

POLS 500c: Regression Analysis in Political Science

Fall 2007

TTh 8:15-9:30 am, 3075 Faner Hall

Prof. Frederick Solt

Office: 3166 Faner Hall

Office Hours: TTh 9:30-10:30 am, 1:30-3:30 pm

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Overview

This course covers in depth the ‘workhorse’ of quantitative political science, linear regression, and also introduces you to several of its extensions. Our objective will be for you to gain sufficient familiarity with the techniques and assumptions of regression analysis to (1) read and understand others’ work, (2) pursue your own quantitative research, (3) establish a foundation for future acquisition of more advanced methods as needed.

Requirements

Your grade will be based on the following:

Problem Sets	30% (6 problem sets, 5% each)
Midterm	25%
Research Paper	25%
Poster	10%
Class Participation	10%

Your research paper may be done in conjunction with another course, but it must be original, single-authored research and it must apply material from this class. It should be modeled on an empirical research article in a political science journal. Consistent with our department tradition, you will also create a poster displaying your research findings and suitable for presentation at a professional conference.

Readings

There are no required books for this class; all of the readings are available online at the links below or, if starred, from the course page on [Blackboard](#). You should print out the readings and bring them to class with you on the days they are assigned.

Class Schedule

Weeks 1 & 2

Topic: Introduction

Reading:

1. *Van Evera, Stephen. 1997. *Guide to Methods for Students of Political Science*. Ithaca: Cornell University Press. Pp. 7-48.

Note: No class on Thursday, Aug 30, due to the APSA.

Weeks 3, 4, & 5

Topic: Multiple Regression—Estimation, Inference, and Hypothesis Testing

Readings:

1. *Gelman, Andrew, and Jennifer Hill. 2007. Linear Regression: The Basics. In *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press. Pp. 31-51.
2. Jackman, Robert W. 1987. "Political Institutions and Voter Turnout in the Industrial Democracies." *American Political Science Review* 81(2):405-424.
3. Gary King. 1986. "How Not to Lie with Statistics: Avoiding Common Mistakes in Quantitative Political Science." *American Journal of Political Science* 30(3): 666-87.
4. Lewis-Beck, Michael S. and Andrew Skalaban. 1990. "When to Use R-Squared." *The Political Methodologist* 3(2):9-11, and King, Gary. 1990. "When *Not* to Use R-Squared." *The Political Methodologist* 3(2):11-12.

Week 6

Topic: Interactions and Nonlinear Predictors

Readings:

1. Brambor, Thomas, William Roberts Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14(1):63-82.
or
Braumoeller, Bear F. 2004. "Hypothesis Testing and Multiplicative Interaction Terms." *International Organization* 58(4):807-820.

2. *Bloom, Stephen. 2008. "Competitive Assimilation or Strategic Non-Assimilation? The Political Economy of School Choice in Latvia." *Comparative Political Studies*, forthcoming.

Weeks 7 & 8

Topic: Assumptions & Violations

Readings:

1. *Fox, John. 1991. *Regression Diagnostics*. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-079. Newbury Park, California: Sage. Pp. 10-40.
2. [Downs, George W., and David M. Roche. 1979. "Interpreting Heteroscedasticity." *American Journal of Political Science* 23\(4\):816-828.](#)

Tuesday, Oct 16, Midterm Examination

Weeks 9 & 10

Topic: Heteroscedasticity—Dichotomous & Ordinal Dependent Variables

Readings:

1. *King, Gary. 1989. Discrete Regression Models. In *Unifying Political Methodology: The Likelihood Theory of Statistical Inference* Ann Arbor: University of Michigan Press. Pp. 97-132.
2. [Highton, Benjamin. 1997. "Easy Registration and Voter Turnout." *Journal of Politics* 59\(2\):565-575.](#)
3. [Solt, Frederick. 2001. "Institutional Effects on Democratic Transitions: Neo-Patrimonial Regimes in Africa, 1989-1994." *Studies in Comparative International Development* 36\(2\):82-91.](#)
4. [Berry, William, and Jacqueline Rubin. 2007. "How to Test for Interaction in Models with Binary Dependent Variables." Society for Political Methodology Working Paper.](#)

Week 11

Topic: Non-Independent Errors—Time Series Data

Readings:

1. [Freeman, John R., John T. Williams, and Tse-min Lin. 1989. "Vector Autoregression and the Study of Politics." *American Journal of Political Science* 33\(4\):842-877.](#)
2. [Goldstein, Joshua S., and Jon C. Pevehouse. 1997. "Reciprocity, Bullying, and International Cooperation: Time-Series Analysis of the Bosnia Conflict." *American Political Science Review* 91\(3\):515-529.](#)

Week 12

Topic: Non-Independent Errors—Hierarchical Data

Readings:

1. Steenbergen, Marco R., and Bradford S. Jones. 2002. “Modeling Multilevel Data Structures.” *American Journal of Political Science* 46(1):218-237.
2. Weldon, Steven A. 2005. “The Institutional Context of Tolerance for Ethnic Minorities: A Comparative, Multilevel Analysis of Western Europe.” *American Journal of Political Science* 50(2):331-349.

Week 13

Topic: Presenting Results

Readings:

1. King, Gary, Michael Tomz, and Jason Wittenberg. 2000. “Making the Most of Statistical Analyses: Improving Interpretation and Presentation.” *American Journal of Political Science* 44(2):347-361.
2. Kastellec, Jonathan P., and Eduardo Leoni. 2007. “Using Graphs Instead of Tables to Improve the Presentation of Empirical Results in Political Science.” *Perspectives on Politics*, forthcoming.

Week 14

Fall Break

Assignment: Work on Paper & Poster

Weeks 15 & 16

Assignment: In-Class Poster Presentations