Statistics/Data analysis

```
      name:  <unnamed>
       log:  D:\Documentos Usuarios\mendezce\OneDrive - Banco Central de Costa Rica\Es
> critorio\Datos y Estimación - Adquirencia e intercambio\Estimación_variables_instrum
> entales.smcl
  log type:  smcl
 opened on:  13 Oct 2026, 10:48:37

1 .
2 . *Importar base de datos
3 . clear all

4 . import excel using "Base_datos_adquirencia_intercambio.xlsx", firstrow clear
  (43 vars, 250 obs)

5 . *  obs:            250
6 . * vars:             43
7 . describe

  Contains data
   Observations:           250
      Variables:            43
```

| Variable name | Storage type | Display format | Value label | Variable label |
|---|---|---|---|---|
| **Pais** | str23 | %23s | | **Pais** |
| **Codigo_Pais** | str3 | %9s | | **Codigo_Pais** |
| **Año** | int | %10.0g | | **Año** |
| **Intercambio** | double | %10.0g | | **Intercambio** |
| **Adquirencia** | double | %10.0g | | **Adquirencia** |
| **Regulacion_in~o** | byte | %10.0g | | **Regulacion_intercambio** |
| **Regulacion_ad~a** | byte | %10.0g | | **Regulacion_adquirencia** |
| **Cajero_Autom** | double | %10.0g | | **Cajero_Autom** |
| **Crimen** | double | %10.0g | | **Crimen** |
| **Cuenta** | double | %10.0g | | **Cuenta** |
| **Pago_digital** | double | %10.0g | | **Pago_digital** |
| **Debito** | double | %10.0g | | **Debito** |
| **Credito** | double | %10.0g | | **Credito** |
| **Densidad_Pob** | double | %10.0g | | **Densidad_Pob** |
| **Densidad_Neg** | double | %10.0g | | **Densidad_Neg** |
| **PIB_pc_PPA** | double | %10.0g | | **PIB_pc_PPA** |
| **ICH** | double | %10.0g | | **ICH** |
| **Concentracion~a** | double | %10.0g | | **Concentracion_bancaria** |
| **Margen_neto** | double | %10.0g | | **Margen_neto** |
| **Valor_prom** | double | %10.0g | | **Valor_prom** |
| **Europa** | byte | %10.0g | | **Europa** |
| **Asia_Este** | byte | %10.0g | | **Asia_Este** |
| **Am_lat** | byte | %10.0g | | **Am_lat** |
| **OCDE** | byte | %10.0g | | **OCDE** |
| **EEE** | byte | %10.0g | | **EEE** |
| **Año_2010** | byte | %10.0g | | **Año_2010** |
| **Año_2011** | byte | %10.0g | | **Año_2011** |
| **Año_2012** | byte | %10.0g | | **Año_2012** |
| **Año_2013** | byte | %10.0g | | **Año_2013** |
| **Año_2014** | byte | %10.0g | | **Año_2014** |
| **Año_2015** | byte | %10.0g | | **Año_2015** |
| **Año_2016** | byte | %10.0g | | **Año_2016** |
| **Año_2017** | byte | %10.0g | | **Año_2017** |
| **Año_2018** | byte | %10.0g | | **Año_2018** |
| **Año_2019** | byte | %10.0g | | **Año_2019** |
| **Año_2020** | byte | %10.0g | | **Año_2020** |
| **Año_2021** | byte | %10.0g | | **Año_2021** |
| **Año_2022** | byte | %10.0g | | **Año_2022** |
| **Año_2023** | byte | %10.0g | | **Año_2023** |
| **Año_2024** | byte | %10.0g | | **Año_2024** |
| **Año_2025** | byte | %10.0g | | **Año_2025** |
| **Año_2026** | byte | %10.0g | | **Año_2026** |
| **Dato_mas_reci~e** | byte | %10.0g | | **Dato_mas_reciente** |

```
  Sorted by:
       Note: Dataset has changed since last saved.
```

```
8 .
9 . ******************** Predicción de la comisión de intercambio *********************
10.
11. foreach especificacion in esp_iv_int_1 esp_iv_int_2 {
    2.
12. if "`especificacion'"=="esp_iv_int_1" {
    3.
13. display "****************** 1) Especificación variables instrumentales sin efectos
  > fijos de año *******************"
    4.
14. ivregress 2sls Intercambio Regulacion_intercambio Crimen Densidad_Pob Densidad_Neg P
  > IB_pc_PPA Europa Asia_Este Am_lat (Valor_prom = ICH)
    5.
15. estat firststage
    6.
16. }
    7.
17. if "`especificacion'"=="esp_iv_int_2" {
    8.
18. display "****************** 2) Especificación variables instrumentales con efectos
  > fijos de año *******************"
    9.
19. ivregress 2sls Intercambio Regulacion_intercambio Crimen Densidad_Pob Densidad_Neg P
  > IB_pc_PPA Europa Asia_Este Am_lat i.Año (Valor_prom = ICH)
   10.
20. estat firststage
   11.
21. }
   12.
22. *Estimar escenario para Costa Rica
23. display "****************** Predicción tasa de intercambio para Costa Rica ********
  > ***********"
   13.
24. predict fitted_`especificacion'
   14. *Generar intervalo de confianza al 95%
25. predict error, stdp
   15. generate lb_`especificacion' = fitted_`especificacion' - invnormal(0.975)*error /
  > /Límite inferior intervalo de confianza al 95%
   16. generate ub_`especificacion' = fitted_`especificacion' + invnormal(0.975)*error /
  > /Límite superior intervalo de confianza al 95%
   17. drop error
   18. sum  ub_`especificacion' fitted_`especificacion' lb_`especificacion' if Codigo_Pa
  > is=="CRI"
   19.
26. }
  ****************** 1) Especificación variables instrumentales sin efectos fijos de añ
  > o *******************

  Instrumental-variables 2SLS regression            Number of obs   =        174
                                                    Wald chi2(9)    =     398.96
                                                    Prob > chi2     =     0.0000
                                                    R-squared       =     0.6915
                                                    Root MSE        =     .33323

  ------------------------------------------------------------------------------
    __
            Intercambio | Coefficient  Std. err.      z    P>|z|     [95% conf. interva
  > l]
  ------------------------------------------------------------------------------
    __
             Valor_prom |  -.0023205   .0017289    -1.34   0.180    -.0057091    .00106
  > 81
  Regulacion_intercambio |  -.6538571   .0637031   -10.26   0.000    -.7787128   -.52900
  > 14
                 Crimen |   -.000094   .0000402    -2.34   0.019    -.0001728   -.00001
  > 52
           Densidad_Pob |  -.0001729   .0002335    -0.74   0.459    -.0006306    .00028
  > 48
           Densidad_Neg |  -.0195356   .0067273    -2.90   0.004     -.032721   -.00635
  > 03
             PIB_pc_PPA |   7.46e-07   2.05e-06     0.36   0.716    -3.27e-06    4.76e-
```

> 06
> 75
> 95
> 31
> 94

| | | | | | | |
|---|---|---|---|---|---|---|
| Europa | -.198655 | .1188861 | -1.67 | 0.095 | -.4316675 | .03435 |
| Asia_Este | .3565469 | .1639839 | 2.17 | 0.030 | .0351444 | .67794 |
| Am_lat | .4702161 | .1314754 | 3.58 | 0.000 | .2125291 | .72790 |
| _cons | 1.692791 | .2146485 | 7.89 | 0.000 | 1.272087 | 2.1134 |

Endogenous: **Valor_prom**
Exogenous:
**Regulacion_intercamb**
**> io Crimen**
**Densidad_Pob**
**Densidad_Neg**
**PIB_pc_PPA Europa**
**Asia_Este Am_lat ICH**

First-stage regression summary statistics

| Variable | R-sq. | Adjusted R-sq. | Partial R-sq. | F(1,164) | Prob > F |
|---|---|---|---|---|---|
| Valor_prom | **0.4369** | **0.4060** | **0.2194** | **46.0976** | **0.0000** |

Minimum eigenvalue statistic = **46.0976**

Critical Values # of endogenous regressors: **1**
H0: Instruments are weak # of excluded instruments: **1**

| | 5% | 10% | 20% | 30% |
|---|---|---|---|---|
| 2SLS relative bias | | (not available) | | |

| | 10% | 15% | 20% | 25% |
|---|---|---|---|---|
| 2SLS size of nominal 5% Wald test | **16.38** | **8.96** | **6.66** | **5.53** |
| LIML size of nominal 5% Wald test | **16.38** | **8.96** | **6.66** | **5.53** |

******************** Predicción tasa de intercambio para Costa Rica ********************
(option **xb** assumed; fitted values)
(52 missing values generated)
(52 missing values generated)
(52 missing values generated)
(52 missing values generated)

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ub_esp_iv_~1 | **1** | **1.349032** | **.** | **1.349032** | **1.349032** |
| fitted_esp~1 | **1** | **1.212396** | **.** | **1.212396** | **1.212396** |
| lb_esp_iv_~1 | **1** | **1.075759** | **.** | **1.075759** | **1.075759** |

******************** 2) Especificación variables instrumentales con efectos fijos de añ**
**> o ********************

Instrumental-variables 2SLS regression

| | | |
|---|---|---|
| Number of obs | = | **174** |
| Wald chi2(**23**) | = | **452.28** |
| Prob > chi2 | = | **0.0000** |
| R-squared | = | **0.7172** |
| Root MSE | = | **.31905** |

| Intercambio | Coefficient | Std. err. | z | P>\|z\| | [95% conf. interval] |
|---|---|---|---|---|---|
| Valor_prom | -.0025554 | .0017235 | -1.48 | 0.138 | -.0059333 .00826 |
| Regulacion_intercambio | -.6487655 | .0736468 | -8.81 | 0.000 | -.7931106 -.50442 |
| Crimen | -.0000743 | .0000427 | -1.74 | 0.082 | -.0001581 9.42e-06 |
| Densidad_Pob | -.0002011 | .0002314 | -0.87 | 0.385 | -.0006547 .00025 |
| Densidad_Neg | -.0160078 | .0066447 | -2.41 | 0.016 | -.0290313 -.00298 |
| PIB_pc_PPA | -3.57e-07 | 2.02e-06 | -0.18 | 0.859 | -4.31e-06 3.60e-06 |
| Europa | -.2185746 | .1216835 | -1.80 | 0.072 | -.4570699 .01992 |
| Asia_Este | .3213891 | .1608741 | 2.00 | 0.046 | .0060817 .63669 |
| Am_lat | .4290302 | .1348644 | 3.18 | 0.001 | .1647008 .69335 |
| Año | | | | | |
| 2013 | .3279738 | .3389316 | 0.97 | 0.333 | -.3363198 .99226 |
| 2014 | .4705704 | .3559356 | 1.32 | 0.186 | -.2270505 1.1681 |
| 2015 | .5262902 | .3518707 | 1.50 | 0.135 | -.1633637 1.2159 |
| 2016 | .546954 | .3443017 | 1.59 | 0.112 | -.1278649 1.2217 |
| 2017 | .3362557 | .3339505 | 1.01 | 0.314 | -.3182753 .99078 |
| 2018 | .4785244 | .3388021 | 1.41 | 0.158 | -.1855156 1.1425 |
| 2019 | .4301857 | .3370747 | 1.28 | 0.202 | -.2304685 1.090 |
| 2020 | .4181438 | .3341272 | 1.25 | 0.211 | -.2367333 1.0730 |
| 2021 | .3263739 | .3375381 | 0.97 | 0.334 | -.3351887 .98793 |
| 2022 | .2693416 | .341891 | 0.79 | 0.431 | -.4007524 .93943 |
| 2023 | .3273163 | .339664 | 0.96 | 0.335 | -.3384129 .99304 |
| 2024 | .3984852 | .339138 | 1.17 | 0.240 | -.266213 1.0631 |
| 2025 | .2765309 | .3410251 | 0.81 | 0.417 | -.391866 .94492 |
| 2026 | -.086109 | .365481 | -0.24 | 0.814 | -.8024386 .63022 |
| _cons | 1.372215 | .3741036 | 3.67 | 0.000 | .638985 2.1054 |

Endogenous: **Valor_prom**
Exogenous:
**Regulacion_intercamb io Crimen Densidad_Pob Densidad_Neg PIB_pc_PPA Europa Asia_Este Am_lat 2013.Año 2014.Año 2015.Año 2016.Año 2017.Año 2018.Año 2019.Año 2020.Año 2021.Año 2022.Año**

**2023.Año 2024.Año**
**2025.Año 2026.Año**
**ICH**

First-stage regression summary statistics

| Variable | R-sq. | Adjusted R-sq. | Partial R-sq. | F(1,150) | Prob > F |
|---|---|---|---|---|---|
| Valor_prom | **0.4692** | **0.3879** | **0.2157** | **41.2619** | **0.0000** |

Minimum eigenvalue statistic = **41.2619**

Critical Values # of endogenous regressors: **1**
H0: Instruments are weak # of excluded instruments: **1**

| 2SLS relative bias | 5% | 10% | 20% | 30% |
|---|---|---|---|---|
| | (not available) | | | |

| | 10% | 15% | 20% | 25% |
|---|---|---|---|---|
| 2SLS size of nominal 5% Wald test | **16.38** | **8.96** | **6.66** | **5.53** |
| LIML size of nominal 5% Wald test | **16.38** | **8.96** | **6.66** | **5.53** |

********************* Predicción tasa de intercambio para Costa Rica *********************
(option **xb** assumed; fitted values)
(52 missing values generated)
(52 missing values generated)
(52 missing values generated)
(52 missing values generated)

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ub_esp_iv_~2 | **1** | **1.367419** | **.** | **1.367419** | **1.367419** |
| fitted_esp~2 | **1** | **1.126621** | **.** | **1.126621** | **1.126621** |
| lb_esp_iv_~2 | **1** | **.8858228** | **.** | **.8858228** | **.8858228** |

```
27.
28. ********************* Predicción de la comisión de adquirencia **********************
29.
30. foreach especificacion in esp_iv_adq_1 esp_iv_adq_2 {
    2.
31. if "`especificacion'"=="esp_iv_adq_1" {
    3.
32. display "******************* 1) Especificación variables instrumentales sin efectos
  > fijos de año *******************"
    4.
33. ivregress 2sls Adquirencia Regulacion_intercambio Crimen Densidad_Pob Densidad_Neg P
  > IB_pc_PPA Europa Asia_Este Am_lat (Valor_prom = ICH)
    5.
34. estat firststage
    6.
35. }
    7.
36. if "`especificacion'"=="esp_iv_adq_2" {
    8.
37. display "******************* 2) Especificación variables instrumentales con efectos
  > fijos de año *******************"
    9.
```

```
38. ivregress 2sls Adquirencia Regulacion_intercambio Crimen Densidad_Pob Densidad_Neg P
  > IB_pc_PPA Europa Asia_Este Am_lat i.Año (Valor_prom = ICH)
  10.
39. estat firststage
  11.
40. }
  12.
41. *Estimar escenario para Costa Rica
42. display "****************** Predicción tasa de adquirencia para Costa Rica ********
  > ***********"
  13.
43. predict fitted_`especificacion'
  14.
44. *Ajustar predicción por distribución de comisiones
45. replace fitted_`especificacion' = (fitted_`especificacion' - (1*0.08) - (1.25*0.05)
  > - (1.5*0.22) - (1.75*0.12))/(0.53) /*Corresponde a la tasa de adquirencia máxima par
  > a los otros sectores*/
  15.
46. *Generar intervalo de confianza al 95%
47. predict error, stdp
  16. generate lb_`especificacion' = fitted_`especificacion' - invnormal(0.975)*error /
  > /Límite inferior intervalo de confianza al 95%
  17. generate ub_`especificacion' = fitted_`especificacion' + invnormal(0.975)*error /
  > /Límite superior intervalo de confianza al 95%
  18. drop error
  19. sum  ub_`especificacion' fitted_`especificacion' lb_`especificacion' if Codigo_Pa
  > is=="CRI"
  20.
48. sum fitted_`especificacion' if Codigo_Pais=="CRI"
  21. local adquirencia_CR = r(mean)
  22.
49. sum ub_`especificacion' if Codigo_Pais=="CRI"
  23. local adquirencia_ub_CR = r(mean)
  24.
50. sum lb_`especificacion' if Codigo_Pais=="CRI"
  25. local adquirencia_lb_CR = r(mean)
  26.
51. }
****************** 1) Especificación variables instrumentales sin efectos fijos de añ
  > o ******************

Instrumental-variables 2SLS regression          Number of obs   =        117
                                                Wald chi2(9)    =     208.48
                                                Prob > chi2     =     0.0000
                                                R-squared       =     0.6302
                                                Root MSE        =     .58533

------------------------------------------------------------------------------
  ——
         Adquirencia | Coefficient  Std. err.      z    P>|z|     [95% conf. interva
  > l]
-------------------------------------------------------------------------------
  ——
          Valor_prom |   .0053273   .0053596     0.99   0.320    -.0051773    .01583
  > 19
Regulacion_intercambio |  -.5315386   .1617984    -3.29   0.001    -.8486576   -.21441
  > 96
              Crimen |  -.0000387    .000097    -0.40   0.690    -.0002289    .00015
  > 15
        Densidad_Pob |  -.0002665    .000452    -0.59   0.556    -.0011524    .00061
  > 95
        Densidad_Neg |   .0252077    .020007     1.26   0.208    -.0140054    .06442
  > 07
         PIB_pc_PPA |  -5.77e-06   6.54e-06    -0.88   0.378    -.0000186    7.05e-
  > 06
              Europa |  -.5089428    .392259    -1.30   0.194    -1.277756    .25987
  > 08
           Asia_Este |  -.2677212    .384214    -0.70   0.486    -1.020767    .48532
  > 44
              Am_lat |   .6181714   .3947938     1.57   0.117    -.1556103    1.3919
  > 53
               _cons |   1.739101   .7801936     2.23   0.026     .2099498    3.2682
```

**> 52**

Endogenous: **Valor_prom**
Exogenous:
**Regulacion_intercamb**
**> io Crimen**
**Densidad_Pob**
**Densidad_Neg**
**PIB_pc_PPA Europa**
**Asia_Este Am_lat ICH**

First-stage regression summary statistics

| Variable | R-sq. | Adjusted R-sq. | Partial R-sq. | F(1,107) | Prob > F |
|---|---|---|---|---|---|
| Valor_prom | **0.4659** | **0.4210** | **0.1281** | **15.7188** | **0.0001** |

Minimum eigenvalue statistic = **15.7188**

| Critical Values | # of endogenous regressors: | **1** |
|---|---|---|
| H0: Instruments are weak | # of excluded instruments: | **1** |

| 2SLS relative bias | 5% | 10% | 20% | 30% |
|---|---|---|---|---|
| | (not available) | | | |

| | 10% | 15% | 20% | 25% |
|---|---|---|---|---|
| 2SLS size of nominal 5% Wald test | **16.38** | **8.96** | **6.66** | **5.53** |
| LIML size of nominal 5% Wald test | **16.38** | **8.96** | **6.66** | **5.53** |

******************Predicción tasa de adquirencia para Costa Rica ******************
(option **xb** assumed; fitted values)
(52 missing values generated)
(198 real changes made)
(52 missing values generated)
(52 missing values generated)
(52 missing values generated)

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ub_esp_i~q_1 | **1** | **2.772302** | . | **2.772302** | **2.772302** |
| fitted_e~q_1 | **1** | **2.466986** | . | **2.466986** | **2.466986** |
| lb_esp_i~q_1 | **1** | **2.161669** | . | **2.161669** | **2.161669** |

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| fitted_e~q_1 | **1** | **2.466986** | . | **2.466986** | **2.466986** |

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ub_esp_i~q_1 | **1** | **2.772302** | . | **2.772302** | **2.772302** |

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| lb_esp_i~q_1 | **1** | **2.161669** | . | **2.161669** | **2.161669** |

******************2) Especificación variables instrumentales con efectos fijos de añ**
**> o ******************

Instrumental-variables 2SLS regression

| | | |
|---|---|---|
| Number of obs | = | **117** |
| Wald chi2(**23**) | = | **258.04** |
| Prob > chi2 | = | **0.0000** |
| R-squared | = | **0.6798** |
| Root MSE | = | **.5446** |

| Adquirencia | Coefficient | Std. err. | z | P>\|z\| | [95% conf. interval] |
|---|---|---|---|---|---|
| Valor_prom | .0047345 | .004669 | 1.01 | 0.311 | -.0044165 .01388 |
| Regulacion_intercambio | -.4548975 | .1663341 | -2.73 | 0.006 | -.7809063 -.12888 |
| Crimen | -.0000328 | .0000877 | -0.37 | 0.708 | -.0002047 .00013 |
| Densidad_Pob | -.000452 | .000433 | -1.04 | 0.297 | -.0013006 .00039 |
| Densidad_Neg | .0256753 | .0183398 | 1.40 | 0.162 | -.0102702 .06162 |
| PIB_pc_PPA | -5.47e-06 | 6.15e-06 | -0.89 | 0.373 | -.0000175 6.58e- |
| Europa | -.7573789 | .3806627 | -1.99 | 0.047 | -1.503464 -.01129 |
| Asia_Este | -.4531969 | .3767247 | -1.20 | 0.229 | -1.191564 .28516 |
| Am_lat | .4780335 | .3727421 | 1.28 | 0.200 | -.2525275 1.2085 |
| Año | | | | | |
| 2013 | .3314378 | .6392133 | 0.52 | 0.604 | -.9213971 1.5842 |
| 2014 | -.3397711 | .6537786 | -0.52 | 0.603 | -1.621154 .94161 |
| 2015 | -.0018933 | .6198225 | -0.00 | 0.998 | -1.216723 1.2129 |
| 2016 | .0878329 | .584955 | 0.15 | 0.881 | -1.058658 1.2343 |
| 2017 | -.1506929 | .5913233 | -0.25 | 0.799 | -1.309665 1.008 |
| 2018 | -.2420402 | .5995319 | -0.40 | 0.686 | -1.417101 .93302 |
| 2019 | -.3132514 | .5815672 | -0.54 | 0.590 | -1.453102 .82659 |
| 2020 | -.4145648 | .5891336 | -0.70 | 0.482 | -1.569246 .74011 |
| 2021 | -.5951772 | .5924731 | -1.00 | 0.315 | -1.756403 .56604 |
| 2022 | -.1775789 | .5904428 | -0.30 | 0.764 | -1.334826 .97966 |
| 2023 | -.2471077 | .5994177 | -0.41 | 0.680 | -1.421945 .92772 |
| 2024 | -.5840967 | .5980675 | -0.98 | 0.329 | -1.756288 .58809 |
| 2025 | -.2314356 | .5847882 | -0.40 | 0.692 | -1.377599 .91472 |
| 2026 | .2835469 | .6751673 | 0.42 | 0.675 | -1.039757 1.6068 |
| _cons | 2.120955 | .8125721 | 2.61 | 0.009 | .5283428 3.7135 |

Endogenous: **Valor_prom**
Exogenous:
**Regulacion_intercamb io Crimen Densidad_Pob Densidad_Neg PIB_pc_PPA Europa Asia_Este Am_lat 2013.Año 2014.Año 2015.Año 2016.Año 2017.Año 2018.Año 2019.Año 2020.Año 2021.Año 2022.Año**

**2023.Año 2024.Año**
**2025.Año 2026.Año**
**ICH**

First-stage regression summary statistics

| Variable | R-sq. | Adjusted R-sq. | Partial R-sq. | F(1,93) | Prob > F |
|---|---|---|---|---|---|
| Valor_prom | **0.5360** | **0.4212** | **0.1617** | **17.9354** | **0.0001** |

Minimum eigenvalue statistic = **17.9354**

| Critical Values | # of endogenous regressors: | **1** |
|---|---|---|
| H0: Instruments are weak | # of excluded instruments: | **1** |

| 2SLS relative bias | 5% | 10% | 20% | 30% |
|---|---|---|---|---|
| | (not available) | | | |

| | 10% | 15% | 20% | 25% |
|---|---|---|---|---|
| 2SLS size of nominal 5% Wald test | **16.38** | **8.96** | **6.66** | **5.53** |
| LIML size of nominal 5% Wald test | **16.38** | **8.96** | **6.66** | **5.53** |

**********  **Predicción tasa de adquirencia para Costa Rica**  **********
(option **xb** assumed; fitted values)
(52 missing values generated)
(198 real changes made)
(52 missing values generated)
(52 missing values generated)
(52 missing values generated)

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ub_esp_i~q_2 | **1** | **3.025599** | **.** | **3.025599** | **3.025599** |
| fitted_e~q_2 | **1** | **2.57895** | **.** | **2.57895** | **2.57895** |
| lb_esp_i~q_2 | **1** | **2.132301** | **.** | **2.132301** | **2.132301** |

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| fitted_e~q_2 | **1** | **2.57895** | **.** | **2.57895** | **2.57895** |

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ub_esp_i~q_2 | **1** | **3.025599** | **.** | **3.025599** | **3.025599** |

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| lb_esp_i~q_2 | **1** | **2.132301** | **.** | **2.132301** | **2.132301** |

```
52.
53. *Cerrar registro del programa
54. log close
       name:  <unnamed>
        log:  D:\Documentos Usuarios\mendezce\OneDrive - Banco Central de Costa Rica\Es
> critorio\Datos y Estimación - Adquirencia e intercambio\Estimación_variables_instrum
> entales.smcl
  log type:  smcl
 closed on:  13 Oct 2026, 10:48:38
```