

## APPENDIX EXTRA

### I. Augmented Dickey-Fuller Unit-Root Tests Outputs - RSR

Variable RSR

```
. tsset DATE, monthly
      time variable:  DATE, 2011m9 to 2016m9
      delta: 1 month
```

```
. dfuller RSR, trend lags(0)
```

Dickey-Fuller test for unit root                      Number of obs    =        **60**

| Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |        |
|-------------------|----------------------------|----------------------|-----------------------|--------|
|                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |        |
| Z(t)              | -3.108                     | -4.128               | -3.490                | -3.174 |

MacKinnon approximate p-value for Z(t) = **0.1044**

```
. dfuller D_RSR, trend regress lags(1)
```

Augmented Dickey-Fuller test for unit root                      Number of obs    =        **58**

| Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |        |
|-------------------|----------------------------|----------------------|-----------------------|--------|
|                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |        |
| Z(t)              | -5.984                     | -4.132               | -3.492                | -3.175 |

MacKinnon approximate p-value for Z(t) = **0.0000**

| D.D_RSR | Coef.            | Std. Err.       | t            | P> t         | [95% Conf. Interval] |                  |
|---------|------------------|-----------------|--------------|--------------|----------------------|------------------|
| D_RSR   |                  |                 |              |              |                      |                  |
| L1.     | <b>-1.229716</b> | <b>.2054951</b> | <b>-5.98</b> | <b>0.000</b> | <b>-1.641709</b>     | <b>-.8177234</b> |
| LD.     | <b>.0729997</b>  | <b>.1351702</b> | <b>0.54</b>  | <b>0.591</b> | <b>-.1980001</b>     | <b>.3439996</b>  |
| _trend  | <b>.0000982</b>  | <b>.0001249</b> | <b>0.79</b>  | <b>0.435</b> | <b>-.0001521</b>     | <b>.0003485</b>  |
| _cons   | <b>-.0021698</b> | <b>.0043361</b> | <b>-0.50</b> | <b>0.619</b> | <b>-.010863</b>      | <b>.0065235</b>  |

*Variable Corrected for stationarity: D\_RSR1 – First Difference with Lag 1*

## Variable DD

. dfuller DD, trend regress lags(0)

Dickey-Fuller test for unit root Number of obs = 60

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -2.021            | -4.128                     | -3.490               | -3.174                |

MacKinnon approximate p-value for Z(t) = 0.5897

| D.DD   | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|--------|-----------|-----------|-------|-------|----------------------|-----------|
| DD     |           |           |       |       |                      |           |
| L1.    | -.1248983 | .0617887  | -2.02 | 0.048 | -.2486279            | -.0011686 |
| _trend | -.0009785 | .0004813  | -2.03 | 0.047 | -.0019423            | -.0000148 |
| _cons  | .0801672  | .0427889  | 1.87  | 0.066 | -.005516             | .1658504  |

. dfuller D\_DD, trend regress lags(1)

Augmented Dickey-Fuller test for unit root Number of obs = 58

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -5.570            | -4.132                     | -3.492               | -3.175                |

MacKinnon approximate p-value for Z(t) = 0.0000

| D.D_DD | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|--------|-----------|-----------|-------|-------|----------------------|-----------|
| D_DD   |           |           |       |       |                      |           |
| L1.    | -1.100424 | .1975457  | -5.57 | 0.000 | -1.496479            | -.7043685 |
| LD.    | .0536557  | .1364684  | 0.39  | 0.696 | -.2199471            | .3272584  |
| _trend | -.0000636 | .0001088  | -0.58 | 0.562 | -.0002818            | .0001546  |
| _cons  | -.0053442 | .0039007  | -1.37 | 0.176 | -.0131646            | .0024762  |

Variable Corrected for stationarity: D\_DD1 – First Difference with Lag 1

## Variable LD

```
. dfuller LD, trend regress lags(0)
```

Dickey-Fuller test for unit root Number of obs = 60

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -2.272            | -4.128                     | -3.490               | -3.174                |

MacKinnon approximate p-value for Z(t) = 0.4492

| D.LD   | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval]   |
|--------|-----------|-----------|-------|-------|------------------------|
| LD     |           |           |       |       |                        |
| L1.    | -.0983028 | .0432579  | -2.27 | 0.027 | -.1849254    -.0116803 |
| _trend | -.000066  | .000287   | -0.23 | 0.819 | -.0006407    .0005088  |
| _cons  | .0328052  | .0237755  | 1.38  | 0.173 | -.0148045    .0804148  |

```
. dfuller D_LD, trend regress lags(1)
```

Augmented Dickey-Fuller test for unit root      Number of obs      =      58

|      | Test Statistic | Interpolated Dickey-Fuller                                       |
|------|----------------|------------------------------------------------------------------|
|      |                | 1% Critical Value      5% Critical Value      10% Critical Value |
| Z(t) | -5.413         | -4.132      -3.492      -3.175                                   |

MacKinnon approximate p-value for Z(t) = 0.0000

| D.D_LD | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|--------|-----------|-----------|-------|-------|----------------------|-----------|
| D_LD   |           |           |       |       |                      |           |
| L1.    | -1.107071 | .2045393  | -5.41 | 0.000 | -1.517148            | -.6969945 |
| LD.    | -.0102481 | .1367161  | -0.07 | 0.941 | -.2843474            | .2638512  |
| _trend | .0004487  | .0002451  | 1.83  | 0.073 | -.0000427            | .0009401  |
| _cons  | -.0208615 | .0089308  | -2.34 | 0.023 | -.0387665            | -.0029564 |

*Variable Corrected for stationarity: D\_LD1 – First Difference with Lag 1*

## Variable FCL

```
. dfuller FCL, trend regress lags(0)
```

Dickey-Fuller test for unit root

Number of obs = 60

|      |                   | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      | Test<br>Statistic | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -2.373            | -4.128                     | -3.490               | -3.174                |

MacKinnon approximate p-value for Z(t) = 0.3942

| D.FCL  | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|--------|-----------|-----------|-------|-------|----------------------|-----------|
| FCL    |           |           |       |       |                      |           |
| L1.    | -.0810821 | .0341725  | -2.37 | 0.021 | -.1495114            | -.0126527 |
| _trend | .1389337  | .0427758  | 3.25  | 0.002 | .0532765             | .2245908  |
| _cons  | 1.768162  | 2.250214  | 0.79  | 0.435 | -2.737814            | 6.274137  |

```
. dfuller D_FCL, trend regress lags(1)
```

Augmented Dickey-Fuller test for unit root

Number of obs = 58

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -6.053            | -4.132                     | -3.492               | -3.175                |

MacKinnon approximate p-value for Z(t) = 0.0000

| D.D_FCL | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|---------|-----------|-----------|-------|-------|----------------------|----------|
| D_FCL   |           |           |       |       |                      |          |
| L1.     | -1.244509 | .2056059  | -6.05 | 0.000 | -1.656724            | -.832294 |
| LD.     | .1225051  | .1378241  | 0.89  | 0.378 | -.1538155            | .3988257 |
| _trend  | .1076767  | .0458972  | 2.35  | 0.023 | .0156585             | .199695  |
| _cons   | -3.032548 | 1.546146  | -1.96 | 0.055 | -6.132383            | .0672884 |

*Variable Corrected for stationarity: D\_FCL1 – First Difference with Lag 1*

## Variable EX

```
. dfuller EX, trend regress lags(0)
```

Dickey-Fuller test for unit root

Number of obs = 60

|      |                   | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      | Test<br>Statistic | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | <b>-0.946</b>     | <b>-4.128</b>              | <b>-3.490</b>        | <b>-3.174</b>         |

MacKinnon approximate p-value for Z(t) = 0.9509

| D.EX   | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|--------|-----------|-----------|-------|-------|----------------------|----------|
| EX     |           |           |       |       |                      |          |
| L1.    | -.0342966 | .0362478  | -0.95 | 0.348 | -.1068815            | .0382882 |
| _trend | .10124    | .050148   | 2.02  | 0.048 | .0008204             | .2016596 |
| _cons  | 1.905224  | 2.972969  | 0.64  | 0.524 | -4.048044            | 7.858491 |

```
. dfuller D_EX, trend regress lags(1)
```

Augmented Dickey-Fuller test for unit root

Number of obs = 58

|      |                   | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      | Test<br>Statistic | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | <b>-8.088</b>     | <b>-4.132</b>              | <b>-3.492</b>        | <b>-3.175</b>         |

MacKinnon approximate p-value for Z(t) = 0.0000

| D.D_EX | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|--------|-----------|-----------|-------|-------|----------------------|-----------|
| D_EX   |           |           |       |       |                      |           |
| L1.    | -1.395796 | .172583   | -8.09 | 0.000 | -1.741804            | -1.049788 |
| LD.    | .4479313  | .1239322  | 3.61  | 0.001 | .1994623             | .6964003  |
| _trend | .0967926  | .0315884  | 3.06  | 0.003 | .0334618             | .1601235  |
| _cons  | -1.241467 | 1.019482  | -1.22 | 0.229 | -3.285405            | .8024713  |

*Variable Corrected for stationarity: D EX1 – First Difference with Lag 1*

## Variable EX\_SPREAD

```
. dfuller EX_SPREAD, trend regress lags(0)
```

Dickey-Fuller test for unit root Number of obs = 60

|      |                   | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      | Test<br>Statistic | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -3.066            | -4.128                     | -3.490               | -3.174                |

MacKinnon approximate p-value for Z(t) = 0.1146

| D.EX_SPREAD | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|-------------|-----------|-----------|-------|-------|----------------------|-----------|
| EX_SPREAD   |           |           |       |       |                      |           |
| L1.         | -.3226183 | .1052366  | -3.07 | 0.003 | -.5333509            | -.1118857 |
| _trend      | 1.548457  | .5670319  | 2.73  | 0.008 | .4129952             | 2.683919  |
| _cons       | -24.94902 | 16.08229  | -1.55 | 0.126 | -57.15326            | 7.255217  |

```
. dfuller D_EX_SPREAD, trend regress lags(1)
```

Augmented Dickey-Fuller test for unit root      Number of obs      =      58

|      |                   | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      | Test<br>Statistic | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -8.166            | -4.132                     | -3.492               | -3.175                |

MacKinnon approximate p-value for Z(t) = 0.0000

| D.D_EX_SPR~D | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|--------------|-----------|-----------|-------|-------|----------------------|-----------|
| D_EX_SPREAD  |           |           |       |       |                      |           |
| L1.          | -1.948921 | .2386571  | -8.17 | 0.000 | -2.4274              | -1.470442 |
| LD.          | .2501771  | .1349532  | 1.85  | 0.069 | -.0203877            | .5207419  |
| _trend       | .9241705  | .4214002  | 2.19  | 0.033 | .079314              | 1.769027  |
| _cons        | -16.12653 | 14.15787  | -1.14 | 0.260 | -44.51136            | 12.2583   |

Variable Corrected for stationarity: *D\_EX\_SPREAD1* – First Difference with Lag 1

## Variable INF

```
. dfuller INF, trend regress lags(0)
```

Dickey-Fuller test for unit root

Number of obs = 60

|      | Test Statistic | 1% Critical Value | 5% Critical Value | 10% Critical Value |
|------|----------------|-------------------|-------------------|--------------------|
| Z(t) | 6.961          | -4.128            | -3.490            | -3.174             |

MacKinnon approximate p-value for Z(t) = 1.0000

| D. INF | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|--------|-----------|-----------|-------|-------|----------------------|-----------|
| INF    |           |           |       |       |                      |           |
| L1.    | .0817346  | .0117425  | 6.96  | 0.000 | .0582207             | .1052486  |
| _trend | .0002894  | .000047   | 6.15  | 0.000 | .0001952             | .0003836  |
| _cons  | -.0138726 | .0015663  | -8.86 | 0.000 | -.017009             | -.0107361 |

*Time-Series with Sationarity, no need for correction.*

## Variable BT

```
. dfuller BT, trend regress lags(0)
```

Dickey-Fuller test for unit root Number of obs = 60

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | <b>-1.096</b>     | <b>-4.128</b>              | <b>-3.490</b>        | <b>-3.174</b>         |

MacKinnon approximate p-value for Z(t) = 0.9298

| D.BT   | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|--------|-----------|-----------|-------|-------|----------------------|----------|
| BT     |           |           |       |       |                      |          |
| L1.    | -.036697  | .0334947  | -1.10 | 0.278 | -.103769             | .0303751 |
| _trend | .0001619  | .0000762  | 2.12  | 0.038 | 9.32e-06             | .0003146 |
| _cons  | -.0011158 | .0017018  | -0.66 | 0.515 | -.0045236            | .0022921 |

```
. gen diff_BT = D.BT
```

(1 missing value generated)

```
. dfuller diff_BT, trend regress lags(0)
```

Dickey-Fuller test for unit root Number of obs = 59

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |  |
|------|-------------------|----------------------------|----------------------|-----------------------|--|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |  |
| Z(t) | <b>-4.597</b>     | <b>-4.130</b>              | <b>-3.491</b>        | <b>-3.175</b>         |  |

MacKinnon approximate p-value for Z(t) = **0.0010**

| D.diff_BT | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|-----------|-----------|-----------|-------|-------|----------------------|-----------|
| diff_BT   |           |           |       |       |                      |           |
| L1.       | -.5528246 | .1202472  | -4.60 | 0.000 | -.7937087            | -.3119406 |
| _trend    | .0000504  | .0000471  | 1.07  | 0.288 | -.0000438            | .0001447  |
| _cons     | -.0005303 | .0015722  | -0.34 | 0.737 | -.0036799            | .0026192  |

*Variable Corrected for stationarity: D\_BT – First Difference*

## Variable ROE

```
. dfuller ROE, trend regress lags(0)
```

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -2.232            | -4.380                     | -3.600               | -3.240                |

| D.ROE  | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|--------|-----------|-----------|-------|-------|----------------------|----------|
| ROE    |           |           |       |       |                      |          |
| L1.    | -.679339  | .3043677  | -2.23 | 0.067 | -1.4241              | .0654219 |
| _trend | -.0092721 | .006859   | -1.35 | 0.225 | -.0260555            | .0075113 |
| _cons  | .2833493  | .1134738  | 2.50  | 0.047 | .0056889             | .5610097 |

Augmented Dickey-Fuller test for unit root      Number of obs      =      8

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | <b>-8.851</b>     | <b>-4.380</b>              | <b>-3.600</b>        | <b>-3.240</b>         |

| D.ROE  | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|--------|-----------|-----------|-------|-------|----------------------|-----------|
| ROE    |           |           |       |       |                      |           |
| L1.    | -1.300053 | .1468789  | -8.85 | 0.001 | -1.707854            | -.8922517 |
| LD.    | .6406321  | .1192676  | 5.37  | 0.006 | .3094921             | .9717721  |
| _trend | -.0141315 | .0032836  | -4.30 | 0.013 | -.0232482            | -.0050148 |
| _cons  | .5294228  | .0598708  | 8.84  | 0.001 | .3631949             | .6956506  |

*Variable Corrected for stationarity: ROE1 – Lag 1*

## Variable DD

```
. dfuller DD, trend regress lags(0)
```

Dickey-Fuller test for unit root Number of obs = 9

|      |                   | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      | Test<br>Statistic | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -1.492            | -4.380                     | -3.600               | -3.240                |

MacKinnon approximate p-value for Z(t) = 0.8318

| D.DD   | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Intervall |
|--------|-----------|-----------|-------|-------|----------------------|
| DD     |           |           |       |       |                      |
| L1.    | -.3886313 | .2604303  | -1.49 | 0.186 | -1.025881 .2486188   |
| _trend | -.03085   | .0154793  | -1.99 | 0.093 | -.0687266 .0070266   |
| _cons  | .3239808  | .2255151  | 1.44  | 0.201 | -.2278346 .8757963   |

```
. dfuller D_DD, trend regress lags(2)
```

Augmented Dickey-Fuller test for unit root      Number of obs      =      6

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -4.704            | -4.380                     | -3.600               | -3.240                |

MacKinnon approximate p-value for Z(t) = 0.0007

| D.D_DD | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|--------|-----------|-----------|-------|-------|----------------------|----------|
| D_DD   |           |           |       |       |                      |          |
| L1.    | -5.534365 | 1.176481  | -4.70 | 0.133 | -20.48297            | 9.414239 |
| LD.    | 3.470241  | .8639665  | 4.02  | 0.155 | -7.507494            | 14.44798 |
| L2D.   | 1.299473  | .3837139  | 3.39  | 0.183 | -3.576074            | 6.175021 |
| _trend | -.093846  | .0223841  | -4.19 | 0.149 | -.3782627            | .1905706 |
| _cons  | .1940229  | .0621817  | 3.12  | 0.197 | -.5960708            | .9841166 |

*Variable Corrected for stationarity: D\_DD2 – First Difference with Lag 2*

## Variable LD

```
. dfuller LD, trend regress lags(0)
```

Dickey-Fuller test for unit root

Number of obs = 9

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -1.405            | -4.380                     | -3.600               | -3.240                |

MacKinnon approximate p-value for Z(t) = 0.8594

| D.LD   | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|--------|-----------|-----------|-------|-------|----------------------|----------|
| LD     |           |           |       |       |                      |          |
| L1.    | -.5933932 | .422285   | -1.41 | 0.210 | -1.626687            | .4399009 |
| _trend | -.0538217 | .0436246  | -1.23 | 0.263 | -.1605672            | .0529239 |
| _cons  | .5694149  | .480047   | 1.19  | 0.280 | -.6052179            | 1.744048 |

```
. dfuller D_LD, trend regress lags(2)
```

Augmented Dickey-Fuller test for unit root

Number of obs = 6

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | <b>-1.023</b>     | <b>-4.380</b>              | <b>-3.600</b>        | <b>-3.240</b>         |

MacKinnon approximate p-value for Z(t) = **0.9410**

| D.D_LD | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|--------|-----------|-----------|-------|-------|----------------------|----------|
| D_LD   |           |           |       |       |                      |          |
| L1.    | -1.561001 | 1.526313  | -1.02 | 0.493 | -20.95465            | 17.83265 |
| LD.    | .1304133  | 1.279859  | 0.10  | 0.935 | -16.13174            | 16.39257 |
| L2D.   | .1208998  | .8432394  | 0.14  | 0.909 | -10.59347            | 10.83527 |
| _trend | .0474293  | .0588783  | 0.81  | 0.568 | -7.006907            | .7955494 |
| _cons  | -.396239  | .3871334  | -1.02 | 0.493 | -5.315235            | 4.522757 |

*Variable not corrected for stationarity due to sample size. LD will not be included in the model.*

## Variable EX\_SPREAD

```
. dfuller EX_SPREAD, trend regress lags(0)
```

Dickey-Fuller test for unit root

Number of obs = 9

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | <b>11.553</b>     | <b>-4.380</b>              | <b>-3.600</b>        | <b>-3.240</b>         |

MacKinnon approximate p-value for Z(t) = 1.0000

| D.EX_SPREAD | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|-------------|-----------|-----------|-------|-------|----------------------|----------|
| EX_SPREAD   |           |           |       |       |                      |          |
| L1.         | 3.644408  | .3154644  | 11.55 | 0.000 | 2.872495             | 4.416322 |
| _trend      | -1.337344 | 2.201875  | -0.61 | 0.566 | -6.725138            | 4.050449 |
| _cons       | -7.953772 | 9.740373  | -0.82 | 0.445 | -31.78761            | 15.88006 |

```
. dfuller D_EX_SPREAD, trend regress lags(2)
```

Augmented Dickey-Fuller test for unit root

Number of obs = 6

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -5.295            | -4.380                     | -3.600               | -3.240                |

MacKinnon approximate p-value for Z(t) = **0.0001**

| D.D_EX_SPR~D | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|--------------|-----------|-----------|-------|-------|----------------------|----------|
| D_EX_SPREAD  |           |           |       |       |                      |          |
| L1.          | -6.740768 | 1.273095  | -5.29 | 0.119 | -22.91697            | 9.435436 |
| LD.          | 3.373059  | .7659311  | 4.40  | 0.142 | -6.359018            | 13.10514 |
| L2D.         | .3885278  | .1759633  | 2.21  | 0.271 | -1.847299            | 2.624354 |
| _trend       | -56.18204 | 12.58348  | -4.46 | 0.140 | -216.0703            | 103.7062 |
| _cons        | 289.2506  | 66.59955  | 4.34  | 0.144 | -556.9769            | 1135.478 |

*Variable Corrected for stationarity: D\_EX SPREAD2 – First Difference with Lag 2*

## Variable FCL

```
. dfuller FCL, trend regress lags(0)
```

Dickey-Fuller test for unit root Number of obs = 9

|      |                   | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      | Test<br>Statistic | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | -1.001            | -4.380                     | -3.600               | -3.240                |

MacKinnon approximate p-value for Z(t) = 0.9440

| D.FCL  | Coef.      | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|--------|------------|-----------|-------|-------|----------------------|----------|
| FCL    |            |           |       |       |                      |          |
| L1.    | -1.3636002 | .3631637  | -1.00 | 0.355 | -1.25223             | .5250294 |
| _trend | -1.434092  | 4.063639  | -0.35 | 0.736 | -11.37746            | 8.509275 |
| _cons  | 41.5835    | 50.66875  | 0.82  | 0.443 | -82.39847            | 165.5655 |

```
. dfuller D_FCL, trend regress lags(1)
```

Augmented Dickey-Fuller test for unit root      Number of obs      =      7

|      | Test<br>Statistic | Interpolated Dickey-Fuller |                      |                       |
|------|-------------------|----------------------------|----------------------|-----------------------|
|      |                   | 1% Critical<br>Value       | 5% Critical<br>Value | 10% Critical<br>Value |
| Z(t) | <b>-4.913</b>     | <b>-4.380</b>              | <b>-3.600</b>        | <b>-3.240</b>         |

MacKinnon approximate p-value for Z(t) = **0.0003**

| D.D_FCL | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|---------|-----------|-----------|-------|-------|----------------------|-----------|
| D_FCL   |           |           |       |       |                      |           |
| L1.     | -.7125603 | .1450353  | -4.91 | 0.016 | -1.174127            | -.2509932 |
| LD.     | -.1416078 | .1343656  | -1.05 | 0.369 | -.5692193            | .2860036  |
| _trend  | .0196961  | .0019291  | 10.21 | 0.002 | .0135569             | .0258352  |
| _cons   | -.097954  | .0106713  | -9.18 | 0.003 | -.1319148            | -.0639933 |

*Variable Corrected for stationarity: D FCL1 – First Difference with Lag 1*