First, we use a recursion identity to find $\ddot{a}_x$:

$$\ddot{a}_x = 1 + vp_x \ddot{a}_{x+1} = 1 + \left(\frac{1}{1.05}\right)(0.99)(6.951) = 7.554$$

To see the effect of changing p_{x+1}, we will need to look at $\ddot{a}_{x+1}$ and $\ddot{a}_{x+2}$:

$$\ddot{a}_{x+1} = 1 + vp_{x+1} \ddot{a}_{x+2}$$

$$6.951 = 1 + \left(\frac{1}{1.05}\right)(0.95)\ddot{a}_{x+2} \Rightarrow$$

$$\ddot{a}_{x+2} = 6.577$$

With the new value for p_{x+1} of 0.98, the new value of

$$\ddot{a}_{x+1} = 1 + (0.98)\left(\frac{1}{1.05}\right)(6.577) = 7.139.$$

The new value for $\ddot{a}_x = 1 + (0.99)\left(\frac{1}{1.05}\right)(7.139) = 7.731.$

The change $= 7.731 - 7.554 = 0.177$