

## VAR(p) Parameter Count: The Curse of Dimensionality

Parameters per equation:  $1 + K \times p$

Total parameters:  $K(1 + Kp) + K(K + 1)/2$

(coefficients + covariance matrix)

Model	Coefficients	Total
K=2, p=1	$2(1+2 \times 1) = 6$	+ 3 = 9
K=3, p=2	$3(1+3 \times 2) = 21$	+ 6 = 27
K=5, p=4	$5(1+5 \times 4) = 105$	+ 15 = 120
K=10, p=4	$10(1+10 \times 4) = 410$	+ 55 = 465

**Warning: Parameters grow as  $K^2 \times p$  — need lots of data!**