

PEC/ECO/PSC 575 POLITICAL ECONOMY 1: SOCIAL CHOICE AND POLITICAL ECONOMY

Fall, 2008
TTh 10:00-12:00
Harkness 112

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Hours: by appointment

We will take up several foundational topics in theoretical political economy. The main part of the course consists of four parts. First, we cover axiomatic social choice, including Arrow's theorem and the median voter theorem in one dimension. Second, we investigate positive social choice theory, covering the case of finite tournaments and extending the analysis to infinite environments. We will cover Plott's theorem on symmetry conditions at core points and McKelvey's theorem on majority cycles. Third, we examine connections between the social choice approach and the game-theoretic analysis of elections. Fourth, we take up dynamic models of policy making based on non-cooperative models of bargaining, and we extend these ideas to dynamic social choice.

I would like to maintain flexibility with respect to the exact topics to be covered, the time allocated to those topics, and the level of mathematical detail of the analysis. Although they will probably be unnecessary for the course, I mention some nice references on such technical topics as Zorn's lemma, measure theory, Markov chains, metric spaces, and differential topology. We will make use of some of these tools, but the books are not required for the course.

- W. Hildenbrand (1974) *Core and Equilibria of a Large Economy*, Princeton: Princeton University Press.
- N. Stokey and R. Lucas (1989) *Recursive Methods in Economic Dynamics*, Cambridge: Harvard University Press.
- V. Guillemin and A. Pollack (1974) *Differential Topology*, Englewood Cliffs, NY: Prentice-Hall.

In what follows, I describe the four main topics of the course in more detail, and I suggest some suggested readings relevant to the topics. The lectures, however, will be based on notes that I will distribute.

1. AXIOMATIC SOCIAL CHOICE THEORY

First, we study axiomatic social choice theory, where we view collective decisions as arising from a social preference relation determined in some arbitrary way by the preferences of individuals. The approach is axiomatic: we posit a domain of possible individual preferences, and we examine the implications of normative restrictions on preference aggregation rules. We begin with fundamental concepts used throughout the course: binary relations, preferences, and choice. We will prove Arrow's impossibility theorem and related results of Gibbard and Nakamura, which inform us of inherent limitations on the rationality of collective decisions. And we consider Black's possibility theorem for majority rule in the one-dimensional model with single-peaked preferences.

- D. Austen-Smith and J. Banks (1999) *Positive Political Theory 1: Collective Preference*, Ann Arbor: University of Michigan Press.

2. POSITIVE SOCIAL CHOICE THEORY

The second topic maintains the social choice perspective, but rather than an axiomatic analysis of voting rules defined over a domain of possible preferences, we attempt to deduce bounds on social choices on the basis of coalitional incentives for a given configuration of preferences. We consider continuity properties of social preferences, the top cycle, and the uncovered set in three types of environments.

Finite model ∴

- H. Moulin (1986) "Choosing from a Tournament," *Social Choice and Welfare*, 3: 271–291.

Distributive model

No specific reading, but I like the graphic.

Spatial model

- R. McKelvey (1979) "General Conditions for Global Intransitivities in Formal Voting Models," *Econometrica*, 47: 1085–1112.

- N. Schofield (1983) “Generic Instability of Majority Rule,” *Review of Economic Studies*, 50: 695–705.
- R. McKelvey (1986) “Covering, Dominance, and Institution-Free Properties of Social Choice,” *American Journal of Political Science*, 30: 283–314.
- J. Banks, J. Duggan, and M. Le Breton (2006) “Social Choice and Electoral Competition in the General Spatial Model,” *Journal of Economic Theory*, 126: 194–234.
- J. Ferejohn, R. McKelvey, and E. Packel (1984) “Limiting Distributions for Continuous State Markov Voting Models,” *Social Choice and Welfare*, 1: 45–67.

3. DOWNSIAN ELECTORAL COMPETITION

We next focus on strategic incentives of political actors, namely, political candidates vying for an elected office. The main analytical problems we consider are existence and characterization of equilibrium in the electoral competition model. We will see close connections to the theory of positive social choice. It is possible that we can extend this topic to include models of policy-motivated candidates, probabilistic voting, and citizen-candidates.

- G. Laffond, J.-F. Laslier, and M. Le Breton (1993) “The Bipartisan Set of a Tournament Game,” *Games and Economic Behavior*, 5: 182–201.
- J. Banks, J. Duggan, and M. Le Breton (2002) “Bounds for Mixed Strategy Equilibria and the Spatial Model of Elections,” *Journal of Economic Theory*, 103: 88–105.
- I. Glicksberg (1952) “A Further Generalization of the Kakutani Fixed Point Theorem, with Application to Nash Equilibrium Points,” *Proceedings of the American Mathematical Society*, 3: 170–174.
- P. Reny (1999) “On the Existence of Pure and Mixed Strategy Nash Equilibria in Discontinuous Games,” *Econometrica*, 67: 1029–1056.
- J. Duggan (2007) “Equilibrium Existence for Zero-sum Games and Spatial Models of Elections,” *Games and Economic Behavior*, 60: 52–74.

- L. Simon and W. Zame (1990) “Discontinuous Games and Endogenous Sharing Rules,” *Econometrica*, 58: 861–872.

4. DYNAMIC POLICY CHOICE

We end by considering non-cooperative bargaining models of policy-making and coalition formation and connections to social choice. We first take up models in which bargaining terminates once an agreement is reached, and we then extend the analysis to fully dynamic models in which policy-making continues indefinitely. We explore the implications for a theory of dynamic social choice.

- D. Baron and J. Ferejohn (1989) “Bargaining in Legislatures,” *American Political Science Review*, 83: 1181–1206
- A. Okada (1996) “A Noncooperative Coalitional Bargaining Game with Random Proposers,” *Games and Economic Behavior*, 16: 97–108.
- D. Ray and R. Vohra (1999) “A Theory of Endogenous Coalition Structures,” *Games and Economic Behavior*, 26: 286–336.
- J. Banks and J. Duggan (2000) “A Bargaining Model of Collective Choice,” *American Political Science Review*, 94: 73–88.
- P. Dutta and R. Sundaram (1998) “The Equilibrium Existence Problem in General Markovian Games,” in Mukul Majumdar, ed., *Organizations with Incomplete Information: Essays in Economic Analysis, A Tribute to Roy Radner*, Cambridge.
- J.-J. Herings and R. Peeters (2004) “Stationary Equilibria in Stochastic Games: Structure, Selection, and Computation,” *Journal of Economic Theory*, 118: 32–60.
- M. Chwe (1994) “Farsighted Coalitional Stability,” *Journal of Economic Theory*, 63: 299–325.
- H. Konishi and D. Ray (2003) “Coalition Formation as a Dynamic Process,” *Journal of Economic Theory*, 110: 1–41.