

Mathematical Tools For Asset Management

MTH6113

Spring Term 2024

$$|\mathbf{A}| = \sum_{k=1}^K a_{ik} (-1)^{i+k} |\mathbf{A}_{ik}| \quad k = 1, 2, \dots, K$$

$$\det \mathbf{M} = \begin{vmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{vmatrix} = a_1 \begin{vmatrix} b_2 & c_2 \\ b_3 & c_3 \end{vmatrix} - b_1 \begin{vmatrix} a_2 & c_2 \\ a_3 & c_3 \end{vmatrix} + c_1 \begin{vmatrix} a_2 & b_2 \\ a_3 & b_3 \end{vmatrix}$$

$$\begin{vmatrix} 0 & -p_1 & -p_2 \\ -p_1 & u_{11} & u_{12} \\ -p_2 & u_{21} & u_{22} \end{vmatrix} = p_1 p_2 u_{21} + p_1 p_2 u_{12} - p_2^2 u_{11} - p_1^2 u_{22} > 0$$

For $u_{21} = u_{12} > 0$ and $u_{11}, u_{22} < 0$