1042-39-63 **Sukanya Basu*** (sukanya@math.uri.edu), Department of Mathematics, University of Rhode Island, Kingston, RI 02881-0816, and **Orlando Merino** (merino@math.uri.edu), Department of Mathematics, University of Rhode Island, Kingston, RI 02881-0816. *A sufficient condition for global asymptotic stability of the positive equilibrium for two classes of rational difference equations.*

We consider the difference equations

$$x_{n+1} = \frac{\alpha + \beta\, x_n + \gamma\, y_{n-1}}{A + B\, x_n + C\, y_{n-1}}, \quad x_{-1},\, x_0 \in [0, \infty) \tag{1}$$

$$y_{n+1} = \frac{r + p\, y_n + y_{n-1}}{q\, y_n + y_{n-1}}, \quad y_{-1},\, y_0 \in (0, \infty), \tag{2}$$

for positive values of all the parameters. There is a known set of inequalities characterizing parameter values for which prime period-two solutions to (1) and (2) do not exist. We build on these inequalities to give sufficient conditions for global asymptotic stability of the positive equilibrium of the equations. The sufficient conditions given here are a considerable improvement on previous results of the authors on equation (1) announced in the AMS 2008 Meeting in San Diego. (Received August 06, 2008)