At a symmetric equilibrium \( y = x \), and also, by (32), \( \bar{y} = \bar{x} \). Thus (30) and (31) imply that

\[
\bar{x} = \frac{[(s + 1)(1 - m_B) - m_B]x + m_B}{sx + 1} \tag{S5.1}
\]

and

\[
x = \frac{[(1 - m_B) - m_B(s + 1)]\bar{x} + m_B(1 + s)}{(1 + s) - s\bar{x}}. \tag{S5.2}
\]

Substituting (S5.1) into (S5.2) gives the quadratic equation

\[
(s + 2)m_B \left\{ sx^2 + \left[ 2 - m_B(s + 2) \right] x - (1 - m_B) \right\} = 0. \tag{S5.3}
\]

As \( 0 < m, \mu_B < 1, s > 0 \) and \( m_B = m(1 - \mu_B) + \mu_B(1 - m) > 0 \), \( x \) satisfies the equation \( R(x) = 0 \) with \( R(x) \) given in (36). As \( 0 < m_B < 1 \) we have \( R(0) < 0 \), and as \( R(\pm \infty) > 0 \), \( R(x) = 0 \) has two real roots, one positive and one negative. Observe that

\[
R(1) = s + \left[ 2 - m_B(s + 2) \right] - (1 - m_B) = (1 - m_B)(s + 1) > 0 \tag{S5.4}
\]

and

\[
R\left(\frac{1}{2}\right) = \frac{s}{4} + \frac{1}{2} \cdot \left[ 2 - m_B(s + 2) \right] - (1 - m_B) = \frac{s}{4}(1 - 2m)(1 - 2\mu_B) \tag{S5.5}
\]

as \( 1 - 2m_B = 1 - 2m - 2\mu_B + 4m\mu_B = (1 - 2m)(1 - 2\mu_B) \). Therefore when \( 0 < m, \mu_B < \frac{1}{2} \) we have \( R\left(\frac{1}{2}\right) > 0 \) and \( 0 < \bar{x} < \frac{1}{2} \).