A. Baseline parametrization:  $\alpha=0.36$ ,  $\beta=0.96$ Value loss function (last periods) Cumulative execution time (sec) Value for N Std. dev. loss function Value loss function bc-MC N\*, T=100  $10^{-1}$ 12 bc-MC N=100, T=100  $4\times 10^{-5}$  $10^{-3}$ bc-MC N=20, T=100 10 bc-MC N=2, T=100  $10^{-2}$ 60  $10^{-3}$  $10^{-4}$ 40  $3 \times 10^{-5}$  $10^{-4}$ 3000 0 2000 2600 2800 3000 Iterations Iterations **Iterations** Iterations Iterations B. Parametrization  $\alpha=\beta=0.99$ Value for N Std. dev. loss function Value loss function Value loss function (last periods) Cumulative execution time (sec)  $6.6 \times 10^{-4}$ 12  $6.4 \times 10^{-4}$  $10^{-2}$ 80  $10^{-1}$ 10  $6.2 \times 10^{-4}$ 60  $6 \times 10^{-4}$  $10^{-2}$  $5.8 \times 10^{-4}$ 40  $10^{-3}$  $5.6\times10^{-4}$  $5.4\times10^{-4}$  $10^{-3}$  $5.2 \times 10^{-4}$ 0 2000 2000 3000 3000 2000 1000 2000 3000 1000 3000 1000 2600 28000 1000 3000 Iterations Iterations **Iterations** Iterations Iterations C. Parametrization  $\alpha = \beta = 0.995$ Value for  ${\sf N}$ Value loss function Value loss function (last periods) Cumulative execution time (sec) Std. dev. loss function  $9 \times 10^{-4}$ 80  $10^{-1}$  $10^{-2}$  $8\times 10^-$ 60  $10^{-2}$ 40  $7 \times 10^{-4}$  $10^{-3}$  $6\times 10^{-4}$ 1000 2000 3000 1000 2000 3000 1000 2000 3000 2600 28003000 1000 2000 3000 **Iterations** Iterations Iterations **Iterations** Iterations D. Parametrization  $\alpha = \beta = 0.999$ Value for N Value loss function Std. dev. loss function Value loss function (last periods) Cumulative execution time (sec)  $10^{-1}$ :----- $2 \times 10^{-3}$  $1.9 \times 10^{-3}$ 10 80  $1.8 \times 10^{-3}$  $10^{-1}$ 8  $1.7 \times 10^{-3}$  $10^{-2}$ 60  $1.6 \times 10^{-3}$ 6 40  $1.5 \times 10^{-3}$  $10^{-2}$  $1.4 \times 10^{-3}$  $1.3\times10^{-3}$  $10^{-3}$ 1000 3000 2000 2000 0 1000 3000 2600 2800 30001000 20003000 3000 Iterations Iterations Iterations Iterations Iterations