

G. S. TOLLEY

North Carolina State College

## *Meshing Elimination of Agricultural Surpluses With Other Goals*

**W**HATEVER MEANS are used, adjusting agricultural production to demand seems bound to inconvenience many persons and perhaps inflict serious hurts on some. Congress has proven to be sensitive to these inconveniences and hurts almost to the point of allergy, with a resulting inclination to try to live with excess production rather than face how to get rid of it.

Critics may oversimplify when they label the congressional position as just politics. The inference is that Congress does not reflect the social interest. There seems to be the notion that the socially desirable course is obvious if only an imperfect political mechanism would follow it. Often the critic of Congress identifies the social interest with norms concerning economic efficiency. But, though the political mechanism may not be perfect, it is democratic. Congressional hesitancy in eliminating surpluses in part reflects a realization that there is a more complex weighing of goals than to follow only one simplified set of norms. This chapter tries to suggest major considerations in weighing the goals.

The first part of the chapter concerns demand-supply characteristics for land and for the human input. The aim of this discussion is to contribute to understanding effects of agricultural control programs. Armed with this background, the second part considers goals related to surplus eliminations. These goals include: conservation, efficiency, rising gross national product, human and cultural development, income equity and regional equity. Then, in the third part, the goal-implications of alternative policy directions are analyzed.

## RESOURCE EQUILIBRIUM IN RELATION TO SURPLUSES

### Land

A hypothesis is that the long-run supply of agricultural land is well approximated as elastic over ranges likely. The supply of land is visualized to be perfectly elastic due to marginal land adjustments. Partly these adjustments take the form of marginal land going in and out of use. By marginal land is meant zero or low rent land. There are millions of acres of marginal land in the Southeast and the western Great Plains. In addition, in areas like the Corn Belt, there are marginal areas and marginal lands even on good farms. These marginal lands tend to go out of production when demand falls making residual returns negative. They tend to come into production if rents rise above the amortized costs of clearing and other investments necessary to make them suitable for farming.

Marginal land adjustments also include drainage, levelling and other improvements. These increase the effective amount of land. Similarly, with low rents, there may be a tendency not to keep land up, letting it erode and so forth. Even though land stays in cultivation, if it deteriorates, the effective supply is reduced.

The marginal or endogenous land adjustments that have been mentioned act as a governor on all agricultural land rents. This is because land use throughout the country is interrelated. The land is in competition producing for common national markets. High rent land — fertile, productive soil with good climate — tends to stay in regardless of demand for land. Due to competition between regions, adjustments to changes in demand may ramify around the country through chains of substitution. But these tend to work themselves out to places where marginal land adjustments are made that either increase or decrease the effective land supply as the demand situation calls for.

The marginal land adjustments and competition for land for common markets lead to depicting the aggregate supply of land in its horizontal position SS as shown in Figure 20.1.

In contrast to the marginal or endogenous land adjustments just discussed, other land supply adjustments may be referred to as exogenous and semi-exogenous. Decreases of this type include pre-empting of agricultural lands for urban and road uses. Increases include government land development activities — such as reclamation and flood control which increase product potential of flood plains. The exogenous land supply influences can temporarily move us from the demand-supply equilibrium O, where DD

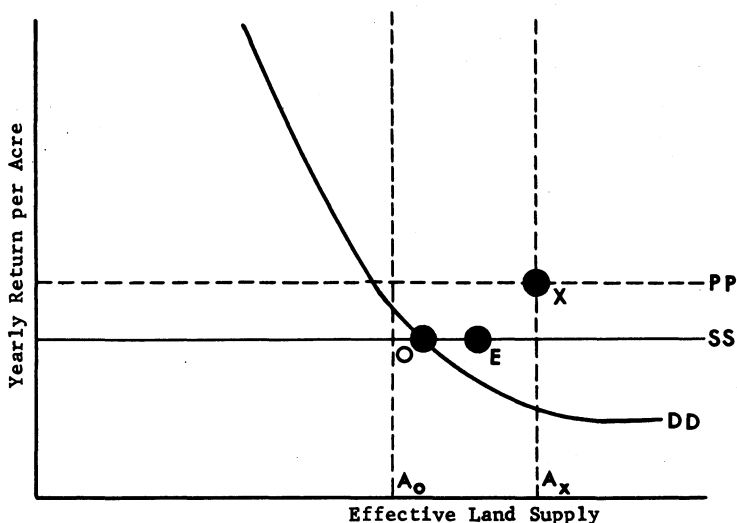


Fig. 20.1. Aggregate demand and supply for agricultural land.

crosses SS, to point E. But competition will result in marginal adjustments that bring the total effective supply of land back to equilibrium O. As an illustration of this type of adjustment, the effect of western reclamation may be to start competitive reactions that eventually drive out marginal areas elsewhere in the country. It has been estimated that for every 20 workers remaining in the southern agriculture, one has been displaced by western reclamation.<sup>1</sup>

What of the demand schedule for land? It is a derived demand depending on demand for farm products, farm technology and supply conditions for labor, purchased inputs and other productive factors. The degree of elasticity of the demand schedule DD remains conjectural. One reason we do not know much about the elasticity is that the supply curve SS, being horizontal, has kept rents from fluctuating enough to reveal much about adjustments to varying rent. That is, since the supply curve has not shifted much, there has been little opportunity to trace out empirically the demand curve DD. The elasticity of DD depends in

<sup>1</sup>The ideas presented thus far in this section are elaborated in my "Reclamation's influence on the rest of agriculture," *Land Econ.*, Vol. XXXV, No. 2, May, 1959, pp. 176-80; "Inter-area relations in agricultural supply," *Jour. Farm Econ.*, Vol. XLII, No. 2, May, 1960, pp. 453-73 (with L. M. Hartman); "Alternative land development possibilities," *Modern Land Policy*, H. G. Halcrow (ed.), University of Illinois Press, Urbana (in press).

part on the substitutability of land for other inputs. It also depends on reservation prices for human inputs and other productive factors. When the price of land gets so high that the other inputs cannot cover their reservation prices, the land will not be demanded.

Now consider the relation of Figure 20.1 to policies connected with surplus. Suppose the point O represents a no-price-support equilibrium where average stock accumulation is zero. This may be compared with a situation where prices of agricultural products are supported above equilibrium levels. The demand schedule DD is replaced by an infinitely elastic demand PP. This is the residual return per acre after other factors have been paid their reservation prices. The point X shows the point where controls succeed in limiting agricultural land to  $A_x$ . The difference in production corresponding to point O and point X represents chronic tendency to surplus.

According to Bottum's presentation (Chapter 12), the difference between O and X is between 40 and 70 million acres today in American agriculture. A hypothesis is that it is no mystery why we are accumulating surpluses. We are supporting prices without fully controlling production. Three main failures to control production may be mentioned. First, supports on non-allotted corn. Second, the 55-million national minimum wheat allotment. Third, lack of cross-compliance requirements.

Determined acreage controls are represented by  $A_0$  in Figure 20.1. Because of the substitution of other inputs for land, the line  $A_0$  falls to the left of O. That is, because of the substitution of other inputs for land at above-equilibrium product prices and rents, final demand for agricultural products can be satisfied on fewer acres than with a no-price-support equilibrium. The substitutions include those that are reversible, such as fertilizer, and those that are irreversible, such as new plant varieties.

But the precise place where  $A_0$  would fall is a detail. The important point is that production can be controlled through acreage restriction if farmers are willing to accept the restriction. We have had substitutions, but there is simply a limit to them. At least in tobacco, we appear to be near physical maximums on fertilizer, plants per acre, disease control and other cultural practices. Research may increase yield again by irreversible changes such as varieties. But these can be met by tightening up further. Tobacco is a prime example of a commodity supported at high levels which has escaped chronic surpluses through effective control even in the face of dramatic yield advances.<sup>2</sup> While

<sup>2</sup>Tobacco has had a better demand growth than wheat, for instance, so the needed adjustments in wheat may have been more severe than in tobacco.

yield increases economize the land input, they do not necessarily decrease other inputs and may even increase some such as fertilizer. Possibly, then, the difficulty of controlling output through land restriction can be over-emphasized.

Figure 20.1 suggests that the need for controls is not likely to disappear through time. As long as parity prices are above equilibrium, there will be pressures to increase agricultural production enormously. Some have expressed the hope that the surplus problem will be solved by growth in the demand for food. Favorable to this idea, suppose population growth is rapid while technological progress in agriculture slows. Then the free market demand schedule for land DD will shift to the right. More land will be needed to grow the nation's food. In relation to present acreage restrictions, the job of control will be made easier. In other words, surpluses might be avoided with present acreage, or increases in allotments might even be called for to increase effective land supply. But acreage controls would still be necessary, because the land response to parity prices is to make for an even greater increase. Growth in demand does not eliminate the gap between PP and SS making for indefinite increase in land supply.

Some may question that land supply is perfectly elastic as depicted in Figure 20.1. This possibility was considered in earlier research. Making the most extreme assumptions about upward slope of the supply of land and about growth in demand for land led to the conclusion that the maximum rise of agricultural prices that could be expected at the farm level due to land shortage was only about 8 percent over a 20-year period.<sup>3</sup> This suggests that the chance is not great for free market farm prices to rise to parity levels of their own accord.

### Human Input

A long-run governor of the rate of pay of the human input is the amount that can be earned in nonagriculture. The human resource may therefore be visualized to have a supply schedule for agriculture that in the long run is perfectly elastic. But in the short run, the supply is not perfectly elastic. While the Ricardian idea of land being residual claimant may be acceptable for the long run, the residual claimant status in the short run is shared by the farm operator and sometimes even by hired labor. This is because cash- and share-rental arrangements are sticky and

<sup>3</sup> "Alternative land development possibilities," op. cit.

because the human resource is not instantaneously mobile. The short run may extend over many years.

By now analysis is familiar with the way economic progress aggravates human resource mobility problems for agriculture, the combination of low-income elasticity of demand and high rate of technological progress reducing the human resources required to meet demands on agriculture.<sup>4</sup> Since at least 1920 the combination has been operating jerkily. Sluggish response of the human resource to the demand and technological changes has been a chronic depressant to farmer income, and the uneven course of the changes has repetitively renewed the strain on farmer adjustability.

The imperfect mobility of human resources in agriculture suggests there might be chronic income problems for the whole of agriculture if the free market route to elimination of surpluses were followed. But at the same time it suggests difficulties of reducing agricultural production by overt government control. People who want to farm and have resistances to leaving are going to have to be induced to get out. Something on the order of 5 percent of the people now farming might have to leave to solve the agricultural surplus problem. Which 5 percent shall it be? That is the uncomfortable question we are discussing.

A concept that may need to be in the fore is human quasi-rents. It is significant that a Gallup Poll on people's goals and outlook for the decade of the '60's revealed a preponderance of optimism, except that the 50-year-old farmer was singled out for special mention as typical of persons who do not think the future looks bright. The concept of human quasi-rents is relevant for persons who have vested comparative advantage in their chosen occupation by dint of experience. Their earnings can sink considerably before alternative employments starting at the bottom of the ladder are as profitable. Earnings can sink still further before a person may be willing to face a total readjustment.

Economic growth processes are already pushing many out of agriculture through pressure on human quasi-rents making it more difficult to superimpose further adjustments. Unfortunately lag effects can last almost a lifetime. The young farmers who were attracted by the profitability of World War II and postwar years of temporary high demand are by now committed to the point where uprooting takes a major effort.

The 30 percent reduction in flue-cured tobacco allotments

---

<sup>4</sup>T. W. Schultz, *The Economic Organization of Agriculture*, McGraw-Hill, New York, 1953, Chap. XVIII, pp. 283-320; E. O. Heady, H. G. Diesslin, H. R. Jensen, G. L. Johnson (eds.), *Agricultural Adjustment Problems in a Growing Economy*, Iowa State University Press, Ames, 1958.

since 1955 provides a case study of human resource adjustment when agricultural controls are clamped down.<sup>5</sup> Approximately 20 percent of the families on tobacco farms in North Carolina left between 1955 and 1959. Sharecroppers, who have little property and who supply mostly labor rather than management, exited in greatest numbers. The croppers who remained and the managers of the large multiple units employing the croppers were in the fortunate position of being able to carry on much as before simply by taking over the allotments of croppers who left. Single-unit operators near industrialized centers increased off-farm employment substantially, whereas in parts of the state with few urban opportunities this type of adjustment was not great. Operators in good farming areas turned to alternative crops and livestock and were able to offset at least a part of the income cut in this manner. Farm operators in relatively poor and retarded predominantly agricultural areas tended to take the income cuts with little offsetting adjustments. It is fortunate that for the state as a whole there existed a large supply of unspecialized laborers that could, in effect, be pushed out readily. The evidence suggests that, without this valve, pressure against unadjustable operators with vested management and property interests in tobacco farming might have resulted in almost a full 30 percent income cut for farm families in many areas instead of the relatively moderate cut that was possible by spreading the allotments over fewer people. Even so, reductions in welfare impinged heavily on some farmers.

Most crops in other parts of the country are not so labor intensive as tobacco, and hence the valve of unspecialized labor to make adjustments permitting less pain to all can be counted on to lesser extent. An unanswered question is how difficult human adjustments would be to eliminate surplus production.

## GOALS

### Conservation

Conservation may seem at first glance to be closely related to surplus elimination. One may think of taking out of production land that most needs conserving. However, three hypotheses may be stated which are in line with the view that conservation

---

<sup>5</sup>For a fuller study of adjustments, see E. C. Pasour, W. D. Toussaint and G. S. Tolley, "North Carolina Piedmont and Coastal Plain tobacco farms: their changing characteristics, 1955-1958," A. E. Info. Series No. 71, Dept. of Agr. Econ., N. C. State College, Raleigh.

does not need to be given primary consideration in seeking ways to eliminate surpluses.

A first hypothesis is that one of the major beneficial roles for soil conservation concerns critical areas and problem situations. These include erosion and sedimentation. Their effects are costly to reverse and, for several reasons including ignorance and low management ability, farmers may not take preventive measures even though a case can be made for them in economic terms. If agricultural production were brought into line with demand, millions of acres would almost certainly come out of cultivation. Especially if land were abandoned, conservation problems might be increased through lack of care for the land. This might happen in situations where natural vegetation and runoff characteristics would not enable the land effectively to take care of itself if left alone. The important point is that surplus elimination might increase critical areas needing attention, but this does not imply that decisions on which land to take out of production should be geared to soil conservation.

A second hypothesis is that a major need is to undertake soil conservation simultaneously with other forms of technical assistance, primarily those that raise management's levels. That is, improvements in the land resource and the human resource may be complementary. For conservation to pay off may require improved decision-making ability to make use of the improved land input.

The third hypothesis is that soil conservation measures tend to have maximum beneficial results if they are kept in tune with the drift of agricultural adjustments. For instance, if the trend in an area is toward large mechanized farms and away from small backward farms, those types of measures that best fit in with the mechanized operation should be pushed. The future direction of agricultural adjustments in an area may depend in part on agricultural control measures. This is another example where surplus elimination may have important implications for soil conservation but not vice versa.

### Efficiency

A situation where people engage in useful activity, i.e., produce things that will be consumed, is clearly more efficient than one where they spend their time producing products which society does not want and will not pay enough to remunerate the factors used in their production at an opportunity return. This is the kind of glaring inefficiency associated with surplus agricultural



production. Economists, with their refined thinking about resource use, sometimes speak about a much more stringent kind of efficiency. This stringency has to do with carrying on production at minimum cost, that is, producing what is produced in the most efficient way. A balanced view about efficiency goals may be as follows. It is very undesirable, if not absurd, to produce commodities on a mass scale in excess of what will be used. The more stringent kind of efficiency — to produce at least cost — is a goal to be pursued, but not the only goal.

If the preceding paragraph is accepted, the most important efficiency problem is reflected in the 5 percent to 8 percent of resources in agriculture producing redundant agricultural commodities. One of the least important inefficiencies is the resource recombination associated with effects of agricultural programs on relative factor prices. Acreage controls give incentives to substitute other productive factors for land, and economists have called attention to the resulting divergence from conditions for optimum resource allocation. Tobacco offers an excellent example because the price of land having acreage allotments has been raised perhaps 20 times above non-allotment land by the tobacco program.<sup>6</sup> If land having a tobacco allotment were valued at the opportunity return of the land, it would bring something like \$100 per acre instead of a current market price of \$2,000 or \$3,000. The dramatic increase in the relative cost of land as a factor input appears to have induced increases in fertilization, in plants per acre and in new high-yielding varieties. However, a recent study indicates that if the land cost were dropped to its opportunity return, only about a penny's worth of resources would be saved per pound of tobacco.<sup>7</sup> The study estimated the most profitable techniques of production under land price expected with and without the program. A finding was that the main effect of the tobacco program on cost of tobacco is the direct effect of increased land costs and not the quite minor increase in real cost of production due to factor substitutions induced by the program.

Though some have said that we should pity the consumer because of high price supports on agricultural commodities, probably rightly high retail prices are not a major issue in deciding farm policy. Carrying through the analysis mentioned in the preceding paragraph, one finds that the 15 cents to 16 cents

<sup>6</sup> F. H. Maier, James L. Hedrick and W. L. Gibson, "The sale value of flue-cured tobacco allotments," Tech. Bul. 148, Virginia Polytechnic Institute, Blacksburg, 1960.

<sup>7</sup> L. M. Hartman and G. S. Tolley, "Effects of federal acreage control on costs and techniques of producing flue-cured tobacco," forthcoming tech. bul. of N. C. State College, Raleigh.

increase in price of tobacco at the farm level due to the program accounts for only about  $1\frac{1}{2}$  cents out of 25 cents that the consumer pays for a pack of cigarettes. There should be little wonder, then, that the loss in consumer surplus due to the federal tobacco program is not a widely debated social issue. Since the effect of federal controls on allotment values for tobacco have been profoundly greater than for other commodities, inefficiencies that have been discussed for tobacco may be even less important when considering other commodities.

The present system of acreage allotments based on historical production tends to freeze in the inefficient areas and hinders relocations of agricultural production as technological changes alter regional comparative advantages. This is almost surely significant and requires more study, but it is not a national calamity. There is more urgent need to bring production in line with demand than to make sure that we reach the optimum optimum in the location of that production.

There is a potential conflict between most efficient location of agricultural production and easing the pain of adjustment involved in cutting back on production. Taking the least efficient areas out of production will require pushing more resources out of agriculture in toto. Indeed, to eliminate surplus production with the least displacement of resources, the most efficient resources should be taken out.

Temperance on the efficiency issue requires recognizing the distinction between holding efficiency as one of several goals and making efficiency the sole criterion by which to judge policies. This is all the more true because the differences in real national product do not appear large under alternative schemes to curtail agricultural production. The varieties of ways in which a given agricultural output can be produced in the United States contain many widely varying alternatives whose costs are of the same order of magnitude.

### Rising Gross National Product

In speaking of efficiency we were considering maximization of product at any one point in time. Now let us consider growth of output through time.

An oft-heard argument is that an efficient agriculture is needed to contribute to the nation's economic growth. The contribution of agricultural efficiency may be determined largely by the size of the sector. Though growth in output per unit of input has been erratic and is difficult to measure, the average rates of

increase do not appear terribly different for agriculture and non-agriculture. Suppose gross national product is being raised 2 percent per year because of growth in output per unit of input in all sectors. Then agriculture's contribution is one-tenth of 1 percent to national growth each year on the assumption that only about a twentieth of the nation's resources are used in agriculture. In other words, if all increases in output per unit of input in agriculture ceased, the rise in per capita income for the nation would be 1.9 percent instead of 2 percent per year. While the example is only illustrative, it is numerically realistic and perhaps suffices to help place in perspective the contribution of technological revolution in agriculture to national growth.

Education of youth in agriculture possibly constitutes the biggest contribution of that sector to growth.<sup>8</sup> Here also we may begin seriously to run into conflicts between growth and agricultural surplus solution. The reason is that, if through education people are made more productive generally, they will become better farmers. This will tend to shift downward the aggregate supply scheduled for agricultural products and so increase tendency toward surpluses.

To develop the human resources of the nation, particularly in the South where education is poor, we may need to undertake educational programs as measures to increase national economic growth. Per pupil expenditures run less than 50 percent in some of these states compared to states which invest relatively fully in education. If investment pay-off is anywhere near proportional to expenditure, productivity could be doubled by greater educational investments in many rural areas. In view of the lagging incomes of these persons, this estimate may be conservative. At any rate, the potential contribution to economic growth appears great, and at the same time there may be an aggravation of surplus problems considering that many of the educated youth may try to stay in agriculture.

### Human and Cultural Development

Education and similar efforts mentioned in the preceding section are important as ends as well as contributors to economic growth. In agriculture those most neglected in this regard are

---

<sup>8</sup>On the increasing awareness of the importance of education to economic growth, see T. W. Schultz, "Investment in man: an economist's view," *Soc. Serv. Rev.*, Vol. XXXIII, No. 2, June, 1959, pp. 109-17; A. G. Frank, "Human capital and economic growth," *Economic Development and Cultural Change*, Vol. VIII, No. 2, Jan., 1960, pp. 170-73.

often referred to as low income farmers living in rural slums — bypassed people culturally disadvantaged relative to the majority of Americans.<sup>9</sup> They are inarticulate and unable to help themselves effectively within the context of their present set of circumstances.

Education and technical assistance that would help these disadvantaged persons to a life fulfillment on a par with the rest of the nation can encounter a conflict with policies to eliminate surplus agricultural production. As already noted, if people are helped to become more effective individuals, they will be more effective farmers.

Results from the Egbert-Heady model (see Chapter 11) corroborate this contention. The model is intended to show where grain would be produced in the United States at least cost and in amounts that would just meet final demand. The ex-post model using actual production costs for 1954 shows no grain production in southern regions. However, the ex-ante model, assuming that all regions were to develop to the point where production techniques were as efficient as the best known today, shows substantial grain production in the South. The indication, then, is that in the 1950's the South was a relatively inefficient producer. If investments were made in the people of the South on a larger scale, they would become better farmers and contribute to surplus problems.

The best action seems clearly not to try to mesh these goals. If helping low income farmers will aggravate surplus problems, then we should simply try to live with aggravation.

### Income Equity

In addition to the problems of culturally disadvantaged individuals mentioned in the preceding section, there is a pervasive income problem associated with agricultural adjustments in process of economic growth. Even the most successful commercial farmers are touched. This problem was suggested in the analysis of human resource adjustments earlier in this chapter. The implications were that the downward pressure on the farm labor force is resulting in low human quasi-rents in agriculture.

---

<sup>9</sup>An idea of the prevalence of this condition can be gained from C. E. Bishop, "Underemployment of labor in southeastern agriculture," *Jour. Farm Econ.*, Vol. XXXVI, No. 2, May, 1954, pp. 258-72; W. E. Hendrix, "Size and distribution of the income of farm people in relation to the low income problem," *Jour. Farm Econ.*, Vol. XXXVI, No. 5, Dec., 1954, pp. 1134-44; E. G. Davis, *Low-Income Farm People: A Selected List of References* (Washington: USDA, 1955).

In other words, there appears to be a tendency for persons of like ability to earn less in agriculture than in nonagriculture.

Achieving farm versus nonfarm income equality requires overcoming many obstacles. High price supports can funnel more income into agriculture, but it is difficult to ensure that the increased income will go to the human factor. Later in this chapter there will be further discussion of implications of the fact that increased income tends to be capitalized into land or certificates or whatever the instrument of control of production is.

Probably an even greater obstacle to achieving income equality is reflected in the fact that the general surplus resource situation of agriculture is superimposed on a complex, heterogeneous industry. Managers are old and young, and they are efficient and inefficient. Demand shifts and technological changes make agriculture one of our most dynamic industries. Changing regional competitive advantages are constantly causing shifts in the regional concentration of production.

The income incidence of various ways of cutting back on agricultural production might be termed the unfaced heart of the farm problem. This is especially true if income is considered more important goal-wise than resource allocation in choosing among alternative farm policies.

### Regional Equity

All the goals discussed so far are at least in principle well defined. Additional considerations to which the legislative process is sensitive include the repugnance to congressmen of losing constituents and to influential merchants of losing business associated with farm population. It is popular cynically to write off these considerations as imperfect politics. While this view makes for an intellectually simple world, should we definitely rule out the possibility that there is some social rationality in the machinations associated with balancing of regional and other group interests?<sup>10</sup> Without going more deeply, it may be noted that society will act as if important goals were being reflected. These considerations cannot afford to be ignored by those interested in giving serious counsel on solution of surplus problems.

---

<sup>10</sup>Economic costs and community and personal problems connected with outmigration are considered by C. L. Leven, "Regional economic development," Iowa Farm Policy Forum, Vol. 12, No. 3, 1959-60, pp. 22-32.

## POLICY IN LIGHT OF GOALS

## Acreage Control Versus Certificate Schemes

Acreage controls have in their favor that they can effectively restrict production. There is a misconception to the contrary, the idea apparently being that there is no limit whatever to the amount of substitution of other inputs for land that can take place. Reasons for present excess production were brought out earlier in this chapter. In a nutshell, the fault is not so much in the type of control as it is in the fact that the controls have not been applied firmly enough.

The present system of trying to keep production in bounds through acreage restriction has further in its favor that it is an accepted means of control. In this sense it works.

Economists have a penchant for recommending the control of production through saleable certificates entitling the bearer to the production of so much of a commodity. Arguments that have been advanced supporting this type of scheme are (1) that it permits agricultural production to be geographically mobile through sale of the certificates and (2) it does not induce the yield-increasing substitutions of other factors for land that is characteristic of acreage controls. The discussion of the efficiency goal in the preceding part of this chapter tried to bring out that these reasons are not or should not be the major considerations in shaping agricultural policy. Further, certificates have against them that they appear radical. Farmers and farm organizations are suspicious of them, and legislators who are against complete geographical mobility of production oppose them on these grounds. Certificates make it clear that something "artificial" is involved in federal programs.

Certificates schemes need to face the problem, which is not discussed by most of their advocates, that regardless of the form of control, there is going to have to be a substantially reduced number of resources producing in agriculture in order to bring production in line with demand. In short, who is going to produce less? Certificates will not magically accomplish this any more than acreage control does. In fact, if saleable certificates encourage more efficient production, particularly in permitting geographical movements of production, they may increase the excess resource problem over what it is with the system of acreage controls because they permit a given amount of production with less resources. The more significant question is whether production will be controlled, not the form of the controls.

## Incidence of Production Restrictions

Three routes for the effects of production controls may be noted. First, people may work less. Second, they may engage in off-farm work to use the time freed by the decline in farm output. Third, there may be migration from an area, tending to leave those remaining carrying on the same amount of farm production per person as before imposition of controls.

The second and third routes help to mitigate income decline associated with having to produce less. Conditions conducive to the second and third routes are as follows.

A general factor influencing all parts of agriculture is general business conditions that affect the entire urban labor market. When there is a plenitude of industrial jobs, off-farm work and migration are both facilitated.

The influence of most of the other factors can be expected to vary greatly from area to area. Off-farm work availability depends on proximity to industry. Even more conducive to this route may be location in industrializing areas where there is active expansion of opportunities for nonfarm employment.

In view of the mechanism of farm to city migration, previous mobility from an area would seem to favor further mobility.

Though migrants often move long distances, they tend to go along established paths, the first move to a new area often being arranged with the help of friends or relatives who have moved there previously. Thus, if the mobility valve is already open, it may be relatively easy to keep open.

The age-tenure displaceability of labor is probably an even more important factor affecting migration. Hired labor and sharecroppers are at the most mobile end of the scale. These people bring little but unspecialized labor to the productive process. They do not have much comparative advantage in agricultural as opposed to nonagricultural occupations, and so there is limited possibility for large human quasi-rents such as can be associated with high management skill in farming. Since they are hired by the very persons who may wish to displace them, the mechanism for the displacement is easy and direct. When production is cut back, operators can hire less labor and take over more of the chores. Managers of multiple units can reduce the number of croppers taking over some of their land. At the other end of the mobility scale from hired labor and croppers are old owners. They need to be able to take over from others, and when there are so many of them that this is difficult, the adjustment and income problems for an area may be particularly serious.

Adjustment problems may be increased by father-son leaks into farming. On the assumption that a working career is 40 years, on the average, about  $2\frac{1}{2}$  percent of farmers must be retiring each year. If there were no entering farmers, this would more than take care of the reduction in farm labor force that has been witnessed in many recent years. Perhaps it is too bad that a moratorium cannot be put on entry into the farm labor force. But there is probably too much feeling that a father should be able to pass along a farm as may happen when father and son operate for a time in partnership.

This discussion of age-tenure displaceability calls attention to the mixed effects that can ensue from the population profile of an area. Consider an area where high birth rates make it appear there is much population pressure. This can have a double-barreled favorable effect on farm incomes. First, it ensures that the mobility valve will be open. Second, large families make it difficult for any one heir to acquire ownership and hence discourage father-son leaks into farming. These factors offset to some extent the unfavorable influence, namely, that high farm birth rates may increase the number of persons entering the labor force who have a determination to farm.

To proceed to another condition that helps offset unfavorable income effects of production restrictions, substitute farm enterprises may be available in some areas. In the past, failure to control all agricultural production and the lack of cross-compliance requirements have made this an important form of adjustment greatly contributing to surplus problems, as was brought out earlier in this chapter. With effective production control, this form of adjustment would be minimized.

Finally, adjustment to production restriction will be made more difficult if there are large existing pressures on the man-land ratio of an area due to mechanization and other changes in production technique. These pressures are already reducing the demand for the human input and so are already taxing the adjustability of some areas.

The foregoing list of possible income adjustments in response to production restrictions emphasizes the widely differing incidence that controls may have. Consider now the further complication to the income effects engendered by the level of price supports, if any, that goes with the controls. A central consideration is that capitalization effects make it difficult to ensure that increased income will go to the human input. Many have stressed that acreage controls lead to capitalization of income effects of agricultural programs into land, whereas with the certificate scheme, capitalization would be into the value of the certificates.



While the capitalization phenomenon is often considered an undesirable result of programs, perhaps there are both pros and cons. After all, there is some overlap between farmers and owners. The older farmer tends to be an owner. These are the people most likely to be hurt by agricultural adjustments associated with growth. The capitalization might not be deleterious to anyone, if the agricultural sector was comprised entirely of owner-operators each of whom had one heir who was male and would take over the farm. In reality, benefits tend to be diffused among many heirs. The undesirability of this can be overstated. Does not attention to human quasi-rents suggest that it is older farmers whom society should be primarily interested in helping rather than their offspring?

A frequent criticism of the capitalization effects associated with acreage or certificate control is that they hinder young people from getting into farming. In seriousness it may be said that this is a good effect. The more important criticism of these schemes may be that they do not make it difficult enough for the young people to get into farming.<sup>11</sup>

How can an optimum incidence of income effects of controls be arranged? This section has served to emphasize the difficulty of answering the question. Most suggested solutions would have a potpourri of effects. Large windfalls might be given via high price supports in areas where off-farm work is readily available or where labor push-out occurs easily. On the other hand, cut-backs, even if accompanied by substantial rises in price support levels, might not succeed in avoiding harm in areas of low mobility and little possibility of off-farm work.

The discussion of goals in the earlier part of this chapter suggests that important criteria in cutting back on production may be income equity and regional balancing of interests. Adherence to these criteria is blocked by lack of knowledge of the income effects of alternative programs.

A suggestion: self-financing entry control for agriculture. As brought out above, acreage controls and certificate schemes have the disadvantage in common that — no matter the level at which agricultural prices are supported — the programs cannot be expected to eliminate the disparity between returns to the human

---

<sup>11</sup>However, the present control program is having some effects in restricting entry to farming in addition to land price effects. Customary share rental arrangements make the rental market at least a little imperfect so as to discriminate against the younger farmer. The landlord and tenant share the products on a customary fractional split. The landlord knows that the more experienced farmer will get better results and so rents to him rather than the younger farmer where there is a choice. This has the good effect of encouraging the younger farmer to go to town.

resource in agriculture and nonagriculture. Increased incomes due to the programs will tend to accrue not to labor but to owners of the instruments of program control, via capitalization.

Let us distinguish three types of equilibria. Suppose, under all of them, that average stock accumulation were zero, i.e., production were in line with demand. First, there is the equilibrium that might occur under acreage or certificate restriction of production. The value of allotments or of certificates would depend on the level of price support, but the return to the human input in agriculture would be below that in nonagriculture due to the adjustments associated with economic growth. The differential would be associated with the continued outmovement of the human input from agriculture. A second type of equilibrium is a free market equilibrium. In this situation there would be no allotment value, and the value of land would be determined largely by marginal adjustments in land as discussed earlier in this chapter. The tendency of the rate of pay of the human input in agriculture to be below that in nonagriculture might be just about the same as in the first type of equilibrium. Finally, a third type of equilibrium might be referred to as a Pareto factor equilibrium where the human resource in agriculture receives a rate of pay equal to what it could receive in nonagriculture. This would have to be accomplished by a different kind of government program. There would be direct financial inducements to adjust the number of persons in agriculture. While the taxpayer might bear this expense, perhaps the better alternative would be to have high enough price supports so that the scheme could be self-financing within agriculture. A part of the receipts from agricultural production could go into a fund for controlling entry into farming. This fund would be used to attract people out of agriculture. This idea is a variant of the homesteads-in-reverse proposal of T. W. Schultz.<sup>12</sup>

If the scheme mentioned in the preceding paragraph raised agricultural prices only enough to finance the outmovement of people to attain equal factor rewards, the welfare criterion for economic efficiency ought to come closer to being satisfied than under the free market equilibrium. But this is not the primary motive for suggesting the scheme. The primary motive is to eliminate income disparity.

The proposal does not solve the key problem of which resources are to be moved out of agriculture. However, it proposes to get them out by financial incentives, which ought to

---

<sup>12</sup>T. W. Schultz, "Homesteads in reverse," Iowa Farm Policy Forum, Vol. 8, No. 5, 1956, pp. 12-14.

minimize the inconveniences and hurts as compared with arbitrary quantitative effects associated with acreage controls or certificate schemes. The proposal is suggested as a general direction for policy that needs investigating. The details could take on many forms. There would undoubtedly be many problems of implementation in view of the heterogeneity of agriculture.

To avoid giving the impression that the aim is to "get people out of farming," legislation might be framed in terms of licenses to farm. Entry into farming would be controlled by purchase and sale of these permits. In times of surplus accumulation the government would raise the price of the permits so that more farmers would be induced to sell their permits to the government.

In view of inelasticity of demand for farm products, there seems little doubt that the revenue to finance the net payments for outmovement could be raised through higher prices of farm products so that costs to the United States Treasury could be eliminated. This would have the advantage of discouraging the habit of agriculture as an interest group using the tax dollar which is so badly needed for other purposes.

## CONCLUSION

### Highlights

A purpose of the first part of the chapter was to show that attempts to control agricultural surpluses should be made taking cognizance of the nature of resource use equilibration in agriculture. The equilibration is influenced by highly elastic long-run supply curves for land and for the human input. In the short run, imperfect mobility leads to inelasticity of supply of human input so that labor shares a residual claimant status with land. The human immobility, together with chronic downward shifts in the demand for human input in agriculture, means that many do not earn as much in agriculture as earned by persons of equal ability in nonagriculture.

Discussion of the goals of policy in the second part of the chapter brought out the following contentions relevant to current policy debates:

(1) The kind of inefficiency most to be avoided is waste of product. Another kind of inefficiency, failure to achieve least-cost production, does not appear to merit overriding consideration in formulating agricultural policy in view of the smallness of losses to consumers associated with it.

(2) To contribute to the nation's economic growth, to further the human and cultural development of many disadvantaged citizens and to raise the level of living of rural-slum farmers, education and other assistance are needed in poor areas. Elimination of agricultural surpluses seems less important than the goals just mentioned. Helping farmers in poverty can contribute to surplus problems. The analysis suggests this should be allowed to happen.

(3) One of the most important goals of agricultural policy may be to achieve equal incomes for persons of comparable ability. Another related goal is to achieve an equitable balancing of regional interests. Due to economic growth adjustments leading to low human quasi-rents, an income disparity problem pervades the efficient commercial segments of agriculture as well as the poverty-stricken segments. Lack of knowledge about the income incidence of various ways of cutting back on agricultural production is a major hindrance to formulating desirable policies.

The third part of the chapter considered policy alternatives. A conclusion was that acreage restrictions have been overmagnified as a method of controlling production. They can be made to work, and they have the advantage, over restrictions on physical quantities of marketings, that they are a more accepted means of control. Instead of centering on method of control, the more important policy questions may concern who shall produce less in eliminating surpluses. Ease of adjustment in different areas might most desirably influence this choice. Factors affecting ease of adjustment are: off-farm work availability, previous mobility from an area, age-tenure displaceability of labor, substitute farm enterprises and existing pressures on the man-land ratio.

The discussion of alternative policies closed with a suggestion to try self-financing entry control for agriculture. This ought to be more effective than direct production controls in eliminating low human quasi-rents in agriculture. The scheme proposes to restrict production through payments to enter or leave farming financed by price supports high enough to avoid drain on the United States Treasury.

### Economists' Contributions to Policy Formation

The discussion of this chapter suggests two major needs for analysis of policies. The first need is to attack more vigorously the technical job of estimating the income incidence of various ways of cutting back on agricultural production. The object would

be to supply information enabling decision-makers better to face the immediately pressing problem of getting rid of surplus production.

The second need, more in the realm of social philosophy, is to devise policies in light of social goals and values. In this way, a contribution can be made to achieving a longer-run satisfactory solution for agriculture. A burden of this chapter has been to show that this latter task will be aided if efficiency is not taken as the only goal but instead is seen in perspective as one of several goals.