Notes mvordflex

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Rethink $Sigma^*$

$$V(\epsilon_t) = \Psi V(\epsilon_{t-1})\Psi + \Sigma$$

If stationary, then it must hold that $V(\epsilon_t) = V(\epsilon_{t-1}) = \Sigma_0$ So we can find Σ_0 by

$$vec(\Sigma_0) = (I - \Psi \otimes \Psi)^{-1} vec(\Sigma)$$

For the covariance we have

$$COV(\epsilon_t, \epsilon_{t-1}) = COV(\Psi\epsilon_{t-1}, \epsilon_{t-1}) = \Psi\Sigma_0$$

Estimation using full Ψ

1. For the estimation of full Psi, the current issue is the fact that the matrix Sigma ˆ * will not be a correlation matrix as Psi need not have entries that are less than 1. So the best idea would be to use a covariance structure for Sigmaˆ* and constraints on the thetas?
2. Can any further constraints on Psi be derived?

Var(y_t) = var(eps) =