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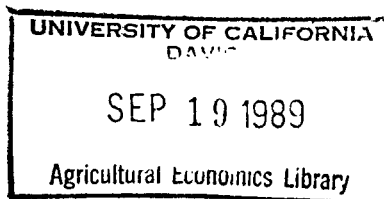
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# ECONOMIC THEORY AND FARM POLITICS

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## Economic Theory and Farm Politics

Bruce L. Gardner

What can economics offer in the explanation of farm politics? The first accomplishment is to reduce the subject to a maximization problem analogous to others encountered in economic theory. A second accomplishment is to make this problem interesting -- to make it really illuminating about politics. Both steps are difficult and the accomplishments to date have been only partial.

The first part of this paper spells out details of the contribution of economic theory to explaining politics. The second part briefly reviews work on agricultural policies in relation to this theory. The third part discusses implications for positive and normative economics in agricultural policy analysis. (When, if ever, should we rock the boat?)

### Economic Theories of Politics

The hope is that economics can explain political choice in agriculture in much the same way as it explains individual choice of consumption goods. This may seem a forlorn hope since consumption theory is standardized and well established but economic theories of politics are various and unproven. The perspective of economic theory in both cases is to look at choices as the outcome of maximization subject to constraints. The consumer maximizes a utility function subject to budget and time constraints. Institutions of public choice maximize a political preference function subject to the constraints they face.

Questions that arise in the application to politics include: What are the arguments of the political preference function? Is it stable over time? What are the constraints? Can we be confident that sufficient conditions

exist for a unique, stable interior solution (e.g., a convex preference function and quasi-concave constraints as in consumer theory)? How does the maximization work? These questions are considered in turn.

Content of political preferences. By analogy with the Bergsonian social welfare function, the arguments of the political preference function can be taken as utilities of individuals. The work in theoretical welfare economics that permits (and via impossibility theorems limits) the replacement of unmeasurable and interpersonally incommensurable utility by simple preference relations can thus be carried over to the political preference function.

In the application of a political preference function to economic policies, the problems of measuring utility are evaded by expressing each person's utility as a function of income. Policies influence the level of the political preference function by influencing people's incomes. The level of this function, which is the indicator of political objectives being achieved, depends upon the way in which people's incomes enter it. The function is essentially an aggregator function of individual incomes:

$$(1) \quad V = V(Y_i), \quad i = 1, n$$

where  $V$  is the level of political success,  $Y_i$  is individual income, and  $n$  is the number of individuals that are considered in the political process.

This specification may be thought too narrow, since the objectives of policies are not limited to people's incomes. People generally value having lakes free of fertilizer runoff and prefer fresh air to the smell of huge cattle feedlots. The existence of many picturesque farmsteads in the countryside appeals to many. Such amenities are no problem for the ideal Bergsonian welfare function, but they do create problems in reducing utility to income. To conduct political choice as a maximization problem the analyst

has to find a cash equivalent for these benefits (or costs) and add them to (or subtract them from) income. This is difficult if not impossible. But the problem arises in public choice whatever framework we use to organize our thoughts. To decide whether to ban a pesticide even though doing so reduces corn yields by one percent it is necessary to know whether the benefits of the ban exceed the cost of losing one percent of the corn crop.

The key to analyzing such issues is to express the preference function in terms of gains to interest groups rather than individuals. Then one of the  $Y_i$  becomes, for example, aggregated environmental benefits and another becomes the gains of landowners. With this specification it is not necessary for the analyst to impose a rate of tradeoff between environmental and landowner gains; rather it is a matter for the political preference function to reveal. This approach requires aggregation of all the individuals who compose each interest group before political choice begins, but this is congruent with the way representative government actually works. With millions of individuals the government cannot possibly optimize equation (1) over each individual separately; instead politics weighs and rewards the interests of groups of citizens. The cost of letting the  $Y_i$  be interest groups is that the results will not pertain to individuals. One of the  $Y_i$  might be "wheat producers' gains," but every wheat producer is also a consumer and shares in environmental gains. To examine the gains of any individual the analyst has to know the individual's participation in each interest group. But this is also the way it really is in political choice.

Stability of preferences. The shift from individuals to interest groups is analogous to aggregation from individual to market level in consumer theory. The main uses of consumer theory, too, are at the market level.

Demand functions are derived from a utility function which is assumed stable and exogenous so that we explain changes in consumption by means of changes in income and prices, and not changes in preferences. But perhaps political preferences are less stable or are not exogenous? This possibility leads to a research agenda of explaining political preferences.

Such an agenda justifies the work on goals, values and beliefs that seems to have been followed most systematically in the early 1960s, exemplified in publications such as Center for Agricultural and Economic Development (1961) or Brewster (1968). The goals-values-beliefs (GVB) approach starts with the world-view of farm people, and of non-farm people about agriculture. For example, from this approach comes the idea of family farming as an inherently good means of socio-economic activity, and as such uniquely deserving of protection and support. The motivating force need not be normative values. "Agricultural fundamentalism" -- the belief that a healthy agriculture is a necessary condition for a healthy economy -- is a matter of positive economics (Davis, 1949).

How do people's goals, values, and beliefs bear on the political preference function? The relevant aspect of the function for most policy questions is its partial derivatives with respect to different individuals' incomes. Evaluating policies means in practice assessing a change in policy, and optimal policy is arrived at when any change reduces  $V$ . This is just to say that maximization of  $V$  is characterized by the first-order condition

$$(2) \quad \frac{dV}{dt} = \sum_{i=1}^n \frac{\partial V}{\partial Y_i} \frac{dY_i}{dt} = 0,$$

where  $t$  is any policy instrument. The partial derivatives can be thought of as "weights". If a dollar for every person has the same effect on  $V$ , then everyone has the same weight in the political preference function.

From this viewpoint the GVB approach is primarily a research program for explaining the weights. It is analogous to consumer marketing research in explaining consumption behavior. It is not in keeping with the thrust of economists' demand studies, which take tastes as exogenous. The GVB research program has not yet advanced far in providing a theory of or empirical regularities in the weights. The most generally useful result to date comes not from the agricultural economics literature but from the notion commonly asserted and used systematically in Peltzman (1976) that  $V_{11} (= \partial(\partial V / \partial Y_1) / \partial Y_1) < 0$ . This means that the weights are endogenous. It means more specifically that when people's incomes fall, their political weight rises. This has analogous consequences to diminishing marginal utility for a particular good in consumer theory, generating convex political indifference curves between people's incomes.

The endogeneity of political weights does not imply unstable political preferences. The question of instability requires further work on the GVB agenda. To date there does not appear to be evidence that political preferences pertaining to agricultural policies are less stable than market-revealed consumer preferences. Indeed one might detect more taste changes for beef than changes in willingness to support farm incomes.

Constraints on political action. The resource constraint is not the government's budget, because raising taxes or borrowing is a policy option. The constraints involve characteristics of the economy and the ability of policy instruments to act upon them. For example, the constraints on generating income gains to tobacco producers by using marketing quotas are the willingness of buyers to pay (i.e., demand function) for tobacco and the alternatives available for land moved out of tobacco. The constraints are

typically nonlinear. The analogy of political theory with consumer theory is closer for household production models, which also can have complicated constraints. Often the easiest way to handle the constraints is to incorporate them in the  $dY_1/dt$  terms of equation (2).

Consider an export subsidy on wheat. This is expected to increase the incomes of wheat growers and reduce the incomes of consumers. What are the constraints on this activity? First, the government must acquire the funds to pay the subsidy. This is not a fixed constraint, but a hindrance imposed by the reluctance of taxpayers to give up their money, by the deadweight loss due to the additional taxes (see Browning), and by the administrative costs of the added taxes. Second, there are constraints imposed by the domestic and foreign demand conditions for wheat. For example, the more elastic is domestic demand, the larger the export subsidy will have to be to obtain a given producer income gain. Third, supply conditions in the domestic economy are an important consideration. If large, undesired government stocks are available, an export subsidy may be a least-cost way of disposing of them. More fundamentally, if the supply function of wheat is very elastic, meaning rents are small or nonexistent, it will be difficult to increase producers' incomes significantly. If the export subsidy raises the average price of wheat in the short run, it will draw in sufficient resources to drive down factor returns to approximately their no-subsidy level. Thus,  $dY_1/dt$  for producers in equation (2) will be essentially zero; and since  $dY_1/dt$  for domestic consumers and taxpayers will be negative, the export subsidy will not be attractive so long as consumers and taxpayers have positive weights.

The preceding factors are not constraints in the classical linear programming sense -- an irresistible brick wall facing maximization. Rather



the constraints are a series of hindrances that raise the costs of operating in desired directions. This is why they can often be well handled by incorporating them in the  $dY_1/dt$  and proceeding to solve for levels of policy instruments that satisfy equation (2).

Will there be a well-behaved solution? Consideration of this issue is made easier by the division into political preferences (weights) and constraints as just outlined. On the constraint side, we want any equations to be concave in the policy instruments -- that marginal costs of a policy increase, and marginal income gains decrease, as  $t$  increases. For commodity market interventions this is achieved by having product and some factor supply functions be upward sloping and product and factor demand functions be downward sloping. These conditions imply increasing marginal deadweight losses as  $t$  increases, and this gives us concave income redistribution possibilities. But this is not the case for lump-sum transfers nor for the cost of taxes raised (unless the tax burden for agricultural support grows so large that increasing support changes the marginal deadweight costs of the whole tax system).

With respect to political preferences the situation is more problematical because it is less clear what is required for them to be well behaved. We want convex political indifference curves analogous to those in consumer theory. The Peltzman argument mentioned earlier provides this result. More commonly used, however, are fixed-weight political preference functions which imply linear indifference curves. Baffes and Chambers (1989) analyze pitfalls in this approach, and emphasize generally the importance of second-order conditions.

A problem with political preferences is that the determination of them is itself complex, as the GVB approach indicates, and moreover has an economic dimension that can cause serious complications. For example, consider a model in which the political weight of members of an interest group depends on how much the group spends on political action. It could then occur that governmental support to a group, by increasing the group's wealth, would generate still more political action, which in turn would increase the group's political weight (and thus lead to more government aid, more political action, a still higher weight, ad infinitum). This raises the possibility of concave political indifference curves with no interior maximum of equation (2). The first interest group off the mark in political action may capture the whole pie. This result is unlikely because the constraints will be even more concave than the preferences. When one group gets a large enough fraction of the whole national income, any appreciable marginal deadweight cost will reduce to zero that group's gain from further redistribution in its favor.

Political institutions. The question of how the maximization process works pertains to a country's political institutions. The discussion up to this point presumes a given set of such institutions. But the possibility of dynamically unstable political weights leads to the larger question of the determination of political institutions. For example, if the first group off the mark did capture the government there might be a revolution. A full theory of political economy would explain why political institutions are as they are, and maximization would involve the specifications of optimal ones (e.g., see Buchanan and Tullock).

For purposes of agricultural policy analysis the political institutions can presumably be taken as given.

How does the policy process work in the context of maximizing political preferences? The first key fact (considering the U.S. case) is that we have representative democracy -- the citizens choose by periodic election a group of professional decision-makers. This raises the issue of the decision-makers themselves as an interest group. While some literature, notably Niskanen, considers these interests and also the interests of governmental employees ("bureaucrats"), the more common approach in the political economy of regulation is to follow Peltzman in assuming "sufficient competition for the regulator's office" (p. 223) so that decision-makers do not use their powers to regulate agriculture according to their own interests, e.g., as landowners.

The second issue is the institutional determination of the political preference function. Using interest groups rather than individuals as the unit of analysis was stated earlier to be analogous to aggregating from individual to market demand in consumer theory. But the kind of simple adding-up aggregation that generates market demand functions for goods is not plausible for collective choice. How do interest groups form and how do they manage to make collective decisions that express their collective views? The work of Olson (1965) set the standard for considering these issues. Then there is the further problem of how the political preference function is generated -- how a collective choice is derived from conflicting interests. Arrow's impossibility theorem first showed the depth of the problem. Public choice theory since Arrow has wrestled with ways to model collective decision-making. A simple theory was mentioned earlier, namely that a group's influence (political weight) is a function of its spending on political action, an instance of the political golden rule (he who has the gold, rules). But this is too simple.

Both in the collective preference process that determines a group's existence and political position, and in the lobbying and voting process in which all the groups' positions are debated to arrive at a national policy decision by the government, the activities are characterized by conflicting objectives of individuals, uncertain information, and opportunities to form coalitions, make promises, and deliver or fail to deliver on them. The situations that result can be analyzed in terms of principal/agent problems or bargaining problems more generally. The analytical tool most obviously adapted to such situations is game theory, and much work in political economy in recent years has involved application of game theory.

What is the useful output of such theory? At the general level what is desired is a micro-level framework from which a maximization approach such as equation (2) is derivable. What conditions of individual preferences and behavior and institutional environment can be expected to result in a stable political preference function with appropriate convexity? What characteristics of individuals and groups determine the nature of (particularly the relative weights of different interest groups in) the political preference function? In particular, what is the role of group size, uncertainty about consequences of actions, individuals' altruism/selfishness or their envy/sympathy with respect to other socio-economic heterogeneity within groups, or a common ideology within groups or the society on a whole? The goal is theory that transforms data on individual and group characteristics, economic conditions, and rules of action (institutions) into policy outcomes -- in our case the levels of agricultural policy instruments. Notable attempts at the general level are the recent works of Becker and Olson, and within agricultural economics, Rausser. But the existing general work is quite sketchy

empirically. How useful these theories are in explaining the observed evolution of policies is still unsure.

Some of the most interesting recent work steps back from the big picture to examine the consequences of plausible kinds of strategic behavior in controlled circumstances that contain the essential elements of collective choice problems. An example is Hillman and Riley. They investigate the hypothesis that in political equilibrium the gains of interest groups from legislation just equal the costs of lobbying the government to obtain the gains. This idea has an intuitive appeal by analogy with competitive investment in market settings, but the strategic and political elements complicate matters. For example, one can easily imagine an industry spending \$3 million to obtain import protection that raises buyers' costs by \$5 million and increases the industry's rents by \$4 million (with a \$1 million deadweight loss). At the same time, one can imagine lobbyists for the buyers spending \$3 million to avoid the increased costs. So their joint spending is \$6 million, well above the value of the "prize" that the industry could win. What Hillman and Riley do is show how the equality of political gains and political spending can result from a plausible characterization of the lobbying situation, and how this outcome is sensitive to some key elements of the situation (notably risk aversion and asymmetric information between interest groups). They do not resolve the issue but they do accomplish a key purpose of economic theory, namely to identify the fundamental causes of events and how they work in the context of hypotheses which can then be confronted with data in the hope that the theory will help explain actual events.

### Relation to Research on Farm Politics

Economists have done a good deal of empirical work on farm politics. What light do the more general theories of political economy throw on this empirical work (and what does the empirical work say about the theories)? Research on goals, values, and beliefs pertaining to agriculture has already been discussed. It fits into the general economic approach as a means of determining the political weight of different groups. Its main contribution has been the development of hypotheses as to why the political weight on farmers' incomes has been high.

A similar type of research at the level of interest group action (rather than individual values) is that which investigates the extent of lobbying activity by different commodity and other interest groups in the political process. Good examples are studies in Hadwiger and Browne (1978) and Guither's study of the development of the 1985 farm bill.

Generalizing from observation of economic policy-making over many years, several investigators have applied to agriculture the notion of the "iron triangle," composed of industry lobbyists, Congressional committee staffers, and executive-branch specialists on the industry. The hypothesis is that because the policy agenda is very full, the details of commodity policy are left to this sub-government of especially well informed experts, who then establish the policy. But they are not only especially well informed, they are specially interested, namely they place a greater weight on the industry's interests than those in government outside the triangle do.

A related but more sweeping hypothesis is that not just a sub-government, but the government as a whole is in effect owned and operated by a ruling elite, whose interests thereby are heavily weighted in every policy. A

similar theory is held by some rural populists, with the particular feature that the ruling interests are opposed to the interests of farmers, except perhaps very large-scale or corporate farmers. Since this theory predicts that ordinary farmers are heavily taxed and not subsidized, whereas in reality they are lightly taxed and heavily subsidized, this is one of the few instances in which a political theory can be fairly decisively rejected.

Several economists have examined the literature of public choice and related topics and used it to justify regressions explaining votes in the legislature or levels of protection of agriculture as a function of variables suggested by the general theories. Examples include Abler, Balisacan and Roumasset, Williams, and the studies in Anderson and Hayami. The results are typically suggestive but not as illuminating as one might hope. For example, several studies have found in cross-country econometric investigations that increased GNP per capita leads to more protection of agriculture. But the underlying reason for this outcome is not clear, and such an income effect has not been a feature of the general economic theories of politics. Perhaps in the future more attention to jointly developed theory and empirical investigation derived closely from the theory will provide findings that are less ad hoc and more definitive. This is not to minimize what has been learned from empirical work on agriculture politics, but just to say that the area is only beginning to be opened up to scientific investigation.

#### Positive and Normative

The models and hypotheses that have been discussed are part of positive economics -- they treat government policies as phenomena to be explained but do not judge them. However, the line between positive and normative by the end of such studies can become thin. Compare Olson (1982) and Becker. Olson

discusses the formation of interest groups and their interaction in the political arena; his positive economics leads him to the conclusion that economic policies dominated by interest groups will inexorably tend to cause a substantial decline in national income, even unto the decline of the nation. This outcome could be described in positive-economics terms, but the portions of the book on policy implications have a clear normative tinge. If you are riding in a car and you see what looks like the edge of a cliff coming up fast it's hard to resist recommending that the driver apply the brakes. Yet Becker surveys very much the same terrain with similar deadweight findings, without ending in even a tincture of judgment. Should he have concluded his article: "Can we stop this madness?"

Olson's view elaborates a notion that occurs to many people -- that if our encrusted institutions could only be swept away, we would be able to make ourselves much better off. But at the same time nagging doubts are encouraged by examples like the following from medieval Iceland:

It had: no foreign policy, no defence forces, no king, no lords, no peasants, no dispossessed aborigines, no battles (till late on), no dangerous animals, and no very clear taxes. What, given this blank slate, could possibly go wrong? Why is their literature all about killing each other? (Shippey, p. 17)

On the other hand, too strong an attachment to existing political institutions generates an "everything is optimal" syndrome. It leaves the economist as policy adviser in a position like that of an investment counselor when all securities' returns follow a random walk.

Tweeten has taken the dilemma by the horns as follows:



Our welfare economics paradigm has not served the profession well. It has tended to favor the status quo and special interest groups. To service the wider interests of society, economists need to begin work on the professional equivalent of placing a man on the moon -- specifying a social welfare function (Tweeten, p. 142).

The three discussants of his paper whose comments follow it appear to believe that Tweeten should have prefaced this recommendation with: "Let's start some madness." Who is right?

Analytically, a social welfare function is quite like a political preference function. They both have the same arguments and the same kind of necessary and sufficient conditions for a maximum. But the political preference function has no apparent normative force.

One reason why economists get into a normative stance is that they wish to give a special place to a particular social welfare function, one that simply adds up the incomes unweighted, so that equation (2) becomes

$$(3) \quad \sum_{i=1}^n \frac{dY_i}{dt} = 0.$$

We keep increasing any policy instrument as long as the sum of gains (national income change) is positive. By this criterion the instruments that have promise in agriculture are research, information, subsidies of environmental amenities, provision of other public goods, and interventions that offset pre-existing distortions. But the usual commodity market interventions reduce national income, because of deadweight losses.

By what warrant can we choose (3) over (2) with unequal weights? The political preference function could ideally be justified by a political

"invisible hand" theorem. The choices made by a representative democracy reflect the public's preferences just as market prices and output reflect the society's demand for market goods. People voting their own interests are led unknowingly to the public interest, as if by an invisible hand.

The counter argument requires public-choice failure just as the anti-market argument requires market failure. But what constitutes public-choice failure is not so clear. It is not a failure of any specifiable marginal condition to be met. It is not the existence of deadweight losses, which may be viewed as the price paid to accomplish social preferences. We lack criteria for the price being too high.

An approach to demonstrating public-choice failure would be to show that a majority of people living in a majority-rule democracy tend chronically be dissatisfied with what their government is doing. A theory of political failure requires an "invisible noose theorem"; a result showing that if you give people democratic government they will tend to choke themselves with it. Olson provides the outline of one. The checks and balances introduced by the U.S. Founding Fathers show that they were concerned about the problem.

The kind of research that appears most promising in developing this area is examination of strategic behavior in various situations, as in Hillman and Riley. The closest example in agricultural economics concerns international trade policy, e.g., Karp and McCalla. This topic concerns players in a different institutional structure, essentially anarchy except for markets, so the game is a noncooperative one, not a bargaining game. Applications to price policies are made in Sarris and Freebairn, and Vanzetti and Kennedy. Bringing these approaches into domestic policy analysis might prove enlightening.

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