

Gretl output - Section I.

? ols elected const

Model 1: OLS, using observations 1-1052
Dependent variable: elected

| | coefficient | std. error | t-ratio | p-value |
|--------------------|-------------|--------------------|----------|---------------|
| const | 0.443916 | 0.0153257 | 28.97 | 4.35e-136 *** |
| Mean dependent var | 0.443916 | S.D. dependent var | 0.497081 | |
| Sum squared resid | 259.6911 | S.E. of regression | 0.497081 | |
| R-squared | 0.000000 | Adjusted R-squared | 0.000000 | |

? ols woman const

Model 2: OLS, using observations 1-1052
Dependent variable: woman

| | coefficient | std. error | t-ratio | p-value |
|--------------------|-------------|--------------------|----------|---------------|
| const | 0.298479 | 0.0141148 | 21.15 | 5.58e-083 *** |
| Mean dependent var | 0.298479 | S.D. dependent var | 0.457808 | |
| Sum squared resid | 220.2776 | S.E. of regression | 0.457808 | |
| R-squared | 0.000000 | Adjusted R-squared | 0.000000 | |

? ols age const

Model 3: OLS, using observations 1-1052
Dependent variable: age

| | coefficient | std. error | t-ratio | p-value |
|--------------------|-------------|--------------------|----------|------------|
| const | 44.6882 | 0.375033 | 119.2 | 0.0000 *** |
| Mean dependent var | 44.68821 | S.D. dependent var | 12.16403 | |
| Sum squared resid | 155509.7 | S.E. of regression | 12.16403 | |
| R-squared | 0.000000 | Adjusted R-squared | 0.000000 | |

? ols university const

Model 4: OLS, using observations 1-1052
Dependent variable: university

| | coefficient | std. error | t-ratio | p-value |
|--------------------|-------------|--------------------|----------|---------------|
| const | 0.163498 | 0.0114074 | 14.33 | 1.09e-042 *** |
| Mean dependent var | 0.163498 | S.D. dependent var | 0.369995 | |
| Sum squared resid | 143.8783 | S.E. of regression | 0.369995 | |
| R-squared | 0.000000 | Adjusted R-squared | 0.000000 | |

? ols white_collar const

Model 5: OLS, using observations 1-1052
Dependent variable: white_collar

| | coefficient | std. error | t-ratio | p-value | |
|--------------------|-------------|--------------------|---------|-----------|-----|
| const | 0.206274 | 0.0124812 | 16.53 | 1.02e-054 | *** |
| Mean dependent var | 0.206274 | S.D. dependent var | | 0.404822 | |
| Sum squared resid | 172.2386 | S.E. of regression | | 0.404822 | |
| R-squared | 0.000000 | Adjusted R-squared | | 0.000000 | |

? ols elected const woman --robust

Model 6: OLS, using observations 1-1052
Dependent variable: elected
Heteroskedasticity-robust standard errors, variant HC1

| | coefficient | std. error | t-ratio | p-value | |
|--------------------|-------------|--------------------|---------|-----------|-----|
| const | 0.460705 | 0.0183658 | 25.08 | 3.48e-109 | *** |
| woman | -0.0562460 | 0.0332546 | -1.691 | 0.0911 | * |
| Mean dependent var | 0.443916 | S.D. dependent var | | 0.497081 | |
| Sum squared resid | 258.9942 | S.E. of regression | | 0.496650 | |
| R-squared | 0.002683 | Adjusted R-squared | | 0.001734 | |
| F(1, 1050) | 2.860743 | P-value(F) | | 0.091062 | |

? ols elected const woman age university white_collar --robust

Model 7: OLS, using observations 1-1052
Dependent variable: elected
Heteroskedasticity-robust standard errors, variant HC1

| | coefficient | std. error | t-ratio | p-value | |
|--------------------|-------------|--------------------|---------|----------|-----|
| const | 0.346649 | 0.0588636 | 5.889 | 5.23e-09 | *** |
| woman | -0.0863818 | 0.0335572 | -2.574 | 0.0102 | ** |
| age | 0.00160447 | 0.00122448 | 1.310 | 0.1904 | |
| university | 0.123862 | 0.0428351 | 2.892 | 0.0039 | *** |
| white_collar | 0.150761 | 0.0401485 | 3.755 | 0.0002 | *** |
| Mean dependent var | 0.443916 | S.D. dependent var | | 0.497081 | |
| Sum squared resid | 251.4070 | S.E. of regression | | 0.490022 | |
| R-squared | 0.031900 | Adjusted R-squared | | 0.028201 | |
| F(4, 1047) | 8.902371 | P-value(F) | | 4.54e-07 | |

Excluding the constant, p-value was highest for variable 3 (age)

? probit elected const woman age university white_collar --robust --p-values

Model 8: Probit, using observations 1-1052

Dependent variable: elected

QML standard errors

| | coefficient | std. error | z | p-value | |
|--------------------|-------------|--------------------|----------|---------|-----|
| const | -0.395815 | 0.154501 | -2.562 | 0.0104 | ** |
| woman | -0.225595 | 0.0889613 | -2.536 | 0.0112 | ** |
| age | 0.00421578 | 0.00319882 | 1.318 | 0.1875 | |
| university | 0.316745 | 0.110099 | 2.877 | 0.0040 | *** |
| white_collar | 0.387297 | 0.103796 | 3.731 | 0.0002 | *** |
| Mean dependent var | 0.443916 | S.D. dependent var | 0.497081 | | |
| McFadden R-squared | 0.023388 | Adjusted R-squared | 0.016468 | | |
| Log-likelihood | -705.6600 | Akaike criterion | 1421.320 | | |
| Schwarz criterion | 1446.112 | Hannan-Quinn | 1430.720 | | |

Number of cases 'correctly predicted' = 632 (60.1%)

f(beta'x) at mean of independent vars = 0.395

Likelihood ratio test: Chi-square(4) = 33.7979 [0.0000]

? genr c=\$coeff

Generated matrix c

? genr z1=c[1]

Generated scalar z1 = -0.395815

? genr z2=c[1]+35*c[3]+c[5]

Generated scalar z2 = 0.139034

? genr z3=c[1]+c[2]+35*c[3]+c[5]

Generated scalar z3 = -0.0865609

? genr z4=c[1]+35*c[3]+c[4]+c[5]

Generated scalar z4 = 0.455779

? genr z5=c[1]+c[2]+35*c[3]+c[4]+c[5]

Generated scalar z5 = 0.230184

? genr pr_1=cdf(N,z1)

Generated scalar pr_1 = 0.346121

? genr pr_2=cdf(N,z2)

Generated scalar pr_2 = 0.555288

? genr pr_3=cdf(N,z3)

Generated scalar pr_3 = 0.46551

? genr pr_4=cdf(N,z4)

Generated scalar pr_4 = 0.675726

? genr pr_5=cdf(N,z5)

Generated scalar pr_5 = 0.591026

```
? restrict --quiet --wald
? b[woman]=0.316745
? end restrict
```

Restriction:

b[woman] = 0.316745

Test statistic: Robust $\chi^2(1) = 37.1656$, with p-value = 1.08511e-009

```
? restrict --quiet --wald
? b[woman]=0
? b[university]=0
? end restrict
```

Restriction set

1: b[woman] = 0

2: b[university] = 0

Test statistic: Robust $\chi^2(2) = 15.2934$, with p-value = 0.000477607

```
? restrict --quiet --wald
? b[woman]+b[university]=0
? end restrict
```

Restriction:

b[woman] + b[university] = 0

Test statistic: Robust $\chi^2(1) = 0.399581$, with p-value = 0.527306

```
? restrict --quiet --wald
? b[woman]-b[university]=0
? end restrict
```

Restriction:

b[woman] - b[university] = 0

Test statistic: Robust $\chi^2(1) = 15.2562$, with p-value = 9.38694e-005

Gretl output – Section II.

The impact of higher wages on the entry of educated citizens into politics

| VARIABLES | (1) leduc OLS | (2) lwage OLS | (3) leduc 2SLS | (4) lwage OLS | (5) leduc 2SLS | (6) lwage OLS | (7) leduc 2SLS | (8) resid7 OLS | (9) leduc OLS | (10) leduc OLS | (11) leduc OLS |
|------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| lwage | 0.193*** [0.012] | | -0.090*** [0.032] | | 0.222*** [0.012] | | 0.223*** [0.012] | | -0.090*** [0.032] | 0.222*** [0.012] | 0.223*** [0.012] |
| woman | 0.190** [0.076] | -0.055*** [0.019] | 0.174** [0.076] | 0.012 [0.009] | 0.192** [0.075] | 0.198*** [0.076] | 0.192** [0.075] | 0.003 [0.076] | 0.174** [0.076] | 0.192** [0.075] | 0.192** [0.075] |
| lage | -0.071*** [0.004] | 0.001 [0.001] | -0.071*** [0.004] | 0.004*** [0.001] | -0.071*** [0.004] | -0.070*** [0.004] | -0.071*** [0.004] | 0.000 [0.004] | -0.071*** [0.004] | -0.071*** [0.004] | -0.071*** [0.000] |
| lkmsq | | 0.053*** [0.001] | | | | -0.020*** [0.002] | | -0.020*** [0.002] | | | |
| lpop | | | | 0.149*** [0.000] | | 0.042*** [0.002] | | 0.009*** [0.002] | | | |
| resid2 | | | | | | | | | 0.326*** [0.035] | | |
| resid4 | | | | | | | | | | -0.187*** [0.031] | |
| resid6 | | | | | | | | | | | 1.000*** [0.000] |
| F excluded instruments | | 7016.26 p-value=0.00 | | 9826.75 p-value=0.00 | | 211.45 p-value=0.00 | | | | | |
| Observations | 5,748 | 5,748 | 5,748 | 5,748 | 5,748 | 5,748 | 5,748 | 5,748 | 5,748 | 5,748 | 5,748 |
| R-squared | 0.006 | 0.134 | 0.001 | 0.841 | 0.006 | 0.007 | 0.006 | 0.001 | 0.007 | 0.006 | 0.998 |

Notes: The dependent variable and the method of estimation appear in the heading of each column.

Variables residX are the residuals from the regression in column X.

Column 2 is the first stage of the 2SLS procedure in column 3.

Column 4 is the first stage of the 2SLS procedure in column 5.

Column 6 is the first stage of the 2SLS procedure in column 7.

Hint: The critical value for the χ^2 distribution with 1 degree of freedom at the 5% significance level is 3.84. The critical value for the χ^2 distribution with 2 degrees of freedom at the same significance level is 5.99.

Gretl output - Section III.

```
? ols white_collar const small after interact
```

Model 1: OLS, using observations 1-912

Dependent variable: white_collar

| | coefficient | std. error | t-ratio | p-value | |
|----------|-------------|------------|---------|-----------|-----|
| const | 0.236 | 0.007 | 36.180 | 7.38e-276 | *** |
| small | -0.026 | 0.009 | -2.843 | 0.0045 | *** |
| after | 0.005 | 0.009 | 0.548 | 0.5837 | |
| interact | 0.042 | 0.013 | 3.128 | 0.0018 | *** |

Mean dependent var 0.234645 S.D. dependent var 0.423790

Sum squared resid 2942.616 S.E. of regression 0.423486

R-squared 0.001617 Adjusted R-squared 0.001434

```
? restrict --quiet --wald
```

```
? b[small]+b[interact]=0
```

```
? end restrict
```

Restriction:

$$b[\text{small}] + b[\text{interact}] = 0$$

Test statistic: F(1, 908) = 2.66872, with p-value = 0.102357

```
? restrict --quiet --wald
```

```
? b[after]+b[interact]=0
```

```
? end restrict
```

Restriction:

$$b[\text{after}] + b[\text{interact}] = 0$$

Test statistic: F(1, 908) = 25.0067, with p-value = 5.77217e-007

Gretl output - Section IV.

Model 1: Pooled OLS, using 145 observations

Included 55 cross-sectional units
Time-series length: minimum 1, maximum 5
Dependent variable: reelect
Robust (HAC) standard errors

| | coefficient | std. error | t-ratio | p-value | |
|--------|-------------|------------|---------|----------|-----|
| const | 0.369801 | 0.0685505 | 5.395 | 2.85e-07 | *** |
| ddef | 5.37537 | 1.84256 | 2.917 | 0.0041 | *** |
| gdp_gr | 4.93101 | 1.56372 | 3.153 | 0.0020 | *** |
| maj | 0.113314 | 0.0898223 | 1.262 | 0.2092 | |
| nd | -0.0446467 | 0.0849181 | -0.5258 | 0.5999 | |

| | | | |
|--------------------|-----------|--------------------|----------|
| Mean dependent var | 0.482759 | S.D. dependent var | 0.501435 |
| Sum squared resid | 32.60010 | S.E. of regression | 0.482553 |
| R-squared | 0.099616 | Adjusted R-squared | 0.073891 |
| F(4, 140) | 5.370931 | P-value(F) | 0.000471 |
| Log-likelihood | -97.54575 | Akaike criterion | 205.0915 |
| Schwarz criterion | 219.9752 | Hannan-Quinn | 211.1392 |

Excluding the constant, p-value was highest for variable 32 (nd)

Model 2: Fixed-effects, using 145 observations

Included 55 cross-sectional units
Time-series length: minimum 1, maximum 5
Dependent variable: reelect
Robust (HAC) standard errors

| | coefficient | std. error | t-ratio | p-value | |
|--------|-------------|------------|---------|-----------|-----|
| const | 0.191993 | 0.0506141 | 3.793 | 0.0003 | *** |
| ddef | 3.35182 | 2.31413 | 1.448 | 0.1511 | |
| gdp_gr | 4.52629 | 2.33174 | 1.941 | 0.0555 | * |
| maj | 0.384744 | 0.0464249 | 8.287 | 1.38e-012 | *** |
| nd | 0.314013 | 0.131702 | 2.384 | 0.0193 | ** |

| | | | |
|--------------------|-----------|--------------------|----------|
| Mean dependent var | 0.482759 | S.D. dependent var | 0.501435 |
| Sum squared resid | 18.35653 | S.E. of regression | 0.462004 |
| LSDV R-squared | 0.493010 | Within R-squared | 0.109627 |
| Log-likelihood | -55.90683 | Akaike criterion | 229.8137 |
| Schwarz criterion | 405.4409 | Hannan-Quinn | 301.1770 |

Robust test for differing group intercepts -
Null hypothesis: The groups have a common intercept
Test statistic: Welch F(54, 35.0) = 91.2662
with p-value = P(F(54, 35.0) > 91.2662) = 1.29204e-026

Model 3: Random-effects (GLS), using 145 observations

Included 55 cross-sectional units

Time-series length: minimum 1, maximum 5

Dependent variable: reelect

| | coefficient | std. error | t-ratio | p-value | |
|--------------------|-------------|--------------------|----------|----------|-----|
| const | 0.349357 | 0.0746635 | 4.679 | 6.72e-06 | *** |
| ddef | 5.10890 | 2.24535 | 2.275 | 0.0244 | ** |
| gdp_gr | 5.17816 | 1.91768 | 2.700 | 0.0078 | *** |
| maj | 0.117159 | 0.101155 | 1.158 | 0.2488 | |
| nd | -0.0285793 | 0.0902593 | -0.3166 | 0.7520 | |
| Mean dependent var | 0.482759 | S.D. dependent var | 0.501435 | | |
| Sum squared resid | 32.62506 | S.E. of regression | 0.481023 | | |
| Log-likelihood | -97.60124 | Akaike criterion | 205.2025 | | |
| Schwarz criterion | 220.0862 | Hannan-Quinn | 211.2502 | | |

'Within' variance = 0.213448

'Between' variance = 0.123275

corr(y,yhat)^2 = 0.0991717

Breusch-Pagan test -

Null hypothesis: Variance of the unit-specific error = 0

Asymptotic test statistic: Chi-square(1) = 0.716127

with p-value = 0.397417

Hausman test -

Null hypothesis: GLS estimates are consistent

Asymptotic test statistic: Chi-square(4) = 10.3131

with p-value = 0.0354718