View Report

R1

(Number of First Attempts: 36)

MCQ

Question 1 Difficulty: 1

What is the main difference between vector autoregression (VAR) and univariate ARIMA?

Variables do not need to undergo differencing in VAR to render them stationary	0	(0 %)
➡ There are multiple dependent variables in VAR but only 1 in univariate ARIMA	35	(97.22 %)
Univariate ARIMA typically involve a greater number of parameters than VAR	0	(0 %)
None of the above.	1	(2.78 %)

Average Grade: 0.97 / 1 (97.22 %)

Question 2 Difficulty: 1

What is the best practice model selection criteria to use for (i) VAR and (ii) ARIMA respectively?

Adjusted R square, AICC	0	(0 %)
AICC, SIC	2	(5.56 %)
➡ SIC, AICC	30	(83.33 %)
AICC for both	4	(11.11 %)

Average Grade: 0.83 / 1 (83.33 %)

Question 3 Difficulty: 1

Which model selection criteria has the highest penalty factor for additional hyperparameters?

None of these	0	(0 %)
Adjusted R square	0	(0 %)

Average Grade: 0.94 / 1 (94.44 %)

AICC	2	(5.56 %)
⇨ SIC	34	(94.44 %)

Question 4 Difficulty: 1

What is the relationship between VAR and VECM?

None of these	1	(2.78 %)
VAR is VECM with additional error correction terms and independent variables	1	(2.78 %)
VECM is VAR with additional independent variables	0	(0 %)
⇨ VECM is a VAR with additional error correction terms added. Order of VECM is determined using same process as order of VAR	34	(94.44 %)

Average Grade: 0.94 / 1 (94.44 %)

Question 5 Difficulty: 1

What is the explanation of cointegration?

Average Grade: 0.89 / 1 (88.89 %)

⇨ Two or more time series are individually not stationary, but a linear combination of them are stationary.	32	(88.89 %)
Two or more time series are stationary, and a linear combination of them is also stationary	2	(5.56 %)
A linear combination of	2	(5.56 %)

two or more time series is stationary

A linear combination of two or more time series is not stationary	0	(0 %)

Question 6 Difficulty: 1

Which of the following is true about the number of hyperparameters in a VAR model?

⇨ Number of hyperparameters grows with the square of the order of the model	29	(80.56 %)
Number of hyperparameters grows linearly with the order of the model	5	(13.89 %)
Number of hyperparameters grows with the square root of the order of the model	1	(2.78 %)
Order of the model does not matter	1	(2.78 %)

Average Grade: 0.81 / 1 (80.56 %)

Question 7 Difficulty: 1

How do we ensure that the residuals of a VAR are stationary?

Average Grade: 0.75 / 1 (75 %)

⇨ Same as with ARIMA (Ljung-Box test)	27	(75 %)
It is not necessary to ensure that they are stationary	2	(5.56 %)
VARSelect ensures that the order of the model chosen will result in stationary residuals	6	(16.67 %)

BIC criteria ensures stationarity		1 (2.78 %)	

Question 8 Difficulty: 1

Which of the following is a mandatory preprocessing step for VAR?

Ensure that variables within the system are decomposed		1 (2.78 %)	
⇨ Ensure that variables are stationary		33 (91.67 %)	Average Grade: 0.92 / 1 (91.67 %)
None of these		2 (5.56 %)	
Box-Cox on all system variables		0 (0 %)	