Common Parameters

April 7, 2016

Some parameters are worth defining because they are likely to be used in a high proportion of models; others are subject to enough constraints when used (such as the need for similar-looking upper- and lower-case Greek representations), as to be worth standardizing.

Programmers should use the corresponding variable name without the backslash as the name of the corresponding object in their code. For example, the Coefficient of Relative Risk Aversion is `\CRRA` in a LaTeX document and `CRRA` in a software module.

Name	LaTeX	Description	Illustration
`\CARA`	α	Coefficient of Absolute Risk Aversion	$\mathrm{u}(\bullet) = -\alpha^{-1}e^{-\alpha\bullet}$
`\CRRA`	ρ	Coefficient of Relative Risk Aversion	$\mathrm{u}(\bullet) = (1-\rho)^{-1}\bullet^{1-\rho}$
`\DiscFac`	β	Time Discount Factor	$\mathrm{u}'(c_t) = \mathsf{R}\beta\mathrm{u}'(c_{t+1})$
`\discRte`	ω	Time Discount rate	$\beta^{-1} - 1$
`\DeprFac`	$\daleth$	Depreciation Factor (Hebrew `daleth`)	$K_{t+1} = \daleth K_t + I_t$
`\deprRte`	δ	Depreciation Rate	$\daleth = 1 - \delta$
`\TranShkAgg`	Θ	Transitory shock (aggregate)	$\mathbb{E}_t[\Theta_{t+n}] = 1$ if Θ iid
`\tranShkInd`	θ	Transitory shock (individual)	$\mathbb{E}_t[\theta_{t+n}] = 1$ if θ iid
`\PermShkAgg`	Ψ	Permanent shock (aggregate)	$\mathbb{E}_t[\Psi_{t+n}] = 1$ if Ψ iid
`\permShkInd`	ψ	Permanent shock (individual)	$\mathbb{E}_t[\psi_{t+n}] = 1$ if ψ iid
`\PopGro`	Ξ	Population Growth Factor	$L_{t+1} = \Xi L_t$
`\popGro`	ξ	Population Growth rate	$\Xi = 1 + \xi$
`\PtyGro`	Φ	Productivity Growth Factor	$G = \Phi\Xi$
`\ptyGro`	ϕ	Productivity Growth rate	$\Phi = (1 + \phi)$
`\leiShare`	ζ	Leisure share, Cobb-Douglas utility	$\mathrm{u}(c, z) = (1-\rho)^{-1}(c^{1-\zeta}z^{\zeta})^{1-\rho}$
`\MPC`	κ	Marginal Propensity to Consume	$\mathrm{c}'(m) = \partial c/\partial m$
`\Pat`	$\mathbb{Þ}$	Absolute Patience Factor (`Thorn`)	$\mathbb{Þ} = (\mathsf{R}\beta)^{1/\rho}$
`\pat`	þ	Absolute Patience rate (`thorn`)	$þ = (\mathsf{R}\beta)^{1/\rho} - 1 \approx \rho^{-1}(\mathsf{r} - \omega)$
`\riskyshare`	ς	Portfolio share in risky assets	$\mathfrak{R}_{t+1} = (1-\varsigma)\mathsf{R} + \varsigma\mathbf{R}_{t+1}$

Table 1 Parameters

Mnemonics:

- Hebrew `daleth` is the fourth letter of the Hebrew alphabet (as d and δ are of the Roman and Greek) and is an etymological and linguistic cousin of those letters
- ω is the lower case Greek letter `omega`, because people say "OMG, I've got to think about the future."
- You are invited to scrutinize Ξ yourself to imagine reasons it could represent something to do with population growth.