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Allen Maunder, Agricultural Economics Unit, Queen Elizabeth House
University of Oxford, England
and
Alberto Valdés, International Food Policy Research Institute
Washington DC, USA

ALAIN DE JANVRY AND ELISABETH SADOULET*

*Alternative Approaches to the Political Economy of Agricultural Policies:
Convergence of Analytics, Divergence of Implications*

INTRODUCTION

It is the thesis of this paper that there has been a convergence, during the last 15 years or so, between (1) the types of issues addressed and the specification of structural context traditionally encountered in the classical approaches to political economy and (2) the identification of microfoundations and the use of analytical tools which are the domain of neoclassical economics. This convergence has created the extraordinarily fertile rational choice approach (including both transactions costs and collective action) to the study of institutional and technological innovations, a subset of which is the analysis of the political economy of agricultural policies. This convergence in structural specification and in analytical techniques does not, however, imply the end of ideology in economics. While, as we will show, there exists simultaneity in the determination of technological and institutional innovations, the use of these innovations for normative purposes remains sharply divergent in correspondence with disagreements on the ultimate social purposes of economic activity and on the choice of instruments to achieve them.

CLASSICAL AND NEOCLASSICAL APPROACHES TO TECHNOLOGICAL AND INSTITUTIONAL INNOVATIONS

The fundamental contributions of neoclassical economics to the field of economics have been its identification of the rationality of individual choices and its introduction of the analytical tools of modern mathematics in the formulation of economic models. The central proposition derived from this approach by orthodox Arrow-Debreu neoclassical economics is the separability between efficiency and equity or, in other words, the strong result that the distribution of wealth ownership does not affect the allocation of resources and, hence, the size of the economy. This result follows from the postulates that perfect markets exist for all factors and products and that there are no transaction costs other than constant terms.[1] All agents thus face the same prices, and factors have the same costs in production irrespective of ownership. In household models, for instance, this implies the separability between production and consumption decisions. This

*University of California at Berkeley

highly abstract and idealized specification of structure is evidently implausible other than as a first approximation; it has, for that reason, been increasingly rejected by modern neoclassics.

Classical economists, by contrast, have given a great deal of attention to the specification of economic and social structure and placed, as the central question of economics, the understanding of the role of institutions and of the state in determining not only the size of the economy (efficiency) but also the personal distribution of income (equity). The key to structure, institutions and the state is the distribution of asset ownership. Yet, orthodox classical economics, Marxism particularly, generally lacks explicit microfoundations. Instead of deriving efficiency and equity from the behaviour of individuals, it tends to stress two determinants of these outcomes: (1) the stifling importance of structural constraints (and especially the initial distribution of asset ownership) that relegates to secondary importance the role of individual behaviour(Roemer, 1988); and (2) a functionalist logic derived from the laws of motion of particular modes of production and from the logic of class behaviour and of the state moved by instrumentalism or capital logic.

Both modern neoclassical (MNC) analysis (in the vintage of Stiglitz, 1985; Akerlof, 1984; Newbery, 1975; and so on) and modern classical (MC) analysis (in the tradition of Bowles and Gintis, 1988; Bardhan, 1986; Eswaran and Kotwal, 1986; and so on) have overcome these limitations. MNC has turned its attention to the age-old questions addressed by the classics regarding the origin and dynamics of institutions and the role of the state. This has been made possible by recognizing the fundamental importance of transactions costs, such as the key difference between labour power (workers) and labour (work) in the production process long central to Marxism (Edwards, 1979) and the role of alternative institutions in affecting efficiency in a structural context of incomplete or failing markets. As we will show, the specification of transactions costs has also enormously enriched the analyses of public choice and collective action as it permits understanding of why different agents face different effective prices based on differential asset ownership and, hence, why they eventually organize coalitions on a class basis for the purpose of collective action.

Simultaneously, MC has been able to rigorously construct its microfoundations by applying to the structure of transactions costs the rigour of neoclassical optimization analysis, opening the road to what Bardhan (1986) has labelled 'rational choice Marxism'. Eswaran and Kotwal (1986), for example, have derived endogenously from rational choice behaviour, in a context where transactions costs vary with landownership, the pattern of class formation and social differentiation in rural society, one of the oldest preoccupations of Marxism (Lenin, 1964; Kautsky, 1986) .

This convergence of structural specification and rational choice analysis has thus created a broad based intersection between neoclassical and classical economics (which still leaves unperturbed both Arrow-Debreu neoclassical purism and orthodox functionalist Marxism), an intersection where participants are increasingly difficult to distinguish in their performances as positive economists.

Convergence of structural specification and of analytics does not, however, imply the elimination of boundaries in normative economics as both the

objective functions specified and the choice of instruments continue to differ. Yet, the boundaries there are also becoming increasingly blurred as the implications of structure and of behaviour become more clear, thus reducing the ideological content of economics which results not only from differing objective functions and differing preferences in the choice of instruments (as it always will) but also from imperfect information as ideology tends to fill the gaps created by ignorance – gaps which are reduced by more accurate structural specification and greater analytic rigour. Economists in the neoclassical tradition tend to remain primarily focussed on efficiency issues; those in the classical tradition, with preoccupations of equity which, because it is seen as primarily determined by asset ownership, implies equality in access to productive assets. Yet, there has been an important growth-with-equity school within neoclassical development economics. With transaction costs included in the analysis, the distribution of asset ownership affects both efficiency and equity. This has led neoclassical development economists to advocate redistribution before growth (Adelman, 1975), with redistributive land reform toward family farms as a prime example of policy implication.

Classical economists have insisted on the fact that redistribution of or social control over the asset is the key to reducing such transactions costs as the need to supervise labour and moral hazards in contractual arrangements, thus increasing efficiency at the same time as it enhances equity. One example of inefficiency that would be reduced is the possibility of abandoning the use of efficiency wages to place quantity constraints on agents as a monitoring device (wages are set above market equilibrium and unemployment is used as a threat for the enforcement of contracts), a device that decreases social efficiency as some productive resources remain idle (Shapiro and Stiglitz, 1984; Bowles and Gintis, 1988). In addition, redistribution can reduce the net social loss created by diversion of productive resources to rent-seeking activities as lobbies become more homogenous in their demands.

There is, of course, a difference in the relationship between efficiency and classlessness and between efficiency and equity which is not intuitively trivial and certainly not unique. Marxists tend to believe that the reduction of transactions costs requires equalization in access to and control over the assets (classlessness) and that the transactions costs associated with participatory democracy are small once access to assets is relatively egalitarian. Classlessness thus has the potential to significantly enhance efficiency. For the neoclassics, by contrast, transactions costs can be reduced by the perfecting of markets (the extension of property rights) and by more effective contractual arrangements (institutions) based on mutually available greater information, while participatory democracy may imply rapidly rising transactions costs justifying the perpetuation of some inequality in asset ownership and in decision making. As a result, there exist for them alternatives to classlessness in promoting greater efficiency; and equity can also be obtained through *ex post* tax-subsidy schemes.

In the rest of this paper, we illustrate the above thesis by showing how the analysis of transactions costs and collective action permits establishment of a theory of both technological innovations in agriculture (the optimum bias of technology as a public good) and institutional innovations in terms of the nature of the agrarian structure (the distribution of farm landownership). We derive from

this a theory of optimum technological and structural policy where the two are interlinked. Since the state itself operates in a second-best world characterized by transactions costs that lead to bureaucratic failures, the impact of lobbies on the making of policy regarding either institutional or technological innovations need not result in net losses as opposed to the pure neoclassical theory of rent seeking that uses the first best as the reference point (Krueger, 1974). For the latter theory, lobbying directed at asset ownership is neutral on efficiency and lobbying directed at the bias of technology necessarily creates net social losses.

THE OPTIMUM BIAS OF TECHNOLOGICAL INNOVATIONS IN THE CONTEXT OF TRANSACTIONS COSTS AND COLLECTIVE ACTION

The neoclassical theory of induced technological innovations (NCTI) has proved to be effective in providing a first approximation to the explanation of the bias of technological change. It has, for example, enabled Hayami and Ruttan (1985) to explain why the United States and Japan have followed such sharply contrasted technological paths, the first with a technology biased toward labour saving and the second toward land saving

As in other neoclassical formulations, the NCTI postulated the existence of perfect market for all factors and products and, hence, the absence of market failures and transactions costs. Changes in relative factor scarcities are then uniquely translated into changes in relative factor prices, and technological innovations are guided by the quest to save on the factor that becomes relatively more expensive. When technological innovations are public goods, the state responds to farmers' demands for cost-saving technological innovations by allocating research budgets toward increasing the productivity of this particular factor. Because markets are perfect, all farmers have the same demand for a specific bias of technological change, and the state responds to this unique demand as it is being pressed by farm lobbies. Consequently, there are no conflicts among farmers in their demands for technological innovations; the state is able to respond indiscriminately to these demands; and, as in most of the public choice literature, the state does not have any particular objectives of its own other than those formulated by the farm lobbies.

Transactions costs have their origin in the possibility of opportunistic behaviour in transactions among individuals. They include such costs as the gathering of information and the negotiation, supervision and enforcement of contracts. If, for example, hired labour tends to shirk, direct supervision costs must be incurred or wages must be paid above market equilibrium to use the rent associated with employment and the threat of unemployment as a monitoring device. The price of a unit of effective labour will, consequently, rise as the number of hired workers relative to family labour increases, that is in general with farm size. A transactions cost on land, originating in a fixed cost on land sales or rentals, implies that the effective price of land declines with farm size. Finally, access to credit may also be quantity constrained as keeping the interest rate below market equilibrium is to the advantage of the lender in discouraging adverse selection and moral hazards among borrowers. In this case, capital is

allocated to competing borrowers by the power relations of the political economy, generally in direct proportion to farm size.

The introduction of transactions costs on labour and land in the theory of induced technological innovations implies that the optimum technological bias is no longer unique but varies systematically across farm sizes (Figure 1). Different classes of farmers and a state that seeks to maximize social efficiency will, consequently, all have different demands for an optimum technological bias. The structure of transactions costs across farms thus give us a theory of aggregation of individuals into lobbies based on the communality of interest for a specific technological bias and on optimum group size. The formation of coalitions is thus endogenously derived from the structure of transactions costs and the advantages (number of votes) and disadvantages (free riding, sharing of benefits) of group size. As opposed to state neutrality in the NCTI, the mechanisms of decision making by the state become key determinants of the bias of technological change. The relative effectiveness of small and large farmers' lobbies in pressing their demands on the state and the degree of relative autonomy of the state in pursuing its own objective establish the bargaining framework where the bias of technological change is determined. In addition to prices, as evidenced by NCTI, the structural and political factors are thus also fundamental determinants of the bias of technological change.

The underlying model to the above reasoning is one where capital is decomposed into labour and land substitutes and where embodied technological change can, consequently, be either labour or land saving. Three types of transactions costs are introduced in the analysis: a rising effective wage with farm size, a falling land rent with farm size, and a credit constraint which is proportional to landownership. A farm operator maximizes profit under this credit constraint which limits expenditure on inputs, including the rental of land. Even if there are constant returns to scale, the credit constraint determines an optimum farm size
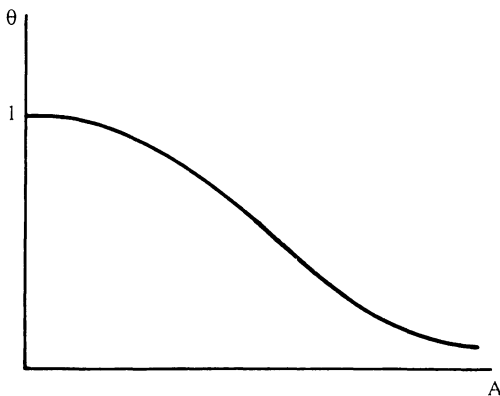

FIGURE 1   *Optimal technological bias by farm size*

for an initial size of landownership. Across farms, transactions costs also determine a pattern of differential rents with the implication that there is one farm size that maximizes efficiency in resource use.

The implications of this model are that the optimum technological bias will be more land saving when:

- the price of fertilizer increases relative to the price of land;
- the price of machinery decreases relative to wage;
- the price of land increases relative to wage;
- average farm size decreases;
- inequality in the distribution of farm sizes decreases (see de Janvry, Sadoulet, and Fafchamps, 1987).

The first three relationships are equivalent to the ones derived from the NCTI. The last two derive from the introduction costs in the analysis. With each farm size demanding a particular technological bias, the way credit is distributed across farm sizes affects aggregate supply response.

With transactions costs, each farm size has a demand for a specific technological bias. The state, which provides technology as a public good, will also opt for a specific technological bias according to its own objective. If the state pursues social optimality, it may seek the technological path that maximizes social efficiency or a combination of efficiency and equity purposes. If the state acts as a lobby on its own behalf, it will seek to promote the welfare of its members. Assuming, for the moment, that the state seeks to maximize sectoral value added and that the distribution of landownership is skewed toward large farms, it will choose an optimum bias that is always more biased toward mechanization than the optimum bias for the average farm. This bias toward mechanization, relative to the optimum bias for the average farm, may well explain the 'drift' toward mechanization observed by Hayami and Ruttan (1985) and by Thirtle (1985) – who do not take transactions costs into account in determining the optimum technological bias – which is left unexplained by relative prices alone.

The political economy of technological policy, in a context where transactions costs vary proportionately to the assets, is one where the actual bias will result from the determinants of state behaviour. In all cases, the objective function that determines the bias will be a weighted average between the state's own objective and the demands of different lobbies (say, small versus large farmers). The weights in this function, which represent the efficacy of lobbying, depend on the type of political regime that prevails. The intensity of lobbying of each farm size is proportional to the difference between the level of farm profit with optimum technological bias for that farm size and the level of profit with the autonomous state's bias. If there are no *ex post* lump-sum income transfers, lobbies must react to the state's initiatives in defining the optimum technological bias since this bias has strong redistributive implications for them. The demands of small farmers are for a bias that is more land saving. If the state behaves in a democratic fashion, where the relative number of farmers in one class size determines the weight attached to their demands, the resulting bias will be heavily weighted toward land saving and more so than the state's autonomous

optimum. If, by contrast, the state responds to the pressures of organized lobbies in an Olsonian world of collective action, the large farmers' demands will dominate and lead to a bias more labour saving than the state's autonomous optimum. Thus we end up with a hierarchy of biases (from the most land saving to the most labour saving) by political regimes as follows:

> Most land saving
>> Democratic state
>> Average farm optimum
>> State optimum
>> Collective action
> Most labour saving

For the state in pursuing its own objective, as Figure 2 shows, there exists substitutability in the use of technological and institutional innovations as instruments. For a given distribution of farm sizes (a), there exists an optimum technological bias; and for a given technological bias (b), there exists an optimum farm size that can be achieved through land reform. The political economy of economic policy thus leaves the state with options in the choice of instruments, maintaining the ideological content of normative economics in spite of the convergence of analytics.
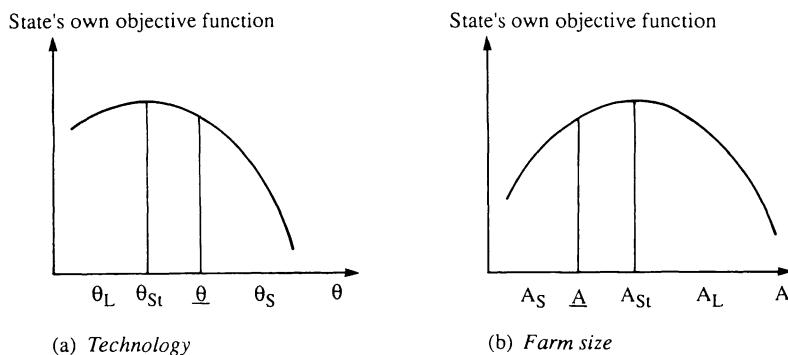

(a) *Technology* (b) *Farm size*

FIGURE 2 *Optimum technological bias and farm size for the state's own objective*

A	Farm size
θ	Share of research budget allocated to land saving technological innovation ($0 \le \theta \le 1$)
$f(A)$	Distribution of farm size
$\bar{A}, \bar{\theta}$	Average farm size and corresponding optimum θ
A_S, θ_S	Small farmers' farm size and corresponding optimum θ
A_L, θ_L	Large farmers' farm size and corresponding optimum θ
A_{St}, θ_{St}	Optimum farm size and optimum θ for state's own objective

Reaching the absolute maximum in the state's own objective requires, however, joint use of these two instruments. Technological and institutional innovations are thus substitutes within the second best, when only one instrument is used but complementary to reach the first best within a world of transactions costs. For a given objective function, reaching the first best must take the state beyond ideology in the choice of technological versus institutional innovations.

The state cannot, however, pursue its own objective without yielding to the pressures of society. The results of these forces will determine what the state does in combining technological and institutional innovations.

WHY DO GOVERNMENTS DO WHAT THEY DO?

The state has been conceptualized from two different angles and reconciliation between these two approaches has remained highly imperfect. The first is the theory of collective action and of the instrumentalist state; the second, the theory of economic regulation and of capital logic.

The theory of collective action looks at the state as activated by a constellation of interest groups, including groups that are constituted within the state itself by bureaucrats and politicians who seek to promote their own welfare. This approach includes the theory of public choice (Buchanan, 1975), the self-interest coalition models (Downs, 1975; and Olson, 1985), rent-seeking competition (Krueger, 1974), and the theory of political markets. In radical political economy, it has taken the form of the instrumentalist approach where one class tends to dominate the state and to appropriate its capacity to intervene to its own benefit (Miliband, 1969). The common feature of these approaches is that the state is looked at as a locus of distributional struggles which create net social losses relative to either an absolute first best defined in a world without transactions costs or relative to a first best defined by the state's own objective in a context of transactions costs. The bias in technological innovations would thus be determined by the outcome of competing demands from different organized groups with small farmers dominating in a democratic form of government and large farmers with Olsonian lobbying.

This approach neglects the fact that the state does have a certain degree of autonomy relative to society which allows it to set its own objectives above purely distributional struggles. This alternative approach has been pursued in the theory of economic regulation with the optimum delivery of public goods and internalization of externalities, the Keynesian state, the elite theory of the state in postcolonial societies (Alavi, 1982), and the capital logic approach, (Sweezy, 1942). Important in these approaches is the role of the state in anticipating or responding to disequilibria in the economy and legitimizing existing social relations. In all cases, the state is seen as a source of net social gains as it intervenes to reduce transactions costs. Limits to the ability of the state in fulfilling these functions are its fiscal legitimacy and administrative constraints. Problems with this approach range from Arrows' Impossibility Theorem to the excessive logic with which the state is imbued, while the role of pressures from civil society is ignored. With technological innovations, the bias that fits the

state's own objective function would directly prevail. If transactions costs exist, this bias will inevitably be at odds with those of all farmers except the one with the farm size equivalent to the state's optimum (with a probability of zero of existing).

The very presence of transaction costs has shown us that it is impossible to decompose the interpretation of the state, except for analytical purposes, between these two approaches. This observation had been made by Rausser (1982) in showing how lobbies intervene in the definition of transaction costs reducing public interventions because of the redistributive effects that these interventions create. If, however, transactions costs are not explicitly taken into account, as we did here, to understand how coalitions are formed on the basis of collective interests determined by asset ownership, the only bases for lobbies to form are the traditional dichotomies between producers and consumers or between producers of different commodities or in different regions.

It is the very existence of transactions costs that activates the state in seeking to reduce them through technological and institutional innovations in order to increase social efficiency. And it is the existence of transactions costs that also induces lobbies in civil society to influence the definition and delivery of public goods away from the state's own optimum and toward their specific interests – in addition to engaging in purely distributional struggles over asset ownership. If transactions costs vary with asset ownership, as they generally do, lobbies will organize on a class basis. In any case, the state becomes a locus of bargain and compromise between the demands of organized lobbies, including those that originate from within the state itself, and the objectives which the state would like to pursue autonomously from civil society – all of this under the constraint of the structure of the national and international economic system (Zusman, 1976). Starting from an equilibrium where lobbies influence the state according to Olson's (1985) specification, the model of the political economy of technological and institutional (land reform) innovations developed in this paper allows the following conclusion: if either distribution of land ownership is made more equitable via land reform and/or the state moves toward more democratic forms of decision making, the resulting equilibrium technological bias, by being closer to the state's own optimum, will imply both greater equity and greater efficiency.

CONCLUSION

We have argued that there has been a significant convergence in economics between classics and neoclassics, where the first have contributed the understanding of structure and the preoccupations with institutions and the state and the second the rigour of rational choice microfoundations and of analytical tools. We have also shown that, while technological and institutional innovations can serve as alternative instruments in the quest of normative purposes by the state, they become complementary if a first best is to be reached, removing the ideological content in the choice of instruments, although evidently not in the choice of objective functions. Finally, we have shown that the contrasted interpretations as to why governments do what they do, while useful for analytical purposes, are in fact complementary once the existence of transactions cost is acknowledged. In

an agrarian structure where land distribution and access to institutions are skewed toward large farmers and where the state is inclined at defining public goods for efficiency gains, more democratic forms of government are likely to result in collective action toward technological and institutional innovations that will create not only equity but also efficiency gains.

NOTES

[1] If some markets fail but there exists perfect information among economic agents and no transactions costs other than scalars, the Coase theorem extends this result in showing that, through private contracting among individuals, the same Pareto efficient equilibrium would be obtained.

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DISCUSSION OPENING – ROBERT H. BATES*

The paper by de Janvry and Sadoulet is both ambitious and important. Focusing on the production of technological research for farming, the paper seeks to reconcile classical and neoclassical thought and to do so by reviving the field of political economy. It joins the recent work of Roemer, Elster and others in seeking a theory of distribution and class formation based upon neoclassical reasoning[1] In two ways, it goes beyond these recent works. It employs the concept of transaction costs to account for the demand for policies that will yield an unequal distribution of economic resources; and by developing an analysis of the state, it seeks to account for the institutionalization of stable allocations that are inequitable. I take as my task the evaluation of their theory of politics.

In my judgement, by introducing an explicit theory of politics, de Janvry and Sadoulet have moved in the correct direction. It is my hope that they will now take the steps that are necessary for a deeper political analysis. When they do so, they may well have to back away from several of their present conclusions. But they will also gain access to a rich body of neoclassically motivated political analysis that can and should be applied to the study of agricultural policy in particular and to the study of distribution more generally.

THE ANALYSIS

De Janvry and Sadoulet see policy as resulting from the interaction between a distribution of farm types, with each point on the distribution possessing a different preference for public policy, and the state, which possesses objectives of its own. Policy is non-divisible, so that this interaction leads to the aggregation of the preferences of the farmer and the state into a single social choice. The process of this interaction is not precisely modelled, but two forms are mentioned: one based on interest groups, the other 'democratic procedures'.

In both cases, the analysis appears – and I say appears because limitations of space have left their explanation fairly terse – to rely upon the application of some kind of weighting function. Each type of farmer articulates his demands with an intensity proportional to the loss he will experience if the state chooses the policy that *it* prefers. When policy is made by interest groups, then, applying Olson's size principle,[2] the demands of the larger farmers are given greater weight. When policy is made democratically, then the demands of any given category are weighted by the number of farmers, and the result is a choice of policy more favourable to the more numerous small farmers.

* Read by Juan Antonio Zapato

CRITIQUE

I regard de Janvry and Sadoulet's analysis of the origins of demands for policy as largely successful. The use of the concept of transaction costs leads them from the world of factor and product markets to the world of politics, where different kinds of demands compete in redistributive struggles. However, their analysis of the world of politics and the process of policy formation is not complete, with the consequence that their conclusions about the impact of politics need not follow.

My critique of de Janvry and Sadoulet rests on two grounds. Once de Janvry and Sadoulet move from the analysis of economics to the analysis of politics, they fail to take into account rules and institutions and their impact upon strategies and outcomes in non-market settings. Secondly, the authors pursue their act of synthesis between the neoclassical and classical traditions by seeking microfoundations for aggregates, such as classes; but they fail similarly to disaggregate the state.

The impact of rules

I begin my critique while retaining the unitary actor political framework employed by de Janvry and Sadoulet – that is, their concept of a monopolistic state. I do so in order to make the point that even employing a unitary actor framework, they must be more precise in specifying the rules that control the policy making process in order to account for policy outcomes.

As shown in Figure 1, I label the state's preferred policy position as X_S and assume that its utility function slopes downward from that ideal point. I assume that the state is biased in favour of the interest of large farmers. I also assume that the ideal points of the citizen farmers are distributed along this policy dimension, with the ideal point of the median farmer falling at point X_F. For purposes of exposition, I assume that there is a larger number of small than large farmers, and
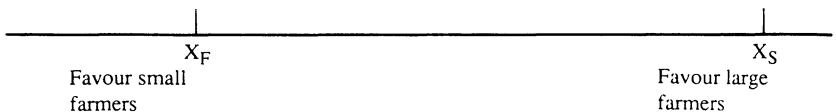
$$X_F \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad X_S$$

Favour small
farmers

Favour large
farmers

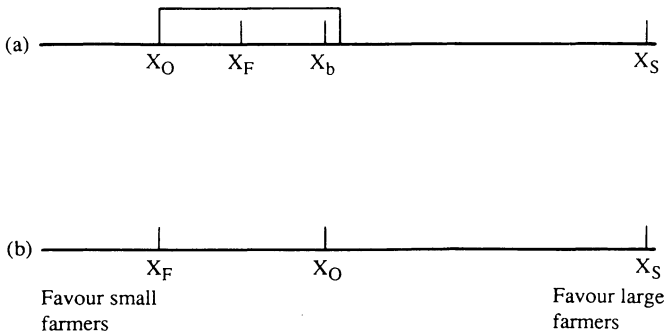FIGURE 1   *The ideal points of the state and the median farmer*

FIGURE 2   *Outcomes under different rules and locations of the status quo*

therefore that if X_F were made official policy, the policy would favour the interests of the small-scale farmers.[3]

We can begin by assuming that the state is monopolistic in the sense that it totally controls the contents of the measures that come up for public ratification. If, as in Figure 2a, X_O were the *status quo*, then the electorate would prefer any measure that were closer to X_F, that is, that fell within the interval $| X_F - X_O |$. The state would then propose a policy, X_b, that would be preferred by the farmers to X_O, but that would lie closer to the state's ideal point, X_S. Behaving rationally, the state would propose a point such as X_b for ratification. In the face of a monopolistic agenda setter, the voters would be left with a choice between the state's bill and the *status quo*. Behaving rationally, they would accept X_b.

This discussion thus shows that de Janvry and Sadoulet's conclusion need not follow. Under 'democratic procedures,' in the words of de Janvry and Sadoulet, the state need not supply the democratic outcome (X_F). It can secure a policy, X_b, that it prefers both to the *status quo* and to the policy preferred by the citizen farmers.

The need for a more refined analysis is further suggested by the consequence of slightly altering our assumptions about the political rules (and the location of the *status quo*). Say the state were a monopolist only in the sense that it totally controlled whether or not a policy were to come up for ratification; but not in the sense that it held monopoly control over the subsequent process of refinement and amendment. And assume as well that the *status quo* lay in the interval between X_F and X_S as in Figure 2b. The predicted outcome would then change. Under these

circumstances, the state would not act at all. For were the state to propose any policy that it preferred to X_0 (that is, a bill X_b in the interval X_0 to X_S), then the subsequent process of debate and amendment would lead to X_F. Under these rules and assumptions about the location of the *status quo*, the state is better off not acting.[4]

The general point of this discussion is that when neoclassical analysis is extended into the political realm, it cannot be content with such devices as weighting functions. Rather, it must explicitly model the way in which the preferences of citizens and of political leaders aggregate into the social choice. And when that process is explicitly modelled, it will then be found that precise features of the process can make a significant impact upon the nature of the political outcome.

An additional critique

An additional limitation of the de Janvry and Sadoulet analysis is that it represents 'the state' as a unitary actor. In fact, 'the state' is no more unitary than 'the market' . Rather, policy making results from the interaction of persons with diverse preferences and capabilities. The key task of modern political analysis is to employ our knowledge of the institutions that structure that interaction to account for collective outcomes.

In the work of de Janvry and Sadoulet, the assumption of a unitary state stands out as an anomaly. For if the state is a pure political monopolist, then why need it consult citizen preferences at all? Why does it not simply impose its will? No satisfactory answer is offered.

The assumption that there is the 'the state' not only leads to logical inconsistencies; it is also at variance with what we know to be true. In the making of pricing policy, for example, Ministries of Agriculture the world over tend to favour prices based upon costs of production and to lobby for farm gate prices high enough to give positive returns to farmers. Ministries of Commerce and Industry favour prices which defend against inflation and subsequent wage demands, and lobby for low consumer prices. Treasury departments worry about the impact upon public finances of attempting to reconcile these divergent preferences. There is no single 'state'. What we see instead are divergent preferences and the politics of their attempted reconciliation.

A major lesson of contemporary political economy is that when there are multiple actors and when policy involves more than one issue (or dimension), then under very general conditions, if majority rule is employed to choose the collective outcome, then any outcome is possible.[5] The more general lesson is that procedures count; where in the space of outcomes one lands depends upon the structure of the political game.

An illustration is offered in Figure 3. Rather than there being a monopolistic state, there are instead three major actors. Say that X_0 represents the *status quo* and that X_1, X_2, and X_3 represent the ideal points of each of three actors.

The first thing we realize is that each of the actors prefers many outcomes to the *status quo*, and that in fact all points in the shaded petals are preferred to X_0 by a majority and so represent possible political outcomes. The second thing we realize is that many of these points are inefficient; they lie outside the boundaries
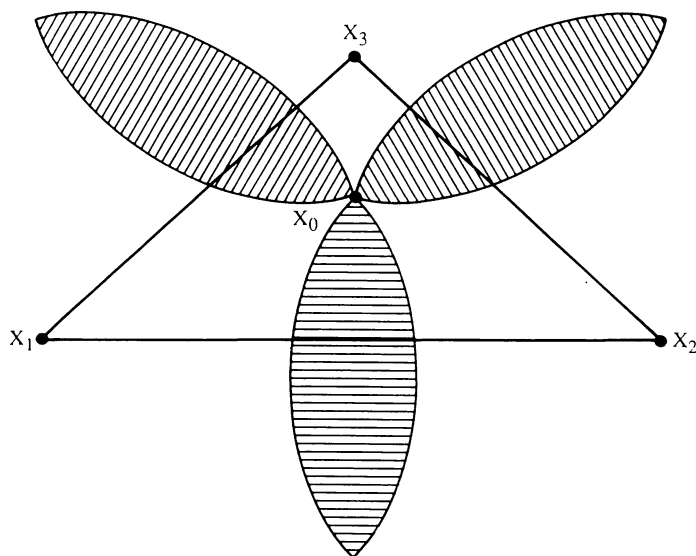
FIGURE 3   *Policy making in a non-unitary state*

of the Pareto set. Responding rationally to the rules of the political game, political actors may choose outcomes that are collectively irrational.

Lastly, we can also quickly grasp how rules and procedures count. Say, for example, that player 2 were a President who held a veto over the final outcome. Then we would know that the final outcome could not lie in the Northwestern petal. Rather, it would lie in the petals containing points preferred by player 2 to the *status quo*. The rules influence the outcomes.

CONCLUSION

One of the most significant contributions of the de Janvry and Sadoulet paper is to place the analysis of politics centrally in the study of agriculture. They seek a form of political economy that will permit a synthesis of the neoclassical and classical traditions in economics. For them to succeed, in my judgement, they must take two additional steps: (1) the further disaggregation of 'the state' into such political actors as the voter, the legislator, and the bureaucrat; and (2) the explicit modelling of the rules and institutions that shape the way in which the preferences of these actors aggregate into policy outcomes.[6]

At this conference, we have heard a lot about the political market. Such talk is natural in a profession dominated by economists who are used to thinking of the process of aggregation in terms of supply and demand and the attainment of equilibria through the formation of prices. But the fact is that there is no political market. There are institutions other than markets through which preferences aggregate into outcomes. Among the most important of these are political institutions. The challenge is to analyse the nature of the equilibria that are achieved within them, and thus how political outcomes occur. The results of these analyses will not look like the kinds of results conventionally found in economics. They will not be the kinds of equilibria found in price theory or the results achieved by employing a social welfare function to assign weights to the preferences of different interests. Rather, they will look like equilibria achieved through the strategic choices of actors involved in games in which the rules of the political institutions influence their choices and thus the nature of the final outcomes. It is time to employ such reasoning to the study of how governments choose policies toward agriculture.

NOTES

[1]See John Elster, 1983, *Explaining Technical Change*, Cambridge University Press, and John E. Roemer, 1982, *A General Theory of Exploitation and Class*, Harvard University Press.

[2]See Mancur Olson, 1965, *The Logic of Collective Action*, Harvard University Press.

[3]For a fuller presentation of this sort of analytic reasoning, see Peter C. Ordeshook, 1986, *Game Theory and Political Theory*, Cambridge University Press.

[4]This analysis builds upon Thomas Romer and Howard Rosenthal, 1978, 'Political Resource Allocation, Controlled Agendas and the Status Quo', *Public Choice* 33, pp. 27–43; and Arthur Denzau and Robert MacKay, 1983, 'Gatekeeping and Monopoly Power of Committees: An Analysis of Sincere and Sophisticated Committees', *American Journal of Political Science* 27, pp. 740–61.

[5]The origins of this result rest in Kenneth Arrow, 1951, *Social Choice and Individual Values*, Wiley, New York . The generality of Arrow's impossibility result has been explored by Richard McKelvey, 1976, 'Intransitivities in Multi-dimensional Voting Models and Some Implications for Agenda Control', *Journal of Economic Theory* 12, pp. 472–82. See also Norman Schofield ,1978, 'Instability of Simple Dynamic Games', *Review of Economic Studies* 45, pp. 575–94.

[6]For a major effort to apply this perspective to the making of agricultural policy, see Eduardo Campos, 1987, 'A Simple Political Economy Model of Price Supports,' PhD Dissertation, California Institute of Technology. Dr. Campos is now on the faculty of the Wharton School of Business of the University of Pennsylvania.