Class Objective:

This class focuses on how to build and use computable general equilibrium (CGE) models to do both research and policy advising. This class is an opportunity for students to develop an additional tool to do economic analysis. Students will develop better data management skills and attempt to maximize its use in economic analysis.

Each student will choose a region in Colorado or a country (that has sufficient data) and your responsibility is to collect data that describes that region in sufficient detail to construct a social accounting matrix (SAM). A SAM is a method to organize data for the firm or sector’s decision to purchase intermediate inputs, land, labor, capital and also pays an array of taxes to the local, state and federal governments. Data is collected to represent the expenditure patterns for multiple household groups distinguished by annual income. We also collect data on taxes collected by various levels of government and the services (transportation, justice, education, etc.) that are supplied by government. All of this data is organized in the SAM which is consistent with a general equilibrium model.

After the data has been put into the SAM, the SAM is merged with the equations of a CGE model. When the CGE model can exactly reproduce the data in the SAM, the model is calibrated the model. The CGE model can be used to examine the impact on the level and distribution of economic activity on issues such as:

1) The expansion or contraction of export sectors.
2) Tax policy such as changing income, sales or property tax rates.
3) Changes in total factor productivity and the marginal productivity of labor or capital.
4) The transition to wind power or natural gas in supplying electricity to a state.
5) The impact of fracking.
6) The impact of natural disasters such as the flood in Colorado that occurred several months ago.
7) A wide range of agricultural issues.

There are many other issues that can be analyzed.
Grading

There will be quite a bit of data gathering for the class. Two primary websites everyone will be using are

- http://www.bls.gov/

Problem Set 1 – 20%
- Use the supplied CGE model and run a range of simulations to understand how a CGE model works. Excel file and word document required. Due date to be determined.

Problem Set 2 – 20%
- Choose a state and start constructing a social accounting matrix. Due date to be determined.
- Master Stata program to organize the data

Problem Set 3 – 20%
- Each student is required to present two CGE papers on a specific topic along with at least one econometric paper on the same topic. The student will also run simulations with their model that either supports or rejects the findings of the other papers.

Problem Set 4 - 20%
- Calibrated CGE model completed.

All simulations will take into account the following paper.

Readings

I. Surveys of Computable General Equilibrium Models


II. Economic Resilience of Natural Hazards


III. Tax Policy


III. Promoting Economic Growth


V. Environmental


