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Mustafa R. S. Kulenovic, Department of Mathematics, University of Rhode Island, Kingston, RI 02881, and **Connor O’Loughlin***, Department of Mathematics, University of Rhode Island, Kingston, RI 02881. *The Neimark-Sacker bifurcation and global stability of perturbation of Beverton-Holt difference equation.* Preliminary report.

We compute the direction of the Neimark-Sacker bifurcation for the difference equation $x_{n+1} = \frac{x_n^2}{ax_n^2 + cx_{n-1}^2 + f}$ where a, c and f are positive numbers and the initial conditions x_{-1} and x_0 are non-negative numbers. Moreover, we give the asymptotic approximation of the invariant curve. We give the necessary and sufficient conditions for global asymptotic stability of the zero equilibrium as well as sufficient conditions for global asymptotic stability of the positive equilibrium. (Received January 19, 2021)