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Agriculture in the National Economy

*By H. B. James**

Agriculture and its part in the national economy has been the subject of much discussion and conjecture during the past 100 years. What is the relationship of agriculture to the rest of the economy? How is this relationship changing over time? What problems arise as a result of these changing relationships?

AGRICULTURE AND ECONOMIC DEVELOPMENT

Economic development is receiving a great deal of attention today, both in the United States and in the world at large. There are two prerequisites for developing a low-income agrarian society into a wealthy industrial nation. First, agriculture must be productive enough so that only a small part of the resources are needed to produce food and fiber. Second, opportunities are needed for transfer of resources from agriculture, as it becomes more efficient, into the nonfarm sector of the economy. This process has been going on in our country for a long time.

We have been able to increase productivity of farm labor a great deal and the end is not yet in sight. For example, in 1900, approximately 44 percent of our nation's civilian labor force was employed on farms, and one worker produced enough for himself and almost six additional consumers. Today, only 10 percent of our country's labor force is employed on farms, and one farm worker produces enough for himself and approximately 20 other consumers. Farm labor can, and no doubt will, be further reduced.

In recent years, we have given a good deal of attention to creating an environment which would be conducive to the transfer of resources from one place to another within our economy and which would encourage the development and maintenance of a higher level of living. Unless we can make the nonfarm sector of the economy function well enough so that resources can be transferred out of agriculture as agriculture becomes more efficient, we are not likely to solve some of our major agricultural problems. If we are to increase our level of living, this transfer must take place. Our level of living will not be increased by simply producing more food and fiber which we cannot consume. Any appreciable increase in consumption must come in nonfarm goods and services.

*Prepared with the assistance of J. C. Williamson, Jr.

WHAT MAKES OUR ECONOMY GROW?

We are interested in economic growth because it makes possible a better material level of living. What conditions are required for economic growth? Why do people invest billions in new plants and equipment? Obviously, they expect a future demand for the goods and services they are preparing to produce and anticipate receiving a reward for their efforts. This is the incentive which encourages production.

Eight conditions are important in relation to over-all investment decisions:

1. The government must be able to inspire confidence and provide reasonable economic rules of the game. It must be able to deal with radical inflation or deflation, provide for change by evolution, and guarantee against instability and revolution. It must be able to guarantee security of property rights. We must have sufficient political stability to provide reasonable continuity in government.

2. Natural resources must be discovered and developed within the economy, or in an interdependent economy, at a rate which permits increased production.

3. The public must prefer a higher material level of consumption and be willing to make and follow economic rules which promote investment growth. It also must be willing to tolerate and encourage change and to permit new methods, techniques, and rules to replace old ones.

4. Income distribution must be such that a high level of effective demand can be maintained.

5. Technological change is needed to increase our ability to produce and create an expanded demand for capital goods and consumer goods and services. It can eliminate the fixities which might tend to produce diminishing returns to capital in a physically limited world.

6. Plants, equipment, materials, and trained personnel are necessary for economic growth. Private capital accumulation (savings) is essential in a free enterprise economy for investment and the production of capital goods. Capital can be accumulated only if we produce more than we consume.

7. Population growth is a source of increased demand for goods and services, particularly when accompanied by a broad distribution of income.

8. Reward for investment and innovation is necessary to induce people to invest and to bring about change.

CHANGES IN ECONOMIC CONDITIONS

Changes in Demand

Three factors are important in determining the demand for agricultural products:

1. **INCOME.** Income affects the amount of money that people spend and the way they spend it. Gross national product in constant value dollars increased 116 percent from 1929 to 1955. It has increased by more than one-fifth since World War II and is currently about 408 billion annually.¹ A projection into the future would indicate that in 1955 dollars it might be around 500 billion by 1965 and about 650 billion by 1975.² Koffsky's projections indicate that by 1975, 60 percent of the families in the United States may have an annual income of \$5,000 or more in 1953 dollars.³

As incomes rise, the proportion of income spent on agricultural commodities declines. Koffsky estimated that in the early 1950's a 10 percent increase in per capita income in the absence of price change would increase consumption of food by 2.5 percent, but that by 1975 a similar income increase would increase consumption of food only 1.5 percent. These calculations are based on the quantity of agricultural commodities consumed and not on total expenditures. Figured on the basis of total expenditures, the ratio would be a good deal higher since marketing margins are fairly high and will likely increase further by 1975.

For some commodities, such as poultry products, per capita consumption increases as income increases. For others, such as dried beans, per capita consumption declines as income increases.

2. **POPULATION.** If other things remain the same, a 1 percent change in population produces a 1 percent change in demand for farm commodities. Over the long run, this is a highly important factor. For example, United States population increased 31 percent from 1929 to 1953. An additional 25 percent increase in population between now and 1975 seems likely. Thus, in less than half a century, population increase alone may produce more than a 50 percent increase in demand.

3. **EXPORTS.** The trend in exports has been downward. Agricultural exports decreased 13 percent from 1929 to 1953 and now

¹"Survey of Current Business," August 1956, Office of Business Economics, U. S. Department of Commerce.

²Based on an annual rate of growth in gross national product of 2.5 percent.

³Koffsky, Nathan, "Long-Term Price Outlook and Agriculture," *Journal of Farm Economics*, Vol. XXXVI, No. 5, p. 795.

run about 3 billion dollars, or about 7 percent of production.⁴ If this trend continues, we might expect to have about 2.5 billion dollars in exports 20 years from now. Exports of some items, such as food grains, will probably decrease, while exports of others may increase slightly.

To summarize the changes in demand, a projection of present trends indicates that we will need about 40 percent more agricultural products in the United States by 1975. Since we are producing about 10 percent more than we need, an increased production of only about 30 percent will be sufficient.⁵

Changes in Methods of Production

Changes in production methods in agriculture may arise from: (1) changes in economic conditions in agriculture, or relative prices of factors or products and (2) technological changes, or changes in physical production possibilities. In practice we are seldom able to distinguish clearly between the effects of these two. We do know that the combined effect has been to increase the productivity of farm labor. As agricultural labor becomes more productive, fewer workers are needed on the farm; hence, some workers can be transferred to the nonfarm economy where they can produce other goods and services desired by the public.

Application of most forms of technology requires additional capital. Capital requirements for efficient farming have increased rapidly. Minimum standards of efficient farming indicate a need for twice as much capital in agriculture in North Carolina as we now have. Capital per worker and per operating unit is increasing. Getting started in farming on an efficient basis is becoming more difficult.

As capital requirements become larger, more attention needs to be given to the questions of transferring farms from one generation to another and of providing adequate credit for farmers. This means credit for the purchase of a farm, for the operation of a farm, and especially for making adjustments in farming systems. Short-term and long-term credit have received more consideration than intermediate credit. In the Southeast, intermediate or adjustment credit is in shortest supply.

Production per man-hour and per operating unit is increasing. The family-size farm is becoming larger. Size of business is becoming more closely associated with efficiency. That is, certain machines require a larger volume of production for efficient use. Without this volume, the addition of new machines may actually increase cost of

⁴*Ibid.*, pp. 795-96.

⁵*Ibid.*, p. 797.

production. This means that the conflict between diversification and efficient production is becoming more acute. Specialization is likely to increase as individual farmers strive for additional efficiency. Diversification may gain on a state or county basis, but the individual farmer will increase diversification only if he has sufficient capital and volume of business to increase efficiency at the same time.

Cash cost relative to total cost is increasing. For the nation as a whole, cash costs now amount to about two-thirds of the farmer's gross receipts. The farmer sells more and buys more. The price of factors of production, including labor, is no longer determined within agriculture. Prices of most things the farmer buys are determined in a market much larger than agriculture itself. The financial well-being of the farmer is more vulnerable to changes in general economic conditions, unless he is protected by new economic rules.

Changes in Marketing

More of the factors used in agriculture are produced in the non-farm sector of the economy. This means the factor markets are becoming increasingly important to farmers. Product marketing functions and services are increasing, and more of them are being performed in the nonfarm sector of the economy. The farmer's share of the consumer's dollar has decreased and will decrease further in the future.

Although the farmer may use his declining share of the consumer's dollar as a political argument, it is of no real value as a measure of the farmer's welfare or income situation. For example, the farmer's share of the consumer's dollar for flue-cured tobacco is approximately 15 percent, whereas his share for poultry and eggs is about 66 percent. If the share of the consumer's dollar received by the farmer were the sole criterion, tobacco farmers could be expected to give up their allotments and begin producing poultry and eggs. This is far from the case. The farmer is concerned with the amount of net income and not the margin between what he receives and what the consumer pays for his product.

My criterion for determining whether margins are too high is based upon the returns to resources used in the production of marketing services for a particular commodity and on the level of technology used in that industry. If levels of technology and returns are comparable for resources used in other industries, I conclude that margins are not out of line.

Volume is a problem to many farmers, especially from the standpoint of marketing. In many cases, farmers are not able to attain

sufficient volume to standardize quality and to handle the product efficiently. Someone must be available to accept small quantities, to grade and standardize quality, and to do the job efficiently to assure the farmer a reasonable return for his product. An efficient marketing sector to perform these functions is especially important to small farmers such as those in the Southeast.

Changes in Family Living

I shall point out only a few of the changes in family living. First, diets have been changing rapidly. The shift has been from cereals, potatoes, and dried beans to meats, fruits, vegetables, and milk and eggs. Some of this change may be attributed to a public better informed on nutrition, but the major causal factor is increased income.

Second, more marketing services are demanded in connection with farm commodities. The housewife seems quite willing and happy to pay for additional services. More housewives are employed now than a decade ago. Looking to the future, even more services will be demanded and provided.

Third, more synthetic products are available and have affected the demand for agricultural products. Competition will continue to be keen in the future, and price elasticity of demand will be higher for products which have good substitutes.

Fourth, the cash cost of living has increased. This is true even for farmers since they now tend to buy a larger share of these items that increase their level of living than in former years.

Fifth, many more items are involved in the standard of living today than formerly and new items are being added quite rapidly. This means that economics of choice and the dissemination of information regarding consumer goods are more important. If people are to use their limited resources to maximize family welfare, they must be able to evaluate alternatives.

Changes in the Economic System

Over the years, people have acquired a better understanding of our economic system and how to make it work to the advantage of all people. Our philosophy of government has shifted from negative to positive, particularly during the past 25 years. For example, legislation dealing with social security, unemployment compensation, changes in labor laws, availability of credit, agricultural programs, etc., have been enacted during that period.

The federal debt and the federal budget have become large enough

in recent years to affect business activities. Monetary and fiscal policy is now being used as a positive tool to regulate economic activity; witness the present high interest rates. Foreign policy, security, and the threat of war now exert considerable influence upon our actions.

In an absolute sense, agriculture is more important today than ever before; but in a relative sense, it is much less important. Economically and politically farmers are becoming a less powerful group in our society. Farm groups will continue to operate along with other interest groups in exerting an influence on public policy, but in their political activities they must give greater consideration to the general welfare.

We must decide on our goals or objectives for agricultural policy before we can go very far in developing a consistent policy for agriculture. As educational workers, we need to point out the conflicts which arise in public policy and in the various public programs. For example, should we spend public funds on land reclamation and land rental at the same time?

We need to know more about alternative public policies and their effects. In many cases, research workers will have to outline the alternatives and their effects before educational workers can carry this information to the public.

SOME PROBLEMS

I shall mention only three of the major problem areas facing agriculture:

1. **BALANCING SUPPLY WITH DEMAND.**⁶ Present surpluses of agricultural commodities are evidence that we have not done a good job of balancing supply with demand. Recent price-support programs have improved the manner in which the farm economy responds to given guides for production, but they have done a poor job of establishing production guides. A necessary first step in remedying the situation is to separate the objective of guiding production from the objective of increasing farm incomes. Following are suggestions for promoting better resource use adjustment.

a. Separate government transfer payments designed to help low-income people from occupational status, quantity of products marketed, and quantity of assets owned. Transfer payments tied to farming increase the attractiveness of farming as an occupation relative to nonfarm occupations. This discourages movement of farm labor into nonfarm employment and hampers inter-industry adjustment

⁶The following discussion is taken largely from "Farm Program and Production Adjustments," *Farm Policy Forum*, Vol. 8, No. 5, 1956.

in resource use. Transfer payments on the basis of quantity of products marketed or quantity of resources owned are paid largely to higher income farmers. This tends to increase rather than to reduce inequality in farm incomes.

b. When farm support prices are necessary, permit commodity prices to seek their level in the market and use direct compensatory government payments to support prices received by farmers. Compensatory payments have three major advantages as compared with supporting market prices. First, they permit what is produced to be utilized in the best possible manner. Second, they eliminate the necessity for accumulation of government stocks. Third, they bring the true cost of farm price-support operations into sharp relief and subject the program to public scrutiny and criticism.

c. Separate the level at which farm prices are supported from historical price relationships. Efforts to maintain a historical price relationship ignore the need for relative price changes to reflect changes in consumer demand and in production costs, with the result that resources are misused and farm production adjustments are discouraged.

d. Insofar as possible, avoid farm production restrictions; and when such restrictions are necessary, restrict output of product rather than factor input and make marketing permits marketable.

e. Distinguish between soil conservation and production and income adjustments as objectives of farm programs. We have been denied an objective appraisal of soil conservation needs by our failure to distinguish between these objectives.

2. THE CHANGING STRUCTURE OF AMERICAN AGRICULTURE. We are all aware of the continuous change in the economic structure of agriculture. Generally, we are most concerned with structural changes which create or threaten to create large social dislocation.

Several questions related to structural change appear to me to be of particular importance. Is technological advance creating such economies of scale that the family-type commercial farm cannot compete with larger firms? If so, is this a necessary aspect of technological advance? Have research activities, financed largely through public funds, unintentionally promoted this type of technological advance?

What part does imperfection in the credit market play in current changes in firm and industry structure? Is vertical integration in the broiler industry, in which the feed dealer-processor provides essentially all the management functions other than day-to-day supervi-

sion, a by-product of imperfections in the credit market, or is it a more efficient means of bearing risks?

3. FARM-NONFARM RESOURCE ADJUSTMENT. Early in my discussion, I emphasized the importance of resource adjustments between the farm and nonfarm sectors of the economy in connection with economic development. Now, I want to pose this as one of the problem areas needing additional attention. Agricultural surpluses as discussed above are a result of a malallocation of resources.

The low-income problem in agriculture cannot be solved within agriculture alone. Resources, particularly human resources, must transfer from the farm into the nonfarm sector. But this is the statement of a problem and not its solution. Large farm-nonfarm income differences have existed for many years. The question still remains, why have such large income differences persisted?

I am convinced that the answer to this question cannot be obtained by looking at agriculture alone or through a superficial look at the nonfarm sector and the barriers to movement. The farm economist must cross the border and take a searching look into the nonfarm sector to find these answers. What accounts for the high wage rate and apparent job rationing in industries located in a rural setting? What are the true income prospects for persons moving from farm into nonfarm employment? What is the poverty problem in the nonfarm sector and how, if at all, does it differ from the poverty problem in agriculture? Would a general attack on poverty be more effective than our present farm programs in solving the farm-nonfarm resource transfer problem?