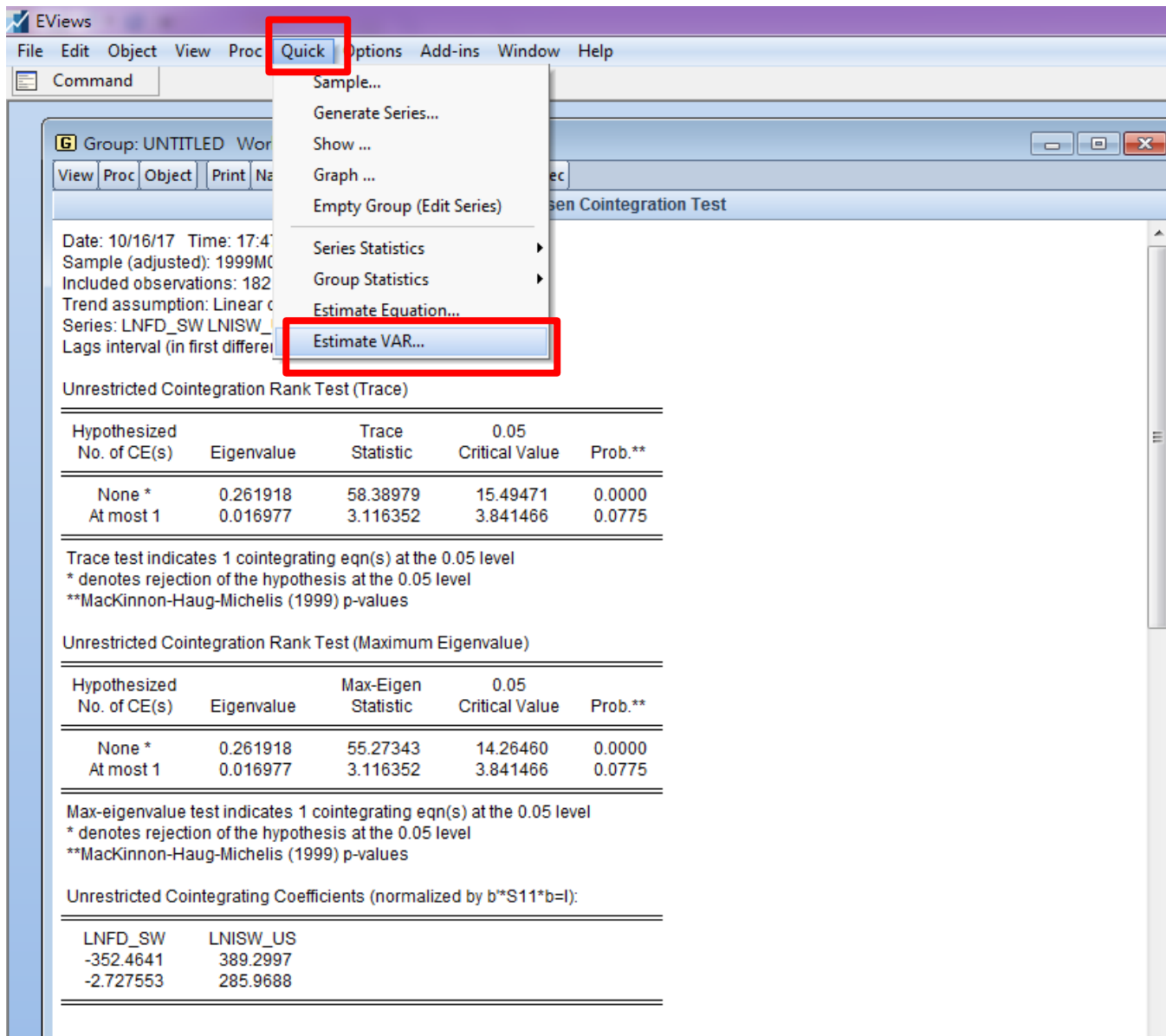


Part 2-

The steps to examine the cointegration
coefficients of IRP
[examining the vector (1,-1)]

Step 1 - Quick -> Estimate VAR



The screenshot shows the EViews software interface. The 'Quick' menu is open, and the 'Estimate VAR...' option is highlighted with a red box. 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

Date: 10/16/17 Time: 17:41
Sample (adjusted): 1999M1-2017M12
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 |
|-----------|----------|
| -352.4641 | 389.2997 |
| -2.727553 | 285.9688 |

Step 2 – select “Vector Error Correction”,
and enter “the variables”, and confirm the “lag”

The screenshot shows the EViews software interface. The main window displays the results of a Johansen Cointegration Test. The test results indicate 1 cointegrating equation at the 0.05 level. The VAR Specification dialog box is open, showing the 'Integration' tab. The 'VAR type' is set to 'Vector Error Correction'. The 'Lag Intervals for (Endogenous):' are set to 1 2. The 'Exogenous Variables' field is empty. The 'Do NOT include C or Trend in VEC's' checkbox is checked.

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 | 0.155000 |
| 0.000000 | 0.000000 |

VAR Specification

Integration

VAR type

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

Estimation Sample

1999m01 2014m05

Exogenous Variables

Lag Intervals for (Endogenous):

1 2

Do NOT include C or Trend in VEC's

確定 取消

Step 3 – Select “Cointegration”, and confirm “model” & “number of cointegrating equation”

The screenshot displays the EViews software interface. The main window shows the 'Johansen Cointegration Test' results for the 'UNTITLED' group. The test results indicate 1 cointegrating equation at the 0.05 level. The 'VAR Specification' dialog box is open, showing the 'Cointegration' tab. The 'Number of cointegrating equations' is set to 1. The 'Deterministic Trend Specification' section shows that the selected model is 'Intercept (no trend) in CE and VAR' (option 3).

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 |

VAR Specification

Basics **Cointegration** VEC 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
Linear trend in data
☒ 3) Intercept (no trend) in CE and VAR
☐ 4) Intercept and trend in CE - no trend in VAR
Quadratic trend in data
☐ 5) Intercept and trend in CE - linear trend in VAR

確定 取消

Step 4 – Select “VEC Restrictions”, and enter restriction “ $B(1,1)= 1, B(1,2)= -1$ ”

The screenshot shows the EViews software interface. The main window displays the results of a Johansen Cointegration Test. The test indicates 1 cointegrating equation at the 0.05 level. The VAR Specification dialog box is open, showing the VEC Restrictions tab. The restriction entered is $b(1,1)=1, b(1,2)=-1$.

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 |
|-----------|-----------|
| 0.333333 | 0.155556 |
| -0.333333 | -0.155556 |

VAR Specification

Restrictions may be placed on the coefficients $B(r,k)$ of the r -th cointegrating relation:

$B(r,1)*LNFD_SW + B(r,2)*LNISW_US$

VEC Coefficient Restrictions

☒ Impose Restrictions

Enter restriction: (Example: $B(1,1)=1, A(1,1)=0$)

$b(1,1)=1, b(1,2)=-1$

Optimization
Max Iterations: 500
Convergence: 0.0001

確定 取消

Step 5 – screen will show “the output”

