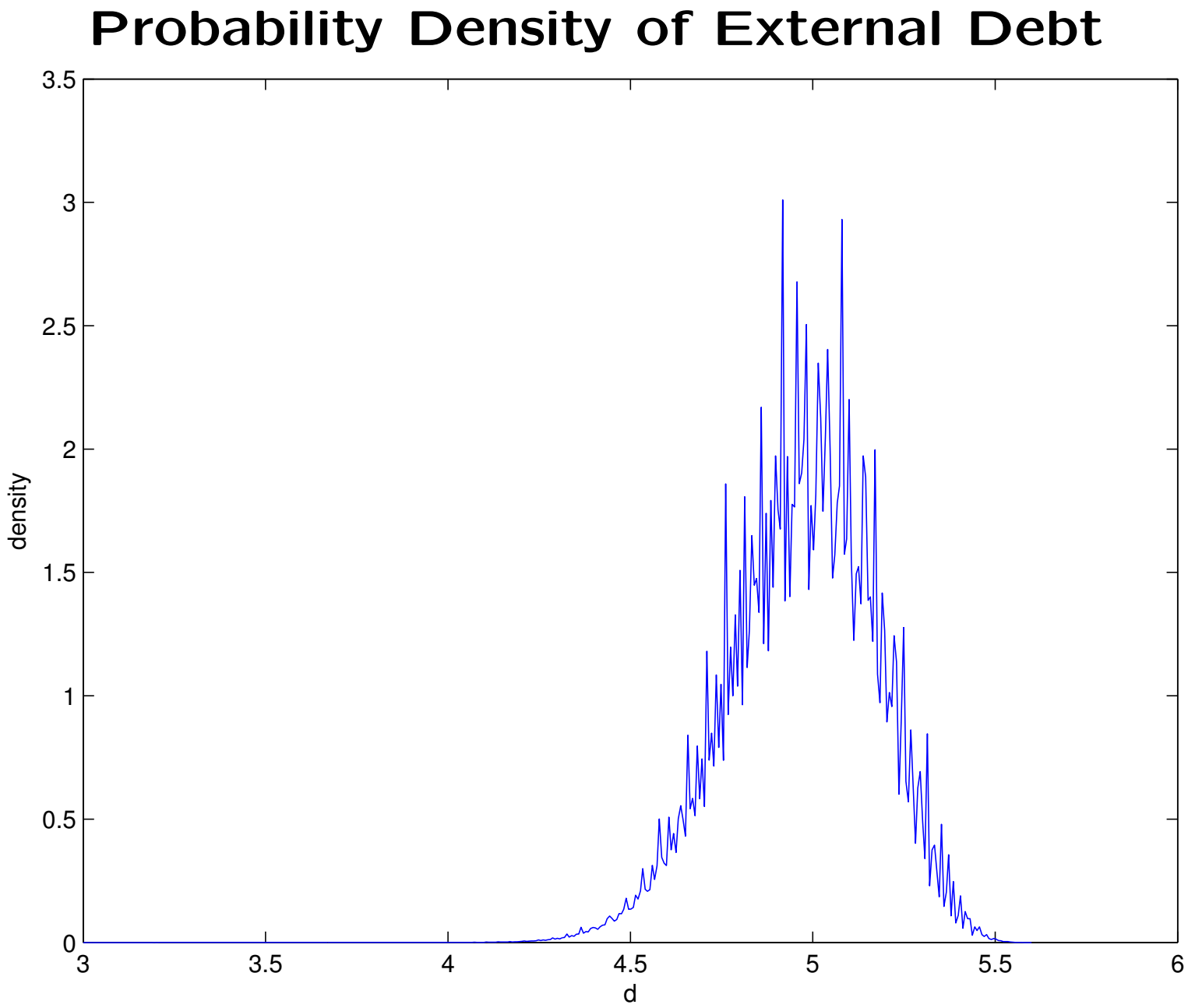
$$\bar{d} = 5.6$$

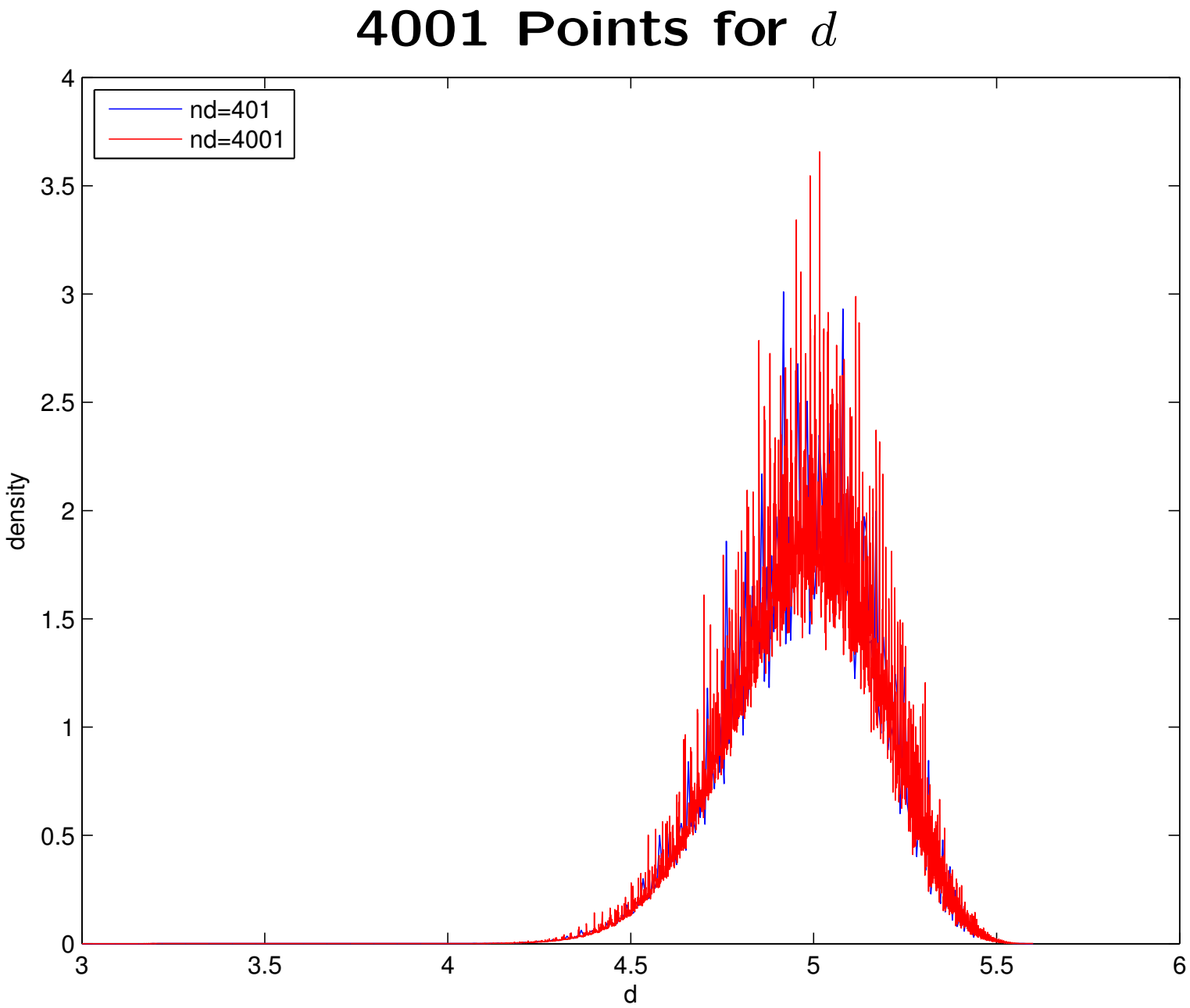
$$y_1 = 1 - 0.066, \quad y_2 = 1 + 0.066, \quad \pi_{ij} = 1/2, \quad \text{for} i, j = 1, 2$$

Discretization of Debt

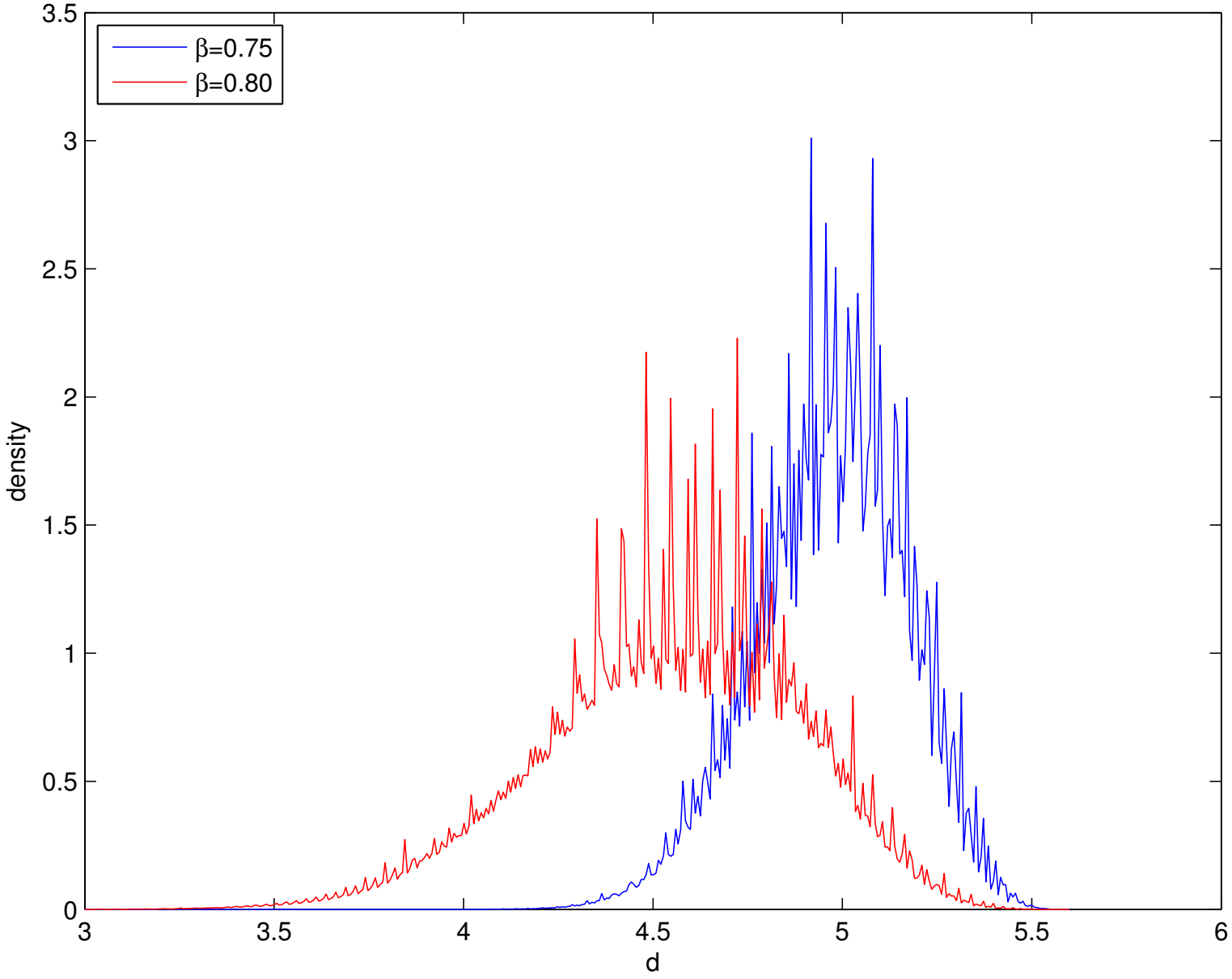
$$d = [d_1, d_2, \ldots, d_{401}],$$

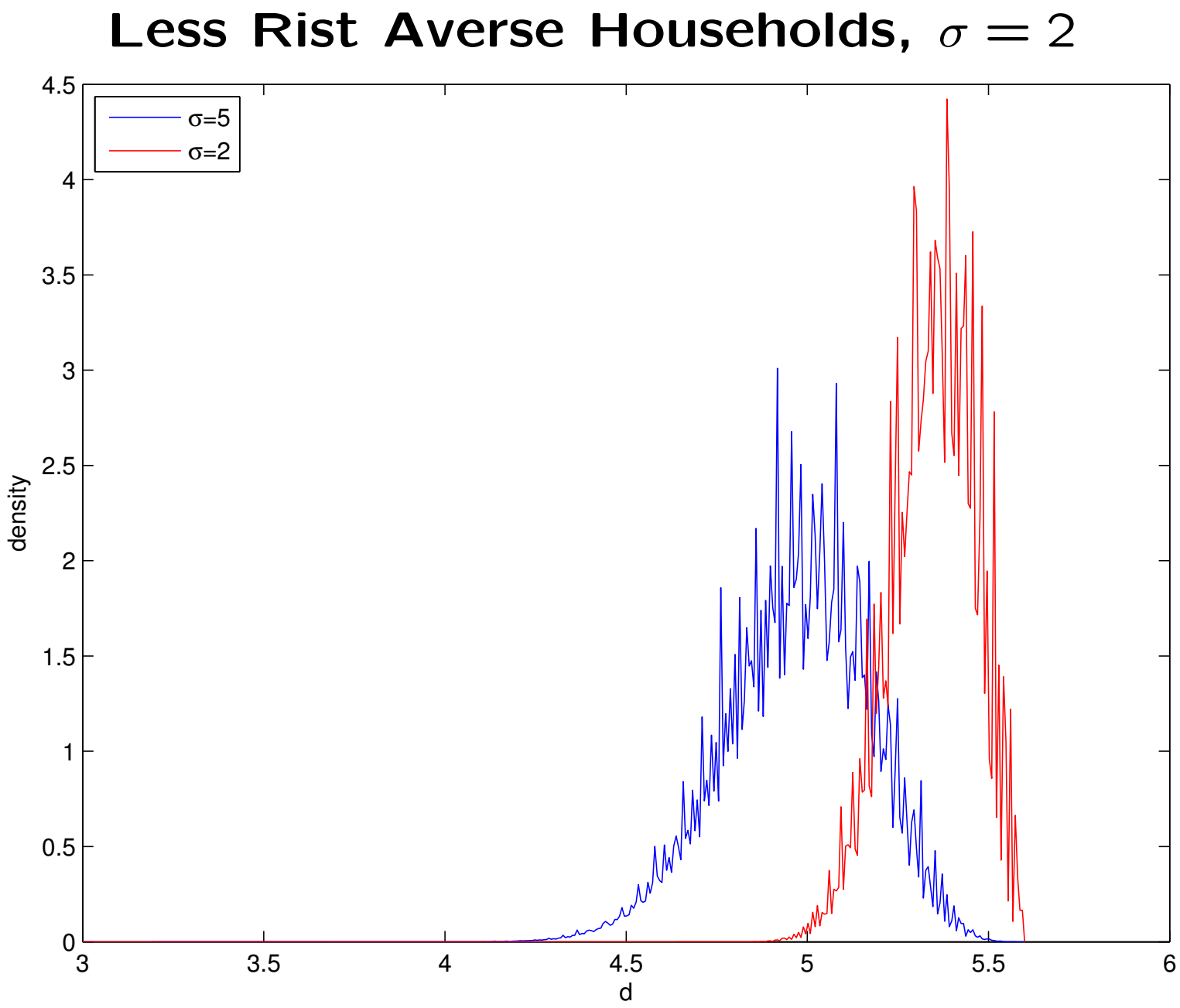
$$d_1 = 3; \quad d_{401} = 5.6; \quad d_{i+1} - d_i = 0.0065, \quad i = 1, \ldots, 400$$


Probability Density of External Debt
density
d
0
0.5
1
1.5
2
2.5
3
3.5
3
3.5
4
4.5
5
5.5
6


4001 Points for d
nd=401
nd=4001
density
d
0
0.5
1
1.5
2
2.5
3
3.5
4
3
3.5
4
4.5
5
5.5
6

More Patient Households, $\beta = 0.8$




Less Rist Averse Households, $\sigma = 2$
σ=5
σ=2
density
d
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
3
3.5
4
4.5
5
5.5
6