In view of (33), the symmetric equilibrium \((\bar{x}, \bar{y})\) is internally stable if
\[
\frac{(1 - 2\mu)^2 (1 + s)^2}{(1 + s\bar{x})^2 [1 + s(1 - \bar{x})]^2} < 1, \tag{S6.1}
\]
as \(\bar{x} = \bar{y}\) and \(\tilde{x} = \tilde{y}\), where, by (S5.1)
\[
\tilde{x} = \frac{[(s + 1)(1 - m_B) - m_B] \bar{x} + m_B}{s \bar{x} + 1}. \tag{S6.2}
\]
Thus
\[
1 + s(1 - \tilde{x}) = (1 + s) - s \cdot \frac{[(1 + s) - m_B(2 + s)] \bar{x} + m_B}{s \bar{x} + 1}. \tag{S6.3}
\]
Hence
\[
(1 + s\bar{x}) [1 + s(1 - \tilde{x})] = (1 + s)(1 + s\bar{x}) - s [(1 + s) - m_B(s + 2)] \bar{x} - sm_B, \tag{S6.4}
\]
or
\[
(1 + s\bar{x}) [1 + s(1 - \tilde{x})] = (1 + s) + sm_B [(s + 2)\bar{x} - 1]. \tag{S6.5}
\]
For condition (S6.1) to be satisfied, since \((1 + s\bar{x}) [1 + s(1 - \tilde{x})] > 0\), it is sufficient that
\[
(1 + s) + sm_B [(s + 2)\bar{x} - 1] > (1 + s), \tag{S6.6}
\]
or that \(\bar{x} > \frac{1}{s+2}\). But
\[
R \left( \frac{1}{s + 2} \right) = \frac{s}{(s + 2)^2} + \left[2 - m_B(s + 2)\right] \frac{1}{s + 2} - (1 - m_B), \tag{S6.7}
\]
or
\[
R \left( \frac{1}{s + 2} \right) = \frac{s}{(s + 2)^2} + \frac{2}{s + 2} - 1 = -\frac{s(1 + s)}{(s + 2)^2} < 0. \tag{S6.8}
\]
Thus \(R(\frac{1}{s+2}) < 0\) and \(R(1) > 0\), and so \(\bar{x} > \frac{1}{s+2}\) as desired.