

Define  $\mathcal{F} : \mathbb{R} \rightarrow \mathbb{R}^+$  for  $a, b, v, L, \ell, H > 0$  such that

$$x \mapsto L + \max \left( 0, -\ell + \frac{H + \ell}{\left[ 1 + \left( -1 + \left( \frac{H + \ell}{\ell} \right)^v \right) e^{-b(x-a)} \right]^{1/v}} \right) \quad (4.2.1)$$

$$y \mid x, \Omega \sim \mathcal{G}(\mu\beta, \beta) \quad \Omega = \{a, b, v, L, \ell, H, g_1, g_2\} \quad a, b \dots g_1, g_2 > 0 \quad (4.2.2)$$

$$\mu = \mathbb{E}(y \mid x, \Omega) = \mathcal{F}(x \mid \Omega) \quad (4.2.3)$$

$$\beta = g_1 + \frac{\mu}{g_2} \quad (4.2.4)$$