IMPACT ASSESSMENT DISCUSSION PAPER NO. 4

ADDING VALUE THROUGH POLICY-ORIENTED RESEARCH: REFLECTIONS OF A SCHOLAR-PRACTITIONER

C. Peter Timmer

Director-General s Office

International Food Policy Research Institute
2033 K Street, N.W.
Washington, D.C. 20006
Tel: (202) 862-5600
Fax: (202) 467-4439
E-mail: IFPRI@CGNET.COM

October 1998

Little is known about the impact of social science research in general, and food policy research, in particular. In order to expand the scope of available academic research and to develop quantitative methods for estimating the impact of IFPRI's work, several papers were commissioned from social scientists. Furthermore, IFPRI held an essay contest to solicit research from a broader range of scientists. The resulting papers were discussed at a two-day symposium organized by IFPRI in 1997. This Discussion Paper is a revised version of a paper prepared for and discussed at the symposium. Other papers will be published in this Discussion Paper series over the next months.

CONTENTS

Page

ABSTRACT

Any evaluation of the benefits of policy-oriented social science research faces fundamental difficulties. These include the uncertainty in determining a causal link between research and the outcome of a policy or the value of a policy outcome. Nonetheless, firm connections can be established between policy research and policy outcomes if there are strong links that bridge the gaps between social science research and the various parts of the policy process. These connections can be established often enough to make it possible to learn about the relationship between research and outcome and the key variables that affect the social profitability of the underlying research.

This essay uses the author's experience with agricultural price policies in Asia, Indonesia in particular, to examine these connections. Four issues pervade the analysis of price policy in Asia: How does an analyst know what policy is best? How can an analyst best communicate the results of research to policymakers? Can a new policy be implemented? Does the new policy work? This last issue, the evaluation of policy, is often neglected, but it can provide an important input into the design of policy and should be made an integral part of any policy process.

The author's experience in Indonesia suggests four factors that can make policy-oriented research successful. First, the analyst should be involved with the same policymakers or in the same policy setting for the long term. Second, there is a need to find a balance between keeping analysis and advice confidential and the ultimate publication of the key models and results. Third, the analysts should rely on the analytical paradigms of the mainstream of the economic profession even while examining deviations from their underlying assumptions. Lastly, there should be continuing demand from policymakers for problem-oriented analysis.

ACKNOWLEDGMENTS

This is a revised version of an essay drafted for an international symposium on "Measuring the Benefits of Policy-Oriented Social Science Research," sponsored by the International Food Policy Research Institute (IFPRI), April 4–5, 1997, in Washington, D.C. I would like to thank participants at the symposium for helpful comments, and my wife, Carol F. Timmer, for her meticulous editor's eye and thoughtful suggestions on how to make the essay more accessible and persuasive. At the time of drafting this paper, the author was Thomas D. Cabot, Professor of Development Studies At-Large, Harvard University.

1. INTRODUCTION

A methodology for evaluating the benefits of policy-oriented social science research could have radical consequences for the size and composition of the financial support given for such research. If medical research offers any insights, it suggests that a neutral and widely accepted methodology for evaluation, double-blind clinical trials, for example, would quickly weed out approaches that have failed from those that are promising. Financial resources for research could then be devoted to these promising lines of inquiry, thereby making the allocation of resources more efficient. More generally, the experimental sciences offer a rational and reproducible methodology for testing hypotheses—the "scientific method."

Although the scientific method underlies the logical approach of most social science research, policy analysis based on such research usually cannot rely on data from carefully designed experiments to test hypotheses.[1] Instead, policy analysts must, at least implicitly, design models of the societies they are investigating, estimate the parameters for the models from whatever historical data are available, and then run the models with counterfactual assumptions about the world as a test of how a change in policy would alter outcomes.[2] Whether the model is formally written down and estimated statistically, or is based on the intuition and knowledge of an experienced policymaker, tests of alternative policies will inevitably be less than scientific. This inability to design scientific experiments to test hypotheses generated by empirical experience is perhaps the biggest difference between practitioners of economics and medical science. Otherwise, the parallels between the two professions are striking and illuminating (Harberger 1993).

Apart from the inability to use experimental evidence to evaluate the effects of changes in policy, three fundamental problems make it difficult to evaluate the benefits from policy-oriented research. First, the process of establishing a causal link between research and the ultimate outcome of a policy is almost always controversial, not the least because evaluation of the effect of the policy itself is often controversial. Not all exogenous variables can be held constant even in the most complex model of a society, and a causal link between a change in policy and a particular outcome can never be established with the confidence attached to carefully controlled experimental results. Social outcomes are always subject to the possibility that they were caused by something else or would have happened anyway, a point emphasized by Krugman (1997).

Second, policies are by definition acts of government. In principle, such acts should be designed to solve problems that private agents acting in markets cannot solve in a manner that is optimal for society. Thus there is an almost inherent contradiction between how the outcome of a policy is valued by the market and by society. Economic theory suggests that there will inevitably be problems in establishing the value of a policy that closes the gap between the private profitability of an outcome and its social profitability. Economists have not ignored this problem, as methodologies that use

contingent valuation or maximization of combined producers' and consumers' surplus attest, but no one would argue that the problems have been solved. And it is even more problematical to establish the value of social science research that has an input, usually only one of many inputs, into the design and implementation of a policy that bridges private and social profitability.

Third, even if the benefits could be quantified and clearly linked to both the policy that was implemented and the research that went into the policy design, an evaluation of whether society gained or lost would still be plagued by the difficulty of making interpersonal comparisons when the policy was not Pareto-improving. Even for Pareto-improving policies that are implemented but for which the feasible redistributions are not actually made—so that some individuals lose although in principle they could be compensated by the winners for their losses—a gain in social welfare cannot be claimed without an explicit social welfare function. Social choice theory focuses on the mechanisms available to a society that permit such a welfare function to be defined (and realized). A major problem is that under democratic institutions and voting schemes, an explicit social welfare function is impossible to design (Arrow 1951).[3]

A general "nonexistence theorem" that proves the impossibility of linking policy research to the welfare of society would formalize the arguments outlined above, but that is not the purpose of this essay. Instead, the likely nonexistence of a general connection between policy research and social benefits is taken as an argument for making the discussion more specific. In particular, the approach taken in this essay suggests that firm connections can be established between policy research and policy outcomes if there are strong links, often personal links, that bridge the gaps between basic social-science research and the analysis, advising, design, implementation, outcomes, and evaluation of policy.

Not all policy processes can establish and maintain these links, but in the specific cases where they have, an opportunity exists to identify and quantify the cause-and-effect relationships that connect research to the outcomes of policy in ways that are simply impossible to make as generalizations. With enough examples of such quantification, it should be possible to learn about the relationship between research and outcome and the key variables that affect the social profitability of the underlying research. Even a handful of examples would sharpen the discussion considerably and point the way toward the most productive forms of social science research designed to influence policy.

This essay pursues these themes at two levels. The distinction between social profitability and private profitability establishes the theoretical difficulties of identifying benefits from policy analysis. These difficulties set up the first theme, a sequence of

lessons on how to make policy analysis more effective in practice, and thus to raise its social profitability for a given amount of cost.

The essay tracks the interactions among research, the analysis of policy and advice given to policymakers, and the design and implementation of policy within the field of agricultural price policy, where the author has considerable experience. This section builds on earlier analyses of rice market interventions in Asia and demonstrates how complex it is to establish credible causal links from one stage of the policy process to the next (Timmer 1988). When bureaucratic actors, political forces, and economic shocks are added to the array of factors affecting the outcome of a policy innovation, it is difficult to see a clear trail from research to outcome.

The second part of the essay attempts to crack this conundrum by highlighting the issues in the context of Indonesian rice price policy before the financial crisis began in late 1997. Indonesia has poured substantial resources into implementing its rice policy, of course, but it has also made a considerable effort to understand analytically how to design and evaluate that policy (Timmer 1991, 1986b). As a "scholar-practitioner" who has participated in virtually all stages of this policy process since it was first designed by Mears and Afiff (1969), I will argue that a plausible train of causation can be established by showing the relationship among policy analysis, subsequent changes in the policy, and effects of the policy changes on the economy. Because much of the analysis is in the public record, I hope to minimize the potential for special pleading. But even at this level of specificity, the relationships may well prove to be controversial.

2. MAKING POLICY ANALYSIS USEFUL: THE POLICY CYCLE AND THE IMPORTANCE OF FEEDBACK

If governments let world markets determine domestic prices, no analysis of price interventions would be needed. It would also be possible to intervene heavily in markets without an analysis of the likely outcome. But such an idiosyncratic and unsystematic approach to agricultural pricing has proven ineffective in helping societies reach their food policy objectives. The alternative is price policy analysis, a somewhat formal effort to understand how existing and proposed price policies affect these objectives. The principles and basic methodological frameworks for this analysis are presented elsewhere (Timmer, Falcon, and Pearson 1983; Timmer 1986a). The goal here is to examine the experience of Asian countries in applying these principles and frameworks and extract a few common issues that all analyses of food price policy must address. In this sense, the story runs parallel to Harberger's Ely Lecture to the American Economic Association, in which he asked what policy practitioners do and how they learn to do it (Harberger 1993).

Four issues seem pervasive, but only one is analytical in the narrow sense. First, how does an analyst know which policies are best? This is the narrowly analytical issue, but even at this level, a simple determination of optimal answers is not possible. A broad set of objectives and constraints must be incorporated into the analysis. So must a clear recognition of the actual starting point for the food system.

Second, how can the results of policy analysis be communicated effectively to policymakers, so that they can make appropriate policy decisions? This effort to communicate puts the analyst into a negotiating role in which pedagogy can be crucial to the outcome. Although this role requires a subtle change in the analyst's task from that of understanding to advising, it does not necessarily require that he or she advocate specific policy recommendations. Rather, the analyst must remain an advocate for the analysis itself and for an understanding by policymakers of the trade-offs identified in the analysis.

The third issue is whether a new policy can be implemented. A frequent criticism of policy analysts, especially of economists, is that they are excellent at designing policies, but ones that governments are not capable of implementing. In fact, analysis that ignores problems of implementation is simply bad analysis. The problems might be economic, political, social, or cultural, but they must be incorporated into the analysis of a policy if that policy is to be implemented successfully.

The fourth issue for the policy analyst is whether the new policy actually works. After the analysis, communication, and implementation are done, the policy must be evaluated. Much is to be learned by the original policy analyst from the evaluation process because unexpected problems always arise. Trying to distinguish elements in

these problems that are systematic from those that are purely idiosyncratic provides valuable lessons for the next cycle of policy analysis.

ANALYSIS, OR HOW TO KNOW WHICH POLICIES ARE BEST

What is best can be determined only with respect to a set of objectives. If the objectives conflict with each other, or if a policy promises improvement in one goal at the expense of others, some mechanism for weighting outcomes is needed. It is not normally the task of the analyst to provide these weights; the task is to explain carefully, and as quantitatively as possible, the effects of alternative policies on social objectives. The objectives themselves are usually not controversial. One widely cited source lists the following: efficient growth in agriculture; improvement in income distribution through productive employment; a nutritional floor for the poor; and national food security as reflected by stable prices in markets for major staple foods (Timmer, Falcon, and Pearson 1983).

Individual policymakers, and indeed entire governments, sometimes have objectives that are sharply at variance with these social welfare-oriented goals. If so, analysts must understand how this divergence affects the prospects for successful communication and implementation, a topic to be discussed shortly. But analysts must avoid becoming "yes men in the halls of political economy," to quote Schultz (1978). This is a delicate task. The initiative for firing the analyst, or not asking him or her to do the analysis in the first place, lies with the government, not the analyst. Still, economists bring to the table a unique understanding of the importance of allocative efficiency and the factors that influence its achievement. There is a certain professional ethic in keeping the efficiency issue on the table.

Whether analysts can successfully push on behalf of the objectives of the broad social goals noted above depends partly on the environment and partly on the skills and reputation of the analyst. Coping with all four issues discussed here, not just the narrower analytical issues, helps policy analysts walk the fine line between not rocking the boat and "speaking truth to power," to use the title of Wildavsky's book on the art and craft of policy analysis (Wildavsky 1979). In developing countries, especially those under the more authoritarian governments found in much of Asia, policy analysis has often been called on as a substitute voice for the interests of those disenfranchised or not well-enough organized to affect policy deliberations on their own behalf. Large corporations, unions, students, the military, and even the government's own bureaucracy can easily and effectively make their interests known as policies are debated. But small farmers, poor consumers, and the many workers and entrepreneurs in the informal sector will often be

voiceless in the policy process unless analysts specifically incorporate their welfare into their analysis and the policy debate.

What kind of methodological framework can illuminate this broad range of issues? Even socialists or structuralists must look to analytical methods that explain individual and household decisionmaking. Having clear microeconomic foundations for understanding the effects of a change in policy is particularly important when small farmers and enterprises dominate economic activity. When appropriately stretched to address the kinds of issues raised here, the basic neoclassical economic model of households, firms, and markets provides a broad base on which to build the analysis. Many of the assumptions underlying the pure neoclassical model do not hold, however, and relaxing them often has severe implications for the normative conclusions derived from the principles behind the model (Stiglitz 1987). But as an empirical framework, with parameters carefully estimated from the country's own experience, the household-firm-markets model provides powerful insights into the workings of most countries' micro economies. Achieving multi-market or macro consistency for the results of such micro analysis is still difficult, though this problem has been at the frontier of economic research for more than a decade.[4] Such difficulties should not discourage the analyst. The goal is to improve the situation—to move policy in the right direction. Sensible and empirical application of a micro framework with some attention to market spillovers and macro effects has proven to be a remarkably robust approach toward achieving this goal.

NEGOTIATIONS, OR HOW TO COMMUNICATE THE RESULTS

The ability of the analyst to transmit analytical results to policymakers depends on the relationship between analyst and policymaker. Several roles can be identified. Analysts might work within an agency under the daily supervision of a policymaker, or they might work for an international agency, such as the International Monetary Fund or the World Bank, that makes virtually no contact with the country's policymakers until a final briefing. The role played determines the difficulty of communication and the importance of devoting special attention to it. Pedagogy is often ignored in training policy analysts, but one of the reasons why effective classroom teachers frequently make good policy advisors is precisely because they think consciously and critically about how to communicate effectively with an audience that is less informed on the particular topic than the presenter.

Analysts who work within an agency on terms of reference provided by their supervisor know that there is a demand for the analysis. But there is no guarantee that the results will be communicated effectively up through the agency and have the desired impact on the policy debate. Even in markets, demand does not always call forth

effective supply. In bureaucratic settings the potential for a mismatch is greater. One approach to effective communication is for the policymaker to specify clearly the problem to be solved so that the analyst has a straightforward task of cranking out results. But the policymaker often does not know the exact nature of the problem.[5] In this situation the analyst can pursue a variety of approaches and topics, but the burden of communicating the results to a potentially surprised and skeptical superior is thus greater. When the channels of communication are open in both directions, an iterative process can be established that can generate a growing degree of trust at both ends.

The problems become greater when the analysis is not conducted within the affected agency. Ministries of finance, central banks, and central planning agencies are often responsible for reviewing policy proposals from line agencies and coordinating policy analysis and debate within the cabinet. How can analysts in these units be informed well enough about the details of proposals by the line agency to review them honestly and fairly and yet remain credible with their own supervisors, who expect a tough and dispassionate evaluation? The establishment of close collegial links between analysts in the ministry of agriculture, for example, and those in the planning agency, is one of the most difficult tasks in developing countries. The failure to establish those links is one reason why "institution building" has such a weak track record. This lack of success is at least as much a failure in the design of programs to build institutions as it is an inherent part of the task. Most such programs are inward looking; they focus on the analytical skills of personnel within the agency rather than on their communication skills and collegial interaction. Naturally, this is a two-way street and can work only if the coordinating agencies reciprocate.

Analysts are sometimes outside consultants to a ministry or policymaker. Although there is some difference between foreign and national consultants in this role, the crucial distinction is that the analysts come from outside the government, usually from academic or research institutions, rather than hold staff positions. It is usually presumed that such outsiders are less likely to defend the agency's narrow interests and are better able to provide critical appraisals of policy initiatives or to evaluate existing policies. This presumption breaks down if the outside consultants develop continuing ties to the agency and thus come to expect to get future assignments for income or access to research data. Then they become more like regular staff within the agency, with all the difficulties and advantages that entails. But bringing bad news to the boss is hard in these circumstances.

A more productive role for the outsider is often in cross-ministerial communication. In this case, being a foreigner, and hence somewhat exempt from cultural restrictions that inhibit direct face-to-face discussions between low-level analysts and high-ranking officials, can be a distinct advantage. This role will be most productive

when the advisor is seen by all parties as an impartial broker with no bias toward a particular policy or agency. Such a reputation can be established only over long periods of time and with an accumulated track record that instills trust and confidence. No single individual is likely to be able to have such a role in more than one or two countries. On the other hand, it becomes difficult for such a person to work himself or herself out of a job, precisely because the longer the experience, the more valuable are the services that he or she can perform.

Policy analysts also work in donor agencies such as the International Monetary Fund, the World Bank, or the United States Agency for International Development (USAID). To improve the effectiveness of the aid process, such multilateral and bilateral agencies increasingly conduct independent assessments of policies in various countries. These assessments can simply be offered to policymakers as inputs to their own process of policy analysis and design. In this case little controversy arises. Indeed, the added analytical resources made available to governments in this manner are often warmly welcomed.

Increasingly, however, assessments of policy by donors form the basis for a policy dialogue with governments, the object of which is to induce policy changes that the donors think advisable. If the analysis has been conducted in a way that illuminates the problems facing a country, this dialogue can be extremely productive. But such is not always the case. There are often sharp disagreements over the directions of appropriate changes in policy. In many cases, the donor analysts have the economics right in a technical sense but fail to understand the other ingredients in effective policy analysis. Hence they fail to communicate the desirability of a change in policy to government officials, who are concerned about other dimensions of the effects of a policy in addition to the narrow economic ones. Donor analysts sometimes fail to communicate their analytical results in a convincing fashion because the results depend on basic assumptions in the underlying models used as the basis of the analysis, assumptions that, if challenged, could unravel the entire foundations of the advice given.

The importance of basic models to policy advice is linked to the short time horizons in which donor analysts must work. Three-week trips to unfamiliar environments mean that analysts must rely on readily accessible data, basic models with wide applicability in many countries, and a willingness to let fairly restrictive assumptions determine policy results. This approach to policy analysis requires reliance on an underlying set of ideas about what policy interventions are appropriate rather than an understanding of the complexity of any given country's policy environment. A particular problem with development economics has been its vulnerability to wide swings in the prevailing political ideology and the resulting enthusiasm for particular approaches to the development process.

A special advantage this observer has had in watching this process in one country over a long period is the realization that intellectual fads come and go, but the basic structural problems that must be addressed by policy remain. From this perspective, for example, Indonesia is a "transition" economy, having abandoned its socialist model in the late 1960s. By the mid-1990s, the country was probably halfway toward becoming a fully open, market-oriented economy (and much less than halfway in developing a modern financial system). Such a transition takes place over decades, not months or years. Thus, the only way to improve the effectiveness of the policy dialogue between donor and country is for both sides to recognize the long-run nature of the development process and the need for policymakers to live with the complex outcomes of policy changes in the short run.

IMPLEMENTATION, OR HOW POLICIES CAN BE CARRIED OUT

Many observers feel that implementation of a policy is the most difficult aspect of government intervention in development. Frequent failures of implementation create a wide gap between objectives and outcomes, between rhetoric and results. They have led to widespread disenchantment about the potential for government intervention to improve on simple market-determined outcomes. Part of the reason is simply that the world is unpredictable and government policies respond more slowly to changed environments than do markets. But much of the problem stems from efforts to implement policies that are unrealistic, that is, not based on careful analysis of the constraints that policy managers and implementers are likely to face. For a policy to be adopted, effective policy analysis must be communicated to policymakers clearly and convincingly. The analysis must also incorporate the problems that will be faced after the policy has been approved for implementation. Although incorporating constraints on implementation vastly complicates the task of the analyst, the inclusion of these constraints simplifies communications with policymakers because they make it immediately clear that the analyst understands the problems the policymaker faces in the day-to-day tasks of policy management.

A wide array of constraints impinge on the potential success of a policy. Only the general categories can be indicated here. A major reason why successful policy analysis requires extended time in and knowledge of the country concerned is that constraints on policy in any country are unique and idiosyncratic. The following pages provide guidance on where to look, but they do not tell the analyst what will be found.

The Budget

Economists are often of two minds about the role of budgetary expenditures in the implementation of a policy. In one view, the budget is simply a transfer mechanism that reallocates the control of resources. Neutral fiscal transfers do not affect the efficiency of resource allocation. If a policy is good for society, it is acceptable to take money from society to implement it. So long as the analyst does not actually have to design and put into place the taxes that raise the resources, this general principle makes it easy to take for granted that whatever resources are needed for the policy under analysis will become available. In this view, designing the policy and finding the budgetary resources to implement it are separate tasks for separate agencies.

The alternative view that has emerged in modern public finance holds that raising budgetary revenues to fund government expenditures will distort the economy. Private citizens and firms can almost always spend and invest their money more effectively than governments, and they will not incur the costs of tax collection. In this view, all government projects and policies must justify their costs, not just in terms of some general social benefit, but also with respect to the marginal costs to society of raising the public revenues needed to implement them. Since there are substantial philosophical differences over the value of resources in private hands compared to those in public control, the debate over the means used to incorporate budgetary costs in policy analysis is often contentious.

From a practical standpoint, whoever controls the budget ultimately controls the policy debate. Given the tight budgetary environment in most Asian countries, this means that if an agricultural price policy requires large budgetary expenditures the minister of finance is likely to be a major actor in its implementation. The implications of this are twofold. First, the impact on the budget must be a key aspect of the analysis of price policy from the start. Second, ways to circumvent direct budget requests and still carry out policy will always appeal to implementing agencies. The latter point explains much of the popularity of agricultural pricing policies that place most of the financial burden on either producers or consumers rather than on the treasury (Anderson and Hayami 1986). The lesson for policy analysts is that budget pressures usually drive the debate over price policy; creating degrees of freedom for price policy within a given budget allocation is a difficult but important task.

Bureaucratic Capacity

Some bureaucracies are more effective than others. This holds within agencies and governments, and from country to country. The Korean bureaucracy can implement policies that would be impossible in Indonesia or Bangladesh; the government of Andhra

Pradesh has adopted a dual price policy that would be impossible in the Philippines. The Sri Lankan government distributed universal rice rations successfully because no means test was needed, but it lacked the skills needed for a fair and efficient food-stamp program that did have a means test (Edirisinghe 1987). Malaysia cannot control its border with Thailand, and it is often said that, because of its extensive coast line, "God meant Indonesia for free trade." But South Korea and Japan control rice trade completely.

The bureaucratic capacity to implement policies is an obvious constraint on the development of sensible policies. Designing a policy that requires extensive bureaucratic resources, such as a food-stamp program or a floor-price support program, without the capacity to carry it out in the short run, surely causes implementation to be poor and leads to widespread criticism of the failure of the government's policy. Since trust and confidence in government policy is an important element in generating positive expectations on the part of investors and the general population, such failures have ramifications well beyond an inability to support a specific price or exclusion of a village from food-stamp benefits. By including bureaucratic capacity in policy design, analysts help the government avoid such challenges to its credibility (Rodrik 1989).

The nature of the bureaucratic constraint depends on the policy. Sometimes the skills of agency staff are adequate, but management personnel and processes prevent them from being used effectively. (The National Food Authority in the Philippines in the latter years of the Marcos era is an example.) Sometimes staff members are poorly trained for the tasks at hand, and even dynamic and effective leadership can have only limited success in implementing new policies (as with BULOG in Indonesia in the late 1960s and early 1970s). Sometimes both staff and management are adequate to the task, but the structure and incentive system of the agency stifle initiative and effective management of new policies. Bureaucratic reform is not usually high on the list of activities for policy analysts, but identifying constraints in the bureaucracy and participating in the long-run process of institution building might be the most productive use of their time.

Physical Infrastructure

Implementing a floor price policy for rice means that the food logistics agency must have access, through either rental or ownership, to trucks, grading equipment, mills and dryers, and warehouses. Roads must be passable if grain is to be moved out of surplus areas; ports must be able to handle imports or exports when required. Physical infrastructure, like bureaucratic capacity, is not fixed in the long run. Analysis that identifies important bottlenecks can point to productive investments in either area. But in the short run, policies cannot be implemented that require an infrastructure that is still at the blueprint stage.

Constraints on infrastructure tend to be an issue of costs and degree, not fixed and rigid, even in the short run. Where the grain market already functions before a floor-price intervention, for example, traders have some capacity in place to buy, mill, store, and transport grain. Much of this capacity will disappear overnight if the government attempts to commandeer it for its own use, but rental arrangements or payment for services when price margins encourage participation by the private sector in marketing may mean that the new policy will succeed even in the face of significant short-run bottlenecks in the physical infrastructure. This success does not happen automatically, of course. The analyst must design the policy in the first place so that it fits the situation.

Supply and Demand Parameters

The responsiveness of farmers and consumers to price changes is essential to the implementation of any price policy. If, as many policymakers seem to believe, supply and demand elasticities are near zero in both the short run and the long run, price policy would have only a limited effect on the efficiency of resource allocation. The objectives of food pricing for income distribution could be implemented with few concerns for economic distortions and slower growth. Policy analysis would thus be a matter of focusing on who gains and loses rather than on how the economy is affected.

Unfortunately, the world is not so simple. The empirical record throughout Asia shows that both farmers and consumers respond to price signals when making decisions about crops and inputs and allocating income among competing goods and services. The supply and demand elasticities for rice are high in the long run; values of 0.5 to 1.0 are often found for both supply and demand (with appropriate signs) when adjustments between five and ten years are permitted. They are also significant even in short-run changes measured year to year. But for policymakers the short run is often measured in days or weeks, so that small changes that are a year away seem minuscule and irrelevant.

The imperfect match between policymakers' perceptions of the time horizon they face and the responsiveness of producers and consumers frequently devastates the implementation of a well-designed food price policy. Using prices to call forth desired changes in the balance between supply and demand requires faith in the capacity of markets to transmit signals and elicit appropriate responses from millions of farm and consumer households. Behavior does not change overnight, nor does it change much from one year to the next. This inertia makes policymakers nervous, especially when buffer stocks are low or prices of imports have risen sharply. If supplies to a market that the government controls are suddenly limited, a significant crop shortfall is reported, or rapid income growth puts pressures on demand, low supply and demand elasticities mean that market prices must rise sharply in the short run to restore balance. It is precisely this instability that governments seek to avoid, and the appeal of attempting to place direct

quantitative control over prices, rather than to influence them indirectly through supplies and demand in the market, is understandable.

As with budgets, bureaucracies, and infrastructure, the constraints imposed on price policy by inflexible supply and demand responses can be identified in the short run and alleviated in the long run. New technology and the widespread use of purchased inputs tend to make output more sensitive to producer prices. Both the availability of other staple foods in the diet and the diversification that comes with higher incomes contribute to more flexible responses by consumers. Marketing efficiency is critical if price signals are to be transmitted quickly and accurately; governments have a range of investments and policy options that lower marketing costs, improve access to small traders, and make markets more reliable and effective vehicles for the implementation of government policy (Timmer 1997). It is wrong to assume that these improvements happen on their own; it is even worse to assume from the start that all markets exist and function efficiently. Price policy analysts have the task of determining the actual sizes of the adjustments that producers and consumers make to changes in prices. They must also understand the types of initiatives that could speed these adjustments and make production and consumption more flexible. This understanding comes partly from econometric analyses of price and quantity data and partly from visits to villages to observe how farmers actually cope with the day-to-day variability that causes production and market risk. Unless the analyst understands this decisionmaking environment of small farmers (and poor consumers), he or she will be unable to serve as a "substitute voice" in the policy debate.

Politics

Politics is frequently invoked as the reason why good economic policies cannot be adopted. Sometimes this means that new policies would rouse such broad, popular opposition that even elected governments would be in jeopardy. Rice riots have brought down more than one government. Promises of cheap rice have elected others. Sometimes politics means that narrow vested interests will be harmed by the policies proposed and can be expected to use their influence on policymakers to prevent the change. For example, unions or the military often oppose increases in food prices or devaluations of a country's currency. And sometimes it just means that the minister does not think a change in policy is a good idea. A vague distrust of the market is easily translated into political opposition to price incentives and wider margins for traders.

What is often forgotten when officials are criticized for a lack of political will to implement needed policy reforms is that virtually all changes in agricultural price policy hurt someone's interests, vested or not. If the poor are being hurt through a reduction in their food consumption, political opposition to changes in pricing is desirable, even if the

new price policy is intended to generate more output and employment in the long run. Unless compensating programs for those most harmed by price reforms can be implemented simultaneously with the reforms, political opposition on behalf of the poor is both understandable and important. This argument obviously does not hold where current price policy is so badly distorted or poorly implemented that the interests of the poor are sacrificed, possibly even to the benefit of the better-off segments of the society. Whatever the political arguments, it is important for the policy analyst to determine the actual impact of current policy on distribution and the effect of the proposed changes on the distribution of benefits.

In some political environments, policy analysis based on economics is irrelevant. In such situations a political constraint is binding. Such systems tend to be dominated by an individual personality or a powerful ideology, rather than by an orientation to economic growth or a complex amalgam of rent-seeking interest groups. But societies do change from one type of political system to another, often in astonishingly short periods, and policy analysts who are irrelevant under one regime may be essential under the next. A society that can train and preserve its analytical talent even when that talent has no influence on policy can avoid the long and painful process of rebuilding this capacity. China's anti-analytical ideology in the early 1970s nearly destroyed its indigenous capacity to evaluate policy trade-offs in a more market-oriented rural economy. The highly personalized politics of the Marcos regime forced talented analysts into the exile of multilateral agencies and foreign universities. The growth-oriented politics of Indonesia, after the personal and ideological politics of Sukarno, placed a cadre of economists in the cabinet and made the country more conducive to effective policy analysis than virtually any other in Asia. The influence of these economists waned in the early 1990s as President Suharto's children became increasingly influential players in both economics and politics. Such an increase in the influence of narrow vested interests reduces the potential for policy analysis to identify problems on the horizon and steer around them (Grindle and Thomas 1991).

For good reasons or bad, the political constraint is always important. The task of the policy analyst, however, is not to incorporate the constraints into the analysis, thus hoping to design policies that are acceptable. Rather, analysts need to determine which dimension of a policy is objectionable, to whom, and to what degree. The analyst must ask whether it is possible to design compensating programs or an information campaign to clarify exactly who gains and loses under the new policy. This approach can be risky, especially when the vested interests in question are close to power, or are simply powerful. Sometimes policy analysis can be a feeble instrument for inducing change; at other times courage and simple facts bring surprising results. Only individual analysts, wrestling with their own conscience and the realities as they perceive them, can decide which time has come.

An entirely new field of positive political economy has emerged since the 1970s to help analysts understand why politicians make rational policy choices that do not increase social welfare. Although many of the "rational choice" models seem contrived or highly dependent on election schemes that bear scant resemblance to reality, the basic paradigm offers a powerful insight: few politicians will choose a policy that is likely to force them from power. Economic analysis that is consistent with this insight is more likely to be adopted, and to have measurable benefits, than analysis that fails to clear this basic hurdle. As Harberger (1993) stressed, such an approach does not abandon the economist's search for efficiency and improvement in overall social welfare. But often part of a loaf is better than none at all.

EVALUATION, OR HOW TO KNOW IF POLICIES ARE WORKING

Evaluation is the poor relation of the policy analysis family. Once an analytical design has been made, policy negotiations have been conducted, and a policy has been implemented, few individuals or institutions have much energy or budget left for evaluation. If the policy works, it will be obvious; if it fails, it is better not to stir up a hornet's nest. Unfortunately, this caricature of attitudes about policy evaluation contains too much truth to be dismissed. Opportunities should not be missed to understand why a policy went awry and to channel this information back into policy analysis and design. Policy evaluation not only completes the linear process of design, communication, implementation, and evaluation, but also provides an important input into policy design itself, thus making the policy process an evolving circle rather than an arrow. Several steps are necessary to reach this potential.

The first is for analysts to recognize at the stage of analysis and design that evaluation is an integral part of the policy process. Monitoring needs to be built into the process from the beginning, including baseline surveys where possible. If a full research effort has gone into the analysis, much of the baseline data may have been gathered as an input. The task is to make it possible to continue to gather data within a consistent sample frame and to allocate analytical resources to monitor and evaluate these and other data from conventional sources, such as market reports, surveys by statistical offices, and even newspaper coverage.

A second step is for the original policy analysts to be involved personally in implementing the policy and monitoring its outcome. This may heighten their sense of responsibility because they must live with the problems created by their own design. It also creates continuity of insight for individual analysts. Such continuity is important for building the intuitive sense of the likely response of the economy to shocks and interventions, a sense that is essential to making policy analysis relevant to policymakers.

In further support of this "intuition building," analysts can participate in the trouble-shooting that is an essential part of making a new policy work. When this role in ongoing implementation and short-run evaluation is built into the original terms of reference of the policy analyst, it is likely to make the analysis and design of policy more pragmatic and capable of successful implementation. Few countries have an adequate supply of the analyst-practitioners that can conduct this amalgam of thinking and doing. Few universities have positions for scholar-practitioners who can develop the methodological tools for policy analysis. Ideally, such tools are an outgrowth of teaching, field research, and experience with the design and implementation of policy.

The gaps in current approaches to improving policy analysis are painfully obvious. Academic scholars and methodologists are drawn to ever narrower topics that are amenable to formal mathematical treatment, whereas practitioners are becoming ever more disenchanted with what they perceive as the irrelevance of the new techniques. To close the gap, academics need to serve as practitioners, at least often enough to understand the complex reality in which policy analysis and design actually take place.

The goal of such cross-fertilization is not simply to improve analytical methodologies for messy policy problems, although that is reason enough. The intended outcome of keeping policy analysts, including academic ones, involved in the complete circle of the policy process is to improve policies. Lessons about problems in design and implementation should feed back to analytical methodologies, to be sure, but they should also be incorporated regularly in adjustments to policy. The need to monitor and adjust policies, rather than merely evaluate them for the historical record, has important implications for the design itself. Policy then becomes a process rather than a result, flexibility and the capacity to change policy become virtues rather than signs of governmental weakness, and continuity and consistency in the government's economic strategy are judged by the government's pragmatic attention to problems, including the problem of maintaining stable prices, rather than by any ideological yardstick.

3. FOR EXAMPLE: THE EVOLUTION OF RICE PRICE POLICY IN INDONESIA

The basic paradigm used by neoclassical economists to analyze the effects of government intervention in the formation of food prices—the border price paradigm—argues that such intervention creates dead-weight efficiency losses and always lower social welfare. Since the Great Depression in the 1930s, every country in Asia has intervened in the formation of domestic rice prices, most of them continuously. There is probably no wider gap between the received wisdom of mainstream economics and the point of view of policymakers. It is particularly revealing to examine the benefits from policy analyses since 1970 that have attempted to close this gap. The Indonesian case is especially well documented.

HISTORY OF THE DEBATE: STABILITY, INCENTIVES, AND ECONOMIC GROWTH

This author's introduction to price policy issues in Indonesia was unnerving. On my first day in the country, in April 1970, with my newly awarded Harvard Ph.D. degree not even framed, I was included in a meeting at the National Food Logistics Agency (BULOG) in which a problem with imports of PL-480 wheat flour from the United States was discussed. Staff members solicited my views on the spot, and I had barely a clue to what the right response might be. After more than two hours of discussion, I slipped away, confused about whether I really knew enough to be of use to the country. It was a feeling that returned often in the next two years as resident advisor with the Harvard Advisory Group.

Remarkably, my Indonesian mentors never lost confidence that my analysis, naive and theoretical as it was, was useful. I was taken on many field trips to study problems in such rice markets as those found in Palembang, Pontianak, or Surabaya and to listen to patient explanations. I tried to make sense of what the farmers, traders, and consumers were saying and to understand why the market price was too high or too low. The notion that there was a correct price, and that the food logistics agency needed to defend it was firmly implanted in my mind.

The thought that rice prices did not need to be stabilized never entered my head. Every country in Asia sought to stabilize rice prices, some more successfully than others. The problems to be solved were operational, not theoretical or conceptual. My academic career has been shaped by this starting point in Indonesia's rice markets and my interaction with those who made the country's economic policy, many of whom had doctoral degrees in economics from universities in the United States. Unless rice prices

were stable, we believed, there would be no government to implement a development strategy and there would be no economic development.

This approach sounds terribly naive in this modern world where complete markets, perfect information, and free trade are assumed. In this world, farmers and traders hedge the risks of price changes in rural credit and risk markets, and no government agency is needed to stabilize rice prices. Many of my academic and institutional colleagues believe that such a world exists and that price stabilization is not only not beneficial, but distorts an economy and acts as a drag on economic growth (World Bank 1994; Jones 1995).

Since the early 1970s, the policy analysis I have done at the university has tried to merge the determination of Indonesian policymakers to stabilize rice prices with the mainstream economic paradigm that finds all departures of domestic prices from world prices, no matter how unstable those world prices, to cause economic distortions and misallocations of resources. Virtually all of the insights I have gained into the importance of rice price stabilization, and the means to do it efficiently, come from my work in Indonesia, especially my work with the food logistics agency.

It might seem surprising that technical economic analysis was significant in the formation of rice price policy in Indonesia, in view of the clear preference of policymakers for an outcome that is not valued by the prevailing economic paradigm. But the technical economic analysis conducted for the food logistics agency and the makers of macroeconomic policy provided two key elements in the widely recognized success of Indonesia's rice price policy. From the time when Mears and Afiff (1969) laid out the original mission of price stabilization, careful economic analysis of the Indonesian rice economy provided the foundation for the agency's role and the measures it could implement (Timmer 1997). Much of this analysis was conducted by foreign advisors early in the agency's development, but the agency's ability to analyze problems itself rose significantly in the 1980s. Staff members who were sent abroad returned with sophisticated analytical skills, and the agency invested heavily in upgrading its middle management through intensive courses on food policy analysis and applied problem solving. Thus, technical economic analysis enabled the agency to structure its mission in line with realities in the rice economy, meaning it was never asked to carry out a "mission impossible." In turn, in the 1980s, its greatly increased capability in policy analysis allowed the agency to be at the forefront of the policy agenda in the Economic Cabinet on issues of direct relevance to the agency. This technical expertise assured the agency of representation in a broad set of policy debates that had affected the agency indirectly.

Three areas in which technical analysis reinforced this institutional development are discussed briefly here. Each analysis engendered professional debate, the application

of methodologies to other countries, subsequent methodological developments applicable to a wider range of issues and settings, and, often, renewal of the policy debate in Indonesia. This iterative process has enriched both the field of policy analysis and Indonesian policy itself.

MARKETING MARGINS

An underlying goal of early efforts at price stabilization was to integrate Indonesia's far-flung rice markets as well as to defend floor and ceiling prices in individual locales. Because the food logistics agency was always intended to be a buyer and seller of last resort rather than a monopolist in rice markets, margins over space, time, and form were important parameters in the design and implementation of price policy. Mears (1961) had researched his classic study on rice marketing in 1956, and many of its findings on marketing structure remained valid in the late 1960s. But as the agency became more successful in setting and defending floor and ceiling prices, and as transportation networks were reestablished, the structure and size of margins changed substantially.

The most important margin for policy purposes was between the floor price and the ceiling price. This margin contained all three components of marketing functions: transformations in space (farm price to urban price), time (harvest price to pre-harvest price), and form (unhusked rice to milled rice). Each component required analytical attention.

For example, little was known about the Indonesian rice milling sector in the early 1970s. An analysis of the choice of techniques in rice milling revealed the rapid development of a small-scale milling industry on Java and illuminated two important factors of concern to policymakers. Analysis showed that rice milling carried out in small mills by thousands of small entrepreneurs was the appropriate choice of technique; these small mills were neither the most labor intensive nor the most capital intensive. In particular, it was not economically optimal to either hand-pound rice or to process it in large-scale integrated rice mills using mechanical drying and bulk handling (Timmer 1974). An intermediate technology was economically efficient, a lesson first shown empirically in this setting. In addition, the Indonesian planning process was shown to favor capital-intensive projects. This finding legitimized longstanding concerns in the planning agency (BAPPENAS) about creating employment and reducing poverty in addition to maximizing the rate of growth. Demonstration of the economic efficiency of creating greater employment meant that these concerns could be integrated into the mainstream activities of the planning agency.[6]

The analysis of the choice of technique in rice milling also provided a concrete example of links between microeconomic behavior and macroeconomic policy. All key "macro prices" that are influenced by government policy—foreign exchange rates, interest rates, and wage rates—can be shown to be important determinants of technology choice and hence of the amount of employment, the distribution of incomes, and the efficiency of resource allocation. These micro-macro connections are crucial to understanding the effect that basic economic development policy has on rural areas. These connections are better understood in Indonesia than in most developing countries.[7]

Each of the three components of the marketing margin between the floor price and the ceiling price—space, time, and form—influences private traders and the rice economy in separate and analytically distinct ways, and yet each component is affected by the decision that determines the size of the margin itself. On several occasions the government has consciously narrowed the margin in order to ease the food price dilemma, which is that any change in food prices has opposite effects on the welfare of producers and consumers. Because the private sector handles a large share of the rice marketed in Indonesia, a decision to squeeze the margin is simultaneously a decision to squeeze the private sector. This squeeze thus alters the tasks for the food logistics agency; a simple model of its operations shows that its role in procurement and distribution tends to be directly proportional to the extent it squeezes the private marketing sector, but the financial burden rises with the square of the squeeze.

Despite this understanding of the consequences, there were constant pressures to squeeze the marketing margin. It was readily apparent that technical analysis and a thorough understanding of the functioning of rice markets were subordinate to political objectives. In particular, they were subordinate to the desire of President Suharto to achieve self-sufficiency in rice production in Indonesia, an achievement for which he received a gold medal from FAO in November 1985. An award for "food security," rather than "self-sufficiency," might have meant that the short-run management of rice price policy could have been more flexible!

THE FERTILIZER SUBSIDY

A contentious debate has been waged since the early 1980s over the social profitability of Indonesia's fertilizer subsidy. Modest subsidies had been given for fertilizer since the earliest days of the Rice Intensification Program. They were to stimulate adoption of a technological package that included high-yielding varieties along with fertilizer and pesticides. But the subsidy became a substantial part of the Indonesian budget only in the late 1970s and early 1980s, after the nominal price of fertilizer had been held constant for more than half a decade at the same time that the nominal floor

price for rice nearly doubled, remaining about in line with the general price level. By 1983, as budgetary pressures began to be felt after the first drop in petroleum prices, Ministry of Finance officials and World Bank analysts pointed to the fertilizer subsidy as an obvious place to cut expenditures and improve the efficiency of resource allocation.

At the same time, the Ministry of Finance was sponsoring a major review of the Rice Intensification Program. This study took a careful look at program design, management, and implementation. Valuable village-level surveys were carried out that highlighted the extreme regional diversity of Indonesia—a diversity ill-suited to the monolithic approach of the government. The use of fertilizer on rice rose rapidly during the 15 years of the program, but administrators of the Rice Intensification Program had no control over price policies for fertilizer and rice. The initial draft of the evaluation report had no discussion of the role of prices (Development Policy and Implementation Study 1983). In 1983, the analysts conducting this study discussed their results with the price policy analysts. A quick and rough study of the role of price policy in successful rice production was then conducted. Using aggregate time series from 1968 to 1982, a fertilizer demand function and a rice production function were estimated, and the social profitability of the fertilizer subsidy was calculated in total and at the margin.

The analysis and conclusions raised troubling issues for most development economists. The trend of experience and thought in the late 1970s and 1980s had reinforced the emphasis that economists placed on the superiority of economic growth under market prices to growth under prices altered by government taxes or subsidies. The high and robust social profitability of Indonesia's fertilizer subsidy seemed to challenge these hard-won gains for the role of free markets. At the very least, the results confirmed what economists knew in principle but hoped to neglect in fact—that such pricing interventions could only be evaluated empirically. There were perfectly sound theoretical reasons why market failures might justify a fertilizer subsidy on efficiency grounds--the subsidy corrected a dynamic disequilibrium. No a priori arguments based on static models could settle the issue. Only empirical evidence could address the problem.

Accordingly, the debate spurred a massive flow of empirical and semi-empirical research. Throughout the vigorous policy debate, Indonesian price policy for fertilizer attempted to follow a consistent goal: to reduce the size of the budget subsidy while maintaining balance between production and consumption of rice. The balance was maintained through the stocks held in the food logistics agency's warehouses. When stocks were large and surplus rice was being exported at subsidized prices, increases in the nominal floor price for rice were kept below the inflation rate while the price of fertilizer rose by more than the inflation rate. In short, the fertilizer price was used in tandem with other prices and programs to fine tune the Indonesian rice economy around a trend of self-sufficiency. With imports difficult to arrange for political reasons, fertilizer

price policy added a degree of freedom to an otherwise overconstrained set of policy objectives. Given Indonesia's large influence on the world rice market, this approach may have been the only way to guarantee food security for the country in the long run.

RICE PRICE POLICY

The relationships between the floor and ceiling prices of rice and between the floor price of rice and the price of fertilizer are only two of several important price relationships for rice. Two others with medium- and long-term significance are the real price of rice to the economy—that is, relative to the costs of other goods and services—and the cost of domestic rice relative to the cost of imports or exports of rice. As with all the price relationships discussed so far, these two are closely related, with the foreign exchange rate entering as another key factor.

The issues to be treated here are broad: what are the consequences of policy on the level and stability of rice prices for consumption, the growth of the rural economy, the stability of the macro (political) economy, and economic growth?

High prices of rice during the world food crisis in the mid-1970s stimulated a concern about the effect of prices on poor Asian consumers. By the mid-1980s, prices in the world rice market had collapsed, and attention turned to the influence this would have on the welfare of farmers and the health of rural economies in Asia.

This has turned out to be a difficult problem both analytically and empirically. Analytically, the issue cannot be treated in a partial-equilibrium framework because of the significant spillover of effects from rice markets to labor, land, and credit markets in rural areas. Because of the importance of rice as a wage good and of rural-urban migration in determining equilibrium wages in the nonagricultural economy, changes in rice prices raise significant issues for general equilibrium as well. As noted earlier, however, the computable general-equilibrium models constructed so far for the Indonesian economy have suffered from several serious problems: the structure of the models does not reflect the apparent complexity of market-clearing in rural Indonesia, the models do not include investment functions from rural incomes, and the parameters they use are not based on solid empirical evidence.

Progress has been made in understanding the mechanics of rice price stabilization and its contribution to social welfare. This is a topic of longstanding analytical interest to economists. Indonesia has been a proving ground for examining the hypothesis that society places a large premium on stability of food prices for reasons that are not apparent in economists' models of the effects of price stabilization policies. Research that has

demonstrated the social profitability of these policies has provided arguments for the Indonesian government in its efforts to maintain and improve its stabilization policies, despite opposition by negotiators from the World Bank, the International Monetary Fund, and GATT/World Trade Organization.[8]

4. GENERALIZATIONS

Is the outcome of long-term policy analysis and advice from a single individual, on a narrow range of topics, an adequate indicator of the general benefits that might flow from this type of analysis? My experience is not unique. Many analysts, some in academia, have had similar careers and can document significant effects from the research that informed the advice they gave policymakers. Harberger (1993), for example, documents such effects on macroeconomic and monetary policies.

These experiences have a strongly personal flavor, however, and a significant idiosyncratic component. One person's career cannot serve as a guide for everyone. Nonetheless, there are likely to be enough case studies to generalize about the replicable factors that lead to success. For the case study reported here, these factors would seem to include the following:

- Long-term involvement with the same policymakers, or at least the same policy settings;
- The need and desire to balance the tension that confidential analysis and policy advising have with the ultimate publication of key models and results;
- A willingness to stay within the mainstream analytical paradigms of the economic profession while examining the impact of particular deviations from underlying assumptions; and
- A continuing demand from policymakers for problem-oriented analysis.

These factors, in turn, raise issues about how to train policy analysts to be effective in empirical settings and how to make policy analysis more useful and influential. One thing is certain: there will be no end to the debate and controversy surrounding the complex endeavor of using technical knowledge and empirical experience to offer sound policy advice.

The debate and controversy have important implications for how policy analysts should be trained. At a minimum, would-be policy analysts should be trained well-enough as technical economists to engage in analytical and methodological debates with their professional colleagues. The goal is not necessarily to have them win the argument, but simply to have it take place, because many useful insights can emerge from vigorous debate. However, winning such debates on occasion, especially in a public forum where policymakers are listening, empowers good policy analysis.

A major stumbling block to working in policy analysis and advising is the lack of a career path that rewards analysis that actually makes a difference in the outcomes of policy. Some universities have enlightened administrative policies that acknowledge a practitioner's need to work in developing countries. There are two benefits to the university: first, teaching courses that have direct relevance to the real world can stimulate interest among students in pursuing such research and making a career of it. Second, when policy analysis is done well, the methodologies and empirical results can be published. This multiplies their impact on students and colleagues. This is the supply side.

On the demand side, synergistic effects emerge when research is carried out over time in a developing country. Within the country, trust builds between policy analyst and policymaker. Demand for policy analysis increases. Getting the policy questions right in the first place is essential. Policy advice and implementation that are successful can build momentum. Each country, and each unique economic setting, contains a wide array of problems that can be addressed by policy-oriented research. But, with care, lessons can also be transferred across countries. Skilled policy analysts can multiply their impact many-fold by carrying solutions learned in a different region or country back and forth between settings that are similar enough so that their relevance is obvious to policymakers.

The political economy of this transfer is fascinating. Lessons from Indonesia are not just more relevant to China than lessons from OECD countries or even Latin America or Africa, for example, they are also more acceptable. The policy analyst who can take lessons in both directions not only has a broader base of knowledge, there are also gains in credibility for the analyst and increased accessibility at both ends of the advisory relationship. If modern political economy is seeking to understand why policymakers do what they do, a good place to start would be to understand which advisors they listen to. Increasingly, as the global economy becomes more complex and interconnected, they listen to policy analysts with modern research skills who understand the full circle of high-quality policy analysis.

NOTES

1. There are, of course, significant exceptions to this generalization. Experimentation with different health insurance schemes by RAND, different land-tenure arrangements in separate counties in China, and different educational reform packages in randomly selected schools in Kenya illustrate the potential for creating controlled experiments even in the social sciences. There is also a growing literature on "natural experiments" that exploit exogenous changes in otherwise similar environments to test cause-and-effect hypotheses.

2. The crucial distinction for policy analysis is "with and without" the policy, not "before and after" the policy. The distinction is especially important in analyzing the impact of structural adjustment policies, where the alternative without reform was often an even steeper drop in welfare than seen after the policy reform. See Sahn, Dorosh, and Younger (1996) for the African dimensions of the problem.

3. Considerable frustration was expressed at the symposium over this line of thought. Democratic institutions do indeed make choices that affect income distribution and even leave some citizens worse off, without compensation. The point, however, is that social choice theory offers little insight into how these choices are made.

4. As a starting point, see the review by Robinson of computable general-equilibrium (CGE) models in Chenery and Srinivasan (1988), the comparison of results of using six different CGE models to evaluate agricultural price policy in de Janvry and Sadoulet (1987), and various papers by Braverman, Hammer, and their colleagues on multi-market models for analysis of agricultural price policies (for example, see Braverman, Hammer, and Gron 1987).

5. This is similar to the situation that Harberger describes where it would be better to write the terms of reference for the consultant after the research is completed (Harberger 1993).

6. Both topics are reviewed in Timmer (1975).

7. Chapter 5 of Timmer, Falcon, and Pearson (1983) contains a generic discussion of these micro-macro links. They are discussed more concretely in the Indonesian setting, using the rice milling example as the vehicle, in Chapter 3 of Timmer (1986a). Pearson et al. (1990) addresses the issues for the entire rice economy.

8. See Timmer (1989, 1996) for a review of these issues and a preliminary effort to quantify the costs and benefits of Indonesia's rice price stabilization program.

REFERENCES

Anderson, K., and Y. Hayami. 1986. *The political economy of agricultural protection: East Asia in international perspective*. Sydney: Allen and Unwin.

Arrow, K. 1951. *Social choice and individual values*. New York: Wiley.

Braverman, A., J. S. Hammer, and A. Gron. 1987. Multi-market analysis of agricultural price policies in an operational context: The case of Cyprus. *The World Bank Economic Review* 1 (2): 337–356.

de Janvry, A., and E. Sadoulet. 1987. Agricultural price policy in general equilibrium models: Results and comparisons. *American Journal of Agricultural Economics* (May): 230–246.

Development Policy and Implementation Studies (DPIS). 1983. *An evaluation of the BIMAS program*. Jakarta: Center for Policy and Implementation Studies.

Ederisinghe, N. 1987. *The food stamp scheme in Sri Lanka: Costs, benefits, and options for modification*. Research Report 58. Washington, D.C.: International Food Policy Research Institute.

Grindle, M. S., and J. W. Thomas. 1991. *Public choices and policy change: The political economy of reform in developing countries*. Baltimore, MD: Johns Hopkins University Press.

Harberger, A. 1993. Richard T. Ely Lecture: The search for relevance in economics. *American Economic Review* 83 (May): 1–16.

Jones, C. 1995. Rice price stabilization in Indonesia: An economic assessment of the changes in risk bearing. *Bulletin of Indonesian Economic Studies* 31 (April): 109–128.

Krugman, P. 1997. Assessing the benefits of economic research: What are the problems?" Paper presented at a workshop at the International Food Policy Research Institute, Washington, D.C., April.

Mears, L. A. 1961. *Rice marketing in the Republic of Indonesia*. Jakarta: P. T. Pembangunan.

Mears, L. A., and S. Afiff. 1969. An operational rice price policy for Indonesia. *Ekonomi dan Keuangan Indonesia*. Jakarta: 3–13.

Pearson, S. R, et al. 1990. *Rural Income and employment effects of rice policy in Indonesia*. Ithaca, NY: Cornell University Press.

Robinson, S. 1988. Multisectoral models. In *Handbook of development economics*, ed. H. Chenery and T. N. Srinivasan. Amsterdam: North-Holland.

Rodrik, D. 1989. The credibility of structural adjustment policies to investors. Kennedy School of Government, Harvard University, Cambridge, MA. Typescript.

Sahn, D. E., P. Dorosh, and S. Younger. 1996. Exchange rate, fiscal, and agricultural policies in Africa: Does adjustment hurt the poor? *World Development* 24 (4): 719–747.

Schultz, T. W., ed. 1978. *Distortions of agricultural incentives*. Bloomington, IN: Indiana University Press.

Stiglitz, J. E. 1987. Some theoretical aspects of agricultural policies. *The World Bank Research Observer* 2 (January): 43–60.

Timmer, C. P. 1974. A model of rice marketing margins in Indonesia. *Food Research Institute Studies* 13 (2): 145–167.

_____. 1975. The political economy of rice in Asia: Indonesia. *Food Research Institute Studies* 14 (3): 197-231.

_____. 1986a. *Getting prices right: The scope and limits of agricultural price policy*. Ithaca, NY: Cornell University Press.

_____. 1986b. The role of price policy in increasing rice production in Indonesia, 1968–1982. In *Research in domestic and international agribusiness management*, Vol. 6, ed. R. A. Goldberg. Greenwich, CN: JAI Press.

_____. 1988. Analyzing rice market interventions in Asia: Principles, issues, themes, and lessons. In *Asian Development Bank, Evaluating Rice Market Intervention Policies: Some Asian Examples*. Manila.

_____. 1989. Food price policy: The rationale for government intervention. *Food Policy* 14 (February): 17–42.

_____. 1991. Food price stabilization: Rationale, design, and implementation. In *Reforming economic systems*, ed. D. H. Perkins and M. Roemer. Cambridge, MA: Harvard Institute for International Development, Harvard University.

_____. 1996. Does BULOG stabilize rice prices in Indonesia? Should it try? *Bulletin of Indonesian Economic Studies* 32 (August): 45–74.

_____. 1997. Building efficiency in agricultural marketing: The long-run role of BULOG in the Indonesian food economy. *Journal of International Development: Policy Arena* 9 (1): 133–145.

Timmer, C. P., W. P. Falcon, and S. R. Pearson. 1983. *Food policy analysis*. Baltimore, MD: Johns Hopkins University Press.

Wildavsky, A. 1979. *Speaking truth to power: The art and craft of policy analysis*. Boston, MA: Little, Brown and Co.

World Bank. 1994. Indonesian agricultural policy: Issues and options. World Bank, Washington, D.C. Draft report.

C. Peter Timmer is dean and professor of development studies at the Graduate School of International Relations and Pacific Studies at the University of California, San Diego.