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Determinants of Farm Size and Structure

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AGRICULTURAL STRUCTURE AND THE WELL BEING OF SOCIETY REVISITED

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We are once again studying the structure of American agriculture or, more specifically, American farming. Why? One reason is that the American people are interested in agriculture, both from the viewpoint of having a sure, safe supply of food at reasonable cost and from concern over the costs of farm programs. Parenthetically, surveys do not show Americans as concerned over the costs of farm programs as some of our politicians would have us believe. There is still a large reservoir of good will for the American farmer -- particularly for the family farmer, whoever he may be and wherever he may be. Between 1950 and 1985, the number of farms in the United States declined by over one-half, while the average size increased by one-half.

A more important reason for agricultural economists to undertake research in structure is that it is a method for looking at agriculture in its entirety. At the same time, while permitting broad macro analyses, structure can be broken down all the way to the individual farm or to a specific commodity without running into some of the limitations one finds in starting with an individual farm or a commodity.

The last major studies of structure took place in the late 1970's, with the Department of Agriculture, Congressional committees, and individual agricultural economists participating. Secretary of Agriculture Bob Bergland was a moving force behind this initiative. The United States Senate published a collection of papers in 1980, many articles dealing with structure appeared in the American Journal of Agricultural Economics, and the Department published a series of papers and a major report in January 1981. However, the Department's report was released just as a new administration was taking office in Washington and "structure" became almost a non-word in the Department. Nevertheless, although questions often associated with structure have been downplayed by the Federal government for the past eight years, they still remain and are resurfacing at the present time. However, I do not believe that we will see the Department of Agriculture giving structure strong emphasis over the next few years.

But what is farm structure? Farming and related activities have been changing so rapidly since World War II that structure today may not be quite the same subject as it was even ten years ago. Farm structure, according to one rather simple definition, is the control and organization of resources needed for farm production. Its dimensions include the number and sizes of farms by commodities and by regions, the degree of specialization in production and the technology employed, the ownership and control of the productive

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resources, barriers to entry and exit in farming, and the social, economic, and political situations of farmers.

A rather complex definition was used by the Department in its 1981 report. It involved: "How farms of different sizes, commodities, incomes, assets and locations organize their natural, financial, labor, and other resources. Who controls, manages and/or operates those farms, and by what means -- including the degrees and kinds of separation among ownership, management, operation and labor functions. The degree of freedom of choice enjoyed -- and the degree, source, and kinds of risk faced -- by those who control, manage, and operate those farms. The distribution of wealth among the persons contributing to production on our farms, and the distribution of income associated with this wealth. The ways in which those farmers secure the inputs, including capital, they need to produce and market their products. The requirements for entering farming as an occupation, and the relative ability of those entering to meet those requirements. The means used to transfer the farms to a new generation, the effects of different types of transfers on the individual unit the make-up of farming as a whole -- locally, regionally, and nationally. The effects of different types of agricultural organizations and techniques on natural resources. The performance of the food system in providing the quantity and quality of food sought by consumers. The ability of the entire food system to withstand shock, to adapt to changing technology and economic circumstances, and to respond to changes in consumer preferences. How the system, in all its components, meets objectives the American people set for themselves as a society" (USDA, 1981, p. 15).

These many factors making up agricultural structure were summarized by Secretary Bergland as a concept which he defined as being "the basic characteristics of a system -- those that embody economic, social, and political goals and values" (USDA, 1981, p. 7). The term "family farm" was not mentioned in the list of factors making up structure or in Bergland's brief definition because, according to the authors of the report, broad agreement on a definition of the family farm was impossible for the purpose of economic and policy analysis. This was not always so, but as farming has changed over the more than 200 years since our nation won its independence, so have definitions of farm structure and of family farms. At the same time, problems of farm structure have been major forces in the development -- indeed, of the very existence -- of this nation.

The American Revolution, for example, was fought by farmers and their leaders in large part because of farm structure. A number of the first English colonies on the Atlantic seaboard were settled under what was called the quit-rent system. That is, a farmer's title to his land was subject to a perpetual small fee, usually to be paid to an absentee landlord in England. Many farmers saw no reason why their hard-earned money should go to a person who had done nothing for them and had title to the land only because of a King's whim. Farmers were further antagonized by the British government in 1763 when it forbade settlement west of the Alleghenies, and sent an army to drive settlers already west of the mountains back across. Farmers felt, quite rightly, that a major purpose of the ordinance was to protect the interests of British land speculators. Many farmers, including the large tobacco planters in the South, also resented the efforts of the British to control and tax the trade in colonial farm products. These limitations on land titles, settlement,

and marketing of farm products, all elements of farm structure, were major causes of the Revolution.

Once the war was won, the new states did away with quit rents, the Constitution forebade taxes on exports, and a system was devised to promote the settlement of western lands. The land system, largely developed by Thomas Jefferson, provided for the sale of western lands with fee simple titles and for bringing the western territories into the union as states equal in every way to the original thirteen. Jefferson called for a free, independent farm population, extolling its virtues as the foundation of the nation.

Jefferson articulated much of the agrarianism which has influenced farm policy throughout our history. Moral corruption, according to Jefferson, "is the mark set on those, who, not looking up to heaven, to their own soil and industry, as does the husbandman, for their subsistence, depend for it on the casualties and caprice of customers" (Edwards, p. 23). Jefferson's ideal farmer provided for his family from his own land by his own efforts. He carried on a self-sufficient agriculture, buying and selling as little as possible. He did not rent his land but owned in it fee simple. He did his own work. As an independent, self-supporting member of society, he was his own boss, responsible for his own managerial decisions.

As a practical matter, the structure of American agriculture never followed the Jeffersonian model. Jefferson himself operated a commercial plantation with slave labor, producing crops for market, and importing goods from England. Every farmer from the earliest settlements produced at least some goods for market since true self-sufficiency was impossible (Loehr). Even though many farmers acquired title to land under the ordinances Jefferson sponsored, both investors and speculators were buying land and leasing it to farmers. A few of these early large landed estates, regularly leased to tenants, are still found scattered across the nation (Socolofsky).

Unrest over farm structure helped establish the new nation, and continuing problems in this area threatened the very existence of the United States. The industrializing North and the plantation South were fixed upon divergent courses, with the divergence centering upon differing farm structures. The North's farms were operated by family labor, the South's plantations by slave labor. The South's dependence upon the export of one major crop opened it up to economic exploitation by northern industrial interests, primarily through the tariff. The Civil War resulting from these conflicts brought major changes in farm structure in both the North and the South (Rasmussen, 1965).

The war led many Northern farmers to increase production by increasing the size of farms and by replacing hand labor by horse-drawn machinery. The result was that these farmers, after the war, were caught up in commercial agricultural production in order to pay for the land and machinery. Southern farmers, virtually without economic resources, turned to an economic system known as share-cropping, damaging to the cropper, the landowner, and the land itself.

In 1862, after the South withdrew from the union, Congress passed four laws vitally affecting the structure of American agriculture. All four sought to encourage family farms. The Homestead Act offered 160 acres of Federal land without charge to a person willing to improve the land and live on it for five years. The Department of Agriculture was established to develop useful information and carry it to the farmers. The land-grant colleges established under the Morrill Land Grant College Act were to educate young people in agriculture so that they could apply the newest knowledge of improved farming methods to their land. Finally, a transcontinental railroad was financed at least in part to provide better access to lands opened under the Homestead Act and to give farmers a way of getting their products to market (Gates).

The increased commercialization of agriculture resulting from the Civil War and the opening of Western lands led to large increases in production and to recurring market surpluses. As a result, farmers organized national associations, including the National Grange and the Farmers Alliances, and turned to cooperatives, to try to gain what they regarded as a fair share of national income. These efforts were not particularly successful (Dyson, pp. 192-202, 233-252).

Meanwhile, the West saw important, large-scale experiments with corporation operation and foreign ownership of farms and livestock ranches. Large, mechanized bonanza wheat farms in the Red River Valley grew out of the depression of 1873, while foreign-owned cattle ranches were developed by eastern speculators, who convinced foreign investors that they could get rich by buying cattle, grazing them without cost on Federal land, and selling the 2-year-olds. The wheat farms seemed to offer an opportunity to apply the most modern technology to production and to develop economies of scale, but they failed. A couple of poor crop years, fluctuations in the price of wheat, increasing costs of farm machinery, and the problem of hiring workers who could and would operate the machinery properly led to the failures (Drache).

A similar fate overtook the large scale cattle ranches. Animal predators and disease took a toll, while rustlers were not uncommon. However, the extremes of climate caused the greatest losses. Most foreign investors lost everything after two very dry summers and the terrible winter of 1886-87 (Schlebecker, pp. 1-16).

By the turn of the century, however, farmers were entering one of the "golden ages" of American agriculture. Total production was not increasing as rapidly as demand, so the two reached a certain equilibrium. Nevertheless, there were still problems. In 1908, President Theodore Roosevelt appointed a Country Life Commission, the first national effort to examine the structure of farming and of farm life. The Commission, which stated that in "independent and strong citizenship, the agricultural people constitute the very foundation of our efficiency," reported that agriculture was generally prosperous, but that country life was deficient. The Commission made many recommendations which were eventually carried out, such as the establishment of land banks and of a nationwide agricultural extension service (Ellsworth). However, many of the problems it discussed are still with the nation 80 years later (Danbom).

The Great Depression and the New Deal of the 1930's had a major impact upon farm structure -- an impact that is still continuing. In the 1920's farm management specialists and other agricultural economists had encouraged farmers to analyze their costs and returns and to reorganize their farms to get the greatest returns. Helpful as this was to individual farmers, it could not overcome the impacts of the depression. Farm legislation was a first order of business for President Franklin D. Roosevelt and Secretary of Agriculture Henry A. Wallace. The Agricultural Adjustment Act of 1933 was signed on May 12. It provided for supporting the prices of major farm products for farmers who agreed to reduce their production. Laws with the purpose of supporting farm prices and relating production to demand have been in effect from then to the present and have had a major impact on farm structure (Saloutos, pp. 254-270).

Other New Deal legislation, too, has had a continuing impact. Laws establishing the Farm Credit Administration, the Soil Conservation Service, the Farmers Home Administration, and the Rural Electrification Administration are still important to farm structure (Rasmussen, 1983).

The greatest changes in farm structure the nation has seen, however, came during and just after World War II. The second American agricultural revolution, marked by the completion of the transition from animal to tractor power and the application of systems analysis to farming began during the war and came to full fruition in the 1950's. In addition to moving from animal to tractor power, this agricultural revolution included the use of hybrid seeds, the adoption of strains of livestock that could make the most efficient use of feed, the careful use of fertilizer, irrigation when and where necessary, and the use of agricultural chemicals when this promoted more efficient production. Many of these changes called for increased capital in farming and for adjustments in size of farms, usually upward, to make the best use of the technology. Unforseen at the time was also the fact that with the unprecedented increases in productivity, the nation would need fewer farmers and fewer farms (Rasmussen, 1982).

During the 1950's and 1960's, a number of proposals and studies were made with the idea of strengthening the family farm (the term was still being used by the Department and by agricultural economists), developing a more rational price support system, and ending rural poverty. Little of substance resulted, although the passage of the Agricultural Trade Development and Public Assistance Act in 1954, known as Public Law 480, provided a base for exporting large quantities of our surplus commodities to nations in need. This law, considerably modified, is still in effect and is still used.

In the same year, on January 11, 1954, President Dwight W. Eisenhower asked that particular attention be given to problems peculiar to farmers with low incomes. The first result was a 44-page report entitled Development of Agriculture's Human Resources. Implicit in the report was the idea that too many resources were devoted to farming, and that financial resources, land, and people should be moved out of agriculture. The general approaches recommended for attacking the problems were to increase productivity in agriculture, improve prospects in part-time farming and nonfarm jobs, increase opportunities for training, and utilize surplus labor in decentralized defense industries. Pilot projects

were established, some of which were helpful to particular individuals and communities, but the problem remained. During the 1960's and 1970's, legislation was passed, funds were appropriated, and projects were undertaken, generally under the heading of rural development. However, the nation has not yet made a firm commitment to rural development and there would seem to be little prospect of such commitment over the next four years. The major and most effective actions appear to have been taken by the State Extension Services, and such programs will likely continue. But the structural changes in agriculture brought about by rural development have not been substantial (Rasmussen, 1989, pp. 189-208).

Both economists and politicians have called for comprehensive changes in price support and adjustment legislation to secure desired changes in structure. Virtually nothing has been done in spite of proposals, committee reports, hearings, seminars, and on and on. Little can be expected in the next round of price support legislation. However, two changes have had some effect -- limitations on payments to be made to one farm and, more important, a step toward requiring participation in soil conservation programs in order to receive support payments.

In recent years, policy makers have stressed the importance of exports and export subsidies to bring about a reasonable balance between production and demand. Substantial amounts of money have been spent on increasing exports, but with somewhat unclear results. We have seen exports of meat blocked supposedly because our producers almost universally bring up our beef cattle on growth hormones. We have seen what appears to be a reasonable proposal to gradually cut out all production and export subsidies in order to promote a freer world trade in farm commodities sidelined by the European Community. Perhaps it is time to try and understand why many other governments are unwilling to adopt our proposals. It may be that structure is part of the problem.

Such problems in structure as large versus small farms, corporate ownership and operation versus individual ownership and operation, maintaining a sizeable population on the land versus encouraging farm people to leave and search for work in the cities, private initiative versus government intervention, conservation versus exploitation of natural resources, and maintaining government credit programs versus turning everything to the private sector are of concern to many nations. Even the question of maintaining a basic source of food within a nation -- a question the United States has never had to face -- can affect trade policies. In fact, after World War I, the determination of most of the European nations to build up enough food production to maintain themselves in time of war brought a virtual end to international trade in food products.

The Common Agricultural Policy group of the European Community recently published a statement entitled "The New Agricultural Structures Policy" which addresses many of these concerns. According to a statement in the introduction, "Structural measures, aimed at improving the efficiency of farming and living, working and production conditions in agriculture particularly on those smaller holdings most seriously affected by natural or socio-economic deficiencies, are therefore a prerequisite to the attainment of the objectives of the CAP."

The measures were summarized and then developed somewhat more fully in respect to their application to particular situations. The main features included the following. Investment should be made to reduce production costs except where this would lead to the increased production of surplus products. Farm management services should be made available. Special aid should be given to the transfer of holdings to young farmers. Less-favored areas should receive compensatory allowances and increased aid for crafts and tourist activities -- similar to some rural development policies in the United States. Forestry should be developed as an alternative to the production of surplus commodities. There must be greater emphasis on education and training. Payments to aid farmers in carrying out conservation and environmental protection programs should be authorized. Finally, the use of new technology, the production of new products, and the development of new market outlets were to be encouraged to improve the added value of agricultural production and enable farmers to share in the benefits.

This list is not unlike one which might be drawn up by a group of American agricultural economists. One point, which is implicit but not forthrightly stated in the Common Agricultural Policy report, was made by a French agricultural economist recently: "We must pay whatever subsidies are necessary to keep our people on the land because we have no place else to put them."

In other parts of the world, situations differ. In some less developed nations, large blocks of land are held by the very wealthy, with the poor being landless. In some, land holdings are too small to allow efficient production. In some well-to-do nations, others as well as France, people are kept on the land for defense, to avoid overcrowding in the cities, or for other reasons.

Obviously, the structure of farming has a major impact in the well-being of any nation. However, it is hard to determine just what because our concepts of structure undergo change, we are not always sure of what we want or expect from our structure, and circumstances either affecting or affected by structure change. For example, Jefferson believed that ownership of the land by those who farmed it was an essential element of a sound democracy and a stable government. Yet today, except for those who believe racial minorities who work the fields in some parts of the nation should own the land, few regard land ownership as a problem. Farm land is generally available for purchase or rent. If rented, the tenant usually makes the management decisions regarding the operation of the farm.

There are other questions related to land. In times of farm prosperity, good farmland may be scarce and valued at prices which make it almost impossible for newcomers, particularly young people, to enter farming, either as owners or renters. Another problem about which many good city folk wring their hands is the continuing growth of very large farms and their domination of the market. In fact, this is a key subject in almost any study of farm structure.

Small and part-time farms, usually with most of the income from outside farming, is another subject in which many people are interested and one that we can no longer easily dismiss. Such farms must be fitted into any model or program for farm structure (Office of Technology Assessment, pp. 163-185).

Studies of farm structure face a number of problems, of which definition is only the first. It is necessary to determine what our present farm structure is and then decide if it should be or could be changed. Is our present farm structure providing the American people with what they want?

One of the difficulties of dealing with structure is its almost fluid nature. It is subject to pressure from many directions. For example, changes in technology have always brought changes in structure and there is every reason to believe this will continue as computers and biotechnology bring sweeping transformations. Agricultural policy, including both price supports and tax measures, has been charged with bringing about a greater concentration of land ownership and the development of very large farms operated by fewer and fewer people. Most Americans would agree with Jefferson that a strong farming sector helps maintain political stability, especially when the people farming the land own it and make the decisions. In recent years though, there have been charges that societal concern for open space, conservation of natural resources, and the environment are threatening the independence and the livelihood of farmers and ranchers. These are some of the influences on structure.

Inaction on the part of the American people means that farm structure will continue to change as economic and political climates change. But is it possible to influence structure to better meet the needs of society? Or is it even necessary?

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