Lecture IV: Farm Groups, Lobbying, Targeting, and Rural Communities

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Utility Maximizing Politician

- Consider a slightly reformulated utility model for a utility maximizing politician

$$\begin{aligned} &\max U\left(g\left(v,z,k,w\right),q\right) \\ &\text{s.t. } p'q \leq Y + w_g g\left(v,z,k,w\right) \end{aligned} \tag{1}$$

  What is really different about this formulation is the function $g\left(v,z,k,w\right)$ which I am using as the probability that the individual will be elected to an office – Representative.
- There are two choice variables in this formulation – the level of goods consumed by the individual (q) and the votes that the person has (or possible would) cast (v)

Decision Functions

- Most of graduate microeconomics involves solving for choice variables as functions of the exogenous variables. For example in the simple consumer model

$$\begin{aligned} &\max U(q) \\ &\text{s.t. } q'p \leq Y \end{aligned} \tag{2}$$

  which yields $q^*(p, Y)$.
- In this case, we assume that we could derive two sets of optimization functions - one the classical consumer demand and the other is an optimal voting function

$$v_i^*(z, k, w, p, Y) \tag{3}$$

  where v_i^* is the optimal vote on issue i (i.e., the farm bill)

Time Out for Microeconomics

- Simple model of Cost Minimization

$$\begin{aligned} \min_{x_1,x_2} & \; w_1 x_1 + w_2 x_2 \\ \text{s.t. } & y = x_1^{\alpha} x_2^{\beta} \end{aligned} . \tag{4}$$

- We set up the Lagrangian

$$L = w_1 x_1 + w_2 x_2 + \lambda \left(y - x_1^{\alpha} x_2^{\beta} \right) \tag{5}$$

- And solve to yield the derived demand for input x_1

$$x_1^* \left(w_1, w_2, y \right) = y^{\frac{1}{\alpha+\beta}} \left(\frac{w_1}{w_2} \right)^{\frac{\beta}{\alpha+\beta}} \tag{6}$$

Determinants of the Vote

- z is the characteristic of the district – what percentage of the voters in the district are corn farmers? cattle farmers? work in factories?
- k is the terms of bill under consideration – target prices, price floors, export enhancement.
- w campaign donations.
- We could think of the function as a quadratic of interaction between the characteristics terms of the bill and the characteristics of the district

$$\tilde{v}_i = \alpha_0 + \alpha_1 z_1 + \alpha_2 z_2 + \alpha_3 k_1 + \alpha_3 k_2 + \frac{1}{2} A_{11} z_1 z_1 + \cdots$$
$$v_i = \frac{\exp\left(\tilde{v}_i\right)}{\exp\left(1 + \tilde{v}_i\right)} \tag{7}$$

Randomness

- Next, suppose that we do not know perfectly how the terms of the farm bill will affect individuals in your district - there is randomness.
- To model this, suppose that we add randomness to the k_j

$$\tilde{v}_i = \alpha_0 + \alpha_1 z_1 + \alpha_2 z_2 + (\alpha_3 + \nu_3) k_1 + (\alpha_4 + \nu_4) k_2 + \frac{1}{2} A_{11} z_1 z_1 + A_{12} z_1 z_2 + (A_{13} + \nu_{13}) z_1 k_1 + (A_{14} + \nu_{14}) \cdots \quad (8)$$

$$v_i = \frac{\exp(\tilde{v}_i)}{\exp(1 + \tilde{v}_i)}$$

What is the Role of the Farm Lobby?

- Purely cynical - the farm lobby contributes money to farm campaigns (Δw).
- Farm organization provide information that reduces the uncertainty about how farm programs will affect the representative's voters – how will the farm program affect agriculture in my district?
- On a slightly different tack - farm organizations may contribute to "writing the farm bill."