

Notes

$$\begin{bmatrix} n_1^1 & n_2^1 \\ 5 \cdot 1 & 3 \cdot 5 \\ 4 \cdot 9 & 3 \cdot 0 \\ n_1^2 & n_2^2 \end{bmatrix}$$

$$\begin{aligned} w_0 &= [w_0, w_1, w_2] \\ &= [0.2, 0.3, -0.5] \end{aligned}$$

$$y_1 = \begin{bmatrix} 1 \\ n_1 \\ n_2 \end{bmatrix} = \begin{bmatrix} 1 \\ n_1 \\ n_2 \end{bmatrix} \begin{bmatrix} 1 & n_0 \\ 5 \cdot 1 & 3 \cdot 5 \end{bmatrix} \begin{bmatrix} n_0 \\ 4 \cdot 9 \\ 3 \cdot 0 \end{bmatrix}$$

$$\phi = [(0.2)(1) + (0.3)(5 \cdot 1) + (-0.5)(3 \cdot 5)]$$

$$= 0.2 + 1.53 - 1.75$$

$$\phi_1 = -0.02$$

Notes

(2)

$$\phi = (0.2)(1) + (0.3)(4.9) \\ + (-0.5)(3.2)$$

$$= 0.2 + 1.47 - 1.5$$

$$\phi_2 = 0.17$$

$$\Delta w_0 = 0.1 \times \left[[1 - (-0.02)] \times 1 \right. \\ \left. + [1 - (0.17)] \times 1 \right]$$

$$= 0.1 \times [1.02 + 0.83]$$

$$\Delta w_0 = 0.185$$

Notes

(3)

$$\Delta w_1 = 0.1 \times [1 - (-0.02)]$$

$$\begin{aligned}\Delta w_1 &= 0.1 \times [(1.02)(5.1) + \\ &\quad (0.83)(4.9)] \\ &= 0.1 [5.202 + 4.067] \\ &= 0.9269.\end{aligned}$$

$$\begin{aligned}\Delta w_2 &= 0.1 [(1.02)(3.5) + \\ &\quad (0.83)(3.0)] \\ &= 0.1 [3.57 + 2.49] \\ &= 0.606\end{aligned}$$

Notes

(M)

~~W3~~

Final updated weights

$$= [0.385, 1.2269, 0.166]$$