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THE POLITICAL ECONOMY OF RICE IN ASIA: A METHODOLOGICAL INTRODUCTION

The current revival of political economy is testimony to the growing realization among development economists that the traditional "box of tools" often is not sufficient to solve many important development problems. Indeed, the tools sometimes seem to get in the way of identifying the real problems. By focusing economists' attention on those problems amenable to neo-classical economic analysis, the "box of tools" approach frequently justified the recent criticism that economics is busy "determining with great precision the optimal location of deck chairs on the Titanic."

The failure to ask the right questions has been nowhere more apparent than in research on international commodity problems. While economists were busy measuring demand and supply elasticities in a *ceteris paribus* world, the astonishing variation in national "rules of the game" and the frequency with which these rules changed were ignored or went unnoticed. The result was a myopic blend of technical sophistication with an air of unreality that politicians often (rightly) rejected.¹

The Stanford Project on the Political Economy of Rice in Asia had its origin in the economic advice offered by the principal investigators on policies in a number of countries and the realization that the political, economic, and legal rules by which rice policy was created, implemented, and judged were vastly different from country to country in Asia. With this realization came the central hypothesis of the project: central functional tendencies were observed within highly diverse national rice policies. It was, and is, premature (and probably incorrect) to argue that rice policies evolve through an inevitable sequence of stages more or less in step with the stage of economic development. The Stanford Rice Project sought to go one stage further—not to relate rice policy to levels of development, but to understand the basic causal mechanisms in the determination of rice policy. The stage of economic development supplies arguments that impinge on these mechanisms (which in turn have an impact on economic development). But the intent of the project from the beginning was to search beyond narrow economic factors for an understanding of how rice policies were determined and

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¹ The author freely confesses to being guilty of these charges as well.

to proceed from there to a broad understanding of the circular impact of rice policies on the society and on the international rice market.

Such schemes are, if not a dime a dozen, at the least merely schemes unless the financial resources are available to do the research that permits the hypothesis to be tested. For this project, funding was provided by the United States Agency for International Development (USAID) under Contract No. CM-ASIA-C-73-39. Funding began in July 1973 and ran through calendar 1975. During this 30-month period, professionals from eight countries were involved in data collection, analysis, and research on the history of rice policy.² Preliminary results were discussed at conferences held in July 1974 at the International Rice Research Institute (IRRI) in Los Baños, the Philippines, and in June 1975 at the Joint Commission on Rural Reconstruction in Taipei, Taiwan. Additional financial support for these workshops was provided by IRRI and the Agricultural Development Council. At the time of this writing, more than 20 working papers have been completed under project auspices.

Three separate but complementary research areas were identified. Data collection and evaluation naturally had priority in several countries and were essential to the subsequent history of rice policy and its effectiveness. With these two tasks complete, a cross-national perspective on evolution of rice policy and its national and international impact could be constructed. The essays presented in these two special issues of *Food Research Institute Studies* (Vol. XIV, No. 3 and Vol. XIV, No. 4) present these comparative results. This issue contains the methodological framework used in several of the analytical histories of national rice policies. Following this framework are the essays for Indonesia, Malaysia, Thailand, and the Philippines. These four countries are grouped because of their geographic proximity and agronomic similarity. The succeeding issue contains the essays for the United States (an important participant in the political economy of rice in Asia), Japan, South Korea, and Taiwan. This grouping also has the logic of geographic proximity (with the obvious exception of the United States) and agronomic similarities. The second issue closes with an essay outlining the primary cross-national lessons that emerge from the national essays and from other research conducted under the Stanford Rice Project.

What kinds of methodology permit, or force, economists to look outside their comfortable range of problems fixable with the box of tools? More concretely, how can economists be sensitized to considering the broader questions of how rice policies are generated in the first place, rather than looking at the impact of alternative formulations of particular programs within the general policy set? The framework used for this purpose invoked the language and decision rules of linear programming familiar to most economists.

The standard formulation of the linear programming problem is the maximization of an objective function by operating activities at levels dictated by constraints on availability of inputs. Lagrangean multipliers permit the same sort of constrained maximization problems to be treated with the traditional calculus, and it was in this context that Tinbergen presented his theoretical

² See Appendix I for a complete list of the personnel involved with the Stanford Rice Project.

analysis of economic policy.³ Tinbergen realized that economic policy making was a constrained maximization problem. Governments have certain objectives which they try to achieve—reduction of unemployment, increase in price stability, decrease of balance-of-payments deficits, and so on. The government policy makers have various policy instruments that can be used to affect the level of unemployment or rate of inflation, for example, but they cannot be used in a vacuum or in a laboratory environment. In fact, a wide range of constraints conditions what policies are permissible and how effective they are in achieving the objectives. Tinbergen noted that constraints on policy implementation range from purely legal to socially customary, from analytically economic to opportunistically political.

The framework used by the Stanford Rice Project is in some sense merely a formalization of the obvious; the interaction of policies, objectives, and constraints can be reduced to a truism by adding perceived constraints, using real objectives rather than stated ones, and by defining policies only in terms of their contribution to objectives. But even at this level much is to be gained by a cross-country comparison in just these terms. Few attempts have been made to make operational Tinbergen's general (Lagrangian) framework or the specific interpretation of it within the linear programming context. Yet, even fairly rough efforts to frame a cross-section of countries' rice policies within the consistent language and order of objectives, policies, and constraints should significantly improve our understanding of both national policies themselves and patterns and regularities across countries.

A useful first step in understanding how the framework is intended to be used is to see it fully idealized as a linear programming problem. This approach permits the convenient shorthand of talking about sets of variables in algebraic notation, as well as emphasizing the necessary interaction implicit among desired objectives, operative policies, and felt constraints. It must be emphasized that actual linear programming solutions, not to mention the more general Lagrangian solutions, are not feasible for this framework at the present time and possibly may never be. Solutions are not, however, the reason for explaining the framework as a linear programming model. What is important is the frame of mind; more than anything else, linear programming is a way of looking at problems. Skilled practitioners must develop an almost instinctive sense for what drives a solution. This ability of linear programming to promote an understanding of what drives a fully interactive system of activities, constraints, and objective function is the critical aspect for the rice policy framework. Efficient solutions to a policy model would, of course, be exciting and desirable. But much is to be learned about the more elementary questions of what makes the system go.

The driving force is revealed in the appearance of the system in the compact format of linear programming.⁴ Since the framework is designed to facilitate cross-country comparisons of rice policy formulation, it is necessary to determine

³ The analysis is contained in J. Tinbergen, *Economic Policy: Principles and Design*, Amsterdam, North-Holland Publishing Co., 1956.

⁴ This interactive system is expressed in the standard language of linear programming in C. P. Timmer and W. P. Falcon, *Agriculture in Development Theory*, ed. by L. G. Reynolds, New Haven and London, Yale Univ. Press, 1975, pp. 405–8.

which parts of the system—the objectives, policies, and constraints—are specific to each country and which parts might reasonably be taken as general for the set of countries.

There are at least eight broad areas of objectives that Asian countries have pursued with their rice policies:

1. welfare protection for consumers (including maintenance of a low cost wage good);
2. income generation for farmers;
3. generation of government revenue (at local and/or national levels);
4. generation of foreign exchange (through exports or reduced imports);
5. reduced reliance on uncertain foreign markets for the basic foodstuff (self-sufficiency);
6. price stability (both inter- and intra-seasonally);
7. regional development (and equity); and
8. provision of adequate nutrition.

A strictly *laissez-faire* economy with a neutral government will achieve some combination of these objectives. But if that outcome is not politically satisfactory (to the people, the elected government, or the king), it is possible to alter the *laissez-faire* outcome by specific governmental intervention.⁵ This intervention takes the form of policies and programs designed to alter, either directly or indirectly, the functioning of the physical (rice) economy. Although differing greatly in individual detail, these policies are drawn from a relatively limited set of possible forms of intervention:

1. consumer programs (including subsidies for rice or substitutes);
2. farm production programs (either intensification or diversification);
3. domestic marketing investments;
4. concessional foreign trade (including exchange rate biases);
5. direct taxation or other forms of fiscal transfers;
6. price controls (by legal fiat and/or market operations), including (a) floor price, (b) ceiling price, (c) buffer stock as stabilizer, usually in conjunction with (a) and (b); and
7. physical controls, including rationing and non-price collections and disbursements.

Policies are used to achieve objectives; inputs are used to implement policies. Constraints on the availability of inputs limit the extent to which policies can be implemented. While the objectives and policies so far presented have been general, the constraints on inputs will tend to be country-specific. Still, the list of inputs (and hence constraints) themselves can be taken to be general since not all inputs need to contribute to all policies.

The list of economic, technical, social, and political inputs into policy implementation will be lengthy if a significant degree of realism is to be achieved.

⁵ The author refrains from saying that government intervention will always improve the outcome, for it will not. What is important is that a potential exists for improvement through government intervention.

Efficiency in policy making is a slippery concept at best, and it is impossible to define without reference to both the *hard* and *soft* constraints on decision making. The line between the two is inevitably blurred, but the response of given rice varieties to fertilizer under fixed agronomic conditions illustrates a hard constraint, while the political necessity to assure urban popular support through low rice prices illustrates a soft constraint. And yet, the policy maker sitting in the capital may feel the soft constraint much more forcibly than the hard. To understand the formulation and effectiveness of rice policy, it is necessary to consider both kinds of constraints.

A partial list of constraints on policy implementation includes the following categories:

1. consumption structure and domestic demand parameters;
2. production technology and domestic supply parameters;
3. international market structure and demand-supply parameters relative to the country in question (e.g., the price effect of entering the world market as a buyer or seller);
4. availability of foreign assistance, both in the short-run as food aid (e.g., rice and wheat on soft-loan terms) and in the longer-run as research inputs (e.g., new varieties from IRRI);
5. governmental administrative capacity (and effectiveness of field workers);
6. domestic market and foreign trade prospects for alternative crops (e.g., maize, cassava, soybeans);
7. state of development of the basic marketing system for both inputs and outputs;
8. government budget that can be committed for rice policy (which may depend on the effectiveness of the policies in the current or previous periods);
9. legal requirements (e.g., limits on sizes of landholdings, or prohibition of certain ethnic groups from particular areas of economic activity);
10. social factors (e.g., the habit of sharing the harvesting task with all who wish to participate); and
11. political factors (e.g., the ability to change prices, use of a price support program for patronage and corruption, and the role of vested interests).

The list of constraints is purposefully inclusive of a very broad range of considerations affecting a policy maker's decision process. This approach permits an iterative resolution to the inherent circularity among coefficients, constraints, and efficiency in policy making. A break is made into the circle by assuming rationality and efficiency on the part of the policy maker and then searching for the constraints, however soft, that explain the actual policies implemented. The rationality or efficiency of policies is then a function of how difficult it would be to break the constraints or whether the constraints as perceived by the decision maker are real or imagined.

The potential for asking efficiency questions about policy making is the most exciting aspect of the political economy framework, but this potential can be realized only with cross-country analysis. For the moment, the framework has substantial descriptive and analytical power for individual country analyses. The

intent, of course, is that by using this descriptive and analytical potential for each country, the cross-country analyses will be thereby more useful and productive.

Hence, the dynamic aspect should be held foremost in mind. What happens as constraints change? As objectives evolve over time, as a society perceives new possibilities and fulfills old dreams, how do policies change? Investment today may break a binding constraint tomorrow. Will the old policies be used more intensively, or does a whole new policy set become feasible? The political economy framework suggests these kinds of questions, and it provides a rough mechanism for organizing the research that will produce the answers.

The eight essays on individual countries attempt to fit Asian rice policy into this framework. Typically, the first step is to set out some of the technical and economic realities of rice in each country. This task involves a descriptive and quantitative review of the geographic setting that so heavily conditions the unique nature of Asian agriculture as well as a brief summary of the state of knowledge about production, marketing, and consumption parameters. A book for each country should be written here alone, but present knowledge and resources will not permit it. The gaps in understanding of basic economic parameters vary widely from Indonesia to Japan to the United States, and these data gaps themselves are often a constraint.

Rice policy is influenced not only by technical and economic constraints but also by its own history. Government involvement dates back to at least the seventeenth century in a number of important Asian countries, especially Indonesia and Japan. In the historical reviews the previous centuries of rice policy, and especially the previous three decades or so, reveal government officials' frame of mind about what is important from rice policy and how it is to be achieved. Many of Asia's present rice problems have their roots well in the past.

With the stage set, it is then possible to treat modern Asian rice policy. Each author makes an attempt to understand what drives the system, what the overriding objectives are, and which constraints condition the policy choices. The results are personal scholarly interpretations, not official positions. Each reader is free to inspect the data himself and to reach a different evaluation. What is useful about the approach and the essays that follow, however, is their consistent effort to uncover those central functional relationships that form the core of any uniformity underlying Asia's diverse rice policies.