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Authors

Rausser, Gordon C.
Foster, Williams E.

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by

Gordon C. Rausser and William E. Foster

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AGRICULTURAL POLICY: A SYNTHESIS OF MAJOR STUDIES
AND OPTIONS FOR 1985

by Gordon C. Rausser and William E. Foster

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The process of developing omnibus legislation to replace the Food and Agriculture Act of 1981 has engendered much interest and activity. The forthcoming 1985 Food and Agriculture Act has, perhaps, been the focus of more conferences and major studies than any other food and agricultural act or, for that matter, any federal government legislation directed to a particular economic sector. The activity and interest are motivated, in part, by the underlying rationale for a new direction in public policy related to food and agriculture. Major papers presented at numerous conferences during the past year and a half suggest that some consensus on new directions may be emerging. Of course, this is counterbalanced by those commodity interests with a reluctance to part with the security and rents obtained from tested policy.

There can be little doubt that the formation of a consensus on new directions for food and agricultural policy will be a difficult and complex task. The current policies will not yield easily to change because they are tied to a long series of legislative procedures, deeply embedded goals and objectives, and vested interests of many commodity groups. Nevertheless, America agriculture continues to evolve in a fashion that undermines the very premises of past and current policies. Specifically, policies predicated on the concept of agriculture as a unique closed sector of the economy appear to

be less and less appropriate to the highly interdependent open agricultural economy of the 1970s and 1980s.

The preparation by numerous groups--farm commodity organizations; governmental bodies; agriculturally related businesses; and many research, education, and public interest groups--for the 1985 debate is, in itself, enlightening. The several conferences and special studies that have been conducted are offered as a logical foundation for their participation in the policy process. The intensity of the interests of these various groups in food, agriculture, and resource policy has never been higher than in recent years or, for that matter, more widespread. One potential explanation for the intense activity is the growing awareness that the internal structure of the agricultural sector and its external linkages to the broader domestic and international economies have changed drastically from the conditions that existed when the goals and framework that govern our agricultural policies were established. These changes must be thoroughly understood, and the goals and policy options must be made more explicit if we are to forge new policy directions for the 1985 and subsequent food and agriculture acts.

The internal structure of agricultural production has evolved in a dynamic fashion. For example, as late as 1960, more than one-fifth of the total farm output was produced on farms with sales of less than \$10,000. Large farms, defined as those with sales of \$100,000 or more, also accounted for approximately one-fifth of the total output. As recently as 20 years ago, small and intermediate farms were the dominant feature of American agriculture. In 1980, small farms selling less than \$20,000 in product comprised only 7 percent of the total output while large farms with \$200,000 or more in sales produced almost half of the total. These large farms are now the dominant

feature of commercial agricultural production. Despite their numbers, small farms (representing more than 50 percent of the total number of farms) make a relatively insignificant contribution to the total output.

The income data for different classes of farms are even more revealing. Per capita incomes on both the large and small farms now equal or exceed that of nonfarmers. In the case of smaller farmers, this results from the larger contribution of nonfarm earnings to the total. In other words, the bulk of the small farmers now treat farming as a sideline or hobby to complement their primary employment, which is off the farm. The remaining farmers, namely, the intermediate-sized farmers (those with sales between \$20,000 and \$200,000) who in the 1980s represent most of the commercial family farms, do not generate incomes that are sufficient to yield a per capita average equal to that of the nonfarm sector. This class includes the vast majority of owner-operators who work full time in agriculture.

The resource base for agricultural production is also of growing concern; much has been written over the last decade on the loss of land and nonreplacable groundwater owing to inadequate conservation practices and on the quantity and quality of surface water in the western states. A number of arguments have been advanced that adjustments must be made in private incentives and opportunities in order to change erosion-causing behavior. If society desires more soil conservation than is currently being done by farmers, various policy options must be screened for their impact on the incentive to conserve. Moreover, the Agriculture Act of 1985 should not encourage nonconserving practices or lead to further depletion of nonreplenishing aquifers.

Externally, the U. S. agricultural sector has been exposed to what can only mildly be referred to as dramatic shifts in its linkages with the U. S. domestic economy and the international economy. Beginning in the early 1970s, the U. S. agricultural sector has been subjected to a vicious roller-coaster ride, the valleys and peaks of which have been defined in large part by these external linkages. In 1972-73 the magnitude of increases in farm product and food prices surprised even the most informed people within the public and private sectors. The move to flexible exchange rates, the rapid expansion of international markets, and the decreasing barriers between the agricultural economy and other domestic economic sectors all resulted in significant changes in the agricultural sector. During this period, the Federal Reserve expanded the U. S. money supply with the objective of holding the real price of energy at the same level or reducing this price; other countries attempted "to inflate their way out" of the energy price shocks by increasing their money supplies. They also attempted to manage their exchange rates with the U. S. dollar by selling their currencies and buying dollars and thus increasing their money supplies even more. These monetary phenomena combined with:

1. Value of the U. S. dollar on international currency markets steadily declining (Schuh).
2. The significant barriers to trade, which insulated many countries from the price-formation process on international markets and, thus, eliminated potential supply responses to the favorable prices and made international markets "thinner" than they otherwise would have been (Johnson).
3. "Real" export demand growth in a number of LDCs; industrialized countries improving or upgrading the diet of their consuming populations; and communist countries (Hathaway).

4. The elimination of the huge governmental stocks that had accumulated during the 1960s, resulting from the U. S. government holding price supports above market equilibrium prices and motivated by the huge U. S. Treasury exposure of carrying large public stocks of food and feed grains,¹ all pointed in the same direction of rapidly increasing agricultural commodity prices.

The rapid increases in commodity prices, along with the rapid rate of inflation experienced in 1972-1974 and again in 1978-1980, resulted in a dramatic move in the valuation of the major resource input in agricultural production, viz., land. The price increases in land values indeed increased at a more rapid rate than most any other asset in the U. S. economy. Due to the distinction between tax rates on earned income and on capital gain income, U. S. agricultural land prices increased at a more rapid rate than the rate of inflation during the much of the 1970s. Due to the role of this resource input in agricultural credit markets, viz., its use as collateral for agricultural loans and credit lines, the total absorption capacity of U. S. agriculture for debt appeared to be augmented by leaps and bounds during the decade of the 1970s.

Thus far, in the decade of the 1980s, the economic linkages with the international economy and the U. S. general economy are almost the exact opposite of the conditions that existed in much of the 1970s. The Federal Reserve has pursued, since October, 1979, a policy of attempting to control the money supply directly rather than controlling interest rates. Vocker and the Federal Reserve consciously avoided monetizing the huge federal government deficits of the Reagan Administration and, thus, have driven real interest

rates to all-time highs. The declining money supply in the United States and the relatively high interest rates in this country have reversed the decline of the U. S. dollar that occurred throughout the 1970s. Interest rates have played a major role in enhancing the value of the U. S. dollar against other major currencies to a level that very recently exceeded the relative level of the dollar prior to the introduction of flexible exchange rates. Given the dominant role of the U. S. Federal Reserve and the rapid appreciation in the value of the dollar, other central banks also maintained a tight rein on their money supply rather than the loose rein that existed during the 1970s. Once again, they attempted to manage the value of their currency vis a vis the dollar by selling dollars and buying their currencies. Once again, without sterilization, they indirectly contracted their own respective money supplies. These monetary phenomena along with the concomitant short-run effects on output and thus the income variable entering the export demand equations for U. S. agricultural products as well as:

1. A steady increase in the value of the dollar which has increased import competition for a number of economic sectors including elements of U. S. agriculture and has had the additional effect of decreasing the inflation rate.
2. The reduction of some barriers to trade which enhanced supply response and increased the liquidity of international markets for a number of commodities.
3. A significant decline in the rate of export growth, at least with respect to that growth that faces the United States from the three groups of countries listed above due, in part, to the rapid increase in competitive supplies available from other agricultural exporting countries, e.g., Brazil and Argentina.

4. The record crops that occurred in 1981 and 1982 brought significant pressure on spot markets and led to market prices that enhanced the attractiveness of the farmer-held reserve that was established by the 1977 Food and Agriculture Act and continued under the 1981 Food and Agricultural Act.²

The above conditions have led to significant decreases in the real prices of agricultural commodities and, in fact, rapid deflation over the period of the 1980s. This deflation, along with the increasing attractiveness of financial assets, has resulted in some rather dramatic decreases in agricultural asset values, particularly land prices. Once again, due to the role of land resources as collateral for agricultural loans and credit lines, the debt-absorption capacity of U. S. agriculture has fallen markedly. This is evidenced by the increased frequency of bankruptcies in the agricultural production sector and by what has come to be called the agricultural financial crisis of 1984.

Obviously, anyone controlling resources that are used for the production of agricultural products in the United States have been exposed to a roller-coaster ride that is unsurpassed in the speed at which it rises or by the speed at which it declines. Some would argue that during the 1980s the rate of decline has been in a state of "free fall." To be sure, the external linkages with the domestic economy and with the international economy have made it crystal clear that timing, in terms of entry and exit from U. S. agricultural production, is indeed critical. New entrants into the production of agricultural products, prior to 1972, are doing quite nicely even in the face of the rapid declines that have occurred in asset values and in income levels during the 1980s. In fact, on the basis of asset values alone, such owners of

agricultural land could be totally incompetent at farming and still have benefitted substantially from their investment. Currently, anyone entering the production of agricultural markets during the period of 1978 through 1980 is either on the verge of bankruptcy or have an independent source of wealth and income, regardless of how effective he or she might be as an entrepreneur of a farming enterprise.

Given the above perspective, the purpose of this paper is to develop a framework to aid in capturing a consistent set of objectives and to select appropriate policy tools that will effectively serve those objectives. This framework will be used to synthesize diverse opinions, perceptions, and factual information that has been generated by the major studies and conferences that have been held in anticipation of the 1985 Food and Agricultural Act. There are, of course, various ways of summarizing the major studies that have been conducted. Our approach will be to make use of the several dimensions of policy and broadly categorize the major studies into one of the following three groups:

1. Those studies examining the "state of the world"--the political and economic environment in which agricultural programs have and will affect policy objectives.
2. Those analyzing proposed instruments or programs designed to reach certain goals under a presumed state of the world.
3. Those providing a conceptual framework to utilize the results of the first two types of studies in the selection of some policy.

II. Synthesis Framework

A framework for synthesizing the major studies that have been conducted in anticipation of the 1985 Food and Agriculture Act must be sufficiently explicit to indicate "best" policies once all elements of the framework are quantified. As argued in Rausser and Hochman, the design of a policy framework involves the specification of the relevant objectives; the policy instruments; and the states of the world or, equivalently, the system that you are attempting to influence through the setting of policy instruments to achieve certain objectives. In a world in which information is uncertain, there must also be specified information-generation processes which properly condition the state of the world that exists at any particular point in time. Specifically, the following basic specifications are required in the synthesis framework:

1. Specification of an objective function, possibly as a representation of collective preferences, which ranks the desirability of different dynamic paths or states of the system. Arguments of variables to enter this function are the key performance measures or attributes, including those internally determined within the model as well as the policy or decision variables.
2. Specification of the states of the world or representations of the system which include:
 - a. Relationships which link the performance measures in each period to the policy or decision variable instruments, other exogenous variables (variables determined outside the model representation), and lagged variables describing previous states of the system.

- b. Initial conditions for the system or the state of the world.
 - c. Other constraints delineating the feasible settings on the policy instruments and endogenous variables on internally determined variable spaces.
 - d. A representation for political feasibility and the determination of the probability of political failure.³
3. Specification of the processes of information generation, together with prescriptions for the analysis of data by policymakers as the policy sequence proceeds. This specification component may embrace "passive" or "active" learning processes whereby additional information may be used to lessen uncertainties with regard to the states of the world, the objective function, and/or the probability of political failure.
 4. Specification of the alternative policy options and the specific instruments within each policy option that must be determined. The policy option, as well as the specific settings on policy instruments, is equivalent to the form and shape of governmental intervention. How the various policy instruments within a particular policy option are set and by whom and at what points in time must be specified. The relevant decision points and procedures for a devising policy instruments in the light of new information are also important to the specification of this component.

The objectives of governmental intervention in food and agriculture are clearly influenced by the "market failure" or equity problem that is presumed to exist. In the case of domestic U. S. agriculture, the rationale for governmental involvement has been many and varied. As stated in the 1981 Food and Agricultural Act, the general purpose of U. S. agricultural policy is "to provide price and income protection for farmers, assure consumers an abundance of food and fiber at reasonable prices, continued food assistance to low-income households, and for other purposes" (U. S. Congress, 1981). Given this general purpose, some have argued that the problem in U. S. agriculture is economically depressed farmers who require income enhancement, others have argued that farmers are in a relatively disadvantaged position in the marketplace and require public support in dealing with concentrated buyers of their products, and still others have argued that U. S. agriculture is faced with an intolerable degree of instability in commodity markets adversely affecting not only farmers but also consumers of food and fiber.

We have argued elsewhere that the most persuasive rationale for an active U. S. agricultural policy, given recent experience, is the market failure associated with an intolerable degree of instability or excessive risk and uncertainty.⁴ Nevertheless, since the major studies that our framework is advanced to synthesize have assumed other problems of the U. S. agriculture which need to be corrected by governmental intervention, a more comprehensive set of objectives than simply risk or uncertainty reduction is required.

Components 1, 3, and 4 of the synthesizing framework are self-explanatory; but Component 2, in the case of food and agricultural policy, requires further clarification. In particular, the major dimensions of the "state of the world" or the representation of the system, which is indeed dynamic and thus

subject to change, should be outlined at this juncture. The first major dimension is the structural characteristics of U. S. agriculture or what was referred to in Section 1 as the internal structure of the agricultural sector. Second the macroeconomic linkages is a major dimension over which there is considerable differences of opinion and debate. Similar observations can be offered for the major dimensions of international trade linkages and apparent state of resource quantities and environmental quality associated with agricultural production. Another major dimension is the specific regional and commodity setting; and related to this dimension is the role of group interests in determining political feasibility and the probability of political failure.

As argued elsewhere (Rausser), group interests play a major role in the political process by seeking rents or their own self interest rather than the public interest. The group interests, of course, are all the actors and agents involved in the U. S. food and agricultural sector, namely, consumers, distributors, processors, assemblers, input suppliers, and environmentalists. Moreover, given the major role of government, other actors that are principally involved in the food and agricultural system include Congressional participants, career bureaucrats, and elected and appointed officials within the Executive Branch. The form and nature of the interaction among all these interest groups, as well as the political participants, define the probability of political failure and indirectly the potential for policy disequilibrium or crises that require the introduction of major revisions or large discrete moves in the design and setting of policy (Rausser).

The role of group interests in the design of the 1985 Farm Bill promises to be much larger than it has been historically. The large implicit taxes

that have been imposed upon the agricultural sector by the high real rates of interest and the strong dollar (imposed on all export economic sectors of the U. S. economy) have created a depressed state of agriculture which, together with the dramatic acreage and price swings in 1983,⁵ intensified the interest of many participants in the food system. These conditions made it crystal clear to a number of interest groups that government policies and programs are indeed important. As argued by Abel and Daft, the potential list of new interest groups is, indeed, quite long and includes:

- Livestock and poultry producers who are affected by wide swings in feed prices.
- Fertilizer, chemical, and farm machinery manufacturing firms supplying agriculture whose corporate profitability is dependent upon crop acreage and farm income.
- Food processors and manufacturers who are the major users of agricultural products.
- Exporters of U. S. farm products, most of which now have substantial excess capacity.
- Various financial institutions serving agriculture that are confronted with farmers' financial problems.

This list clearly suggests that the focus of farm policy will be broadened by the interjection of new interest groups that go well beyond the narrow agenda that would have been set by traditional commodity groups. It also means that the objective set must be expanded to reflect the interest and power in the political process that can be exercised by each one of the above interest groups.

FOOTNOTES

¹The U. S. Treasury exposure of carrying public stocks became unbearable in the early 1970s. As a result, the "Soviet grain deal" appeared as a savior for the policy disequilibrium that existed (Rausser). The U. S. government liquidated public stocks which then exposed the economy to the risk of large agriculture commodity price increases. From the standpoint of officials who are struggling to contain inflation, governmental stocks were liquidated prematurely and thus failed to provide the stabilizing influence which taxpayers supposedly had been paying for so long.

²Coming into the 1981 crop year, substantial quantities of stocks already existed in the farmer-held reserve. The addition in stocks from the 1981 and 1982 record crops were considered excessive relative to the stabilizing and food-security objectives for the farmer-held reserves. With the accumulation of public stocks of more than 1 billion bushels of wheat and over 2.5 billion bushels of feed grains and the associated escalation and Treasury outlays, strong voices of criticism surfaced; and some stopgap, crises-driven policy provisions had to be enacted.

³Government intervention is often motivated by the inability of unregulated markets to solve socially intolerable problems, but such intervention itself invites the participation of a political system in the determination of values which is itself subject to failure. Formally, political failure was a tendency of the legislative process to produce policies that do not lead to Pareto-superior outcomes. Political markets induce politicians to consider personal, not public benefits and costs. As a result, the existence of market failure is a necessary but not sufficient condition for government

intervention. A sufficient condition is that the loss of economic efficiency in the case of the uncorrected market failure is greater than the loss under the government remedy which is influenced by the existence of political failure. As argued in Calvin et al. (page 7),

"Political failure has two important effects. First a policy may be selected that does not solve market failure problems in an efficient manner but rather contributes to the short-run goals of politicians. This is the most obvious result of political failure-- failure in choice. Economists can do very little to solve this problem other than to try to inform the public and politicians about available policy options. The second result, failure and implementation of the policy is more subtle. Over time, policies may be modified to serve political concerns.

⁴This rationale for government intervention is based on the stochastic character of both commodity prices and production and arises from the inability of farmers to trade their risk adequately to other agents of the economy. Inherent instability results from the significant dependence of production on weather patterns; the inelastic nature of aggregate demand; rapid political change; asset fixity and atomistic behavior; and the significant integration of U. S. agriculture into international markets influenced by supply and demand fluctuations in other countries, changes in trade policies, and variations in exchange rates. Furthermore, the inherent risk and uncertainty of the U. S. agricultural sector can be increased by unstable fiscal and monetary policies. For example, a flex-price specification of agricultural commodity markets and a fixed-price specification of labor, manufacturing prices, and the like cause highly volatile real rates of interest and exchange rates (resulting from unstable fiscal and monetary policies) to lead to overshooting an agricultural sector market (Rausser and

Stamoulis). These "macro externalities" introduce further instabilities into a sector that already is unstable.

⁵This was caused in large measure by the drought of 1983 and by the PIK program.