



Political Science 8125 & 867

Dynamic Analysis (Time Series Modeling in Politics)

Electronic Classrooms

Spring Semester 2010

11:00-1:00 CST/12:00-2:00 EST, Fridays

Office hours for all by mutual arrangement.

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This course studies statistical techniques used to analyze social processes occurring through time. The course introduces students to time series methods and to the applications of these methods in political science. We begin by discussing social problems that are inherently dynamic in nature and also how time series are measured. We then review the calculus of finite differences and other estimation techniques. We move next to the study stationary ARMA models. In the following section of the course, we examine a number of important topics in time series analysis including "reduced form" methods (granger causality and vector autoregression), unit root tests, near-integration, fractional integration, cointegration, and error correction models. Time series regression is also discussed (including pooling cross-sectional and time series data). We learn not only how to construct these models but also how to use time series models in social science analyses.

We expect students to have a firm grounding in probability and regression analysis and to bring to the course some interesting questions about the dynamics of political processes. The emphasis throughout the course is on application, rather than on statistical theory. However, the focus of most lectures will be statistical theory. Homework focuses as much as possible on the time series you are interested in understanding. To that end, students will need to gather time series data for analysis. It is strongly recommended that this be done during the first week of class (these data need not be used throughout the term, though that would make your life easier). The length of the series should be at least 40 time points; longer series are better than shorter ones.

This is a 13-week seminar team-taught by the 3 J's: Jan, John, and Jon.

Schedule

We expect to cover the following topics in the weeks and dates indicated, though we may adjust slightly as the course progresses and as needed based on class interaction.

Week 1, January 22 – Topic 1: Motivation - All
Week 2, January 29 – Topic 2: Measurement - Freeman
Week 3, February 5 – Topic 3: Difference Equations - Freeman
Week 4 & 5, February 12 & 19 – Topics 4 & 5: ARIMA & ARFIMA Models – Box-Steffensmeier (2 wks)
Week 6, February 26 – Topics 6 & 7: Intervention & ARCH Models - Pevehouse
Week 7, March 5 – Topic 8: Time Series Regression Analysis – Box-Steffensmeier
Week 8, March 12 – Topic 9: VAR/Reduced Form Methods - Freeman
Week 9 & 10, April 2 & 9 – Topic 10: Cointegration & ECMs – Pevehouse (2 wks)
Week 11, April 16 – Topic 11: Forecasting – Box-Steffensmeier & Pevehouse
Week 12, April 30 – Topic 12: Bayesian Time Series Analysis - Freeman
Week 13, May 7 – Topic 13: The Social Sciences and Time Series – All

Required Texts

Students should purchase:

Enders, Walter. 2003. *Applied Econometric Time Series*. 2nd or 3rd ed. N.Y.: Wiley. ISBN: 0471230650

Stata. 2009 (or earlier). *Time-Series Reference Manual*. College Station, Texas: Stata Press.

Work in Progress

The instructors and Professor Jon Pevehouse (University of Chicago, Harris School) are writing a textbook on the subject of the course. In some weeks, draft chapters of this book will be assigned. The book is tentatively titled *Time Series Analysis for the Social Sciences*. We denote this title by TSASS.

Recommended Texts

Other books that will be used during the course and/or serve as excellent references include:

Chatfield, C. 1989. *The Analysis of Time Series: An Introduction, Fourth Edition*. New York: Chapman and Hall.

Goldberg, S. 1958. *Introduction to Difference Equations*. New York: John Wiley and Sons, Inc.

Gottman, R.E. 1981. *Time Series Analysis: A Comprehensive Guide for Social Scientists* NY: Cambridge University Press.

Gujarati, Damodar. 1995. *Basic Econometrics, 3rd Edition*. New York: McGraw-Hill

Hamilton, J.D. 1994. *Time Series Analysis*. Princeton, NJ: Princeton University Press.

Huckfeldt, R. Robert, C.W. Kohfeld, and T.W. Likens. 1982. *Dynamic Modeling: An Introduction* Beverly Hills, CA.: Sage.

McCleary, R. and R.A. Hay, Jr. 1980. *Applied Time Series Analysis for the Social Sciences* Beverly Hills, CA.: Sage.

Maddala, G.S., and In-Moo Kim. 2000. *Unit Roots, Cointegration, and Structural Change*. Cambridge, MA: Cambridge University Press.

Mills, Terence C. 1990. *Time Series Techniques for Economists*. New York: Cambridge University Press.

Patterson, K.D. 2000. *Introduction to Applied Econometrics: A Time Series Approach*. New York: Palgrave.

Pindyck, R.S. and D.L. Rubinfeld. 1991. *Econometric Models and Economic Forecasts Third Edition*. NY: McGraw-Hill.

Software

STATA is the primary statistical package that will be used. The STATA website is: <http://www.stata.com/> You are welcome to use RATS, R, or other software, but please inform the instructors first.

Course Assignments

Students will complete four written assignments and give a short (approximately 15 minutes) oral presentation/critique for the course, for a total of 200 points. See also the Assignment links on the website for more details.

1) The presentation should be on one of the listed articles on the syllabus or another application chosen in consultation with the instructor. Many of the articles on the syllabus are applications and will be essential to rounding out your understanding of the methods. No more than 5 minutes of the presentation should be summary of the article and 15 minutes total. The rest of the time should be critique and leading class discussion. There will typically be 2 students presenting any one article and usually from different universities. Another option for presentations is to do the presentation through camtasia or another recording program and then the presentation will be posted on the class website and discussed online through the Discussion Tab of the class website. The presentation is worth 35 points.

2) A short problem set on the calculus of finite differences will be required. The problem set is worth 25 points.

3) Students will write a short critical evaluation of the Sprague article in week three of the syllabus. The Sprague critique is worth 25 points.

4) The next assignment is considerably larger in scope. Students will estimate and apply an ARIMA model for a data set of their choosing. This data set should contain series with at least forty time points. The data set need not be the same one students use for the next assignment, however, we recommend it. Students are welcome to use their own original data, use data from the Time Series of Social Scientists (link on the website), or use and replicate other existing data sets. There is an 8 page limit. The ARIMA assignment is worth 55 points.

5) Finally, a short (approximately 8 page) paper analyzing a substantive problem using time series data and techniques is required. Either Vector Autoregression or Error Correction techniques should be used. The assignment is worth 60 points.

COURSE OUTLINE

We expect to have all required readings available from the course website, which is through the OSU Carmen system.

Topic 1 [January 22]: Introduction - All

The motivation for time series analysis

- (a) Significant social problems that are about dynamics
- (b) The pitfalls of cross-sectional analysis and the usefulness of time series
- (c) Forecasting for theory validation and policy analysis
- (d) Introduction to difference equations
- (e) Example: An American-Chinese Arms Race

REQUIRED

Brunner, R. D. and K. Liepelt. 1972. "Data Analysis, Process Analysis, and System Change" *Midwest (American) Journal of Political Science [AJPS]* 17 (1): 538-569.

"Modeling Social Dynamics" Chapter 1 in TSASS, pps. 1-10.

Recommended

Cortes, et. al. 1974. *Systems Analysis for Social Scientists*. NY: Wiley: Chap. 1

Hamilton, J. 1994. *Time Series Analysis*, Princeton, NJ: Princeton University Press: Chaps. 1

Topic 2 [January 29]: Measurement in time; more on difference equations - Freeman

Time series measurement problems

- (a) Systematic sampling
- (b) Temporal aggregation
- (c) Data vintaging
- (d) First order linear deterministic difference equations

REQUIRED

Freeman, John R. 1990. "Systematic Sampling, Temporal Aggregation and the Study of Political Relationships." *Political Analysis* 1.

Goldstein, Joshua S. 1991. "Reciprocity in Superpower Relations: An Empirical Analysis." *International Studies Quarterly* 35: 195-209.

"Modeling Social Dynamics" Chapter 1 in TSASS, pps. 10-19.

"Time Series Models As Difference Equations" Chapter 2 in TSASS, pps. 1-11

Recommended

Georgoutsos, D.A., G.P. Kouretas, D.E. Tserkezos. 1998. "Temporal Aggregation in Structural VAR Models." *Applied Stochastic Models and Data Analysis* 14: 19-34.

Granger, Clive W.J. 1990. "Aggregation of Time-Series Variables: A Survey." *Disaggregation in Econometric Modeling*: 17-34.

Granger, Clive W.J. and P.R. Sikklos. 1995. "Systematic Sampling, Temporal Aggregation, Seasonal Adjustment, and Cointegration: Theory and Evidence." *Journal of Econometrics* 66: 357-369.

Robertson, John C. and Ellis W. Tallman. "Data Vintages and Measuring Forecast Model Performance." *Economic Review* Atlanta, GA: Federal Reserve Bank of Atlanta, Fourth Quarter, 1998: 4-20.

Tiao, G.C. and W. Wei. 1976. "Effect of Temporal Aggregation on the Dynamic Relationship of Two Time Series Variables." *Biometrika* 63(3): 513-523.

Zellner, A. and C. Montemarquette. 1971. "A Study of Some Aspects of Temporal Aggregation Problems in Econometric Analysis." *Review of Economics and Statistics* 53: 335-342.

Topic 3 [February 5]: *The Calculus of Finite Differences – Freeman*

Essential concepts for modeling social systems

- (a) Discrete vs. continuous time models
- (b) Concepts of equilibration: difference equation models
- (c) Deterministic and stochastic difference equations
- (d) Systems of difference equations
- (e) Illustrations: the U.S.-China arms race

REQUIRED

Enders, Chap. 1, pps. 1-14

Przeworski, A. and J. Sprague. 1986. *Paper Stones: A History of Electoral Socialism*. Chicago, IL: University of Chicago Press: pps. 1-11, 57-99, 187-201.

Sprague, J. 1981. "One Party Dominance in Legislatures." *Legislative Studies Quarterly* 6(2): pps. 259-285.

"Time Series Models as Difference Equations" Chapter 2 in TSASS, pps. 11-46

Recommended

Freeman, J. and D. Snidal. 1982. "Diffusion, Development and Democratization in Western Europe." *Canadian Journal of Political Science* 15 (2): 299-329.

Hamilton, chp. 5.

Huckfeldt et. al., 1982 *Dynamic Modeling: An Introduction* Sage Publications.

Richards, D. 1993. "A Chaotic Model of Power Concentration in the International System." *International Studies Quarterly* 37: 55-72.

Zinnes, D.A. and R.G. Muncaster. 1984. "The Dynamics of Hostile Activity and the Prediction of War." *Journal of Conflict Resolution* 28 (2): 187-229.

Topic 4 [February 12]: *Identifying, estimating and using models of single time series–Box-Steffensmeier*

Univariate time series models

- (a) Stationary ARMA models – includes a discussion of ARIMA and ARFIMA
- (c) ARCH models – includes a discussion of FIGARCH

- (d) Dynamic Conditional Correlations
- (e) Structural change
- (f) Illustration: Demographic change in the U.S. and Europe
- (g) Illustration: European Public Opinion/Government Spending

REQUIRED

Enders, chp. 2.

“Univariate Time Series Models” Chapter 3 in TSASS.

Recommended

Green, D., B. Palmquist, and E. Schickler 1998. “Macropartisanship: A Replication and Critique.” *American Political Science Review* 92(4): 883-899.

Hamilton, Chapters 2, 3.

Haynie, S. 1992. “Leadership and Consensus on the U.S. Supreme Court.” *Journal of Politics [JOP]* 54(4): 1158-1169.

Li, R. P. 1976. “A Dynamic Comparative Analysis of Presidential and House Elections.” *AJPS* 20: 670-691.

Li, R. P. and W. R. Thompson. 1978. “The Stochastic Process of Alliance Formation Behavior.” *American Political Science Review* 72(4): 1288-1303.

MacKuen, M., R. Erickson, and J. Stimson. 1989. “Macropartisanship.” *American Political Science Review* 83(December): 1125-42.

McCleary and Hay. 1980. *Applied Time Series Analysis for the Social Sciences* Beverley Hills, CA,: Chps 2, 6.

Quinn, D. P. and R. Jacobson. 1989 “Industrial Policy Through Restrictions on Capital Flows” *American Journal of Political Science [AJPS]* 33(3): 700-736.

Topic 5 [February 19]: *Unit Roots, Near Integration, and Fractal Integration – Box-Steffensmeier*
Univariate time series models continued

REQUIRED

Box-Steffensmeier, Janet M., and Renee M. Smith. 1996. “The Dynamics of Aggregate Partisanship.” *The American Political Science Review* 90(3): 567-80.

Enders, Chapter 6.

Lebo, Matthew, Robert W. Walker, and Harold D. Clarke. 2000. “You Must Remember This: Dealing with Long Memory in Political Analyses.” *Electoral Studies*, Vol. 19, No. 2. (March): 31-48.

“Univariate Time Series Models” Chapter 3 in TSASS.

Recommended

- Box-Steffensmeier, Janet M., and Renee M. Smith. 1998. "Investigating Political Dynamics Using Fractional Integration Methods." *American Journal of Political Science* 42(2): 661-89.
- Brooks, Chris, Melvin J. Hinich, and Robert E. Molyneux. 1999. "Episodic Nonlinear Event Detection: Political Epochs in Exchange Rates." in *Political Complexity*, ed., Diana Richards. University of Michigan Press.
- Chambers, Marcus J. 1998. "Long Memory and Aggregation in Macroeconomic Time Series." *International Economic Review* 39 (4): 1053-1072.
- DeBoef, Suzanna, and Jim Granato. 1997. "Near-Integrated Data and the Analysis of Political Relationships." *American Journal of Political Science* 41(2): 619-40.
- Durr, R. "What Moves Policy Sentiments?" *American Political Science Review* 87:1: 158-172.
- Freeman, John, Daniel Houser, Paul M. Kellstedt, and John T. Williams. 1998. "Long-Memored Processes, Unit Roots, and Causal Inference in Political Science." *American Journal of Political Science*, Vol. 42, No. 4. (Oct.): 1289-1327.
- Hamilton, J.D. 1994. *Time Series Analysis*. Princeton, NJ: Princeton University Press: Chapters 15-20.
- Lebo, Matthew, and Harold D. Clarke. 2000. "Modelling Memory and Volatility: Recent Advances in the Analysis of Political Time Series." *Electoral Studies*, Vol. 19, No. 2. (March): 1-7.
- Lebo, M. and W. Moore. 2003. "Dynamic Foreign Policy Behavior." *Journal of Conflict Resolution* 47 (1): 13-32.
- Maddala, G.S., and In-Moo Kim. 2000. *Unit Roots, Cointegration, and Structural Change*. Cambridge: Cambridge University Press: Chapters 4, 6, 9.
- Rossana, Robert J. and John Seater. 1992. "Aggregation, Unit Roots, and the Time Series Structure of Manufacturing Real Wages." *International Economic Review* 33 (1): 159-179.

Topic 6 [February 26]: Intervention Models and Changes in Regime – Box-Steffensmeier
Univariate time series models continued

REQUIRED

Enders, pps. 165-195.

Enders' video presentation – see website.

Recommended

Alt, J. 1986. "Political Parties, World Demand, and Unemployment." *American Political Science Review* 79(4): 1016-1040.

Box, G.E.P. and G. C. Tiao. 1975. "Intervention Analysis with Applications to Economic and Environmental Problems." *Journal of the American Statistical Association* 70: 70-79.

Flemming, R., J. Bohte, B. D. Wood. 1997. "One Voice Among Many: The Supreme Court's Influence on Attentiveness to Issues in the US, 1947-92." *AJPS* 41(4): 1224-50.

Hibbs, D. 1977. "Political Parties and Macroeconomic Performance." *American Political Science Review* 71(4): 1467-1479.

McCleary and Hay, Chapter 3,4.

Rasler, K. and W. Thompson, 1985. "War and the Economic Growth of the Major Powers." *American Journal of Political Science* 29(3): 513-538.

Rasler, Karen. 1986. "War, Accommodation, and Violence in the United States, 1890- 1970." *American Political Science Review* 80: 921-945.

Wood, B. Dan. 1988. "Principals, Bureaucrats, and Responsiveness in Clean Air Enforcements." *American Political Science Review* 82(1): pp. 213-236.

Wood, B. Dan and R. W. Waterman. 1991. "The Dynamics of Control of Bureaucracy" *American Political Science Review* 85(3): 801-828.

Yantek, T. 1988. "Polity and Economy Under Extreme Economic Conditions: A Comparative Study of The Reagan and Thatcher Experiences." *AJPS* 32(1): 196-216.

Topic 7 [February 26]: ARCH, GARCH, FIGARCH, and Changes in Regime - Pevehouse
Univariate time series models continued

REQUIRED

Brehm, John and Paul Gronke. 2002. "History, Heterogeneity, and Presidential Approval: A Modified ARCH Approach." *Electoral Studies* 21 (3): 425-452.

Caldeira, Greg and Christopher, J. W. Zorn. 1998. "Of Time and Consensual Norms in the Supreme Court." *American Journal of Political Science* 42: 874-902.

Enders, Chapter 3 and Section 6 in Chapter 4.

Freeman, John, Jude C. Hays, Helmut Stix. 2000. "Democracy and Markets: The Case of Exchange Rates." *American Journal of Political Science*, (July): 449-468.

Recommended

Bauwens, L., S. Laurent, and J.V.K.Rombouts 2006. "Multivariate GARCH Models: A Survey" *Journal of Applied Econometrics* 21: 79-109.

Jensen, Nathan M. and Scott Schmith. 2005 "Market Responses to Politics: The Rise of Lula And the Decline of the Brazilian Stock Market." *Comparative Political Studies* 38(10): 1245-1270.

J.C.Hays, J.R. Freeman and H. Nesseseth. 2003. "Exchange Rate Volatility and Democratization in Emerging Market Countries." *International Studies Quarterly* 47: 203-288.

Maddala, G.S., and In-Moo Kim. 2000. *Unit Roots, Cointegration, and Structural Change*. Cambridge: Cambridge University Press: Chapter.

Maestas, Cherie and Robert R. Preuhs. 2000. "Modeling Volatility in Political Time Series." *Electoral Studies* 19: 95-110.

TIME SERIES MODELING IN POLITICS, PART II

Topic 8 [March 5]: *Time Series Regression Principles + Intro to VAR – Box-Steffensmeier*

Multiple time series – Regression and VAR

- (a) Time series regression
- (b) Granger causality
- (c) Vector autoregression
- (d) Illustration: Reciprocity in international relations

REQUIRED

Keele, Luke J. and Suzanna DeBoef. (2005). "Taking Time Seriously" *AJPS forthcoming*

Keele, Luke J. and Nathan J. Kelly (2006). "Dynamic Models for Dynamic Theories: The Ins and Outs of Lagged Dependent Variables." *Political Analysis*.

Pindyck, R.S. and D.L. Rubinfeld. 1991. *Econometric Models and Economic Forecasts Third Edition*. NY: McGraw-Hill: Sections 6.2 and 9.1.

Recommended

Beck, N. 1985. "Estimating Dynamic Models is not Merely a Matter of Technique." *Political Methodology* 11 (1-2): 71-90.

Beck, Nathaniel. 1991. "Comparing Dynamic Specifications: The Case of Presidential Approval." *Political Analysis* 3: 51-88.

Box-Steffensmeier, Janet M. and Tse-Min Lin. 1995. "A Dynamic Model of Campaign Spending in Congressional Campaigns." *Political Analysis* 6

Grier, K. B. 1989. "On the Existence of a Political Monetary Cycle." *American Journal of Political Science* 33 (2): 376-389.

Gujarati, Damodar. 1995. *Basic Econometrics, 3rd Edition*. New York: McGraw-Hill: Chapter 17.

Hamilton, J.D. 1994. *Time Series Analysis*. Princeton, NJ: Princeton University Press: Chapter 8.

Krause, G. 2000. "Testing for the Strong Form of Rational Expectations with Heterogeneously Informed Agents." *Political Analysis* 8(3): 285-305.

Mitchell, S. M. and W. Moore. 2002. "Presidential Uses of Force During the Cold War: Aggregation, Truncation, and Temporal Dynamics." *American Journal of Political Science* 46 (2): 438-453.

Topic 9 [March 12]: *"Reduced Form" Methods - Freeman*

Multiple time series – Regression and VAR continued

REQUIRED

Enders, Chapter 5, sections 4 to 11.

Freeman, J. 1983. "Granger Causality and the Time Series Analysis of Political Relationships" *American Journal of Political Science*: 327-358.

Freeman, J. Williams, and T. Lin. 1989. "Vector Autoregression and the Study of Politics." *American Journal of Political Science*: 842-877.

Recommended

Brandt, Patrick, and John T. Williams 2007. *Multiple Time Series Models* Sage

Freeman, J. and J. Alt. 1994. "The Politics of Public and Private Investment in Britain" *The Comparative Political of the Welfare State*: 136-168.

Goldstein, J. S., J. Pevehouse, D. Gerner, and S. Telhami. 2001. "Dynamics of Middle East Conflict and U.S. Influence, 1979-1997." *Journal of Conflict Resolution* 45 (5): 594-620.

Goldstein, J. and J. Pevehouse. 1997. "Reciprocity, Bullying, and International Cooperation: Time-series Analysis of the Bosnian Conflict." *American Political Science Review* 91 (3): 515-529.

Goldstein, J. and J. Freeman. 1990. *Three Way Street: Strategic Reciprocity in World Politics* Chicago: University of Chicago Press.

Gujarati, Damodar. 1995. *Basic Econometrics, 3rd Edition*. New York: McGraw-Hill: 746-53.

Hamilton, J.D. 1994. *Time Series Analysis*. Princeton, NJ: Princeton University Press: Chapters 10-11.

Williams, J. 1990. "The Political Manipulation of the Macroeconomic Policy." *American Political Science Review* 84(3): 767-795.

Topic 10 [April 2 and 9]: Cointegration and Error Correction - Pevehouse

Multiple time series – Cointegration and ECMs

- (a) Cointegration
- (b) error correction models
- (c) Illustration: Presidential approval and the economy

REQUIRED

Clarke, Harold D., and Marianne C. Stewart. 1994. "Prospections, Retrospections, and Rationality: The "Bankers" Model of Presidential Approval Reconsidered." *American Journal of Political Science* 38(4, Nov.): 1104-23.

DeBoef, Suzanna. 2001. "Modeling Equilibrium Relationships: Error Correction Models with Strongly Autoregressive Data." *Political Analysis* 9 (1): 78-94.

Enders: Chapter 6.

Murray, Michael P. 1994. "A Drunk and Her Dog: An Illustration of Cointegration and Error Correction." *The American Statistician* 48:37-9.

Ostrom, Charles W. and Renee M. Smith. 1993. "Error Correction, Attitude Persistence and Executive Rewards and Punishments: A Behavioral Theory of Presidential Approval." *Political Analysis 4*: 127-184.

"Cointegration" Chapter in TSASS.

Recommended

Beck, Nathaniel. 1993. "The Methodology of Cointegration." *Political Analysis 4*: 237-248.

Box-Steffensmeier, Janet M., and Andrew R. Tomlinson. 2000. "Fractional Integration Methods in Political Science." *Electoral Studies 19* (1, March): 63-76.

Durr, Robert. 1993. "An Essay on Cointegration and Error Correction Models" *Political Analysis 4*: 185-228.

Durr, Robert. 1993. "Of Forest and Trees." *Political Analysis 4*: 255-258.

Engle, R.F. and Clive W.J. Granger. 1987. "Cointegration and Error Correction: Representation, Estimation, and Testing." *Econometrica 55*:251-276.

Engle, R.F. and Clive W.J. Granger. 1991. *Long Run Economic Relationships: Readings in Cointegration*. New York: Oxford University Press.

Greene, William H. 1993. *Econometric Analysis, 2nd Edition*: Sections 19.3 - 19.6.

Krause, George A. 1997. "Voters, Information Heterogeneity, and the Dynamics of Aggregate Economic Expectations." *American Journal of Political Science 41* (4 Oct.): 1170-1200.

Smith, Robert. 1993. "Error Correction, Attractions, and Cointegration." *Political Analysis 4*: 249-254.

Williams, John. 1993. "What Goes Around, Comes Around: Unit Root Tests and Cointegration." *Political Analysis 4*: 229-236.

Topic 11 [April 16]: Forecasting Social Series – Box-Steffensmeier & Pevehouse

- (a) Forecasting as model validation and as policy analysis
- (b) Forecasting with univariate models
- (c) Forecasting with multivariate models
- (d) Illustrations: Forecasting crime in the U.S., election outcomes, and relations between India and Pakistan

REQUIRED

Clements, Michael P. and David F. Hendry "An Introduction to Forecasting" Chapter 1 in *Forecasting Economic Time Series* NY Cambridge University Press, 1998: 1-32.

Pindyck, Robert and Daniel L. Rubinfeld, "Estimating and Forecasting with Time Series Models" Chapter 18 in *Economic Models and Econometric Forecasting* Fourth Edition NY McGraw Hill, 1998: 549-579..

Kou, S. G. and Michael E. Sobel (2004) "Forecasting the Vote: A Comparison Of Election Market and Public Opinion Polls" *Political Analysis* 12(3), 2004: 277-295.

"Forecasting" Chapter in TSASS.

Recommended

Clements and Hendry, "Evaluating Forecast Accuracy" Chapter Three in *Forecasting Economic Time Series* pps. 52-78.

"Political Forecasting" A Special Issue of *International Journal of Forecasting* 1999. L. Sigelman, R. Batchelor and H. Steklar eds. [Articles on forecasting U.S, British, and French election outcomes as well as Dutch partisanship.]

Symposia and articles on forecasting particular elections in the U.S. and the American States by year of election:

2004, *PS: Political Science & Politics* 38(1), 2005: 23-40

PS: Political Science & Politics 37(4), 2004: 733-768, 813-821

1996, Wlezien and Erikson, "Temporal Horizons and Presidential Election Forecasts" *American Politics Quarterly (now APR)* 1996

1992, *The Political Methodologist* 5(2): 1994: 2-23

PS: Political Science & Politics 26, 1993: 17-23

Campbell, J. and T Mann, "Forecasting the 1992 Presidential Election: A User's Guide to the Models" The Brookings Review Fall, 1992: 22-27.

Topic 12 [April 30]: Bayesian Time Series - Freeman

- (a) Frequentist vs. Bayesian approaches to statistics in general and to time series analysis in particular
- (b) The Minnesota Prior
- (c) Illustration: Macropartisanship revisited

REQUIRED

Brandt, Patrick T. and John R. Freeman 2006. "Advances in Bayesian Time Series Modeling and the Study of Politics: Theory Testing, Forecasting and Policy Analysis." *Policy Analysis* 14(1): 1-36.

Brandt, Patrick T., Michael Colaresi, and John R. Freeman "The Dynamics of Reciprocity, Accountability, and Credibility." *Journal Conflict Resolution* forthcoming

Kadane, J. B., N.H.Chan, and L.J. Wolfson 1996 "Priors for Unit Root Models" *Journal Of Econometrics* 75: 99-111.

Recommended

Bauwens, L., M. Lubrano, and J.-F. Richard 1999. *Bayesian Inference in Dynamic Econometric Models* Oxford University Press.

Sattler, Thomas, John R. Freeman, and Patrick Brandt. "Political Accountability And the Room to Maneuver: A Search for a Causal Chain." *Comparative Political Studies*. Forthcoming.

Sims, C.A. and T. Zha 1998. "Bayesian Methods for Dynamic Multivariate Models" *International Economic Review*

_____ 1999 "Error Bands for Impulse Responses" *Econometrica* 67(5): 1113-1156.

And more ... Topic 13 [May 7]: *The Social Sciences and Time Series - All*

We will summarize our principal arguments, revisit some of the issues raised regarding the relevance of time series methods for social science, look briefly at some extensions and connections to other kinds of dynamic models, and make some recommendations regarding the implementation of time series methods.

REQUIRED

Brandt, Patrick, John Williams, Benjamin Fordham, and Brian Pollins. 2000 "Dynamic Modeling for Persistent Event Count Time Series" *AJPS* October: 823-843.

Brandt, Patrick T. and John R. Freeman "Modeling Macro Political Dynamics"
Revised version of a paper delivered at the Annual Meeting of the A.P.S.A.
September 2005.

Dickinson, Matthew J., and Matthew J. Lebo. 2005. "Reexamining the Growth of the Institutional Presidency." Typescript.

Video presentation by Matt Lebo – see website.

Recommended

Lebo, Matthew, and Janet M. Box-Steffensmeier. 2007. "Dynamic Conditional Correlations in Political Science."