





























$$\begin{aligned}
C_y &= \begin{bmatrix} -\alpha_1 \beta m_w \bar{K}_s & -\alpha_1 \beta m_w \bar{C}_f & \alpha_1 \beta (m_w \bar{K}_s - I_d \bar{K}_t) & \alpha_1 \beta m_w \bar{C}_f \\ \alpha_2 & 0 & -\alpha_2 & 0 \end{bmatrix} \\
D_{qp} &= \begin{bmatrix} -\alpha & 0 & -\beta m_w d_{ks} & -\beta I_d d_{kt} & -\beta m_w d_{cf} & \beta m_w d_{\Phi} \\ 0 & -\alpha & -\beta \gamma_1 \gamma_2 d_{ks} & \beta (\gamma_1 \gamma_2 - I_d) d_{kt} & -\beta \gamma_1 \gamma_2 d_{cf} & \beta \gamma_1 \gamma_2 d_{\Phi} \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}, \quad D_{q1} = \begin{bmatrix} \beta I_d \bar{K}_t & 0 & 0 \\ \beta (I_d - \gamma_1 \gamma_2) \bar{K}_t & 0 & 0 \\ 0 & 0 & 0 \\ -\bar{K}_t & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}, \\
D_{q2} &= \begin{bmatrix} \beta m_w \bar{\Phi} \\ \beta \gamma_1 \gamma_2 \bar{\Phi} \\ 0 \\ 0 \\ 0 \\ \bar{\Phi} \end{bmatrix}, \quad D_{zp} = \begin{bmatrix} -\alpha & 0 & -\beta m_w d_{ks} & -\beta I_d d_{kt} & -\beta m_w d_{cf} & \beta m_w d_{\Phi} \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} \\
D_{yp} &= \begin{bmatrix} -\alpha_1 \alpha & 0 & -\alpha_1 \beta m_w d_{ks} & -\alpha_1 \beta I_d d_{kt} & -\alpha_1 \beta m_w d_{cf} & \alpha_1 \beta m_w d_{\Phi} \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} \\
D_{z1} &= \begin{bmatrix} \beta I_d \bar{K}_t & 0 & 0 \\ 0 & 0 & 0 \\ -1 & 0 & 0 \end{bmatrix}, \quad D_{z2} = \begin{bmatrix} \beta m_w \bar{\Phi} \\ 0 \\ 0 \end{bmatrix}, \quad D_{y1} = \begin{bmatrix} \alpha_1 \beta I_d \bar{K}_t & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}, \quad D_{y2} = \begin{bmatrix} \alpha_1 \beta m_w \bar{\Phi} \\ 0 \end{bmatrix}
\end{aligned}$$