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ALTERNATIVE APPROACHES TO THE POLITICAL
ECONOMY OF AGRICULTURAL POLICIES:
CONVERGENCE OF ANALYTICS, DIVERGENCE
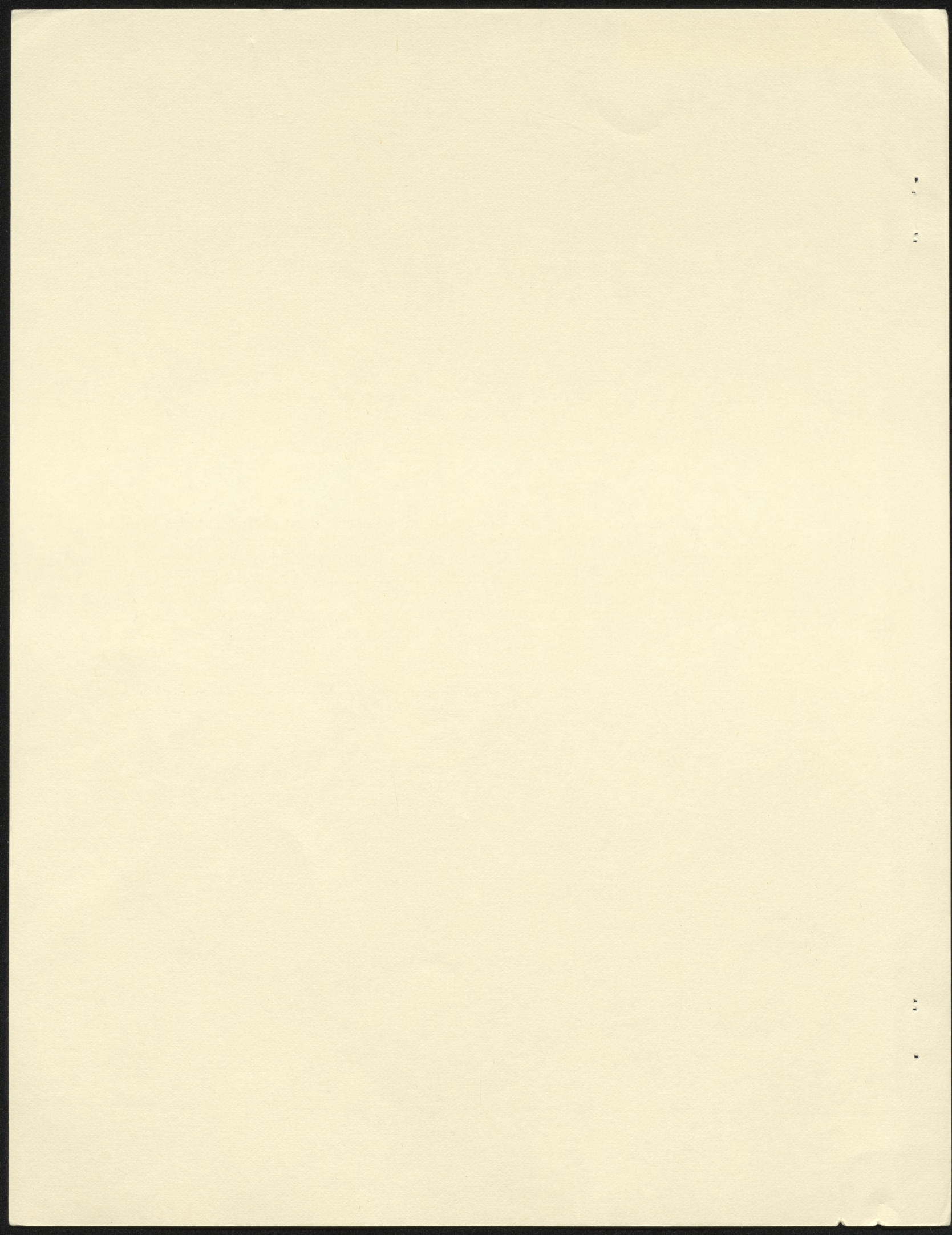OF IMPLICATIONS

and

Robert H. Bates

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by

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ABSTRACT

There has, in recent years, been a highly creative convergence in the positive approaches to political economy followed by the classical and neoclassical schools. The first has contributed with the identification of issues and the specification of structural context. The second with the formalization of microfoundations and the use of rigorous analytical tools. This conjunction permits to reformulate the theories of technological and institutional innovations.by casting them in the context of transactions costs analysis and collective action. We show how economic and political forces explain the determination of the bias of technological change and the land tenure system. While positive analysis has converged, normative economics remains divergent in the choice of objectives and instruments, leading to different policy recommendations regarding the optimum bias of technological change and the optimum land tenure system.

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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.

I.   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 transactions 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 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). 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 behavior 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 behavior (Roemer);

and (2) a functionalist logic derived from the laws of motion of particular modes of production and from the logic of class behavior and of the state moved by instrumentalism or capital logic.

Both modern neoclassical (MNC) analysis (in the vintage of Stiglitz, Akerlof, Newbery, etc.) and modern classical (MC) analysis (in the tradition of Bowles, Bardhan, Eswaran and Kotwal, etc.) 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 labor power and labor in the production process long central to Marxism (Edwards) 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 to understand why different agents face different effective prices based on differential asset ownership and, hence, why they eventually organize 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 rigor of neoclassical optimization analysis, opening the road to what Bardhan has labeled "rational choice Marxism." Eswaran and Kotwal, for example, have derived endogenously from rational choice behavior, 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, Kautsky).

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 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 behavior 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 analytical rigor. Economists in the neoclassical tradition tend to remain primarily focused 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 transactions 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), 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 assets is key in reducing such transactions costs as the need to supervise labor and moral hazards in contractual arrangements, thus increasing efficiency at the same time as it

enhances equity. One such 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, Bowles and Gintis).

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. 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 to establish 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 social losses as opposed to the pure neoclassical theory of rent seeking that uses the first best as the reference point (Kruger). For the latter theory, lobbying directed at asset ownership is neutral on efficiency and lobbying directed at technology necessarily creates net social losses.

II. 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 to explain why the United States and Japan have followed such sharply contrasted technological paths, the first with a technology biased toward laborsaving and the second toward landsaving.

As in other neoclassical formulations, the NCTI postulates the existence of perfect markets 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 exist no conflicts among farmers in their demands for technological innovations; the state is able to respond indiscriminately to

these demands; and, as in all 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 behavior 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 labor 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 labor will, consequently, rise as the number of hired workers relative to family labor increases, i.e. 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 above 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 labor 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 1.1). Different classes of farmers and an autonomous state that maximizes social efficiency will, consequently, all have different demands for an optimum technological bias. 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 objectives establish the bargaining framework where the bias of technological change is determined. In addition to prices, as evidenced by NCTI, 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 labor and landsubstitutes and where embodied technological change can, consequently, be either labor or landsaving. 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 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 landsaving 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).

The first three relations are equivalent to the ones derived from the NCTI. The last two derive from the introduction of transactions costs in the analysis. With each farm size
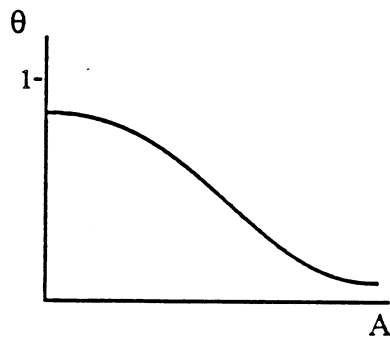
Figure 1.1 - Optimal Technological Bias by Farm Size
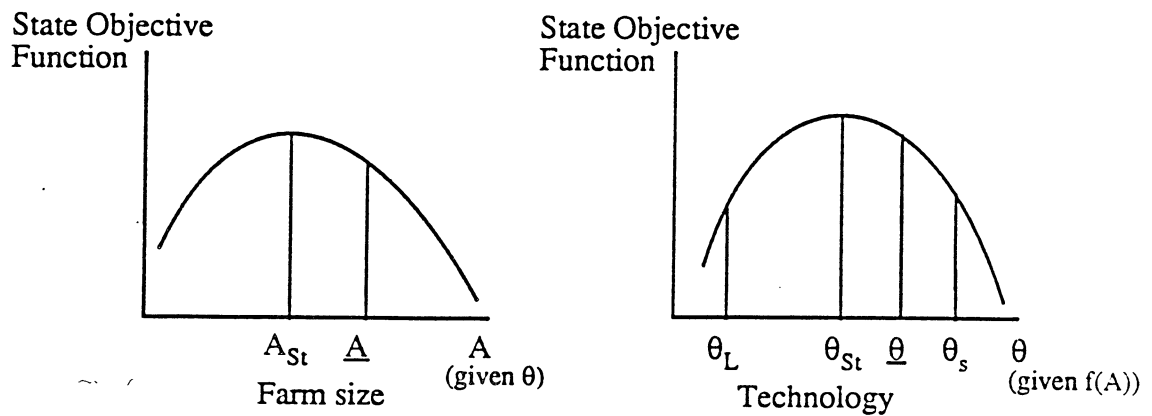
Figure 1.2 - Optimum Technological Bias and Farm Size for State Objective

A Farm size

θ Share of research budget allocated to land saving technological innovation

f(A) Distribution of farm size

$\underline{A}$, $\underline{\theta}$ 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 objective

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 which it pursues autonomously from the pressures of the farm lobbies. 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 and by Thirtle who do not take transactions costs into account in determining the optimum technological bias and 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 behavior. 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 farm 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 pure transfers of income, 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 landsaving. 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 landsaving, 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, the large farmers' demands will dominate and lead to a bias more laborsaving than the state's autonomous optimum. Thus we end up with a hierarchy of biases (from the most landsaving to the most laborsaving) by political regimes as follows:

> Most landsaving
>> Democratic state
>> Average farm optimum
>> State optimum
>> Collective action
> Most laborsaving.

For the autonomous state, as Figure 1.2 shows, there exists simultaneity in the use of technological and institutional innovations as instruments. For a given distribution of farm sizes, there exists an optimum technological bias; and for a given technological bias, 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. Reaching the absolute maximum in the state's 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 of the autonomous state, reaching the first best must take the state beyond ideology in the choice of technological versus institutional innovations.

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

III. 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), the self-interest coalition models (Downs and Olson), rent-seeking competition (Krueger), 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). 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 objective of the autonomous state in a context of transactions costs (but a state which is itself not affected by transactions costs in the achievement of its own objectives). 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 civil 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 post-colonial societies (Alavi); and the capital logic approach (Sweezy). Important in these approaches is the role of the state in anticipating or responding to disequilibria in the economy and in the legitimation of existing class 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 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 transactions 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 in showing how lobbies intervene (as "PESTs") in the definition of transactions costs-reducing public intervention ("PERTs") because of the redistributive effects that a PERT-seeking state creates. If,

however, transactions costs are not explicitly taken into account, as we did here, to understand how lobbies are organized by 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 to increase social efficiency or to reach a combination of efficiency and equity goals. 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 autonomous optimum and toward their own specific interests -- in addition to engaging into 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 pursued by the state autonomously from civil society -- all of this under the constraint of the structure of the national and international economic system (Zusman).

IV.   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 rigor 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 government do what they do, while useful for analytical purposes, are in fact complementary once the existence of transactions costs is acknowledged. With transactions costs on the way in which the state itself implements its own objectives, collective action, even of the rent seeking type, may result in net social gains. In an agrarian structure where land distribution and access to institutions is skewed toward large farmers and where the state is inclined at defining public goods for efficiency gains, more democratic forms of government will likely result in collective action toward technological and institutional innovations that will create not only equity but also efficiency gains.

FOOTNOTE:
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 obtain.
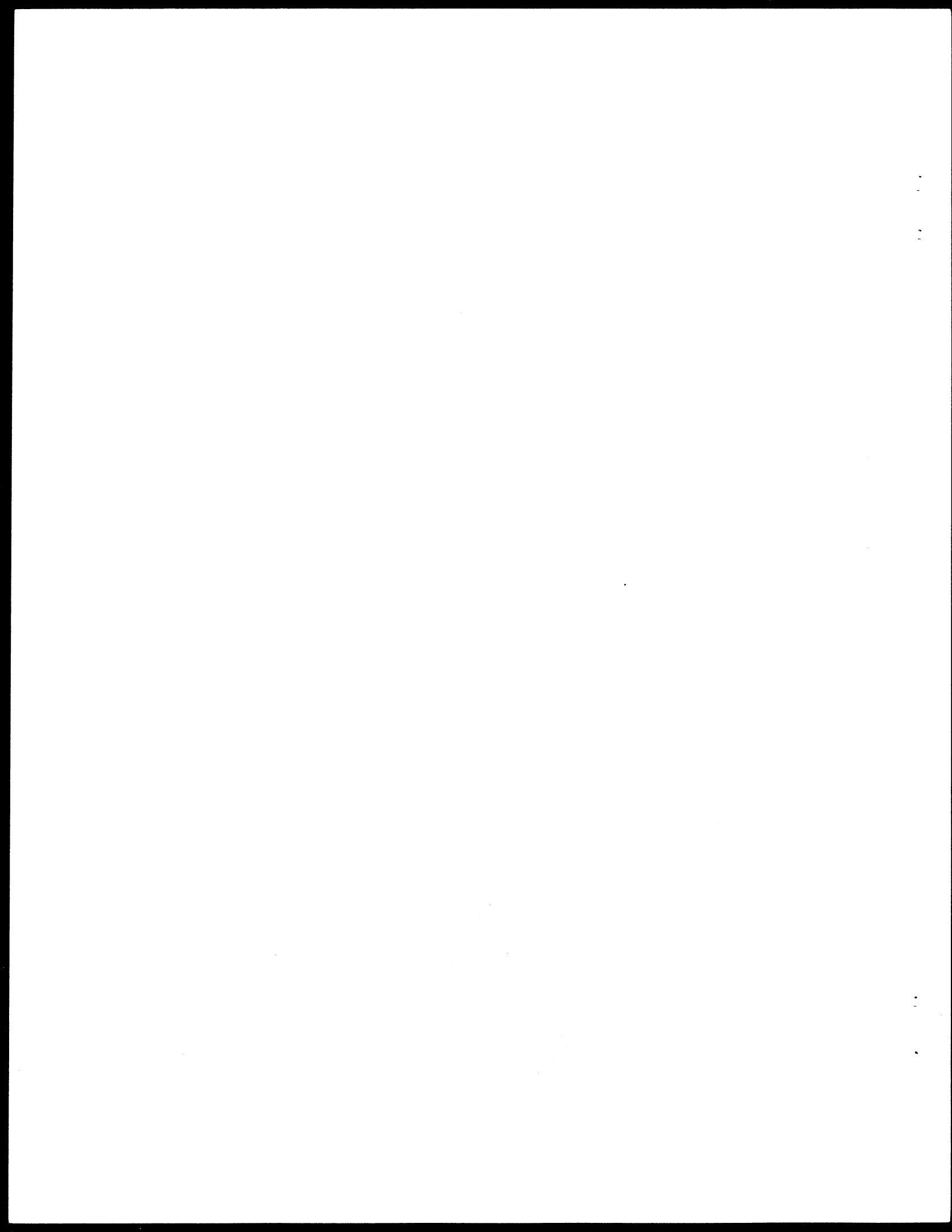
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On de Janvry and Sadoulet

by

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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 neo-classical 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 take the next
several 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 neo-classically 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 modeled,
but two forms are mentioned: one based upon interest groups
and one based upon "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 its
demands with an intensity proportional to the loss it will
experience if the state choses the policy it most 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 favorable to the more numerous small
farmers.

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 neo-
classical and classical traditions by seeking micro-
foundations 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--i.e.
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 I, I label the state's most
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 favor of the interest of large
farmers. I also assume that the ideal point of the citizens
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 are a larger
number of small than large farmers, and therefore that if X_F

were made official policy, the policy would favor 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 IIA, X_O were the status quo, then the electorate would prefer any measure that were closer to X_F, i.e. 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 lay 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 most preferred by the citizen farmers.

The need for a more refined analysis is further suggested by the consequence of slightly altering the our assumptions about the political rules (and the location of the status quo). Say that 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 IIB. 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_O (i.e. a bill X_b in the interval X_O 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 neo-classical 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 explicity modeled, 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 piece 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 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 favor 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 favor 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 chose 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 III. 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 prefer 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 lay outside the boundaries of the Pareto set. Responding rationally to the rules of the political game, political actors may chose 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 neo-classical 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 much talk of 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 analyze 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.

FIGURE I

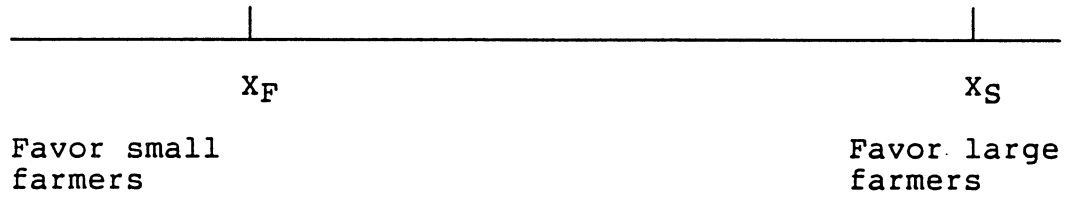## The Ideal Points of the State and the Median Farmer

$$X_F \hspace{8cm} X_S$$

Favor small   Favor large
farmers   farmers

FIGURE II

Outcomes Under Different Rules and Locations of the Status Quo

A

X_O X_F X_b X_S

B

X_F X_O X_S

Favor small   Favor large
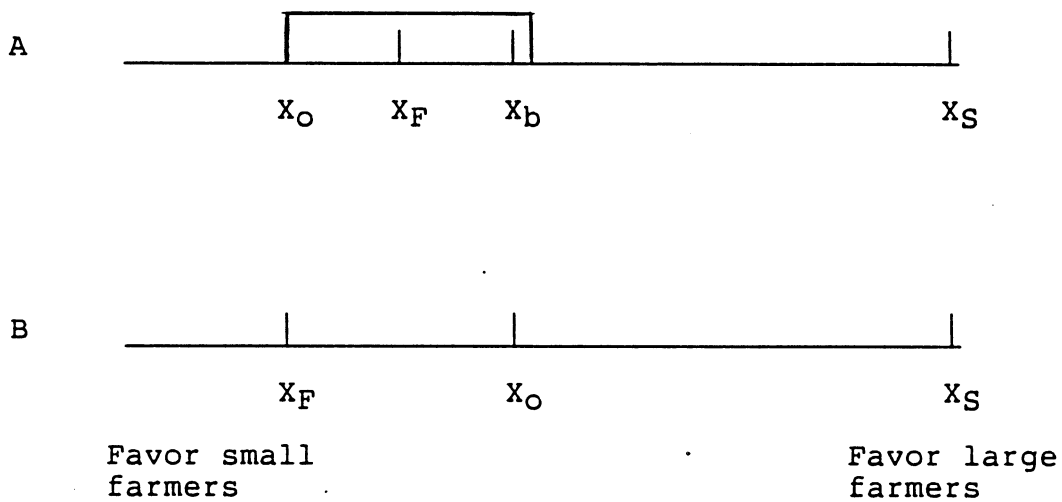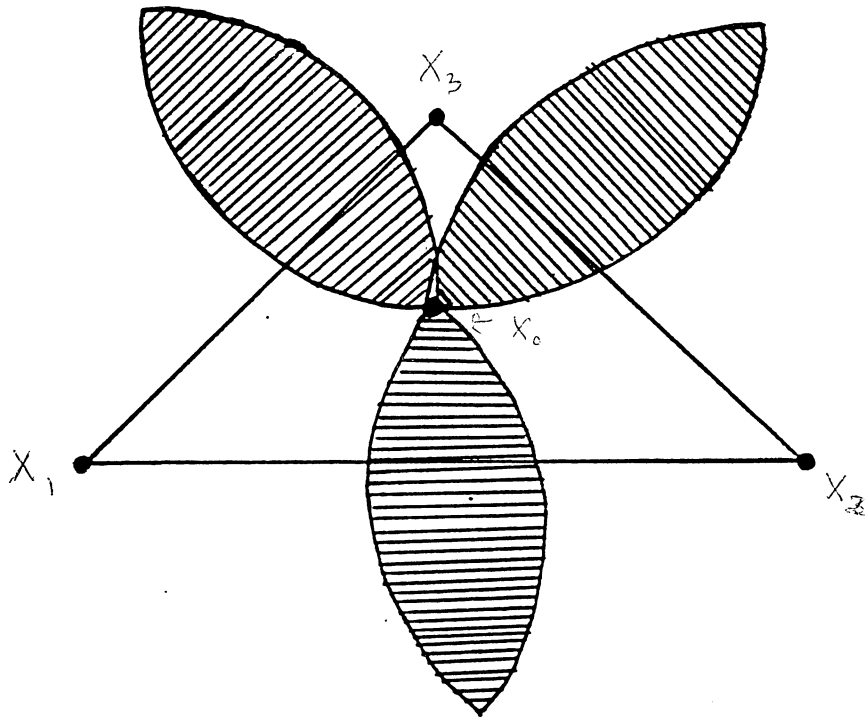farmers   farmers

FIGURE III

Policy Making in a Non-Unitary State

FOOTNOTES

[1] See John Elster, <u>Explaining Technical Change</u> (Cambridge: Cambridge University Press, 1983) and John E. Roemer, <u>A General Theory of Exploitation and Class</u> (Cambridge, Mass.: Harvard University Press, 1982).

[2] See Mancur Olson, <u>The Logic of Collective Action</u> (Cambridge, Mass.: Harvard University Press, 1965).

[3] For a fuller presentation of this sort of analytic reasoning, see Peter C. Ordeshook, <u>Game Theory and Political Theory</u> (Cambridge: Cambridge University Press, 1986).

[4] This analysis builds upon Thomas Romer and Howard Rosenthal, "Political Resource Allocation, Controlled Agendas and the Status Quo," <u>Public Choice</u> 33 (1978):27-43 and Arthur Denzau and Robert MacKay, "Gatekeeping and Monopoly Power of Committees: An Analysis of Sincere and Sophisticated Committees," <u>American Journal of Political Science</u> 27 (1983):740-61.

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

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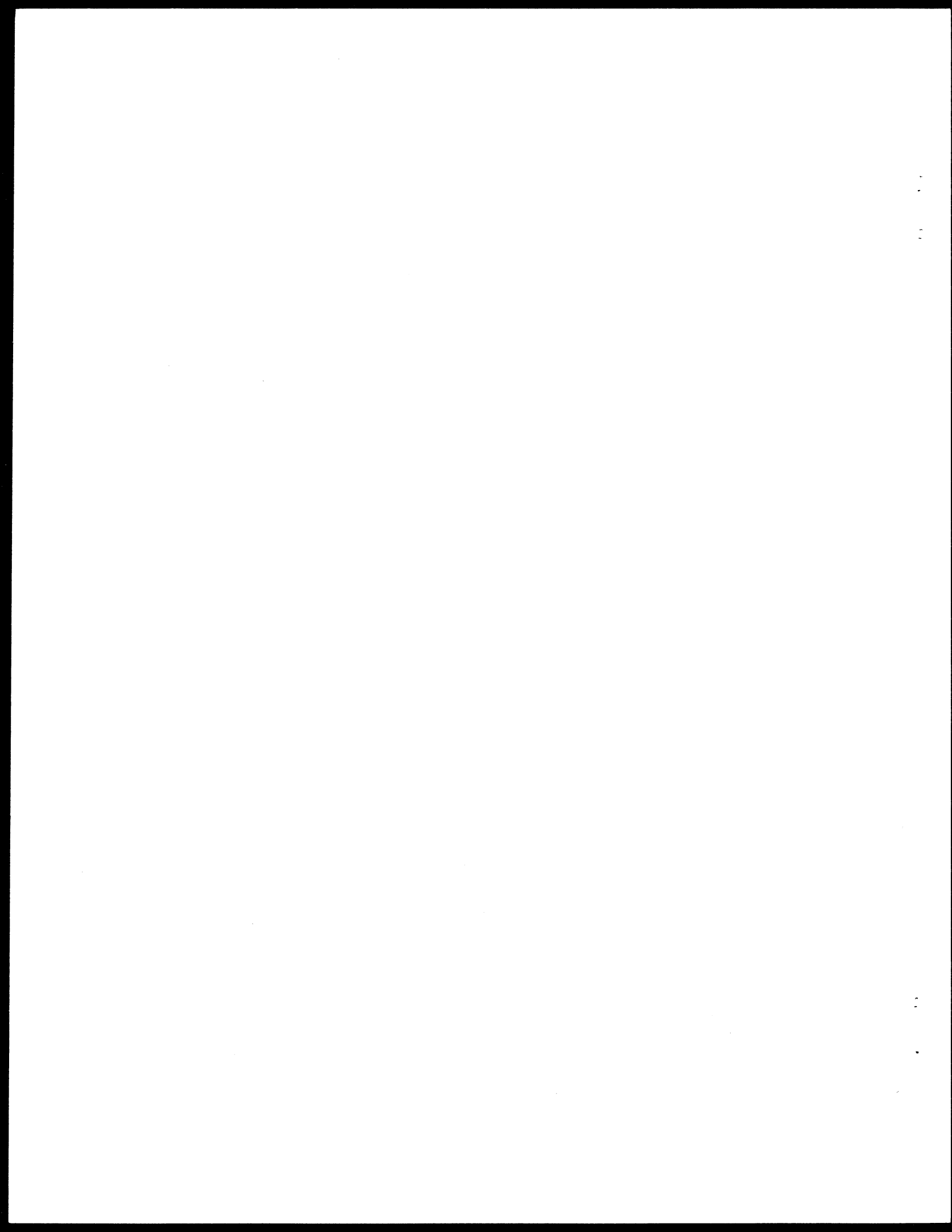
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