51-69

INSTITUTE FOR RESEARCH ON POVERTY

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DISCUSSION PAPERS

THE UNIVERSITY OF WISCONSIN, MADISON, WISCONSIN

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August, 1969

ABSTRACT

Growing dissatisfaction with existing welfare programs has led to the formulation of various proposals for a national program of income maintenance. The negative income tax has received the most attention, probably because it combines general coverage with a marginal rate low enough to temper the disincentive effect associated with transfers.

The degree to which farm operators would be eligible to participate depends on both the breakeven level of income and the extent to which income imputed to assets is added to money income. If farmers become eligible for basic allowances that are reduced at marginal rates well above those experienced by most operators under the positive income tax some changes in accounting procedures and the definition of income are likely.

The size and composition of farm output can be expected to be altered as the imposition of a NIT influences the decisions of operators. The input of operator and family labor may be affected by reduced marginal returns to labor input (for incomes within NIT range), willingness to hold multiple jobs, and migration. The net result on output is not easily predictable, since we do not have sufficient information to predict whether labor input will rise or fall or to foresee the consequences of subsequent reorganization of production.

By reducing risk for less prosperous operators, the NIT may increase both the supply of and demand for credit. The net effect on hired labor is likely to be a reduction in supply.

Participation in voluntary programs of supply control may be reduced if farmers regard the NIT as a means of reducing the risk of nonparticipation. Because income from labor is "taxed" under the NIT program, some farmers may be encouraged to divert acres from production in response to the lower net returns to labor.

FARM OPERATORS UNDER THE NEGATIVE INCOME TAX

INTRODUCTION

Publicly financed programs of income maintenance have long been in operation in this country. Federally subsidized transfers to recipients in selected categories, e.g., families with dependent children, the blind, and the totally disabled, are administered by state and local governments. Unemployment compensation and payments to the elderly, survivors, and the disabled are provided under Social Security legislation. States and local governments supplement these transfers with general relief payments to indigent recipients who fail to meet eligibility requirements for categorical assistance. Other government programs are widely regarded as being primarily for income maintenance--the farm programs, for example--albeit not necessarily for the poor.

Dissatisfaction with existing programs is widespread and has prompted various proposals for major reform (notably, the President's family assistance program presented in August, 1969). For one, substantial interstate differences in benefit levels create horizontal inequities among low income families and are alleged to encourage migration of welfare recipients to states with more generous payment levels. Two, local welfare officials possess a great deal of arbitrary authority which they can use to force recipients either to conform to certain patterns of behavior or lose benefits. Three, because of the categorical nature of existing programs, many low-income families are ineligible for any assistance. This is especially true of families with an employed male head whose earned income is too low to provide an adequate standard of living.

In order to reduce interstate differences in assistance, reduce the financial burden on state and local governments, provide greater independence for welfare families, and provide an income supplement to the working poor, some critics of existing programs recommend a comprehensive program of income maintenance financed by the federal government. The work disincentive effect of income maintenance programs stems from the reduction in transfer payments to the recipient if he increases his income through earnings and other sources. To counteract the work disincentive effect, it would be necessary to reduce the transfer at a marginal rate well below 100 percent of any increment to income from other sources, particularly since many of the working poor hold jobs devoid of fringe benefits and job satisfaction. A transfer program of this type has come to be called the negative income tax, or NIT.

The list of analyses of specific NIT proposals is growing,[1] but thus far little has been written about the effect of the NIT on farm operators or the farm economy. Some of the issues that are likely to arise if farm operators become eligible for NIT payments are discussed below.

THE BASIC PLAN

All NIT plans contain the same major components. These include the basic allowance (Y_g), which varies with family size and represents the guaranteed minimum to be paid to families with no other income; the negative tax rate (t), the rate at which the NIT transfer declines as income of family members from other sources (Y_a) rises; and the NIT breakeven income (Y_b), at which NIT transfers cease.

Assuming a proportional rate, t, the total NIT payment to a family

(P) is determined as follows:

$$P = Y_g - tY_a.$$

The breakeven income is

$$Y_b = \frac{Y_g}{t}.$$

A conflict arises between the desire to set the basic allowance at a level high enough to guarantee a reasonable standard of living and the desire to keep the marginal rate at a low enough level to avoid a serious disincentive to work. For example, if the allowance (Y_g) is set at $3,000 and the rate (t) at 50 percent, breakeven income (Y_b) is $6,000. Dropping t to 33 1/3 percent raises Y_b to $9,000. Obviously any combination of low rate and high basic allowance is going to bring many families with incomes above the poverty level into the benefit range.[2]

There are ways of getting around the dilemma. One possibility is a graduated rate structure that reduces NIT payments at an increasing marginal rate as income from other sources approaches or exceeds the poverty level. But, disincentives would be great for those families whose earning potential is in the vicinity of breakeven income. Another alternative is a basic allowance below reasonable subsistence levels with supplementary categorical payments for families with no employable adults. This alternative would provide income supplements to the working poor but is likely to perpetuate most of the shortcomings of existing welfare programs.

In respect to farm operators, any reasonably generous NIT program is likely to extend coverage to income levels in excess of those experienced by full-time marginal farmers and by many more prosperous operators during periodic "bad years."

MEASURING INCOME

Proponents of the NIT contend that if adopted nationally it should be administered in the same impersonal manner as the existing personal income tax, perhaps by the same agency. Integration of positive and negative income taxes would be greatly facilitated if the same definition of income (other than NIT transfers) were used in both cases. Most NIT proponents concede, however, that a more inclusive definition of income would be necessary for transfer purposes if benefits are to be denied to taxpayers who have high money income but low taxable income. They recommend inclusion of Social Security benefits, most private transfers, and all interest and dividends. Some even recommend including life insurance proceeds, gifts, and inheritances. Personal deductions would be limited to such non-discretionary expenditures as uninsured medical expenses and alimony. Loss carryovers would be greatly restricted.

Accelerated depreciation, extra first-year depreciation, and percentage depletion are also candidates for elimination from an NIT statute, since the purpose of the program is to provide income maintenance, not to subsidize investment.

Imputed Return to Assets

Some NIT proposals call for reduced payments to low income families with a positive net worth. Presumably they would be encouraged to contribute to their own support through dissaving. Reduction of payments is accomplished by adding to income:

a) an imputed return to dwellings and other assets with money yields below a certain level, and

b) some fraction of the family's net worth (with an exemption for a limited amount of personal and household goods), as capital consumption.

Among low income groups the self-employed and the elderly are most likely to have sizeable asset holdings. For the self-employed, labor earnings are a function of assets and dissaving from business assets would reduce current income. Data from the *1962 Survey of Financial Characteristics of Consumers* (Projector and Weiss, 1966, p.152) show that 21 percent of the self employed with incomes below the poverty level, as defined by the Social Security Administration, had a net worth in excess of $25,000, compared to 10 percent of families with a retired head and, only 3 percent of the families headed by a wage earner. Hence, if an asset imputation is added to money income, NIT payments to low income farm owners are likely to be considerably lower than payments to tenants or urban wage earners with equal money incomes.

One typical proposal of a negative tax plan (Wright, 1968) calls for imputing a return to net asset holdings (excluding household goods) measured at fair market value, at a rate of 5 percent. Money income from these assets is subtracted, giving the net imputation to be added to income. If, on the average, money returns exceed the imputation rate, no asset imputation is added. This procedure serves to put a floor under returns to business and financial assets while adding an imputed income to owner-occupied dwellings.

Imputed Returns to Assets of Self-Employed

Discussions of the asset imputation have not generally dealt with the problem of determining net imputed returns to business assets of the self-employed. In addition to the problem of estimating the market value of business assets, which is often formidable, some method must be devised for separating business money income into returns to labor

and capital. Failure to net out money returns to business assets before the imputation is added would lead to double counting and discriminate against this type of holding.

Obviously a rule-of-thumb procedure must be adopted if business income is to be allocated between labor and capital in a way that is administratively feasible. One approach is to estimate the opportunity cost of operator and unpaid family labor, subtract from business income, and allocate the residual to capital. An arbitrary hourly rate, e.g., the federal minimum wage, could be selected, but an administrative problem arises in measuring the number of hours of input. A second alternative is to impute a separate return to business assets (perhaps at a higher imputation rate than that used for other assets), subtract this imputation from total business income and allocate the residual (if positive) to labor.

Capital Consumption

A further limitation on participation by families with positive net worth would be imposed through addition to income of a fraction of a family's net worth. The model negative income tax statute drafted by a group of Yale Law School students sets the fraction at 30 percent (Wright, 1968). Exemptions of $5,000 per family head and $3,000 per dependent are allowed. An additional $5,000 exemption is allowed for assets used in a trade or business so as "to avoid requiring small businessmen to expend a portion of their business assets for current consumption needs " (Schiffman, 1963, p. 325). Even with the added exemption, the provision would keep many farm operators otherwise eligible from receiving benefits.

Effect of Various Imputation Formulas

Data obtained from a 1967 U.S. Department of Agriculture report to Congress (Department of Agriculture, 1967) are used to illustrate the effects of various imputation formulas. The results are derived using average values of equity assets, net farm income, and labor opportunity costs for U.S. farms in three sales classes. Obviously the outcome would differ considerably among farms, regions, and type of farm enterprise. Figures are for 1966, a year of exceptionally high farm income.

The data in Table I show how net farm income (Col. 1) would be increased by the addition of an imputed net return to equity assets (Col. 2) and of a capital consumption imputation of 30 percent of owner equity (after subtraction of a $5,000 exemption). The imputed net return to equity assets (Col. 2) is obtained by imputing a 5 percent return and deducting from it a residual return to assets. The residual return is calculated by subtracting from net realized farm income the opportunity cost of operator and unpaid family labor, as estimated by USDA (Wright, 1968, p. 23). Net realized farm income already includes imputations for housing and food produced and consumed on the farm.

Table II shows how NIT transfers would be affected by the two imputations, again using sales class averages. The computations are for a family of four. The payment schedule is taken from the Yale model statute (Wright, 1968, p. 294) and calls for a basic allowance of $1,200 for the family head, $800 for his spouse, and $600 for each dependent. The basic allowance is therefore $3,200 for a family of four. Given a marginal rate of 50 percent, breakeven income is $6,400. It is further assumed that the net farm income as defined by USDA is the same as statutory income excluding imputations and that income is not affected by the NIT

TABLE I

Effect of Alternative Asset Imputations on an Income from Farming, Using 1966 Sales-Class Averages.

Sales Class	Realized Net Farm Income (1)	Imputed Net Return to Equity (2)	Sum of Realized and Imputed Income (3)	Capital Consumption Imputation (4)	Sum of Imputed Return and Capital Consumption (5)	Sum of Realized Income and Imputations (6)
$10,000 to $19,999	$6,869	$ 935	$7,804	$13,098	$14,033	$20,902
5,000 to 9,999	3,989	1,686	5,675	8,616	10,302	14,291
Under $5,000	1,071	840	1,911	3,540	4,380	5,451

Source: Department of Agriculture, "Parity Returns Position of Farmers for U.S. Senate, 90th Congress, First session, Document No. 44, Washington, D.C., 1967, p. 22, Table 9.

TABLE II

Annual NIT Transfer to Farm Operators Under Yale Formula, for Family of Four, Farm Income Only, 1966 Sales-Class Averages.

	Income Measure		
Sales Class	Realized Net Farm Income	Sum of Realized Income and Imputed Return to Equity	Realized Income Plus Equity and Capital Consumption Imputations
$10,000 to $19,999	$ 0	$ 0	$ 0
5,000 to 9,999	1,205	362	0
Under $5,000	2,665	2,244	474

program. These assumptions, for reasons discussed below, are of doubtful accuracy.

Without imputations only families on farms with sales below $10,000 (using averages) would be eligible for benefits. Families on larger farms would be eligible if they have a large number of dependent children. Payments are reduced substantially with the addition of imputed net return to equity. Notice that this return is higher for farms in the $5,000 to $9,999 class than in the $10,000 to $19,999 class (Table I, Col. 2), reflecting the relatively low observed return to capital assets on smaller farms. When a capital consumption imputation of 30 percent of net worth is added, only families operating the smallest farms are eligible. This can be seen by referring to Table I, col. 5, which shows the average imputed income charged against a farm operator before any income from current operations is added.

Table III is similar to Table II except that off-farm income is added. Mean off-farm income exceeds mean farm income in the smallest size category, and incorporation of the asset imputations recommended by the Yale Statute group would preclude all but the smallest full-time owner-operators and tenants with limited asset holdings from regular participation in an NIT program.

The picture is quite different if the asset imputations are dropped. In that case a substantial number of operators would be eligible, especially in years of below-average income.

TABLE III

Annual NIT Transfer to Farm Operators Under Yale Formula, for Family of Four, Farm and Off-Farm Income, 1966 Sales-Class Averages.

Sales Class	Income Measure: Realized Net Farm Income Plus Off-Farm Income	Sum of Realized Income and Imputed Return to Equity	Realized Income Plus Equity and Capital Consumption Imputations
$10,000 to $19,999	$ 0	$ 0	$ 0
5,000 to 9,999	249	0	0
Under $5,000	454	267	0

COMPLIANCE AND ADMINISTRATION

If large numbers of farm operators become potential recipients of NIT transfers serious problems of compliance and administration are likely to arise. Some of the problems already exist under the positive income tax, but they may be more serious under an NIT with marginal rates two or three times those experienced by most operators under the positive tax. Attempts to deal with them are likely to lead to changes in regulations that would affect all farm tax accounting. In the absence of a considerable tightening of existing Internal Revenue Service (IRS) regulations for farmers, they would have a greater opportunity to take advantage of the program than most urban wage earners with comparable incomes.

Existing tax laws, regulations, and administrative procedures serve to give farmers a tax advantage. The distinction between capital and current outlays is generous. In practice outlays on small capital items and repairs that prolong the life of depreciable assets

are often deducted as current expenses. Farm operators are allowed substantial leeway in allocating auto expenses and utilities to business and in deducting the cost of producing food consumed on the farm. Under an NIT, an attempt might be made to restrict some of these practices.

Of greater potential significance is the opportunity of the farm operator to time his receipts and expenses so as to take maximum advantage of an NIT program. We consider the problem in detail below.

Income Shifting

Under the cash method of accounting a farm operator is allowed to carry a crop over for sale in a subsequent year while charging production costs to the year in which the crop is grown. Hence, by appropriate planning he can concentrate his sales in, say, even-numbered years while keeping his income at or near zero in odd-numbered years. The ability to juggle sales so as to take advantage of the NIT is much greater for some enterprises, such as grain production, than for others, such as dairying. If the practice is widespread it could have a significant effect on the agricultural enterprise mix with NIT farmers favoring products more amenable to juggling.

Cash accounting also provides opportunities for concentrating expenses into the years when the farmer participates in the NIT program. Repairs that do not prolong the life of property are treated as expenses under current I.R.S. regulations. Some repairs may not be postponable without substantially hindering normal operations. Others, such as painting or repair of buildings or purchase of new tires for farm vehicles, can usually be juggled with little or no inconvenience. The I.R.S. has tightened up on prepayment for purchase of the next year's

supplies, but leeway is still allowed. Expenses are assigned to the year incurred if delivery is made. Interest payments (but not loan expenses) are deductable in the year paid regardless of the duration of the loan.

Certain expenditures that are a type of capital formation can be concentrated into a single year. Examples include the cost of lime (and to a lesser extent, fertilizer), and expenditures for clearing land, planting of windbreaks, and movement or treatment of earth.

If a NIT program is adopted it seems likely that it will contain provisions designed to limit the ability of farm operators to juggle income and expenses. One way to do so is to require farmers to use accrual accounting. This would add to enforcement problems because it requires both an accurate physical count and appropriate precision determining valuation of inventories at the beginning and end of the tax year. If all farmers were required to switch to the accrual method it would discriminate against larger operators who may never be eligible for NIT. Cash accounting gives them an opportunity to gain the benefits of averaging without which they suffer, relative to persons with more stable incomes, under a progressive rate structure. One modification of the provision might be to require all farmers to switch to accrual accounting in order to become eligible for the NIT. Those preferring to continue using the cash method would remain outside the NIT program.

Accounting Period and Timing of Payments

Most NIT proposals call for payments based on an annual accounting period. The easiest way to administer the program is to wait until the end of the year when annual family income can be determined and make the payment the following year, either in a lump sum or in installments.

Critics argue that this method is not sufficiently responsive to short-term needs. Responsiveness can be increased by making payments a function of income over a shorter period, e.g., a quarterly moving average or even monthly income. Payments can be handled like withholding under the positive tax with a reconciliation following the year's end.

A payment system based on monthly income or a short-term moving average would be impractical for most farm operators and many other proprietors operating under an annual accounting system. Basing payments on lagged income would not be objectionable for farmers who, unlike urban wage earners, are accustomed to irregular receipts. In fact it might be the best method of paying farmers, since their need for assistance may be greatest the calendar year following a year of low income.

The choice between payment in a lump sum or installments may be worthy of further study. A lump-sum payment would presumably be received early in the calendar year at a time when it would provide a farmer with cash that could be used to finance production outlays. If payments are made in monthly installments throughout the year, the recipient would have less opportunity to use the funds for production purposes. Conceivably, the use of an installment method of payment would be more conducive to increased consumption expenditures than the lump-sum method, which would provide an interest-free substitute for borrowed working capital. The major goal of the NIT--raising the standard of living of low income families--as well as the goal of agricultural supply control would both appear to be better served by the installment method.

A more pronounced lagged response can be built into the system by basing payments on income averaged over a period of two or more years.

By lengthening the period, payments would be directed to families with chronically low incomes. Long-term averaging would tent to deny payments to operators experiencing occasional years of low income and to weaken the incentive to juggle sales and expenses. The sluggish response of payments to sudden declines in income makes the program unresponsive to emergency needs, especially for wage earners. For this reason long-term averaging is not likely to be used for all families in a national program, but it might be considered for full-time farm operators.

Compliance and Enforcement

The measurement of income is much more difficult for the typical proprietor than for his wage-earning counterpart. The wage earner need only take the figure from his W-2 form. The employer does the bookkeeping. The proprietor, however, must maintain a set of books that meets the requirements of government revenue agencies. Because the task of income measurement is more complicated, enforcement and compliance are more difficult and opportunities for evasion are likely to be greater.

It is generally agreed that farm income is underreported on tax returns, but the magnitude of the discrepancy remains a subject of dispute. Kahn estimates that in 1960 only one-third of all farm income was reported on federal returns (Kahn, 1964, p. 30). Stacker and Ellickson (1959) dispute this finding indirectly by attempting to show that farmers reported 86 percent of gross receipts in 1955. They also suggest that farmers may understate expenses (Stacker and Ellickson, 1959 pp. 125-6), but it is doubtful that such understatement (if it exists) would offset underreporting of gross receipts.[3]

We shall not attempt here to resolve the dispute over the magnitude

of underreporting of farm income. The important point is that underreporting by operators with incomes in the NIT range has much greater consequences under a high negative tax rate than under zero or relatively low positive rates. The problem is likely to be particularly acute among chronically depressed marginal farmers who are most likely to have difficulty keeping adequate records even if they have no intension of trying to evade reporting of income. One possible consequence might be more intense federal policing of the accounting practices of all farm operators and increased technical assistance on tax matters.

EFFECTS OF NIT ON FARM DECISIONMAKING

The decision of farmers with incomes regularly or intermittently below the breakeven income are likely to be influenced by the existence of a NIT program. In general this group includes small and medium-sized farms, but some large operators in risky enterprises, e.g., cattle feeders and turkey growers, may also be affected. Labor supply, willingness to take risks, job mobility, and migration are among the determinants of farm output that may be responsive to marginal rates and payment levels.

Labor Supply

If the usual assumptions about income-leisure preferences and declining marginal returns to labor are accepted, it can be shown that a negative income tax will reduce labor input in the farm firm eligible for NIT payments. The indifference curves in Figure 1 are convex to the origin. Their slopes grow steeper at each level of leisure (or labor input) as income rises in accordance with the assumption that leisure is a superior good. On the income axis, Y_g represents the basic

allowance under the NIT program and Y_b the breakeven income with a 50 percent tax rate.

The curve AB, which relates income to leisure (labor input), is concave to the origin, reflecting diminishing marginal returns to labor on a farm of a given size. In the absence of NIT, equilibrium is at E. A negative tax program with a basic allowance AC will raise the returns-to-labor curve to CDB while reducing its slope along CD compared to the slope along AD. Consequently, the new equilibrium F must be to the right of E, indicating that labor input will fall.

This result appears more likely for farmers than for wage earners, because the former are not faced with such institutional rigidities as the 40-hour week. Hence, for full-time farmers with "typical" preferences and production functions we can predict that a NIT would reduce labor input and farm output if they are eligible for NIT payments, although the magnitudes are not known.

Occupational Mobility and Migration

The input of labor by farm operators and their families may be subject to further alteration if a NIT encourages operators to shift to non-farm occupations, retire while remaining on the farm, or leave the farm and migrate to cities or towns.

For incomes below the breakeven level the imposition of a NIT has the effect of narrowing the after-tax income differential between alternative occupations with different incomes. Available data do not enable us to predict with confidence what effect this will have on the supply of farm labor.[4] By reducing the dollar payoff of a shift in occupation and by providing a buffer against extreme privation, a program of income

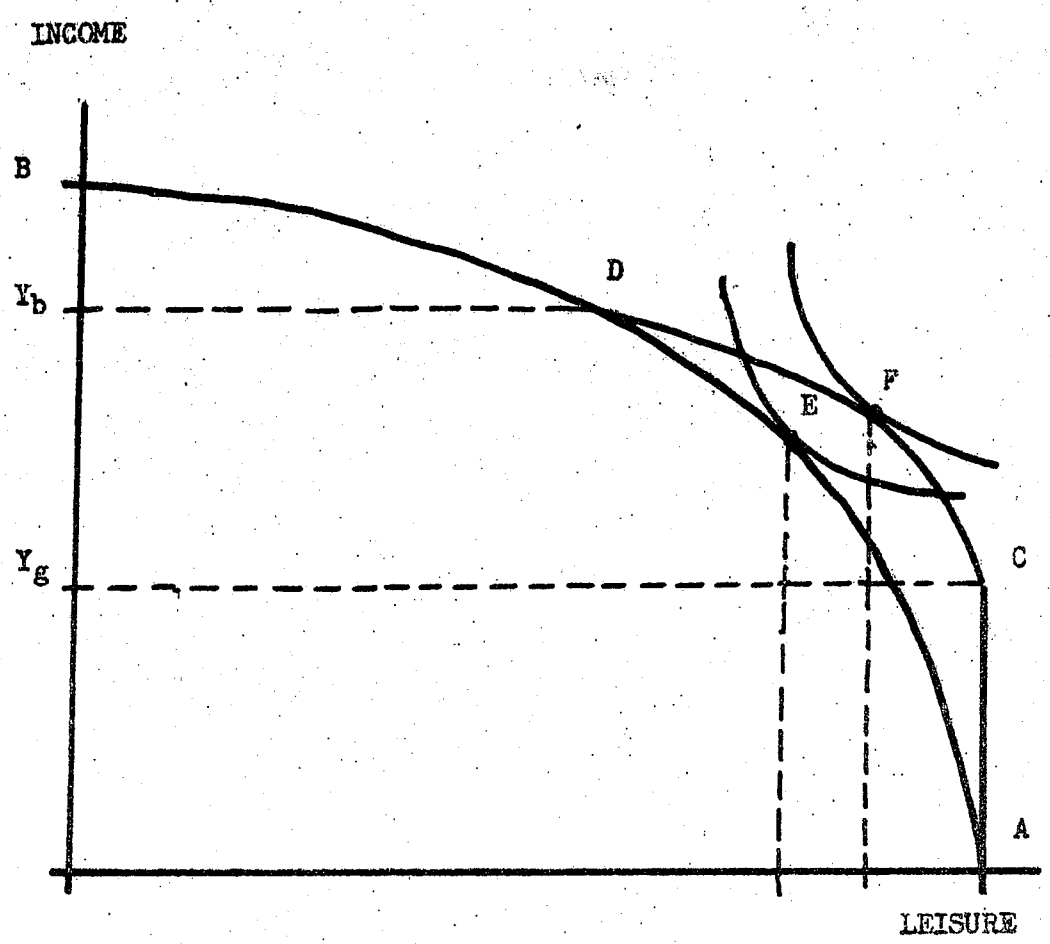

Figure 1. Income-leisure relationships and effect of NIT on labor input.

maintenance could be expected to reduce the incentive to migrate. On the other hand, the NIT, especially if it is responsive to a short-run decline in income, would encourage migration by reducing uncertainty (Hathaway, 1963, p. 359) regarding income in the new occupation.

Perhaps of greater significance is the effect of a NIT on willingness of operators and members of their families to accept off-farm employment. Off-farm employment is common among farmers (Schiffman, 1963, pp. 516-523), especially those operating units too small to require full-time labor input. Among farms with annual sales of less than $5,000 nonfarm income exceeds farm income. For most farmers, however, off-farm work is seasonal or occasional and is not a major source of income (Hathaway and Waldo, 1964, pp. 31-41). They may respond to a NIT by giving up offfarm work. Thus, while their total supply of labor may decline, their hours worked on the farm may increase.

Multiple job holding is highest among younger farm operators. Within this group off-farm employment is frequently an intermediate step prior to leaving farming (Hathaway and Waldo, 1964, pp. 12-13). By affecting off-farm work, income maintenance may indirectly affect migration as well.

Effect on Choice of Enterprise

In choosing among farm enterprises both the size and variance of expected income are of significance. To the extent that the probability distributions of anticipated returns from alternative enterprise combinations intersect the NIT range (between zero and Y_b in the absence of less offset of carryover), the existence of a NIT program will affect both the mean and variance of expected after-tax returns. In particular, the

negative tax will reduce the variance of expected income. For operators who are risk averters the result will be to make riskier enterprises relatively more attractive. This is because the government is in effect sharing the risk with the producer (Musgrove, 1959, p. 322). By reducing the cost of risk taking, the NIT encourages the substitution of more-risky for less-risky enterprises. Hence, low and middle income operators may be induced to shift in the direction of riskier enterprises at the expense of enterprises generating a more stable income. Such a shift may be restrained somewhat if higher income discourages risk taking, i.e., if income and substitution effects pull in the opposite direction (Musgrove, 1959, p. 319).

A NIT might have the effect of encouraging greater specialization. Diversification is one way of reducing risk, but under a NIT the reduction of risk may encourage operators to concentrate on the production of commodities in which they are most efficient.

Effect on Factor Supplies

A NIT is likely to affect the supply of non-family labor available to farmers. Given the low wages typically paid to farm labor, both migrant and non migrant, most hired labors would be eligible for payments even under a relatively penurious program. The payments can be expected to reduce work incentive. If strikers are eligible for participation in a NIT program, attempts to organize farm workers could also be strengthened.

The income support provided by the program would reduce somewhat the risk involved in making loans to small farmers. The result may be an increased supply of credit. An analysis by Berr from the *1960 Sample Survey of Agriculture* seems to show, however, that low income

farmers do not ordinarily take full advantage of existing credit availability. The percentage of farmers reporting debts is lower for farmers with chronically low incomes than for others. Herr concludes that lack of demand for credit on the part of low income farmers is the main cause of the difference (Herr, 1960, pp. 523-527). If his conclusion is correct the major impact of income maintenance on use of credit will be reflected in its effect on the willingness of low income producers to assume the risk of indebtedness.

Participation in Supply Control Farm Programs

Of concern to agricultural policymakers is the effect that a national NIT program would have on participation in voluntary programs of supply control. Income and asset limitations on NIT eligibility are of crucial importance here. A low breakeven income would preclude NIT participation by commercial farmers who produce the great bulk of marketed crops. Addition of asset and capital consumption imputations would limit NIT participation by operators with a sizeable capital equity.

If NIT eligibility is restricted to low-income operators with small acreage allotments existing supply control programs are not likely to be seriously threatened. Small producers account for only a small share of total output and available data indicate that their participation rates are relatively low. In 1964, for example, participation rates in the feed-grain programs ranged from 24 percent for farms with allotments under 10 acres to 70 percent for those with allotments of 301 to 500 acres (Department of Agriculture, p. 1). Although correlation between allotment size and income is not perfect, it is high enough to support the contention that participation rises with income.

Under a generous income maintenance scheme a significant number of operators are likely to be eligible for payments, if only occasionally. An income guarantee would reduce the price and yield risk of remaining outside the program, especially for small and medium-sized units. Other factors, especially the relation between allotments and productive capacity, may be more important determinants of participation than risk aversion, but a NIT could be expected to contribute to non-participation.

Of greater potential concern is the effect that a national system of income maintenance would have on political support for existing farm programs. With income protection policymakers would find it easier to relax production controls without fear of a catastrophic decline in farm income. In addition, the pretense that the farm program is needed to insure minimal living standards for low-income farmers would be further discredited.

AN ADDENDUM: THE NIT CONCEPT AS A BASIS FOR A NEW FARM PROGRAM

The current farm program has been criticized on allocational and distributional grounds. Price supports and acreage controls hinder adjustment and raise food prices. Most of the benefits go to high income commercial farmers. A farm program along the lines of the negative income tax, offering income maintenance to those most in need might be feasible even if a national NIT is not adopted. The prospects for such a reorientation of farm policy are examined below.

Current Farm Programs

Expenditures by the federal government on behalf of agriculture are already substantial. The total fluctuates from year to year, depending on whether the government is accumulating or liquidating stocks of surplus commodities, but the USDA budget usually runs about $6 to $7 billion per year. Roughly $5 billion of this contributes directly or indirectly to support of farm prices.

The major thrust of current farm policy is in the direction of supply control. Given the inelasticity of demand for farm products (about -0.25 on the average), effective supply control can raise prices substantially.

Supply control can be effected in a variety of ways. The cheapest for the treasury is through mandatory production quotas aasigned to each producer. The government organizes a cartel composed of all producers of a specific crop. Quotas are enforced, but only after approval in a producers referendum. Mandatory quotas have never been accepted by producers of a major crop.[1]

The major commodity programs (wheat, feed grains, and cotton) are voluntary. Each farm is assigned an acreage allotment based on the

acreage planted in a particular crop during a historical base period. The allotment is assigned to the land, not the farmer; so any value it attains is capitalized into higher land prices.[2] A producer who voluntarily diverts a predetermined percentage of his acreage allotment from production is eligible to participate in the program. Participation guarantees him a support price plus diversion payments designed to compensate him for income lost by not planting the diverted acres. Rigid restrictions are imposed on use of diverted acres, but the producer is free to concentrate his labor and other resources as intensively as he wishes on his remaining land. Non-participants take their chances on the market.

Most of the cost of the diversion program is paid out of general revenue. An exception exists under the wheat program, where processors are required to buy certificates for all wheat that goes into the domestic food supply (about 40 percent of the domestic crop). Certificates are given to participants in the program for subsequent sale to processors. This method of finance is sometimes referred to as a "bread tax." It is reminiscent of the processor tax used to finance the original Agricultural Adjustment Act of the New Deal.

The voluntary programs outlined above have been successful in two respects. The huge surpluses accumulated under the Benson program of the 1950's have been largely depleted and farm income has exceeded levels of the preceding decade. Nevertheless, current policies can be criticized especially on distributional grounds.

Under these diversion plans, payments to participants are a function of farm size. Hence, the largest payments tend to go to the largest producers. Attempts to put an upper limit on payments to individual producers have failed. Payments in excess of $10,000 are common, especially

under the cotton program. In 1968 the top payment was $2,772,187 (to a California corporation).[3] According to a newspaper account, "dozens of others, chiefly in California and Arizona," received payments of over $100,000. One of the recipients most often mentioned is James Eastland of Sunflower County, Miss., a member of the Senate Agriculture Committee, who in 1968 was paid $116,978.

A recent study of the distribution of benefits from major farm programs by James T. Bonnen (1968) supports the view that only a small portion of the benefits go to low income farm operators. Bonnen calculated Gini coefficients based on distribution of benefits by allotment size groups.[4] The coefficients ranged from a low of .456 for sugarbeets to a high of .799 for sugarcane. Ratios for major commodities were .565 for feedgrains, .569 for wheat, and .653 for cotton.[5] These compare to a ratio of .468 for farmers and farm managers as a group (Bayne, 1965, p. 1221). In other words, the benefits of farm programs may be more concentrated than farm income. Bonnen (1968), p. 122) is reluctant to conclude that the farm program contributes to greater inequality in farm income, but neither does he deny that this may be the case.

To the extent that farm price supports raise food prices, the program places a burden on all families. The food stamp plan partially offsets the burden on low income groups, but for various reasons food stamps are not available to all low income households.

Thus it is not surprising that many critics, especially those not connected with agriculture, argue for a reorientation of the farm program with greater emphasis on redistribution. The negative income tax could serve as a model for such a reorientation, even if its application is limited to farmers. A plan somewhat akin to the NIT was suggested a

decade ago by Boris Swerling (1959). He proposed a system of income insurance that would guarantee farmers a minimum income equal to 75 percent of average net earnings over the preceding five years with an upper limit on payments of $4,800 per year. Eligibility for benefits would be reduced as income from non-farm sources increased. The program would be financed by a premium levied on farmers augmented by a transfer from the federal treasury.

Swerling's proposal would provide a cushion against precipitous drops in income, but owing to the moving average on which payments are based it would not prevent a secular decline in farm income (Department of Agriculture, 1967, p. 344). Its low upper limit would exclude large operators. Unlike the NIT, payments would not be dependent on differences in family size.

The lack of enthusiasm for Swerling's proposal may be indicative of the lack of support for a change in the distributional goal of farm policy at that time. Other problems associated with such a change, some of which underlie political attitudes must also be considered.

Problems of Reorientation

If the price support programs were replaced by a NIT for farmers, farm operators would be provided with minimum income protection comparable to (and in some respects superior to) that available to wage earners under unemployment compensation. In view of the risks inherent in farming this is desirable. If the $5 billion or so now used for price supports were used for income maintenenace the guarantee level would be substantial. Even if the $350 million allocated to food stamp and school lunch programs and the $1.7 billion spent on food for foreign aid is subtracted, that still leaves some $3 billion, an average of nearly $1,000 per farm.

Under the NIT approach assistance would be concentrated on low-income producers. Large producers would in most cases be on their own, and the market would be allowed to perform its usual function of discouraging overproduction.

If the NIT is limited to farmers it could be designed to subsidize off-farm migration. A farm family could be allowed to remain eligible for benefits for 2 or 3 years after leaving the farm. Failure to do so might have the effect of "locking in" marginal operators.[6] Farm youth between ages 12 and 22 could be made eligible for the basic allowance of a single adult if they attend high school, college, or vocational school. This feature would help to reduce the high dropout rate among farm youth.

Entry into farming could be controlled by limiting eligibility to persons who have earned most of their income from farming for a specified time, e.g., three consecutive years, so as to discourage entrants who lack the capital to earn an adequate income in commercial agriculture.

So drastic a change from existing farm programs is certain to generate strong opposition. As we have pointed out above, a NIT for farmers--especially if limited to farmers--would be opposed by those who fear that it would slow the exodus of marginal farmers from agriculture. The main concern here is the young low-income farmer, and we have suggested ways of countering this objection.

Another objection is that the more prosperous farmers would bear an unfair share of the cost of the policy change. Many estimates have been made of the effect that elimination of the major commodity programs would have on farm income. The consensus is that in the short run income would drop from $13 or $14 billion to $8 or $9 billion. Even if one adds back $5 billion in transfers it is unlikely that farm income would reach present

levels because of the higher cost of production that would accompany elimination of supply control. Furthermore, the income loss would be concentrated in middle and upper income brackets. It might be argued that these people would still not suffer from privation, but the reduction in their standard of living would be substantial, and some would be severely strained in servicing their debts. In order to take advantage of economies of scale many large operators have taken on sizeable debt obligations[7] that require not only payment of interest but of principal as well (the latter must be paid out of net income, reducing the amount available for living expenses--a factor not apparent in income statistics). Refinancing may be possible, but not without hardship, especially if elimination of acreage allotments should lead to a fall in land prices.

Finally, the effect of a change in farm policy on the rural non-farm economy must be considered. The effect on out-migration, incomes, and businesses servicing and supplying agriculture are of prime importance for political as well as economic reasons.

To conclude, any shift in farm policy away from price supports in the direction of income maintenance for low-income farmers will impose high interim costs on commercial agriculture. Strong opposition can be anticipated, and any shift that is politically acceptable is likely to be gradual and expensive.

FOOTNOTES

FARM OPERATORS

[1]Examples include David and Leuthold (1968), Green (1967) and Tobin, et.al. (1967). See references.

[2]If breakeven income exceeds the income at which the positive tax takes effect the marginal NIT rate, t, will remain in effect only if recipients are exempt from the positive tax. Otherwise the marginal rate will exceed t. In addition tax liability must rise gradually to the full positive level, because an immediate jump to the existing positive tax could result in marginal rates in escess of 100 percent. See Tobin, et.al. (1967, p. 7). Thus families with incomes somewhat above the breakeven level would enjoy a tax reduction.

[3]To avoid a downward bias in reported income, receipts and expenses would have to be underreported by the same absolute amount. In percentage terms underreporting of expenses would have to be much higher.

[4]Perkins and Hathaway (1966) found no significant relationship between farm income and off-farm mobility. Winkelmann (1966, p. 20) concludes that policies that raise farm income reduce outmigration. Diehl, (1966, p. 10) found that farm people do migrate in response to income incentives.

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FOOTNOTES
ADDENDUM

[1]See Hadwiger and Talbot (1965), for an account of the ill-fated wheat referendum of 1963.

[2]Prices of farm land have risen rapidly during the past decade. A study by USDA (1967, p. 13) shows that returns to landowners (capital gains plus annual income) compare favorably with returns on common stocks.

[3]The figures cited in this paragraph are reported in Rich (1969) and were placed in the Congressional Record, May 21, 1969, by Rep. Paul Findley (Rep. Ill.) sponsor of an amendment that would limit annual payment to $20,000 for any one recipient.

[4]The Gini coefficient is the ratio of the area between the Lorenz curve and the diagonal to the area under the diagonal. A rise in the ratio from 0 to 1 indicates increasing concentration.

[5]Bonnen's ratios are based on allotment size. In general larger allotments coincide with larger farms and higher incomes, but the relationship is not perfect nor does it take into account income from non-farm sources.

[6]A similar problem would arise in the case of older farmers who would have an incentive to postpone retirement so as to retain benefits. Special provisions would also be needed for part-time farmers. These difficulties would disappear under a national NIT.

[7]Results from the 1960 Sample Survey of Agriculture show that 46 percent of farm operators in the largest economic class had major real estate debts as compared to 17 percent in the smallest (Board of Governors, 1964, p. 3). In terms of income 44 percent of operators with incomes of $15,000 or more had major real estate debts; the figure for farmers with incomes under $5,000 was 37 percent (Ibid., p. 25).

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