VAR Model

Quick → Estimate VAR → Endogenous variables → lag → ok.

By doing this we will not get prob of coefficients so,

Proc → Make system → order by variable.

you will get equations

Estimate → ok.

check Durbin-Watson Stat

If value is from 1.9 to 2.1 → model is good

~~(far from serial co-relation)~~.

Determine Joint significance of variable in a particular equation

eg:- LNPCE → 1st lag of ~~PCE~~ GDP ~~&~~ and 2nd lag.

View → coefficient diagnostics → wald test

C(5) = C(6) = 0 → ok.

↙ ↘

Coefficient GDP 1 Coef GDP-2.

$p < 0.05$ - reject null hypothesis

Check for the significance if $p > 0.05$ → not significance.

View → coefficient diagnostics → wald test

All coefficient not significance = 0

eg C(5) = C(6) = C(7) = 0. → ok.

if $P > 0.05$ then cannot reject null hypothesis

Ho:- There are no ~~influtan~~ influence on dependent variable.

Remove the variables.

Spec -> remove the unwanted variable.

Estimate -> OK.

Check all the coefficient are significant

Checking causality

-> Specify the model
-> stationary test
-> optimal lags determination
-> Estimate the unrestricted VAR.
-> perform causality tests
-> perform diagonstics

Vuew -> Lag structure -> Granger causality

Ho: lagged coefficient (s) = 0

H1: lagged coefficient (s) ≠ 0

Reject Ho: Prob Chi2-stat < 0.05

(has a causal impact -> H1).

uick → Group Statistics → Granger causality test → ok.

no of lag → → ok.

check Prob < 0.05 → reject null hypothesis.

H_1 :- ~~Granger~~ causality is present
(Alternative)

Test for diagonistics

View → Residual test → Auto correlation LM test → no of lag → ok.

check prob ~~< 0.05~~ > 0.05 → Accept Ho → no Serial correlation

View → Residual → normality → Cholesky coef

Variance decomposition
View → Variance decomposition → period → ok.

Panel Data - Econometric data

-> It allows the inclusion of data for N cross-sections (eg:- countries, household, firms, individuals and so on) and T time periods (for eg:- years, quarters, months and so on).

-> A true panel data set would allow each individual in the panel to be followed over a number of periods.

-> If the panel has the same number of time observations for every variable and every individual, it is known as ~~perfect~~ Balanced panel.

-> The basic idea of panel data analysis ~~is that~~ arises from some belief that the individual relationships will all have the same parameter -> This is called pooling ~~effects~~ assumption.

=> Here all individuals are pooled together into one data set and a common set of parameters is imposed across them.

-> Panel data can be estimated using three different methods
(a) with a constant as in equation
(b) allowing for fixed effects
(c) allowing for random effects.

-> Fixed effects method -> constant is treated as group-specific. This model allows for different constants for each group.

=> Before assessing the ~~fixed~~ validity of a fixed effects method, we need to apply tests to check whether fixed effects (that is different constants for each group) should indeed be included in this model

⇒ To do this, standard F test can be used to che
fixed effects against the simple constant OL
method.

-> Null hypothesis:- All the constants are same
(homogeneity) ∴ The common
constant method is applicabl

$H_0 : a_1 = a_2 = \ldots a_N$.

⇒ F statistic is > F critical we reject null.

to check constant OLS

Panel Data Eviews.

open eviews → File → Workfile →

Workfile structure type → Balanced panel

→ panel specification → Annual → Start date

→ end date → ok → No of crosssections → ok.
(No of rows (obs))

file → import from file → import panel data

→ OK → finish.

clicks on "obs" → date box will open →

Cross section id series. → date series

(given cross section id) (put year)

→ ok.

Shortcut method → drag and drop excel file in eviews → Basic structure → Dated panel → give the crosssectional id and date series → finish

Quick → estimate equation → (return C beta)

eg:-

ok.

prob > 0.05 → we cannot do regression.

(There is some effect → fixed or random)

The pooled regression assumes that the intercepts are same for each firm and for each year.

This may be inappropriate assumption and we could instead estimate a model with firm fixed and time-fixed effects which will allow for latent firm specific and time specific heteroskedasticity.

~~View → fixed random~~

Estimate → Panel option → cross-section → fixed
Period → fixed → OK.

So the probability would be < 0.05, then it is significance, and Durbin-Watsonstat should be near to '2' which means that there is no ~~supre~~ spurious regression.

~~Check the parame~~

To determine redundant fixed effect test

View → ~~fixed/Effect~~ fixed/Random effect testing → ~~Hette~~

~~Random effect testing~~ Reduandant fixed effects - likelihood test.

if All prob ~~to~~ ~~should be~~ are zero then it is fixed effect

So estimate Random effect model

Estimate → panel option → cross-section → Random
→ period → none → OK.

view → fixed / Random effect testing → ~~Hauss~~
Hausman test

if the ~~probatity~~ prob is less than 0.001
indicating that the random effects model is not appropriate and that the fixed effect specification is preferred.

if prob is less than 0.1% reject null hypothesis
Ho:- correlation effect is perfect.