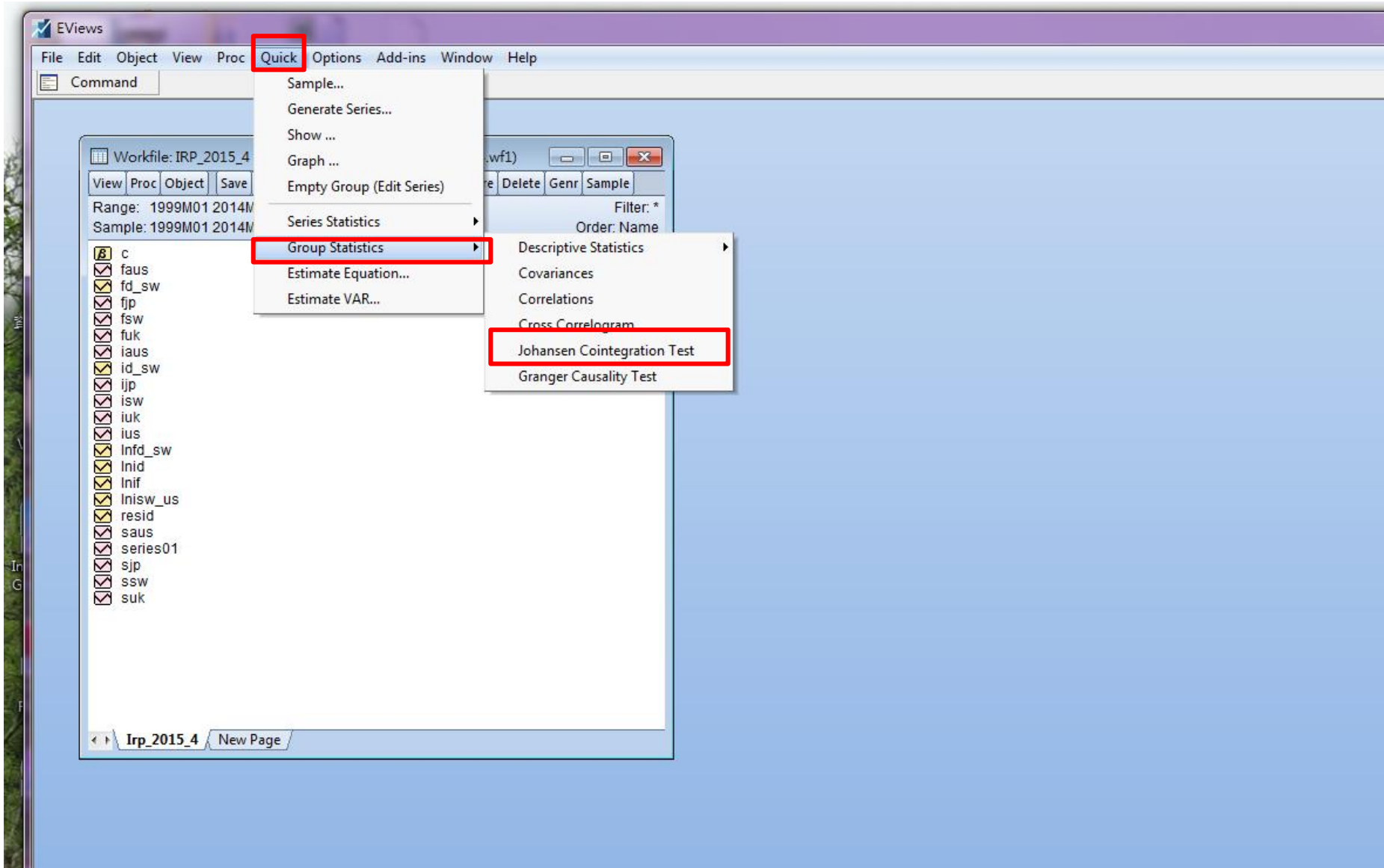


Operating Steps of Johansen Cointegration by EVIEWS

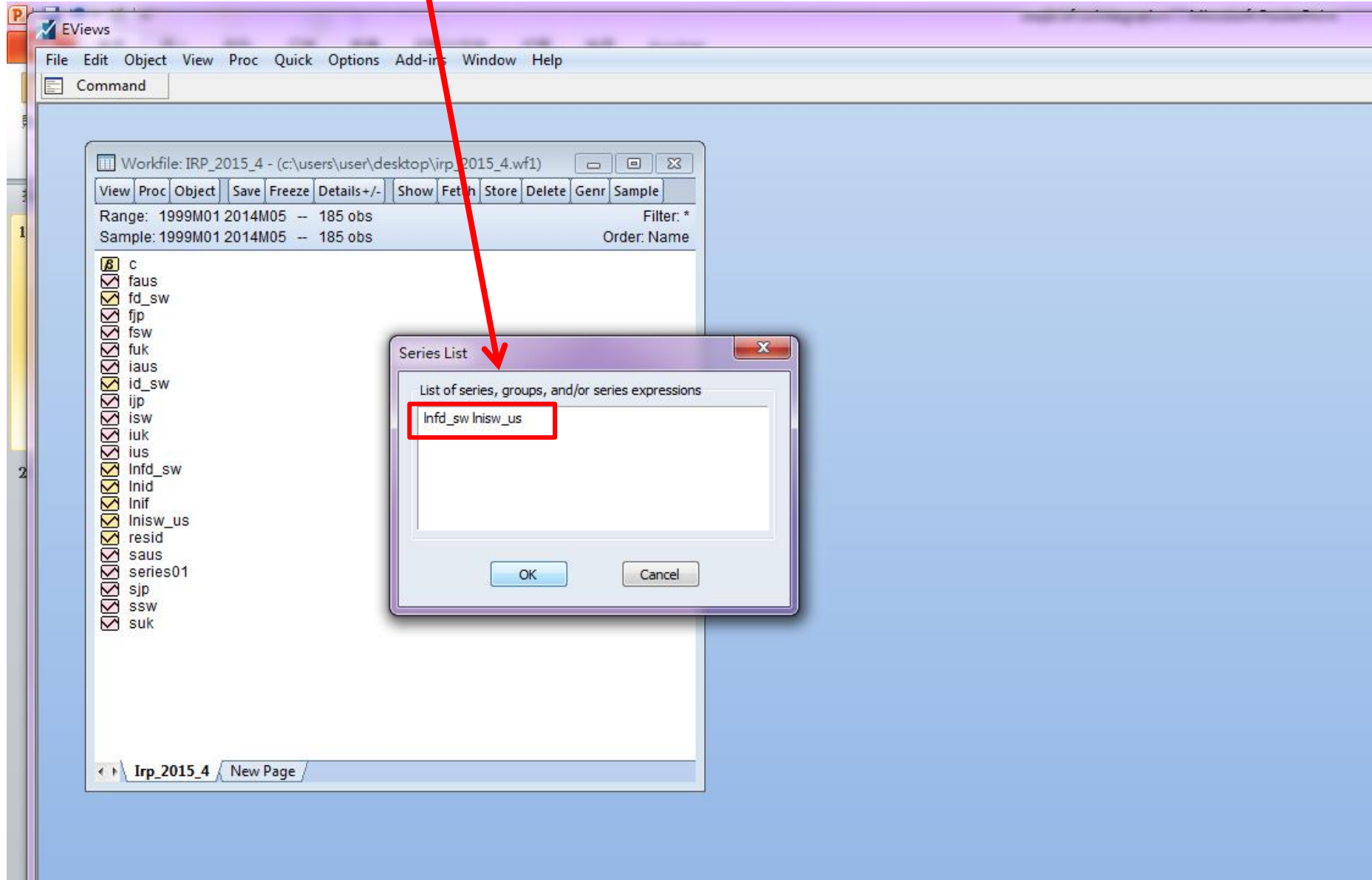
Part 1-

The steps to examine
the Johansenn cointegration

Step 1: “Quick” -> “group statistics” -> “Johansen Cointegration Test”



Step 2 – input the variables (輸入變數)



Step 3 – select “ model (model 2 or 3 or 4)” & select “lag “

The screenshot displays the EViews software interface. The main window shows a list of variables on the left, including 'c', 'faus', 'fd_sw', 'fjp', 'fsw', 'fuk', 'iaus', 'id_sw', 'ijp', 'isw', 'iuk', 'ius', 'lnfd_sw', 'lnid', 'lnif', 'lnisw_us', 'resid', 'saus', 'series01', 'sjp', 'ssw', and 'suk'. The top menu bar includes 'File', 'Edit', 'Object', 'View', 'Proc', 'Quick', 'Options', 'Add-ins', 'Window', and 'Help'. The 'Command' window is open, showing the range and sample of the data: 'Range: 1999M01 2014M05 -- 185 obs' and 'Sample: 1999M01 2014M05 -- 185 obs'. The 'Johansen Cointegration Test' dialog box is open, showing the 'Cointegration Test Specification' tab. The 'Deterministic trend assumption' section is highlighted with a red box, and the 'Lag intervals' section is also highlighted with a red box. The 'Lag intervals' section shows the value '12' entered in the 'Lag intervals' field. The 'Critical Values' section shows the 'MHM' option selected and the 'Size' set to '0.05'. The 'Exog variables*' field is empty. The 'Lag spec for differenced endogenous' field is empty. The 'Summary' section shows the '6) Summarize all 5 sets of assumptions' option selected. The 'Deterministic trend assumption' section includes the following options: '1) No intercept or trend in CE or test VAR', '2) Intercept (no trend) in CE - no intercept in VAR', '3) Intercept (no trend) in CE and test VAR' (selected), and '4) Intercept and trend in CE - no intercept in VAR'. The 'Allow for linear deterministic trend in data:' section includes the following options: '1) No intercept or trend in CE or test VAR', '2) Intercept (no trend) in CE - no intercept in VAR', '3) Intercept (no trend) in CE and test VAR' (selected), and '4) Intercept and trend in CE - no intercept in VAR'. The 'Allow for quadratic deterministic trend in data:' section includes the following options: '1) No intercept or trend in CE or test VAR', '2) Intercept (no trend) in CE - no intercept in VAR', '3) Intercept (no trend) in CE and test VAR' (selected), and '4) Intercept and trend in CE - no intercept in VAR'. The 'Summary' section includes the following options: '1) No intercept or trend in CE or test VAR', '2) Intercept (no trend) in CE - no intercept in VAR', '3) Intercept (no trend) in CE and test VAR' (selected), and '4) Intercept and trend in CE - no intercept in VAR'. The 'Critical Values' section includes the following options: 'MHM' (selected) and 'Osterwald-Lenum'. The 'Size' is set to '0.05'. The 'Exog variables*' field is empty. The 'Lag spec for differenced endogenous' field is empty. The 'Lag intervals' section shows the value '12' entered in the 'Lag intervals' field. The 'Deterministic trend assumption' section is highlighted with a red box, and the 'Lag intervals' section is also highlighted with a red box. Red arrows point from the text 'Step 3 – select “ model (model 2 or 3 or 4)” & select “lag “ to these two sections.

Johansen Cointegration Test

Cointegration Test Specification

Deterministic trend assumption test

Assume no deterministic trend in data:

☐ 1) No intercept or trend in CE or test VAR

☐ 2) Intercept (no trend) in CE - no intercept in VAR

Allow for linear deterministic trend in data:

☒ 3) Intercept (no trend) in CE and test VAR

☐ 4) Intercept and trend in CE - no intercept in VAR

Allow for quadratic deterministic trend in data:

☐ 5) Intercept and trend in CE - intercept in VAR

Summary:

☐ 6) Summarize all 5 sets of assumptions

*Critical values may not be valid with exogenous variables; do not include C or Trend.

Exog variables*

Lag intervals

12

Lag spec for differenced endogenous

Critical Values

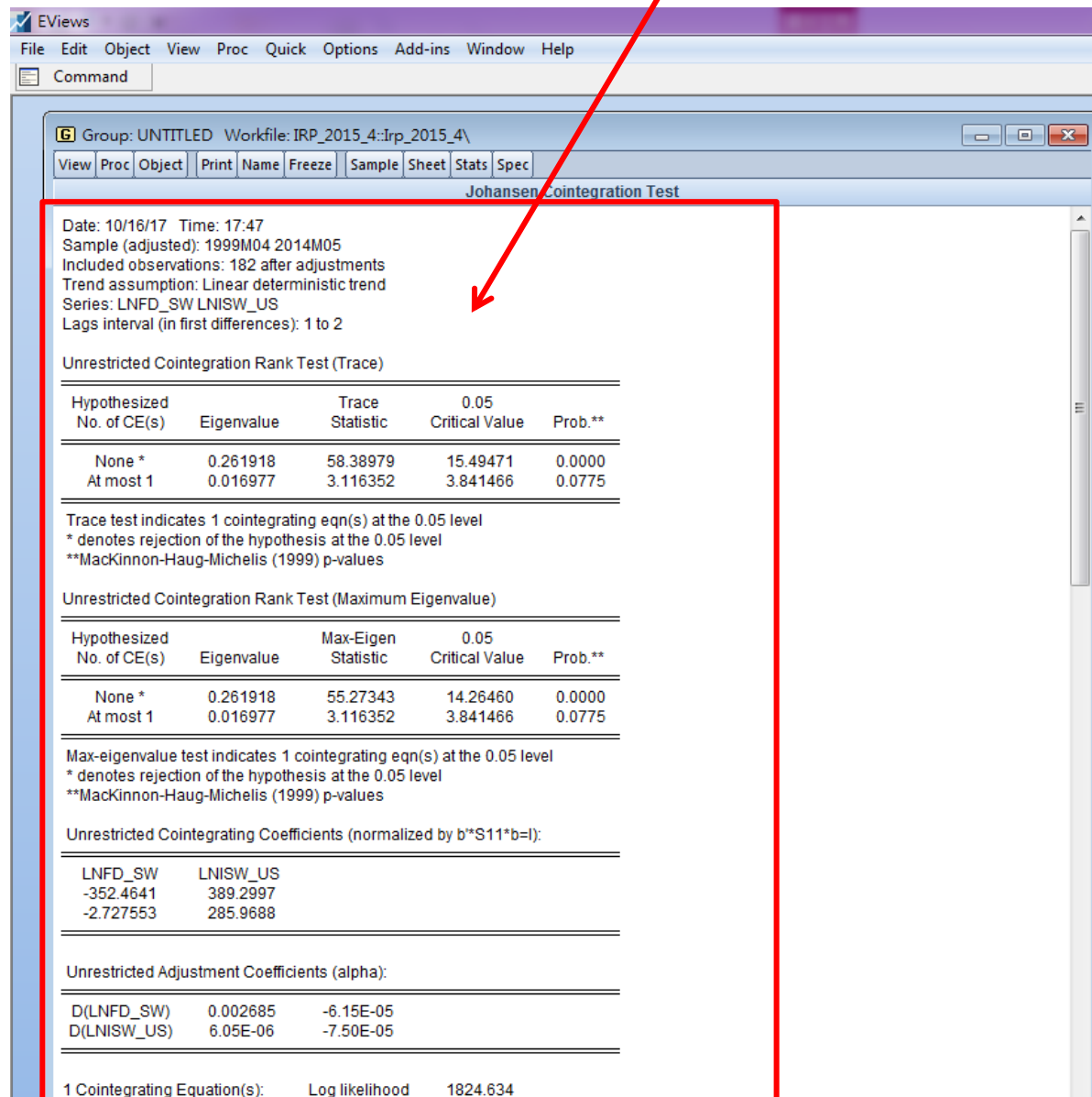
☒ MHM

Size 0.05

☐ Osterwald-Lenum

確定 取消

Step 4 – screen will show “the output” of Johansen Cointegration



EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Command

Group: UNTITLED Workfile: IRP_2015_4::Irp_2015_4\

View Proc Object Print Name Freeze Sample Sheet Stats Spec

Johansen Cointegration Test

Date: 10/16/17 Time: 17:47
Sample (adjusted): 1999M04 2014M05
Included observations: 182 after adjustments
Trend assumption: Linear deterministic trend
Series: LNFD_SW LNISW_US
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.261918	58.38979	15.49471	0.0000
At most 1	0.016977	3.116352	3.841466	0.0775

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**Mackinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.261918	55.27343	14.26460	0.0000
At most 1	0.016977	3.116352	3.841466	0.0775

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**Mackinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b*S11*b-l):

LNFD_SW	LNISW_US
-352.4641	389.2997
-2.727553	285.9688

Unrestricted Adjustment Coefficients (alpha):

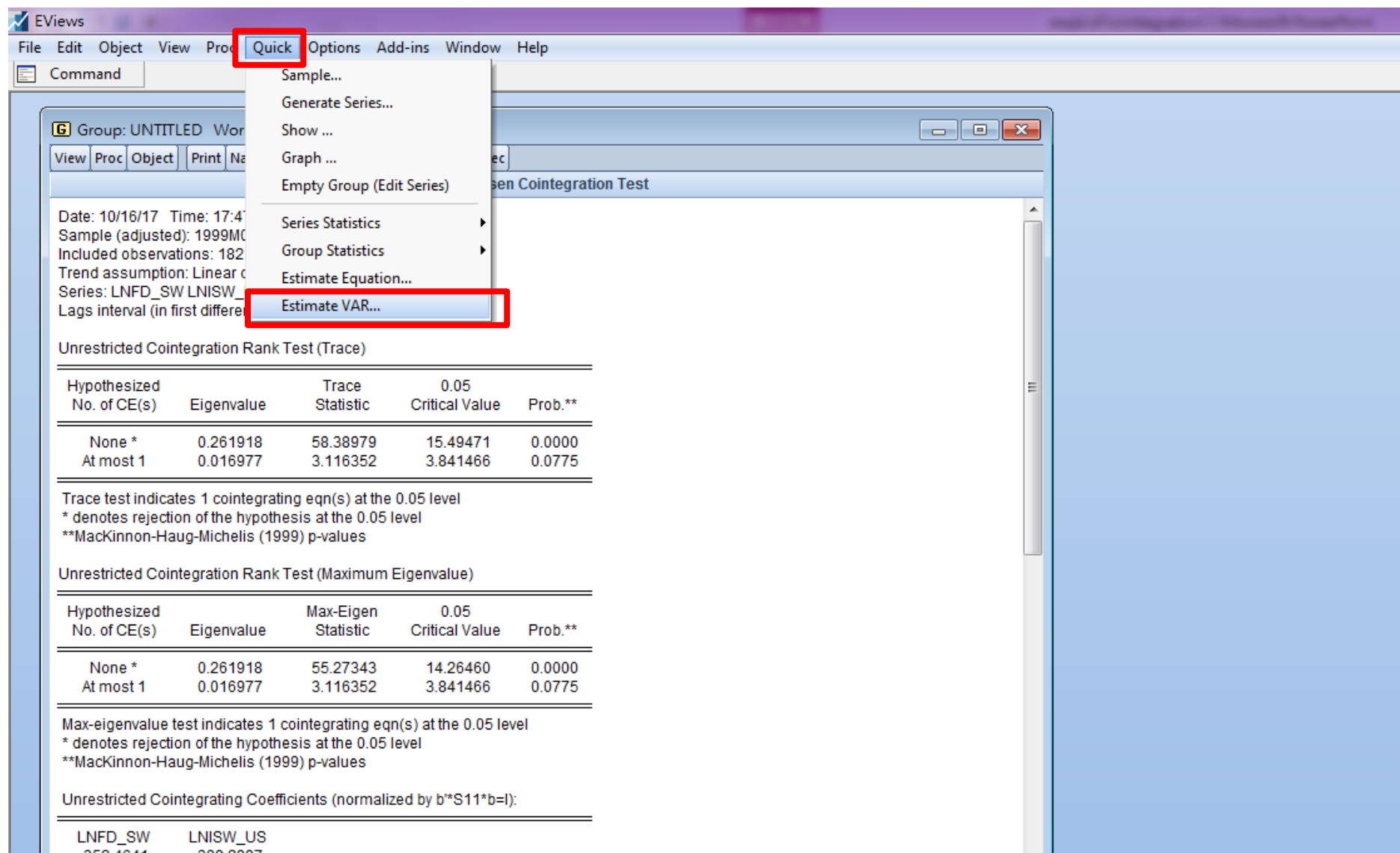
D(LNFD_SW)	D(LNISW_US)
0.002685	-6.15E-05
6.05E-06	-7.50E-05

1 Cointegrating Equation(s): Log likelihood 1824.634

Part 2-

The steps of estimating VECM

Step 1 - Quick -> Estimate VAR



The screenshot shows the EViews software interface. The 'Quick' menu is open, and the 'Estimate VAR...' option is highlighted. The background window displays the results of an Unrestricted Cointegration Rank Test (Trace) and an Unrestricted Cointegration Rank Test (Maximum Eigenvalue).

Group: UNTITLED Workfile: UNTITLED

View Proc Object Print Name

Date: 10/16/17 Time: 17:41
Sample (adjusted): 1999M1-2017M4
Included observations: 182
Trend assumption: Linear cointegration
Series: LNFD_SW LNISW_US
Lags interval (in first difference): 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.261918	58.38979	15.49471	0.0000
At most 1	0.016977	3.116352	3.841466	0.0775

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**Mackinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.261918	55.27343	14.26460	0.0000
At most 1	0.016977	3.116352	3.841466	0.0775

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**Mackinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b*S11*b=I):

LNFD_SW	LNISW_US
0.504641	0.000000
0.000000	0.000000

Step 2 – select “Vector Error Correction” -> enter “the variables”
-> confirm the “lag”
-> select “Cointegration”

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Command

Group: UNTITLED Workfile: IRP_2015_4::lrp_2015_4\

View Proc Object Print Name Freeze Sample Sheet Stats Spec

Johansen Cointegration Test

Date: 10/16/17 Time: 17:47
Sample (adjusted): 1999M04 2014M05
Included observations: 182 after adjustments
Trend assumption: Linear deterministic trend
Series: LNFD_SW LNISW_US
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.261918	58.38979	15.49471	0.0000
At most 1	0.016977	3.116352	3.841466	0.0775

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.261918	55.27343	14.26460	0.0000
At most 1	0.016977	3.116352	3.841466	0.0775

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b*S11*b=I):

LNFD_SW	LNISW_US
-352.4641	389.2997
-2.727553	285.9688

Unrestricted Adjustment Coefficients (alpha):

LNFD_SW	LNISW_US
0.000000	0.000000
0.000000	0.000000

VAR Specification

Basics Cointegration VEC Restrictions

VAR Type
☒ Unrestricted VAR
☐ Vector Error Correction
☐ Bayesian VAR

Endogenous Variables
lnfd_sw lnisw_us

Estimation Sample
1999m01 2014m05

Lag Interval for (Endogenous)
1 2

Exogenous Variables

Do NOT include C or Trend in VEC's

確定 取消

Step 3 - confirm " model (model 2 or 3 or 4)"

The screenshot shows the EViews software interface. In the background, the 'Workfile: IRP_SW' is open, displaying a list of variables: c, d1, fd_sw, fsw, id_sw, isw, ius, Infd_sw, Infs, Inid, Inidf, Inif, Inssw, resid, series01, ssw, and y. The 'VAR Specification' dialog box is in the foreground, with the 'VEE Restrictions' tab selected. The 'Rank' is set to 1, and the 'Number of cointegrating equations' is 1. Under 'Deterministic Trend Specification', the 'No trend in data' section is active, and option 3, 'Intercept (no trend) in CE and VAR', is selected. Options 1, 2, 4, and 5 are unselected. The 'Linear trend in data' and 'Quadratic trend in data' sections are also visible but not selected. At the bottom of the dialog box are buttons for '確定' (OK) and '取消' (Cancel). A red arrow points from the text 'Step 3 - confirm " model (model 2 or 3 or 4)"' to the selected option 3.

Workfile: IRP_SW - (d:\圖全\圖全107上)

View Proc Object Save Freeze Details+/-

Range: 1999M01 2014M05 -- 185 obs
Sample: 1999M01 2014M05 -- 185 obs

Variables: c, d1, fd_sw, fsw, id_sw, isw, ius, Infd_sw, Infs, Inid, Inidf, Inif, Inssw, resid, series01, ssw, y

VAR Specification

Basics Cointegration VEE Restrictions

Rank:
Number of cointegrating equations: 1

Deterministic Trend Specification

No trend in data

☐ 1) No intercept or trend in CE or VAR
☐ 2) Intercept (no trend) in CE - no intercept in VAR
☒ 3) Intercept (no trend) in CE and VAR
☐ 4) Intercept and trend in CE - no trend in VAR

Linear trend in data

Quadratic trend in data

☐ 5) Intercept and trend in CE- linear trend in VAR

確定 取消

Irp_2015_4 New Page

Step 3 – screen will show “the output” of VECM

