A. Baseline parametrization:  $\alpha=0.36$ ,  $\beta=0.96$ Value for N Std. dev. loss function Value loss function Value loss function (last periods) Cumulative execution time (sec) bc-MC N\*, T=100  $10^{-3}$  $10^{-2}$ 15.0 bc-MC N=100, T=100  $10^{-5}$ bc-MC N=20, T=100  $10^{-4}$  $10^{-3}$ 12.5bc-MC N=2, T=100  $10^{-4}$  $10^{-5}$ 10.0 $10^{-6}$  $10^{-5}$  $10^{-6}$ 7.5 40  $10^{-6}$  $10^{-7}$ 5.0  $10^{-7}$  $10^{-7}$ 2.5  $10^{-8}$  $10^{-8}$  $10^{-8}$  $10^{-9}$ 3000 0 1000 3000 2000 2600 28003000 Iterations Iterations Iterations Iterations Iterations B. Parametrization  $\alpha = \beta = 0.99$ Value loss function Value for N Std. dev. loss function Value loss function (last periods) Cumulative execution time (sec)  $10^{-1}$ 14  $3 \times 10^{-5}$ 12 80  $10^{-2}$ 10  $10^{-3}$ 60  $10^{-3}$  $2 \times 10^{-5}$  $10^{-4}$ 20  $10^{-5}$ 3000 0 2000 0 1000 2000 3000 1000 2000 1000 2000 3000 1000 2600 2800 3000 0 3000 Iterations Iterations Iterations Iterations **Iterations** C. Parametrization  $\alpha = \beta = 0.995$ Value for  ${\sf N}$ Value loss function Cumulative execution time (sec) Std. dev. loss function Value loss function (last periods)  $10^{-1}$  $10^{-3}$ 12 80  $10^{-6}$  $10^{-2}$ 10  $10^{-9}$ 60  $10^{-4}$  $10^{-3}$  $10^{-12}$  $10^{-15}$  $10^{-4}$  $10^{-5}$ 1000 2000 3000 0 1000 2000 3000 2000 3000 26003000 0 1000 20003000 0 2800 Iterations Iterations Iterations Iterations Iterations D. Parametrization  $\alpha = \beta = 0.999$ Value for  ${\sf N}$ Value loss function Cumulative execution time (sec) Std. dev. loss function Value loss function (last periods)  $10^{-4}$  $10^{-1}$ 12  $10^{-2}$ 80 10  $10^{-2}$  $10^{-3}$ 60  $10^{-3}$ 40  $10^{-4}$  $10^{-5}$  $10^{-4}$  $10^{-5}$  $10^{-5}$ 3000 2000 1000 2000 0 1000 2000 3000 2600 2800 3000 0 1000 3000 1000 2000 3000 Iterations Iterations Iterations Iterations Iterations