

LAMPIRAN

Lampiran 1. Perhitungan rekursif

➤ Untuk $n = 12$

$$f_{12}(s_{12}, x_{12}) = 0,917 f_{13}^*(s_{12} - x_{12}) + 0,083 f_{13}^*(s_{12} + x_{12})$$

$$\text{Untuk } s_{12} = 4.616.865 \qquad x_{12} = 4.616.865$$

$$\begin{aligned} f_{12}(s_{12}, x_{12}) &= 0,917 f_{13}^*(4.616.865 - 4.616.865) + 0,083 f_{13}^*(4.616.865 + \\ &\quad 4.616.865) \\ &= 0,917 f_{13}^*(0) + 0,083 f_{13}^*(9.233.730) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_{12} = 6.091.952 \qquad x_{12} = 4.616.865$$

$$\begin{aligned} f_{12}(s_{12}, x_{12}) &= 0,917 f_{13}^*(6.091.952 - 4.616.865) + 0,083 f_{13}^*(6.091.952 \\ &\quad + 4.616.865) \\ &= 0,917 f_{13}^*(1.475.087) + 0,083 f_{13}^*(10.708.815) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_{12} = 6.091.952 \qquad x_{12} = 6.091.952$$

$$\begin{aligned} f_{12}(s_{12}, x_{12}) &= 0,917 f_{13}^*(6.091.952 - 6.091.952) + 0,083 f_{13}^*(6.091.952 + \\ &\quad 6.091.952) \\ &= 0,917 f_{13}^*(0) + 0,083 f_{13}^*(12.183.904) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_{12} = 6.095.981 \qquad x_{12} = 4.616.865$$

$$\begin{aligned} f_{12}(s_{12}, x_{12}) &= 0,917 f_{13}^*(6.095.981 - 4.616.865) + 0,083 f_{13}^*(6.095.981 + \\ &\quad 4.616.865) \\ &= 0,917 f_{13}^*(1.479.116) + 0,083 f_{13}^*(10.712.846) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_{12} = 6.095.981 \qquad x_{12} = 6.091.952$$

$$\begin{aligned} f_{12}(s_{12}, x_{12}) &= 0,917 f_{13}^*(6.095.981 - 6.091.952) + 0,083 f_{13}^*(6.095.981 + \\ &\quad 6.091.952) \\ &= 0,917 f_{13}^*(4.029) + 0,083 f_{13}^*(12.187.933) \end{aligned}$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

Untuk $s_{12}= 6.095.981$

$x_{12}= 6.095.981$

$$f_{12}(s_{12}, x_{12}) = 0,917 f_{13}^* (6.095.981 - 6.095.981) + 0,083 f_{13}^* (6.095.981 + 6.095.981)$$

$$= 0,917 f_{13}^* (0) + 0,083 f_{13}^* (12.191.962)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

Untuk $s_{12}= 7.670.691$

$x_{12}= 0$

$$f_{12}(s_{12}, x_{12}) = 0,917 f_{13}^* (7.670.691 - 0) + 0,083 f_{13}^* (7.670.691 + 0)$$

$$= 0,917 f_{13}^* (7.670.691) + 0,083 f_{13}^* (7.670.691)$$

$$= 0,917 (1) + 0,083 (1)$$

$$= 0,917 + 0,083$$

$$= 1$$

Untuk $s_{12}= 7.670.691$

$x_{12}= 4.616.865$

$$f_{12}(s_{12}, x_{12}) = 0,917 f_{13}^* (7.670.691 - 4.616.865) + 0,083 f_{13}^* (7.670.691 + 4.616.865)$$

$$= 0,917 f_{13}^* (3.053.826) + 0,083 f_{13}^* (12.287.556)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

Untuk $s_{12}= 7.670.691$

$x_{12}= 6.091.952$

$$f_{12}(s_{12}, x_{12}) = 0,917 f_{13}^* (7.670.691 - 6.091.952) + 0,083 f_{13}^* (7.670.691 + 6.091.952)$$

$$= 0,917 f_{13}^* (1.578.739) + 0,083 f_{13}^* (13.762.643)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

Untuk $s_{12}= 7.670.691$

$x_{12}= 6.095.981$

$$f_{12}(s_{12}, x_{12}) = 0,917 f_{13}^* (7.670.691 - 6.095.981) + 0,083 f_{13}^* (7.670.691 + 6.095.981)$$

$$= 0,917 f_{13}^* (1.574.710) + 0,083 f_{13}^* (13.766.672)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

$$\begin{aligned}
 \text{Untuk } s_{12} &= 7.670.691 & x_{12} &= 7.670.691 \\
 f_{12}(s_{12}, x_{12}) &= 0,917 f_{13}^* (7.670.691 - 7.670.691) + 0,083 f_{13}^* (7.670.691 + \\
 & \quad 7.670.691) \\
 &= 0,917 f_{13}^* (0) + 0,083 f_{13}^* (15.341.382) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

➤ **Untuk $n = 11$**

$$\begin{aligned}
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (s_{11} - x_{11}) + 0,083 f_{12}^* (s_{11} + x_{11}) \\
 \text{Untuk } s_{11} &= 4.616.865 & x_{11} &= 4.616.865 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (4.616.865 - 4.616.865) + 0,083 f_{12}^* (4.616.865 + \\
 & \quad 4.616.865) \\
 &= 0,917 f_{12}^* (0) + 0,083 f_{12}^* (9.233.730) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_{11} &= 6.091.952 & x_{11} &= 0 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (6.091.952 - 0) + 0,083 f_{12}^* (6.091.952 + 0) \\
 &= 0,917 f_{12}^* (6.091.952) + 0,083 f_{12}^* (6.091.952) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,076 + 0,007 \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_{11} &= 6.091.952 & x_{11} &= 4.616.865 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (6.091.952 - 4.616.865) + 0,083 f_{12}^* (6.091.952 + \\
 & \quad 4.616.865) \\
 &= 0,917 f_{12}^* (1.475.087) + 0,083 f_{12}^* (10.708.817) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_{11} &= 6.091.952 & x_{11} &= 6.091.952 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (6.091.952 - 6.091.952) + 0,083 f_{12}^* (6.091.952 + \\
 & \quad 6.091.952) \\
 &= 0,917 f_{12}^* (0) + 0,083 f_{12}^* (12.183.904) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_{11}= 6.095.981 && x_{11}= 0 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^*(6.095.981 - 0) + 0,083 f_{12}^*(6.095.981 + 0) \\
 &= 0,917 f_{12}^*(6.095.981) + 0,083 f_{12}^*(6.095.981) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,076 + 0,007 \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_{11}= 6.095.981 && x_{11}= 4.616.865 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^*(6.095.981 - 4.616.865) + 0,083 f_{12}^*(6.095.981 + \\
 & \quad 4.616.865) \\
 &= 0,917 f_{12}^*(1.479.116) + 0,083 f_{12}^*(10.712.846) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_{11}= 6.095.981 && x_{11}= 6.091.952 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^*(6.095.981 - 6.091.952) + 0,083 f_{12}^*(6.095.981 + \\
 & \quad 6.091.952) \\
 &= 0,917 f_{12}^*(4.029) + 0,083 f_{12}^*(12.187.933) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_{11}= 6.095.981 && x_{11}= 6.095.981 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^*(6.095.981 - 6.095.981) + 0,083 f_{12}^*(6.095.981 + \\
 & \quad 6.095.981) \\
 &= 0,917 f_{12}^*(0) + 0,083 f_{12}^*(12.191.962) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_{11}= 7.670.691 && x_{11}= 0 \\
 f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^*(7.670.691 - 0) + 0,083 f_{12}^*(7.670.691 + 0) \\
 &= 0,917 f_{12}^*(7.670.691) + 0,083 f_{12}^*(7.670.691) \\
 &= 0,917 (1) + 0,083 (1) \\
 &= 0,917 + 0,083 \\
 &= 1
 \end{aligned}$$

$$\text{Untuk } s_{11} = 7.670.691 \quad x_{11} = 4.616.865$$

$$\begin{aligned}
f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (7.670.691 - 4.616.865) + 0,083 f_{12}^* (7.670.691 + \\
&\quad 4.616.865) \\
&= 0,917 f_{12}^* (3.053.826) + 0,083 f_{12}^* (12.287.556) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{11} = 7.670.691 \qquad x_{11} = 6.091.952$$

$$\begin{aligned}
f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (7.670.691 - 6.091.952) + 0,083 f_{12}^* (7.670.691 + \\
&\quad 6.091.952) \\
&= 0,917 f_{12}^* (1.578.739) + 0,083 f_{12}^* (13.762.643) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{11} = 7.670.691 \qquad x_{11} = 6.095.981$$

$$\begin{aligned}
f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (7.670.691 - 6.095.981) + 0,083 f_{12}^* (7.670.691 + \\
&\quad 6.095.981) \\
&= 0,917 f_{12}^* (1.574.710) + 0,083 f_{12}^* (13.766.981) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{11} = 7.670.691 \qquad x_{11} = 7.670.691$$

$$\begin{aligned}
f_{11}(s_{11}, x_{11}) &= 0,917 f_{12}^* (7.670.691 - 7.670.691) + 0,083 f_{12}^* (7.670.691 + \\
&\quad 7.670.691) \\
&= 0,917 f_{12}^* (0) + 0,083 f_{12}^* (15.341.382) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

➤ **Untuk $n = 10$**

$$f_{10}(s_{10}, x_{10}) = 0,917 f_{11}^* (s_{10} - x_{10}) + 0,083 f_{11}^* (s_{10} + x_{10})$$

$$\text{Untuk } s_{10} = 4.616.865 \qquad x_{10} = 0$$

$$\begin{aligned}
f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^* (4.616.865 - 0) + 0,083 f_{11}^* (4.616.865 + 0) \\
&= 0,917 f_{11}^* (4.616.865) + 0,083 f_{11}^* (4.616.865) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,076 + 0,007 \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10} = 4.616.865 \qquad x_{10} = 4.616.865$$

$$\begin{aligned}
f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^* (4.616.865 - 4.616.865) + 0,083 f_{11}^* (4.616.865 + \\
&\quad 4.616.865) \\
&= 0,917 f_{11}^*(0) + 0,083 f_{11}^* (9.233.730) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10} = 6.091.952 \quad x_{10} = 0$$

$$\begin{aligned}
f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^* (6.091.952 - 0) + 0,083 f_{11}^* (6.091.952 + 0) \\
&= 0,917 f_{11}^* (6.091.952) + 0,083 f_{11}^* (6.091.952) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,076 + 0,007 \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10} = 6.091.952 \quad x_{10} = 4.616.865$$

$$\begin{aligned}
f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^* (6.091.952 - 4.616.865) + 0,083 f_{11}^* (6.091.952 + \\
&\quad 4.616.865) \\
&= 0,917 f_{11}^* (1.475.087) + 0,083 f_{11}^* (10.708.817) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10} = 6.091.952 \quad x_{10} = 6.091.952$$

$$\begin{aligned}
f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^* (6.091.952 - 6.091.952) + 0,083 f_{11}^* (6.091.952 + \\
&\quad 6.091.952) \\
&= 0,917 f_{11}^* (0) + 0,083 f_{11}^* (12.183.904) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10} = 6.095.981 \quad x_{10} = 0$$

$$\begin{aligned}
f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^* (6.095.981 - 0) + 0,083 f_{11}^* (6.095.981 + 0) \\
&= 0,917 f_{11}^* (6.095.981) + 0,083 f_{11}^* (6.095.981) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,076 + 0,007 \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10} = 6.095.981 \quad x_{10} = 4.616.865$$

$$\begin{aligned}
f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^* (6.095.981 - 4.616.865) + 0,083 f_{11}^* (6.095.981 + \\
&\quad 4.616.865)
\end{aligned}$$

$$\begin{aligned}
&= 0,917 f_{11}^* (1.479.116) + 0,083 f_{11}^* (10.712.846) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10}= 6.095.981 \qquad x_{10}= 6.091.952$$

$$\begin{aligned}
f_{10} (s_{10}, x_{10}) &= 0,917 f_{11}^* (6.095.981 - 6.091.952) + 0,083 f_{11}^* (31.278.000 + \\
&\quad 6.091.952) \\
&= 0,917 f_{11}^* (4.029) + 0,083 f_{11}^* (12.187.933) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10}= 6.095.981 \qquad x_{10}= 6.095.981$$

$$\begin{aligned}
f_{10} (s_{10}, x_{10}) &= 0,917 f_{11}^* (6.095.981 - 6.095.981) + 0,083 f_{11}^* (6.095.981 + \\
&\quad 6.095.981) \\
&= 0,917 f_{11}^* (0) + 0,083 f_{11}^* (12.191.962) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10}= 7.670.691 \qquad x_{10}= 0$$

$$\begin{aligned}
f_{10} (s_{10}, x_{10}) &= 0,917 f_{11}^* (7.670.691 - 0) + 0,083 f_{11}^* (7.670.691 + 0) \\
&= 0,917 f_{11}^* (7.670.691) + 0,083 f_{11}^* (7.670.691) \\
&= 0,917 (1) + 0,083 (1) \\
&= 0,917 + 0,083 \\
&= 1
\end{aligned}$$

$$\text{Untuk } s_{10}= 7.670.691 \qquad x_{10}= 4.616.865$$

$$\begin{aligned}
f_{10} (s_{10}, x_{10}) &= 0,917 f_{11}^* (7.670.691 - 4.616.865) + 0,083 f_{11}^* (7.670.691 + \\
&\quad 4.616.865) \\
&= 0,917 f_{11}^* (3.053.826) + 0,083 f_{11}^* (12.287.556) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_{10}= 7.670.691 \qquad x_{10}= 6.091.952$$

$$\begin{aligned}
f_{10} (s_{10}, x_{10}) &= 0,917 f_{11}^* (7.670.691 - 6.091.952) + 0,083 f_{11}^* (7.670.691 + \\
&\quad 6.091.952) \\
&= 0,917 f_{11}^* (1.578.739) + 0,083 f_{11}^* (13.762.643) \\
&= 0,917 (0) + 0,083 (1)
\end{aligned}$$

$$= 0,083$$

$$\text{Untuk } s_{10} = 7.670.691$$

$$x_{10} = 6.095.981$$

$$\begin{aligned} f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^*(7.670.691 - 6.095.981) + 0,083 f_{11}^*(7.670.691 + \\ &\quad 6.095.981) \\ &= 0,917 f_{11}^*(1.574.710) + 0,083 f_{11}^*(13.766.672) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_{10} = 7.670.691$$

$$x_{10} = 7.670.691$$

$$\begin{aligned} f_{10}(s_{10}, x_{10}) &= 0,917 f_{11}^*(7.670.691 - 7.670.691) + 0,083 f_{11}^*(7.670.691 + \\ &\quad 7.670.691) \\ &= 0,917 f_{11}^*(0) + 0,083 f_{11}^*(15.341.382) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

➤ **Untuk $n = 9$**

$$f_9(s_9, x_9) = 0,917 f_{10}^*(s_9 - x_9) + 0,083 f_{10}^*(s_9 + x_9)$$

$$\text{Untuk } s_9 = 4.616.865$$

$$x_9 = 0$$

$$\begin{aligned} f_9(s_9, x_9) &= 0,917 f_{10}^*(4.616.865 - 0) + 0,083 f_{10}^*(4.616.865 + 0) \\ &= 0,917 f_{10}^*(4.616.865) + 0,083 f_{10}^*(4.616.865) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,076 + 0,007 \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_9 = 4.616.865$$

$$x_9 = 4.616.865$$

$$\begin{aligned} f_9(s_9, x_9) &= 0,917 f_{10}^*(4.616.865 - 4.616.865) + 0,083 f_{10}^*(4.616.865 + \\ &\quad 4.616.865) \\ &= 0,917 f_{10}^*(0) + 0,083 f_{10}^*(9.233.730) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_9 = 6.091.952$$

$$x_9 = 0$$

$$\begin{aligned} f_9(s_9, x_9) &= 0,917 f_{10}^*(6.091.952 - 0) + 0,083 f_{10}^*(6.091.952 + 0) \\ &= 0,917 f_{10}^*(6.091.952) + 0,083 f_{10}^*(6.091.952) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,076 + 0,007 \end{aligned}$$

$$= 0,083$$

$$\text{Untuk } s_9 = 6.091.952$$

$$x_9 = 4.616.865$$

$$\begin{aligned} f_9(s_9, x_9) &= 0,917 f_{10}^* (6.091.952 - 4.616.865) + 0,083 f_{10}^* (6.091.952 + \\ &\quad 4.616.865) \\ &= 0,917 f_{10}^* (1.475.087) + 0,083 f_{10}^* (10.708.817) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_9 = 6.091.952$$

$$x_9 = 6.091.952$$

$$\begin{aligned} f_9(s_9, x_9) &= 0,917 f_{10}^* (6.091.952 - 6.091.952) + 0,083 f_{10}^* (6.091.952 + \\ &\quad 6.091.952) \\ &= 0,917 f_{10}^* (0) + 0,083 f_{10}^* (12.183.904) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_9 = 6.095.981$$

$$x_9 = 0$$

$$\begin{aligned} f_9(s_9, x_9) &= 0,917 f_{10}^* (6.095.981 - 0) + 0,083 f_{10}^* (6.095.981 + 0) \\ &= 0,917 f_{10}^* (6.095.981) + 0,083 f_{10}^* (6.095.981) \\ &= 0,917 (0,076) + 0,083 (0,007) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_9 = 6.095.981$$

$$x_9 = 4.616.865$$

$$\begin{aligned} f_9(s_9, x_9) &= 0,917 f_{10}^* (6.095.981 - 4.616.865) + 0,083 f_{10}^* (6.095.981 + \\ &\quad 4.616.865) \\ &= 0,917 f_{10}^* (1.479.116) + 0,083 f_{10}^* (10.712.846) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_9 = 6.095.981$$

$$x_9 = 6.091.952$$

$$\begin{aligned} f_9(s_9, x_9) &= 0,917 f_{10}^* (6.095.981 - 6.091.952) + 0,083 f_{10}^* (6.095.981 + \\ &\quad 6.091.952) \\ &= 0,917 f_{10}^* (4.029) + 0,083 f_{10}^* (12.187.952) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_9 = 6.095.981$$

$$x_9 = 6.095.981$$

$$\begin{aligned}
f_9(s_9, x_9) &= 0,917 f_{10}^* (6.095.981 - 6.095.981) + 0,083 f_{10}^* (6.095.981 + \\
&\quad 6.095.981) \\
&= 0,917 f_{10}^* (0) + 0,083 f_{10}^* (12.191.962) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_9 = 7.670.691 \qquad x_9 = 0$$

$$\begin{aligned}
f_9(s_9, x_9) &= 0,917 f_{10}^* (7.670.691 - 0) + 0,083 f_{10}^* (7.670.691 + 0) \\
&= 0,917 f_{10}^* (7.670.691) + 0,083 f_{10}^* (7.670.691) \\
&= 0,917 (1) + 0,083 (1) \\
&= 1
\end{aligned}$$

$$\text{Untuk } s_9 = 7.670.691 \qquad x_9 = 4.616.865$$

$$\begin{aligned}
f_9(s_9, x_9) &= 0,917 f_{10}^* (7.670.691 - 4.616.865) + 0,083 f_{10}^* (7.670.691 + \\
&\quad 4.616.865) \\
&= 0,917 f_{10}^* (3.053.826) + 0,083 f_{10}^* (12.287.556) \\
&= 0,917 (0,007) + 0,083 (1) \\
&= 0,006 + 0,083 \\
&= 0,089
\end{aligned}$$

$$\text{Untuk } s_9 = 7.670.691 \qquad x_9 = 6.091.952$$

$$\begin{aligned}
f_9(s_9, x_9) &= 0,917 f_{10}^* (7.670.691 - 6.091.952) + 0,083 f_{10}^* (7.670.691 + \\
&\quad 6.091.952) \\
&= 0,917 f_{10}^* (1.578.739) + 0,083 f_{10}^* (13.762.646) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_9 = 7.670.691 \qquad x_9 = 6.095.981$$

$$\begin{aligned}
f_9(s_9, x_9) &= 0,917 f_{10}^* (7.670.691 - 6.095.981) + 0,083 f_{10}^* (7.670.691 + \\
&\quad 6.095.981) \\
&= 0,917 f_{10}^* (1.574.710) + 0,083 f_{10}^* (13.766.6) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_9 = 7.670.691 \qquad x_9 = 7.670.691$$

$$\begin{aligned}
f_9(s_9, x_9) &= 0,917 f_{10}^* (7.670.691 - 7.670.691) + 0,083 f_{10}^* (7.670.691 + \\
&\quad 7.670.691)
\end{aligned}$$

$$\begin{aligned}
&= 0,917 f_{10}^* (0) + 0,083 f_{10}^* (15.341.382) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

➤ **Untuk $n = 8$**

$$f_8 (s_8, x_8) = 0,917 f_9^* (s_8 - x_8) + 0,083 f_9^* (s_8 + x_8)$$

$$\text{Untuk } s_8 = 4.616.865 \qquad x_8 = 0$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (4.616.865 - 0) + 0,083 f_9^* (4.616.865 + 0) \\
&= 0,917 f_9^* (4.616.865) + 0,083 f_9^* (4.616.865) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,076 + 0,007 \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 4.616.865 \qquad x_8 = 4.616.865$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (4.616.865 - 4.616.865) + 0,083 f_9^* (4.616.865 + \\
&\quad 4.616.865) \\
&= 0,917 f_9^* (0) + 0,083 f_9^* (10.233.730) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 6.091.952 \qquad x_8 = 0$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (6.091.952 - 0) + 0,083 f_9^* (6.091.952 + 0) \\
&= 0,917 f_9^* (6.091.952) + 0,083 f_9^* (6.091.952) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,076 + 0,007 \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 6.091.952 \qquad x_8 = 4.616.865$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (6.091.952 - 4.616.865) + 0,083 f_9^* (6.091.952 + \\
&\quad 4.616.865) \\
&= 0,917 f_9^* (1.475.087) + 0,083 f_9^* (10.708.817) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 6.091.952 \qquad x_8 = 6.091.952$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (6.091.952 - 6.091.952) + 0,083 f_9^* (6.091.952 + \\
&\quad 6.091.952)
\end{aligned}$$

$$\begin{aligned}
&= 0,917 f_9^* (0) + 0,083 f_9^* (12.183.904) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 6.095.981 \qquad x_8 = 0$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (6.095.981 - 0) + 0,083 f_9^* (6.095.981 + 0) \\
&= 0,917 f_9^* (6.095.981) + 0,083 f_9^* (6.095.981) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,007+0,076 \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 6.095.981 \qquad x_8 = 4.616.865$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (6.095.981 - 4.616.865) + 0,083 f_9^* (6.095.981 + \\
&\quad 4.616.865) \\
&= 0,917 f_9^* (1.479.116) + 0,083 f_9^* (10.712.846) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 6.095.981 \qquad x_8 = 6.091.952$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (6.095.981 - 6.091.952) + 0,083 f_9^* (6.095.981 + \\
&\quad 6.091.952) \\
&= 0,917 f_9^* (4.029) + 0,083 f_9^* (12.187.952) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 6.095.981 \qquad x_8 = 6.095.981$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (6.095.981 - 6.095.981) + 0,083 f_9^* (6.095.981 + \\
&\quad 6.095.981) \\
&= 0,917 f_9^* (0) + 0,083 f_9^* (12.191.962) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_8 = 7.670.691 \qquad x_8 = 0$$

$$\begin{aligned}
f_8 (s_8, x_8) &= 0,917 f_9^* (7.670.691 - 0) + 0,083 f_9^* (7.670.691 + 0) \\
&= 0,917 f_9^* (7.670.691) + 0,083 f_9^* (7.670.691) \\
&= 0,917 (1) + 0,083 (1) \\
&= 1
\end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_8 = 7.670.691 && x_8 = 4.616.865 \\
 f_8(s_8, x_8) &= 0,917 f_9^* (7.670.691 - 4.616.865) + 0,083 f_9^* (7.670.691 + \\
 & \quad 4.616.865) \\
 &= 0,917 f_9^* (3.053.826) + 0,083 f_9^* (12.287.556) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_8 = 7.670.691 && x_8 = 6.091.952 \\
 f_8(s_8, x_8) &= 0,917 f_9^* (7.670.691 - 6.091.952) + 0,083 f_9^* (7.670.691 + \\
 & \quad 6.091.952) \\
 &= 0,917 f_9^* (1.578.739) + 0,083 f_9^* (13.762.646) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_8 = 7.670.691 && x_8 = 6.095.981 \\
 f_8(s_8, x_8) &= 0,917 f_9^* (7.670.691 - 6.095.981) + 0,083 f_9^* (7.670.691 + \\
 & \quad 6.095.981) \\
 &= 0,917 f_9^* (1.574.710) + 0,083 f_9^* (13.766.672) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_8 = 7.670.691 && x_8 = 7.670.691 \\
 f_8(s_8, x_8) &= 0,917 f_9^* (7.670.691 - 7.670.691) + 0,083 f_9^* (7.670.691 + \\
 & \quad 7.670.691) \\
 &= 0,917 f_9^* (0) + 0,083 f_9^* (15.341.382) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

➤ **Untuk n = 7**

$$f_7(s_7, x_7) = 0,917 f_8^* (s_7 - x_7) + 0,083 f_8^* (s_7 + x_7)$$

$$\text{Untuk } s_7 = 4.616.865 \quad x_7 = 0$$

$$\begin{aligned}
 f_7(s_7, x_7) &= 0,917 f_8^* (4.616.865 - 0) + 0,083 f_8^* (4.616.865 + 0) \\
 &= 0,917 f_8^* (4.616.865) + 0,083 f_8^* (4.616.865) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,076 + 0,007 \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_7 = 4.616.865 & & x_7 = 4.616.865 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(4.616.865 - 4.616.865) + 0,083 f_8^*(4.616.865 + \\
 & \quad 4.616.865) \\
 &= 0,917 f_8^*(0) + 0,083 f_8^*(34.869.000) \\
 &= 0,917 (0) + 0,083 (0,083) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_7 = 6.091.952 & & x_7 = 0 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(6.091.952 - 0) + 0,083 f_8^*(6.091.952 + 0) \\
 &= 0,917 f_8^*(6.091.952) + 0,083 f_8^*(6.091.952) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,076 + 0,007 \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_7 = 6.091.952 & & x_7 = 4.616.865 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(6.091.952 - 4.616.865) + 0,083 f_8^*(6.091.952 + 4.616.865) \\
 &= 0,917 f_8^*(1.475.087) + 0,083 f_8^*(10.708.817) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_7 = 6.091.952 & & x_7 = 6.091.952 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(6.091.952 - 6.091.952) + 0,083 f_8^*(6.091.952 + 6.091.952) \\
 &= 0,917 f_8^*(0) + 0,083 f_8^*(12.183.904) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_7 = 6.095.981 & & x_7 = 0 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(6.095.981 - 0) + 0,083 f_8^*(6.095.981 + 0) \\
 &= 0,917 f_8^*(6.095.981) + 0,083 f_8^*(6.095.981) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_7 = 6.095.981 & & x_7 = 4.616.865 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(6.095.981 - 4.616.865) + 0,083 f_8^*(6.095.981 + 4.616.865) \\
 &= 0,917 f_8^*(1.479.116) + 0,083 f_8^*(10.712.846) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_7 = 6.095.981 && x_7 = 6.091.952 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(6.095.981 - 6.091.952) + 0,083 f_8^*(6.095.981 + \\
 &6.091.952) \\
 &= 0,917 f_8^*(4.029) + 0,083 f_8^*(12.187.952) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_7 = 6.095.981 && x_7 = 6.095.981 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(6.095.981 - 6.095.981) + 0,083 f_8^*(6.095.981 + 6.095.981) \\
 &= 0,917 f_8^*(0) + 0,083 f_8^*(12.191.962) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_7 = 7.670.691 && x_7 = 0 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(7.670.691 - 0) + 0,083 f_8^*(7.670.691 + 0) \\
 &= 0,917 f_8^*(7.670.691) + 0,083 f_8^*(7.670.691) \\
 &= 0,917 (1) + 0,083 (1) \\
 &= 1
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_7 = 7.670.691 && x_7 = 4.616.865 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(7.670.691 - 4.616.865) + 0,083 f_8^*(7.670.691 + \\
 &4.616.865) \\
 &= 0,917 f_8^*(3.053.826) + 0,083 f_8^*(12.287.556) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_7 = 7.670.691 && x_7 = 6.091.952 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(7.670.691 - 6.091.952) + 0,083 f_8^*(7.670.691 + 6.091.952) \\
 &= 0,917 f_8^*(1.578.739) + 0,083 f_8^*(13.762.646) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 &\text{Untuk } s_7 = 7.670.691 && x_7 = 6.095.981 \\
 f_7(s_7, x_7) &= 0,917 f_8^*(7.670.691 - 6.095.981) + 0,083 f_8^*(7.670.691 + 6.095.981) \\
 &= 0,917 f_8^*(1.574.710) + 0,083 f_8^*(13.766.672) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

Untuk $s_7 = 7.670.691$

$x_7 = 7.670.691$

$$\begin{aligned} f_7(s_7, x_7) &= 0,917 f_8^*(7.670.691 - 7.670.691) + 0,083 f_8^*(7.670.691 + 7.670.691) \\ &= 0,917 f_8^*(0) + 0,083 f_8^*(15.341.382) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

➤ **Untuk n = 6**

$$f_6(s_6, x_6) = 0,917 f_7^*(s_6 - x_6) + 0,083 f_7^*(s_6 + x_6)$$

Untuk $s_6 = 4.616.865$

$x_6 = 0$

$$\begin{aligned} f_6(s_6, x_6) &= 0,917 f_7^*(4.616.865 - 0) + 0,083 f_7^*(4.616.865 + 0) \\ &= 0,917 f_7^*(4.616.865) + 0,083 f_7^*(4.616.865) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,076 + 0,007 \\ &= 0,083 \end{aligned}$$

Untuk $s_6 = 4.616.865$

$x_6 = 4.616.865$

$$\begin{aligned} f_6(s_6, x_6) &= 0,917 f_7^*(4.616.865 - 4.616.865) + 0,083 f_7^*(4.616.865 + \\ &\quad 4.616.865) \\ &= 0,917 f_7^*(0) + 0,083 f_7^*(10.233.730) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Untuk $s_6 = 6.091.952$

$x_6 = 0$

$$\begin{aligned} f_6(s_6, x_6) &= 0,917 f_7^*(6.091.952 - 0) + 0,083 f_7^*(6.091.952 + 0) \\ &= 0,917 f_7^*(6.091.952) + 0,083 f_7^*(6.091.952) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,076 + 0,007 \\ &= 0,083 \end{aligned}$$

Untuk $s_6 = 6.091.952$

$x_6 = 4.616.865$

$$\begin{aligned} f_6(s_6, x_6) &= 0,917 f_7^*(6.091.952 - 4.616.865) + 0,083 f_7^*(6.091.952 + \\ &\quad 4.616.865) \\ &= 0,917 f_7^*(1.475.087) + 0,083 f_7^*(10.708.817) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Untuk $s_6 = 6.091.952$

$x_6 = 6.091.952$

$$\begin{aligned}
f_6(s_6, x_6) &= 0,917 f_7^* (6.091.952 - 6.091.952) + 0,083 f_7^* (6.091.952 + \\
&\quad 6.091.952) \\
&= 0,917 f_7^*(0) + 0,083 f_7^* (12.183.904) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_6 = 6.095.981 \qquad x_6 = 0$$

$$\begin{aligned}
f_6(s_6, x_6) &= 0,917 f_7^* (6.095.981 - 0) + 0,083 f_7^* (6.095.981 + 0) \\
&= 0,917 f_7^*(6.095.981) + 0,083 f_7^* (6.095.981) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_6 = 6.095.981 \qquad x_6 = 4.616.865$$

$$\begin{aligned}
f_6(s_6, x_6) &= 0,917 f_7^* (6.095.981 - 4.616.865) + 0,083 f_7^* (6.095.981 + \\
&\quad 4.616.865) \\
&= 0,917 f_7^* (1.479.116) + 0,083 f_7^* (10.712.846) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_6 = 6.095.981 \qquad x_6 = 6.091.952$$

$$\begin{aligned}
f_6(s_6, x_6) &= 0,917 f_7^*(6.095.981 - 6.091.952) + 0,083 f_7^*(6.095.981 + \\
&\quad 6.091.952) \\
&= 0,917 f_7^* (4.029) + 0,083 f_7^* (12.187.952) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_6 = 6.095.981 \qquad x_6 = 6.095.981$$

$$\begin{aligned}
f_6(s_6, x_6) &= 0,917 f_7^* (6.095.981 - 6.095.981) + 0,083 f_7^*(6.095.981 + 6.095.981) \\
&= 0,917 f_7^* (0) + 0,083 f_7^* (12.191.962) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_6 = 7.670.691 \qquad x_6 = 0$$

$$\begin{aligned}
f_6(s_6, x_6) &= 0,917 f_7^* (7.670.691 - 0) + 0,083 f_7^*(7.670.691 + 0) \\
&= 0,917 f_7^* (7.670.691) + 0,083 f_7^*(7.670.691) \\
&= 0,917 (1) + 0,083 (1) \\
&= 1
\end{aligned}$$

Untuk $s_6 = 7.670.691$

$x_6 = 4.616.865$

$$\begin{aligned} f_6(s_6, x_6) &= 0,917 f_7^*(7.670.691 - 4.616.865) + 0,083 f_7^*(7.670.691 + \\ &\quad 4.616.865) \\ &= 0,917 f_7^*(3.053.826) + 0,083 f_7^*(12.287.556) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Untuk $s_6 = 7.670.691$

$x_6 = 6.091.952$

$$\begin{aligned} f_6(s_6, x_6) &= 0,917 f_7^*(7.670.691 - 6.091.952) + 0,083 f_7^*(7.670.691 + \\ &\quad 6.091.952) \\ &= 0,917 f_7^*(1.578.739) + 0,083 f_7^*(13.762.646) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Untuk $s_6 = 7.670.691$

$x_6 = 6.095.981$

$$\begin{aligned} f_6(s_6, x_6) &= 0,917 f_7^*(7.670.691 - 6.095.981) + 0,083 f_7^*(7.670.691 + 6.095.981) \\ &= 0,917 f_7^*(1.574.710) + 0,083 f_7^*(13.766.672) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Untuk $s_6 = 7.670.691$

$x_6 = 7.670.691$

$$\begin{aligned} f_6(s_6, x_6) &= 0,917 f_7^*(7.670.691 - 7.670.691) + 0,083 f_7^*(7.670.691 + \\ &\quad 7.670.691) \\ &= 0,917 f_7^*(0) + 0,083 f_7^*(15.341.382) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

➤ **Untuk n = 5**

$$f_5(s_5, x_5) = 0,917 f_6^*(s_5 - x_5) + 0,083 f_6^*(s_5 + x_5)$$

Untuk $s_5 = 4.616.865$

$x_5 = 0$

$$\begin{aligned} f_5(s_5, x_5) &= 0,917 f_6^*(4.616.865 - 0) + 0,083 f_6^*(4.616.865 + 0) \\ &= 0,917 f_6^*(4.616.865) + 0,083 f_6^*(4.616.865) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,076 + 0,007 \\ &= 0,083 \end{aligned}$$

Untuk $s_5 = 4.616.865$

$x_5 = 4.616.865$

$$\begin{aligned}
f_5(s_5, x_5) &= 0,917 f_6^* (4.616.865 - 4.616.865) + 0,083 f_6^* (4.616.865 + \\
&\quad 4.616.865) \\
&= 0,917 f_6^* (0) + 0,083 f_6^* (10.233.730) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_5 = 6.091.952 \qquad x_5 = 0$$

$$\begin{aligned}
f_5(s_5, x_5) &= 0,917 f_6^* (6.091.952 - 0) + 0,083 f_6^* (6.091.952 + 0) \\
&= 0,917 f_6^* (6.091.952) + 0,083 f_6^* (6.091.952) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,076 + 0,007 \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_5 = 6.091.952 \qquad x_5 = 4.616.865$$

$$\begin{aligned}
f_5(s_5, x_5) &= 0,917 f_6^* (6.091.952 - 4.616.865) + 0,083 f_6^* (6.091.952 + \\
&\quad 4.616.865) \\
&= 0,917 f_6^* (1.475.087) + 0,083 f_6^* (10.708.817) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_5 = 6.091.952 \qquad x_5 = 6.091.952$$

$$\begin{aligned}
f_5(s_5, x_5) &= 0,917 f_6^* (6.091.952 - 6.091.952) + 0,083 f_6^* (6.091.952 + \\
&\quad 6.091.952) \\
&= 0,917 f_6^* (0) + 0,083 f_6^* (12.183.904) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_5 = 6.095.981 \qquad x_5 = 0$$

$$\begin{aligned}
f_5(s_5, x_5) &= 0,917 f_6^* (6.095.981 - 0) + 0,083 f_6^* (6.095.981 + 0) \\
&= 0,917 f_6^* (6.095.981) + 0,083 f_6^* (6.095.981) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_5 = 6.095.981 \qquad x_5 = 4.616.865$$

$$\begin{aligned}
f_5(s_5, x_5) &= 0,917 f_6^* (6.095.981 - 4.616.865) + 0,083 f_6^* (6.095.981 + \\
&\quad 4.616.865) \\
&= 0,917 f_6^* (1.479.116) + 0,083 f_6^* (10.712.846)
\end{aligned}$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

$$\text{Untuk } s_5 = 6.095.981 \quad x_5 = 6.091.952$$

$$f_5(s_5, x_5) = 0,917 f_6^*(6.095.981 - 6.091.952) + 0,083 f_6^*(6.095.981 + 6.091.952)$$

$$= 0,917 f_6^*(4.029) + 0,083 f_6^*(12.187.952)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

$$\text{Untuk } s_5 = 6.095.981 \quad x_5 = 6.095.981$$

$$f_5(s_5, x_5) = 0,917 f_6^*(6.095.981 - 6.095.981) + 0,083 f_6^*(6.095.981 + 6.095.981)$$

$$= 0,917 f_6^*(0) + 0,083 f_6^*(12.191.962)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

$$\text{Untuk } s_5 = 7.670.691 \quad x_5 = 0$$

$$f_5(s_5, x_5) = 0,917 f_6^*(7.670.691 - 0) + 0,083 f_6^*(7.670.691 + 0)$$

$$= 0,917 f_6^*(7.670.691) + 0,083 f_6^*(7.670.691)$$

$$= 0,917 (1) + 0,083 (1)$$

$$= 1$$

$$\text{Untuk } s_5 = 7.670.691 \quad x_5 = 4.616.865$$

$$f_5(s_5, x_5) = 0,917 f_6^*(7.670.691 - 4.616.865) + 0,083 f_6^*(7.670.691 + 4.616.865)$$

$$= 0,917 f_6^*(3.053.826) + 0,083 f_6^*(12.287.556)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

$$\text{Untuk } s_5 = 7.670.691 \quad x_5 = 6.091.952$$

$$f_5(s_5, x_5) = 0,917 f_6^*(7.670.691 - 6.091.952) + 0,083 f_6^*(7.670.691 + 6.091.952)$$

$$= 0,917 f_6^*(1.578.739) + 0,083 f_6^*(13.762.646)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

$$\text{Untuk } s_5 = 7.670.691 \quad x_5 = 6.095.981$$

$$\begin{aligned}
 f_5(s_5, x_5) &= 0,917 f_6^*(7.670.691 - 6.095.981) + 0,083 f_6^*(7.670.691 + 6.095.981) \\
 &= 0,917 f_6^*(1.574.710) + 0,083 f_6^*(13.766.672) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\text{Untuk } s_5 = 7.670.691 \qquad x_5 = 7.670.691$$

$$\begin{aligned}
 f_5(s_5, x_5) &= 0,917 f_6^*(7.670.691 - 7.670.691) + 0,083 f_6^*(7.670.691 + \\
 &\quad 7.670.691) \\
 &= 0,917 f_6^*(0) + 0,083 f_6^*(15.341.382) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

➤ **Untuk n = 4**

$$f_4(s_4, x_4) = 0,917 f_5^*(s_4 - x_4) + 0,083 f_5^*(s_4 + x_4)$$

$$\text{Untuk } s_4 = 4.616.865 \qquad x_4 = 0$$

$$\begin{aligned}
 f_4(s_4, x_4) &= 0,917 f_5^*(4.616.865 - 0) + 0,083 f_5^*(4.616.865 + 0) \\
 &= 0,917 f_5^*(4.616.865) + 0,083 f_5^*(4.616.865) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,076 + 0,007 \\
 &= 0,083
 \end{aligned}$$

$$\text{Untuk } s_4 = 4.616.865 \qquad x_4 = 4.616.865$$

$$\begin{aligned}
 f_4(s_4, x_4) &= 0,917 f_5^*(4.616.865 - 4.616.865) + 0,083 f_5^*(4.616.865 + \\
 &\quad 4.616.865) \\
 &= 0,917 f_5^*(0) + 0,083 f_5^*(10.233.730) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\text{Untuk } s_4 = 6.091.952 \qquad x_4 = 0$$

$$\begin{aligned}
 f_4(s_4, x_4) &= 0,917 f_5^*(6.091.952 - 0) + 0,083 f_5^*(6.091.952 + 0) \\
 &= 0,917 f_5^*(6.091.952) + 0,083 f_5^*(6.091.952) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,076 + 0,007 \\
 &= 0,083
 \end{aligned}$$

$$\text{Untuk } s_4 = 6.091.952 \qquad x_4 = 4.616.865$$

$$\begin{aligned}
f_4(s_4, x_4) &= 0,917 f_5^*(6.091.952 - 4.616.865) + 0,083 f_5^*(6.091.952 + \\
&\quad 4.616.865) \\
&= 0,917 f_5^*(1.475.087) + 0,083 f_5^*(10.708.817) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_4 = 6.091.952 \qquad x_4 = 6.091.952$$

$$\begin{aligned}
f_4(s_4, x_4) &= 0,917 f_5^*(6.091.952 - 6.091.952) + 0,083 f_5^*(6.091.952 + \\
&\quad 6.091.952) \\
&= 0,917 f_5^*(0) + 0,083 f_5^*(12.183.904) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_4 = 6.095.981 \qquad x_4 = 0$$

$$\begin{aligned}
f_4(s_4, x_4) &= 0,917 f_5^*(6.095.981 - 0) + 0,083 f_5^*(6.095.981 + 0) \\
&= 0,917 f_5^*(6.095.981) + 0,083 f_5^*(6.095.981) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_4 = 6.095.981 \qquad x_4 = 4.616.865$$

$$\begin{aligned}
f_4(s_4, x_4) &= 0,917 f_5^*(6.095.981 - 4.616.865) + 0,083 f_5^*(6.095.981 + \\
&\quad 4.616.865) \\
&= 0,917 f_5^*(1.479.116) + 0,083 f_5^*(10.712.846) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_4 = 6.095.981 \qquad x_4 = 6.091.952$$

$$\begin{aligned}
f_4(s_4, x_4) &= 0,917 f_5^*(6.095.981 - 6.091.952) + 0,083 f_5^*(6.095.981 + \\
&\quad 6.091.952) \\
&= 0,917 f_5^*(4.029) + 0,083 f_5^*(12.187.952) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_4 = 6.095.981 \qquad x_4 = 6.095.981$$

$$\begin{aligned}
f_4(s_4, x_4) &= 0,917 f_5^*(6.095.981 - 6.095.981) + 0,083 f_5^*(6.095.981 + \\
&\quad 6.095.981) \\
&= 0,917 f_5^*(0) + 0,083 f_5^*(12.191.962)
\end{aligned}$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

Untuk $s_4 = 7.670.691$ $x_4 = 0$

$$f_4 (s_4, x_4) = 0,917 f_5^* (7.670.691 - 0) + 0,083 f_5^* (7.670.691 + 0)$$

$$= 0,917 f_5^* (7.670.691) + 0,083 f_5^* (7.670.691)$$

$$= 0,917 (1) + 0,083 (1)$$

$$= 1$$

Untuk $s_4 = 7.670.691$ $x_4 = 4.616.865$

$$f_4 (s_4, x_4) = 0,917 f_5^* (7.670.691 - 4.616.865) + 0,083 f_5^* (7.670.691 + 4.616.865)$$

$$= 0,917 f_5^* (3.053.826) + 0,083 f_5^* (12.287.556)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

Untuk $s_4 = 7.670.691$ $x_4 = 6.091.952$

$$f_4 (s_4, x_4) = 0,917 f_5^* (7.670.691 - 6.091.952) + 0,083 f_5^* (7.670.691 + 6.091.952)$$

$$= 0,917 f_5^* (1.578.739) + 0,083 f_5^* (13.762.646)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

Untuk $s_4 = 7.670.691$ $x_4 = 6.095.981$

$$f_4 (s_4, x_4) = 0,917 f_5^* (7.670.691 - 6.095.981) + 0,083 f_5^* (7.670.691 + 6.095.981)$$

$$= 0,917 f_5^* (1.574.710) + 0,083 f_5^* (13.766.672)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

Untuk $s_4 = 7.670.691$ $x_4 = 7.670.691$

$$f_4 (s_4, x_4) = 0,917 f_5^* (7.670.691 - 7.670.691) + 0,083 f_5^* (7.670.691 + 7.670.691)$$

$$= 0,917 f_5^* (0) + 0,083 f_5^* (15.341.382)$$

$$= 0,917 (0) + 0,083 (1)$$

$$= 0,083$$

➤ **Untuk n = 3**

$$f_3 (s_3, x_3) = 0,917 f_4^* (s_3 - x_3) + 0,083 f_4^* (s_3 + x_3)$$

Untuk $s_3 = 4.616.865$ $x_3 = 0$

$$\begin{aligned} f_3(s_3, x_3) &= 0,917 f_4^*(4.616.865 - 0) + 0,083 f_4^*(4.616.865 + 0) \\ &= 0,917 f_4^*(4.616.865) + 0,083 f_4^*(4.616.865) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,076 + 0,007 \\ &= 0,083 \end{aligned}$$

Untuk $s_3 = 4.616.865$ $x_3 = 4.616.865$

$$\begin{aligned} f_3(s_3, x_3) &= 0,917 f_4^*(4.616.865 - 4.616.865) + 0,083 f_4^*(4.616.865 + 4.616.865) \\ &= 0,917 f_4^*(0) + 0,083 f_4^*(10.233.730) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Untuk $s_3 = 6.091.952$ $x_3 = 0$

$$\begin{aligned} f_3(s_3, x_3) &= 0,917 f_4^*(6.091.952 - 0) + 0,083 f_4^*(6.091.952 + 0) \\ &= 0,917 f_4^*(6.091.952) + 0,083 f_4^*(6.091.952) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,076 + 0,007 \\ &= 0,083 \end{aligned}$$

Untuk $s_3 = 6.091.952$ $x_3 = 4.616.865$

$$\begin{aligned} f_3(s_3, x_3) &= 0,917 f_4^*(6.091.952 - 4.616.865) + 0,083 f_4^*(6.091.952 + 4.616.865) \\ &= 0,917 f_4^*(1.475.087) + 0,083 f_4^*(10.708.817) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Untuk $s_3 = 6.091.952$ $x_3 = 6.091.952$

$$\begin{aligned} f_3(s_3, x_3) &= 0,917 f_4^*(6.091.952 - 6.091.952) + 0,083 f_4^*(6.091.952 + 6.091.952) \\ &= 0,917 f_4^*(0) + 0,083 f_4^*(12.183.904) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Untuk $s_3 = 6.095.981$ $x_3 = 0$

$$f_3(s_3, x_3) = 0,917 f_4^*(6.095.981 - 0) + 0,083 f_4^*(6.095.981 + 0)$$

$$\begin{aligned}
&= 0,917 f_4^*(6.095.981) + 0,083 f_4^* (6.095.981) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_3 = 6.095.981 \qquad x_3 = 4.616.865$$

$$\begin{aligned}
f_3(s_3, x_3) &= 0,917 f_4^*(6.095.981 - 4.616.865) + 0,083 f_4^*(6.095.981 + \\
&\quad 4.616.865) \\
&= 0,917 f_4^*(1.479.116) + 0,083 f_4^*(10.712.846) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_3 = 6.095.981 \qquad x_3 = 6.091.952$$

$$\begin{aligned}
f_3(s_3, x_3) &= 0,917 f_4^*(6.095.981 - 6.091.952) + 0,083 f_4^*(6.095.981 + \\
&\quad 6.091.952) \\
&= 0,917 f_4^*(4.029) + 0,083 f_4^*(12.187.952) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_3 = 6.095.981 \qquad x_3 = 6.095.981$$

$$\begin{aligned}
f_3(s_3, x_3) &= 0,917 f_4^*(6.095.981 - 6.095.981) + 0,083 f_4^*(6.095.981 + \\
&\quad 6.095.981) \\
&= 0,917 f_4^*(0) + 0,083 f_4^*(12.191.962) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_3 = 7.670.691 \qquad x_3 = 0$$

$$\begin{aligned}
f_3(s_3, x_3) &= 0,917 f_4^*(7.670.691 - 0) + 0,083 f_4^*(7.670.691 + 0) \\
&= 0,917 f_4^*(7.670.691) + 0,083 f_4^*(7.670.691) \\
&= 0,917 (1) + 0,083 (1) \\
&= 1
\end{aligned}$$

$$\text{Untuk } s_3 = 7.670.691 \qquad x_3 = 4.616.865$$

$$\begin{aligned}
f_3(s_3, x_3) &= 0,917 f_4^*(7.670.691 - 4.616.865) + 0,083 f_4^*(7.670.691 + \\
&\quad 4.616.865) \\
&= 0,917 f_4^*(3.053.826) + 0,083 f_4^*(12.287.556) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_3 = 7.670.691 & & x_3 = 6.091.952 \\
 f_3(s_3, x_3) &= 0,917 f_4^*(7.670.691 - 6.091.952) + 0,083 f_4^*(7.670.691 + \\
 & \quad 6.091.952) \\
 &= 0,917 f_4^*(1.578.739) + 0,083 f_4^*(13.762.646) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_3 = 7.670.691 & & x_3 = 6.095.981 \\
 f_3(s_3, x_3) &= 0,917 f_4^*(7.670.691 - 6.095.981) + 0,083 f_4^*(7.670.691 + \\
 & \quad 6.095.981) \\
 &= 0,917 f_4^*(1.574.710) + 0,083 f_4^*(13.766.672) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_3 = 7.670.691 & & x_3 = 7.670.691 \\
 f_3(s_3, x_3) &= 0,917 f_4^*(7.670.691 - 7.670.691) + 0,083 f_4^*(7.670.691 + \\
 & \quad 7.670.691) \\
 &= 0,917 f_4^*(0) + 0,083 f_4^*(15.341.382) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

➤ **Untuk n = 2**

$$\begin{aligned}
 f_2(s_2, x_2) &= 0,917 f_3^*(s_2 - x_2) + 0,083 f_3^*(s_2 + x_2) \\
 \text{Untuk } s_2 = 4.616.865 & & x_2 = 0 \\
 f_2(s_2, x_2) &= 0,917 f_3^*(4.616.865 - 0) + 0,083 f_3^*(4.616.865 + 0) \\
 &= 0,917 f_3^*(4.616.865) + 0,083 f_3^*(4.616.865) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,076 + 0,007 \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_2 = 4.616.865 & & x_2 = 4.616.865 \\
 f_2(s_2, x_2) &= 0,917 f_3^*(4.616.865 - 4.616.865) + 0,083 f_3^*(4.616.865 + \\
 & \quad 4.616.865) \\
 &= 0,917 f_3^*(0) + 0,083 f_3^*(10.233.730) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\text{Untuk } s_2 = 6.091.952 \quad x_2 = 0$$

$$\begin{aligned} f_2(s_2, x_2) &= 0,917 f_3^*(6.091.952 - 0) + 0,083 f_3^*(6.091.952 + 0) \\ &= 0,917 f_3^*(6.091.952) + 0,083 f_3^*(6.091.952) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,076 + 0,007 \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_2 = 6.091.952 \quad x_2 = 4.616.865$$

$$\begin{aligned} f_2(s_2, x_2) &= 0,917 f_3^*(6.091.952 - 4.616.865) + 0,083 f_3^*(6.091.952 + \\ &\quad 4.616.865) \\ &= 0,917 f_3^*(1.475.087) + 0,083 f_3^*(10.708.817) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_2 = 6.091.952 \quad x_2 = 6.091.952$$

$$\begin{aligned} f_2(s_2, x_2) &= 0,917 f_3^*(6.091.952 - 6.091.952) + 0,083 f_3^*(6.091.952 + \\ &\quad 6.091.952) \\ &= 0,917 f_3^*(0) + 0,083 f_3^*(12.183.904) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_2 = 6.095.981 \quad x_2 = 0$$

$$\begin{aligned} f_2(s_2, x_2) &= 0,917 f_3^*(6.095.981 - 0) + 0,083 f_3^*(6.095.981 + 0) \\ &= 0,917 f_3^*(6.095.981) + 0,083 f_3^*(6.095.981) \\ &= 0,917 (0,083) + 0,083 (0,083) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_2 = 6.095.981 \quad x_2 = 4.616.865$$

$$\begin{aligned} f_2(s_2, x_2) &= 0,917 f_3^*(6.095.981 - 4.616.865) + 0,083 f_3^*(6.095.981 + \\ &\quad 4.616.865) \\ &= 0,917 f_3^*(1.479.116) + 0,083 f_3^*(10.712.846) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_2 = 6.095.981 \quad x_2 = 6.091.952$$

$$\begin{aligned} f_2(s_2, x_2) &= 0,917 f_3^*(6.095.981 - 6.091.952) + 0,083 f_3^*(6.095.981 + \\ &\quad 6.091.952) \end{aligned}$$

$$\begin{aligned}
&= 0,917 f_3^* (4.029) + 0,083 f_3^* (12.187.952) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_2 = 6.095.981 \qquad x_2 = 6.095.981$$

$$\begin{aligned}
f_2 (s_2, x_2) &= 0,917 f_3^* (6.095.981 - 6.095.981) + 0,083 f_3^* (6.095.981 + \\
&\quad 6.095.981) \\
&= 0,917 f_3^* (0) + 0,083 f_3^* (12.191.962) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_2 = 7.670.691 \qquad x_2 = 0$$

$$\begin{aligned}
f_2 (s_2, x_2) &= 0,917 f_3^* (7.670.691 - 0) + 0,083 f_3^* (7.670.691 + 0) \\
&= 0,917 f_3^* (7.670.691) + 0,083 f_3^* (7.670.691) \\
&= 0,917 (1) + 0,083 (1) \\
&= 1
\end{aligned}$$

$$\text{Untuk } s_2 = 7.670.691 \qquad x_2 = 4.616.865$$

$$\begin{aligned}
f_2 (s_2, x_2) &= 0,917 f_3^* (7.670.691 - 4.616.865) + 0,083 f_3^* (7.670.691 + \\
&\quad 4.616.865) \\
&= 0,917 f_3^* (3.053.826) + 0,083 f_3^* (12.287.556) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_2 = 7.670.691 \qquad x_2 = 6.091.952$$

$$\begin{aligned}
f_2 (s_2, x_2) &= 0,917 f_3^* (7.670.691 - 6.091.952) + 0,083 f_3^* (7.670.691 + \\
&\quad 6.091.952) \\
&= 0,917 f_3^* (1.578.739) + 0,083 f_3^* (13.762.646) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_2 = 7.670.691 \qquad x_2 = 6.095.981$$

$$\begin{aligned}
f_2 (s_2, x_2) &= 0,917 f_3^* (7.670.691 - 6.095.981) + 0,083 f_3^* (7.670.691 + \\
&\quad 6.095.981) \\
&= 0,917 f_3^* (1.574.710) + 0,083 f_3^* (13.766.672) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_2 = 7.670.691 & \qquad \qquad \qquad x_2 = 7.670.691 \\
 f_2(s_2, x_2) &= 0,917 f_3^*(7.670.691 - 7.670.691) + 0,083 f_3^*(7.670.691 + \\
 &\quad 7.670.691) \\
 &= 0,917 f_3^*(0) + 0,083 f_3^*(15.341.382) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

➤ **Untuk n = 1**

$$\begin{aligned}
 f_1(s_1, x_1) &= 0,917 f_2^*(s_1 - x_1) + 0,083 f_2^*(s_1 + x_1) \\
 \text{Untuk } s_1 = 4.616.865 & \qquad \qquad \qquad x_1 = 0 \\
 f_1(s_1, x_1) &= 0,917 f_2^*(4.616.865 - 0) + 0,083 f_2^*(4.616.865 + 0) \\
 &= 0,917 f_2^*(4.616.865) + 0,083 f_2^*(4.616.865) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_1 = 4.616.865 & \qquad \qquad \qquad x_1 = 4.616.865 \\
 f_1(s_1, x_1) &= 0,917 f_2^*(4.616.865 - 4.616.865) + 0,083 f_2^*(4.616.865 + \\
 &\quad 4.616.865) \\
 &= 0,917 f_2^*(0) + 0,083 f_2^*(10.233.730) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_1 = 6.091.952 & \qquad \qquad \qquad x_1 = 0 \\
 f_1(s_1, x_1) &= 0,917 f_2^*(6.091.952 - 0) + 0,083 f_2^*(6.091.952 + 0) \\
 &= 0,917 f_2^*(6.091.952) + 0,083 f_2^*(6.091.952) \\
 &= 0,917 (0,083) + 0,083 (0,083) \\
 &= 0,076 + 0,007 \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_1 = 6.091.952 & \qquad \qquad \qquad x_1 = 4.616.865 \\
 f_1(s_1, x_1) &= 0,917 f_2^*(6.091.952 - 4.616.865) + 0,083 f_2^*(6.091.952 + \\
 &\quad 4.616.865) \\
 &= 0,917 f_2^*(1.475.087) + 0,083 f_2^*(10.708.817) \\
 &= 0,917 (0) + 0,083 (1) \\
 &= 0,083
 \end{aligned}$$

$$\begin{aligned}
 \text{Untuk } s_1 = 6.091.952 & \qquad \qquad \qquad x_1 = 6.091.952
 \end{aligned}$$

$$\begin{aligned}
f_1(s_1, x_1) &= 0,917 f_2^*(6.091.952 - 6.091.952) + 0,083 f_2^*(6.091.952 + \\
&\quad 6.091.952) \\
&= 0,917 f_2^*(0) + 0,083 f_2^*(12.183.904) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_1 = 6.095.981 \qquad x_1 = 0$$

$$\begin{aligned}
f_1(s_1, x_1) &= 0,917 f_2^*(6.095.981 - 0) + 0,083 f_2^*(6.095.981 + 0) \\
&= 0,917 f_2^*(6.095.981) + 0,083 f_2^*(6.095.981) \\
&= 0,917 (0,083) + 0,083 (0,083) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_1 = 6.095.981 \qquad x_1 = 4.616.865$$

$$\begin{aligned}
f_1(s_1, x_1) &= 0,917 f_2^*(6.095.981 - 4.616.865) + 0,083 f_2^*(6.095.981 + \\
&\quad 4.616.865) \\
&= 0,917 f_2^*(1.479.116) + 0,083 f_2^*(10.712.846) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_1 = 6.095.981 \qquad x_1 = 6.091.952$$

$$\begin{aligned}
f_1(s_1, x_1) &= 0,917 f_2^*(6.095.981 - 6.091.952) + 0,083 f_2^*(6.095.981 + \\
&\quad 6.091.952) \\
&= 0,917 f_2^*(4.029) + 0,083 f_2^*(12.187.952) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_1 = 6.095.981 \qquad x_1 = 6.095.981$$

$$\begin{aligned}
f_1(s_1, x_1) &= 0,917 f_2^*(6.095.981 - 6.095.981) + 0,083 f_2^*(6.095.981 + \\
&\quad 6.095.981) \\
&= 0,917 f_2^*(0) + 0,083 f_2^*(12.191.962) \\
&= 0,917 (0) + 0,083 (1) \\
&= 0,083
\end{aligned}$$

$$\text{Untuk } s_1 = 7.670.691 \qquad x_1 = 0$$

$$\begin{aligned}
f_1(s_1, x_1) &= 0,917 f_2^*(7.670.691 - 0) + 0,083 f_2^*(7.670.691 + 0) \\
&= 0,917 f_2^*(7.670.691) + 0,083 f_2^*(7.670.691) \\
&= 0,917 (1) + 0,083 (1)
\end{aligned}$$

$$= 1$$

$$\text{Untuk } s_1 = 7.670.691$$

$$x_1 = 4.616.865$$

$$\begin{aligned} f_1(s_1, x_1) &= 0,917 f_2^*(7.670.691 - 4.616.865) + 0,083 f_2^*(7.670.691 + \\ &\quad 4.616.865) \\ &= 0,917 f_2^*(3.053.826) + 0,083 f_2^*(12.287.556) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_1 = 7.670.691$$

$$x_1 = 6.091.952$$

$$\begin{aligned} f_1(s_1, x_1) &= 0,917 f_2^*(7.670.691 - 6.091.952) + 0,083 f_2^*(7.670.691 + \\ &\quad 6.091.952) \\ &= 0,917 f_2^*(1.578.739) + 0,083 f_2^*(13.762.646) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_1 = 7.670.691$$

$$x_1 = 6.095.981$$


$$\begin{aligned} f_1(s_1, x_1) &= 0,917 f_2^*(7.670.691 - 6.095.981) + 0,083 f_2^*(7.670.691 + 6.095.981) \\ &= 0,917 f_2^*(1.574.710) + 0,083 f_2^*(13.766.672) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

$$\text{Untuk } s_1 = 7.670.691$$

$$x_1 = 7.670.691$$

$$\begin{aligned} f_1(s_1, x_1) &= 0,917 f_2^*(7.670.691 - 7.670.691) + 0,083 f_2^*(7.670.691 + \\ &\quad 7.670.691) \\ &= 0,917 f_2^*(0) + 0,083 f_2^*(15.341.382) \\ &= 0,917 (0) + 0,083 (1) \\ &= 0,083 \end{aligned}$$

Lampiran 2. Surat Ijin Penelitian dari Program Studi Matematika

	<p>KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET, DAN TEKNOLOGI UNIVERSITAS TIMOR FAKULTAS PERTANIAN, SAINS, DAN KESEHATAN Jalan Km 09 Kelurahan Sasi, Kefamenanu Laman : unimor.ac.id, e-mail: univertastimor@yahoo.co.id</p>
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Nomor : 729/UN60.1/PP/2023	23 Juni 2023
Lampiran : Satu Set	
Perihal : Mohon Izin Penelitian	

✓ Yth. Manejer KCS Bakery Kefamenanu

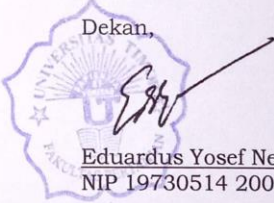
Dengan Hormat,
Bersama surat ini kami menyampaikan bahwa salah satu syarat penyelesaian tugas akhir Mahasiswa Strata Satu (S1) di Fakultas Pertanian Unimor adalah Penelitian. Berkaitan dengan itu, kami mohon kiranya Bapak/Ibu dapat memberikan izin kepada Mahasiswa kami:

Nama : Anjelina Tefi
NPM : 53190015
Prodi : Matematika

Untuk melaksanakan penelitian dengan judul **“Penerapan Program Dinamik Probabilistik dalam Pengendalian Persediaan Bahan Baku untuk Meminimumkan Biaya Produksi dengan Mempertimbangkan Masa Kedaluwarsa (Studi Kasus: KCS Bakery Kefamenanu)”**. Waktu disesuaikan dilapangan.

Demikian surat permohonan ini kami sampaikan. Atas perhatian dan kerjasama kami ucapkan terima kasih.

Dekan,



Eduardus Yosef Neonbeni, S.P., M.P.
NIP 19730514 200501 1 002

Tembusan:

1. Koordinator Program Studi Matematika.

Lampiran 3 Dokumentasi Pengambilan Data

DAFTAR RIWAYAT HIDUP



Penulis skripsi ini bernama ANJELINA TEFI anak ketiga dari lima bersaudara yang lahir di Kefamenau Kabupaten TTU pada tanggal 14 Agustus 2001. Penulis berkebangsaan Indonesia dan beragama kristen protestan.

Berikut riwayat pendidikan penulis, yaitu pada tahun 2013 lulus dari SD Gmit Kefamenanu 4, Kabupaten Timor Tengah Utara. Kemudian melanjutkan pendidikan di SMP Kristen Kefamenanu dan lulus pada tahun 2016. Pada tahun 2019 penulis lulus dari SMA Kristen Petra dan melanjutkan studi di Universitas Timor Program Studi Matematika melalui jalur SBMPTN hingga penulis selesai menyusun skripsi ini dengan motto “Karena Masa Depan Sungguh Ada Dan Harapanmu Tidak Akan Hilang (Amsal 23:18)”

Akhir kata penulis mengucapkan rasa syukur yang sebesar – besarnya atas selesainya menyusun skripsi dengan judul” PENERAPAN PROGRAM DINAMIK PROBABILISTIK DALAM PENGENDALIAN PERSEDIAAN BAHAN BAKU UNTUK MEMINIMUMKAN BIAYA PRODUKSI (Studi Kasus: KCS Bakery Kefamenanu)”

Kefamenanu, Februari 2024

Anjelina Tefi