$$\Omega = \begin{bmatrix} \tilde{u} & \rho\tilde{u} & \rho^2\tilde{u} \\ \rho\tilde{u} & \tilde{u} & \rho\tilde{u} \\ \rho^2\tilde{u} & \rho\tilde{u} & \tilde{u} \end{bmatrix}$$