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## Tax-Induced Investment in Agriculture: Gaps in Research

By Kenneth R. Krause and Harvey Shapiro

Estimated individual income tax subsidies to agriculture approximate \$1 billion annually. The more important provisions of the Internal Revenue Code and regulations that permit the subsidies are described and analyzed. The economic impact of the subsidy plus unmeasured subsidies to corporations are unknown in terms of resource allocation, price, income, supply, and structural effects. The most critical gaps in quantitative effects of the subsidies in terms of the Treasury Department and congressional tax writing committees are highlighted. Needed research by agricultural economists and possible approaches to such research are suggested in this survey article.

Keywords: Income taxes; Research needs; Subsidies; Tax loss farming.

A recent study of Federal subsidy programs estimated the gross budgetary costs of the Federal Government's fiscal 1970 agricultural subsidies at \$5.2 billion (31, p. 87). The report identified the 18 separate programs whose individual costs accounted for this total. The second largest "program," costing an estimated \$880 million, was agricultural tax subsidies in the form of expensing and capital gains.<sup>1</sup> With indications ahead for sharply reduced direct subsidies to agricultural production, income tax subsidies may become the largest single subsidies to agriculture.

The commentary accompanying the estimates contained the following statement regarding the farm tax subsidy: "It is not clear how the tax subsidy... relates to agricultural production" (31, p. 87).

This statement points to a serious gap in available knowledge regarding the impact of Federal income tax variables on American agriculture, at least in the minds of members of the Joint Economic Committee of Congress. An incentive that costs the Federal Treasury nearly \$900 million in tax revenues in a single year probably has some important effects on agricultural input and product prices, income, consumer prices, and the structure of U.S. agriculture. Yet the subject has apparently been largely ignored in both empirical and policy contexts.

In the Department of Agriculture and in the academic community little research effort has been devoted to this subject. Answers to policy questions generated by such nonagricultural sources as the Treasury Department and congressional personnel interested in tax reform are now required. Most of the response to legislative activity has come from special-interest lobby groups.

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This article describes the more important tax provisions affecting agricultural investment, discusses the possible economic implications, reviews what statistical information is available, points to gaps in our knowledge, and indicates some questions in need of answers.

### Agricultural Tax Accounting

Income or loss from farming may be computed under more liberal accounting rules than are generally applicable to nonfarm businesses. For nonfarm businesses the cost of an asset, including maintenance of the asset prior to its being used in the business, is considered a capital expenditure. It may not, therefore, be deducted as incurred but may be recovered only by depreciation over the useful life of the asset. In this manner, the cost of the asset is matched with the income earned by it.

A 1919 Treasury Regulation, however, permits agricultural producers to deduct some capital costs as they are incurred (34). For example, expenditures associated with the raising of livestock held for breeding purposes are capital expenditures, but they are deductible currently. Similarly, a grove of most types of fruit or nut trees may not bear a commercial crop for several years after it has been planted, but all the post-planting costs of raising the grove to a producing state (except for citrus since 1970 and almonds since 1971) may also be deducted when incurred.

Of equal importance, a second Federal income tax regulation allows agricultural producers to be exempt from the general rules regarding inventory accounting. The exemption is based on a 1915 administrative decision by the Commissioner of Internal Revenue (33). Even in cases where inventories are a material factor.

farmers have historically been permitted to use the cash accounting method and to ignore their year-end inventories of crops, cattle, and so on. This also results in an inaccurate reflection of annual income when expenditures are fully deducted in the year incurred, but the assets produced by those expenditures (inventories) are not sold and the income not reported until a later tax year.

While these liberal deviations from accounting practices required of other businesses are permitted for farm operators, they may choose to use accrual accounting for income tax reporting purposes. The accounting variations are permitted by regulations issued by the Treasury Department rather than by legislation (33). Congress liberalized the tax treatment of agricultural producers in 1951 by expanding the category of assets used in a trade or business and entitled to capital gains treatment upon sale to include livestock held for draft, breeding, or dairy purposes (35). The Tax Reform Act of 1969 added livestock held for sporting purposes to the relevant section of the Internal Revenue Code (2, 36, 38).

### Different Views of Preferred Tax Treatment

Opposing arguments exist concerning the reasons for special tax concessions. One view contends that the special agricultural rules were a deliberate effort to recognize the importance of agriculture to a strong dynamic national economy. Thus, according to one author, the Federal Government has recognized the volatile nature of the beef cattle industry and offered certain tax shelters and subsidies to attract investment capital for building up the quality and quantity of U.S. beef cattle (25). Some people interested in investments in other agricultural enterprises, such as fruit and nut orchards or race horses, espouse similar arguments.

Another view holds that farm producers have been permitted to use cash accounting and ignore year-end inventories because nearly 60 years ago it was believed that farmers were incapable of complying with accounting methods required of other businesses and that accounting principles were too unsophisticated to cope with livestock accounting (6, p. 2). Still another view asserts that the underlying rationale for this concession no longer exists, if in fact it ever did. This view holds that today's commercial farmers no longer need this special treatment and, in fact, frequently keep two sets of records: cash-basis accounts for income tax purposes and at least modified accrual-basis records for farm business analysis purposes.<sup>2</sup> If large numbers of farm operators are using or could use accrual accounting

methods and then keep inventory accounts, the argument of those who contend that an accrual system of accounting would be impossible for farmers to use is substantially weakened (32, p. 2877).

It may be that accrual-basis books are still too difficult for some farmers. The extent to which nontax-purpose accrual accounting is actually used needs to be determined. In addition, the insights from a careful study and evaluation of the problems of applying accrual accounting to the many different types of farm enterprises are also needed.

### Some Resulting Tax Abuses

High-bracket taxpayers whose primary economic activity is other than farm production have invested in fruit and nut tree groves, in breeding cattle operations, in beef feeding, and in catfish growing, to take advantage of the special farm accounting rules. Many of these high-bracket taxpayers incur farm losses for income tax purposes which are largely attributable to the expensing of capital costs (32, 33, 37). The farm losses, which are deducted from nonfarm income, represent an investment in farm assets rather than actual economic losses. When the asset, which has been expensed, is ultimately sold, it is taxed at capital gains rates. Depreciation that is taken is usually recaptured at ordinary income tax rates.

Thus, the combination of a farm loss deduction against high nonfarm income and the subsequent application of capital gains rates to income from the sale of the farm asset provides a mechanism by which nonfarm investors in farm production can convert ordinary income into capital gains. In short, this practice results first in tax deferral and finally in a partial exemption of income from taxation. With the proper combinations of high marginal tax rates applicable to nonfarm income, "farm tax losses" currently deductible, and capital assets subject to future capital gains taxation, the investor can actually increase his after-tax income. He can do this by investing in certain agricultural activities even if they do not show an economic profit.

The value of deferring taxes increases with the length of the deferral period and the interest rate. Conceptually, one can delay payment of taxes for many years from engaging, say, in cattle feeding, by increasing the size of the feeding operation each year.

The benefit of the capital gains qualification can be illustrated with the following, oversimplified, examples. Assume the feed and other deductible expenses of raising a breeding herd from owned calves are \$200,000. If the taxpayer is in the top 70 percent bracket, the current deduction of these expenses will reduce his

current taxes by \$140,000. When the herd is sold, the entire sale price, including the \$200,000 representing the recovery of these expenses, will be taxable at the 25 percent capital gains rate on the first \$50,000 and 35 percent on the remaining \$150,000, with the tax being \$65,000. Ignoring excess deductions and minimum tax provisions, the taxpayer could realize a \$75,000 tax profit (\$140,000 minus \$65,000) from a transaction which economically broke even.<sup>3</sup>

These tax profits are not necessarily limited to taxpayers whose primary economic activity is other than farm production. Taxpayers whose primary economic activity is farm production, such as ranchers with other profitable agricultural activities such as feeding livestock or growing crops, can also take advantage of the current farm accounting regulations.

### Tax-Induced Farm Investment by Nonfarmers

Information regarding the number of breeding cows, vines, and trees owned by investors whose primary economic activity is outside agriculture is not available. Estimates of the magnitude of "tax loss farms," therefore, have to be inferred largely from data reported on Federal income tax returns. In 1970, nearly 1.2 million sole proprietorships reported farm losses on proprietary interests in farming, totaling \$2.9 billion

(table 1). Farm proprietorship losses of \$0.7 billion, or approximately one-fourth of total farm losses reported, appeared on the 72,000 returns with nonfarm adjusted gross incomes of \$25,000 or above.

In addition, farm partnerships reported losses of \$3.9 million. Information is needed on whom these partnership losses flow to and also on the nature and magnitude of partnership incomes. Furthermore, losses incurred in agricultural production by corporations are not available. Thus, the following inference is based on part of the universe.

Tax losses of the magnitude shown in table 1 clearly indicate substantial flows of money into agricultural production by investors whose primary economic activity is outside agriculture. Taxpayers reporting farm tax losses not only invest their own equity but sometimes borrow several times the amount of the loss in order to obtain the tax loss.<sup>4</sup> Thus, the annual gross magnitude of tax-loss investments by nonfarm investors in agricultural production could conceivably be as high as \$10 to \$20 billion.<sup>5</sup>

A figure as high as \$20 billion, however, is only about 6 percent of \$340 billion, the total value of assets in the agricultural sector (10). Yet the impacts may focus sharply on certain areas. For example, if nonfarm investors borrow most of the money that they invest in agriculture, they may be responsible for an important part of the \$65 billion of agricultural sector debt. Limited formal research effort has been made to obtain

Table 1. Sole-proprietorship Federal income tax returns with farm losses, number of returns, and size of loss, by size of nonfarm adjusted gross income, 1970

Size of nonfarm adjusted gross income	Farm losses								All farm losses	
	Under \$5,000		\$5,000 to \$14,999		\$15,000 to \$24,999		\$25,000 and over		Number of returns	Amount
	Number of returns	Amount	Number of returns	Amount	Number of returns	Amount	Number of returns	Amount		
	<i>Mil. dol.</i>		<i>Mil. dol.</i>		<i>Mil. dol.</i>		<i>Mil. dol.</i>		<i>Mil. dol.</i>	
Under \$5,000	355,402	400.2	19,640	157.9	2,196	37.9	1,358	63.4	378,596	659.5
5,000 to 9,999	371,452	468.9	14,187	105.2	11	.2	154	5.7	385,804	580.0
10,000 to 24,999	385,465	558.0	41,487	306.8	3,154	58.3	490	17.0	430,596	940.1
25,000 to 49,999	32,261	55.6	10,323	82.3	3,079	58.5	1,863	83.5	47,526	279.9
50,000 to 99,999	8,043	13.9	4,937	45.1	2,292	43.4	1,739	77.6	17,011	180.0
100,000 to 999,999	2,133	4.7	1,569	14.5	742	14.8	2,606	189.1	7,030	222.8
1,000,000 and over	9	0.1	21	0.1	15	0.3	65	15.5	110	16.1
All returns	1,154,545	1,501.1	92,164	711.9	11,489	213.5	8,275	451.8	1,266,673	2,878.3

Source: Unpublished Internal Revenue Service data.

an estimate of tax induced investment in agriculture (1, 9, 22). Such an estimate, however, is very critical in the debate about the importance of nonfarm money that flows into agricultural production and the impact of a loss of such money if the Internal Revenue Code and the regulations were changed.

## Economic Implications

Since appropriate data regarding the economic effects of tax-induced agricultural investments are not available for analysis, any evaluation of the economic implications of tax shelter investments in agriculture must be limited to qualitative economic inference.

*Misallocation of resources.* A recent simulation study by Harrison and Woods investigated the profitability of investing in beef cow herds with or without the special tax provisions of capital gains, net operating loss carryover, income averaging, and offsetting nonfarm incomes with farm losses (17). The study simulates a 15-year period and shows that (a) there is no economic incentive for nonfarm investment in commercial herds through management companies without the tax incentives, and (b) even with existing tax provisions, nonfarm investment in beef cow herds is not profitable unless the investor has a marginal tax rate of at least 50 percent. Some management companies indicate that a taxpayer should as a minimum be in the 30 percent marginal tax bracket. The results of the study support the point that some of the nonfarm money that moves into beef cow herds is for "tax profit" purposes and not for normal economic returns, and is thereby a misallocation of investment resources.

No similar study has been made regarding nonfarm investment in orchards.

*Price and income effects.* In the long run, it can be argued that investment in cattle and orchards by taxpayers whose primary economic activity is other than farming will increase the supply of beef and certain fruits and nuts and thereby reduce the prices of these commodities. Nonfarm investment in farming can increase the demand for farm real estate, breeding and feeding cattle, and fruit and vine stock, thus causing real estate and farm input prices to rise (7, 21). Farmers who own farm assets will find their net worth rising. They may also find increases in their farming costs through a resulting rise in real estate taxes, if local public expenditures continue to be supported from property taxes and if such taxes continue to be assessed on the market value of assets.

The impact of these nonfarm-induced price changes is not uniformly spread across all commodities and is

largely confined to certain areas of the country. For example, nonfarm investment was attracted to the citrus-growing areas in Florida for a number of years prior to the 1969 Tax Reform Act, which included a provision that requires capitalization of citrus grove development expenses.

Analysis of the extent of nonfarm-investment-induced price changes is not available.

Price reductions in agricultural commodities affected by tax-induced investment combined with increased expenses can reduce farm income. Estimates of the magnitude of the reduction are not available. Tax-induced nonfarm investment in farming has increased pressure on the income of farm operators without nonfarm income or employment opportunities and may have contributed to the reduction in the number of farm operators in recent years. At the same time, after-tax income of nonfarm investors in agriculture has probably increased as a result of these tax-loss investments.

*Changes in agricultural practices.* Many animal scientists say that the average biological life of a cow is about 8 years. Tax considerations may affect the average age of the herd that a rancher will maintain, because the proportion of capital gains sales to total sales depends upon the mean service life of cows in the breeding herd. Assuming that the rancher's reactions are proportional to dollar amounts of rewards, the higher his marginal tax rate on ordinary income, the lower will be the mean age of his breeding herd and also his total beef herd.

The tax incentive to sell breeding cows at less than total productive life arises from a combination of two circumstances: the tax law allows the rancher to deduct the expense of raising and maintaining breeding stock against ordinary income, and it allows him to report costs of breeding stock as capital gains.<sup>6</sup>

Let  $R_o$  = ordinary income receipts,  $R_g$  = capital gains receipts,  $E$  = expenses,  $T$  = taxes,  $P$  = before-tax profit,  $t$  = ordinary marginal tax rate, and  $g$  = capital gains marginal tax rate. Then  $P - T = (1-t)R_o + (1-g)R_g - (1-t)E$ . From a point where  $R_o = E$ , every dollar of additional receipts that is shifted from an ordinary to a capital gains computation adds  $(t-g)$  cents to after-tax income, that is \$1 of capital gains receipts substitutes for  $(1-g)(1-t)$  of ordinary receipts in its effect on profit after tax. Since a breeding herd produces about half heifer and half bull calves, a rancher cannot shift more than half of his receipts into a capital gains computation unless he also raises bulls for use in his own operation. Thus, a rancher who is in the 70 percent marginal tax bracket, and who has \$100,000 of receipts and expenses, will show an after-tax profit of \$8,750 if he can shift a quarter of his receipts from an ordinary to a capital gains

classification. His after-tax profit will be \$17,500 if he can fully shift receipts so that he shows a \$50,000 ordinary loss. He would need \$155,000 of ordinary receipts, given expenses of \$100,000, to show an after-tax profit of \$17,500.<sup>7</sup>

Empirical evidence is needed to determine the extent to which the age-tax considerations actually shorten the serviceable life of breeding livestock, and to determine whether tax loss considerations actually alter conventional practices in other farm commodities.

*Structural effects.* Tax-loss farming appears to have had several direct effects on the organization of agriculture (3; 13, p. 45-48).<sup>8</sup> nonfarm investors in beef breeding herds or orchards usually use an investment management company, which in turn hires a farm manager. The nonfarm investor may invest in a cow herd and make expenditures for its upkeep only, or he may also invest in grazing and cropland (25). Where the investment is only in the breeding herd, farmers and ranchers usually contract to care for the animals, but the major decisions are made by the investment company's farm manager. It is often contended that this decisionmaking arrangement reduces the farmer or rancher to a hired laborer and eliminates his entrepreneurial role. The farmer may make a higher return from contract production than from owned cattle. This arrangement is similar to broiler production under contract where growers are required for labor but not managerial or entrepreneurial roles. Where the nonfarm investor also purchases farm real estate for his herd, farm and ranch owners and operators may be displaced. Some of them will find employment as hired farm laborers, supervisors, or managers. The remaining farm operators and ranchers will find increased competition for farm resources, competition which they may not be able to meet solely from their agricultural derived income.

Structural changes in fruit and nut production attributable to "tax loss" production are similar to changes in cattle breeding. However, nonfarm investors in fruit and nut ventures generally purchase or obtain long-term leases on the necessary farm real estate to carry out their ventures and thereby eliminate the former producer (4). New fruit and nut "nonfarm" investors often select farm real estate that has been used for other purposes such as crops, forage, or livestock raising. Also, they often try to select locations that have potential for future use in urban development or highways. Successful selection of such sites not only gives them the income tax advantages from grove or orchard investment, but they may be able to sell the real estate a few years later at much higher prices. The appreciation qualifies for capital gains treatment.

Successful large-scale farm producers who are in a high income tax bracket also seek additional farming investments which provide tax shelters and in the process, often displace smaller family labor size units. High marginal tax rates encourage expansion through the use of borrowed funds, and these large-scale farmers benefit from the high financial leverage and the deduction of the subsequent interest costs. They also take advantage of land clearing or soil conservation expenditures which are currently tax-deductible expense items, though the amount allowed annually is limited (16, p. 27-28; 18, 36).

Current farm income tax provisions may also provide incentives for vertical integration or for conglomerate structures to enter or form within agriculture to achieve the benefits of differential income tax treatment. Apparently, one attraction for vertical integration in agriculture may be the possibility of accumulating profits at different levels and transferring them to the farm level, where they can be converted in whole or part to capital gains (27, p. 13-16).

Dean and Carter argued over a decade ago that the inclusion of Federal income taxes drastically changes the economies-of-scale curves facing individual owner-operators on highly commercialized cash crop farms in the Imperial Valley of California (8). They concluded that, as the equity percentage is reduced, the average cost curve after Federal income taxes shifts to a lower position and net returns to management increase, that is, an individual who reaches a given level of output with as little owned capital as possible has a cost advantage. Since large-scale farm units and nonfarm investors have borrowed more money, it may be inferred that the marginal tax rate structure does influence the size of firms in agricultural production and increases pressure for farm firm expansion (18).

There has been increasing farm size in the farming area that Dean and Carter studied. It is not clear, however, whether the tax provisions are largely responsible for the increased farm size or are simply one of several factors pushing in that direction. More recently, Carman has updated their results (4). Harl, on the other hand, argued that the legal and tax structure used in agriculture does not discriminate systematically against small-scale farmers and for large-scale firms in agricultural production (15, 16). There are a number of income tax variables where the smaller scale farmer qualifies for special treatment and escapes limitations imposed directly or indirectly upon large-scale firms (19, 20). The resolution of these apparently conflicting positions will require further conceptualization and empirical verification.

## Federal Income Taxes and Agricultural Policy

Federal income taxes could be used to assist in meeting agricultural and food system policy objectives. However, agricultural policy objectives are seldom formulated to suggest a specific tax policy. For instance, an agricultural policy objective may be to preserve and strengthen the family farm. Such an objective does not indicate whether the Internal Revenue Code might be amended to encourage nonfarm investors to own beef cows that family farmers would care for, or to encourage nonfarm investors to provide machine services for family farmers. Such concerns have generally not been considered in developing agricultural policy since tax legislation is made by different Cabinet-level departments and congressional committees.

However, Congress may be reluctant to approve new tax-induced incentives for agriculture. The general argument against such incentives is that an income tax policy should be investment neutral, and that subsidies should be in the form of direct Federal payments and thereby subject to direct budgetary control of Congress. The important unresolved issue in congressional deliberations on the 1969 Tax Reform Act revolved around the question of providing differential income tax treatment for the agricultural sector (32, 39). Even though methods to assist in achieving agricultural policy objectives outside of direct agricultural programs are not likely to be adopted in the near future, agricultural economists can make substantial contributions to public policy by focusing on the key areas that have been discussed. The Treasury Department does not have the necessary expertise in agricultural economics and is not likely to obtain the expertise to do the necessary research.

## Concluding Observations

The term "tax shelter" has been used to describe an investment which produces tax losses which are used to shield income that would otherwise be subject to tax. The tax losses produced by such investments do not necessarily correspond to economic losses. The tax shelter can result in a deferral of tax which approaches exemption as the period of deferral lengthens. In addition, tax shelters may involve conversion of ordinary income into capital gains when the economically excess deductions are later "recaptured" (taxed at preferential long term capital gains rates).

*Implications.* Because the tax shelter mechanism results in a reduction in the effective rate of tax on income from investment in the tax shelter, presumably investors respond by reallocating their limited investment funds. Economic theory suggests they will do

this until their after-tax rate of return on investments in tax shelters is the same as the after-tax rate of return on alternative investments of equal risk which do not receive a tax subsidy (30).<sup>9</sup>

If after-tax rates of return tend to be equalized, then the important economic question becomes one of determining how much investment must flow into the tax-favored industry to equalize after-tax rates of return. Tax losses reported on tax returns strongly suggest that tax-induced investments in agriculture run into billions of dollars. Investment flows of these magnitudes can clearly be expected to have some effect on farm prices and incomes and on consumer food prices. Empirical evidence regarding how much of an effect is almost entirely nonexistent.

It has been suggested that farmers were given preferential treatment because they were believed to be incapable of complying with accounting methods required of other businesses. It has also been suggested that accounting principles are not well enough developed to cope with livestock accounting. Leaders in the livestock breeding industry argue that their industry could not exist without the present special income tax concessions, since the rates of returns are very low and the capital requirements very high. Whether these contentions are true today is unknown. Directly identifiable farm program subsidies have existed for several farm commodities. The subsidies are subject to at least a modicum of budgetary restraint. If, in fact, the U.S. beef industry cannot remain viable without a subsidy, administrative considerations suggest that the subsidy should be identified and be made subject to direct public budgetary restraint. The chairman of one cattle management firm, however, makes a strong case for the indirect subsidy (24, p. 222).

Unlike the cattle breeding industry, which seeks to continue cash accounting, the egg industry has expressed interest in switching to accrual accounting. The egg industry contends that cash accounting contributes to wide variations in annual egg production and consequently to average higher egg prices to consumers (39, p. 26). Once again, empirical verification is lacking. Given the lack of verification, the industry is likely to continue to push for and possibly obtain something that may not produce the desired results for either the industry or the public.

Current income tax provisions affect not only nonfarm investors who invest in agriculture, but also bona fide farmers who receive most of their income from farming. Income tax provisions can have a direct effect on farm firm structure through influencing the decisionmaking process of bona fide farmers and the way they accumulate, allocate, and dispose of their

wealth (19). The provisions can also influence the structure and policies of other firms that deal with agricultural production firms.

*A start on research.* In our search of literature we found an almost bare cupboard of statistical treatments of the effects of the current income tax code and regulations on the cost of agricultural inputs, product prices, income, the structure of agriculture, and consumer prices. Most of the literature consists of descriptions of the code and regulations, ways in which farmers can use tax provisions to their advantage, congressional testimony of special interest groups, and general income tax books and references.

Given the apparent size of the tax subsidy, we suggest that more analytical research resources and primary data collection resources can profitably be used. No data are specifically collected on an ongoing basis for analysis of the issues that we have raised and data collected for other purposes do not generally have direct application. However, simulation studies similar to the Harrison and Woods study could be made in large part from secondary farm expense and income data for tax-incentive investing in cattle feeding, swine breeding and feeding, and nonfarm investing in orchards and nut groves, among others. The conflicting results of Dean and Carter versus Harl also might be resolved with the use of existing secondary data.

To answer the questions posed by the Treasury Department and the congressional tax-writing committees, however, would require large outlays for primary data collection. To analyze the effects of converting all farms to accrual-basis accounting would require interviews with producers of various sizes and types of operations (single versus multiple enterprises and dry lot versus range care of beef cows) who do and do not keep accrual-basis records that would be acceptable for Internal Revenue reporting purposes. A useful place to start such a study may be with farm record projects of the land grant universities, commercial banks, or the retail outlets of the Farm Credit System that keep records and provide analysis for farmers.

Likewise, to determine the dollar amount of tax-induced investment and pertinent characteristics of the owners of beef breeding herds, feeder cattle, orchards and nut groves will require large-scale surveys. If large-scale surveys do not produce the desired degree of detail, it may be necessary to use selected sample surveys of firms that arrange and manage herds and groves for absentee owners as well as direct interviews with absentee owners.

Careful thought needs to be given to the specific kinds of data needed to analyze the effects of income tax variables on farm input costs, farm product prices,

structural influences, and consumer prices. The interest and assistance of accomplished economic and econometric model builders should be sought. Given the current state of the arts, it may not be feasible to determine the net influence of tax incentives on farm input prices such as land, fertilizer, and machines. Numerous other variables also affect the cost of these items. However, interviews with both full-time farm operators and with nonfarm investors with tax loss motives should provide good descriptive clues to the importance they give tax loss incentives when they bid on farm inputs.

Similar problems will be encountered in building economic and econometric models for farm income, structural impacts, and consumer prices. Availability and cost of money, the level of consumer incomes, worldwide demand, and many other variables influence farm income and consumer food prices, and with different weights during different time periods.

When technical competence and experience with building and analyzing results of applicable tax models have been developed, it may be possible to include income tax variables in aggregate agricultural supply response models. Tax loss variables could prove to be important in explaining the supply of agricultural production under various conditions, in combination with more traditional variables such as direct farm costs and projected product prices.

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## Notes

<sup>1</sup>The terms tax incentive, tax shelter, tax profit, tax loss farming investment, and expensing are used interchangeably in this paper. They refer to incentives to invest in agriculture as a result of the current income tax code and regulations. Tax shelters probably serve to sweeten the incentives but probably are seldom the only variable that nonfarm investors use to select agriculture. Considerable nonfarm capital has apparently entered agriculture, not necessarily in search of Federal income tax shelters. Such money may be the predominant source of funding for the production of some agricultural commodities.

Tax shelters are available in other sectors of the U.S. economy but the arguments for such incentives in other economic sectors compared with tax-induced investments in agricultural production are beyond the scope of this paper. For a discussion of what a Federal income tax system should accomplish and distortions that a tax system can create, see (6, 11, 12, 14, 26).

<sup>2</sup>One of the better current discussions of alternative accounting methods available to farmers is developed by O'Byrne (23). It is obvious from his discussion that taxes are the primary consideration in the choice of farm accounting methods rather than the lack of ability to use methods other than the cash method.

<sup>3</sup>The 1969 Tax Reform Act attempted to recapture some farm losses. Taxpayers with nonfarm adjusted gross income (AGI) over \$50,000 are required to place the excess of their farm losses over \$25,000 into a special excess deduction (EDA) account. Gain on the subsequent sale of farm property is treated as ordinary income to the extent of EDA balances. EDA is reduced by farm income in a subsequent year and EDA balances are also reduced to the extent that they are used to offset capital gains on the sale of farm property. The Act also requires that taxpayers with substantial amounts of otherwise tax-free income pay a minimum tax on at least a portion of the income. For example, after deduction of a \$30,000 exemption and after deduction of the taxpayer's regular Federal income tax, the remainder is taxed on a 10-percent rate (39, p. 4). Thus, the tax profit shown in the example may not be \$75,000, depending on

the nature and magnitude of the taxpayer's other income and expenses over a period of several years.

<sup>4</sup>Some of the money may be obtained, however, from traditional agricultural lending sources such as country banks, the Farm Credit Administration, and agricultural departments of life insurance companies, since nonfarm investors often borrow much of the money they invest in agricultural production.

<sup>5</sup>Some types of investments in agriculture, such as cattle feeding, provide an annual or more frequent turnover of the investment. Other types, such as beef breeding herds and orchards, may require outlays for 2 or more years before the product is sold. Since taxpayers' incomes fluctuate and there are numerous agricultural and nonagricultural tax shelter investment opportunities, the same taxpayers do not necessarily reinvest in agriculture. Extensive work is needed to refine the estimate of the magnitude of nonfarm investments in agriculture. Indications from farm management records are that an investment of \$4 to \$7 is required for \$1 of tax loss—an assumption used to arrive at the above figures.

<sup>6</sup>The provision does not apply if an individual or firm is in the business of raising or selling breeding stock.

<sup>7</sup>If \$25,000 of the \$100,000 of ranch income is considered capital gain the tax computations are as follows:

(1) \$100,000 of expenses minus \$75,000 of ordinary income equals a net (tax) loss of \$25,000. As the \$25,000 loss can be deducted against other ordinary income the actual cost to the taxpayer is \$7,500 (\$25,000 times 30 percent). The remainder (70 percent of \$25,000) represents the tax he would have paid on the \$25,000 of other income but for the offsetting deduction.

(2) The \$25,000 capital gain is subject to the 35-percent capital gains tax rate resulting in an after-capital-gains tax profit of \$16,250.

(3) The new result of the two-step tax calculation leaves the taxpayer a net profit after taxes of \$8,750 (\$16,250 minus \$7,500).

Following the calculations above, the \$50,000 ordinary loss actually costs the taxpayer \$15,000 (30 percent of \$50,000). The capital gains tax on \$50,000 is \$17,500 (35 percent of \$50,000), leaving a net profit of \$17,500.

<sup>8</sup>The term "structure of agriculture" has come to imply several different concepts. It may refer to number and size of farm production units, assets, debts, net worth of farm production units, and volume of a commodity produced under contract or produced by vertically integrated production and marketing firms. Decisionmaking in agriculture a few years ago implied that decisions were made mostly by farm operators. Now, many hired management firms make on-the-form production decisions for their employers, and where there is low equity in a farm business, production decisions are often made jointly by the farm resource owner, the operator, and a financial institution.

<sup>9</sup>When after-tax rates of return are equalized, the before-tax rate of return for the tax shelter investment is less than that for nonsheltered investments. When other things are equal, this implies a misallocation of resources (28, 29, 30).