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## AGRICULTURE'S REVEALING—AND PAINFUL— LESSON FOR INDUSTRIAL POLICY

### INTRODUCTION

It has been argued that the experience of U.S. agriculture demonstrates the potential success of industrial policy. MIT economist Lester Thurow, for example, recently concluded that "in agriculture what started as a desperate effort to prop up a very large, sick industry in the 1930s ended as an industry that is the world's most efficient. There is no reason that feat cannot be duplicated elsewhere."<sup>1</sup>

The trouble is that agricultural policy makes a poor model for proponents of a national industrial policy. Some governmental activity in agriculture has been productive, but much more of it has been wasteful. The productive activity has involved the development and dissemination of knowledge that helped U.S. agriculture become a successful high-tech industry. But the rationale and methods of these activities do not transfer to the industrial sector. The wasteful governmental activities in agriculture have involved intervention in the commodity markets in response to the political pressures of producer groups. Attempts at industrial policy would inevitably be subject to analogous pressures. In short, the unproductive aspects of agricultural policy would likely carry over to industrial policy, while the productive aspects would not.

### THE STATE OF U.S. AGRICULTURE

It may be questioned whether U.S. agriculture today is a notable success. In the past two years there have been assertions

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<sup>1</sup> Lester C. Thurow, "Farms: A Policy Success," Newsweek, May 16, 1983.

that farmers are in the worst financial crisis that they have experienced since the Great Depression. U.S. federal spending for farm commodity programs in fiscal 1983 was \$21 billion, approximately equal to the value of net farm income in total. One could be forgiven for rephrasing the earlier quotation from Thurow to say, "What started as a desperate effort to prop up a very large, sick industry in the 1930s ended as a desperate effort to prop up a somewhat smaller but almost as sick industry in the 1980s."

Despite current problems, U.S. agriculture is an economic success for a number of reasons. First, U.S. agriculture has experienced rates of productivity growth surpassing those in most industries, whether measured in terms of labor productivity or in terms of total factor productivity (output divided by an index of labor, land, and capital inputs). The United States has a substantial cost advantage in world commodity trade for most agricultural products. American grain producers receive about half the prices obtained for their products by European Community farmers, and U.S. rice producers receive about one-fourth the prices of Japanese rice producers. U.S. production continues to expand and to dominate world trade in the grains and rice.

A second, and resultant, indicator of success in American agriculture, is the low food prices paid by U.S. consumers, compared to food prices abroad. A third indicator is that, despite the problems of some financially strained farmers, U.S. agriculture yields incomes and a return on investment that are fully comparable to returns earned in nonagricultural industries, a situation that did not exist in the 1930s or 1950s. The average U.S. farm in 1982 had a net worth of \$350,000, about 8 times the real net worth of the average farm in 1940.

In short, U.S. agriculture has been a success in that it is competitive in world markets, provides low-priced food to U.S. consumers, and generates reasonable rewards to progressive commercial farmers.

On the other hand, the incidence of poverty is higher among rural families than among urban dwellers (although differences in cost of living, nonpecuniary income, and family size make comparisons difficult). These poor farmers should not be confused with the commercial farmers who account for the high productivity of the agricultural sector and the high mean net worth of U.S. farms. Income in agriculture is significantly less evenly distributed and more skewed (more concentrated at the upper income level) for farm, as compared to nonfarm, households.

Farming, moreover, has been no creator of jobs. Employment in farming accounted for 20 percent of the labor force in 1930, but only 3 percent in 1982. In this sense, U.S. agriculture is a

declining industry. Against this background the productivity and profitability of U.S. commercial farming are all the more striking.<sup>2</sup>

#### FEDERAL AGRICULTURE PROGRAMS

The list of federal policies to assist U.S. agriculture is impressive. They include:

- o Agricultural research through the land grant universities and experiment stations.
- o The Agricultural Extension Service for disseminating research findings.
- o Educational programs at land grant universities and vocational agricultural programs in high schools.
- o A federal farm credit system.
- o Federally subsidized irrigation, drainage, and other water projects.
- o Subsidized crop insurance programs.
- o Price support programs through the Commodity Credit Corporation for grains, cotton, rice, milk, peanuts, and several minor commodities.
- o Land control and retirement programs.
- o Export promotion programs.
- o Restrictions on imports of sugar, beef, dairy products, and other agricultural commodities.
- o Grain and cotton storage subsidies.
- o Exemption of cooperatives for marketing farm products from most antitrust legislation.
- o Tax advantages for expensing many capital investments, capital gains tax treatment of certain livestock returns, and other provisions resulting in substantially lower effective tax rates for agriculture compared to other businesses.

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<sup>2</sup> On returns to investment in farming, see E. Melicar, "Capital Gains versus Current Income in the Farming Sector," American Journal of Agricultural Economics, December 1979, pp. 1085-1092; for an overall review, see L. Tweeten, et al., "The Emerging Economics of Agriculture," Council for Agricultural Science and Technology, Report No. 98, September 1983.

How are these federal policies linked to the successes and failures of American agriculture?

### Research

Numerous studies have identified cost-reducing consequences of technical change in agriculture, for instance, and the high rate of return of federally funded research and extension. Federal policies in this area undeniably have been important in the promotion of cost-reducing technical change, as an element of what could be called a successful industrial policy. On the other hand, much of the research in agricultural production has been conducted by agribusiness corporations, and some that has been done under governmental auspices would have been done privately were there no government involvement. So it would be incorrect to infer that U.S. agriculture would have become technologically backward without government research.

### Farm Credit

The farm credit programs, and other subsidies toward farm production expenses and income tax burdens, have reduced the costs of farmers. It could be argued that U.S. households have received benefits from these policies in the form of cheaper food, and that these benefits largely offset the subsidy costs. There is no evidence, however, that the rate of return to the taxpayers providing financial support for these activities justifies the cost; it is mainly a transfer from taxpayers to owners of rent-earning agricultural assets.

If these production-oriented policies were the sum total of governmental involvement in U.S. agriculture, they might be relevant as a policy model for other industries. But the full set of agricultural policies must be considered, since they are inextricably intertwined politically. Farmers have argued that governmental policies have increased production and therefore reduced prices, and in some cases, have made traditional farming practices obsolete. They go on to maintain that the government therefore has the responsibility to insure farmers of returns sufficient to cover costs--even for enterprises that cannot take full advantage of advances in production techniques. These latter policies, put forth under the slogan of "supporting" (or more often "saving") the family farm, require consideration.

### Stabilization Policies

In addition to the difficulties of some in adapting to technological change, farmers are said to need aid to cope with the market power of middlemen, the uncertainties of international markets and weather, and the dynamics of biological production processes. These problems reasonably may justify the exploration of antitrust remedies, risk management institutions such as futures markets, or the provision of market information and educational services by government. Instead, the main policy results have

been a half-century-long series of experiments in commodity price and output control programs. These have been marketed under the label "stabilization," and as such, have been claimed good medicine for consumers and producers alike.

MIT economist Lester Thurow believes that these stabilization policies are an integral part of the U.S. agricultural success story. He states that:

they had important effects, not just on the welfare of farm families, but on farm productivity. With more certainty about their incomes, farmers were willing to make heavy investments in new equipment. Banks were willing to finance that new equipment, knowing that income to repay the loans would be there. Farm machinery makers could gear up for massive production runs--reducing unit costs--and make larger investments in developing new machinery for what was a stable market.<sup>3</sup>

Despite this plausible scenario, there is little evidence that stabilization efforts per se have been a cause of agricultural productivity growth. One can obtain some evidence on this question by comparing periods of greater and less stability, and by comparing various agricultural enterprises in which different policies were followed. For example, the yield of corn per acre and its output per unit of total input have increased dramatically in recent years at the same time a substantial price stabilization program was in effect.

Productivity gains in other crops, on the other hand, have been equally impressive without significant governmental stabilization programs. Some of the most dynamic farm products, such as broiler chickens, have had no government programs to stabilize their markets. The real price of chicken has declined by about one-half since 1960. Moreover, some of the commodities that have been slowest to adopt new productive techniques, such as milk and tobacco, are among the most heavily protected. And some unprotected commodities, for example soybeans, have not experienced yield increases as great as for corn, while in other respects the two crops are grown in quite similar farm operations.

Studies based on policy experiments have also been inconclusive. In the 1940s a price stabilization program was introduced for potatoes, after which output increased dramatically. Agricultural economists who studied this program attributed the gains to "production adjustments induced by the greater price certainty."<sup>4</sup>

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<sup>3</sup> Ibid.

<sup>4</sup> R. Gray, V. Sorenson, and W. Cochrane, "Impact of Government Programs in the Potato Industry," as quoted in W. Cochrane and M. Ryan, American Farm Policy: 1948-1973 (Minneapolis, Minnesota: University of Minnesota Press, 1976), p. 375.

However, this program was essentially a price support program--the government bought potatoes to keep prices up in low-price periods, but it did not store and resell them to keep prices down in high-price periods. It seems more plausible, in other words, to attribute the expansion of output to higher prices than to stable prices.

Similarly, tobacco and peanut yields per acre in the 1950s and 1960s accelerated rapidly in response to USDA programs, but it is not clear that any real productivity or efficiency gains were involved. The main cause was a production-control program that guaranteed high prices, but limited the number of acres that a farmer could plant. Responding to this incentive, farmers used fertilization and other intensive practices to double their yield per acre of tobacco and peanuts in only a few years. But it is not apparent that a corresponding increase in total factor productivity was induced.

Further examination of these and other commodity comparisons suggests that productivity gains have been due not to stabilization policies but primarily to successful investment in research, leading to new varieties, new harvesting techniques, or new methods of controlling natural enemies. When profitable technical breakthroughs are made in any commodity, the productivity advances. But these technical advances do not seem to be linked significantly to the existence of stabilization policies.

Why, then, has the U.S. embarked on this voyage of intervention? The main motivating force behind such agricultural policies has not, in fact, been desire for productivity growth, stability, or any other public good, but rather the redistribution of wealth to commodity groups with the greatest political clout. The irony is that the ostensible gainers from these policies are not receiving nearly as much as taxpayers and consumers are giving up. So the programs do not enhance efficiency or productivity--they reduce it.

## LESSONS FOR INDUSTRIAL POLICY

### Declining Firms

Some industrial policy proposals aim to help marginal or technologically obsolete firms and protect their workers. There are lessons from the agricultural policy experience for such initiatives, but they are not supportive of industrial policy. Agricultural policies, despite rhetoric favoring traditional family farms, have not been geared to saving economically obsolete enterprises. Indeed, in the past 50 years the number of farms in the United States has been reduced by about two-thirds, from approximately 6 million to about 2 1/3 million. And a common criticism of agricultural policy is that it has fostered large-scale, risk-taking enterprises at the expense of small, traditional operations.

Some federal programs do seem to have enabled small-scale farming to survive longer than otherwise would have been the case, notably the quantitative restrictions in tobacco growing and a few other commodities, as well as earlier acreage control policies in the grains and cotton. Overall, the long-run structural consequences of policy generally have been to let the most economic enterprises survive and to permit the poorly managed, financially weak, or unlucky enterprises to fail. In the past five years, however, there has been a shift toward providing credit on easy terms for farmers in financial difficulty because of adverse weather or low market prices. In response to the American Agricultural Movement's disorderly but effective lobbying, the Emergency Agricultural Act of 1978 supplemented longstanding emergency loan programs of the USDA with a new \$6 billion program of "economic emergency" loans. These loans kept in business some farms whose credit standing was too poor to qualify for loans from commercial banks. But the emergency loans simply postponed the failure of some farm enterprises until the next round of depressed prices in 1981-1982. Now there is great pressure in Congress to prohibit the U.S. Department of Agriculture (USDA) from foreclosing on past loans. This episode gives evidence to support the critics of the bail-out strategies that are connected with industrial policy.

### "Unfair" Trade

Industrial policy also aims at dealing with "unfair" trade practices of other countries. U.S. agricultural policy in this area has been active but inconsistent, and its consequences, dubious. Attempts to manage international markets have proceeded farthest in the grains with quite mixed results. Periods of vigorous subsidy and export promotion have alternated with periods of export restriction--most notably during the mid-1970s and again in President Carter's embargo on grain sales to the Soviet Union. It seems likely that a general regime of liberalized trade would have produced a better environment for U.S. agricultural exports than did the arbitrary shifts resulting from attempts to manage the grain trade from Washington, D.C.

The most workable and beneficial policy regarding trade is the general multinational negotiation of reductions in barriers. Apart from such efforts, together with the promotion of efficiency in agricultural production, the other policies designed to promote and manage U.S. exports have been either counterproductive or more costly to consumers and taxpayers than their gains to American producers would warrant.

### Interest Groups

The most obvious and important lesson that 50 years of experience with agricultural policy offers is the inevitable dominance of interest-group politics in debates and legislation. Although a public-interest rationale can be given for a U.S. agricultural policy, the real reason for the programs stems from

the firm belief of farmers that governmental intervention would serve to increase their economic returns plus the political ramifications of that belief. Thus, in the area of stabilization policy, the only approaches to receive serious consideration are programs to stabilize prices by increasing low prices; policies that would bring stability by reducing high prices are practically never enacted. Admittedly, the beef price ceilings of the mid-1970s, and the soybean and grain embargos of that time, were exceptions to the rule. But they earned their proponents such political odium that both political parties now compete to give the strongest promise never to repeat the policy. The same political reality explains why policies that stabilize prices by means of commodity storage, such as those favored by the Carter Administration, cannot be successful politically when prices remain low for several consecutive years, since rising stocks mean farmers cannot realistically expect substantial price increases for many more years.

It is for such plain political reasons that the United States has resorted throughout the past to acreage restrictions, rather than a policy of building up stocks, to support prices. This same approach is the central theme of the current payment in kind (PIK) program.

Such political dominance by interest groups leads to indefensible transfers from politically weak to politically strong groups. But more important, in the context of an industrial policy, it results inevitably in economic inefficiency. This means that the cumulative costs to consumers and taxpayers are substantially larger than the gains to producers. The PIK program, for instance, is making U.S. farmers in 1983 better off by perhaps \$10 billion--but it is costing consumers and taxpayers about \$15 billion.<sup>5</sup> The difference is the policy's deadweight loss.

The most visible segment of this loss is the rental value of productive land that, instead of being used to grow commodities, is sitting idle in order to meet the requirements of the program. At a rental value of \$50 per acre, the 80 million idle acres in the PIK program mean a net loss of \$4 billion.

In addition to the cost of idled land, corresponding reductions in the demand for seeds, harvesting labor, fertilizer, and other farm inputs disrupt the agribusiness community and impose burdens. Another important element of the deadweight loss is the cost of political action by farmers--such as the hiring of lobbyists and counterlobbyists to put forward economic and legal arguments on both sides of legislative debates.

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<sup>5</sup> These numbers are soft but plausible. Derivation of them here is spelled out in "Rural Reagonomics: An Analysis and Critique," prepared for Resources for the Future, Washington, D.C., June 1983.



## Executing Policies

Another lesson for advocates of industrial policy that stems from U.S. experience with agricultural policy is the difficulty implicit in carrying out management tasks associated with strategies to stabilize markets and resolve market failures. The U.S. has had a long experience with stabilization policy based on commodity storage programs in the case of the Commodity Credit Corporation (CCC). During the Carter Administration, CCC storage was supplemented by a "Farmer Owned Reserve" (FOR) program--one of the most sophisticated attempts to stabilize the grain markets. This program, retained by the Reagan Administration in a modified form, involves a complex system of incentives and subsidies to encourage farmers to store grain when prices are low and to encourage them to release it from storage when prices are high.

The management issue is whether the government is better able to discover the optimal quantity to hold in storage at each price than is the private trade through the speculative storage of grain. The evidence to date on the government's ability to manage stocks is mixed at best. When wheat and corn stocks were drawn down in the early 1970s, American consumers were left vulnerable to large price increases when there was a corn crop shortfall in 1974. The management mistake was made not by farmers or other private owners of grain stocks, but primarily by the CCC, which sold off its long-held inventories when prices first began to rise during the Soviet grain imports of 1972 and 1973.

While the farmer-owned reserve management policies were more complex during the 1977-1981 period, subsequent study of the price patterns of that time, compared to the pre-FOR period, showed no significant improvement in stability thanks to the program.<sup>6</sup> Moreover, when FOR stocks expanded considerably in the late 1970s, and again in the 1980s, the government reacted not by reducing its additions to stocks or cutting its purchase price for grain, but instead by production control measures. This policy proved ill-advised in 1980, when the warmest summer in 25 years reduced grain yields appreciably. Combined with short Soviet crops, this resulted in a scarcity only aggravated by acreage controls. There was a repeat performance during the hot, dry summer of 1983. The 1983 situation was intensified by the PIK program, which reacted to the large stocks that had accumulated by 1982 with the largest acreage cutback program ever.

None of these episodes inspires confidence in the government's ability to manage the grain markets. And most agricultural economists appear to accept such an assessment. The main disagreement

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<sup>6</sup> See General Accounting Office, "Farmer Owned Grain Reserve Program Needs Modification to Improve Effectiveness," Report to the Congress by the Comptroller General, CED-81-70, June 26, 1981.

among them is whether past failures call for more intelligent governmental policy or the abandonment of governmental attempts to manage these markets.<sup>7</sup>

### Loss of Cropland

The pitfalls of governmental management are also apparent in another aspect of agriculture where market failures are widely accepted as important, namely the loss of prime cropland to erosion and urbanization. Governmental efforts to promote conservation over the past 50 years have been well intentioned, but it is not clear that the complete array of agricultural policies has been effective. It is even arguable that the price-support programs have tended to accelerate soil depletion.<sup>8</sup>

Incentives to drain and irrigate cropland have worked at cross-purposes with simultaneous attempts to control production.<sup>9</sup> And recent judgments regarding federal conservation programs have ranged from the conclusion that "soil conservation spending is not being allocated very effectively"<sup>10</sup> to the opinion that these programs are "models of inefficiency."<sup>11</sup> Once again the central message is clear: bureaucratic confusion, and an inability to carry out even a straightforward mandate to improve upon perceived market failures, have meant that governmental efforts to guide economic events have created as many--perhaps more--problems than they have solved.

A final consideration that gives pause is the role of the general public. Even if Congress could start again with a clean slate, and even if interest-group politics and poor managerial capabilities could be surmounted, the ultimate directions to policymakers would still come from voters, most of whom have only the vaguest understanding of the technical issues and trade-offs involved in agricultural (or industrial) policy. Voters would be in no position, nor find it in their interest, to take the time and effort necessary to respond intelligently to the self-interested requests for support directed at them. The problem is that the

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<sup>7</sup> See J. Schnittker, "A Framework for Food and Agricultural Policy for the 1980's" and D. Hoover "A Framework for Analyzing Agricultural and Food Policy in the 1980's," American Journal of Agricultural Economics, May 1981, pp. 324-332.

<sup>8</sup> S. Batie, "Policies, Institutions, and Incentives for Soil Conservation," in Soil Conservation Policies, Institutions, and Incentives (Ankeny, Iowa: Soil Conservation Society of America, 1982).

<sup>9</sup> W. Martin, "Returns to Public Irrigation Development and the Concomitant Costs of Commodity Programs," American Journal of Agricultural Economics, December 1979, pp. 1107-1123.

<sup>10</sup> C. Lemen, "Political Dilemmas in Evaluating and Budgeting Soil Conservation Programs," in Soil Conservation Policies, p. 85.

<sup>11</sup> T. W. Schultz, "The Dynamics of Soil Erosion in the U.S.," mimeo, 1982, p. 13.

functioning of the agricultural commodity markets and the impact of policy interventions are complex matters that do not lend themselves to solutions that can be worked out by interested amateurs or properly explained by the popular media. Agricultural policy, or any other form of industrial policy for that matter, is not likely to lead to intelligent public choice.

## CONCLUSION

The U.S. government has undertaken some policies that appear to have been successful in increasing the productivity of U.S. agriculture, namely promotion of research and the dissemination of information to farmers. The case for extending these policies to industrial enterprises is very weak, however, since these industries are better structured than farming enterprises to maintain private property rights over invention and information.

In any case, even the successful agriculture policies have not been aimed at saving, nor have they saved, the high-cost, marginal producers of farm products. The number of farms has declined by two-thirds over the last 50 years. Efforts in the late 1970s to provide "emergency" credit and other help to the weakest enterprises have produced distortions and other damaging consequences very familiar to critics of Chrysler-style industrial bail-outs. There is nothing in the agricultural experience to support any of the "rescue" elements of industrial policy.

If industrial policy proponents are to learn a lesson from agriculture in this area, the lesson is laissez-faire. The more dominant agricultural policies have involved governmental management of farm production, prices, marketing, and trade.

But the overall conclusion to be drawn from this set of activities is: do not try them. The complexity of public choice, the difficulty of managerial decision making, and above all the inevitable dominance of interest-group politics suggest that the situation must be dire indeed for there to be any likelihood of improvement through governmental policy.

In short, agricultural policy has been successful only in areas where it is not transferable to industrial policy, and it has been a failure in those areas that could and would be transferred. It would be a grave mistake to adopt agricultural policy as a model for a national industrial policy.

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