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IMPORTANT DEVELOPMENTS IN ECONOMICS

by

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134

## IMPORTANT DEVELOPMENTS IN ECONOMICS

Gordon C. Rausser\*

Professor Pope has undertaken an almost impossible task of determining what developments in economics will lead to significant applications in agricultural economics. One development that reappears throughout the paper is the concept of rational expectations. In the extreme, this concept can be used to explain why no one should read the Pope paper or, for that matter, that Pope should not have written this paper. On the one hand, as Pope notes, "my own rent-seeking behavior would prevent my telling you the truth free. Thus, my own behavior and the perfect markets literature might suggest that my forecast has little value." Hence, if Pope provides the profession with any real insights, this framework would regard him as a "stupid" agent. On the other hand, the perfect markets literature also tells us that, if readers believe that Pope will provide some real insights, they are stupid. The unequivocal inference of rational expectations and the perfect markets literature is that either Pope is stupid for writing the paper or the reader is stupid for reading the paper. This dilemma also makes it clear that agents cannot behave rationally if other agents are irrational. In a strict sense, the concept of rational expectations requires that agents take into account the potential irrationalities of other agents.

Fortunately, we have an alternative theory based upon asymmetric information and imperfect markets. This literature suggests that neither Pope nor any reader of this particular paper is stupid. In fact, Pope should be congratulated on the preparation of a very fine discussion of developments in economics. His approach in assessing changes in economic knowledge is to utilize data reported from the Journal of Economic Literature for two years, 1974 and 1984. Given his approach, Professor Pope extracts as much as could be expected. A number of criticisms could be offered regarding his interpretation of the data, but most would be insignificant. The selection of the first year, 1974, is meaningful in the sense that it is toward the beginning of one of the most rapid inflation periods for the U. S. economy. Similarly, 1984 comes after the end of one of the worst recessions in the post-World War II U. S. economy. A natural question that arises is: How robust are the results reported by Pope to this interval selection?

During the post-World War II era, general economics has gone through a period of formalization and extended use of mathematical and statistical tools. Economics has aspired to become a rigorous discipline, along the lines of engineering and physics, and has attempted to shake the reputation in many academic circles as the "dismal science." The 1950s witnessed the emergence and wide application of econometrics as a major tool of analysis; similar experiences occurred with mathematical programming in the 1960s, and the 1970s

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witnessed the diffusion of optimal control and topology as major analytical tools. Unlike the earlier periods, no major new mathematical techniques emerged during the late 1970s and the 1980s. To be sure, important refinements have occurred, many of which have focused on econometrics, e.g., the work on unobservable and latent variables, on specification analysis, on measurement errors, on qualitative and disequilibrium estimators, on sample selection, on new models of technological change, and on new admissible estimators. Aside from these refinements, the major emphasis within the general discipline of economics seems to have been directed to the analysis of behavioral patterns resulting from human frailty and the role of imperfect information. There is also an emerging interest in the economics of institutions. There appears to be a movement afoot to return to the core of economics a number of concepts that have emerged in other disciplines, e.g., political science, psychology, sociology, and law.

From the standpoint of value to the agricultural economics profession, other approaches could have been employed in lieu of the JEL data utilized by Pope. One approach would be to identify the major leaders in each area of economics and examine the stream of citations to their work. Another and, perhaps, a more attractive approach would be to define the major problems (both recurrent and emerging) and those paradigms and associated analytical frameworks that can effectively address these problems. This approach would not restrict the examination to just the economics discipline but, instead, to all disciplines that would assist in addressing the identified problems. This, in fact, underlies much of the recent developments in the new industrial organization which, in a large part, has resulted from a merger of law, organization theory, and economics.

The directional change within economics (viz., away from methods to theoretical and conceptual developments) should provide much impetus in our attempt to address a number of long-standing issues that have eluded solution for some time. The first is public policy in food and agriculture. Here a number of different perspectives can be taken, but the major concerns are to both explain and design the forces and processes that shape agricultural policies and their implications. From an explanatory perspective, the new economics of regulation, rent-seeking behavior, and the notion of political economic markets are natural frameworks in which to address these issues. <sup>1/</sup> From an evaluative perspective, the comparative static analysis that is frequently used to trace through the impacts of public policies is grossly inadequate. What is required here and in the analysis of many other problems is comparative dynamic analysis. These methods have not been developed within economics but, instead, in electrical engineering. Here again, we see that we must look not only to what Pope describes as the "mother discipline" but to other fields to determine where the major advancements are likely to come within agricultural economics.

In the normative, or prescriptive design of public policy, the so-called Lucas critique raises its ugly head. Prior to the Lucas critique, the standard

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1/ Pope, in his examination, incorrectly associates the theory of rent seeking with Stigler, Posner and Peltsman. This theory is actually more correctly associated with Downs, Buchanan, Krueger, Tullock, and others. In fact, Gordon Tullock wrote the first paper on this particular topic to correct some conceptual flaws in standard welfare economics and the measurement of deadweight losses.

approach to normative policy analysis was to set up an optimization problem where the policy process is viewed as a game against nature. The substance of the Lucas challenge is that policymaking is a game involving conscious players. It rejects the notion that the atomistic nature of the constituents of "the public" implies that public behavior can be modeled by a mechanical rule. To be sure, the Lucas critique does not imply that "policy" is ineffective even if all agents in the private sector form their expectations rationally. A more accurate statement is that it is unreasonable to expect most of the people to be fooled most of the time; a policy which counts on such foolish behavior is doomed to failure. Private agents' decisions are contingent on the state of the world; the rules which determine the decisions as functions of the state of the world are products of agents' optimization problems; and a change in policy not only changes the state of the world but it also changes the agents' optimization problems and, hence, their decision rules. This means that the reduced-form estimation of behavioral relationships is inadequate for policy analysis. In any event, the Lucas critique has performed a valuable service in drawing our attention to the fact that the effectiveness of a policy today depends, in part, on expectations of that policy in the future. This has led to important insights regarding the constraints under which governments operate. Specifically, governments must be concerned with their credibility. For example, it does no good to announce that farm subsidies will be phased out if most farmers believe otherwise. If their beliefs are proven correct, the announcement weakens the government's ability to reduce subsidies in the future. This result also suggests the importance of studying bargaining problems and other games in order to properly investigate public policies in food and agriculture.

A second major set of issues relates to the demystification of agribusiness. Much remains to be accomplished in assessing the structure, conduct, and performance as we move along the vertical commodity marketing chain beginning with input suppliers and ending with ultimate consumers. The new industrial organization has much to offer in addressing this issue, focusing, as it does, on information (Diamond, Salop, Spence, and Stiglitz); tests of monopoly power and conjectural variation (Green, Porter, and Lee); product differentiation and monopolistic competition (Dixit, Hart, Salop, Spence, and Stiglitz); advertising and strategic behavior (Friedman, Fudenberg, Shubik, and Tirole); vertical integration (Carlton, Perry, and Spence); and transaction costs and institutional models (Williamson, Telser, and Zusman).

There are, clearly, numerous mechanisms or institutions which coordinate the exchange of food products. These alternative coordinating mechanisms (cooperatives, vertical integration, horizontal integration, commodity associations, marketing orders and agreements, spot markets, futures markets, forward contracts, governmental intervention, etc.) will influence transaction costs, technology, the quality and quantity of output in a particular economic system, the size and distribution of gains and losses, and, equally as important, the sharing of risk among various components of the food marketing system. At the heart of any analytical framework designed to evaluate the performance of alternative coordinating mechanisms must be the notion of a contract. Such a perspective can be traced back to the conception of a firm adopted long ago by Coase and recently accepted and employed by students of economic organizations. Contracting and limited information force us into a second-best world where first-best solutions are not achievable. Unless the conventional Pareto norm established in general economics is replaced by some other norm, we are, generally, left with ambiguous efficiency evaluations of food and agricultural systems.

The work in the theory of economic organizations has much to offer agricultural economics. Markets in food and agriculture comprise a great variety of contractual arrangements which have generally been ignored in the literature. For example, in agricultural credit markets, contractual arrangements exist which allocate capital and risk bearing among the economic agents. These contracts ordinarily involve sizable transaction costs and significant externalities which emanate from principal/agent relationships. The transaction costs cover such items as monitoring, enforcement, bargaining, agency cost, and contract formulation and documentation. In this setting, a "second best" solution is one which minimizes the overall social cost under the imposed constraints. The upshot is that much more needs to be learned about the world of second best and the evaluation of performance, conduct, and structure under other norms or criteria.

The notion of sufficient statistics and under what conditions market prices are fully revealing must be explored in the context of the institutional coordinating mechanisms that exist for various commodity systems. We now know that costless information is both a necessary and sufficient condition for market efficiency, but we have only begun to realize what this implies in terms of the information content of market signals. The work in finance and on commodity futures markets has examined efficiency in a world of limited and asymmetric information. This work will ultimately define the market characteristics that are needed to achieve different types of informational efficiency. In this setting, the stochastic calculus, developed and advanced by Merton, Samuelson, and others, has not been fully exploited. Much the same could be said for the recent literature on arbitrage pricing.

The above arguments suggest that rational expectations and perfect markets are ideals that will not be duplicated in the real world. Rational expectations must take into account the benefits and costs of collecting information in a world in which various agents are only partially and unequally informed. The data available to those in agricultural economics provide us with a comparative advantage in developing empirical frameworks which recognize how rational expectations might be formed in a world of costly information. At Berkeley, we have developed a model which allows us to infer from the price dynamics in futures and spot markets the weightings across groups defined in accordance with their information set and the pattern by which they form expectations. In periods of significant market instability, a larger number of agents fall in the group which form their expectations rationally under costly information while, during periods of more stable prices, a larger share falls into "naive" expectation groups. This simply reflects the difference in benefits and costs of collecting information to form more precise conditional price expectations.

Finally, I do not share Professor Pope's enthusiasm for the contestable market theory. It would seem to me that this theory has done nothing more than formalize what was already known in the "old" industrial organization literature. Quasi-public inputs and scope economics, however, have much to offer agricultural economists. I was delighted to learn that Ivan Lee suggested this to Professor Pope when he was writing his dissertation at Berkeley. I only wish the two of them had realized the importance of what they had stumbled upon prior to its popularization in general economics.

Another set of issues relate to farm family and consumer choices including the labor/leisure trade-off. Theories of product quality choice, dynamic changes in preferences, and family production functions show real promise in explaining the behavior of consumers as well as farm families. In the former context,

such understanding is especially important because sagging demands are a major constraint currently facing agriculture. For farm families, the work in demographic economics, eloquently outlined by Professor Pope, should prove to be particularly relevant. Very recently, agricultural economists have made major contributions to the theory of implicit markets and the separation of consumer taste from the demand for food nutrients. In a more general demographic context, the merger of economics with sociology and psychology will, indeed, entail large transaction costs but may also reap significant benefits as suggested by Professor Pope.

Another major set of issues relates to the forces behind the shifts in production capacities and market shares of agricultural products across nations and regions. Here, much can be accomplished in the evaluation of comparative advantage, competitive advantage, and effective protection. Once again, comparative dynamic methods will prove to be of much greater value than comparative statics. Research in this area should also benefit immensely from the merger of rent-seeking behavioral theories with the recent developments in international economics on trade under imperfect competition. Computable general equilibrium models, which have been applied to LDCs, could and should be applied to evaluate comparative advantage as well as competitive advantage. Moreover, such models will prove useful in examining the hypothesis that the only way to significantly increase the export demand for agricultural products from the United States is by designing policies for LDCs that lead to rapid rates of economic growth.

In his analysis, Pope chooses to neglect macroeconomics and thus focuses on new developments in microeconomics. This separation would make sense if the classical macroeconomic model held in the real world and if money was, in fact, neutral. Unfortunately, as I and others have shown, the U. S. economy is composed of both fixed- and flex-price markets and, as a result, money is at a minimum nonneutral in the short run. As a direct result of the nonneutrality of money, overshooting occurs in agricultural commodity markets. This means that three sets of causal forces must be identified and estimated in attempts to empirically explain the price dynamics of a particular (storable) commodity market. These sets of forces include internal demand and supply, the influence of governmental interventions, and the overshooting resulting from the nonneutrality of money and the equilibrium that must arise in the short run among asset markets. The linkages between agricultural markets and the macroeconomy, along with the international economy, cannot be treated by exogenous income interest rates, exchange rates, and so on. To do so is to miss one of the three major causal forces that defines the dynamic path of storable commodity prices.

There are few that would argue with the observation that we need a better understanding of what determines the behavior of farmers. In this respect, the blending of psychology and economics shows much promise. Both the new approaches to decision making under uncertainty (cited by Pope) and the work on cognitive dissonance (Akerlof) should prove of much value. The challenges to the conventional expected utility framework are exciting and could result in useful empirical formulations. In this respect, it is my belief that Professor Pope has underestimated the potential value of prospect theory which originated in the field of psychology.

Much more could and should be said regarding the new developments in economics, as well as in other fields, that might be of direct potential value to agricultural economists. In evaluating the potential contribution of such

developments to our profession, we are well advised to continue to focus on applied, well-articulated problems. This is where our comparative advantage lies; it is also the ultimate gauge by which all new theories, concepts, and methods should be assessed.