The Terminal/Limiting Consumption Function

For any set of parameter values that satisfy the conditions required for convergence, the problem can be solved by setti

A natural alternative choice for the terminal consumption rule is the solution to the perfect foresight liquidity constrain

Our solution is simple: The formulae in another appendix that identify kink points on () for integer values of n (e.g., $^{n}_{\#}$

This strategy generates a smooth limiting consumption function — except at the remaining kink point defined by $\{^{0}_{\#},^{0}_{\#}$

Such a kink point causes substantial problems for numerical solution methods (like the one we use, described below) th

Our solution is to use, as the terminal consumption rule, a function that is identical to the (smooth) continuous consun

$$\grave{}(^{0}_{\#}) = ^{0}_{\#}$$
$$'(^{0}_{\#}) = 1$$
$$'(^{\underline{n}}_{\#}) = (d^{n}_{\#}/dn)(d^{n}_{\#}/dn)^{-1}|_{n=\underline{n}}$$
$$''(^{\underline{n}}_{\#}) = (d^{2}_{\#}{}^{n}/dn^{2})(d^{2}_{\#}{}^{n}/dn^{2})^{-1}|_{n=\underline{n}}$$

where $\underline{n}$ is chosen judgmentally in a way calculated to generate a good compromise between smoothness of the limiting cons

We thus define the terminal function as

Since the precautionary motive implies that in the presence of uncertainty the optimal level of consumption is below th

which must be a number between $-\infty$ and $+\infty$ (since $0 <_{t} () < \grave{}()$ for > 0). This function turns out to be much better beha

Differentiating with respect to μ and dropping consumption function arguments yields

which can be solved for

Similarly, we can solve eq:ChiDef for

Thus, having approximated χ_t, we can recover from it the level and derivative(s) of $_t$.