# AGRICULTURAL COMPETITIVENESS: MARKET FORCES AND POLICY CHOICE

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# *Public Policy for Agriculture: The Role of Constitutions, Institutions and Political Economy*

## INTRODUCTION

Agricultural economists, when asked to evaluate certain agricultural policies and recommend possible policy improvements, ordinarily approach this task in a normative spirit; that is, they analyse the policy problem in terms of the 'public interest'. In essence, they often evaluate the policy in terms of its anticipated impact on various social surpluses, such as consumer surplus, producers' income, citizens' willingness to pay for public goods and government expenditures. They then recommend policy measures that maximize the sum total of all social surpluses or some other combinations of these surpluses (Gardner, 1987).

This is not a simple and easy task, as it requires a thorough understanding of the relevant economic relations and a wealth of data. Yet the outcome of this exercise is often a frustrating experience, since policy makers are inclined to ignore the analysts' recommendations, preferring instead to retain the prevailing policies despite the clear evidence of their economic inefficiency. A careful examination of such eventualities almost always yields the same conclusion: evaluations and policy recommendations were declined because analysts had ignored, at least partly, the existing political power structure and the concerns of politically powerful interest groups. Obviously, the interests and political power of participants in the 'political economy' are principal determinants of economic policy. Given the economic structure, the objectives of interest groups and policy makers, and the political power structure, one expects policy choices to be fully and uniquely determined, so that policy formation attains the force of a natural law. Not much can be done about it, or so it would seem. This, however, is an erroneous view of the political process.

In particular, given human propensity to err, it is not impossible that inefficient existing policies could actually be improved even within the existing power structure. Even if the original political choices were flawless, delays in policy updating are likely to yield outdated and inefficient policies which may be corrected even by the ruling coalition. Furthermore, both historical experience and theoretical considerations often suggest that, despite its relative stability, the political power structure is most likely to undergo major changes, often dramatic ones. Alterations in the power structure are ordinarily condu-

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cive to major policy reforms.[1] When existing policies are inefficient, even within the existing power structure, as they are likely to be, economists can devise politically acceptable, welfare improving policy measures. For instance, improvements that benefit equally each and every participant are likely to be accepted by all parties concerned.

Moreover, policy improvements which yield benefits whose distribution is consistent with the prevailing power structure have an even better chance of being adopted. An analyst seeking such improvements must, therefore, first carry out a proper analysis of the political power structure in order to quantify the relative political strength of all participants. To this end, let me first present a political power theoretical approach to endogenous policy formation, a subject dealt with in more detail by Rausser and Zusman in a forthcoming book.

## MODELLING THE POLITICAL ECONOMY

To simplify the presentation let us consider first the case of quantitative policy formation introduced by Tinbergen (1956). Accordingly, given values of the exogenous variables, $z$, and policy instruments, $x$, values of the endogenous variables, $y$, are determined by the economic structure, $F(y, x, z) = 0$. Note that $x$, $y$ and $z$ are vectors of various dimensions and $F(.)$ is a vector-valued function with the same dimension as $y$. Then, assuming that $F = 0$ can be solved for $y$, one gets $y = y(x\ ;\ z)$. The policy formation problem consequently amounts to the question of how $x$ is determined. To deal with this problem, it is assumed that there exists a policy-making centre (or centres) that is (are) constitutionally authorized to select the values, $x_0$, of the policy instruments. Values of the endogenous variables are then determined by the economic structure; that is, $y_0 = y(x_0)$.[2] The values $(x_0, y_0)$ affect the well-being of all participants in the political economy. Individual participants having similar preferences over the set of feasible policy instruments are divided into 'interest groups'. It is assumed that the political preferences of all members of the $i$th interest group are expressed by the policy objective function:

$$v_i(y_0, x_0) = v_i(y(x_0), x_0) = u_i(x_0)\ .$$

Some interest groups are usually organized for political action; that is, they have a leadership capable of mobilizing the group's resources and coordinating the actions of group members. The group's leaders can also enter binding agreements with other organized interest groups and policy-making centres. Other interest groups are unorganized and either their members are responsive to policy choices by the central decision agents or the interest group is altogether inert. The responses of unorganized, but responsive, groups ordinarily are uncoordinated but are predictable individual actions undertaken by the group membership. Strictly inert interest groups are rather rare, for individual members usually respond to policy choices, at least in the voting booth.

In the following I shall assume a group configuration consisting of a single policy-making centre to be indexed by $i = 0$ and $n$ organized interest groups indexed by $i = 1,2,\ldots n$. The principal political problem to be addressed in the

following is: how are the values of the policy instruments, $x_0$, chosen? Obviously, if policy makers were free to act in their own way, they would select $x_0$ such that $u_o(x_0) = \max_{x \in X_0} u_o(x)$.

Here $x_o$ is the set of feasible policy instruments, where feasibility is determined by a variety of possible restrictions on $x$; for example, when $x$ refers to prices it must be non-negative. Also the set $x_o$ is not sufficiently narrow to determine in itself a unique choice of $x_o$. The policy choice $x_o$ is consequently decided in a bargaining game involving the policy-making centre and the $n$ organized interest groups. In order to model this bargaining game we further define the extended policy objective function of the policy-making centre as follows:

$$U_o = U_o(x, c_1, \delta_1, c_2, \delta_2, \ldots c_n, \delta_n) = u_o(x) + \sum_{i=1}^{n} s_i(c_i, \delta_i) \tag{1}$$

where $s_i(c_i, \delta_i)$ is the effect of the means of power employed by the $i$th organized interest group on central policy makers; $c_i$ is the cost to organized interest group $i$ of employing its means of power over the policy-making centre; $\delta_i$ is a dichotomous variable indicating whether a 'reward' policy ($\delta_i = \alpha$) or a 'penalizing' policy ($\delta_i = \beta$) is employed by organized group $i$. Note that $s_i(c_i, \delta_i)$, the 'strength of power' function defined by Harsanyi (1962a), is the subjective evaluation by central policy-makers while $c_i$, Harsanyi's 'cost of power' function (Harsanyi, 1962a), is subjectively evaluated by the $i$th organized interest group. Hence $s_i$ is expressed in the same units as $U_o$, and $c_i$ in the same units as $u_i$. Note, also, that it is implicitly assumed that $c_i$ is the minimum cost of the means of power required to yield $s_i$ given $\delta_i$.

The extended policy objective function of the $i$th organized interest groups is:

$$\begin{aligned} U_i &= U_i(x, c_i) \\ &= u_i(x) - c_i \quad (i = 1, 2, \ldots, n) \end{aligned} \tag{2}$$

The policy-making centre seeks values of $[x, (c_1, \delta_1), (c_2, \delta_2) \ldots (c_n, \delta_n)]$ that maximize $U_o$ while organized interest group $i$ seeks values of $(x, c_i, \delta_1)$ maximizing $U_i$. A bargaining game over the values of $[x, (c_1, \delta_1) \ldots (c_n, \delta_n)]$ is thus created. Zusman (1976) showed that the cooperative solution of this bargaining game implies that all organized interest groups follow a reward policy. That is:

$$\delta_i = \alpha \quad (i = 1, 2 \ldots, n) \tag{3a}$$

The solution values of the policy instruments maximize the 'policy governance function', $W(x_o)$, where

$$W(x_o) = \max_{x \in X_0} [u_o(x) + \sum_{i=1}^{n} b_i u_i(x)] \tag{3b}$$

The solution values of $\bar{c}_1, \bar{c}_2, \ldots, \bar{c}_n$ are such that the expression

$$\sum [b_i \alpha_i(\bar{c}_1) - \bar{c}_1] \tag{3c}$$

is maximized where:

$$b_i = \frac{d\beta_i(c_i'')}{dc_i} = \frac{d\alpha_i(\bar{c}_i)}{dc_i} = \frac{\bar{U}_i - U_i''}{\bar{U}_o - U_o''} \geq 0 \tag{4}$$

Here, $\beta_i(c_i'') \equiv s_i(c_i'', \beta) \quad i = 1, 2, \ldots, n$
$\alpha_i(\bar{c}_i) \equiv s_i(\bar{c}_i, \alpha) \quad i = 1, 2, \ldots, n$

where $\bar{c}_i$ and $c_i''$, respectively, are the costs of power to the $i$th organized interest group over the policy-making centre at the cooperative and non-cooperative (disagreement) solutions; $\bar{U}_i$ is the cooperative solution value of $U_i$; and $U_i''$ is the disagreement value of $U_i$ ($i$ = 0,1,...,$n$). Thus the power coefficient ($b_i$, $i$ = 1,2,...$n$) represents the political power that organized interest group $i$ has over the policy-making centre and equation (4) provides two possible interpretations of $b_i$, as the reciprocal of the marginal cost of a unit of 'strength' at the cooperative and non-cooperative equilibrium, and as the gain in the $i$th interest group objective function, due to cooperation rather than non-cooperation, relative to the gain of the policy-making centre.

In this respect, it should be mentioned that several attempts have actually been made by economists at developing a positive theory of endogenous policy formation (for example, Peltzman, 1976; Becker, 1983; Magee *et al.*, 1989). Following Downs (1957) and others, these attempts were often based on the rational choice approach to individual and group behaviour. Accordingly, political actors (political parties, political entrepreneurs, policy makers in government and so on) rationally seek to maximize political support to themselves by offering political favours to interest groups. Political actors compete with each other for political support. A competitive market in which political favours are traded for political support is thereby created. Endogenous policy formation is then associated with the equilibrium solution of the 'political market'. While highly suggestive, the 'political market' theory is unsatisfactory because political exchange cannot be modelled on commodity exchange; in particular, the concept of price is not well-defined in political exchange and, unlike the non-personal exchange in competitive commodity markets, actors' identities do matter in the political arena. Furthermore, even in those cases where political exchange was modelled as a non-market game, the formulation was often deficient. In contrast, the theory of endogenous policy formation presented above is based on a political power theoretic approach. That is, given the economic structure, policy choices are presumed to be determined by the political power of the individuals, or groups involved in the political process. In this respect it should be emphasized that the concept of political power has been historically introduced as a somewhat vague but extremely useful abstraction of a relationship between individuals and groups in complex institutional settings. It has been effectively employed in explaining diverse political phenomena. The present theory of political power is based

on theoretical developments by scholars such as Dahl (1968), Lukes (1986), March (1955), Harsanyi (1962a, 1962b) and Nagel (1968).

## THE PRINCIPAL DETERMINANTS OF POLITICAL POWER

As suggested by the political–economic conditions (3b), given the policy objective functions, $u_o(x), u_1(x), \ldots, u_n(x)$, the political economic equilibrium values of the instrumental variables are determined by the power coefficients $b_1, \ldots, b_n$. But how are these coefficients determined? Several determinants of the power structure may be distinguished. These could be related to the principal bases of social power. First, legitimate power is almost exclusively determined by the prevailing ideologies. Ideology – consisting of shared values and beliefs concerning the laws controlling the functioning of the social and physical environment – fundamentally affects several power bases. In particular, it lends legitimacy to policy choices consistent with the particular ideology and to political leaders committed to it, thus conferring legitimate power on the corresponding policies and individuals. A shared ideology also enhances the economic and political power bases, because it enables leaders to mobilize more effectively the group's resources and because it facilitates joint group action. Ideologically committed individuals are less likely to 'free-ride' so that interest groups are more easily formed and mobilized for collective action. Ideologically committed central policy makers are not easily influenced by organized interest groups since committed individuals are more immune to incentives produced by the penalties and rewards offered by organized interest groups. Hence ideological commitment of central policy makers weakens the power of organized interest groups sharing a different ideology, while ideological commitment of group members strengthens the power of the organized interest group.

Additionally, the ruling ideology affects the structure of political institutions, especially the constitutional arrangements, which in turn affect the participating groups' relative power. Thus an ideology favouring a small government and increased reliance on markets will be likely to yield less government economic intervention and weaker governmental institutions. It also strengthens free traders and those opposing market regulation by government; and vice versa. In addition, an ideology supporting strong government intervention is conducive to a centralist, strongly interventionist government and a highly regulated economy. Under these circumstances central policy makers, government bureaucrats and regulatory agencies are politically powerful.

The economic power base primarily depends on the distribution of wealth in a particular society. One expects producer groups to be more wealthy than consumer groups, for example, and consequently to enjoy a larger economic power base. Finally, the political power base of an organized interest group is enhanced by conditions facilitating organizational efforts and providing for a better control of propensities to 'free-ride'. Thus small and geographically concentrated groups are more easily organized for political action, while large and geographically dispersed memberships entail high organizational costs and, therefore, result in smaller political bases of power. Easily observed

environmental characteristics thus provide strong clues regarding the relative sizes of the power coefficients, $b_1 \ldots, b_n$.

Note also that the causal chain of effects works both ways. Groups with large power bases are politically more powerful and are thus better able to shift policies in their own favour, which in turn contributes to the further enhancement of their political and economic power bases, and vice versa. Consequently, the political power structure tends to exhibit strong positive feedback dynamics and is thus prone to oscillatory behaviour with intermittent phases of stable policies and political crises involving major shifts in the distribution of political power. Policy reforms are likely to occur in the latter phases.[3]

## NORMATIVE CONSIDERATIONS

The political power-theoretic approach to endogenous policy formation redefines the state of system equilibrium. The newly defined political–economic equilibrium now consists of the economic solution, $y_0$, given the government policy choice and the solution to the underlying bargaining game determining $x_0$, given the power structure. I shall now consider the economic efficiency of the political–economic equilibrium, assuming that the economic structure describes a competitive economy, which ensures economic efficiency given that the following conditions hold.

To this end, one can establish conditions for an economically efficient political–economic equilibrium. Defining economic efficiency in terms of a benefit–cost criterion employed in public project selection problems and policy analysis, the following conditions for an efficient political–economic equilibrium have been derived:

(1) All individual actors whose well-being is influenced by the policy choice should be represented in the political process.
(2) The policy objective functions of all organized groups (policy makers and organized interest groups) should fully and faithfully reflect group members' policy preferences.
(3) The weights attached to the policy objective functions included in the policy governance function should be equal (that is, $b_1 = b_2 = \ldots = b_n = 1$).
(4) If the group configuration of the political economy includes unorganized but responsive interest groups, then the overall impact of the unorganized interest groups' reactions on the organized interest groups' objective functions (including that of the policy making centre) should faithfully reflect the policy preferences of the members of the unorganized groups.[4]

## THE ROLE OF INSTITUTIONS

According to the positive theory of endogenous policy formation outlined above, values of the power coefficients $b_1, \ldots, b_n$, are crucial determinants of the policy choices. Furthermore, values of the power coefficients, $b_1, \ldots, b_n$ also condition the efficiency of the political economic equilibrium. As was claimed

in the introduction, the imperfect functioning of a political–economic system may leave room for policy improvements. However, our positive theory of policy formation yields determinate solutions, thus implying that the room for improvements in prevailing policies may be rather narrow. Hence more significant improvements may require intervention at an earlier stage in the policy formation process, that is at the stage in which the power coefficients themselves are formed. As argued in the earlier section, the political power structure is shaped by fundamental environmental forces. Nevertheless, political institutions, including especially the constitutional arrangements whether explicitly written or tacitly accepted, are major mediating variables in the determination of the power coefficients. Intervention at the institutional level may, therefore, prove more effective in influencing welfare economic outcomes. Thus, inasmuch as political institutions are deliberately selected rather than spontaneously formed, the most effective policy intervention is at the institutional selection phase. Institutional choice should then satisfy conditions (1) to (4) in the previous section.

## NOTES

[1]See, in particular, the analysis of the dynamics of the political power structure in Rausser and Zusman (forthcoming).

[2]In the interest of simplicity and brevity the exogenous variables, $z$, are suppressed in the present and subsequent presentations.

[3]A dynamic theory of political power has yet to be developed. A first attempt in this direction, dealing especially with positive feedback dynamics, is provided in Rausser and Zusman (forthcoming).

[4]For a detailed discussion of normative considerations relating to political–economic systems, see Rausser and Zusman (forthcoming).

## REFERENCES

Becker, G.S. (1983), 'A Theory of Competition Among Pressure Groups for Political Influence', *Quarterly Journal of Economics*, 98 (3).

Dahl, R.A. (1968), 'Power as the Control of Behavior', *Encyclopedia of the Social Sciences*, New York: Crowell Collier and Macmillan.

Downs, A. (1957), *The Economic Theory of Democracy*, New York: Harper & Row.

Gardner, B.L. (1987), *The Economics of Agricultural Policies*, New York: Macmillan.

Harsanyi, J.C. (1962a), 'Measurement of Social Power, Opportunity Cost, and the Theory of Two-Person Bargaining Games', *Behavioral Science*, 7 (1).

Harsanyi, J.C. (1962b), 'Measurements of Social Power in *n*-Person Reciprocal Power Situations', *Behavioral Science*, 7 (1).

Lukes, S. (1986), 'Introduction' in S. Lukes (ed.), *Power*, New York: New York University Press.

Magee, S.P., Brock, W.A. and Young, L. (1989), *Black Hole Tariffs and Endogenous Policy Theory*, Cambridge: Cambridge University Press.

March, J.G. (1955), 'An Introduction to the Theory and Measurement of Influence', *The American Political Science Review*, 49 (4).

Nagel, J.H. (1968), 'Some Questions About the Concept of Power', *Behavioral Science*, 13 (1).

Peltzman, S. (1976), 'Toward a More General Theory of Regulation', *Journal of Law and Economics*, 19 (2).

Rausser, G.C. and Zusman, P. (forthcoming), *Political Power and Endogenous Policy Formation*, Cambridge: Cambridge University Press.

Tinbergen, J. (1956), *Economic Policy: Principles and Design*, Amsterdam: North-Holland.
Zusman, P. (1976), 'The Incorporation and Measurement of Social Power in Economic Models', *International Economic Review*, 17 (4).