VECM procedure – may not need

Johansen Procedure VECM(2)

(Outline the functional form below)

Let: , and generalise the form:

Where the ECM form is as follows:

is the matrix which represents the long run coefficient and the cointegrating relationship. For a pair of cointegrating variables, the condition that must hold.

The Johansen Test allows identification for more than one cointegrating vector in the variables of interest. Using 3 functional forms and an additional Maximal Eigenvalue test, there are 4 tests conducted altogether. Where is equal to the number of cointegrating vectors, the hypotheses for these test are outlined below.

(insert table of test results)

It is found that 3 of the tests identify a cointegrating relationship whilst the trace test incorporating a time trend suggests cointegration may not exist.

Long run cointegrating equations

(Results obtained using VECM() function)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **BSE** | **Term** | **EC** |
| Test trace (none) | 1 | 232.91 | 0.0002 |
| Test trace (constant) | 1 | -1.598 | -0.0187 |
| Test trace (Trend) | 1 | 40.519 | 0.0007 |

Short run cointegrating equations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Test trace (none)** | **Test trace (constant)** | **Test trace (Trend)** | **Engle-Granger** |
|  |  |  |  | -0.255  (0.119)\* |
|  | 0.1578  (0.0894) | 0.1757  (0.0887)\* | 0.1623  (0.0897) | 0.1869  (0.0895)\* |
|  | -0.0918  (0.1357) | -0.0384  (0.1369) | -0.0708  (0.1407) |  |
|  | -0.0693  (0.0907) | -0.0412  (0.0919) | -0.0646  (0.0923) | -0.0181  (0.0874) |
|  | 0.1672  (0.1320) | 0.2057  (0.1312) | 0.1915  (0.1330) |  |
|  | 0.0002  (0.00016)\* | -0.0187  (0.0117) | 0.0007  (0.0005) | -0.1432  (0.041)\*\*\* |
|  | 0 | 0.1923  (0.1166) | 0 | 0.0062  (0.00352) |
|  | 0 | 0 | 0.0000435  (0.0001) |  |