

For $a, b, L, \ell, H > 0$, define $\mathcal{F} : \mathbb{R} \rightarrow \mathbb{R}_+$ as

$$\mathcal{F}(x) = L + \max \left\{ 0, -\ell + \frac{H + \ell}{1 + \left(\frac{H}{\ell}\right) e^{-b(x-a)}} \right\} \quad (4.1.4)$$

$$S_{50}(\mathcal{F}) = a - \frac{1}{b} \ln \left(\frac{H\ell}{H(H + 2\ell)} \right) \quad (4.1.5)$$

For $c_1, c_2 > 0$

$$y \mid x, \Omega, c_1, c_2 \sim \text{Gamma}(\mu \cdot \beta, \beta) \quad (4.1.6)$$

$$\mu = \mathcal{F}(x \mid \Omega) \quad \Omega = \{a, b, L, \ell, H\} \quad (4.1.7)$$

$$\beta = \frac{1}{c_1} + \frac{1}{c_2 \cdot \mu} \quad (4.1.8)$$