

## TABLES

TABLE 1

### The Decrease in Prices of Oil and Metals

| Type                                 | Decrease since 1/95 | Decrease during the last 12 months |
|--------------------------------------|---------------------|------------------------------------|
| The Economist metal index (\$ terms) | 40%                 | 23%                                |
| The average price of:                |                     |                                    |
| Nickel                               | 60%                 | 18%                                |
| Copper                               | 45%                 | 19%                                |
| Aluminum                             | 40%                 | 16%                                |
| Crude oil (North Sea Brent)          |                     | 28%                                |

Source: the Economist

TABLE 2

### The Decrease in Imports between 8/98 to 9/98

| Product               | Decrease |
|-----------------------|----------|
| Fruits and vegetables | 62%      |
| Meat                  | 60%      |
| Milk products         | 85%      |
| Medicines             | 71%      |
| Heavy machinery       | 64%      |
| Clothing              | 60%      |

Source: the Economist

**TABLE 3**

**Russian Inflation Trends**

| <b><u>Consumer Price Index (CPI)</u></b> |                               |                             | <b><u>Producer Price Index (PPI)</u></b> |                             |
|--|-------------------------------|-----------------------------|--|-----------------------------|
| <b>Month</b>                             | <b>Month<br/>on<br/>Month</b> | <b>Year<br/>on<br/>Year</b> | <b>Month<br/>On<br/>Month</b>            | <b>Year<br/>on<br/>Year</b> |
| <b>Jul-97</b>                            | 0.9%                          | 14.7%                       | 0.2%                                     | 15.5%                       |
| <b>Aug-97</b>                            | -0.1%                         | 14.9%                       | 0.5%                                     | 13.8%                       |
| <b>Sep-97</b>                            | -0.3%                         | 14.2%                       | 0.1%                                     | 11.9%                       |
| <b>Oct-97</b>                            | 0.2%                          | 13.0%                       | 0.2%                                     | 9.1%                        |
| <b>Nov-97</b>                            | 0.6%                          | 11.5%                       | 0.2%                                     | 8.4%                        |
| <b>Dec-97</b>                            | 1.0%                          | 11.0%                       | -0.1%                                    | 7.4%                        |
| <b>Jan-98</b>                            | 1.5%                          | 10.5%                       | 0.9%                                     | 7.1%                        |
| <b>Feb-98</b>                            | 0.9%                          | 9.4%                        | 0.6%                                     | 6.0%                        |
| <b>Mar-98</b>                            | 0.6%                          | 8.5%                        | -0.1%                                    | 4.5%                        |
| <b>Apr-98</b>                            | 0.4%                          | 8.0%                        | 0.1%                                     | 3.7%                        |
| <b>May-98</b>                            | 0.5%                          | 7.5%                        | -0.9%                                    | 2.4%                        |
| <b>Jun-98</b>                            | 0.1%                          | 6.4%                        | 0.1%                                     | 1.6%                        |
| <b>Jul-98</b>                            | 0.2%                          | 5.6%                        | -0.8%                                    | 0.5%                        |
| <b>Aug-98</b>                            | 3.7%                          | 9.7%                        | -1.2%                                    | 1.2%                        |
| <b>Sep-98</b>                            | 38.4%                         | 52.2%                       | 7.5%                                     | 6.2%                        |
| <b>Oct-98</b>                            | 4.5%                          | 58.8%                       | 5.9%                                     | 12.1%                       |
| <b>Nov-98</b>                            | 5.7%                          | 66.8%                       | 5.1%                                     | 17.7%                       |

Source: EIU

# Tests

## Test 1: Hausman test

|              | Coefficients |               | (b-B)<br>Difference | sqrt(diag(V_b-V_B))<br>S.E. |
|--------------|--------------|---------------|---------------------|-----------------------------|
|              | (b)<br>fixed | (B)<br>random |                     |                             |
| CPI          | .0055586     | -.0018524     | .007411             | .0088003                    |
| Dir_inv      | 2.75e-06     | 1.91e-06      | 8.39e-07            | 3.50e-07                    |
| Bus_tend     | .0159703     | -.0000468     | .0160171            | .0034122                    |
| Prod_tend    | .0004661     | .0087101      | -.0082439           | .0020796                    |
| ER           | -.0637144    | .0131674      | -.0768818           | .0227201                    |
| Export       | .0240774     | .0228149      | .0012626            | .                           |
| Import       | .0018004     | .0052656      | -.0034652           | .                           |
| Ind_prod     | .2115741     | .2129036      | -.0013295           | .                           |
| LT_int_rate  | .0110997     | .010035       | .0010646            | .0091972                    |
| oecd_reces~c | -.2592097    | -.3123683     | .0531586            | .0118562                    |

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$\chi^2(9) = (b-B)' [(V_b-V_B)^{-1}] (b-B)$   
 = 36.67  
 Prob>chi2 = 0.0000  
 (V\_b-V\_B is not positive definite)

## Test 2: OLS, LSDV, FE, areg

| Variable     | ols           | fixed         | ols_dum       | areg          |
|--------------|---------------|---------------|---------------|---------------|
| CPI          | -.00185235    | .00555862     | .00555862     | .00555862     |
| Dir_inv      | 1.909e-06     | 2.749e-06     | 2.749e-06     | 2.749e-06     |
| Bus_tend     | -.00004682    | .01597031***  | .01597031***  | .01597031***  |
| Prod_tend    | .00871006***  | .00046612     | .00046612     | .00046612     |
| ER           | .01316737***  | -.06371445**  | -.06371445**  | -.06371445**  |
| Export       | .02281486***  | .02407744***  | .02407744***  | .02407744***  |
| Import       | .00526562     | .00180044     | .00180044     | .00180044     |
| Ind_prod     | .21290356***  | .21157411***  | .21157411***  | .21157411***  |
| LT_int_rate  | .01003505     | .01109965     | .01109965     | .01109965     |
| oecd_reces~c | -.31236833*** | -.25920972*** | -.25920972*** | -.25920972*** |
| _Icountry_2  |               |               | -2.1563191**  |               |
| _Icountry_3  |               |               | 1.0594613*    |               |
| _Icountry_4  |               |               | -3.3552845*** |               |
| _Icountry_5  |               |               | -2.4652665*** |               |
| _Icountry_6  |               |               | -2.2682901*** |               |
| _Icountry_7  |               |               | -2.2793283*** |               |
| _Icountry_8  |               |               | -1.8920302**  |               |
| _Icountry_9  |               |               | -2.1583847**  |               |
| _Icountry_10 |               |               | -2.4140567*** |               |
| _Icountry_11 |               |               | -1.8647196*** |               |
| _cons        | .35059281***  | .91485238***  | 2.7143268***  | .91485238***  |
| N            | 572           | 572           | 572           | 572           |
| r2           | .57262311     | .51741728     | .6021727      | .6021727      |
| r2_a         | .56500498     | .49990067     | .5877325      | .5877325      |

Legend: \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

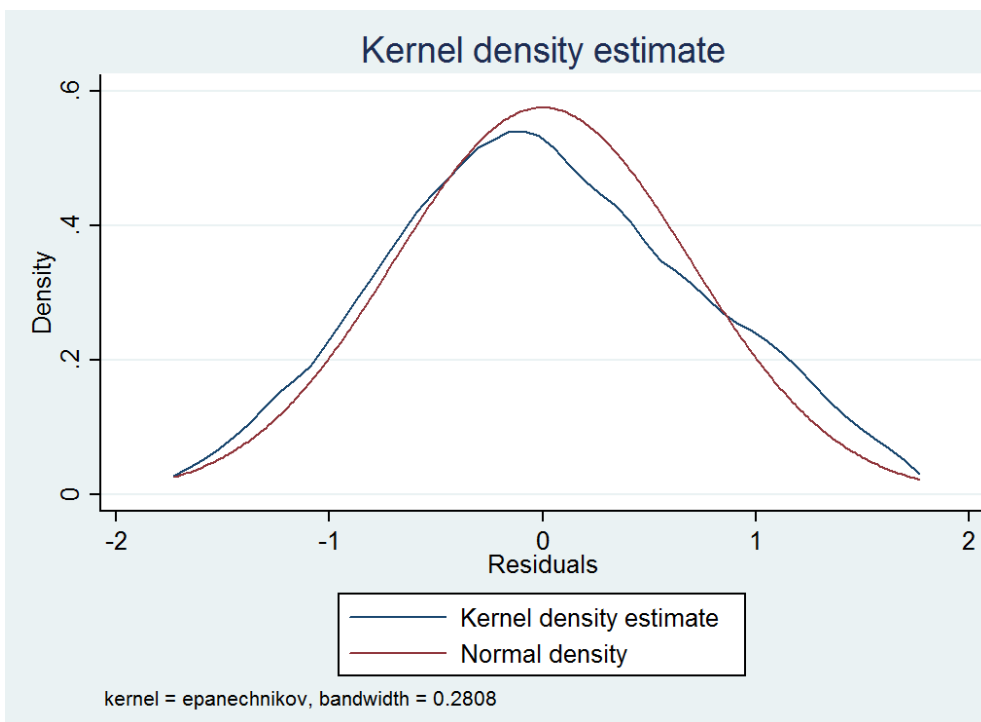
### Test 3: areg regression

```
. areg GDP_g CPI Dir_inv Bus_tend Prod_tend ER Export Import Ind_prod LT_int_rate oecd_reces_indic, absorb(country) robust
```

```
Linear regression, absorbing indicators      Number of obs =      572
                                           F( 10, 551) =      42.34
                                           Prob > F      =      0.0000
                                           R-squared     =      0.6022
                                           Adj R-squared =      0.5877
                                           Root MSE     =      0.6839
```

| GDP_g            | Coef.     | Robust Std. Err. | t     | P> t  | [95% Conf. Interval] |           |
|------------------|-----------|------------------|-------|-------|----------------------|-----------|
| CPI              | .0055586  | .0172514         | 0.32  | 0.747 | -.0283279            | .0394452  |
| Dir_inv          | 2.75e-06  | 1.30e-06         | 2.11  | 0.036 | 1.86e-07             | 5.31e-06  |
| Bus_tend         | .0159703  | .0029447         | 5.42  | 0.000 | .010186              | .0217546  |
| Prod_tend        | .0004661  | .0032815         | 0.14  | 0.887 | -.0059796            | .0069118  |
| ER               | -.0637144 | .0366686         | -1.74 | 0.083 | -.1357417            | .0083128  |
| Export           | .0240774  | .0083864         | 2.87  | 0.004 | .0076043             | .0405506  |
| Import           | .0018004  | .0077188         | 0.23  | 0.816 | -.0133615            | .0169624  |
| Ind_prod         | .2115741  | .0221271         | 9.56  | 0.000 | .1681104             | .2550378  |
| LT_int_rate      | .0110997  | .0175401         | 0.63  | 0.527 | -.0233541            | .0455534  |
| oecd_reces_indic | -.2592097 | .0757846         | -3.42 | 0.001 | -.4080718            | -.1103477 |
| _cons            | .9148524  | .3305617         | 2.77  | 0.006 | .2655371             | 1.564168  |
| country          | absorbed  |                  |       |       | (11 categories)      |           |

### Test 4: Confirmation of Normality



## Test 5: Breusch-Pagan

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of GDP\_g

chi2(1) = 0.26  
 Prob > chi2 = 0.6118

## Test 6: Multicollinearity check

| Variable     | VIF  | 1/VIF    |
|--------------|------|----------|
| Prod_tend    | 6.48 | 0.154246 |
| Bus_tend     | 6.36 | 0.157185 |
| CPI          | 3.39 | 0.295114 |
| Import       | 3.24 | 0.308816 |
| LT_int_rate  | 3.00 | 0.333783 |
| ER           | 2.88 | 0.347139 |
| Ind_prod     | 2.68 | 0.373447 |
| Export       | 2.42 | 0.413795 |
| oecd_reces~c | 1.50 | 0.664923 |
| Dir_inv      | 1.35 | 0.742917 |
| Mean VIF     | 3.33 |          |

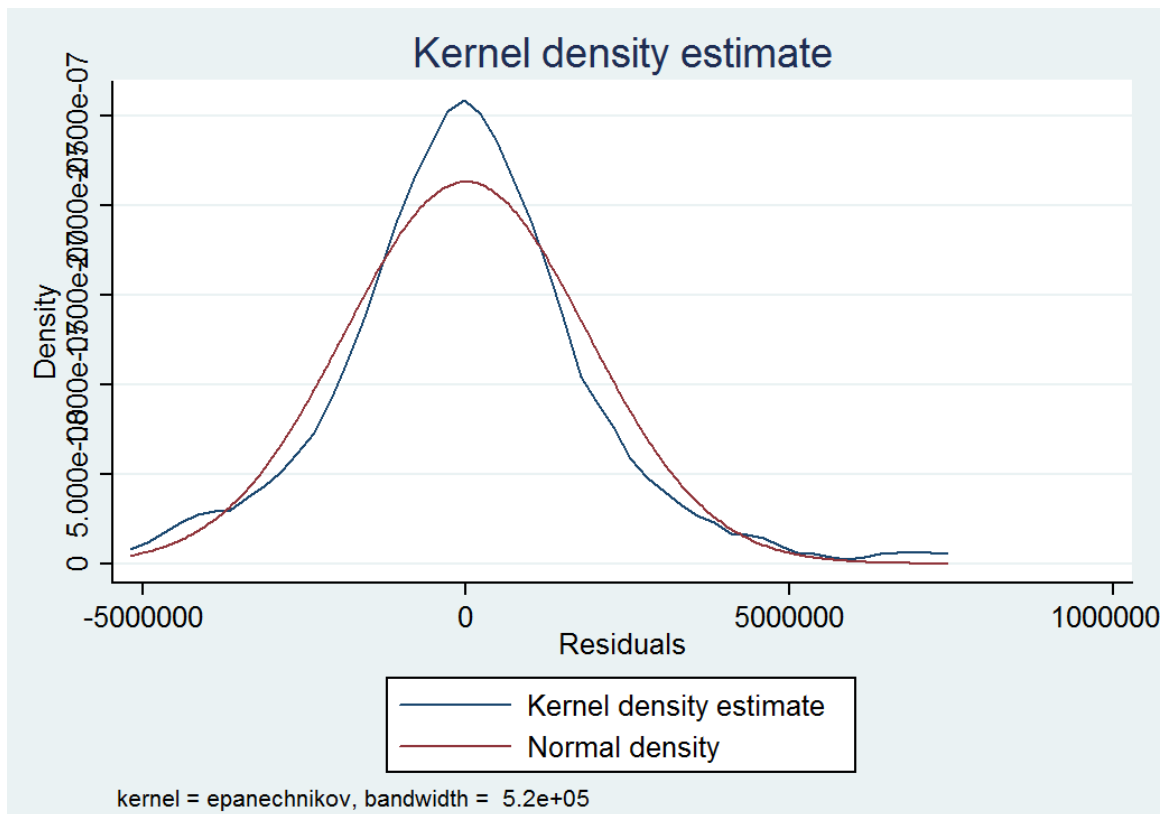
## Test 7: Pooled OLS

| Source   | SS         | df | MS         |                 |         |  |  |
|----------|------------|----|------------|-----------------|---------|--|--|
| Model    | 3.3249e+13 | 4  | 8.3122e+12 | Number of obs = | 96      |  |  |
| Residual | 8.0206e+14 | 91 | 8.8139e+12 | F( 4, 91) =     | 0.94    |  |  |
| Total    | 8.3531e+14 | 95 | 8.7928e+12 | Prob > F =      | 0.4428  |  |  |
|          |            |    |            | R-squared =     | 0.0398  |  |  |
|          |            |    |            | Adj R-squared = | -0.0024 |  |  |
|          |            |    |            | Root MSE =      | 3.0e+06 |  |  |

|                           | GDP | Coef.     | Std. Err. | t     | P> t  | [95% Conf. Interval] |          |
|---------------------------|-----|-----------|-----------|-------|-------|----------------------|----------|
| Natresextr                |     | 40580.09  | 55620.58  | 0.73  | 0.468 | -69903.36            | 151063.5 |
| Manuf                     |     | 3434.52   | 69829.69  | 0.05  | 0.961 | -135273.6            | 142142.6 |
| Prodanddistrofelectricgas |     | -3510.293 | 88327.32  | -0.04 | 0.968 | -178961.7            | 171941.1 |
| otherind                  |     | -123810.1 | 111111.7  | -1.11 | 0.268 | -344519.7            | 96899.57 |
| _cons                     |     | 1.16e+07  | 9206047   | 1.26  | 0.209 | -6648955             | 2.99e+07 |

### Test 8: Normality confirmation



### Test 9: Breusch-pagan

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H0: Constant variance

Variables: fitted values of GDP

chi2(1) = 61.31

Prob > chi2 = 0.0000

### Test 10: Wooldridge test

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F( 1, 7) = 592.376

Prob > F = 0.0000

## Test 11: HAC

|                       |   |                 |  |               |           |
|-----------------------|---|-----------------|--|---------------|-----------|
|                       |   | Number of obs = |  | 96            |           |
|                       |   | F( 4, 84) =     |  | 3.06          |           |
|                       |   | Prob > F =      |  | 0.0208        |           |
| Total (centered) SS   | = | 3.99262e+14     |  | Centered R2   | = 0.1667  |
| Total (uncentered) SS | = | 3.99262e+14     |  | Uncentered R2 | = 0.1667  |
| Residual SS           | = | 3.32718e+14     |  | Root MSE      | = 1.9e+06 |

| GDP                       | Robust    |           | z     | P> z  | [95% Conf. Interval] |           |
|---------------------------|-----------|-----------|-------|-------|----------------------|-----------|
|                           | Coef.     | Std. Err. |       |       |                      |           |
| Natresextr                | 128548.7  | 57585.73  | 2.23  | 0.026 | 15682.7              | 241414.6  |
| Manuf                     | 148374.9  | 67199.15  | 2.21  | 0.027 | 16667.02             | 280082.9  |
| Prodanddistrofelectricgas | -17671.03 | 46412.06  | -0.38 | 0.703 | -108637              | 73294.94  |
| otherind                  | -327791.8 | 113850.9  | -2.88 | 0.004 | -550935.4            | -104648.2 |

Included instruments: Natresextr Manuf Prodanddistrofelectricgas otherind