The lectures and readings for this semester of the seminar focus on simultaneous equations models and time series analysis. The section on simultaneous equations covers the traditional structural modeling issues of identification and estimation. A critique of structural modeling follows in the methodology section. The lectures on time series analysis will emphasize the use of time series methods as supplemental or complementary procedures for achieving the same goals as structural modeling. Consequently, there will be less emphasis on univariate models and forecasting, and greater concentration on multivariate models, the examination of relations between variables and the relationship between structural models and time series models. To minimize overlap with Economics 582, there will not be an extensive discussion of univariate model identification procedures during lectures. Students will be expected to learn the theory of univariate modeling largely from our text and through homework assignments.

There will be one midterm examination (after approximately seven weeks) covering simultaneous equations models. This will count for 30% of the final grade. An additional 30% of the grade will be based on a set of homework assignments covering materials from all topics in the course. These assignments will enable us to avoid the indignity of yet another final examination, but they should be treated as an examination in the sense that all work should be done without the assistance of other students.

The remaining 40% of the course grade is based on an individual research project involving an advanced econometric topic. The choice of topic is open; you may consider econometric procedures introduced in a previous or the current econometrics course. Additional ideas can be found in various textbooks which I can lend you, including those by Maddala, Kmenta, and Judge, et al. (their advanced text). You might also consider an empirical issue raised in other economics courses, which would lend itself to a sophisticated econometric analysis. In any case one goal in this assignment is to get you started or help you along with a major research agenda which could ultimately lead to a thesis or significant research paper.

In evaluating your work I will be looking for demonstration of mastery of some important body of econometric theory. It is important that you show a knowledge of your topic which goes beyond material presented in this or prior courses. Your own contribution can be in the form of working through the missing steps in theoretical derivations or empirical work using some advanced procedures. You may have to work with a statistical package, and I will offer guidance on which package would be most appropriate for your problem. I can also provide assistance in the form of self-paced laboratory experiments which can help you learn RATS, SHAZAM, or TSP. I should also mention that an up-to-date version of TSP is now available on the VAX cluster as is the very comprehensive SAS program and a package for multiple time series modeling.

Examples of topics which have generated successful papers in the past are: Econometric issues in specification and estimation of flexible function forms for cost or demand analysis; theory and application of qualitative choice models (logit/probit); alternative approaches to causality testing; pooling models. Other areas which I think could lead to promising papers are: limited dependent variable models (censored and truncated regression models); the application of the Zellner-Palm methodology to a small economic model; application of the transfer function or intervention model; application of the Hendry methodology in an error correction model; a survey of the Monte Carlo method with small pilot project.

A proposal outlining your project and including a few key references is due February 10. I would like to use some class time towards the end of the term for informal presentations of your projects. The idea here is to introduce the class to an area of econometrics which may be new to them, to describe how it might be useful to them, and to discuss any problems you might have encountered. The final paper is due on the last day of our class with a 15% penalty imposed if I have to submit an incomplete grade.

Readings and Topics

I. Simultaneous Equations Models
Judge, Chapters 12, 13

II. Methodology
Judge, et al., Chapter 22.

III. Introduction to Time Series Models
Judge, et al., Chapter 25.

IV. Multiple Time Series Models and Dynamic Systems
A. Transfer functions, distributed lags, intervention models.
Judge, Chapters 26-27.

B. The Zellner-Palm Methodology

C. Vector ARMA and Vector Autoregression Models
Federal Reserve Bank of Kansas City
925 Grand Avenue
Kansas City, MO 64198