MICRO EFFECTS OF ALTERNATIVE INCOME TAX MANAGEMENT STRATEGIES ON NORTHWEST OKLAHOMA FARMS

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PREFACE

This study is concerned with an analysis of the effects on the funds available for reinvestment and growth of various income tax provisions. The primary objective is to determine the impact of selected income tax provisions on after tax income available for reinvestment and growth for dryland, cash grain and livestock farms in northwest Oklahoma. A computer-based farm simulation model is used in the analysis. Two representative farm situations with two different methods of growth under five combinations of selected income tax provisions are analyzed.

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CHAPTER I

INTRODUCTION

Over time, the size structure of Oklahoma farms has changed. There have been increases in the number of commercial farms of the larger sizes and decreases in the number of smaller firms. In 1959, the number of Class 1 and 2 farms totaled 5,420 units while in 1969 the number for the same two classes had increased to 10,479 units. The Class 3, 4 and 5 farms totaled 41,196 firms in 1969, down from 43,303 farms in 1959. In terms of physical size, those firms with 500 acres or more of land in farms accounted for 18,648 farming units in 1969, up from 16,896 farming units in 1959. The firms that fell into the 140 to 499 acre size range in 1969 totaled 26,246 farms, down from 27,715 farms in 1959 while firms with 139 acres or less amounted to 6,781 farming units in 1969, up from 4,112 farming units in 1959.[1] Much of the expansion of the larger firms can be attributed to efforts to attain the goals of (1) making the most annual profits, (2) maintaining or increasing the family living standard, (3) increasing the net worth of the business and (4) avoiding years of low profits or losses.[2]

As the firm size increases, one factor that may become an increasingly important restraint on growth is federal income taxes. Because of the progressive nature of the income tax, as taxable income rises, taxes rise. At the lower levels of taxable income, taxes are less important in percentage and absolute values than at the upper levels.

As taxable income increases, the amount liable to taxation increases, and the tax rate rises also. Thus, the amount of taxes paid becomes an increasingly important factor in determining the amount of income available for reinvestment and growth as the size of firm increases. For married taxpayers filing joint returns, the 1973 marginal rate varies from a low of 15 percent for a taxable income ranging from $1,000 to $2,000 to a maximum of 70 percent for taxable incomes exceeding $200,000.

Problem Setting

Many questions with respect to firm growth arise because of the increasing importance of income taxes for large scale, expanding farms. Some of the more important questions follow. How do income taxes affect the amount of after tax income available for family living, reinvestment and growth? What provisions are important in reducing income taxes paid? Can income taxes paid be minimized subject to maximizing growth? What are the short-run and long-run consequences for after tax income for family consumption and growth of these provisions? What strategy or grouping of provisions will reduce income taxes the greatest under what conditions? Does the production of some products have an advantage in lessened tax liability that other products lack? What are the consequences of using the alternative methods of depreciation over time? What are the advantages of investment credit, income averaging, loss carryback or carryover? The attainment of the following objectives will provide answers to these questions.

Objectives of the Study

The objectives of this study are:

(1) To develop a model to estimate taxable income and income taxes for a variety of farm firms under alternative provisions of the Federal Tax Law.

(2) To estimate the effects of selected federal tax provisions on federal income taxes payable by conducting simulation experiments.

(3) To estimate the effects on growth of selected tax provisions.

Study Area

Northwest Oklahoma (Figure 1) is the geographic area selected for this study. The dominant farm types are cash grain, livestock farm, and livestock ranch. These three types accounted for 83.2 percent of the commercial farms in the area in 1969. In 1959, the same farm types totaled 78.4 percent of the commercial farms. The relative importance of the farm types has changed. In 1959, the cash grain farms made up 44.3 percent of the commercial farms while the livestock farms and livestock ranches totaled 24.3 percent and 9.7 percent, respectively. However, in 1969, the livestock farm was the dominant farm type with 42.9 percent of the commercial farms, while the cash grain farm type has dropped to 25.7 percent. The livestock ranch type of farm had increased its share to 14.6 percent.

The class 1 and 2 farms have increased in importance while the class 3, 4, and 5 farms have declined. In 1959, the top two classes composed 13.0 percent of the commercial farms while in 1969 they increased their share to 22.9 percent, with both classes increasing almost equally. The remaining three classes of commercial farms saw their share

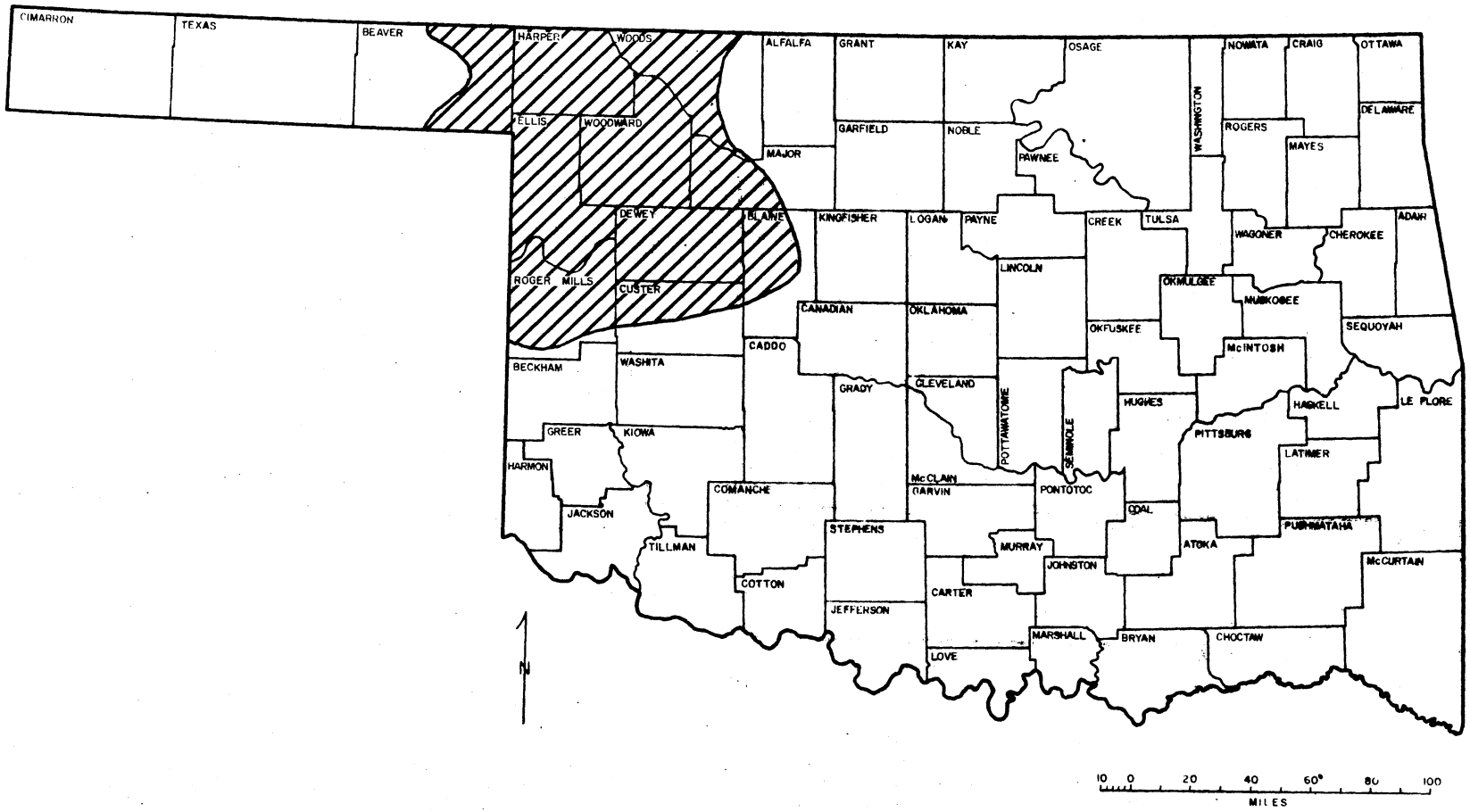

Figure 1. Map of Oklahoma Showing Area of Study

decline to 77.1 percent in 1969 as compared to 87.0 percent in 1959. The class 4 farms declined the most while class 5 farms declined the least.

In conjunction with increases in farm size, more capital intensive technology is used to reduce the amount of labor required per unit of output on large scale units. Larger and more physically efficient machinery complements are utilized to plow, plant, and harvest. Improved seed varieties and accompanying fertilizer-chemical packages are used to increase crop yields. Improved livestock management techniques have increased meat output and shortened the time necessary for production.

The farms of the study area operate in variable weather conditions resulting in relatively variable crop production.[3] The average annual rainfall is 23 inches and ranges from 10 to 42 inches. During the summer months, seventy percent of the annual precipitation occurs. High winds, a high potential evapotranspiration rate, coupled with intermediate drought are characteristic of the area. The U. S. Southern Great Plains Field Station, Woodward, Oklahoma, is near the center of the area.

The soils included in the study are the major ones in the northern Rolling Red Plains, the western High Plains, and Plains Border land resource areas in northwest Oklahoma. Reddish Chestnuts and Regosals are the dominant great soil groups of the area.

This area was selected for the study area because of the characteristics described above. The effects of income averaging and net operating loss carryback or carryover can be determined because of the income variability. Investment credit impacts can be analyzed due to the capital structure of the dominant farm types. The effects on

different farm types and growth methods can be examined because of the different type of farms in this area. Whether or not the production of some products has an income tax advantage can be determined because of the different farm types analyzed. Also, the impact of using alternative depreciation methods can be determined because of the firm's depreciable capital structures.

Organization of the Remainder of the Thesis

The remainder of the thesis is organized as follows: Chapter II discussed the economic framework underlying the analysis of the problem. Chapter III includes a discussion of the basis of federal income tax management strategies and the strategies analyzed. Chapter IV presents the simulation model used, data requirements of the model, and the experimental design. Chapter V presents the empirical results and conclusions of the study. Chapter VI is comprised of a summary of the study, an evaluation of the study, and suggestions for further research.

CHAPTER II

CONCEPTUAL FRAMEWORK

Economic theory usually ignores the effects of income taxes in selecting the most profitable level of inputs and outputs for the firm. Any mention of taxation typically refers to an analysis of the effects of imposing a tax per unit of output, or a lump sum tax on the firm to achieve certain resource allocation objectives of society.

Very little research has been devoted to the effects of alternative income tax management strategies on the most profitable level of inputs and outputs for the firm. (See Dean and Carter for an exception.) Some reasons for this might be that typical firm organizations in agriculture are of the single proprietorship or parternship types which pay no taxes themselves. In addition, many of the corporations producing agricultural products are of the Subchapter S type which are treated as a partnership. Also, income taxes may be such a small item that maximizing before tax income is essentially the same as maximizing after tax income.

These reasons may not be valid for a large commercial farm. For the large commercial farm, income taxes (because of the progressive tax rate) become a significant expense whose effect on reinvestment and growth cannot be ignored, but which must be managed. The purpose of managing income taxes is to maximize after tax income available for consumption, reinvestment, and growth.

The effects of different income tax provisions are felt not only in one time period, but in several time periods. Each regulation is either continuously in force or comes into play only when certain criteria are met. The tax rules have both a primary and a secondary impact. The secondary impact occurs in the following years as a consequence of the primary impact. The same rule taking effect in consecutive years would result in both primary and secondary impacts in the same year. For example, an investment credit is taken in a given year with the primary impact of a reduction in tax liability in that year. The consequences in the following years are a result of the tax reduction in the year the investment credit was taken. The income that is not paid out in the form of income taxes is invested and yields a return which is taxable. Over time, return on the amount originally not paid as taxes compounds, increasing taxable income. Baumol's working definition of economic dynamics is "the study of economic phonomena in relation to preceding and succeeding events."[2] It is clear that the study of income taxes fits Baumol's definition and therefore should be analyzed in a dynamic framework.

Figure 2 illustrates the total revenue and total cost curves of a firm in perfect competition over time. The plane $R_1R_2R_3R_4$ is the total revenue plane for the firm over time. The total costs required to generate this revenue are represented by the surface $C_1C_2C_3C_4$. The difference between the two surfaces is the net revenue at each point in time. If a cross section of the diagram perpendicular to the time axis is taken, the traditional static total revenue and total cost curves result. In this manner, it can be seen that the static method of analysis can be used to examine the revenue-cost relationship at a point in

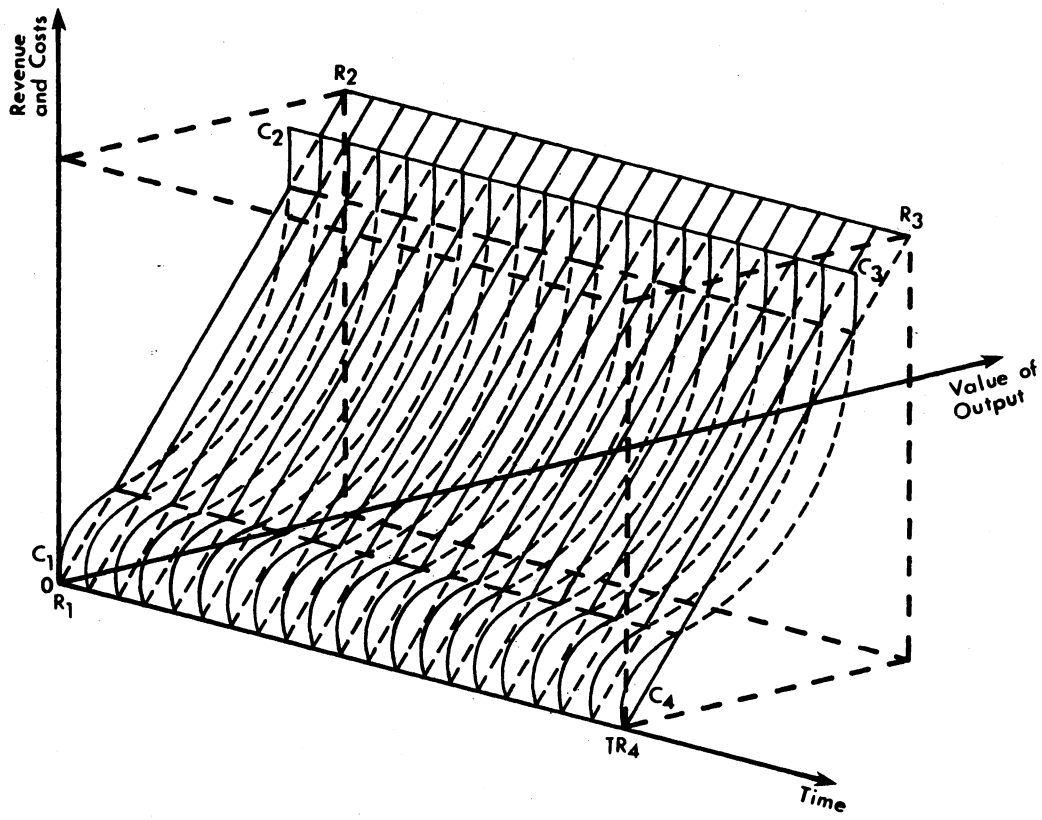

Figure 2. Total Cost and Total Revenue Over Time

time though not excluding the influence of time. The dynamic method of analysis considers the time element in the study of the problem.

The analysis of the effects of incorporating income taxes as a cost of production on profit maximization over time is difficult. By incorporation income taxes as a cost of production in a static framework, the effect can be determined at one point in time. The effects over time can be studied by joining the points in time sequentially.

The initial part of this chapter develops the profit maximization conditions for a firm under static conditions. The second section evaluates alternative models that can be used to analyze tax management strategies under dynamic conditions.

A Static Framework

The problem is one of determining the maximum returns to the taxpayer-owner-manager combination. In this situation, income taxes may be treated as a cost of production, and included in the cost relations defined for the firm.[3]

Traditionally, cost curves are directly related to the production function.

$$Q_A = f(Q_X, Q_Y)$$

where

Q_A = quantity of product A produced; and

Q_X, Q_Y = quantities of inputs X and Y.

The quantity produced of the output item A is a function of the input items X and Y. The total cost of producing any level of A at a point in time is the sum of the amounts of inputs used times their respective prices,

$$TC_{Ai} = Q_{Xi}P_{Xi} + Q_{Yi}P_{Yi} \quad (2)$$

where

TC_{Ai} = total cost of producing any level of A in time period i;

Q_{Xi} = quantity of input X used to produce A in time period i;

P_{Xi} = price of input X at quantity Q_X in time period i;

Q_{Yi} = quantity of input Y used to produce A in time period i;

and

P_{Yi} = price of input Y at quantity Q_Y in time period i.

However, this does not include an income tax charge. Income or total revenue in time period i is defined as the quantity of output sold times the price of the output.

$$TR_{Ai} = Q_{Ai}P_{Ai} \quad (3)$$

where

TR_{Ai} = total revenue in time period i;

Q_{Ai} = quantity of output sold in time period i; and,

P_{Ai} = price of output sold in time period i.

Income taxes in a time period are a function of taxable income which is loosely the difference between income and expense for that time period.

$$TI_i = TR_{Ai} - TC_{Ai}, \quad (4)$$

$$TI_i > 0$$

where

TI_i = taxable income in time period i.

$$YT_i = f(TI_i) \quad (5)$$

$$= f(TR_{Ai} - TC_{Ai}) \quad (6)$$

where

YT_i = income taxes in time period i.

Traditional costs are a function of prices and quantities of inputs and the level of output. They are typically expressed as a function of output. While income taxes can be considered a cost of production to the individual, their origin differs from that of a traditional cost of production to the firm. Income taxes are a function of prices and quantities of both inputs and outputs, rather than inputs alone. Thus, cost relationships including income taxes can be expressed as a function of total revenue.

Total costs including income taxes (TC^*_{Ai}) can be defined as in the following equation:

$$TC^*_{Ai} = TC_{Ai} + [R_{1i}(TI_{Li}) + R_{2i}(TI_i - TI_{Li})] \qquad (7)$$

$$0 > R_{1i}, R_{2i} > 1$$

where

TC^*_{Ai} = total costs including income taxes in time period i;

TI_{Li} = lower limit of each range of taxable income associated with a marginal tax rate in time period i;

R_{1i} = tax rate for lower limit of each range of taxable income in time period i; and

R_{2i} = tax rate for taxable income within each range in time period i.

Figure 3 illustrates the theoretical relationship between total revenue, total cost, and total cost including income taxes. At the point of greatest taxable income, income taxes are also the greatest. As taxable income rises, income taxes rise; and as taxable income falls, income taxes fall.

Average total costs including income taxes per dollar of revenue can be defined as:

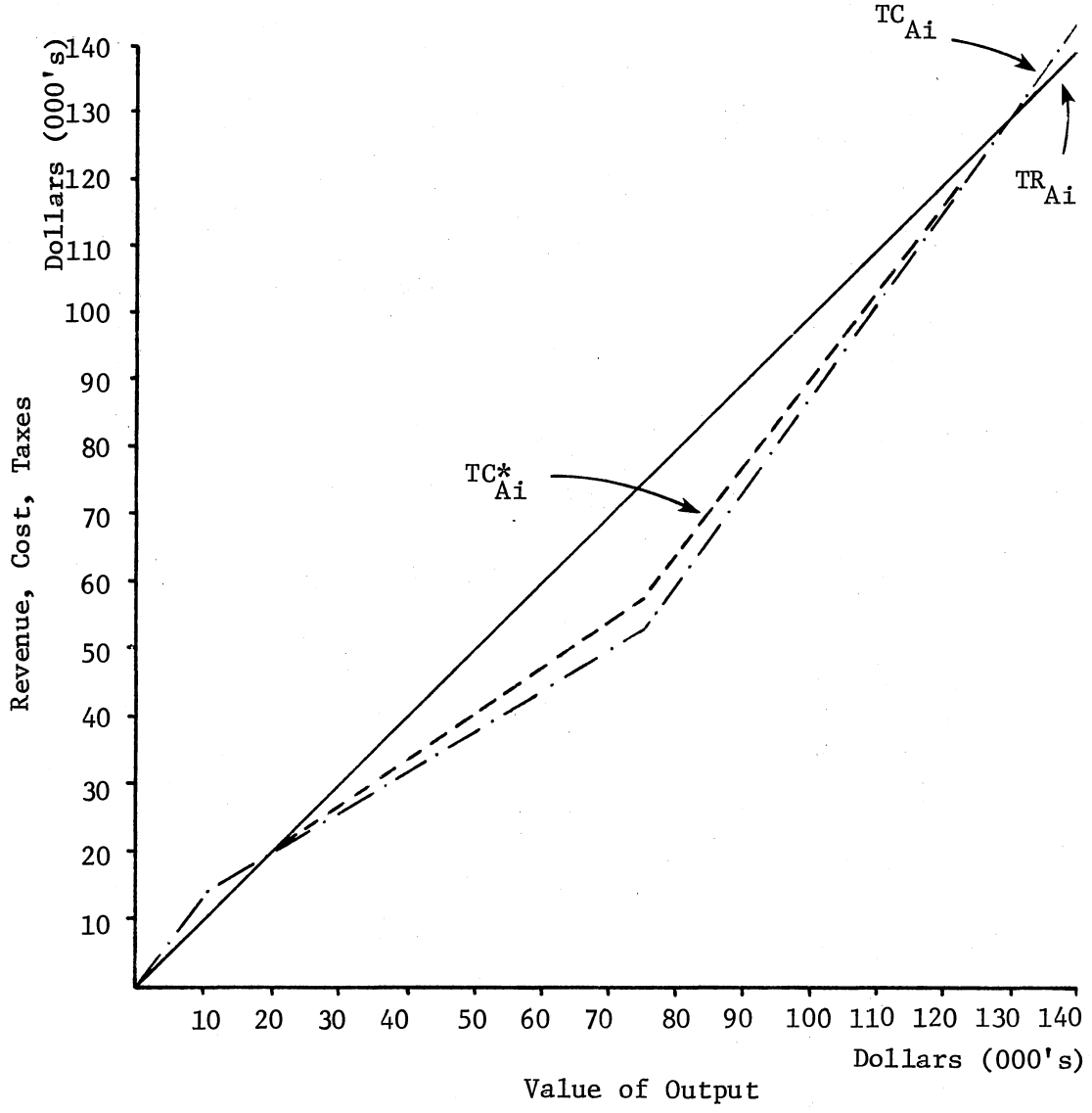

Figure 3. Total Cost and Total Revenue Curves at a Point in Time

$$ATC^*_{Ai} = \frac{TC_{Ai}}{TR_{Ai}} + \frac{R_{1i}(TI_{Li}) + R_{2i}(TI_i - TI_{Li})}{TR_{Ai}} \tag{8}$$

It can be seen that by including income taxes in the costs of production that the average cost per dollar of revenue rises above what it would be without including income taxes. Figure 4 shows the relationship between average total revenue, average total cost, average total cost including income taxes, marginal cost, and marginal cost including income taxes.

The marginal cost including income taxes can be defined as

$$MC^*_{Ai} = \frac{TC^*_{Ai}}{TR_{Ai}} + \frac{[R_{1i}(TI_{Li}) + R_{2i}(TI_i - TI_{Li})]}{TR_{Ai}} \tag{9}$$

where

MC^*_{Ai} = marginal cost including income taxes in producing product A in time period i.

The marginal cost including income taxes can be seen to be greater than marginal cost not including income taxes wherever taxable income exists. At points where there is no taxable income, the marginal cost including and marginal cost not including income taxes are the same.

The point of profit maximization may also be affected by the inclusion of income taxes as a cost of production. Total profit is equal to total revenue less total cost including income taxes.

$$\pi^*_i = TR_{Ai} - TC^*_{Ai}, \tag{10}$$

where

π^*_i = total profit in time period i.

At each point where taxable income is positive, total profits taking into consideration income taxes are less than total profits without considering income taxes.

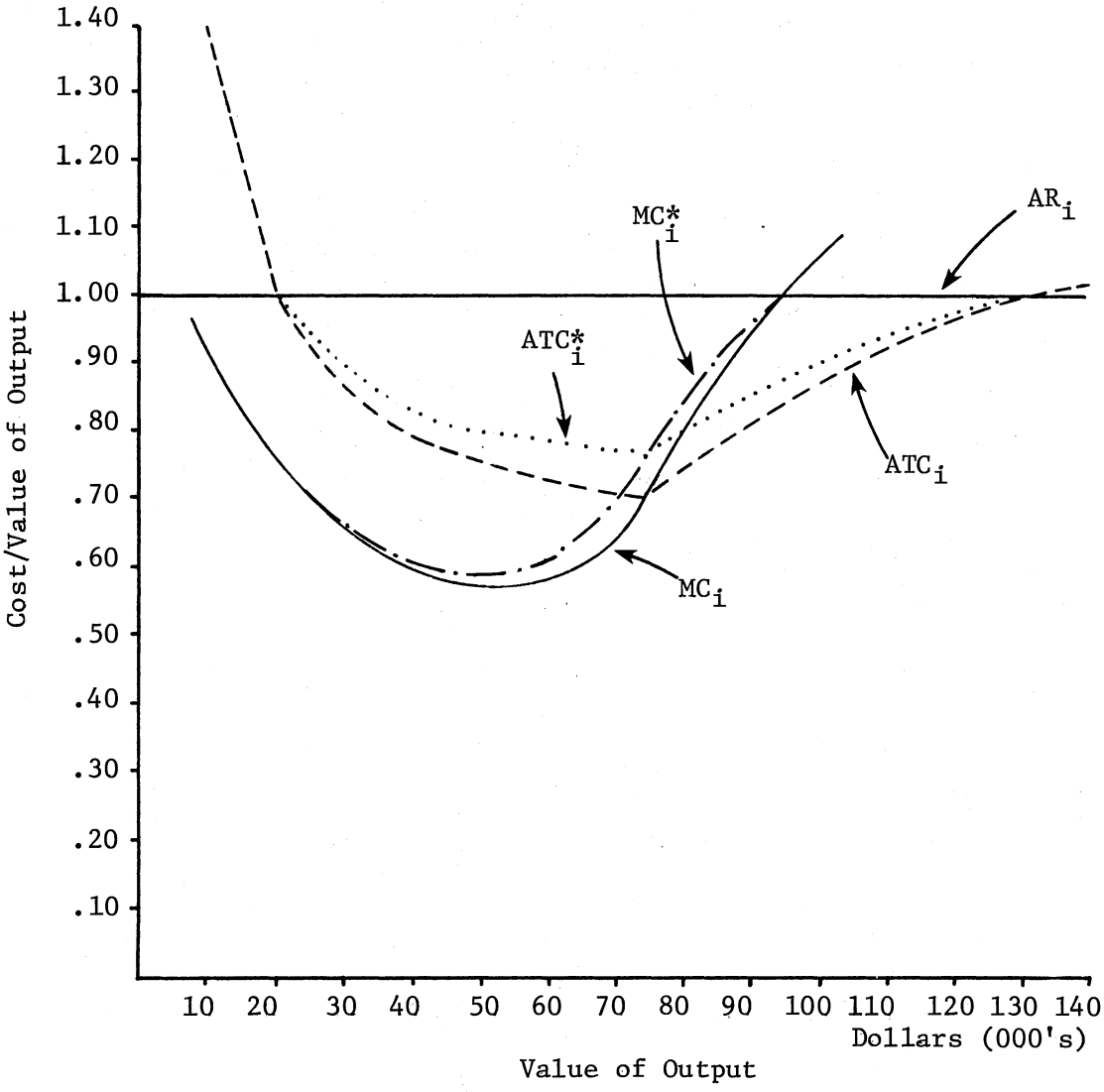

Figure 4. Average Revenue and Average Cost Curves at a Point in Time

Toward a Dynamic Framework

The analysis of different income tax management strategies essentially involves the comparison of the effects of these strategies on the costs and revenues of a representative firm over time. The above discussion of the action of cost curves with and without consideration of income taxes illustrates the effects of taxes at a point in time. However, the effects of the income tax strategies are important over many periods of time. While the static analysis is important, it is not sufficient to analyze the effects over several time periods. Also, the analysis must be done in a sequential manner, for what has happened in the past affects the present as well as the future. These considerations indicate that the analysis must be made within a dynamic framework.

The various income tax provisions which affect income taxes paid vary not only in their occurrence but in their effects over time. The timing and magnitude of the effects of some of the provisions are dependent upon the firm's net cash income generating ability. Other provisions are dependent upon changes in the capital structure to determine their impact. Also, the effects are both primary and secondary. Often the secondary effects of the different provisions interact and result in unexpected occurrences over time. By grouping the different provisions into strategies, the consequences of the primary and secondary effects over time can be determined.

The problem now arises of how to compare the various strategies to select the "best." One method is to compare the series of results of each strategy time period by time period with others. In this way, their relative attributes can be seen. However, a criterion is needed to determine if strategy A is "better" than strategy B when one is not

superior to the other in all time periods. Hicks[4] and Baumol[5] suggest the use of discounting to the present and then comparing the discounted present values. The formula for the discounted present value of one return for one time period in the future is:

$$D.P.V. = \frac{R}{(1+i)^n} \tag{11}$$

where

D.P.V. = discounted present value;

R = returns for the time period;

i = discount rate; and

n = number of time periods to be discounted.

Expanding (11) to consider several time periods, a stream of returns can be discounted using the following formula:

$$D.P.V. = R_0 + \frac{R_1}{(1+i)} + \frac{R_2}{(1+i)^2} + \ldots + \frac{R_n}{(1+i)^n};$$

where

R_0 = returns for the current time period;

R_1 = returns for the first time period; and

R_n = returns for the nth time period.

Since the comparison is between the different income tax strategies, costs and income taxes need to be removed. The formula for this case can be denoted as follows:

$$N.D.P.V. = (R_o - C_o) + \frac{R_1 - C}{(1+i)} + \frac{R_2 - C_2}{(1+i)^2} + \ldots + \frac{(R_n - C_n),}{(1+i)^n} \tag{12}$$

where

C_ℓ takes into consideration costs and income taxes for the ℓth time period ($\ell = 1,2,\ldots n$), and

N.D.P.D. = net discounted present value.

A problem when using the discounting technique is the determination of the discount rate, i. According to Baumol, "the discount rate is just a measure of what we lose by receiving our money later rather than now." If a perfect capital market were to exist, where lending and borrowing occurred at the same market price, interest and discount rates would be the same.[6] However, this is not the case, borrowers normally can get only limited amounts of funds and capital providers pay out less for deposits than are required for loans. For farmers and ranchers local banks or savings and loans institutions would seem to offer the most logical opportunity for investment of funds if they were not to be put back into the firm. In this manner they can be used as collateral as well as providing a source of revenue to the holders. These deposits could take the form of Certificates of Deposit (CD's).

The effects of income taxes on the cost and returns structure of an owner-operator enterprise has been demonstrated. In addition, a method of comparing the differences between the strategies was developed. Now the method of determining the effects of these tax management strategies on an operating unit must be determined.

Analytical Methodology

There are many analytical techniques or methods available to the researcher. Each of these techniques has characteristics which best fit into a particular type of problem solving area.

Before starting to examine the various techniques available, the important characteristics of the technique to be used must be defined. The model chosen must be able to:

(1) account for the passage of calendar time,

(2) account for the cash-flow of the firm,

(3) provide enough information so that a tax return can be calculated,

(4) allow for different methods of depreciation, and

(5) allow for transition of ordinary income to capital gains income.

The following discussion examines the various techniques available and determines their compatibility with the above criteria.

Budgeting

The budgeting technique can be, and has been used to cover a wide range of topics. These can range from the simplest project or partial budget to a complete farm analysis over time. This technique could be used to analyze the management strategies under study. However, while budgeting could be used, the amount of hand calculations necessary to do the job would be quite large. This is especially true if items such as stochastic yields, and correlated prices are included and the analysis is to cover a number of different strategies over a long period with many replications. Therefore, while budgeting is a technique which could be used, the data handling problems preclude its usage.

Mathematical Programming

This method of analysis has had wide usage in the past because of its ability to handle a vast amount of data and to arrive at an optimal solution. However, these models have problems with the use of stochastic prices and yields, and time. There are methods of getting around these

difficulties but they themselves are fraught with difficulties. In addition, the formulation of programming models to handle tax problems would be difficult, indeed. It could be done, but with much trouble. This leads to another technique, simulation.

Simulation

Naylor defines simulation as a technique which involves setting up a model of a real situation and then performing experiments on the model.[7] This opens up quite a large area that can be termed as simulation.

For the purposes of this study, simulation is termed a computer program representing the accounts of a farm firm. It is essentially an accounting model keeping track of the expenses and returns of a situation under the conditions to which it is subjected. These conditions are the characteristics of that situation. The degree of sophistication of the program is the only limit on what the model will do. However, as the degree of sophistication increases, the cost of using the model also increases in most cases, and the information necessary to represent reality increases. The only real limits on the use of simulation are the costs required for model development, validation and the analysis.

Because of the flexibility of simulation models over other research techniques in handling the tax management situations, it is felt this technique should be used. The specific simulator selected for use in this study is the general agricultural firm simulator.[8] This simulator is used at Oklahoma State University to a considerable extent. It can be modified to complete the analysis of alternative tax management

strategies. Although other simulators could have been used, the general agricultural firm simulator was chosen, because of the more wide-spread experience with this program.

FOOTNOTES

[1]G. W. Dean and H. O. Carter, "Some Effects of Income Taxes on Large Scale Agriculture," Journal of Farm Economics, Vol. 44 (1962), pp. 754-738.

[2]W. J. Baumol, Economic Dynamics (2nd ed., New York, 1959), p. 4.

[3]Dean and Carter, pp. 754-756.

[4]J. R. Hicks, Value and Capital (2nd ed., London, 1946).

[5]W. J. Baumol, Economic Theory and Operations Analysis (2nd ed., Englewood Cliffs, 1965), pp. 431-471.

[6]Ibid.

[7]T. H. Naylor, et al., Computer Simulation Techniques (New York, 1966), p.2.

[8]V. R. Eidman, ed., Agricultural Production Systems Simulation (Stillwater, 1971).

CHAPTER III

BASIS OF FEDERAL INCOME TAX MANAGEMENT STRATEGIES

The basic purpose of federal income tax management is to use the available provisions of the Federal Tax Code to reduce the tax liability. The income tax liability is based on taxable income. The level of taxable income determines the tax rate as well as being the quantity to which the rate is applied. In general, if the amount of taxable income is "large", the tax liability will be "large" due to both a "high" tax rate and a "high" level of taxable income. Therefore, if the amount of income taxes paid is to be managed, taxable income must be managed.

Gross income less deductions from gross income less itemized non-business expenses or the standard deduction less exemptions equals taxable income (Figure 5). A better understanding of the factors which influence taxable income is attained by studying Form 1040 and the various schedules and attachments which support it. By examining those items which influence taxable income, strategies to manage the amount of taxes paid can be determined. Having ascertained how taxes paid can be managed, methods of maximizing profits including income taxes as a cost of production can be found. The following sections of this chapter discuss accounting methods and the federal income tax calculation procedure, note factors which can be managed, and list the tax management strategies to be studied.

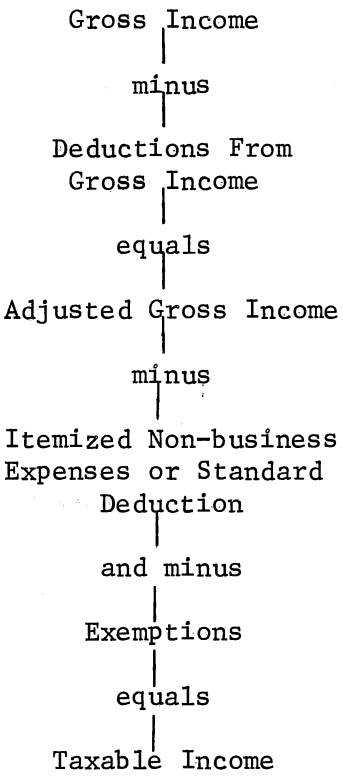

Figure 5. Calculation of Taxable Income

Accounting Methods

Taxable income must be computed for a fixed accounting period and in accordance with a set of rules to determine time and manner in which income and deductions will be reported -- an accounting method. There are two commonly accepted accounting methods: (1) the cash basis, and (2) the accural basis. Under the rules of the cash method,

> all taxable income--whether received in cash or property--is included in income in the year it is actually or constructively received (emphasis added).[1]

Income is defined as being constructively received when it is credited to the taxpayer's account or unconditionally set apart for the taxpayer and may be drawn upon by him at anytime. With the cash method, farm business expenses are deductible only in the tax year in which they are paid. Also, inventories are not used under the cash method in determining income.

Under the accural method farm income is included in income for the year in which it was earned (emphasis added) regardless of the receipt of payment. Farm business expenses are deductible in the tax year in which they are incurred, whether-or-not they are paid. Inventories are utilized with the accural method to determine gross income.[2]

Farmers can use either of the two methods mentioned above or any other method that clearly reflects their income, including combinations of cash and accural methods.[3] Many farmers chose the cash method because it is easier to keep records with this method. But the principal advantage of the cash method is that incomes and expenses can be manipulated from tax year to tax year. Because inventories are not used to calculate income, deductions can be increased by purchasing for inventory. Like-

wise, income can be postponed by increasing the inventory of products. Or, if the product is sold by constructively receiving the income from this sale in the next tax year. Whereas with the accural method the increases and decreases in inventory are reflected in income. Therefore, it is easier to partially smooth or "farmer average" the flow of income and expenses over time.

Federal Income Tax Calculation Procedures

The federal income return FORM 1040 and its attendant schedules are used to report the income received and expenses paid during the tax year. Through an examination of these forms and the various laws and procedures pertinent to the management of income taxes, methods of controlling tax liability can be deduced.

Income is composed of the following: (1) wages, salaries, tips, and other employee compensation; (2) dividends less exclusions; (3) interest income; and (4) income other than wages, dividends, and interest. Much of commercial farm income will be reported under the general category - income other than wages, dividends, and interest. The following items: (1) business income, (2) net gain (or loss) from the sale or exchange of capital assets, (3) net gain (or loss) from the sale or exchange of capital items used in a business or trade, (4) pensions and annuties, rents and royalities, partnerships, estates or trusts, (5) farm income (or loss), (6) fully taxable pensions and annuties, (7) 50% of capital gain distributions, (8) state income tax refunds, (9) alimony, and (10) other income compose this catagory (see Figure 6). Within this category, only four items are of importance under most circumstances to farmers. They are: net gain (or loss) from the sale or exchange of capital assets;

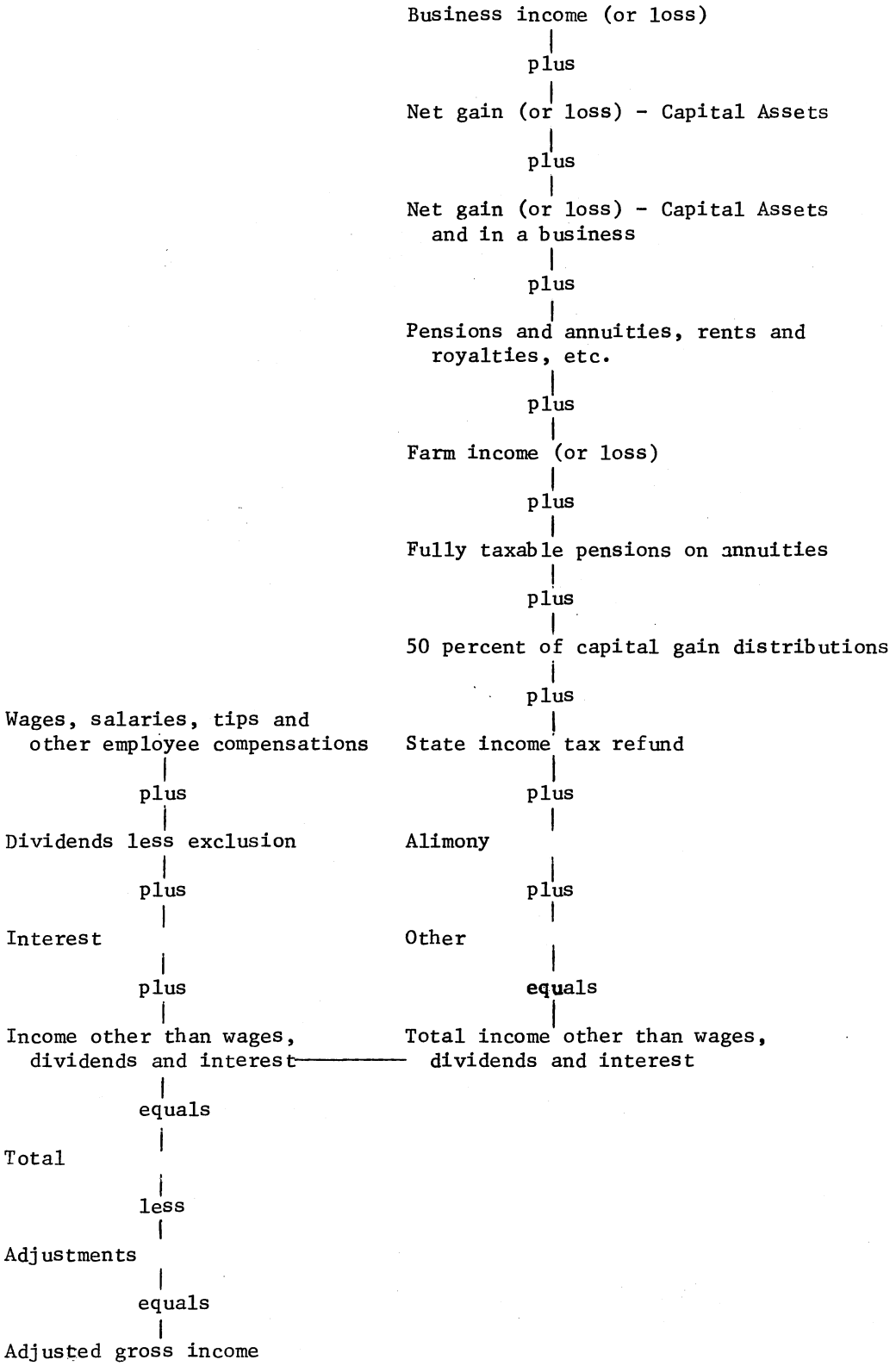

Figure 6. Calculation of Adjusted Gross Income

net gain (or loss) from the sale or exchange of capital items used in a business or trade; pensions and annuties, rents and royalities, partnerships, estates or trusts; and farm income (or loss).

Net Gain (or Loss) From the Sale or Exchange of Capital Assets

All property the taxpayer owns and uses for personal purposes, pleasure or investment is a capital asset.[4] All other assets are non-capital or ordinary assets. These items are discussed below.

The term "capital asset" means property (whether or not connected with a trade or business), but does not include:

(1) Property held primarily for sale to customers,

(2) Accounts or notes receivable,

(3) Depreciable property,

(4) Real property,

(5) A copy right, a literary, musical or artistic composition, a letter or memorandum,

(6) Certain short-term discount obligations of Federal, state, and municipal governments.[5]

The definition of "capital assets" excludes business real estate or any depreciable business property. The law does however contain a special provision for grouping gains and lossed from these properties. This provision is called Section 1231.[6]

To determine if Code Section 1231 applies, group all gains on Section 1231 items and separately group all losses on Section 1231 items. If the gains exceed the losses, each gain and each loss is treated as though it were derived from the sale of a long-term capital asset. If

the gains do not exceed the losses, each gain and loss is treated as though it was not derived from the sale of a capital asset.

Section 1245 property is defined as depreciable property which is either (1) personal property (tangible and intangible), or (2) other tangible property (not including a building or its structural components) used as an integral part of (a) manufacturing, (b) production, (c) extraction, or (d) the furnishing of transportation, communications, electrical energy, gas, water, or sewage disposal services.[7]

For taxable years after 1969, livestock is included as Sec. 1245 property. Post-1969 depreciation on draft, breeding, dairy and sporting livestock is recaptured as ordinary income. This is with regard to the sale of livestock which has been purchased. Livestock that is raised generally has no basis for depreciation, but to the extent that it does have a basis and is depreciated, it would be subject to recapture.[8]

Section 1250 property is property that is depreciable under Sec. 167 but is not subject to the recapture rule under Sec. 1245. This includes all intangible real property and all tangible real property except Sec. 1245 property.[9]

These sections of the Federal Income Tax Code are the basis of the calculations used in this study. All property is assumed to be Sec. 1231, Sec. 1245, or Sec. 1250 property. No "capital assets" as defined by the tax code are included in this study.

In the calculation of gains or losses, a sale value must be determined for sold assets. The sale price estimated approximates the "Blue Book" values for farm equipment.[10] Depending upon which method of depreciation is used and the length of ownership, the sale price may

be above, equal to, or felow the depreciated value giving rise to gains or losses.

The basis for each capital item is the purchase cost. No improvements are assumed to be made to these items. Therefore, the adjusted basis is the cost of the items less depreciation, both additional first year and regular (see Figure 7).

The difference between the sale price and the adjusted basis is termed gain or loss depending on which is greater. For personal property, if the sale price is greater than the purchase cost, this difference is termed "1231 gain" and is taxed as capital gains. The portion of the gain that is due to depreciation, i.e. the amount of depreciation is termed "1245 gain" and is taxed as ordinary income. If the sale price is below the adjusted basis, the difference is termed a "1231 loss" and is taxed as an ordinary loss.[11]

For depreciable real property, the procedure is a bit more complex. If a gain is made on depreciable real property, which was depreciated solely by the straight line method, it is termed "1231 gain" and is taxed as capital gains. If a gain is made on property that was depreciated by a method other than straight line and the depreciation exceeds that of straight line, part of the gain is treated as ordinary income. The amount of the gain treated as ordinary income is the amount by which the depreciation taken exceeds the depreciation that would have occurred using the straight line depreciated value, the difference between these two values is treated as "Section 1231" gain. The portion of this gain that is the difference between the straight line and the chosen method is taxed as ordinary income. If the sale price is less

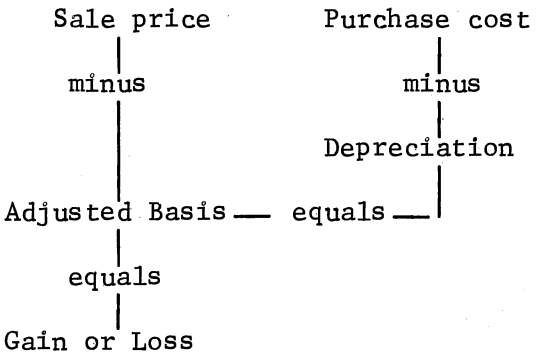

Figure 7. Calculation of Gains of Losses

than the depreciated value under the chosen method, the loss is handled as an ordinary loss.[12]

The ability to convert ordinary income to capital gains is unique to agriculture and a few other enterprises. A method to attain capital gains in agriculture is based upon the determination that if the cash method of record keeping is used and livestock is raised and held for draft, breeding, dairy or sporting purposes and that the cost of raising the livestock is deducted during the period it is raised, the basis of the livestock is zero.[13] If the basis is zero, no depreciation can be taken from it, and hence no part of the sale value of the livestock can be used to recapture the depreciation which is taxed as ordinary income, resulting in all of the sale value of the livestock being capital gains. Also, the costs of raising the livestock are deducted as an expense further reducing the amount of income that can be taxed.

Pensions and Annuities, Rents and Royalties, Partnerships, Estates or Trusts

The income stream from most farms and ranches may have some income from rents and royalties, and if the taxpayer is a partner in some activities, partnership income. It is doubtful if a very large amount of income is in the form of pension, annuities, estates or trusts. Because of the probably small amount of income generated under this heading, these sources of income are not considered for this study.

Farm Income (or Loss)

Farm income is basically receipts from the sale of livestock and

produce less production expenses and depreciation. If feeder cattle are purchased in one tax year and sold as fed cattle in the next tax year, the purchase cost is an expense in the year of the sale. The total amount received from the sale of livestock or produce raised for sale is included in the total receipts. Expenses incurred in the production of raised livestock and produce as well as the expenses from increasing the value of a purchased item later resold for gain constitute the production expenses deducted from gross income. Depreciation is composed of additional first year depreciation, if any is taken, and regular depreciation (see Figure 8).

Factors to be Managed

Some of the factors which can be implemented in order to manage taxable income are: (1) depreciation, (2) sale of capital items used in a business or trade, (3) investment credit, (4) income averaging, and (5) net operating loss carryback and carryover. Depreciation and the sale of capital items are factors whose primary impact on taxable income is felt over a period of years. Once a depreciation method has been selected, it can be changed only by moving to a less rapid method. The sale of capital items used in the business involves a change of production method. Instead of the producer selling stockers, feeders or slaughter steers and heifers, he sells brood cows and steers or if the herd is of a high enough quality, breeding bulls and cows. This converts the income stream from one that is all ordinary income to one that is half capital gains and half ordinary income or all capital gains income. In addition, the expenses incurred in raising the

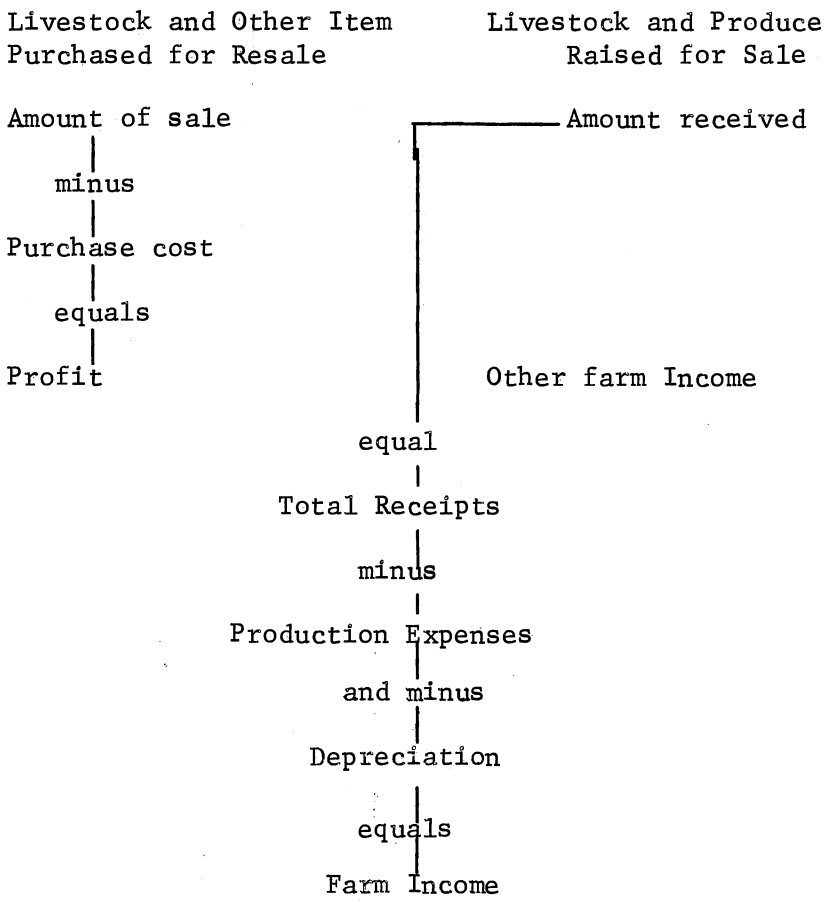

Figure 8. Calculation of Farm Income and Expenses

breeding stock are an ordinary expense which offsets ordinary income.

Investment credit, income averaging, and net operating loss carryback and carryover affect the primary tax liability based upon taxable income. These provisions allow the taxpayer to take advantage of situations that arise in any individual year. The primary impact of these provisions is in the year that circumstances trigger their implementation. The year capital items are purchased, if the various criteria are met, income taxes will be reduced. Likewise, any year during which the income tax liability is extraordinarily greater than the preceding four years, income averaging can lower the income tax bill for that year. If a net operating loss occurs for any time period, the loss can be carried back and/or forward reducing the liabilities for the years carried to, with the refund occurring in the year the loss took place. The secondary effects which result from the lower taxes paid occur over many time periods after the primary impact of each factor.

Management Strategies

A series of strategies to be analyzed were developed based upon the factors discussed above. The strategies are labeled and operationally explained on the following page. Also, reasons for the analysis of each strategy are given (see Table I).

1. Traditional. With this strategy straight line depreciation only is taken. No carryback or carryover of losses is undertaken. No additional first year depreciation or investment credit is taken. No attempt to convert ordinary income to capital gains is made. This strategy assumes no effort is made to manage federal income tax. The purpose of including

TABLE I

TAX MANAGEMENT STRATEGIES

Management Factors	Strategies				
	1	2	3	4	5
Additional first year depreciation		X	X		X
Straight line depreciation	X			X	
Sum-of-the-Years Digits Depreciation		X	X		X
Take Income as Long-term Capital Gains				X	X
Investment Credit			X		X
Loss Carryback or Carryover			X		X
Take Income as Ordinary Income	X	X	X		
Income Averaging			X		X

it is to create a base against which other strategies can be compared. In this way, the amounts that can be gained through the usage of the various other procedures can be determined.

2. Fast depreciation. Takes fastest depreciation method available. Also, takes additional first year depreciation. No investment credit is utilized. No attempt to convert ordinary income to capital gain is made. This strategy is included to determine the effect of fast depreciation without the use of other provisions.
3. Fast depreciation, income averaging, investment credit, loss carryback and forward. No attempt to convert ordinary income to capital gains is made with this alternative.

The purpose of this strategy is to investigate the effects of selected common provisions of the tax laws that do not require any change in operational procedures. These would be useful to those individuals who cannot or do not wish to change their production organization.

4. Traditional with conversion to capital gains. This strategy is the same as number 1 above except that there is an attempt to take advantage of the creation of capital gains through raising beef breeding stock.

This strategy is important in the organization of the farms in this area. Typically, some pastureland is included in the organization which is utilized by a beef herd. By raising breeding stock rather than stockers or feeders, ordinary income can be converted to capital gains income,

lowering the income tax liability.

5. Use all features available. This is an attempt to determine the minimum amount of income tax which will be needed to be paid.

These five tax management strategies encompass a number of different provisions of the tax procedures which are available to each tax paying farm or ranch owner-operator. These strategies were selected to gain the largest amount of useful data on the effect of these provisions on the taxes paid. The information gained from the simulation of these strategies will be useful in advising farmers and ranchers in these problems as well as giving researchers an insight into the effects of different tax provisions on profit maximization under a firm growth setting.

FOOTNOTES

[1]1973 Farmers Tax Guide, Internal Revenue Service Pub. 225 (Washington, 1973), p. 21.

[2]Ibid.

[3]1973 Tax Guide for Small Business, Internal Revenue Service Pub. 334 (Washington, 1973), p. 16.

[4]1973 Farmers Tax Guide, p. 38.

[5]1973 Tax Guide for Small Business, p. 152.

[6]1973 U. S. Master Tax Guide (Chicago, 1972), p. 328.

[7]Ibid., p. 342.

[8]Ibid.

[9]Ibid., p. 343.

[10]Wendell Bowers, Modern Concepts of Farm Machinery Management (Champaign, 1970).

[11]1973 Farmers Tax Guide, p. 38.

[12]Ibid.

[13]Ibid., p. 41.

CHAPTER IV

THE SIMULATION MODEL AND THE EXPERIMENTAL DESIGN

The basic simulation model utilized in this study was developed by R. F. Hutton and H. R. Hinman. The organization of this chapter is as follows: (1) the firm simulation model is explained, (2) the modifications necessary for this study are discussed, and (3) the experimental design followed is described.

The General Agricultural Firm Simulator

This simulation model is an accounting model of the farm business. It is not a decision model representing the management of the firm. "The basic intent in the design of the Agricultural Firm Simulator is to represent a farm business at the same level of generality as it is represented by the theory of the firm."[1]

The simulator attempts to separate data and structure.[2] The thrust of the Hutton and Hinman model is to consider as many factors which characterize a situation as possible as data, leaving the structure as general as possible. The greater the generality of the structure, the wider the applicability of the model. The data individualizes the situations. The structure provides the mechanism which accounts for the flows of input services into and of products out of the firm as described by the data set representing a situation.

The data is read into the simulator in the form of tables, eight in number. These tables and their contents are described below.

The first table consists of the input allowances (requirements) of each activity of the firm. The rows of this table represent input services and the columns represent the activities of the firm. The firm activities are divided into either livestock or crop activities. Each cell or intersection of row and column denotes the amount of input service required for the activity.

The second table contains average output per unit of activity and product price information. Each row of this table represents an output of the activities of the firm. The columns of the table are divided into two sets. The first set of columns denotes the activities of the firm. These columns are the same as those in Table 1. Each cell represents the amount of each output generated by each activity. The second set contains four price information columns. These columns provide information about the average price, yearly price trend, standard deviation in price, and limit to price variance, respectively, for each output of the firm.

Table 3 presents the characteristics of the input services. The rows represent input services used by the firm. The rows of Table 1 and Table 3 are the same. Each column denotes a different characteristic attributable to each of the various inputs. These characteristics are as follows: Rental Rate, Purchase Cost, Units of Service Provided, Total Life, Security Class, Price Trend, Minimum Units of Purchase, Minimum Units of Rental, Price Change Per Lot Purchased, Change in Rent Per Lot Rented, Property Tax on Real Estate, Insurance Cost Per Dollar Value, Hire Out Rate, Percent Rental Increase Per Year, Repair Cost,

Income Tax Rate, Production Variation, and Limit to Production Variation.

The fourth table gives the standard deviations in production. The rows represent the various outputs of the firm. Each column represents an activity in which the firm is engaged. The rows and columns of Table 4 are the same as the rows and first set of columns of Table 2. Each cell represents the standard deviation about the output reported in Table 2 of each activity.

Table 5 presents the limits to the number of standard deviations in production. The rows and columns are identical to those in Table 4. Each cell gives the number of standard deviations about the expected yield recorded in Table 2 that output will be allowed to vary. The data in tables 4 and 5 and the assumption of a normal distribution are used to represent yield uncertainty in the stochastic model. Table 5 denotes the limits to the variation and Table 4 the amount of variation per standard deviation.

Table 6 contains the inventory of capital assets. There are three columns in this table. The first column contains the Class of Input Service (Row Number of Table 1). Those rows which represent capital items are listed in column 1. The second column is entitled the Number of Units of Capital. The amount of each capital item listed in column 1 is presented in column 2. The third column is the Age of Capital Assets. This column gives the age of the asset listed in column 1 at the start of simulation. Assets with an infinite life (such as land or labor) do not have an age specified.

Table 7, Part I, gives the organization of the firm as defined by level of activity. There are two columns in Part I. The first column gives the column number in Table 1 of each activity of the firm.

Column 2 presents the number of units of each activity. The number of acres in the crop activities and the number of head in the livestock activities are given.

Table 7, Part II contains purchase or sale commands for the capital assets. Part II of Table 7 consists of three columns. The first column presents the row number in Table 1 of the capital item being bought or sold. Column two contains the number of units bought of the capital item identified by the row number given in column 1. Column three presents the number of units sold of the capital asset denoted by the row number in column 1.

Table 8 presents debts outstanding and credit terms by security type with miscellaneous data on various aspects of the situation. Information on the initial financial condition of the firm is contained in this table. In addition, the characteristics of up to three classes of debt, initial cash balance, and investment outside of the firm are presented. Information about the amount of debt, the interest rate, and the length of repayment period by debt class is included. The terms under which new borrowings can be made are presented. Miscellaneous data such as the number of income tax exemptions, mode of run (deterministic or stochastic), number of years to be simulated, are also included.

In addition, to the eight tables described above, there are 40 parameters or conditional constants read prior to the data cards. These parameters set up the structure of the tables, define the various files, and provide income tax data.[3]

Logic of the General Agricultural Firm Simulator

The model uses the previously described data and progresses

through six major logical steps in the simulation of a firm's yearly operations. These six major steps follow.

The first major step performs the capital management operations. In simulated time as well as in logic, this step occurs first. The operations performed are as follows. Debts are increased or decreased as indicated by the data. Capital items are purchased or sold, resulting in an inventory increase or decrease respectively. Also, there may be "automatic" adjustments in debt structure to maintain conformity with debt security requirements and operating cash balances. Step 2 determines the amount of input services necessary to produce the products of the firm.

The third major step determines the amount of output. The levels of production of each activity can be specified directly as data (under the deterministic mode) or may be stochastic. If the stochastic mode is used, the data in Tables 4 and 5 is used in conjunction with a random number generator to compute the yields of each activity (independent of each other).

Step 4 calculates the amount of input services available in the capital inventory. All of the capital items are increased in age by one year. If the age of the item exceeds its useful life, it is removed from the inventory.

The fifth step subtracts the amount of inputs services required by the enterprises of the firm from those services available. If there are not enough input services in inventory, a check is made to determine if they are available from current production. If not, the amount needed is purchased. If the input services can be acquired from current production, this is done to the extent of the amount available or required.

The last major step applies prices and costs to the output and input services. If a product is not assigned a price, it is automatically placed in inventory with a one year life. Trend is taken into account in input costs and product prices, as is stochastic price variability, if desired. A price cycle is not built into the simulator.

A financial summary report of the simulated operations for each year is prepared at the end of the year in simulated time. This report includes a listing of the year end values of the capital assets, amounts of debt by type, labor used, enterprise organization and distribution, sources of operating income, sources of operating expenses, net income earned, income taxes paid, social security taxes paid, interest on investment, labor and management returns, returns per man, off-farm income, and withdrawals from the farm.

The six major steps of the General Agricultural Firm Simulator occur in the Master program and six principal subroutines (INPUT, CAPITAL, CAP, NEEDS, PROD, and REPORT). The steps and the subroutines do not necessarily coincide. Some steps may occur in two subroutines or only in part of one subroutine, for instance. The other subroutines of the simulator are primarily concerned with modifications to the logic of the basic simulator.

Modifications of the General Agricultural Firm Simulator

The General Agricultural Firm Simulator does not contain many features important in analyzing alternative tax management strategies. To fulfill the first objective of the study and to be able to analyze the

strategies developed in Chapter III, several features were added to the General Agricultural Firm Simulator. The simulator must be able to calculate additional first year depreciation as well as the following three methods of depreciation: sum of the years digits, declining balance and straight line. The capability of determining the sale price and the subsequent capital gains or losses for capital items sold must be added. An investment credit computing procedure must be included so that the income tax liability for any year in which qualifying capital items are purchased can be reduced if desired. Income averaging and net operating carryback or carryover need to be added to allow advantage of these features to be taken whenever circumstances dictate. A method of incorporating correlated yields would remove a major shortcoming of this model. Also, a procedure to organize the important variables by year and replicate would shorten the time necessary to summarize the simulated results. In addition, the capability of controlling the required additional features must be added.

The modifications that have been made in the simulator are incorporated in the MASTER program, the CAPITAL subroutine, the NEEDS subroutine, the UPDATE subroutine and the REPORT subroutine. Two new major subroutines LOSSCY and TABLES were created to contain operations that did not logically fit into the other subroutines. The major modifications are discussed below in the order that they occur in the logic of the simulator.

Additional Data Requirements

In order to perform the modifications made in the simulator, data in addition to the original data is required. This additional data is

read in using two methods: (1) cards, before the parameter cards of the original simulator, and (2) an external data file, called by MAIN. No changes have been made in the original data entry methods.

Cards. Two additional parameter records and nine additional data arrays are read prior to the original simulator's parameter cards. The first additional parameter card has three fields which contains information necessary to the control of part of the program. The three variables associated with the first record read are as follows:

XXXX - variable denoting whether or not the subroutine LOSSCY is to be bypassed.
Code: 0 = subroutine LOSSCY will be bypassed.
1 = subroutine LOSSCY is not bypassed.

EFGH - variable denoting number of random price values common to all situations.

XYAVX - variable denoting whether or not the income averaging procedure is to be bypassed.
Code: 0 = income averaging will be bypassed.
1 = income averaging is not bypassed.

The second parameter card contains information on the length of the additional data arrays. This additional data array parameter card is important because each of the arrays are read one array at a time. If the length of each data array was not specified, the length would need to be specified in the program, lessening the generality of the modifications. The nine additional data arrays in the order in which they occur are as follows:

DEPAD - array denoting whether or not first year additional depreciation is to be taken.
Code: 0 = no additional first year depreciation taken,
1 = additional first year depreciation taken.

DEPMD - array identifying the method of depreciation for capital items.
Code: 0 = straight line method,

1 = sum of the years digits method,
2 = declining balance method,
3 = no depreciation to be taken.

IFACTR - array of values for use in the declining balance method of depreciation which denotes the percentage the balance will decline each year.

PROP - array for the identification of capital goods as either personal property or real property.
Code: 0 = personal property,
1 = real property.

SALV - array of salvage values for capital items used in the sum of the year digits method of depreciation calculation.

RFVI - array of factors used in calculating sale value of equipment.

RFVII - array of factors used in calculating sale value of equipment.

IVCRT - array denoting whether or not investment credit is desired for that property.
Code: 0 = new property,
1 = used property.

All of the arrays are used to provide additional data about input services. The first field for each of the nine relevant arrays refers to the first input service; the second field to the second input service; and so on. The implicit reference is to the data storage row for each input item. In order to minimize problems, all items which are property should be located in the first rows of the tables.

External Data File. The external data file is created separate from the simulator but is called to provide correlated yield data for each year of simulation. The size of the file for each year is equivalent to the 0 array in the original simulator. Each year the 0 array is set equal to the portion of the file called for that year. In this manner,

the problem of independence of production among the different enterprises under the stochastic mode may be overcome.

The series of correlated yields is generated under a technique discussed elsewhere.[4] The generation of the series is separate from the creation of the file. The file stores the data until it is called by the simulator.

Calculation of Depreciation

There are three methods of calculating depreciation included in the modified simulator. These methods are as follows: straight line, sum of the years digits, and declining balance. Also, additional first year depreciation (only at the maximum rate of 20 percent) can be taken if desired under any of the three methods of depreciation.

The method of depreciation to be used by each capital item is determined prior to the beginning of simulation. The code for the method of depreciation desired is entered in the appropriate additional data array. The taking of additional first year depreciation is also determined prior to simulation.

The calculation of depreciation is the first major task of the modified subroutine CAPTAL. The method of depreciation, the amount of additional first year depreciation, and the depreciation taken (the sum of additional first year depreciation and depreciation calculated by either of the three methods, if both are taken) are reported in the Table of Depreciation.

Capital Gains and Losses

It is assumed that all capital items sold have been held for a

period greater than six months in length. Based on this assumption, all capital items are subject to the long term capital gains or losses provisions of the modified simulator.

In the calculation of gains or losses, a sale value must be determined for sold assets. The following equation

$$G = CBUY(I) \times RFVI(I) \times RFVII(I)^{B} \qquad (1)$$

where G = sale price,

CBUY(I) = cost of capital item, I,

RFVI(I) = factors that adjust cost to sale price by year,

RFVII(I) = factors that adjust cost to sale price by year, and,

B = number of years from purchase to sale,

approximates the "Blue Book" value for farm equipment.[5] Depending upon which method of depreciation is used and the length of ownership, the sale price may be above, equal to, or below the depreciated value giving rise to gains or losses.

The basis for each capital item is the purchase cost. No improvements are assumed to be made to these items. Therefore, the adjusted basis is the cost of the item less depreciation, both additional first year and regular.

The difference between the sale price and the adjusted basis is termed gain or loss depending on which is greater. For personal property, (a) if the sale price is greater than the purchase cost, this difference is termed "1231 gain" and is taxed as capital gains. The portion of the gain that is due to depreciation, i.e. the amount of

depreciation is termed "1245 gain" and is taxed as ordinary income; (b) if the sale price is below the adjusted basis, the difference is termed "1231 loss" and is taxed as an ordinary loss.[6]

For depreciable real property, the procedure is more complex. If a gain is made on depreciable real property, which was depreciated solely by the straight line method, it is termed "1231 gain" and is taxed as capital gains. If a gain is made on property that was depreciated by a method other than straight line and the depreciation exceeds that of straight line, part of the gain is treated as ordinary income. The amount of the gain treated as ordinary income is the amount by which the depreciation taken exceeds the depreciation that would have occurred using the straight line method. If the sale price is greater than the straight line depreciated value, the difference between these two values is treated as "Section 1231" gain. The portion of this gain that is the difference between the straight line and the chosen depreciation method is taxed as ordinary income. If the sale price is less than the straight line depreciation value but greater than the depreciated value under the chosen method, the entire gain is taxed as ordinary income. If the sale price is less than the depreciated value under the chosen method, the loss is taxed as an ordinary loss.[7]

Probabilistic Output Coefficients

The original subroutine NEEDS calculates both probabilistic prices and yields. These prices and yields are independent for the same activity and between activities. However, yields of crops in the same geographic area tend to vary together because of the effects of the same environmental factors. Prices can be assumed to be independent of

production and local conditions because they are affected by a national market. In order to incorporate correlated yields into the simulator, an external data file was created to store a series of correlated yields. The yields for each enterprise are the same for all strategy, growth method and farm type situations for each year for each replicate. Each year for each replicate is stored separately and is identified by year and replicate. If a bankruptcy occurs before the end of a replicate, the simulator advances to the start of the next replicate, thereby, insuring the same correlated value for all replicate. There are 300 records for each simulated situation in each external data file. Each farm organization that has a different number of correlated enterprises must have a separate data file. For this study, there are four external data files which correspond with the four starting farm organizations presented below.

To save computation costs, the section of the NEEDS subroutine which calculated the probabilistic output coefficients was removed. The probabilistic output coefficients calculated would not be used even if this section was in the simulator.

Income Tax Calculations

The income tax computation procedure was modified to more closely follow the Internal Revenue Service Form 1040 and its supporting schedules or forms. A variable defined as adjusted gross income was created. This variable is defined as the sum of the net gross income plus outside income plus gains or losses taxed as ordinary income less total depreciation plus capital gains. This variable is used to calculate the standard deduction and in the loss carryback and carryover procedure.

The variable (taxable income), is redefined to incorporate gains or losses taxed as ordinary income and capital gains. The redefined taxable income is the adjusted gross income less the dependents exemption and less the standard deduction.

Social Security Self Employment

The revised procedure includes both the regular and the optional methods of calculating the self-employment tax. If the criteria for the regular method are not met, the optional method is used. There is no choice between the method to be used.

Investment Credit

A credit against the federal income tax is allowed for investment in certain personal property. To qualify, the property must: (a) be depreciable; (b) have a useful life of at least 3 years; (c) be tangible personal property or other tangible property (with the exception of buildings or their structural components) used as an integral part of processes of manufacturing, production, or extraction, etc.; and (d) be placed in service in a trade or business or production of income by the taxpayer during the year.[8]

The amount of investment in qualifying property that is eligible for the investment credit depends upon the length of the useful life of the property and whether or not the property is new or used. The amount of credit that is allowed as a reduction in the tax liability in any one year is limited, but the excess may be carried back or forward.[9]

The credit allowable is 7 percent of the investment eligible for the credit. The credit is limited to the amount of the tax liability,

or $25,000 plus 50 percent of the tax liability in excess of $25,000 whichever is the smaller.[10]

An unused credit exists if the amount of the credit allowable for the tax year exceeds the limitation based on the tax liability. The unused credit may be carried back to the three preceeding tax years and the balance still unused may be carried over to the seven succeeding tax years. The unused credit must be used in the earliest of these years. Also, it is absorbed to the extent that the applicable limitation based on the tax liability exceeds any credit allowable for that earliest year plus any unused credits carried to that year from prior years.[11]

An additional data array is coded to indicate whether or not investment credit is desired for any qualified item. The user must determine whether or not the property qualifies for the investment credit externally to the modified simulator. The modified simulator checks only the useful life of the item to determine the percentage of the basis of property that qualifies for the credit. There are no other internal checks. Therefore, the user should check the appropriate source materials for the detailed criteria.

If investment credit is desired, another additional data array is read to determine if the property is new or used. The applicable percentage of the investment which qualifies for investment credit is the same for new or used property for the same useful life (see Table II below). Qualifying used property is limited to no more than $50,000 of the cost in determining credit in any one year.[12]

It is assumed that investment credit will be calculated for the individual only, i.e., no corporations, estates, or trusts will be considered. Also, foreign tax credits and retirement income credit are not

TABLE II

APPLICABLE PERCENTAGE OF QUALIFIED INVESTMENT

Years of Life	Applicable Percentage
Less than 3	0
3 or more but less than 5	33 1/3
5 or more but less than 7	66 2/3
7 or more	100

Source: 1973 Farmers Tax Guide, Internal Revenue Service Pub. 225 (Washington, 1973).

considered. These features were not included because they will not be encountered enough to justify their inclusion.

If the investment credit is greater than the limitation of the current year's tax liability, or $25,000 plus 50 percent of the tax liability in excess of $25,000, the excess is carried back three years. There is no limitation assumed on how far it can be carried forward. This is a simplifying assumption which should not affect the results too greviously.

No provision is made for adjustments if the property is disposed of prior to the end of the useful life estimated when the investment credit was taken.

Net Operating Loss Carryback and Carryover

The subroutine LOSSCY was created to determine if a net operating loss exists, and if so, to carry this loss back and/or over as may be necessary. LOSSCY is called from subroutine REPORT.

Before LOSSCY is entered, all calculations necessary to compute the income taxes to be paid have been completed, except for the inclusion of the loss from another year, if it exists.

The taxable income is checked for the occurance of a loss. If a loss has occurred, it first must be adjusted to determine if the loss is of sufficient size to carryback or carryover.

The net operating loss is computed in the same way as taxable income except for the following adjustments: (1) a net operating loss carryback or carryover from any other year may not be deducted, (2) the capital losses cannot exceed capital gains, (3) the 50 percent excess of a net long-term capital gain over a net short-term capital loss may

not be deducted, (4) no personal or dependents exemptions may be claimed, and (5) the nonbusiness deductions cannot exceed the nonbusiness income.

These adjustments are summed and added to the negative taxable income. If the loss still exists after the adjustments, it is carried back to the third prior year. A check is made at this point to see if the third year to which the loss will be carried back is before the start of simulation or not. All three prior years are checked to see if any adjusted taxable income exists. If it does not, the current year's loss is carried forward. If a loss from the past has been carried to this year, the two losses are summed and carried forward.

After a year has been found to which a loss can be carried back, the loss carried back is compared with the taxable income to determine if the loss is greater than the taxable income or not. If the loss is less than the taxable income, the adjusted gross income for that year is reduced by the loss, the resultant figure has the "normal" deductions taken, the tax liability recalculated, and the difference between the two tax liabilities is set equal to the refund. The refund is added to the cash account.

If the loss is greater than the taxable income, the taxable income is adjusted by the standard deduction, the gain or loss taxed as ordinary income, and the 50 percent of the excess of a long term capital gain over a short term capital loss. The adjusted taxable income is used to reduce the loss. The refund for that year is the taxes paid in that year, which is added to the cash account. The process is then carried to the next of the prior years. And the process is started over. The loss carried back is compared with taxable income to see which is larger, and so on.

If, when LOSSCY was entered, the taxable income was positive, a check to see if any loss carried forward is made. If not, the subroutine is exited. If a loss exists, a check is made to see if the loss is greater than the taxable income or not. The same calculation procedures are used for carryforward as for carryback.

Income Averaging

Income averaging for the current tax year may be utilized if certain conditions are met. These conditions are that the taxable income of the current year must be at least $3,000 greater than 30 percent of the sum of taxable income of the preceding four years.

The income averaging procedure is included in the REPORT subroutine prior to the investment credit calculating section, but after the loss carryback or carryover determining analysis. Before the income averaging procedure is entered, a check is made to determine if this option is desired. If not, this is noted and the procedure is bypassed. If income averaging is desired, the year of simulation is examined to determine if it is the first simulated year. If so, income averaging is not allowed to take place. If the year of simulation is other than the first year, the taxable incomes for the four preceding years are summed and 30 percent of this sum is taken. If the difference between the current year taxable and 30 percent of the sum of the four preceding years taxable income is not greater than $3,000, the current year does not qualify for income averaging. If the difference is greater than $3,000, the income of the current year of simulation can be averaged. The income tax of the current year of simulation's averaged income is then calculated and the amount saved by income averaging is also calculated. The income tax of

the averaged income is recorded as the income taxes paid for that year. The amount of income taxes saved is the difference between the income taxes that would have been paid without income averaging and the amount paid with income averaging.

Additional Output

A subroutine TABLES was created to organize the large amounts of data generated by simulating various situations over time with replication. The desired information is gathered into a convenient form so that summary tables and useful statistics for analysis of the results of each simulated situation can be derived. After the desired number of years have been simulated and replicated, the organized results are written on disk. Another program is used to calculate the mean, range, standard deviation, high and low values for selected variables as well as to print the summary tables for selected variables.

Organization of the Experiment

The tax management strategies to be simulated were derived in the preceeding chapter. Equally as important as the tax management strategies are the types of farms to which the strategies will be applied, and the methods by which these farms are able to grow.

Representative Firm Situations

Almost all types of farms as defined by the Census of Agriculture are present in the study area. Livestock farms other than poultry or dairy farms in 1969 census composed 42.88 percent of the class 1-5 farms in the study area. For the same year, cash-grain farms made up

25.72 percent of the class 1-5 farms while livestock ranches accounted for 14.57 percent of the class 1-5 farms. These three farm types totaled 83.17 percent of the class 1-5 farms. For the 1964 Census of Agriculture the distribution for these farm types are as follows: cash-grain--27.98 percent, livestock farms other than poultry or dairy--21.31 percent, and livestock ranches 9.11 percent for all farms in the study area. The 1959 Census provides the following percentage distribution by type for all farms in the study area: cash-grain--33.28 percent, livestock farms other than poultry or dairy--18.28 percent, and livestock ranches--7.32 percent. The two most important farm types in the study area in numbers are cash-grain farms and livestock farms other than poultry or dairy farms.

Based upon the dominance of the cash-grain farm and livestock farm other than poultry or dairy in terms of numbers, these two types were selected to be analyzed. In addition, these two types offer an opportunity to analyze all tax provisions described in the preceding chapter. The Class I size of these two types was chosen for the analysis because this size operation would be in a position to better take advantage of the suggested strategies. Also, these size farms are likely to be more concerned about the tax management problem than other size firms and because more and more firms are entering this class in each census taken.

The land resources assumed to be controlled at the start of simulation by each type of farm is given in Table III. These land resource situations were determined as follows: (1) the number of farms by type for the study area was determined by summing the number of farms by type for each county in the study area; (2) the state distribution of farms by type across class was applied to the number of farms by type in the study

TABLE III

LAND RESOURCES CONTROLLED

	Cash Grain Farm	Livestock Farm
	(acres)	(acres)
Cropland	1,394	950
Pasture	500	1,162
Other	35	59
Total	1,929	2,171

area to get the number of farms by class by type for the study area. Following this procedure indicate there are 74 class I cash grain farms, 292 class I livestock farms, 301 class 2 cash grain farms, and 460 class 2 livestock farms; (3) the amount of cropland, pastureland, and other land was summed across the counties in the study area to get the total for these uses of land in the study area; (4) the amount of land by use by type was determined for the state; (5) the distribution across class for each use by type of farm was determined; (6) the percentage of land by use by type for the state was applied to the amount of land by use for the study area to get the amount of land by type and use for the study area; (7) the distribution across class for the state was applied to get the amount of land by class, by use by farm type for the study area; and (8) the number of farms by type by class, by use and by type to get the amount of land per farm by type by use of class.

To determine the starting enterprise organization for simulation the resource organization determined above was linear programmed using the LP-farm Computerized Whole Farm Enterprise Planning system. The data bank budgets developed by the area farm management agent for the study area were used to determine the starting organization as well as being used in the simulation procedure.

The beginning organization for the two representative farm types are given in Table IV. The first three strategies have no provision for the conversion of ordinary income to capital gains income and therefore, no breeding heifers are raised. As a result the starting organizations for both representative firms have no breeding heifers. The fourth and fifth strategies do have provision for taking capital gains income, and as a consequence have breeding stock in the beginning organization.

TABLE IV

BEGINNING ORGANIZATIONS BY FARM TYPE

Item	Units	Strategies 1-3	Strategies 4-5
Cash Grain Farm			
Wheat	Acres	943	943
Small Grain Pasture	Acres	451	451
Native Pasture	Acres	500	500
Other Land	Acres	35	35
Cow-Calf Herd	Units	25	25
Breeding Heifers I	Head	0	8
Breeding Heifers II	Head	0	8
Feeders I	Head	645	645
Feeders II	Head	645	645
Livestock Farm			
Wheat	Acres	638	638
Small Grain Pasture	Acres	312	312
Native Pasture	Acres	1162	1162
Other Land	Acres	59	59
Cow-Calf Herd	Units	50	50
Breeding Heifers I	Head	0	16
Breeding Heifers II	Head	0	16
Feeders I	Head	376	376
Feeders II	Head	376	376
Summer Stockers	Head	199	199

Wheat, small grain pasture, native pasture, cow-calf herd, and feeders are common to both representative firms. The livestock farm has summer stockers while the cash-grain farm does not.

Decision Making Procedure

The modifications described above pertain to the logic of the simulator itself. No decision rules for the management of the firm have been built into the simulator. The management process is contained in the subroutine UPDATE. While the primary objective of the study is the comparison of alternative tax management strategies, provisions must be made for firm growth.

Two methods of growth have been selected. They are as follows: (1) growth through land purchase, and (2) growth through land renting. The decision to purchase (or rent) is made during four decisions year, five years apart in the twenty year simulation. These years are Year 3, Year 8, Year 13, and Year 18. These years were selected because they represent likely points where an operator might decide to expand. The first years are used to accumulate income for downpayments. If the decisions to expand are made during a decision year, the following years are necessary to pay off part of the incurred debt and accumulate income for the next decision year.

The logic for the decision process to purchase or rent is very similar. A discussion of the purchase decision model is presented below. The differences in the procedure will be denoted when they occur.

The subroutine UPDATE is called at the end of each year of simulation. If the year is not a decision year the growth part of the subroutine is not entered. Any decisions made in the decision year are

implemented at the beginning of the following year. During each decision year a check is made to determine if enough cash above the minimum amount of cash to be on hand is available to make the downpayments on land, machinery, and cattle in the purchase growth mode. The amount of downpayments are the sum of 29 percent of the purchase price for land, 50 percent of the purchase cost for machinery, and 50 percent of the purchase cost of breeding livestock. If this amount of cash is not available, the additional land is not purchased and the same organization is followed until the next decision year. With the rent growth framework, the amount of excess cash is checked against the sum of the rent payment for the first year, 50 percent of the purchase cost of machinery, and 50 percent of the purchase cost of the livestock. If this amount of excess cash is not available, the land is not rented and the organization stays the same. If the amount of cash available is sufficient to make the downpayments, the security ratios for each type of debt are checked taking into consideration the additional debt load that will be incurred. If any of these ratios are not passed, the purchase or renting of land does not take place, and the organization stays the same. If the ratios are met, the land is purchased (or rented) and the machinery to operate it (if necessary) and the cattle are purchased.

The amount of land considered for purchase or rent for each decision year is 160 acres. The proportion of cropland and native pasture in land purchased or rented is the same as in the original farm. After land has been added to the farm, the cropland is broken up into wheat and small grain pasture in the same percentages as specified in the linear program for the starting situation. Livestock are also added in

the same proportions as in the beginning organization.

The decision to include additional machinery was based on the hours of availability of the original machinery versus the additional requirements of the newly added land. If the requirements exceeded the hours available, more machinery was purchased. The comparison availability was made external to the simulation and specified as being required by the additional land.

As the machinery in the inventory reaches the end of its total life it is dropped from inventory. Each piece of machinery is replaced whenever it is dropped. This replacement takes place whether or not a decision year has been reached, and is independent of the growth framework of the subroutine UPDATE. The machinery is replaced at new cost and with a full useful life.

Experimental Design

Each strategy for each farm type for each growth method (each cell) is simulated over a 20 year period. There are 15 replications per cell. The replications are the same for each cell so that only the tax management strategy changes within blocks or only farm types or only growth method. In this manner, the maximum amount of useful information for evaluation is gained. The results of the simulations can be organized in such a manner to exclude or include any major variable in the analysis, thereby facilitating the evaluation of the results of the simulations.

FOOTNOTES

[1]V. R. Eidman, ed., Agricultural Production Systems Simulation (Stillwater, 1971), pp. 10-20.

[2]Ibid., p.10.

[3]Ibid., pp.

[4]A. M. Clements, Jr., H. P. Mapp, Jr., and V. R. Eidman, A Procedure for Correlating Events in Farm Firm Simulation Models, Oklahoma Agricultural Experiment Station Technical Bulletin T-131 (August, 1971).

[5]Wendell Bowers, Modern Concepts of Farm Machinery Management (Champaign, 1970).

[6]1973 Farmers Tax Guide, Internal Revenue Service Pub. 225 (Washington, 1973), p. 38.

[7]Ibid.

[8]1973 Tax Guide For Small Business, Internal Revenue Service Pub. 334 (Washington, 1973), p. 175.

[9]Ibid., p. 176.

[10]Ibid., p. 178

[11]Ibid.

[12]Ibid.

CHAPTER V

RESULTS OF THE SIMULATION OF ALTERNATIVE TAX MANAGEMENT STRATEGIES ON SELECTED VARIABLES

This chapter presents the results of the twenty situations described in Chapter IV. Each situation is characterized by a set of assumptions with respect to farm type (cash grain farm or livestock farm), growth method (land purchase or land rent) and tax management strategy (one, two, three, four, or five). Each of the twenty situations is simulated for twenty years and replicated fifteen times with each replicate having a set of randomly drawn prices and crop yields. There are four decision points during the twenty year simulation. These decision points are after the simulation of the third, eighth, thirteenth and eighteenth years, but before the following year. The decision made at each point is either to expand or not to expand the size of the firm.

The initial tenure position for both farm types is one of full ownership of the land and chattle equity. No land and/or equipment are rented, initially. The full owner has an equity of 90.4 percent in land for the livestock farm and 89.5 percent for the livestock ranch. The length of period for real estate loans for this study is twenty years. Under the land purchase growth method a downpayment of 29 percent is made and the remainder is financed by borrowing for each expansion. When expansion is accomplished with the land purchase method, the operator

remains a full owner, whereas under the land rent method of growth the operator is in a part-owner tenure status.

The two farm types have differing proportions of cropland to pastureland as well as being of different initial sizes and organizations. As each farm type expands by either growth method, the cropland: pastureland ratio is the same as the initial starting distribution.

The simulation results estimate total product sales, total operating expenses, net cash income, off-farm income, gains or losses taxed as ordinary income, total depreciation, and capital gains. Also estimated are adjusted gross income, standard deductions and dependents exemptions and premanagement income tax liability. In addition, the income tax reduction due to income averaging, income tax reduction due to net operating loss carryback or carryover, income tax reductions due to investment credit, income taxes paid and net worth are estimated.

Off-farm income is only the interest on income earned that is not needed for production expenses. The operator and his family do not have any excess labor to sell off-farm to gain other non-farm income.

Net worth is one of the variables utilized to measure firm growth. Increases in net worth determined by the modified simulator result from land purchase or cash accumulation. Returns over the amounts to operate the firm and pay debts are accumulated in a cash account. This cash account receives an interest payment (off-farm income) which contributes to the income of the firm.

Central to the following discussion is the assumption that after tax income available for reinvestment is maximized when income taxes paid are minimized. The analysis of the results of the simulation is presented in the following order. The basic causes of firm expansion

are discussed first, followed by the determination of net cash income. Taxable income which is based upon adjustments to net cash income is examined third. Fourthly, income taxes paid are scrutinized. Finally, the effects of various factors on net worth are inspected.

The mean values of the replicates are used in the description of the results. The mean, high, low, standard deviation and range by year for each selected variable are given in Appendix A. The values incorporate all replicates. There were no bankruptcies for any of the situations simulated. However, not all situations expanded at the same rate.

Firm Expansion

Two criteria must be satisfied for expansion to take place. They are as follows: (1) enough cash must be on hand to: (a) make the downpayment on land, machinery and cattle for the land purchase growth method, or (b) make the first rent payment for the land rent plus downpayments on machinery and cattle for the land rent growth method, and (2) the ratio of old debt plus new debt for all three debt classes to equity must be greater than the minimum requirements. If the cash requirement or any of the security ratios are not met, expansion does not take place.

The growth of the cash grain farm and livestock farm differed more by farm type than by growth method. Under the land purchase growth method for the cash grain farm, all tax management strategies purchased the maximum number of quarter sections for each iteration (see Table V). The cash grain farm type of farm with the land rent growth method also grew the maximum number of quarter sections for each strategy for each iteration.

TABLE V

QUARTER PURCHASED AND RENTED BY ITERATION AND TAX MANAGEMENT STRATEGY FOR THE CASH GRAIN FARM

Growth Step Iteration	Tax Management Strategy One				Tax Management Strategy Two				Tax Management Strategy Three				Tax Management Strategy Four				Tax Management Strategy Five			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	1[2]	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
2	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
3	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
5	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
6	1	2	3	4		2	3	4	1	2	3	4	1	2	3	4	1	2		4
7	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
8	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
9	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
10	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
11	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
12	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
13	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
14	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
15	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

[1]The Land Purchase and Land Rent Growth Methods both acquire the maximum number of quarter sections for all iterations.

[2]The number in the table indicates the particular quarter section of land purchased or rented at each growth step.

The cash grain farm generates enough income for continued expansion because a large proportion of total land is devoted to cropland (see Table VI). The organization of the cash grain farm is such that more wheat for grain and beef are marketed from the smaller acreage unit. Because of this income generating ability, the cash grain farm expanded for all tax management strategies for both purchase and rent growth methods.

The land purchase growth method for the livestock farm did not grow the maximum number of quarter sections of land for all tax management strategies nor for all iterations (see Table VII). Strategies one, two, four and five failed to purchase the first quarter section on the first growth step for iterations ten and thirteen. Tax management strategy three did not acquire the first quarter section at the first growth step for iteration thirteen. The first, second and third quarter sections of land were all purchased at subsequent growth steps. The cash available for the first expansion was not sufficient to meet the cash requirements (see Table VIII).

The land rent growth method for the livestock farm grew for all tax management strategies except for iteration thirteen. The land rent growth method has lower requirements in terms of cash, i.e., the rent payment for the first year is lower than the downpayment for the land purchase. Also, no new debt is added to the already existing land debt making the land debt : equity ratio requirement easier to satisfy. The chattle debt : equity ratio is the same for both land purchase and land rent growth methods. For these reasons the land rent growth method can expand easier than the land purchase growth method.

The results of the simulations are presented as means of all

TABLE VI

ORGANIZATION OF THE CASH GRAIN FARM AND LIVESTOCK FARM AT THE BEGINNING OF SIMULATION AND AFTER EACH EXPANSION

	Units	Beginning Organization		First Expansion		Second Expansion		Third Expansion		Fourth Expansion	
		TMS 1-3	TMS 4-5	TMS 1-3	TMS 4-5	TMS 1-3	TMS 4-5	TMS 1-3	TMS 4-5	TMS 1-3	TMS 4-5
Cash Grain Farm											
Wheat	Acres	943.		1021.		1099.		1177.		1255.	
Small Grain Pasture	Acres	451.		488.		525.		562.		599.	
Native Pasture	Acres	500.		545.		590.		635.		680.	
Other Land	Acres	35.		35.		35.		35.		35.	
Cow-Calf Herd	Units	25.		28.		32.		35.		38.	
Breeding Heifers I	Head	0.	8.	0.	9.24	0.	10.56	0.	11.55	0.	12.54
Breeding Heafers II	Head	0.	8.	0.	9.24	0.	10.56	0.	11.55	0.	12.54
Feeders I	Head	645.		697.		749.		801.		853.	
Feeders II	Head	645.		697.		749.		801.		853.	
Livestock Farm											
Wheat	Acres	638.		685.		732.		779.		826.	
Small Grain Pasture	Acres	312.		335.		358.		381.		404.	
Native Pasture	Acres	1162.		1252.		1342.		1432.		1522.	
Other Land	Acres	59.		59.		59.		59.		59.	
Cow-Calf Head	Units	50.		55.		60.		65.		70.	
Breeding Heifers I	Head	0.	16.	0.	18.15	0.	19.80	0.	21.45	0.	23.10
Breeding Heifers II	Head	0.	16.	0.	18.15	0.	19.80	0.	21.45	0.	23.10
Feeders I	Head	376.		406.		436.		466.		496.	
Feeders II	Head	376.		406.		436.		466.		496.	
Summer Stockers	Head	199.		201.		203.		205.		207.	

TABLE VII

QUARTER PURCHASED AND RENTED BY ITERATION AND TAX MANAGEMENT STRATEGY FOR THE LIVESTOCK FARM

Growth Step / Iteration	Tax Management Strategy One	Tax Management Strategy Two	Tax Management Strategy Three	Tax Management Strategy Four	Tax Management Strategy Five
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Land Purchase					
1	1[1] 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
2	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
3	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
6	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
7	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
8	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
9	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
10	1 2 3	1 2 3	1 2 3 4	1 2 3	1 2 3
11	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
12	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
13	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
14	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
15	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Land Rent					
1	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
2	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
3	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
6	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
7	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
8	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
9	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
10	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
11	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
12	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
13	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
14	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
15	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

[1] The number in the table indicates the particular quarter section of land purchased or rented at each growth step.

TABLE VIII

CASH AVAILABLE FOR FIRST EXPANSION OF THE LIVESTOCK FARM BY GROWTH METHOD WHERE EXPANSION DID NOT OCCUR AT THE FIRST GROWTH STEP

Growth Method	Cash Available for First Expansion	Minimum Cash Necessary for First Expansion
Land Purchase		
Tax Management Strategy 1		
Iteration 10	10176.82	15734.60
Iteration 13	-4352.98	15734.60
Tax Management Strategy 2		
Iteration 10	15575.07	15734.60
Iteration 13	-158.52	15734.60
Tax Management Strategy 3		
Iteration 13	1408.18	15734.60
Tax Management Strategy 4		
Iteration 10	7874.92	15734.60
Iteration 13	-6839.30	15734.60
Tax Management Strategy 5		
Iteration 10	14922.17	15734.60
Iteration 13	-2840.26	15734.60
Land Rent		
Tax Management Strategy 1		
Iteration 13	-4352.98	2475.60
Tax Management Strategy 2		
Iteration 13	-158.52	2475.60
Tax Management Strategy 3		
Iteration 13	1408.18	2475.60
Tax Management Strategy 4		
Iteration 13	-6839.30	2475.60
Tax Management Strategy 5		
Iteration 13	-2840.26	2475.60

iterations. Because not all iterations for all strategies for each farm type-growth method situation expanded at the same point, differences occurred which make companions between strategies and situations more complicated.

Net Cash Income

The direct effects of the selected tax law provisions which constitute the tax management strategies are not felt by the determinants of net cash income. Net cash income is isolated as much as possible from the tax management strategies to simplify the analysis of the effects of these strategies. The indirect consequences of the strategies are felt in terms of the ability to expand, and to make prepayments on debt and debt payments. The number of acres operated determines the total product sales. The total operating expenses, of which debt prepayments and payments are a part, are based directly and indirectly on acres operated. The direct costs are those expenses which accrue on a per unit of activity basis as well as overhead expenses, and labor costs. Interest costs are based on debt which is a function of the number of expansions undertaken and debt prepayments and payments. The difference between total product sales and total operating expenses is net cash income.

Total Product Sales

The two tax management strategies which produce breeding heifers to sell for capital gains (strategy four and strategy five) have less average total product sales (ordinary income) than the strategies which do not sell breeding heifers (see Table IX). This condition holds for

TABLE IX

MEAN VALUES OF TOTAL PRODUCT SALES BY GROWTH METHOD, FARM TYPE AND TAX MANAGEMENT STRATEGY

Year	Cash Grain Farm		Livestock Farm				
	Land Purchase and Land Rent		Land Purchase			Land Rent	
	One, Two and Three	Four and Five	One and Two	Three	Four and Five	One, Two and Three	Four and Five
1	212,092.	212,092.	193,847.	193,847.	190,649.	193,847.	190,649.
2	220,937.	220,937.	199,092.	199,092.	195,932.	199,092.	195,932.
3	215,653.	215,653.	195,697.	195,697.	192,536.	195,697.	192,536.
4	233,257.	233,257.	206,289.	207,046.	202,811.	207,046.	203,546.
5	235,639.	235,639.	207,428.	208,210.	203,981.	208,210.	204,742.
6	231,182.	231,182.	204,473.	205,271.	201,009.	205,271.	201,786.
7	228,951.	228,951.	203,382.	204,126.	199,896.	204,126.	200,619.
8	232,537.	232,537.	205,437.	206,202.	201,979.	206,202.	202,722.
9	247,607.	247,607.	215,465.	216,257.	211,668.	216,257.	212,440.
10	252,394.	252,394.	218,456.	219,233.	214,658.	219,233.	215,413.
11	250,582.	250,582.	217,476.	218,219.	213,675.	218,219.	214,397.
12	253,698.	253,698.	219,206.	219,971.	215,415.	219,971.	216,159.
13	249,552.	249,552.	216,770.	217,481.	212,990.	217,481.	213,680.
14	273,473.	273,473.	232,670.	233,429.	228,534.	233,429.	229,271.
15	273,605.	273,605.	232,080.	232,826.	227,980.	232,826.	228,704.
16	271.949.	271,949.	231,130.	231,880.	227,020.	231,880.	227,748.
17	272,786.	272,786.	231,677.	232,494.	227,558.	232,494.	228,354.
18	268,344.	268,344.	228,695.	229,440.	224,587.	229,440.	225,312.
19	292,030.	292,030.	244,009.	244,775.	239,595.	244,775.	240,341.
20	288,587.	288,587.	242,246.	242,923.	237,805.	242,923.	238,461.

both growth methods as well as both farm types. The income from the sale of the breeding animals is a capital receipt and is therefore not included in ordinary income (product sales).

The dollar volume of sales from the cash grain farm, for both land purchase and land rent growth methods, is greater than that of the livestock farm. This greater volume of sales is due to both a greater proportion of the total land devoted to crops for the cash grain farm as well as a larger acreage in crops. Because of the greater availability of small grain grazing, from wheat for grain and small grain graze-out, the cash grain farm is also able to support a larger volume of feeders than the livestock farm.

For the cash grain farm the volume of sales for the non-capital gains producing strategies for the land purchase and land rent growth methods are the same. Also, for the capital gains producing strategies for both growth methods the volume of sales is identical. The livestock farm expanded at the first opportunity for each growth step for both growth methods and, therefore, farm size and organization are identical.

The expansion for the livestock farm for both land purchase and land rent methods of growth did not occur at the first opportunity for each growth step. For those strategies where the expansions occurred at the same opportunity the volume of sales is the same. The land purchase growth method expanded in a fewer number of iterations for strategies one, two, four, and five than did the land rent method resulting in lower average sales for these strategies than for the same strategies under the land rent growth method.

Total Operating Expenses

The two tax management strategies which produced breeding heifers (strategy four and strategy five) have a higher mean value of total operating costs than those strategies which do not produce breeding heifers for both farm types and both growth methods (see Table X). This occurs because the breeding heifers have more expense involved in raising them to the point at which they will be sold. The stocker heifers are sold at approximately six months of age while the breeding heifers are kept to an age of slightly over two years.

As the firms expand, the costs associated with each rises. Also, immediately after each expansion because debt is used to finance the growth, operating expenses will be the greatest due to interest on debt being considered on operating expense. As the debt is reduced, the interest expense is reduced and the total operating expenses decline until expansion occurs again in which case, the cycle starts over again. This is the cause of the falling and rising, falling and rising total operating expenses for both farm types and growth methods. The cycles are not as great for the land rent growth method because less debt and hence, less interest expense is involved. Also, less property tax is paid. Real estate debt as well as chattle debt is involved with the land purchase growth method, whereas only chattle debt is involved in the land rent growth method.

The cash grain farm for both the land purchase and land rent growth methods has a higher level of total operating expenses than the livestock farm. The cash grain farm has a greater proportion of its land in crops as compared to the livestock farm. Also, the cash grain farm has a greater number of acres in crops and a larger number of animals

TABLE X

MEAN VALUES OF TOTAL OPERATING EXPENSES BY GROWTH METHOD, FARM TYPE AND TAX MANAGEMENT STRATEGY

	Land Purchase								Land Rent			
	Cash Grain Farm			Livestock Farm					Cash Grain Farm		Livestock Farm	
Year	One	Two and Three	Four and Five	One	Two	Three	Four	Five	One, Two and Three	Four and Five	One, Two, and Three	Four and Five
1	162,001.	162,001.	163,277.	159,437.	159,437.	159,437.	161,943.	161,943.	162,001.	163,277.	159,437.	161,943.
2	160,179.	160,179.	161,453.	157,974.	157,968.	157,968.	160,467.	160,467.	160,179.	161,453.	157,974.	160,467.
3	159,110.	159,110.	160,380.	157,111.	157,068.	157,063.	159,571.	159,550.	159,110.	160,380.	157,111.	159,571.
4	175,746.	175,755.	177,158.	166,472.	166,444.	167,181.	169,124.	169,106.	173,821.	175,224.	165,501.	168,166.
5	174,278.	174,277.	175,679.	165,356.	165,356.	166,071.	168,034.	168,034.	172,342.	173,744.	164,322.	167,021.
6	173,889.	173,888.	175,273.	164,977.	164,977.	165,694.	167,613.	167,613.	171,952.	173,337.	163,914.	166,578.
7	173,858.	173,858.	175,242.	164,785.	164,785.	165,506.	167,412.	167,412.	171,920.	173,305.	163,696.	166,343.
8	137,525.	173,525.	174,970.	164,422.	164,422.	165,140.	167,173.	167,173.	171,586.	173,032.	163,299.	166,070.
9	190,835.	190,834.	192,364.	175,971.	175,971.	176,708.	178,708.	178,708.	186,997.	188,526.	172,995.	175,730.
10	188,232.	188,231.	189,725.	174,690.	174,346.	174,940.	176,915.	176,841.	184,462.	185,956.	171,237.	173,862.
11	187,918.	187,917.	189,496.	174,200.	174,023.	174,608.	176,777.	176,695.	184,217.	185,795.	170,914.	173,715.
12	187,867.	187,867.	189,427.	173,873.	173,802.	174,466.	176,570.	176,553.	184,236.	185,795.	170,783.	173,575.
13	136,969.	186,968.	188,470.	173,090.	173,090.	173,786.	175,737.	175,737.	183,405.	184,908.	170,112.	172,757.
14	205,397.	205,397.	206,887.	184,073.	184,010.	184,656.	186,513.	186,506.	200,192.	201,682.	179,151.	181,696.
15	203,523.	203,522.	205,108.	182,968.	183,021.	183,660.	185,735.	185,729.	198,406.	199,993.	178,208.	180,962.
16	202,466.	202,465.	203,993.	182,441.	182,495.	183,127.	185,070.	185,065.	197,794.	199,321.	178,082.	180,697.
17	201,276.	201,275.	202,859.	181,838.	181,893.	182,517.	184,605.	184,600.	197,092.	198,676.	177,924.	180,673.
18	200,766.	200,765.	202,296.	181,664.	181,721.	182,337.	184,320.	184,315.	197,071.	198,603.	178,197.	180,829.
19	216,398.	216,398.	217,977.	192,363.	192,422.	193,019.	194,973.	194,968.	211,279.	212,858.	187,490.	190,074.
20	214,938.	214,937.	217,313.	191,388.	191,407.	192,003.	193,958.	193,953.	210,391.	211,981.	186,958.	189,537.

on feed than the livestock farms. This results in a higher mean level of total operating expenses.

The land rent method of growth has a lower mean level of total operating expenses for both the livestock cash grain farm and livestock farm type than the land purchase growth method after expansion has begun. The land rent growth method pays lower property taxes and interest payments but must pay rental for the land which the land purchase growth does not.

The expansion of operations for the cash grain farm and livestock farm for the land rent growth method occurred at the same point for all iterations resulting in equal expenditures by the capital gains producing and non-capital gains producing strategies for both farm types. The requirements for expansion under the land rent method are not as streneous as for the land purchase growth method. The capital gains producing strategies for both cash grain farm and livestock farm types under the land purchase growth method have equal mean values for their total operating expenses for each farm type. The differences which occur between the non-capital gains producing strategies for both farm types is due primarily to the occurrence or non-occurrence of prepayment of debt at growth steps. If sufficient cash was not available for prepayment at a growth step, the prepayment did not occur, resulting in greater interest changes which raises the mean value of the operating expenses.

Net Cash Income

Net cash income is the difference between Total Produce Sales and Total Operating Expenses and as such reflects the movements of these two

variables (see Table XI). The capital gains producing strategies for both farm types and both growth methods have a smaller net cash income than the non-capital gains producing strategies. The smaller net cash income for these strategies is a result of their lower total product sales and higher total operating expenses.

The cash grain farm has a larger net cash income for both growth methods than the livestock farm. This is due to the larger amount of wheat and beef produced by the cash grain farm.

Strategies one through three for the cash grain farm, land rent situation havethe same values for net cash income each year. Strategies four and five of the cash grain farm, land rent, are equal each year of simulation. Strategies one, two, and three for the livestock farm with the land rent growth method are equal to each other as are strategies four and five. For both the cash grain farm and livestock farm for the land purchase method strategies four and five are equal by farm types. Tax management strategies one, two and three for the livestock farm with the land purchase growth method vary among themselves due to missed prepayments on debts and non-expansion at the same points for all iterations for each strategy. Strategy one differs from strategies two and three for these same reasons.

The basic difference between the farm types, growth methods, and tax management strategies selected for analysis have been discussed above without regard to their effects on income taxes. The tax provisions selected for study can be divided into two groups denoted by the direct effects of their actions. One group of provisions affects the level of taxable income while the other affects the income tax liability. Taxable income can be lowered by using accelerated depreciation and

TABLE XI

MEAN VALUES OF NET CASH INCOME BY GROWTH METHOD, FARM TYPE AND TAX MANAGEMENT STRATEGY

	Land Purchase								Land Rent			
	Cash Grain Farm			Livestock Farm					Cash Grain Farm		Livestock Farm	
Year	One	Two and Three	Four and Five	One	Two	Three	Four	Five	One, Two and Three	Four and Five	One, Two, and Three	Four and Five
1	50,090.	50,090.	47,215.	34,409.	34,409.	34,409.	28,706.	28,706.	50,090.	47,215.	34,409.	28,706.
2	60,757.	60,757.	57,903.	41,117.	41,123.	41,123.	35,464.	35,464.	60,757.	57,903.	41,117.	35,464.
3	56,542.	56,542.	53,691.	38,585.	38,628.	38,633.	32,964.	32,985.	56,542.	53,691.	38,585.	32,985.
4	57,500.	57,501.	54,305.	39,816.	39,844.	39,865.	33,686.	33,704.	59,435.	56,239.	41,544.	35,398.
5	61,360.	61,361.	58,183.	42,071.	42,071.	42,138.	35,946.	35,946.	63,296.	60,118.	43,887.	37,720.
6	57,292.	57,293.	54,123.	39,494.	39,494.	39,576.	33,395.	33,395.	59,229.	56,059.	41,356.	35,208.
7	55,092.	55,093.	51,912.	38,597.	38,597.	38,619.	32,483.	32,483.	57,030.	53,849.	40,430.	34,275.
8	59,011.	59,012.	55,784.	41,014.	41,014.	41,061.	34,805.	34,805.	60,950.	57,723.	42,902.	36,652.
9	56,772.	56,772.	53,195.	39,493.	39,493.	39,549.	32,959.	32,959.	60,610.	57,033.	43,261.	36,709.
10	64,161.	64,162.	60,619.	43,765.	44,109.	44,292.	37,742.	37,816.	67,931.	64,388.	47,995.	41,551.
11	62,663.	62,663.	59,036.	43,276.	43,452.	43,610.	36,898.	36,980.	66,364.	62,736.	47,304.	40,681.
12	65,829.	65,830.	62,226.	45,332.	45,403.	45,504.	38,844.	38,861.	69,462.	65,858.	49,188.	42,584.
13	62,582.	62,583.	59,042.	43,680.	43,680.	43,694.	37,252.	37,252.	66,145.	62,605.	47,368.	40,923.
14	68,075.	68,076.	64,335.	48,596.	48,660.	48,772.	42,020.	42,027.	73,281.	69,540.	54,276.	47,574.
15	70,081.	70,082.	66,264.	49,111.	49,058.	49,165.	42,244.	42,250.	75,198.	71,380.	54,618.	47,741.
16	69,482.	69,482.	65,719.	48,688.	48,634.	48,753.	41,949.	41,954.	74,154.	70,390.	53,798.	47,051.
17	71,510.	71,510.	67,686.	49,839.	49,783.	49,976.	42,953.	42,958.	75,693.	71,868.	54,569.	47,680.
18	67,577.	67,578.	63,812.	47,030.	46,973.	47,102.	40,266.	40,271.	71,271.	67,506.	51,243.	44,482.
19	75,631.	75,632.	71,635.	51,644.	51,586.	51,754.	44,621.	44,626.	80,751.	76,754.	57,284.	50,266.
20	73,648.	73,649.	68,839.	50,858.	50,839.	50,919.	43,847.	43,852.	78,195.	74,171.	55,965.	48,923.

converting ordinary income to capital gains income. After the income tax liability has been computed based upon the amount of taxable income, the liability can be reduced by utilizing investment credit, net operating loss carryback and carryover and income averaging. The money saved by the tax reducing provisions can be re-invested and yield a return which becomes a part of taxable income in later years and hence these provisions indirectly raise taxable income and income taxes. However, the amount that these provisions indirectly increase income taxes is less than the amount saved by the same provisions.

The discussion of the tax management strategies will be divided into two parts to focus on the effects of the two groups of tax provisions. The following sections discuss the effects of the selected income tax provisions on taxable income and income taxes paid. A subsequent section discusses the combined effects on growth of the firm, focusing on net worth. Also, the discussion assumes that minimizing income taxes paid maximizes after tax income available for consumption or re-investment.

Effects on Taxable Income

The analysis of the effects on taxable income by the various income tax provisions is broken into sections identified by growth method and farm type. A subsequent section examines the effects of different farm type and growth method on taxable income. Table XII presents the sum of the discounted present values of taxable income and income taxes paid. The mean values of the variables which determine taxable income for the land purchase growth method for both farm types are presented in Table

TABLE XII

TABLE OF DISCOUNTED PRESENT VALUES[1]

	Taxable Income	Rank	Overall Rank	Income Taxes Paid	Rank	Overall Rank
Land Purchase						
Cash Grain Farm						
1	596,606.	5	15	212,719.	5	15
2	579,521.	2	12	205,765.	4	14
3	588,036.	4	14	193,746.	2	12
4	581,946.	3	13	205,637.	3	13
5	572,131.	1	11	186,218.	1	11
Livestock Farm						
1	346,970.	5	5	97,166.	5	6
2	330,183.	3	3	93,385.	4	4
3	336,499.	4	4	82,776.	2	2
4	318,184.	2	2	86,876.	3	3
5	306,886.	1	1	72,806.	1	1
Land Rent						
Cash Grain Farm						
1	654,235.	5	20	243,182.	5	20
2	637,760.	2	17	236,556.	4	19
3	646,260.	4	19	224,739.	2	17
4	639,887.	3	18	236,070.	3	18
5	630,693.	1	16	217,242.	1	16
Livestock Farm						
1	399,806.	5	10	120,248.	5	10
2	383,351.	3	8	116,621.	4	9
3	390,034.	4	9	106,336.	2	7
4	370,929.	2	7	109,240.	3	8
5	359,904.	1	6	95,436.	1	5

[1]The discount rate is 6 percent.

XIII. The mean values for the land rent growth method are given in Table XIV.

Land Purchase, Cash Grain Farm

The net cash incomes for the non-capital gains generating strategies (tax management strategies one, two and three) are essentially equal and are larger than those for the capital gains generating strategies (strategies four and five). The discounted present value of the taxable income for each strategy was calculated to determine if a difference exists between the alternative strategies. Tax management strategy five ranks first, that is, has the lowest discounted present value, with a value of $572,131. Strategy two is second in rank with a value of $579,521. The third ranking discounted present value is $581,946 associated with strategy four. Strategy one has the largest discounted present value with $596,606 to rank fifth. The difference between the highest and the lowest discounted present values is $24.475.

Strategies Five and Two Compared. Both strategies utilize sum of the years digits depreciation plus additional first year depreciation and as a consequence have the same amount of depreciation for each year. Strategy two does not convert ordinary income to capital gains and has no income tax liability reducing provisions (income averaging, investment credit, and net operating loss carryback and/or carryover). Strategy five converts some ordinary income to capital gains and does not use income tax liability reducing provisions. The net cash income of strategy two is greater than that of strategy five because of the non-conversion of ordinary income to capital gains.

TABLE XIII

DETERMINANTS OF TAXABLE INCOME FOR THE LAND PURCHASE GROWTH METHOD BY FARM TYPE AND YEAR

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 1										
Net Cash Income	50,090.41	50,090.41	50,090.41	47,215.92	47,215.92	34,409.20	34,409.20	34,409.20	28,706.14	28,706.14
Off-Farm Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gain/Loss Taxed as Ord. Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Depreciation	9,839.95	19,902.01	19,902.01	9,839.95	19,902.01	10,570.31	21,184.45	21,184.45	10,570.31	21,184.45
Capital Gains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adjusted Gross Income	40,250.41	30,188.34	30,188.34	37,375.92	27,313.86	23,838.83	13,224.70	13,224.70	18,135.78	7,521.65
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	3,987.79	3,999.54	3,904.30	3,904.30	3,940.88	3,782.04
Taxable Income	36,250.41	26,188.34	26,188.34	33,375.92	23,326.07	19,839.30	9,320.40	9,320.40	14,194.91	3,739.61
Year 2										
Net Cash Income	60,757.03	60,757.03	60,757.03	57,903.20	57,903.20	41,117.67	41,123.07	41,123.07	35,464.65	35,464.65
Off-Farm Income	1,036.36	1,252.97	1,304.97	1,102.97	1,359.61	523.04	674.17	716.07	613.38	770.26
Gain/Loss Taxed as Ord. Income	-936.62	-258.84	-258.84	0.00	218.39	-936.62	-258.84	-258.84	0.00	218.39
Total Depreciation	9,839.95	15,390.88	15,390.88	9,839.95	15,390.88	10,570.31	16,495.01	16,495.01	10,570.31	16,495.01
Capital Gains	0.00	0.00	0.00	975.44	1,205.13	0.00	0.00	0.00	2,419.19	2,648.88
Adjusted Gross Income	51,016.75	46,360.21	46,412.20	50,141.59	45,295.39	30,133.73	25,043.32	25,039.64	27,926.86	22,607.10
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	3,971.87	3,971.87	4,000.00	3,938.53
Taxable Income	47,016.75	42,360.21	42,412.20	46,141.59	41,295.39	26,133.73	21,071.45	21,113.36	23,926.86	18,668.57
Year 3										
Net Cash Income	56,542.26	56,542.26	56,542.26	53,691.73	53,691.73	38,585.38	38,628.50	38,633.13	32,964.48	32,985.71
Off-Farm Income	2,025.19	2,373.71	2,660.41	2,120.46	2,746.56	941.64	1,175.60	1,290.72	1,073.02	1,399.67
Gain/Loss Taxed as Ord. Income	-535.97	-242.54	-242.54	0.00	0.00	-535.97	-242.54	-242.54	0.00	0.00
Total Depreciation	10,051.01	14,829.13	14,829.13	10,051.01	14,829.13	10,781.34	15,755.00	15,755.00	10,781.34	15,755.00
Capital Gains	0.00	0.00	0.00	1,175.76	1,322.48	0.00	0.00	0.00	2,619.51	2,766.23
Adjusted Gross Income	47,980.41	43,844.23	44,130.94	46,936.89	42,931.59	28,209.65	23,806.51	23,926.27	25,875.62	21,396.57
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	3,985.70
Taxable Income	43,980.41	39,844.23	40,130.94	42,936.89	38,931.59	24,209.65	19,806.51	19,929.27	21,875.62	17,410.87
Year 4										
Net Cash Income	57,500.16	57,501.10	57,501.10	54,305.08	54,305.08	39,816.93	39,844.89	39,865.26	33,686.29	33,704.68
Off-Farm Income	2,061.24	2,532.67	2,933.11	2,158.57	3,026.78	661.81	996.92	1,102.95	811.32	1,283.28
Gain/Loss Taxed as Ord. Income	325.24	584.44	584.44	683.56	683.56	683.56	683.56	683.56	683.56	683.56
Total Depreciation	10,313.25	13,322.82	13,322.82	10,313.25	13,322.82	11,097.77	14,133.01	14,181.76	11,097.77	14,133.01
Capital Gains	0.00	0.00	0.00	1,264.59	1,394.19	0.00	0.00	0.00	2,887.50	2,887.50
Adjusted Gross Income	49,573.34	47,295.34	47,695.78	48,098.51	46,086.74	30,064.48	27,392.32	27,469.96	26,970.84	24,425.96
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	45,573.34	43,295.34	43,695.78	44,098.52	42,086.74	26,064.48	23,392.32	23,469.96	22,970.84	20,425.96

TABLE XIII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 5										
Net Cash Income	61,360.48	61,361.38	61,361.38	58,183.50	58,183.50	42,071.22	42,071.22	42,138.84	35,946.67	35,946.67
Off-Farm Income	3,389.77	3,946.81	4,415.73	3,533.25	4,559.23	2,228.10	2,648.91	2,797.22	2,463.49	3,062.59
Gain/Loss Taxed as Ord. Income	4,233.93	8,156.96	8,156.96	5,628.72	8,217.34	10,551.64	15,722.32	15,722.32	11,257.45	15,722.32
Total Depreciation	10,368.64	11,893.39	11,893.39	10,368.64	11,893.39	11,097.77	12,043.62	12,071.34	11,097.77	12,043.62
Capital Gains	0.00	0.00	0.00	919.59	1,586.81	0.00	0.00	0.00	2,784.84	3,137.75
Adjusted Gross Income	58,615.46	61,571.68	62,040.60	57,896.34	60,653.42	43,753.16	48,398.82	48,587.02	41,354.65	45,825.70
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	54,615.46	57,571.68	58,040.60	53,896.34	56,653.42	39,753.16	44,398.82	44,587.02	37,354.65	41,825.70
Year 6										
Net Cash Income	57,292.21	57,293.05	57,293.05	54,123.30	54,123.30	39,494.81	39,494.81	39,576.48	33,395.30	33,395.30
Off-Farm Income	3,460.17	3,964.26	4,489.28	3,634.70	4,688.13	1,275.30	1,600.67	1,871.10	1,590.71	2,237.88
Gain/Loss Taxed as Ord. Income	596.23	940.52	940.52	845.56	940.52	596.23	940.52	940.52	845.56	940.52
Total Depreciation	10,728.02	15,389.19	15,389.19	10,728.02	15,389.19	11,346.77	16,502.02	16,526.26	11,346.77	16,502.02
Capital Gains	0.00	0.00	0.00	1,492.33	1,617.00	0.00	0.00	0.00	3,013.08	3,137.75
Adjusted Gross Income	50,620.51	46,808.58	47,333.59	49,367.80	45,979.69	30,019.53	25,533.95	25,861.81	27,497.82	23,209.39
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	3,993.81
Taxable Income	46,620.51	42,808.58	43,333.59	45,367.80	41,979.69	26,019.53	21,533.95	21,861.81	23,497.82	19,215.59
Year 7										
Net Cash Income	55,092.57	55,093.36	55,093.36	51,912.56	51,912.56	38,597.52	38,597.52	38,619.92	32,483.26	32,483.26
Off-Farm Income	4,765.98	5,396.03	6,029.73	4,986.45	6,276.70	1,999.08	2,425.86	2,823.54	2,390.43	3,265.34
Gain/Loss Taxed as Ord. Income	-1,389.42	1,556.68	1,556.68	0.00	1,556.68	-1,389.42	1,556.68	1,556.68	0.00	1,556.68
Total Depreciation	10,771.45	10,878.38	10,878.38	10,771.45	10,878.38	11,390.20	11,831.26	11,852.01	11,390.20	11,831.26
Capital Gains	0.00	0.00	0.00	922.29	1,617.00	0.00	0.00	0.00	2,443.04	3,137.75
Adjusted Gross Income	47,697.63	51,167.61	51,801.32	47,049.81	50,484.52	27,816.94	30,748.76	31,149.09	25,926.49	28,611.73
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	43,697.63	47,167.61	47,801.32	43,049.81	46,484.52	23,816.94	26,748.76	27,148.09	21,926.49	24,611.73
Year 8										
Net Cash Income	59,011.73	59,012.48	59,012.48	55,784.70	55,784.70	41,014.54	41,014.54	41,061.49	34,805.43	34,805.43
Off-Farm Income	4,971.01	5,544.73	6,209.69	5,223.34	6,509.[illegible]	1,625.70	2,020.32	2,444.09	2,081.56	2,969.42
Gain/Loss Taxed as Ord. Income	-75.93	639.85	639.85	683.56	920.04	-75.93	639.85	639.85	683.56	920.04
Total Depreciation	11,228.56	14,453.89	14,453.89	11,228.56	14,453.89	11,847.27	15,246.84	15,264.11	11,847.27	15,246.84
Capital Gains	0.00	0.00	0.00	1,237.25	1,476.90	0.00	0.00	0.00	2,758.00	2,997.65
Adjusted Gross Income	52,678.21	50,743.08	51,408.05	51,700.27	50,236.82	30,716.97	28,427.83	28,881.29	28,481.22	26,445.66
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	3,995.79
Taxable Income	48,678.21	46,743.08	47,408.05	47,700.27	46,236.82	26,716.97	24,427.83	24,881.29	24,481.22	22,449.86

TABLE XIII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 9										
Net Cash Income	56,772.04	56,772.75	56,772.75	53,195.36	53,195.36	39,493.55	39,493.55	39,549.12	32,959.88	32,959.88
Off-Farm Income	5,257.11	5,913.43	6,684.84	5,508.02	6,990.54	1,532.85	1,993.38	2,518.60	2,009.71	3,072.45
Gain/Loss Taxed as Ord. Income	2,035.87	4,506.45	4,506.45	2,035.87	4,506.45	2,035.87	4,506.45	4,506.45	2,035.87	4,506.45
Total Depreciation	11,559.44	11,966.51	11,966.51	11,559.44	11,966.51	12,223.20	12,644.66	12,675.87	12,223.20	12,644.66
Capital Gains	0.00	0.00	0.00	1,617.00	1,617.00	0.00	0.00	0.00	3,137.75	3,137.75
Adjusted Gross Income	52,505.51	55,226.05	55,997.46	50,796.73	54,342.77	30,839.03	33,348.67	33,898.24	27,919.96	31,031.81
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	48,505.51	51,226.05	51,997.46	46,796.73	50,342.77	26,839.03	29,348.67	29,898.24	23,919.96	27,031.81
Year 10										
Net Cash Income	64,161.71	64,162.39	64,162.39	60,619.84	60,619.84	43,765.71	44,109.27	44,292.42	37,742.84	37,816.44
Off-Farm Income	4,221.21	4,841.85	5,676.98	4,537.11	6,050.60	381.31	627.46	1,136.15	740.07	1,805.49
Gain/Loss Taxed as Ord. Income	982.09	1,279.06	1,279.06	984.62	1,279.06	982.09	1,279.06	1,279.06	984.62	1,279.06
Total Depreciation	11,836.82	16,997.39	16,997.39	11,836.82	16,997.39	12,500.59	17,505.61	17,533.34	12,500.59	17,505.61
Capital Gains	0.00	0.00	0.00	1,846.73	1,848.00	0.00	0.00	0.00	3,425.23	3,426.49
Adjusted Gross Income	57,528.11	53,285.84	54,120.97	56,151.38	52,800.04	32,628.46	28,510.15	29,174.28	30,392.10	26,821.85
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	3,989.92
Taxable Income	53,528.11	49,285.84	50,120.97	52,151.38	48,800.04	28,628.47	24,510.15	25,174.29	26,392.10	22,831.93
Year 11										
Net Cash Income	62,663.25	62,663.89	62,663.89	59,036.61	59,036.61	43,276.23	43,452.85	43,610.95	36,898.05	36,980.53
Off-Farm Income	5,186.07	5,956.82	6,957.70	5,565.89	7,395.39	627.35	1,079.76	1,758.67	1,195.94	2,533.09
Gain/Loss Taxed as Ord. Income	1,080.72	1,080.72	1,080.72	1,080.72	1,080.72	1,561.04	1,561.04	1,681.12	1,561.04	1,561.04
Total Depreciation	11,869.71	14,393.69	14,393.69	11,869.71	14,393.69	12,533.51	14,731.91	14,756.14	12,533.51	14,731.91
Capital Gains	0.00	0.00	0.00	1,848.00	1,848.00	0.00	0.00	0.00	3,426.49	3,426.49
Adjusted Gross Income	57,060.24	55,307.65	56,308.54	55,661.41	54,966.94	32,931.05	31,361.69	32,294.54	30,547.98	29,769.19
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	3,981.84	3,970.01	3,976.39	3,965.53	3,959.69
Taxable Income	53,060.24	51,307.65	52,308.54	51,661.41	50,966.94	28,949.21	27,391.67	28,318.15	25,582.45	25,809.50
Year 12										
Net Cash Income	65,829.88	65,830.50	65,830.50	62,226.52	62,226.52	45,332.99	45,403.90	45,504.76	38,844.77	38,861.90
Off-Farm Income	6,695.83	7,556.63	8,624.84	7,138.84	9,128.63	1,344.51	1,922.04	2,703.30	2,091.18	3,637.35
Gain/Loss Taxed as Ord. Income	960.19	960.19	960.19	960.19	960.19	960.19	960.19	960.19	960.19	960.19
Total Depreciation	11,869.71	11,022.00	11,022.00	11,869.71	11,022.00	12,533.51	11,379.80	11,447.94	12,533.51	11,379.80
Capital Gains	0.00	0.00	0.00	1,848.00	1,848.00	0.00	0.00	0.00	3,426.50	3,426.50
Adjusted Gross Income	61,616.14	63,325.27	64,393.46	60,303.76	63,141.24	35,104.15	36,906.29	37,720.27	32,789.09	35,506.09
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	57,616.14	59,325.27	60,393.46	56,303.76	59,141.24	31,104.15	32,906.29	33,720.27	28,789.10	31,506.09

TABLE XIII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 13										
Net Cash Income	62,582.56	62,583.13	62,583.13	59,042.63	43,680.38	43,680.38	43,680.38	43,694.81	37,252.84	37,252.84
Off-Farm Income	8,565.21	9,424.01	10,528.08	9,075.39	11,100.46	3,016.27	3,629.18	4,471.36	3,926.13	5,524.62
Gain/Loss Taxed as Ord. Income	9,208.58	9,208.58	9,208.58	9,208.58	9,208.58	18,214.57	18,214.57	18,214.57	18,214.57	18,214.57
Total Depreciation	11,869.71	10,813.32	10,813.32	11,869.71	10,813.32	12,533.51	10,904.33	10,939.77	12,533.51	10,904.33
Capital Gains	0.00	0.00	0.00	1,848.00	1,848.00	0.00	0.00	0.00	3,426.50	3,426.50
Adjusted Gross Income	68,486.50	70,402.25	71,506.25	67,304.80	70,386.19	52,377.66	54,619.76	55,440.92	50,286.49	53,514.17
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	64,486.57	66,402.25	67,506.38	63,304.80	66,386.19	48,377.66	50,619.76	51,440.92	46,286.49	49,514.17
Year 14										
Net Cash Income	68,075.75	68,076.25	68,076.25	64,335.27	64,335.27	48,596.97	48,660.04	48,772.39	42,020.70	42,027.20
Off-Farm Income	8,103.09	8,951.83	10,105.50	8,653.89	10,721.26	1,572.14	2,118.25	3,000.55	2,490.94	4,154.37
Gain/Loss Taxed as Ord. Income	832.75	832.75	832.75	832.75	832.75	683.56	683.56	683.56	683.56	683.56
Total Depreciation	14,721.64	17,874.82	17,874.82	14,721.64	17,874.82	13,076.98	16,249.02	16,317.11	13,076.98	16,249.02
Capital Gains	0.00	0.00	0.00	1,848.00	1,848.00	0.00	0.00	0.00	3,426.50	3,426.50
Adjusted Gross Income	62,289.91	59,986.00	61 139.67	60,948.18	59,862.37	37,775.64	35,212.77	36,139.33	35,544.67	34,042.55
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	58,289.91	55,986.00	57,139.67	56,948.18	55,862.37	33,775.64	31,212.77	32,139.33	31,544.67	30,042.55
Year 15										
Net Cash Income	70,081.75	70,082.25	70,082.25	66,264.94	66,264.94	49,111.55	49,058.55	49,165.92	42,244.61	42,250.79
Off-Farm Income	9,051.74	10,012.14	11,372.38	9,687.42	12,074.77	2,264.91	2,976.62	3,999.28	3,408.42	5,308.41
Gain/Loss Taxed as Ord. Income	2,225.64	2,225.62	2,225.62	2,225.64	2,225.62	1,895.22	1,895.20	1,895.20	1,895.22	1,895.20
Total Depreciation	14,721.64	14,078.82	14,078.82	14,721.64	14,078.82	13,049.52	10,900.34	10,960.23	13,049.52	10,900.34
Capital Gains	0.00	0.00	0.00	2,021.25	2,021.25	0.00	0.00	0.00	3,715.25	3,715.25
Adjusted Gross Income	66,637.50	68,241.19	69,601.38	65,477.50	68,507.56	40,222.10	43,030.00	44,100.13	38,213.91	42,269.28
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	62,637.54	64,241.20	65,601.38	61,477.50	64,507.56	36,222.10	39,030.00	40 100.13	34,213.91	38,269.28
Year 16										
Net Cash Income	69,482.00	69,482.50	69,482.50	65,719.00	65,719.00	48,688.44	48,634.29	48,753.46	41,949.02	41,954.88
Off-Farm Income	9,971.59	10,937.13	12,343.42	10,689.00	13,129.82	2,973.22	3,653.64	4,710.39	4,260.49	6,173.56
Gain/Loss Taxed as Ord. Income	2,543.71	2,543.71	2,543.71	2,543.71	2,543.71	2,903.95	2,703.81	2,803.88	2,903.95	2,703.81
Total Depreciation	14,721.69	15,712.14	15,712.14	14,721.69	15,712.14	13,022.10	11,808.18	11,859.88	13,022.10	11,808.18
Capital Gains	0.00	0.00	0.00	2,021.25	2,021.25	0.00	0.00	0.00	3,715.25	3,715.25
Adjusted Gross Income	67,275.63	67,251.19	68,657.44	66,251.30	67,701.63	41,543.66	43,183.50	44,407.79	39,806.57	42,739.28
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	63,275.67	63,251.19	64,657.48	62,251.30	63,701.63	37,543.66	39,183.50	40,407.79	35,806.57	38,739.28

TABLE XIII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 17										
Net Cash Income	71,510.25	71,510.69	71,510.69	67,686.19	67,686.19	49,839.01	49,783.31	49,976.44	42,953.21	42,958.75
Off-Farm Income	11,368.99	12,388.55	13,888.09	12,470.84	14,761.14	3,863.81	4,540.47	5,666.54	5,304.55	7,294.30
Gain/Loss Taxed as Ord. Income	2,373.43	2,373.41	2,373.41	2,373.43	2,373.41	2,373.43	2,373.41	2,373.41	2,373.43	2,373.41
Total Depreciation	14,721.64	12,568.88	12,568.88	14,721.64	12,568.88	12,994.64	9,961.82	10,005.32	12,994.64	9,961.82
Capital Gains	0.00	0.00	0.00	2,021.25	2,021.25	0.00	0.00	0.00	3,715.25	3,715.25
Adjusted Gross Income	70,531.00	73,703.69	75,203.25	69,529.94	74,273.00	43,081.54	46,735.30	48,011.00	41,351.75	46,379.82
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	66,531.00	69,703.75	71,203.25	65,529.95	70,273.00	39,081.54	42,735.30	44,011.00	37,351.75	42,379.82
Year 18										
Net Cash Income	67,577.75	67,578.19	67,578.19	63,812.31	63,812.31	47,030.79	46,973.74	47,102.26	40,266.21	40,271.41
Off-Farm Income	11,821.63	12,802.46	14,369.48	12,708.90	15,330.27	3,813.06	4,434.65	5,620.35	5,406.85	7,407.54
Gain/Loss Taxed as Ord. Income	696.32	696.32	696.32	960.19	960.19	696.32	696.32	696.32	960.19	960.19
Total Depreciation	14,721.64	16,159.50	16,159.50	14,721.64	16,159.50	12,967.19	13,769.61	13,804.93	12,967.19	13,769.61
Capital Gains	0.00	0.00	0.00	1,889.31	1,889.31	0.00	0.00	0.00	3,583.31	3,583.31
Adjusted Gross Income	65,374.05	64,917.44	66,484.44	64,649.01	65,832.50	38,572.94	38,335.05	39,613.97	37,249.34	38,452.80
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	61,374.05	60,917.44	62,484.46	60,649.01	61,832.53	34,572.94	34,335.05	35,613.97	33,249.34	34,452.80
Year 19										
Net Cash Income	75,631.75	75,632.25	75,632.25	71,635.13	71,635.13	51,644.86	51,586.46	51,754.89	44,621.73	44,626.61
Off-Farm Income	12,322.77	13,370.82	15,064.86	13,263.73	16,081.32	4,052.60	4,711.41	6,028.24	5,750.22	7,920.79
Gain/Loss Taxed as Ord. Income	5,697.23	5,697.20	5,697.20	5,697.23	5,697.20	6,177.55	6,177.50	6,297.58	6,177.55	6,177.50
Total Depreciation	15,137.58	13,705.01	13,705.01	15,137.58	13,705.01	13,229.84	11,327.58	11,361.58	13,229.84	11,327.58
Capital Gains	0.00	0.00	0.00	2,021.25	2,021.25	0.00	0.00	0.00	3,715.25	3,715.25
Adjusted Gross Income	78,514.19	80,995.19	82,689.25	77,479.63	81,729.75	48,645.11	51,147.74	52,719.08	47,034.87	51,112.54
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	74,514.19	76,995.19	78,689.25	73,479.63	77,729.75	44,645.11	47,147.74	48,719.08	43,634.87	47,112.54
Year 20										
Net Cash Income	73,648.63	73,649.00	73,649.00	68,839.44	68,839.44	50,858.36	50,839.41	50,919.97	43,847.42	43,852.05
Off-Farm Income	11,955.52	12,983.84	14,763.98	13,001.90	15,876.92	3,054.83	3,657.93	5,053.79	4,921.14	7,153.52
Gain/Loss Taxed as Ord. Income	984.62	2,749.34	2,749.34	984.62	2,749.34	984.62	2,749.34	2,749.34	984.62	2,749.34
Total Depreciation	15,137.63	18,990.38	18,990.38	15,137.63	18,990.38	13,198.20	17,035.51	17,090.10	13,198.20	17,035.51
Capital Gains	445.86	445.86	445.86	2,640.36	2,640.36	445.86	445.86	445.86	4,449.86	4,449.86
Adjusted Gross Income	71,896.88	70,837.65	72,617.78	70,328.56	71,115.56	42,145.42	40,656.99	42,078.80	41,004.80	41,169.20
Standard Deduction and Dependents Exemptions	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Taxable Income	67,896.94	66,837.65	68,617.78	66,328.56	67,115.56	38,145.42	36,656.99	38,078.80	37,004.80	37,169.20

TABLE XIV

DETERMINANTS OF TAXABLE INCOME FOR THE LAND RENT GROWTH METHOD BY FARM TYPE AND YEAR

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 1										
Net Cash Income	50,090.41	50,090.41	50,090.41	47,215.92	47,215.92	34,409.20	34,409.20	34,409.20	28,706.14	28,706.14
Off-Farm Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gain/Loss Taxed as Ord. Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Depreciation	9,839.95	19,902.01	19,902.01	9,839.95	19,902.01	10,570.31	21,184.45	21,184.45	10,570.31	21,184.45
Capital Gains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adjusted Gross Income	40,250.41	30,188.34	30,188.34	37,375.92	27,313.86	23,838.83	13,224.70	13,224.70	18,135.78	7,521.65
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	987.79	999.54	904.30	904.30	940.88	782.04
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	36,250.41	26,188.34	26,188.34	33,375.92	23,326.07	19,839.30	9,320.40	9,320.40	14,194.91	3,739.61
Year 2										
Net Cash Income	60,757.03	60,757.03	60,757.03	57,903.20	57,903.20	41,117.67	41,123.07	41,123.07	35,464.65	35,464.65
Off-Farm Income	1,036.36	1,252.97	1,304.97	1,102.97	1,359.61	523.04	674.17	716.07	613.38	770.26
Gain/Loss Taxed as Ord. Income	-936.62	-258.84	-258.84	0.00	218.39	-936.62	-258.84	-258.84	0.00	218.39
Total Depreciation	9,839.95	15,390.88	15,390.88	9,839.95	15,390.88	10,570.31	16,495.01	16,495.01	10,570.31	16,495.01
Capital Gains	0.00	0.00	0.00	975.44	1,205.13	0.00	0.00	0.00	2,419.19	2,648.88
Adjusted Gross Income	51,016.75	46,360.21	46,412.20	50,141.59	45,295.39	30,133.73	25,043.32	25,039.64	27,926.86	22,607.10
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	971.87	971.87	1,000.00	938.53
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	47,016.75	42,360.21	42,412.20	46,141.59	41,295.39	26,133.73	21,071.45	21,113.36	23,926.86	18,668.57
Year 3										
Net Cash Income	56,542.26	56,542.26	56,542.26	53,691.73	53,691.73	38,585.38	38,628.50	38,633.13	32,964.48	32,985.71
Off-Farm Income	2,025.19	2,373.71	2,660.41	2,120.46	2,746.56	941.64	1,175.60	1,290.72	1,073.02	1,399.67
Gain/Loss Taxed as Ord. Income	-535.97	-242.54	-242.54	0.00	0.00	-535.97	-242.54	-242.54	0.00	0.00
Total Depreciation	10,051.01	14,829.13	14,829.13	10,051.01	14,829.13	10,781.34	15,755.00	15,755.00	10,781.34	15,755.00
Capital Gains	0.00	0.00	0.00	1,175.76	1,322.48	0.00	0.00	0.00	2,619.51	2,766.23
Adjusted Gross Income	47,980.41	43,844.23	44,130.94	46,936.89	42,931.59	28,209.65	23,806.51	23,926.27	25,875.62	21,396.57
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	985.70
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	43,980.41	39,844.23	40,130.94	42,936.89	38,931.59	24,209.65	19,806.51	19,926.27	21,875.62	17,410.87
Year 4										
Net Cash Income	59,435.22	59,435.22	59,435.22	56,239,21	56,239.21	41,544.89	41,572.85	41,583.29	35,379.88	35,398.27
Off-Farm Income	3,050.54	3,522.61	3,923.06	3,148.51	4,016.73	1,357.81	1,692.92	1,859.42	1,503.85	1,975.81
Gain/Loss Taxed as Ord. Income	325.24	584.44	584.44	683.56	683.56	683.56	683.56	683.56	683.56	683.56
Total Depreciation	10,269.39	12,991.82	12,991.82	10,269.39	12,991.82	11,074.80	13,872.83	13,872.83	11,074.80	13,872.83
Capital Gains	0.00	0.00	0.00	1,264.59	1,394.19	0.00	0.00	0.00	2,887.50	2,887.50
Adjusted Gross Income	52,541.53	50,550.40	50,950.84	51,066.42	49,341.80	32,511.41	30,076.45	30,253.39	29,379.95	27,072.25
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	48,541,53	46,550.40	46,950.84	47,066.42	45,341.80	28,511.41	26,076.45	26,253.39	25,379.95	23,072.25

TABLE XIV (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 5										
Net Cash Income	63,296.57	63,296.57	63,296.57	60,118.69	60,118.69	43,887.61	43,887.61	43,887.61	37,720.70	37,720.70
Off-Farm Income	4,459.55	5,011.04	5,483.89	4,604.59	5,630.07	2,973.36	3,392.87	3,620.15	3,209.72	3,811.64
Gain/Loss Taxed as Ord. Income	4,233.93	8,156.96	8,156.96	5,628.72	8,217.34	10,551.64	15,722.32	15,722.32	11,257.45	15,722.32
Total Depreciation	10,324.81	11,827.77	11,827.77	10,324.81	11,827.77	11,074.80	12,010.09	12,010.09	11,074.80	12,010.09
Capital Gains	0.00	0.00	0.00	919.59	1,586.81	0.00	0.00	0.00	2,804.09	3,157.00
Adjusted Gross Income	61,665.18	64,636.73	65,109.59	60,946.73	63,725.07	46,337.80	50,992.70	51,219.97	43,917.16	48,401.56
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	57,665.18	60,636.73	61,109.59	56,946.73	59,725.07	42,337.80	46,992.70	47,219.97	39,917.16	44,401.56
Year 6										
Net Cash Income	59,229.30	59,229.30	59,229.30	56,059.55	56,059.55	41,356.11	41,356.11	41,356.11	35,208.04	35,208.04
Off-Farm Income	4,607.91	5,103.84	5,635.91	4,784.46	5,837.38	2,079.74	2,400.29	2,753.33	2,398.31	3,055.79
Gain/Loss Taxed as Ord. Income	596.23	940.52	940.52	845.56	940.52	596.23	940.52	940.52	845.56	940.52
Total Depreciation	10,684.20	15,325.82	15,325.82	10,684.20	15,325.82	11,323.80	16,467.11	16,467.11	11,323.80	16,467.11
Capital Gains	0.00	0.00	0.00	1,492.33	1,617.00	0.00	0.00	0.00	3,032.33	3,157.00
Adjusted Gross Income	53,749.16	49,947.78	50,479.86	52,497.66	49,128.57	32,708.23	28,229.77	28,582.82	30,160.40	25,894.20
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	49,749.16	45,947.78	46,479.86	48,497.66	45,128.57	28,708.23	24,229.77	24,582.82	26,160.40	21,894.20
Year 7										
Net Cash Income	57,030.68	57,030.68	57,030.68	53,849.88	53,849.88	40,430.36	40,430.36	40,430.36	34,275.01	34,275.01
Off-Farm Income	5,998.84	6,623.26	7,264.35	6,222.37	7,515.63	2,873.97	3,299.95	3,779.95	3,270.68	4,160.46
Gain/Loss Taxed as Ord. Income	-1,389.42	1,556.68	1,556.68	0.00	1,556.68	-1,389.42	1,556.68	1,556.68	0.00	1,556.68
Total Depreciation	10,727.58	10,817.27	10,817.27	10,727.58	10,817.27	11,367.19	11,794.96	11,794.96	11,367.19	11,794.96
Capital Gains	0.00	0.00	0.00	922.29	1,617.00	0.00	0.00	0.00	2,462.29	3,157.00
Adjusted Gross Income	50,912.45	54,393.28	55,034.37	50,266.89	53,721,84	30,547.66	33,491.96	33,971.97	28,640.73	31,354.14
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	46,912.45	50,393.28	51,034.37	46,266.89	49,721.84	26,547.66	29,491.97	29,971.97	24,640.73	27,354.14
Year 8										
Net Cash Income	60,950.86	60,950.86	60,950.86	57,723.07	57,723.07	42,902.84	42,902.84	42,902.84	36,652.05	36,652.05
Off-Farm Income	6,293.03	6,856.91	7,528.07	6,549.05	7,833.09	2,574.75	2,964.21	3,473.98	3,038.59	3,938.75
Gain/Loss Taxed as Ord. Income	-75.93	639.85	639.85	683.56	920.04	-75.93	639.85	639.85	683.56	920.04
Total Depreciation	11,184.70	14,395.07	14,395.07	11,184.70	14,395.07	11,824.30	15,209.17	15,209.17	11,824.30	15,209.17
Capital Gains	0.00	0.00	0.00	1,237.25	1,476.90	0.00	0.00	0.00	2,777.25	3,016.90
Adjusted Gross Income	55,983.20	54,052.47	54,723.64	55,008.20	53,557.96	33,577.31	31,297.67	31,807.45	31,327.12	29,318.52
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	51,983.20	50,052.47	50,723.64	51,008.20	49,557.96	29,577.31	27,297.67	27,807.45	27,327.12	25,318.52

TABLE XIV (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 9										
Net Cash Income	60,610.44	60,610.44	60,610.44	57,033.05	57,033.05	43,261.88	43,261.88	43,261.88	36,709.88	36,709.88
Off-Farm Income	7,680.79	8,327.77	9,104.55	7,936.22	9,416.73	3,364.96	3,822.31	4,436.16	3,852.72	4,929.79
Gain/Loss Taxed as Ord. Income	2,035.87	4,506.45	4,506.45	2,035.87	4,506.45	2,035.87	4,506.45	4,506.45	2,035.87	4,506.45
Total Depreciation	11,471.71	11,578.95	11,578.95	11,471.71	11,578.95	12,156.36	12,292.83	12,292.83	12,156.36	12,292.83
Capital Gains	0.00	0.00	0.00	1,617.00	1,617.00	0.00	0.00	0.00	3,157.00	3,157.00
Adjusted Gross Income	58,855.30	61,865.66	62,642.43	57,150.31	60,994.20	36,506.31	39,297.78	39,911.63	33,599.07	37,010.24
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	54,855.30	57,865.66	58,642.43	53,150.31	56,994.20	32,506.31	35,297.78	35,911.63	29,599.07	33,010.24
Year 10										
Net Cash Income	67,931.25	67,931.25	67,931.25	64,388.77	64,388.77	47,995.33	47,995.33	47,995.33	41,551.09	41,551.09
Off-Farm Income	6,865.59	7,464.07	8,300.04	7,188.35	8,681.98	2,139.94	2,559.20	3,232.74	2,737.36	3,841.13
Gain/Loss Taxed as Ord. Income	982.09	1,279.06	1,279.06	984.62	1,279.06	982.09	1,279.06	1,279.06	984.62	1,279.06
Total Depreciation	11,749.13	16,877.45	16,877.45	11,749.13	16,877.45	12,433.76	17,417.73	17,417.73	12,433.76	17,417.73
Capital Gains	0.00	0.00	0.00	1,846.73	1,848.00	0.00	0.00	0.00	3,444.48	3,445.74
Adjusted Gross Income	64,029.79	59,796.95	60,632.91	62,659.23	59,320.29	38,683.54	34,415.79	35,089.34	36,283.73	32,699.24
Standard Deduction	1,000,00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	60,029.79	55,726.95	56,632.91	58,659.23	55,320.29	34,683.54	30,415.79	31,089.34	32,283.73	28,699.24
Year 11										
Net Cash Income	66,364.00	66,364.00	66,364.00	62,736.79	62,736.79	47,304.07	47,304.07	47,304.07	40,681.62	40.681.62
Off-Farm Income	8,047.16	8,798.55	9,800.29	8,435.07	10,249.54	2,683.19	3,220.17	4,060.45	3,392.08	4,780.80
Gain/Loss Taxed as Ord. Income	1,080.72	1,080.72	1,080.72	1,080.72	1,080.72	1,681.12	1,681.12	1,681.12	1,681.12	1,681.12
Total Depreciation	11,782.02	14,278.26	14,278.26	11,782.02	14,278.26	12,466.67	14,644.94	14,644.94	12,466.67	14,644.94
Capital Gains	0.00	0.00	0.00	1,848.00	1,848.00	0.00	0.00	0.00	3,445.74	3,445.74
Adjusted Gross Income	63,709.86	61,965.00	62,966.73	62,318.46	61,636.69	39,201.66	37,560.35	38,400.64	36,733.85	35,944.29
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	989.60	995.97	985.16	979.32
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	59,709.86	57,965.00	58,966.73	58,318.46	57,636.69	35,201.66	33,570.75	34,404.66	32,748.69	31,964.96
Year 12										
Net Cash Income	69,462.00	69,462.00	69,462.00	65,858.00	65,858.00	49,188.08	49,188.08	49,188.08	42,584.27	42,584.27
Off-Farm Income	9,779.38	10,621.45	11,688.45	10,231.83	12,203.34	3,694.04	4,298.33	5,207.00	4,514.25	6,037.59
Gain/Loss Taxed as Ord. Income	960.19	960.19	960.19	960.19	960.19	960.19	960.19	960.19	960.19	960.19
Total Depreciation	11,782.02	10,911.09	10,911.09	11,782.02	10,911.09	12,466.67	11,341.13	11,341.13	12,466.67	11,341.13
Capital Gains	0.00	0.00	0.00	1,848.00	1,848.00	0.00	0.00	0.00	3,445.75	3,445.75
Adjusted Gross Income	68,419.44	70,132.44	71,199.44	67,115.94	69,958.31	41,375.60	43,105.44	44,014.11	39,037.75	41,686.64
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	64,419.49	66,132.50	67,199.50	63,115.94	65,958.38	37,375.60	39,105.44	40,014.11	35,037.75	37,686.64

TABLE XIV (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 13										
Net Cash Income	66,145.94	66,145.94	66,145.94	62,605.45	62,605.45	47,368.40	47,368.40	47,368.40	40,923.13	40,923.13
Off-Farm Income	11,866.23	12,703.51	13,804.55	12,387.19	14,391.10	5,624.49	6,220.23	7,168.71	6,560.48	8,119.77
Gain/Loss Taxed as Ord. Income	9,208.58	9,208.58	9,208.58	9,208.58	9,208.58	18,214.57	18,214.57	18,214.57	18,214.57	18,214.57
Total Depreciation	11,782.02	10,706.95	10,706.95	11,782.02	10,706.95	12,466.67	10,837.32	10,837.32	12,466.67	10,837.32
Capital Gains	0.00	0.00	0.00	1,848.00	1,848.00	0.00	0.00	0.00	3,445.75	3,445.75
Adjusted Gross Income	75,438.50	77,351.00	78,452.00	74,267.06	77,346.00	58,740.77	60,965.84	61,914.30	56,677.20	59,865.86
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	71,438.50	73,351.00	74,452.00	70,267.06	73,346.00	54,740.77	56,965.84	57,914.30	52,677.20	55,865.86
Year 14										
Net Cash Income	73,281.13	73,281.13	73,281.13	69,540.13	69,540.13	54,276.91	54,276.91	54,276.91	47,574.86	47,574.86
Off-Farm Income	12,745.99	13,570.52	14,719.96	13,308.73	15,350.86	5,083.24	5,647.94	6,663.96	6,102.11	7,706.45
Gain/Loss Taxed as Ord. Income	832.75	832.75	832.75	832.75	832.75	683.56	683.56	683.56	683.56	683.56
Total Depreciation	14,590.13	17,442.00	17,442.00	14,590.13	17,442.00	12,987.44	16,135.13	16,135.13	12,987.44	16,135.13
Capital Gains	0.00	0.00	0.00	1,848.00	1,848.00	0.00	0.00	0.00	3,445.75	3,445.75
Adjusted Gross Income	72,269.63	70,242.25	71,391.75	70,939.38	70,129.56	47,056.25	44,473.23	45,489.24	44,818.82	43,275.45
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	68,269.69	66,242.38	67,391.75	66,939.38	66,129.63	43,056.25	40,473.23	41,489.25	40,818.82	39,275.45
Year 15										
Net Cash Income	75,198.19	75,198.19	75,198.19	71,380.75	71,380.75	54,618.18	54,618.18	54,618.18	47,741.60	47,741.60
Off-Farm Income	14,008.08	14,938.30	16,289.39	14,657.99	17,009.02	6,162.24	6,822.90	7,974.47	7,335.71	9,173.34
Gain/Loss Taxed as Ord. Income	2,225.64	2,225.62	2,225.62	2,225.64	2,225.62	1,895.22	1,895.20	1,895.20	1,895.22	1,895.20
Total Depreciation	14,590.13	13,915.88	13,915.88	14,590.13	13,915.88	12,957.86	10,785.43	10,785.43	12,957.86	10,785.43
Capital Gains	0.00	0.00	0.00	2,021.25	2,021.25	0.00	0.00	0.00	3,734.50	3,734.50
Adjusted Gross Income	76,841.63	78,446.00	79,797.19	75,695.38	78,720.56	49,717.72	52,550.80	53,702.38	47,749.14	51,759.18
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	72,841.69	74,446.00	75,797.19	71,695.38	74,720.56	45,717.72	48,550.80	49,702.38	43,749.14	47,759.18
Year 16										
Net Cash Income	74,154.13	74,154.13	74,154.13	70,390.63	70,390.63	53,798.39	53,798.39	53,798.39	47,051.62	47,051.62
Off-Farm Income	15,482.64	16,414.24	17,809.86	16,215.95	18,614.68	7,421.02	8,041.15	9,228.21	8,743.74	10,580.41
Gain/Loss Taxed as Ord. Income	2,543.71	2,543.71	2,543.71	2,543.71	2,543.71	2,903.95	2,803.88	2,803.88	2,903.95	2,803.88
Total Depreciation	14,590.13	15,556.01	15,556.01	14,590.13	15,556.01	12,928.29	11,692.29	11,692.29	12,928.29	11,692.29
Capital Gains	0.00	0.00	0.00	2,021.25	2,021.25	0.00	0.00	0.00	3,734.50	3,734.50
Adjusted Gross Income	77,590.25	77,556.00	78,951.50	76,581.31	78,014.13	51,195.00	52,951.07	54,138.14	49,505.47	52,478.06
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	73,590.25	73,556.00	74,951.63	72,581.31	74,014.19	47,195.00	48,951.07	50,138.14	45,505.47	48,478.06

TABLE XIV (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 17										
Net Cash Income	75,693.44	75,693.44	75,693.44	71,868.75	71,868.75	54,569.27	54,569.27	54,569.27	47,680.86	47,680.86
Off-Farm Income	17,471.24	18,455.23	19,941.59	18,290.90	20,835.79	8,899.63	9,507.28	10,766.82	10,379.66	12,277.61
Gain/Loss Taxed as Ord. Income	2,373.43	2,373.41	2,373.41	2,373.43	2,373.41	2,373.43	2,373.41	2,373.41	2,373.43	2,373.41
Total Depreciation	14,590.13	12,419.50	12,419.50	14,590.13	12,419.50	12,898.73	9,844.95	9,844.95	12,898.73	9,844.95
Capital Gains	0.00	0.00	0.00	2,021.25	2,021.25	0.00	0.00	0.00	3,734.50	3,734.50
Adjusted Gross Income	80,947.75	84,102.38	85,588.69	79,964.19	84,679.50	52,943.53	56,604.95	57,864.49	51,269.65	56,221.35
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	76,947.75	80,102.44	81,588.75	75,964.19	80,679.56	48,943.53	52,604.95	53,864.49	47,269.65	52,221.35
Year 18										
Net Cash Income	71,271.88	71,271.88	71,271.88	67,506.00	67,506.00	51,243.01	51,243.01	51,243.01	44,482.66	44,482.66
Off-Farm Income	18,512.48	19,452.09	21,000.55	19,419.47	21,983.96	9,439.77	9,980.84	11,296.91	11,077.82	12,967.46
Gain/Loss Taxed as Ord. Income	696.32	696.32	696.32	960.19	960.19	696.32	696.32	696.32	960.19	960.19
Total Depreciation	14,590.13	16,016.89	16,016.89	14,590.13	16,016.89	12,869.15	13,651.73	13,651.73	12,869.15	13,651.73
Capital Gains	0.00	0.00	0.00	1,889.31	1,889.31	0.00	0.00	0.00	3,602.56	3,602.56
Adjusted Gross Income	75,890.50	75,403.38	76,951.75	75,184.75	76,322.50	48,509.89	48,268.40	49,584.46	47,254.03	48,361.10
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	71,890.50	71,403.38	72,951.75	71,184.75	72,322.50	44,509.89	44,268.40	45,584.46	43,254.03	44,361.10
Year 19										
Net Cash Income	80,751.38	80,751.38	80,751.38	76,754.19	76,754.19	57,284.27	57,284.27	57,284.27	50,266.66	50,266.66
Off-Farm Income	20,611.23	21,617.42	23,289.67	21,573.61	24,330.30	11,098.54	11,675.63	13,114.96	12,845.83	14,896.70
Gain/Loss Taxed as Ord. Income	5,697.23	5,697.20	5,697.20	5,697.23	5,697.20	6,297.63	6,297.58	6,297.58	6,297.63	6,297.58
Total Depreciation	14,962.20	13,238.25	13,238.25	14,962.20	13,238.25	13,075.32	10,885.36	10,885.36	13,075.32	10,885.36
Capital Gains	0.00	0.00	0.00	2,021.25	2,021.25	0.00	0.00	0.00	3,734.50	3,734.50
Adjusted Gross Income	92,097.44	94,827.50	96,499.88	91,083.98	95,564.50	61,605.07	64,372.05	65,811.38	60,069.25	64,310.00
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	88,097.50	90 827.63	92,499.88	87,083.98	91,564.50	57,605.07	60,372.05	61,811.38	56,069.25	60,310.01
Year 20										
Net Cash Income	78,195.00	78,195.00	78,195.00	74,171.38	74,171.38	55,965.36	55,965.36	55,965.36	48,923.45	48,923.45
Off-Farm Income	20,944.65	21,917.44	23,676.31	22,014.43	24,826.36	10,739.80	11,268.30	12,785.97	12,683.98	14,766.44
Gain/Loss Taxed as Ord. Income	984.62	2,749.34	2,749.34	984.62	2,749.34	984.62	2,749.34	2,749.34	984.62	2,749.34
Total Depreciation	14,962.20	18,795.75	18,795.75	14,962.20	18,795.75	13,043.64	16,886.47	16,886.47	13,043.64	16,886.47
Capital Gains	445.86	445.86	445.86	2,640.36	2,640.36	445.86	445.86	445.86	4,469.11	4,469.11
Adjusted Gross Income	85,607.75	84,511.88	86,270.76	84,848.44	85,591.56	55,091.91	53,542.34	55,059.99	54,017.46	54,021.81
Standard Deduction	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Dependents Exemptions	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Taxable Income	81,607.75	80,511.88	82,270.76	80,848.44	81,591.56	51,091.91	49,542.34	51,059.99	50,017.46	50,021.81

For the years one through fourteen, strategy two has a larger taxable income than strategy five because the large net cash income (relative to strategy five) could not be off-set by zero capital gains, smaller off-farm income (relative to strategy five) and smaller or equal gains/losses taxed as ordinary income. The off-farm income of strategy five is greater than that of strategy two because the tax liability reducing provisions lower income taxes paid, consequently more income (relative to strategy two) accumulates in the cash account which yields a return as off-farm income. From year fifteen through year twenty strategy five taxable income exceeded that of strategy two. Strategy five's larger off-farm income plus greater capital gains off-set the lower net cash income resulting in a taxable income greater than that of strategy two. As a result of the above described relationships, the taxable income of strategy five has a discounted present value lower than that of strategy two by $7,390.

Strategies Two and Four Compared. Both strategy two and four do not have tax liability reducing provisions. Strategy four converts some ordinary income to capital gains income while strategy two does not. Strategy two utilizes fast depreciation (additional first year depreciation and sum of the years digits depreciation) while strategy four uses straight line depreciation. Strategy two has a larger taxable income than strategy four for the twelve years which are clustered in the middle and later years of simulation.

For years one through four strategy four has a larger taxable income than strategy two because the smaller net cash income and off-farm income could not off-set the smaller depreciation and larger

capital gains. The net cash income, off-farm income, and gains/losses taxed as ordinary income for years five, seven and nine for strategy two could not be nullified by depreciation and zero capital gains to result in a greater taxable income for strategy two. For years six, eight, ten, eleven and fourteen depreciation and zero capital gains over-rode the net cash income, off-farm income, and gains/losses taxed as ordinary income for strategy two to result in a smaller taxable income than for strategy four. Depreciation, zero capital gains, and equal (or smaller) gains/losses taxed as ordinary income could not offset the off-farm income and net cash income for years twelve, fifteen, sixteen, and eighteen resulting in a larger taxable income for strategy two. Strategy four for years thirteen, seventeen and nineteen has a smaller taxable income because a smaller net cash income, off-farm income and a larger depreciation offset capital gains. For year twenty the net cash income, off-farm income and gains/losses taxed as ordinary income of strategy two could not be nullified by depreciation and capital gains resulting in a smaller taxable income for strategy four. The discounted percent value of strategy four exceeds that of strategy two by $2,425 as a consequence of the above described interactions.

Strategies Four and Three Compared. Strategy four is a capital gains generating strategy with no provisions to reduce tax liability and utilizes straight line depreciation. Strategy three utilizes fast depreciation and has provisions to reduce tax liability but does not convert ordinary income to capital gains. The taxable income of strategy three exceeds that of strategy four for thirteen years of the twenty simulated, with these years being clustered in the middle

to later years of simulation. Net cash income and off-farm income for strategy four are less than for strategy three.

For years one through four, the small depreciation, larger gains/losses taxed as ordinary income and capital gains off-set the small net cash income and off-farm income to result in a larger taxable income for strategy four than for strategy three. Strategy three for years five, seven, nine, eleven, fourteen, sixteen and twenty has a larger taxable income than strategy four because the net cash income, off-farm income, and gains/losses taxed as ordinary income cannot be offset by depreciation and zero capital gains. For years six, eight and ten the depreciation and capital gains of strategy four could not be negated by net cash income and off-farm income resulting in a larger taxable income than for strategy three. Net cash income and depreciation for strategy three for years twelve, thirteen, fifteen, seventeen and nineteen could not be overrode by zero capital gains resulting in a greater taxable income than for strategy four. In year eighteen, net cash income and off-farm income were not nullified by depreciation, gains/losses taxed as ordinary income and zero capital gains resulting in a larger taxable income for strategy three than for strategy four. The difference in discounted present value of $6,090 between strategy three and four results from the interactions described above.

Strategies Three and One Compared. Strategy three utilizes first year additional depreciation and sum of the years digits depreciation while strategy one uses straight line depreciation only. Neither strategy converts ordinary income to capital gains income and net cash income is equal for all years of simulation. Strategy three employs

tax liability reducing provisions while strategy one does not. For eleven of the twenty years simulated the taxable income of strategy three exceeds that of strategy one. Off-farm income of strategy three always exceeds that of strategy one.

For years one through four, the greater depreciation of strategy three over-compensated for the larger off-farm income and gains/losses taxed as ordinary income to result in a smaller taxable income than for strategy one. Gains/losses taxed as ordinary income and off-farm income overpowered the larger depreciation to give strategy three a larger taxable income than strategy one for the years five, seven and nine. Strategy one for years six, eight, ten, eleven and fourteen with a small depreciation under-compensated for by off-farm income and gains/losses taxed as ordinary income results in a greater taxable income for strategy one. Strategy one has a smaller taxable income in years twelve, thirteen, fifteen, seventeen and eighteen because of a larger depreciation and smaller off-farm income than strategy three. For years sixteen and eighteen a small off-farm income compensates for a small depreciation resulting in a smaller taxable income for strategy one. In year twenty a small off-farm income plus a small gains/losses taxed as ordinary income off-set a small depreciation resulting again in a smaller taxable income for strategy one. The difference between the discounted percent values of strategy three and one as a result of the above described actions is $8,570.

Land Purchase, Livestock Farm

The net cash income for the non-capital gains generating strategies

(strategies one, two and three) is larger than for the capital gains generating strategies (strategies four and five). Unlike the Land Purchase, Cash Grain Farm situation the net cash incomes for these two groups are seldom equal within the group, which complicates the analysis slightly. The differences are relatively small in relation to the total values involved. The reasons for this non-equality lies in the uneven expansion by all replicates discussed in the section on net cash income and the differences in prepayments of debt and borrowings to meet the minimum cash requirements. These factors are dependent upon criteria internal to the simulator and as such are outside the direct influence of the analyst.

The discounted present value for strategy five was the lowest with a value of $306,886. Strategy one has a discounted present value of $346,970 to rank last. The difference between the highest and lowest discounted present values is $40,084 which is greater than the difference for the Land Purchase, Cash Grain Farm situation. The second smallest discounted present value is $318,184 associated with strategy four. Strategy two ranked third smallest, while strategy three ranked second largest.

Strategies Five and Four Compared. Strategy five contains provisions for accelerated depreciation and for reducing income tax liability while strategy four employed straight line depreciation only. Both strategies convert some ordinary income to capital gains income. Strategy five has a larger off-farm income as a result of the provisions which reduce income tax liability. Strategy five has a lower taxable income for nine of the twenty simulated years. These years are clustered in the beginning and middle years of simulation. Strategy five for the

years one through four has a smaller taxable income, larger or equal gains/losses taxed as ordinary income and greater or equal capital gains with some assistance from a smaller standard deduction and dependents exemption. Higher off-farm income, gains/losses taxed as ordinary income and capital gains for strategy five than for strategy four for the years five, seven and nine which could not be offset by a larger depreciation resulted in a larger taxable income for stragegy five. For years six, eight, ten, eleven and fourteen the larger depreciation nullified the larger off-farm income, larger or equal gains/losses taxed as ordinary income and larger (or equal) capital gains to result in a smaller taxable income for strategy five. Years twelve, thirteen, fifteen, sixteen, seventeen and nineteen have a larger taxable income for strategy five because strategy four has smaller off-farm income and larger depreciation. For year eighteen a smaller off-farm income compensated for a small depreciation to result in a smaller taxable income for strategy four than for strategy five. For year twenty a larger off-farm income and gains/losses taxed as ordinary income could not be compensated for by a larger depreciation to result in a larger taxable income for strategy five. The above relationships resulted in strategy five having a lower taxable income by $11,298 than strategy four.

Strategies Four and Two Compared. Strategy four uses straight line depreciation and converts some ordinary income to capital gains income, but does not have tax liability reducing provisions. Strategy two employs fast depreciation, does not use tax liability reducing provisions, and does not convert ordinary income to capital gains. The taxable income of strategy two exceeds that of strategy four for thirteen of the twenty years simulated, clustered in the middle and later part of the simulation.

Strategy four for years one, two and three has taxable income which exceeds that of strategy two because a smaller depreciation, larger capital gains and larger or equal gains/losses taxed as ordinary income could not offset a smaller off-farm income and net cash income. For years four, five and seven small net cash income, off-farm income and gains/losses taxed as ordinary income compensate for a small depreciation and larger capital gains to result in a smaller taxable income for strategy four. In year nine, small net cash income and gains/losses taxed as ordinary income nullify a small depreciation, larger off-farm income and capital gains to result in a smaller taxable income for strategy four. Year six has a smaller taxable income for strategy two because depreciation and zero capital gains are sufficient to over-ride net cash income, off-farm income and gains/losses taxed as ordinary income. A smaller net cash income for strategy four was not sufficient to compensate for a larger off-farm income, gains/losses taxed as ordinary income, capital gains and a smaller depreciation to result in a larger taxable income for year eight. For years ten, fourteen, and twenty a smaller net cash income and smaller or equal gains/losses taxed as ordinary income for strategy four did not offset small depreciation, larger off-farm income, and capital gains to result in larger taxable income for strategy two. Strategy four has a smaller taxable income because a larger depreciation and smaller net cash income nullified a larger capital gains and off-farm income for years twelve, thirteen, fifteen, seventeen and nineteen. For year sixteen a larger off-farm income, gains/losses taxed as ordinary income, and capital gains were offset by a larger depreciation and smaller net cash income to result in a smaller taxable income for strategy four. The above relationships result in a difference of $2,425 between the discounted present values of strategies two and four.

Strategies Two and Three Compared. The taxable income influencing provisions of strategies two and three are the same. Strategy three has income tax liability reducing provisions which result in a larger off-farm income for strategy three. The taxable income of strategy three is greater for all twenty years of simulation. Strategy three expanded for fourteen replicates while strategy two expanded for thirteen. This greater number of expansions for strategy three results in a larger net cash income, depreciation and in some cases gains/losses taxed as ordinary income. Off-farm income was also increased because of the greater number of expansions. However, if the effects of the un-even number of expansions are ignored strategy three will still have a larger taxable income because of the effects of the tax liability reducing provisions on off-farm income. The above actions result in the discounted present value of strategy two's taxable income being $6,316 lower than that for strategy three.

Strategy Three and One Compared. Both strategies one and three do not convert ordinary income to capital gains. Strategy one uses straight line depreciation while strategy three utilizes fast depreciation and tax liability reducing provisions. Off-farm income is always larger for strategy three. The taxable income of strategy one exceeds that of strategy three for ten of the twenty years simulated, and are clustered in the beginning to middle years of simulation.

For years one through four, the larger depreciation was able to compensate for a lower or equal gains/losses taxed as ordinary income and larger off-farm income to result in a smaller taxable income for strategy three. For the first three years of greater taxable income for strategy three (years five, seven and nine) larger off-farm income plus greater

gains/losses taxed as ordinary income overode a larger depreciation. For years six, eight, ten, eleven, fourteen and twenty a large depreciation offset larger gains/losses taxed as ordinary income and off-farm income to result in a smaller taxable income for strategy three. A smaller depreciation plus larger off-farm income for strategy three resulted in a larger taxable income than for strategy one for the years twelve, thirteen, fifteen, sixteen, seventeen and nineteen. Off-farm income that could not be offset by depreciation caused a larger taxable income for strategy three for year eighteen. The difference in the discounted present values of the taxable incomes of strategies two and three of $10,471 is a consequence of the above described relations.

Land Rent, Cash Grain Farm

The net cash income for the capital gains generating strategies (strategies four and five) is always less than the net cash income for the non-capital gains producing strategies (strategies one, two and three). The net cash income for the strategies within these two groups are equal. This results from the greater profitability of the cash grain farm and the resultant ability to expand for all iterations and to make all prepayments and principle payments on the debt for all strategies.

Strategy five has the lowest net discounted present value at $630,693 to rank first. The largest net discounted present value of $654,235 is associated with strategy one for a range of $23,542 between the high and low strategies. Strategies two and four were ranked second and third respectively with discounted present values of $637,760 and $639,887. Strategy three ranked fourth with a discounted present value

of $646,260.

Strategies Five and Two Compared. Both strategies utilize additional first year depreciation and sum of the years digits depreciation. Strategy five converts some ordinary income to capital gains while strategy two does not. In addition strategy five uses tax liability reducing provisions which result in a higher off-farm income.

For all simulated years, net cash income is greater, off-farm income is less, capital gains are less, and gains/losses taxed as ordinary income are less or equal for strategy two as compared to strategy five. The net cash income of strategy five is so much smaller than that of strategy two that the larger off-farm income, capital gains and gains/losses taxed as ordinary income of strategy five are offset until the fifteenth year of simulation, resulting in a smaller taxable income for strategy five. Beginning in year fifteen the larger off-farm income and capital gains over-ride the smaller net cash income to result in a greater taxable income for strategy five until the end of simulation. The larger off-farm income is due to the income tax liability reducing provisions which allow cash to accumulate which yields as its return off-farm income. The larger capital gains for strategy five result from the expansion of the firm while strategy two having no capital conversion of ordinary income cannot follow suit even though it, too, expands. The discounted present value of strategy five is $7,067 smaller than that of strategy two due to the above interactions.

Strategies Two and Four Compared. Strategy two is a fast depreciation, non-capital gains generating strategy. Strategy four is a straight line depreciation, capital gains producing strategy. Neither strategy has provisions which reduce the tax liability. Strategy four always has a

lower net cash income than strategy two. Strategy two has a lower taxable income for ten of the twenty simulated years. These lower taxable income years are grouped in the early and middle years of simulation.

For years one through four strategy two has a lower taxable income. For these years, the larger depreciation, smaller gains/losses taxed as ordinary income, and zero capital gains compensate for the higher net cash income and off-farm income to result in a lower taxable income for strategy two. Strategy four has a lower taxable income for years five, seven, and nine. For these years, the smaller net cash income, lower off-farm income and lesser gains/losses taxed as ordinary income offsets the smaller depreciation and larger capital gains to produce a smaller taxable income for strategy four. In years six and ten, the larger depreciation and zero capital gains outweigh the greater net cash income, off-farm income and gains/losses taxed as ordinary income to produce a smaller taxable income for strategy two. For years eight eleven and fourteen, the zero capital gains, lower (or equal) gains/losses taxed as ordinary income and greater depreciation counter-acted the larger off-farm income and net cash income to result in a lower taxable income for strategy two than for strategy four. Years twelve, thirteen, fifteen, seventeen and nineteen have a higher depreciation, lower off-farm income, and lower net cash income to offset the higher capital gains to give strategy four a lower taxable income. In years sixteen and eighteen the lower net cash income and off-farm income outweighed the lower depreciation and higher capital gains to result in a lower taxable income for strategy four. For year twenty, the lower capital gains and greater depreciation negates the higher net cash income, off-farm income and gains/losses taxed as ordinary income to

produce a smaller taxable income for strategy two. The above described relationships result in a $2,127 smaller discounted present value for strategy two.

The larger net cash income and off-farm income were off-set by the larger depreciation and zero capital gains to produce the lower taxable income for strategy two. These lower taxable incomes were clustered in the beginning and middle years of simulation. When strategy two did not have a smaller taxable income, the larger net cash income and off-farm income could not be off-set.

Strategies Four and Three Compared. Strategy four is a capital gains producing and straight line depreciation combination. Strategy three is a non-capital gains producing strategy with fast depreciation and tax liability reducing provisions. Strategy four always has lower net cash income and off-farm income than strategy three. The years when strategy three has a lower taxable income are seven of the first ten years simulated.

In years one through four and year eight, the larger depreciation, zero capital gains, and smaller gains/losses taxed as ordinary income off-set the greater off-farm income and net cash income to give strategy three a lower taxable income. For years six and ten the larger depreciation and zero capital gains over-rode the larger net cash income, off-farm income and gains/losses taxed as ordinary income to result in strategy three having the smaller taxable income. In eight of the thirteen years (years five, seven, nine, eleven, fourteen, sixteen, eighteen, and twenty) strategy four has a lower taxable income due to the smaller net cash income and off-farm income nullifying the lower depreciation and higher capital gains. The remaining five years during which

strategy four has a lower taxable income (years twelve, thirteen, fifteen, seventeen and nineteen) a larger depreciation plus the smaller net cash income and off-farm income off-set the capital gains to result in a lower taxable income. The lower net cash income and off-farm income plus some lower depreciation were the prime causes of strategy four having a lower taxable income. The discounted present value of strategy four is lower than that of strategy three by $6,373 because of the described interactions.

Strategies Three and One Compared. Strategy three utilizes rapid depreciation with provisions to reduce tax liability. Strategy one incorporates straight line depreciation but has no capacity to reduce tax liability. Neither strategy produces capital gains. Both strategies have the same net cash income for all years while off-farm income for strategy three is always greater than that for strategy one. For nine years of the twenty simulated, strategy three has a lower taxable income than strategy one with these years bunched in the beginning and middle years of simulation.

Strategy three has a lower taxable income for nine years (years one, two, three, four, six, eight, ten, eleven and fourteen) because larger depreciation overrode larger off-farm income and gains/losses taxed as ordinary income. For years five, seven, nine, sixteen, eighteen and twenty the smaller off-farm income and smaller (or equal) gains/losses taxed as ordinary income compensated for lower depreciation to produce a lower taxable income for strategy one. In years twelve, thirteen, fifteen, seventeen and nineteen a larger depreciation and smaller off-farm income combined to result in a smaller taxable income for strategy one. The consequences of the above described combined

interactions is a $7,975 lower discount present value for strategy three. The off-farm income and the relationship of the straight line and fast depreciation are the prime constituents of the determinants of the lower taxable income for strategy three.

Land Rent, Livestock Farm

The capital gains producing strategies have a lower net cash income than the non-capital gains producing strategies for all simulated years. The net cash income for strategies four and five is equal for both strategies for eighteen of the twenty years and in the remaining two years is equal to the hundredth digit. For seventeen years of the total simulated, the net cash incomes of strategies one, two and three are equal. For two of the remaining years the net cash income is equal to the hundreds and for the last year equal to the thousandth digit across strategies. These inequalities for both groups of strategies occur in the second, third and fourth years of simulation. They are due to low cash necessitating additional interest costs which are a part of operating expenses, hence reducing net cash income. This factor is internal to the simulator and as such is outside the control of the experimentor.

The rankings of the strategies are the same as the rankings for the Land Purchase, Livestock Farm situation. Strategy five has the lowest taxable income with a discounted present value of $359,904. Strategy four has the second lowest taxable income which is $370,929 discounted to the present. The largest discounted taxable income is $399,806 for strategy one. The difference between the smallest and largest present discount values of the taxable income is $39,902. Strategy two and strategy three rank third and fourth respectively.

Strategies Five and Four Compared. Strategy five utilizes additional first year depreciation and sum of the years digits depreciation as well as features which reduce the income tax liability. Strategy four incorporates straight line depreciation only. Both strategies convert some ordinary income to capital gains. The net cash income for both strategies is equal for eighteen of the twenty simulated years and for the two unequal years differs by a maximum of twenty-one dollars. Strategy five always has a higher off-farm income.

Strategy four has a larger taxable income for nine of the twenty simulated years. For these years (years one, two, three, four, six, eight, ten, eleven and fourteen) a smaller depreciation offsets the lower off-farm income, lower (or equal) gains/losses taxed as ordinary income and capital gains for strategy four to result in a larger taxable income for strategy four. The years five, seven, nine, eighteen and twenty when strategy five has a larger taxable income, the larger depreciation could not compensate for the larger off-farm income, larger (or equal) gains/losses taxed as ordinary income and capital gains. A small depreciation plus a larger off-farm income combined to result in a larger taxable income for the years twelve, thirteen, fifteen, sixteen, seventeen and nineteen. A difference of $11,025 in discounted present values is a consequence of the above actions.

Strategies Four and Two Compared. Strategy two is a fast depreciation, non-capital gains converting strategy. Strategy four uses straight line depreciation and generates capital gains. Both strategies do not utilize provisions to reduce tax liability. A lower net cash income, smaller off-farm income and higher capital gains than strategy two are common to strategy four for all years simulated. The years

when strategy two has a larger taxable income than strategy four are clustered in the middle and later years of simulation.

In years one, two and three strategy two has a lower taxable income than strategy four because a greater depreciation and smaller gains/losses taxed as ordinary income and zero capital gains overshadow the larger net cash income and off-farm income of strategy two. Years four, five and seven for strategy two have a larger taxable income than strategy four because the zero capital gains and larger depreciation did not overcome the greater net cash income, off-farm income and gains/losses taxed as ordinary income. In year six, the depreciation and no capital gains did outweigh the other factors to result in a lower taxable income for strategy two. For year eight, a smaller gains/losses taxed as ordinary income added to zero capital gains and a greater depreciation did nullify the greater net cash income and off-farm income to produce a smaller taxable income. For strategy two for the years nine and eleven a larger net cash income and larger (or equal) gains/losses taxed as ordinary income could not be offset by zero capital gains, a smaller off-farm income and a greater depreciation to result in a larger taxable income than strategy four. In years ten, fourteen and twenty for strategy two the zero capital gains, larger depreciation and smaller off-farm income negates the greater net cash income and larger gains/losses taxed as ordinary income to result in a smaller taxable income. For strategy two for years twelve, thirteen, fifteen, sixteen, seventeen and nineteen the larger net cash income cannot be offset by a smaller off-farm income, zero capital gains and a smaller depreciation to result in a taxable income greater than that of strategy four. Strategy two has a larger taxable income

than strategy four because a "lumpier" depreciation, zero capital gains, smaller off-farm income and smaller gains/losses taxed as ordinary income could not offset a larger net cash income. Strategy four has a discounted present value for its taxable income $12,422 lower than that of strategy two because of the above interactions.

Strategies Two and Three Compared. Strategies two and three have the same factors directly influencing taxable income in that both utilize fast depreciation. However, strategy three contains tax liability reducing provisions which result in an increased off-farm income relative to a strategy which does not utilize these features. Strategy two and three have an equal taxable income for the first year simulated. In all following years, strategy three has a larger taxable income because of the influence of tax liability reducing provision on off-farm income. The influence of the tax liability reducing provisions results in a discounted present value for taxable income $6,683 greater for strategy three.

Strategies Three and One Compared. Strategy one utilizes straight line depreciation while strategy three incorporates fast depreciation and tax liability reducing provisions. Neither strategy converts ordinary income to capital gains income. Both strategies have essentially the same net cash incomes and zero capital gains. Strategy three always has a greater off-farm income because of the effects of the tax liability reducing provisions.

The determinant of a greater or smaller taxable income is the interaction of off-farm income, gains/losses taxed as ordinary income and depreciation. For years one through four for strategy one, a smaller off-farm income and lower gains/losses taxed as ordinary income

resulted in a larger taxable income than for strategy three. Strategy three has a larger taxable income for years five, seven and nine because a larger depreciation could not negate a larger off-farm income and gains/losses taxed as ordinary income. Years six, eight, ten, eleven, fourteen and twenty for strategy one have a larger taxable income than strategy three because depreciation is so small that it negates all other influences. Strategy three has a greater taxable income than strategy one for the years twelve, thirteen, fifteen, sixteen, seventeen, eighteen and nineteen because the depreciation cannot affect the greater off-farm income. Strategy three has a discounted present value for taxable income $9,772 smaller than strategy one due to the above factors.

Cash Grain Farm - Livestock Farm Relationship

For both growth methods, the cash grain farm has a larger taxable income than the livestock farm. The cash grain farm has a greater net cash income because of greater production than the livestock farm. The cash grain farm has more bushels of wheat and head of fat cattle to sell because of a greater number of acres of wheat and small grain pasture. Also, the cash grain farm has a greater proportion of its acreage devoted to wheat and small grain pasture. Because of the same per unit income generating ability for both the cash grain farm and livestock farm, a greater number of units implies greater income. The cash grain accumulated a greater absolute amount of cash and hence generated greater off-farm income. The cash grain farm has a lower amount of depreciation taken because the livestock farm has more cows to depreciate. Those strategies which generate capital gains have a lower

capital gains income for the cash grain farm because fewer breeding heifers are sold. For those reasons, the cash grain farm has a larger taxable income than the livestock farm.

Land Purchase - Land Rent Relationship

For both farm types, the land rent growth method has a larger taxable income than the land purchase growth method. After expansion, the land rent growth method has a greater net cash income than the land purchase growth method because of lower interest costs and lower property taxes. The property taxes are paid by the property owner and no debt is incurred to rent the land used. Lower rent payments than purchase payments plus a greater net cash income result in a greater cash accumulation and hence larger off-farm income. A lower depreciation for the land rent growth method results from fence depreciation accuring to the property owner and not the renter. The greater cash accumulation results in more expansion for the land rent growth method. Consequently, on the average, where there is a difference in capital gains and gains/losses taxed as ordinary income between the land purchase and land rent growth methods, the land rent growth method values will be greater. These are the reasons for a greater taxable income for the land rent growth strategies.

Effects on Income Taxes Paid

The primary amount of income taxes paid is based directly upon taxable income. The amount of taxable income determines the tax rate which applied to the taxable income gives the basic income tax liability. However, this income tax liability can be reduced by some provisions of

the tax laws. These provisions reduce the tax liability without directly affecting taxable income except in following years where the result of the reduction of taxes paid may find its way into taxable income. For this study three tax liability reducing provisions have been selected to be included in the tax management strategies to analyze their impact on income taxes paid. These provisions are as follows: investment credit, income averaging and net operating loss carryback and carryover.

Table XVI presents the non-discounted totals of the mean values of the income tax liability prior to adjustment by the tax liability reducing provisions, the value of the adjustments by the three provisions, and income taxes paid by growth method, farm type and tax management strategy for the twenty year simulation. Tables XVII and XVIII present the values of the same items on a yearly basis.

Taxable Income

While the amount of income taxes paid is based primarily on taxable income, a complication arises when tax liability reducing provisions are utilized. The savings due to these provisions are invested and yield a return which is part of off-farm income of later years and hence, a component of taxable income upon which income taxes paid are based in later years.

To estimate this effect, strategy two has the same factors affecting taxable income as strategy three but does not have the income liability reducing provisions. By comparing these two strategies the total effect of the provisions on taxable income can be determined. Table XV contains the non-discounted total taxable income and income taxes paid by growth method-farm type situation and strategy. For the

TABLE XV

TABLE OF TOTAL TAXABLE INCOME AND INCOME TAXES PAID BY GROWTH METHOD, FARM TYPE AND TAX MANAGEMENT STRATEGY

	Taxable Income	Rank	Income Taxes Paid	Rank
Land Purchase				
Cash Grain Farm				
1	1,098,149.	4	400,832.	5
2	1,081,457.	3	394,471	4
3	1,099,729.	5	376,679.	2
4	1,073,450.	1	388,609.	3
5	1,073,656.	2	363,949.	1
Livestock Farm				
1	640,439.	5	183,911.	5
2	625,778.	3	181,851.	4
3	639,928.	4	164,641.	2
4	594,405.	2	166,808.	3
5	593,203.	1	147,719.	1
Land Rent				
Cash Grain Farm				
1	1,225,795.	4	469,150.	5
2	1,210,172.	3	463,407.	4
3	1,228,376.	5	446,190.	2
4	1,202,047.	1	457,028.	3
5	1,203,307.	2	433,478.	1
Livestock Farm				
1	758,494.	4	236,578.	5
2	744,405.	3	234,918.	4
3	759,176.	5	218,639.	3
4	712,453.	2	218,101.	2
5	711,514.	1	199,983.	1

TABLE XVI

TOTAL MEAN VALUES OF THE PRIOR INCOME TAX LIABILITY, ADJUSTMENTS, AND INCOME TAXES PAID BY GROWTH METHOD, FARM TYPE AND TAX MANAGEMENT STRATEGIES

	Tax Management Strategy				
	One	Two	Three	Four	Five
Land Purchase					
Cash Grain Farm					
Prior Income Tax Liability	400,832.	394,471.	404,032.	388,609.	391,402.
Credit for Income Averaging	0.	0.	8,007.	0.	8,192.
Credit for Net Operating Loss	0.	0.	0.	0.	0.
Credit for Investment Credit	0.	0.	19,345.	0.	19,261.
Income Tax Paid	400,832.	394,471.	376,679.	388,609.	363,949.
Rank	5	4	2	3	1
Livestock Farm					
Prior Income Tax Liability	183,911.	181,851.	187,910.	166,808.	171,230.
Credit for Income Averaging	0.	0.	5,551.	0.	5,986.
Credit for Net Operating Loss	0.	0.	7.	0	36.
Credit for Investment Credit	0.	0.	17,711.	0.	17,489.
Income Taxes Paid	183,911.	181,851.	164,641.	166,808.	147,719.
Rank	5	4	2	3	1
Land Rent					
Cash Grain Farm					
Prior Income Tax Liability	469,150.	463,407.	473,333.	457.028.	460,814.
Credit for Income Averaging	0.	0.	8,165.	0.	8,359.
Credit for Net Operating Loss	0.	0.	0.	0.	0.
Credit for Investment Credit	0.	0.	18,977.	0.	18,977.
Income Taxes Paid	469,150.	463,407.	446,190.	457,028.	433,478.
Rank	5	4	2	3	1
Livestock Farm					
Prior Income Tax Liability	236,578.	234,918.	241,815.	218,101.	223,446.
Credit for Income Averaging	0.	0.	5,494.	0.	5,890.
Credit Net Operating Loss	0.	0.	7.	0.	36.
Credit for Investment Credit	0.	0.	17,671.	0.	17,536.
Income Taxes Paid	236,578.	234,918.	218,639.	218,101.	199,983.
Rank	5	4	3	2	1

TABLE XVII

MEAN VALUES OF INCOME TAX LIABILITY PRIOR TO ADJUSTMENT AND INCOME TAXES PAID FOR THE LAND PURCHASE GROWTH METHOD BY FARM TYPE AND TAX MANAGEMENT STRATEGY

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 1										
Prior Income Tax Liability	10,855.43	6,916.98	6,916.99	9,657.31	5,933.30	4,366.00	1,902.13	1,902.13	2,992.58	927.55
Credit for Income Averaging	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	945.35	0.00	928.11	0.00	0.00	761.85	0.00	544.32
Income Taxes Paid	10,855.43	6,916.98	5,971.64	9,657.31	5,005.16	4,566.00	1,902.13	1,140.29	2,992.58	383.24
Year 2										
Prior Income Tax Liability	15,934.52	13,752.85	13,776.61	15,513.66	13,267.48	6,733.88	5,036.94	5,050.92	5,967.89	4,304.73
Credit for Income Averaging	0.00	0.00	4,239.20	0.00	4,197.39	0.00	0.00	1,214.49	0.00	1,105.17
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	0.00	35.74
Credit for Investment Credit	0.00	0.00	0.00	0.00	17.24	0.00	0.00	128.26	0.00	274.98
Income Taxes Paid	15,934.52	13,752.85	9,537.41	15,513.60	9,052.86	6,733.88	5,036.94	3,701.20	5,967.89	2,888.84
Year 3										
Prior Income Tax Liability	14,360.47	12,462.55	12,591.49	13,876.89	12,058.19	5,950.53	4,541.04	4,577.12	5,185.95	3,844.33
Credit for Income Averaging	0.00	0.00	1,598.77	0.00	1,645.83	0.00	0.00	0.00	0.00	490.51
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	311.49	0.00	311.49	0.00	0.00	366.73	0.00	391.73
Income Taxes Paid	14,360.47	12,462.55	10,681.23	13,876.89	10,100.86	5,950.53	4,541.04	3,668.18	5,185.95	2,962.09
Year 4										
Prior Income Tax Liability	15,043.39	13,959.79	14,148.85	14,341.07	13,400.38	6,554.44	5,638.86	5,666.55	5,506.54	4,703.52
Credit for Income Averaging	0.00	0.00	673.43	0.00	699.50	0.00	0.00	405.13	0.00	3 8.61
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	360.23	0.00	360.23	0.00	0.00	400.67	0.00	431.03
Income Taxes Paid	15,043.39	13,959.79	13,115.19	14,341.07	12,340.64	6,554.44	5,638.86	4,860.74	5,506.54	3,883.89
Year 5										
Prior Income Tax Liability	19,698.09	21,219.31	21,462.86	19,334.64	20,742.58	12,315.01	14,471.20	14,558.81	11,248.41	13,263.49
Credit for Income Averaging	0.00	0.00	599.53	0.00	685.97	0.00	0.00	1,945.08	0.00	2,225.14
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	194.94	0.00	194.94	0.00	0.00	59.49	0.00	59.49
Income Taxes Paid	19,698.09	21,219.31	20,668.36	19,334.64	19,861.65	12,315.01	14,471.20	12,554.22	11,248.41	10,978.85
Year 6										
Prior Income Tax Liability	15,730.16	13,945.42	14,189.44	15,134.96	13,569.69	6,671.18	5,170.35	5,274.77	5,809.18	4,458.30
Credit for Income Averaging	0.00	0.00	16.55	0.00	8.76	0.00	0.00	0.00	0.00	0.00
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	1,678.67	0.00	1,678.67	0.00	0.00	1,996.48	0.00	1,929.40
Income Taxes Paid	15,730.16	13,945.42	12,494.19	15,134.96	11,882.26	6,671.18	5,170.35	3,278.29	5,809.18	2,528.90

TABLE XVII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 7										
Prior Income Tax Liability	14,166.45	15,822.15	16,135.32	13,862.13	15,490.39	5,833.14	6,844.57	6,992.93	5,212.72	6,100.69
Credit for Income Averaging	0.00	0.00	31.73	0.00	41.31	0.00	0.00	32.59	0.00	32.65
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	215.94	0.00	215.94	0.00	0.00	215.94	0.00	215.94
Income Taxes Paid	14,166.45	15,822.15	15,887.65	13,862.13	15,233.14	5,833.14	6,844.57	6,744.38	5,212.72	5,852.09
Year 8										
Prior Income Tax Liability	16,820.30	15,893.57	16,212.16	16,350.22	15,656.70	6,998.46	6,204.07	6,355.03	6,217.66	5,539.32
Credit for Income Averaging	0.00	0.00	3 .15	0.00	41.33	0.00	0.00	14.91	0.00	18.14
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	1,555.75	0.00	1,555.75	0.00	0.00	1,539.30	0.00	1,511.50
Income Taxes Paid	16,820.30	15,893.57	14,623.23	16,350.22	14,059.63	6,998.46	6,204.07	4,800.82	6,217.66	4 009.67
Year 9										
Prior Income Tax Liability	16,850.45	18,156.53	18,537.23	16,039.43	17,730.51	7,127.45	8,052.79	8,261.97	6,120.83	7,206.64
Credit for Income Averaging	0.00	0.00	38.72	0.00	42.27	0.00	0.00	32.19	0.00	42.84
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	729.22	0.00	729.22	0.00	0.00	757.16	0.00	757.16
Income Taxes Paid	16,850.45	18,156.53	17,769.28	16,039.43	16,959.02	7,127.45	8,052.79	7,472.60	6,120.83	6,406.65
Year 10										
Prior Income Tax Liability	19,237.41	17,129.78	17,534.39	18,545.45	16,896.81	7,715.78	6,240.98	6,458.96	6,893.22	5,669.07
Credit for Income Averaging	0.00	0.00	18.68	0.00	19.25	0.00	0.00	43.45	0.00	52.21
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	2,564.31	0.00	2,564.31	0.00	0.00	2,403.65	0.00	2,338.50
Income Taxes Paid	19,237.41	17,129.78	14,951.38	18,545.45	14,313.25	7,715.78	6,240.98	4,011.86	6,893.22	3,278.37
Year 11										
Prior Income Tax Liability	19,157.00	18,295.52	18,790.25	18,469.23	18,132.30	7,953.48	7,376.09	7,709.40	7,085.34	6,811.97
Credit for Income Averaging	0.00	0.00	54.41	0.00	71.87	0.00	0.00	59.52	0.00	89.33
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	663.66	0.00	663.66	0.00	0.00	647.42	0.00	624.62
Income Taxes Paid	19,157.00	18,295.52	18,072.15	18,468.23	17,396.77	7,953.48	7,376.09	7,002.45	7,085.34	6,098.02
Year 12										
Prior Income Tax Liability	21,214.08	22,112.27	22,679.26	20,528.77	22,017.45	8,597.96	9,312.05	9,653.48	7,707.07	8,754.96
Credit for Income Averaging	0.00	0.00	66.85	0.00	56.55	0.00	0.00	136.44	0.00	143.67
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	83.84	0.00	83.84	0.00	0.00	130.42	0.00	121.10
Income Taxes Paid	21,214.08	22,112.27	22,528.52	20,528.77	21,877.06	8,597.96	9,312.05	9,386.60	7,707.07	8,490.19

TABLE XVII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 13										
Prior Income Tax Liability	24,800.06	25,842.86	26,446.06	24,161.20	25,834.08	16,319.71	17,449.21	17,874.28	15,285.34	16,890.91
Credit for Income Averaging	0.00	0.00	89.49	0.00	105.31	0.00	0.00	759.49	0.00	957.58
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	311.49	0.00	311.49	0.00	0.00	311.49	0.00	311.49
Income Taxes Paid	24,800.06	25,842.86	26,045.04	24,161.20	25,417.26	16,319.71	17,449.21	16,803.28	15,285.34	15,621.84
Year 14										
Prior Income Tax Liability	21,770.95	20,590.27	21,176.95	21,080.82	20,525.74	9,862.92	8,834.79	9,210.64	8,969.79	8,384.09
Credit for Income Averaging	0.00	0.00	50.77	0.00	57.32	0.00	0.00	82.19	0.00	93.49
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	3,137.90	0.00	3,137.90	0.00	0.00	1,936.49	0.00	1,898.13
Income Taxes Paid	21,770.95	20,590.27	17,988.25	21,080.82	17,330.51	9,862.92	8,834.79	7,191.95	8,969.79	6,392.46
Year 15										
Prior Income Tax Liability	23,805.56	24,673.42	25,408.97	23,180.87	24,816.66	10,607.91	11,852.37	12,346.09	9,745.94	11,507.15
Credit for Income Averaging	0.00	0.00	17.89	0.00	25.67	0.00	0.00	13.23	0.00	29.36
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	194.94	0.00	194.94	0.00	0.00	59.49	0.00	59.49
Income Taxes Paid	23,805.56	24,673.42	25,196.12	23,180.87	24,596.05	10,607.91	11,852.37	12,273.33	9,745.94	11,418.29
Year 16										
Prior Income Tax Liability	24,478.09	24,462.16	25,209.78	23,940.14	24,703.88	11,517.39	12,227.26	12,770.82	10,787.50	12,045.24
Credit for Income Averaging	0.00	0.00	56.52	0.00	59.74	0.00	0.00	37.74	0.00	57.26
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	980.00	0.00	980.00	0.00	0.00	679.00	0.00	679.00
Income Taxes Paid	24,478.09	24,462.16	24,173.24	23,940.14	23,664.14	11,517.39	12,227.26	12,054.07	10,787.50	11,308.98
Year 17										
Prior Income Tax Liability	26,259.46	27,984.17	28,805.54	25,727.00	28,296.53	12,249.54	13,888.67	14,476.29	11,505.54	13,731.42
Credit for Income Averaging	0.00	0.00	220.90	0.00	216.50	0.00	0.00	85.96	0.00	77.84
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	327.73	0.00	327.73	0.00	0.00	355.68	0.00	355.68
Income Taxes Paid	26,259.46	27,984.17	28,256.89	25,727.00	27,752.30	12,249.54	13,888.67	14,034.62	11,505.54	13,297.90
Year 18										
Prior Income Tax Liability	23,243.23	23,002.54	23,837.63	22,864.49	23,494.16	10,029.73	9,934.41	10,477.24	9,502.00	9,997.79
Credit for Income Averaging	0.00	0.00	21.84	0.00	19.89	0.00	0.00	12.89	0.00	18.96
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	1,555.75	0.00	1,555.75	0.00	0.00	1,555.75	0.00	1,555.75
Income Taxes Paid	23,243.23	23,002.54	22,260.03	22,864.49	21,918.53	10,029.73	9,934.41	8,908.58	9,502.00	8,423.09

TABLE XVII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 19										
Prior Income Tax Liability	30,389.82	31,797.32	32,760.64	29,806.40	32,213.88	14,552,75	15,764.20	16,537.84	13,787.51	15,749.14
Credit for Income Averaging	0.00	0.00	109.10	0.00	108.65	0.00	0.00	113.58	0.00	131.78
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	725.84	0.00	525.34	0.00	0.00	766.19	0.00	775.22
Income Taxes Paid	30,389.82	31,797.32	31,925.67	29,806.40	31,579.89	14,552.75	15,764.20	15,658.04	13,787.51	14,842.15
Year 20										
Prior Income Tax Liability	27,019.60	26,452.13	27,412.02	26,196.71	26,620.91	11,754.31	11,109.65	11,755.10	11,275.65	11,339.59
Credit for Income Averaging	0.00	0.00	69.48	0.00	89.00	0.00	0.00	20.17	0.00	31.42
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	2,807.88	0.00	2,924.54	0.00	0.00	2,639.31	0.00	2,654.17
Income Taxes Paid	27,019.60	26,452.13	24,534.70	26,196.71	23,607.37	11,754.31	11,109.65	9,095.75	11,275.65	8,654.00

TABLE XVIII

MEAN VALUES OF INCOME TAX LIABILITY PRIOR TO ADJUSTMENTS AND INCOME TAXES PAID FOR THE LAND RENT GROWTH METHOD BY FARM TYPE AND TAX MANAGEMENT STRATEGY

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 1										
Income Tax Liability	10,855.43	6,916.98	6,916.99	9,657.31	5,933.27	4,566.00	1,902.13	1,902.13	2,992.58	927.55
Credit for Income Averaging	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	945.34	0.00	928.11	0.00	0.00	761.85	0.00	544.32
Income Taxes Paid	10,855.43	6,916.98	5,971.64	9,657.31	5,005.16	4,566.00	1,902.13	1,140.29	2,992.58	383.24
Year 2										
Income Tax Liability	15,934.52	13,752.85	13,776.61	15,513.60	13,267.48	6,733.88	5,036.94	5,050.92	5,967.89	4,304.73
Credit for Income Averaging	0.00	0.00	4,239.20	0.00	4,197.39	0.00	0.00	1,214.49	0.00	1,105.17
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	0.00	35.74
Credit for Investment Credit	0.00	0.00	0.00	0.00	17.24	0.00	0.00	128.26	0.00	274.98
Income Taxes Paid	15,934.52	13,752.85	9,537.39	15,513.60	9,052.86	6,733.88	5,036.94	3,701.20	5,967.89	2,888.84
Year 3										
Income Tax Liability	14,360.47	12,462.55	12,591.49	13,876.89	12,058.19	5,950.53	4,541.04	4,577.12	5,185.95	3,844.33
Credit for Income Averaging	0.00	0.00	1,598.77	0.00	1,645.83	0.00	0.00	542.20	0.00	490.51
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	311.49	0.00	311.49	0.00	0.00	366.73	0.00	391.73
Income Taxes Paid	14,360.47	12,462.55	10,681.21	13,876.89	10,100.86	5,950.53	4,541.04	3,668.18	5,185.95	2,962.09
Year 4										
Income Tax Liability	16,486.18	15,514.29	15,709.01	15,766.32	14,936.11	7,452.12	6,560.29	6,623.84	6,324.27	5,538.93
Credit for Income Averaging	0.00	0.00	842.58	0.00	892.71	0.00	0.00	572.28	0.00	539.43
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	268.15	0.00	268.15	0.00	0.00	314.73	0.00	360.54
Income Taxes Paid	16,486.18	15,514.29	14,598.25	15,766.32	13,775.24	7,452.12	6,560.29	5,736.82	6,324.27	4,638.96
Year 5										
Income Tax Liability	21,268.67	22,830.24	23,080.74	20,896.71	22,346.78	13,498.18	15,717.00	15,827.77	12,386.92	14,467.77
Credit for Income Averaging	0.00	0.00	659.42	0.00	728.53	0.00	0.00	2,110.84	0.00	2,429.85
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	194.94	0.00	194.94	0.00	0.00	59.49	0.00	59.49
Income Taxes Paid	21,268.67	22,830.24	22,226.35	20,896.71	21,423.30	13,498.18	15,717.00	13,657.41	12,386.92	11,978.42
Year 6										
Income Tax Liability	17,249.17	15,408.91	15,664.21	16,635.92	15,022.92	7,655.28	6,058.70	6,180.13	6,725.71	5,290.87
Credit for Income Averaging	0.00	0.00	26.57	0.00	25.59	0.00	0.00	0.00	0.00	0.00
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	1,678.67	0.00	1,678.67	0.00	0.00	2,067.49	0.00	2,005.16
Income Taxes Paid	17,249.17	15,408.91	13,958.95	16,635.92	13,318.66	7,655.28	6,058.70	4,112.63	6,725.71	3,285.74

TABLE XVIII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 7										
Income Tax Liability	15,698.41	17,423.52	17,748.43	15,384.07	17,085.90	6,756.46	7,846.37	8,031.58	6,091.07	7,046.09
Credit for Income Averaging	0.00	0.00	14.61	0.00	24.75	0.00	0.00	30.66	0.00	37.84
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	215.94	0.00	215.94	0.00	0.00	215.94	0.00	215.94
Income Taxes Paid	15,698.41	17,423.52	17,517.85	15,384.07	16,845.21	6,756.46	7,846.37	7,784.96	6,091.07	6,792.30
Year 8										
Income Tax Liability	18,431.53	17,484.54	17,811.44	17,948.80	17,247.20	8,080.47	7,235.57	7,420.22	7,240.73	6,525.73
Credit for Income Averaging	0.00	0.00	20.28	0.00	30.78	0.00	0.00	11.50	0.00	16.46
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	1,555.75	0.00	1,555.75	0.00	0.00	1,555.75	0.00	1,551.91
Income Taxes Paid	18,431.53	17,484.54	16,235.39	17,948.80	15,660.67	8,080.47	7,235.57	5,852.96	7,240.73	4,957.36
Year 9										
Income Tax Liability	19,959.36	21,488.22	21,889.63	19,109.44	21,046.82	9,270.63	10,420.72	10,683.72	8,137.83	9,482.41
Credit for Income Averaging	0.00	0.00	63.45	0.00	58.49	0.00	0.00	69.32	0.00	86.42
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	637.13	0.00	637.13	0.00	0.00	665.08	0.00	665.08
Income Taxes Paid	19,959.36	21,488.22	21,189.02	19,109.44	20,351.20	9,270.63	10,420.72	9,949.30	8,137.83	8,730.93
Year 10										
Income Tax Liability	22,571.20	20,389.29	20,817.65	21,862.46	20,147.62	10,100.89	8,379.67	8,644.06	9,118.73	7,722.40
Credit for Income Averaging	0.00	0.00	42.14	0.00	60.26	0.00	0.00	58.26	0.00	75.59
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	2,564.31	0.00	2,564.31	0.00	0.00	2,564.31	0.00	2,506.37
Income Taxes Paid	22,571.20	20,387.39	18,211.18	21,862.46	17,523.05	10,100.89	8,379.67	6,021.48	9,118.73	5,140.44
Year 11										
Income Tax Liability	22,534.18	21,636.91	22,152.60	21,817.15	21,470.70	10,490.27	9,814.63	10,155.80	9,477.54	9,163.05
Credit for Income Averaging	0.00	0.00	36.89	0.00	27.36	0.00	0.00	80.60	0.00	74.63
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	663.66	0.00	663.66	0.00	0.00	663.66	0.00	651.78
Income Taxes Paid	22,534.18	21,636.91	21,452.02	21,817.15	20,779.66	10,490.27	9,814.63	9,411.54	9,477.54	8,436.64
Year 12										
Income Tax Liability	24,835.54	25,764.88	26,347.54	24,134.59	25,670.96	11,221.05	11,980.84	12,387.85	10,223.97	11,360.66
Credit for Income Averaging	0.00	0.00	50.79	0.00	70.23	0.00	0.00	91.62	0.00	136.79
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	83.84	0.00	83.84	0.00	0.00	130.42	0.00	130.42
Income Taxes Paid	24,835.54	25,764.88	26,212.88	24,134.59	25,516.90	11,221.05	11,980.84	12,165.83	10,223.97	11,093.45

TABLE XVIII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 13										
Income Tax Liability	28,607.54	29,676.59	30,295.21	27,957.42	29,673.53	19,578.68	20,738.86	21,235.86	18,508.97	20,165.12
Credit for Income Averaging	0.00	0.00	86.15	0.00	95.61	0.00	0.00	465.08	0.00	604.18
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	311.49	0.00	311.49	0.00	0.00	311.49	0.00	311.49
Income Taxes Paid	28,607.54	29,676.59	29,897.53	27,957.42	29,266.44	19,578.68	20,738.86	20,459.27	18,508.97	19,249.44
Year 14										
Income Tax Liability	27,082.29	25,985.16	26,604.58	26,361.59	25,921.79	13,941.92	12,761.76	13,220.64	12,917.07	12,226.40
Credit for Income Averaging	0.00	0.00	90.23	0.00	88.82	0.00	0.00	59.57	0.00	82.06
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	3,045.82	0.00	3,045.82	0.00	0.00	1,847.80	0.00	1,847.80
Income Taxes Paid	27,082.29	25,985.16	23,468.50	26,361.59	22,787.16	13,941.92	12,761.76	11,313.24	12,917.07	10,296.54
Year 15										
Income Tax Liability	29,394.01	30,299.39	31,064.31	28,752.80	30,454.05	15,009.99	16,407.48	16,983.64	14,061.99	16,011.88
Credit for Income Averaging	0.00	0.00	28.64	0.00	22.48	0.00	0.00	10.48	0.00	34.85
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	194.94	0.00	194.94	0.00	0.00	59.49	0.00	59.49
Income Taxes Paid	29,394.01	30,299.39	30,840.69	28,752.80	30,236.63	15,009.99	16,407.48	16,913.64	14,061.99	15,917.53
Year 16										
Income Tax Liability	30,074.14	30,052.99	30,832.13	29,516.20	30,310.85	15,949.11	16,796.17	17,384.23	15,143.44	16,571.13
Credit for Income Averaging	0.00	0.00	53.10	0.00	73.18	0.00	0.00	39.70	0.00	32.80
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	980.00	0.00	980.00	0.00	0.00	679.00	0.00	679.00
Income Taxes Paid	30,074.14	30,052.99	29,799.00	29,516.20	29,257.67	15,949.11	16,796.17	16,665.50	15,143.44	15,859.33
Year 17										
Income Tax Liability	32,004.95	33,795.59	34,646.08	31,454.49	34,126.82	16,838.84	18,656.99	19,292.15	16,026.61	18,469.42
Credit for Income Averaging	0.00	0.00	165.57	0.00	156.03	0.00	0.00	47.62	0.00	38.36
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	327.73	0.00	327.73	0.00	0.00	355.68	0.00	355.68
Income Taxes Paid	32,004.95	33,795.59	34,152.76	31,454.49	33,643.05	16,838.84	18,656.99	18,888.83	16,026.61	18,075.38
Year 18										
Income Tax Liability	28,961.45	28,690.79	29,556.34	28,571.13	29,207.48	14,500.66	14,387.02	15,020.22	13,916.44	14,442.20
Credit for Income Averaging	0.00	0.00	12.29	0.00	10.79	0.00	0.00	2.54	0.00	11.59
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	1,555.75	0.00	1,555.75	0.00	0.00	1,555.75	0.00	1,555.75
Income Taxes Paid	28,961.45	28,690.79	27,988.29	28,571.13	27,640.94	14,500.66	14,387.02	13,461.94	13,916.44	12,874.85

TABLE XVIII (Continued)

	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
Year 19										
Income Tax Liability	38,211.28	39,824.77	40,815.98	37,612.69	40,259.89	21,096.09	22,556.48	23,322.44	20,292.15	22,522.35
Credit for Income Averaging	0.00	0.00	100.27	0.00	101.17	0.00	0.00	76.68	0.00	79.68
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	793.49	0.00	793.49	0.00	0.00	674.11	0.00	674.11
Income Taxes Paid	38,211.28	39,824.77	39,922.20	37,612.69	39,365.23	21,096.09	22,556.48	22,571.63	20,292.15	21,768.57
Year 20										
Income Tax Liability	34,631.16	34,006.69	35,012.29	34,198.89	34,625.59	17,887.29	17,118.64	17,870.24	17,360.13	17,362.89
Credit for Income Averaging	0.00	0.00	34.04	0.00	49.10	0.00	0.00	11.21	0.00	13.67
Credit for Net Operating Loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Credit for Investment Credit	0.00	0.00	2,648.15	0.00	2,648.15	0.00	0.00	2,694.73	0.00	2,694.73
Income Taxes Paid	34,631.16	34,006.69	32,330.10	34,198.89	31,928.34	17,887.29	17,118,64	15,164.31	17,360.13	14,654.48

land purchase-cash grain farm, the increase in taxable income due to the savings of the tax liability reducing provisions is $18,272 or from $1,081,457 to $1,099,729. For the land purchase-livestock farm situation, the increase is from $625,778 to $639,928 or $14,150. For the land rent growth method the increase for the cash grain farm is $18,204 and for the livestock farm is $14,771. These increases cover the entire twenty year simulation period.

The savings are greater for the cash grain farm because the cash grain farm has a greater reduction in income tax liability than the livestock farm. The farm has more investment in capital subject to investment credit. Also its income is larger and when averaged, the savings from the averaging are greater than for the livestock farm.

Similar effects on taxable income are appropriate for strategy five for the various situations. Thb conversion of some taxable income to capital gains income for strategy five is the only distinguishing factor from strategy three.

Income Taxes Paid

The discounted present values of Table XII indicate that within all growth method-farm type situations the ranking of the strategies remains the same. Strategy five and strategy three pay the lowest and second lowest income taxes, respectively. Strategies one and two pay the most and second most income taxes, respectively; while strategy four pays the median amount of income taxes. In comparing income taxes paid with the rankings of the discounted present values of the taxable incomes, strategy five is ranked the lowest for both items. Strategy three moves from the fourth rank for taxable income to the second rank for income

taxes paid. Both strategy one and three contain the income tax liability reducing provisions. The remaining three strategies maintain their relative positions. The ranks are the same on a non-discounted basis between strategies for all growth method-farm type situations except the Land Rent Livestock Farm situation where strategies three and four switch positions.

For strategy three of the land purchase-cash grain farm situation, a total of $27,352 in tax liability was removed by the provisions. Of this amount, $9,561 was due to re-invested savings which increased the prior income tax liability from $394,471 to $404,032. The remainder, $17,792, is the amount solely from the effects of income averaging and investment credit. No net operating losses occurred. The net effect of the provisions is a reduction of income taxes paid from $394,471 to $376,679. For the land purchase-livestock farm the prior income tax liability was increased by $6,059 from $181,851 to $187,910 due to re-invested tax savings. The total reduction is $22,269 due to income averaging, net operating loss carryback and carryover, and investment credit. The net reduction is $17,210 from $181,851 to $164,641. Similar values hold for the other two situations.

Also, similar effects on taxable income are appropriate for strategy five for the various situations. The conversion of some ordinary income to capital gains income for strategy five is the only distinguishing factor from strategy three.

For all situations across all strategies, investment credit reduced income taxes paid by the largest amount. Income averaging lowered income taxes the second most and net operating loss carryback and carryover the least. The price and physical relationships chosen for the

simulation resulted in very few losses occurring and hence a small effect from this provision. The amount of savings due to income averaging depends upon the variability of the returns while the reduction because of investment credit stems from the investment in capital goods. Had the variability of yields and prices been greater, the savings from income averaging would have been greater, and contra-wise for less variability. If there had been less investment in capital goods, the reduction due to investment credit would have been less and vice versa. There is no particular relationship between any of these provisions to indicate one provision would reduce income taxes liability more than the other. The situation determines the results of these provisions.

The land rent growth method situations paid more taxes relative to the land purchase growth method across farm types and tax management strategies. The cash grain farm paid more income taxes than the livestock farm type across both growth methods and all tax management strategies. For the land rent situations, the extra off-farm income which is generated by the accumulation of cash rather than being used as payments on capital plus lower property taxes and interest expenses on debt result in a higher taxable income on which income taxes are based. The cash grain farm generates more net income than the livestock farm and therefore pays more taxes. The ordering from the largest tax paying growth method-farm type situation to the least is as follows: (1) rent-cash grain farm, (2) purchase-cash grain farm, (3) rent-livestock farm, and (4) purchase-livestock farm.

Income Taxes Saved

Tables XIX and XX present the tax savings that can be gained or lost

TABLE XIX

AMOUNT SAVED OR LOST IN INCOME TAXES PAID ON A DISCOUNTED PRESENT VALUE BASIS OVER THE TWENTY YEAR SIMULATION BY SELECTING AN ALTERNATIVE STRATEGY

	Tax Management Strategy				
	One	Two	Three	Four	Five
Land Purchase					
Cash Grain Farm					
One	0.	-6,954.	-18,973.	-7,082.	-26,501.
Two	6,954	0.	-12,019.	-128.	-19,547.
Three	18,973.	12,019.	0.	11,891.	-7,528.
Four	7,082.	128	-11,891.	0.	-19,419.
Five	26,501.	19,547.	7,528.	19,419.	0.
Livestock Farm					
One	0.	-3,781.	-14,390.	-10,290.	-24,360.
Two	3,781.	0.	-10,609.	-6,900.	-20,579.
Three	14,390.	10,609.	0.	4,100.	-9,970.
Four	10,290.	6,900.	-4,100.	0-	-14,070.
Five	24,360.	20,579.	9,970.	14,070.	0.
Land Rent					
Cash Grain Farm					
One	0.	-6,626.	-18,443.	-7,112.	-25,940.
Two	6,626.	0.	-11,817.	-486.	-19,314.
Three	18,443.	11,817.	0.	11,331.	-7,497.
Four	7,112.	486.	-11,331.	0.	-18,828.
Five	25,940.	19,314.	7,497.	18,828.	0.
Livestock Farm					
One	0.	-3,627.	-13,912.	-11,008.	-24,812.
Two	3,627.	0.	-10,285.	-7,381.	-21,185.
Three	13,912.	10,285.	0.	2,904.	-10,900.
Four	11,008.	7,381.	-2,904.	0.	-13,804.
Five	24,812.	21,185.	10,900.	13,804.	0.

TABLE XX

AMOUNT SAVED OR LOST IN INCOME TAXES PAID OVER THE TWENTY YEAR SIMULATION BY SELECTING AN ALTERNATIVE STRATEGY

	Tax Management Strategy				
	One	Two	Three	Four	Five
Land Purchase					
Cash Grain Farm					
One	0.	-6,361.	-24,153.	-12,223.	-36,883.
Two	6,361.	0.	-17,792.	-5,862.	-30,522.
Three	24,153.	17,792.	0.	11,930.	-12,730.
Four	12,223.	5,862.	-11,930.	0.	-24,660.
Five	36,883.	30,522.	12,730.	24,660.	0.
Livestock Farm					
One	0.	-2,060.	-19,270.	-17,103.	-36,192.
Two	2,060.	0.	-17,210.	-15,043.	-34,132.
Three	19,270.	17,210.	0.	2,167.	-16,922.
Four	17,103.	15,043.	-2,167.	0.	-19,089.
Five	36,192.	34,132.	16,922.	19,089.	0.
Land Rent					
Cash Grain Farm					
One	0.	-5,743.	-22,960.	-12,122.	-35,672.
Two	5,743.	0.	-17,217.	-6,379.	-29,929.
Three	22,960.	17,217.	0.	10,838.	-12,712.
Four	12,122.	6,379.	-10,838.	0.	-23,550.
Five	35,672.	29,929.	12,712.	23,550.	0.
Livestock Farm					
One	0.	-1,660.	-17,939.	-18,477.	-36,595.
Two	1,660.	0.	-16,279.	-16,817.	-34,935.
Three	17,939.	16,279.	0.	-538.	-18,656.
Four	18,477.	16,817.	538.	0.	-18,118.
Five	36,595.	34,935.	18,656.	18,118.	0.

by utilizing any one strategy as compared to the other strategies on a discounted and non-discounted basis, respectively. The tables are divided into growth method and farm type situations and further subdivided by strategies. The columns represent the strategy moved from and the rows represent the strategy to be attained. For example, for the Land Purchase, Cash Grain Farm situation by utilizing strategy three instead of strategy one $18,973 on a discounted basis or $24,153 on a non-discounted basis can be saved over twenty years. Strategies five and three reward the most for changing to them and punish the most for changing from them. This is to be expected because strategies five and three are the lowest income tax paying strategies.

The rewards and punishments for selecting one strategy over another for the cash grain farm type of farm is approximately the same for both growth methods. This also applies for the livestock farm. The rewards and punishments for the cash grain farm are greater than those of the livestock farm because of the greater income generating ability of the cash grain farm. These relationships apply to both the discounted and non-discounted estimates.

Effects on Firm Growth

Net worth is one of the measures of farm size used in this study to estimate the relative effects on firm growth of the alternative tax management strategies. Net worth is the difference between total assets and total debts. Total assets is the sum of the market values of the capital assets plus the amount of cash at the end of each year. Total debts is the sum of the real estate, chattle and other debts.

The tax management strategies affect the amount of income which accumulates in the cash account, thereby effecting net worth. All strategies by farm type have the same complement of capital equipment and land. The differences that occur are the result of non-expansion by the same number of iterations. The addition to (or subtraction from) the cash account each year is defined as net cash income plus outside income less income taxes paid less social security taxes and less family living expenses. The family living expense is fixed for all strategies for all situations. Also, social security taxes are normally at the maximum amount allowed because of the relative income generating ability of the farms under all situations and tax management strategies. Within growth method-farm type situations, net cash income is comparable within the non-capital gains generating and capital gains generating strategies as well as the relationship between these two groups being constant for each year. The outside income (or off-farm income) is determined by the amount of cash on hand at the beginning of the year plus capital sales less capital purchases less the minimum amount of cash on hand needed times the yield rate. Income taxes paid as influenced by the different components of the alternative strategies for different situations affects the amount of cash remaining at the end of each year and hence effects total assets and finally net worth. In addition, if the cash account is too small to meet the requirements, expansion in terms of acres with the accompanying equipment will not take place. Also, a too small cash account will postpone debt payments and/or prepayments, thereby maintaining a larger debt and hence smaller net worth.

Table XXI contains the ending net worths and their rank for each of the growth method-farm type-strategy situations. Tables XXII and

TABLE XXI

ENDING NET WORTH AND RANK FOR THE VARIOUS SIMULATED SITUATIONS

Tax Management Strategy	Land Purchase						Land Rent					
	Cash Grain Farm	Rank	Overall Rank	Livestock Farm	Rank	Overall Rank	Cash Grain Farm	Rank	Overall Rank	Livestock Farm	Rank	Overall Rank
One	1,347,921.	5	10	1,006,946.	5	20	1,407,190.	5	6	1,072,444.	5	16
Two	1,368,221.	4	9	1,108,823.	4	19	1,426,476.	4	5	1,083,349.	4	15
Three	1,404,278.	2	7	1,050,871.	3	18	1,461,891.	2	2	1,114,417.	3	13
Four	1,375,591.	3	8	1,057,580.	2	17	1,435,698.	3	3	1,124,600.	2	12
Five	1,433,337.	1	4	1,103,134.	1	14	1,491,906.	1	1	1,167,271.	1	11

TABLE XXII

MEAN VALUES OF NET WORTH FOR THE LAND PURCHASE GROWTH METHOD BY FARM TYPE AND TAX MANAGEMENT STRATEGY

Year	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
1	882,515.	886,453.	887,398.	888,449.	893,116.	762,500.	765,302.	766,064.	773,644.	776,496.
2	906,926.	913,263.	918,476.	913,382.	924,766.	776,228.	780,913.	783,053.	788,376.	794,528.
3	927,772.	936,355.	943,636.	934,844.	950,629.	786,681.	793,053.	796,185.	799,884.	808,649.
4	950,815.	960,953.	969,479.	958,725.	977,379.	799,347.	806,998.	811,031.	813,893.	824,786.
5	974,053.	983,229.	992,775.	982,527.	1,001,681.	810,563.	816,478.	822,641.	826,563.	838,330.
6	994,258.	1,005,724.	1,017,246.	1,003,567.	1,027,027.	821,986.	829,746.	838,229.	839,368.	855,275.
7	1,018,477.	1,028,918.	1,041,008.	1,028,364.	1,051,743.	835,650.	842,825.	851,825.	854,204.	870,347.
8	1,037,219.	1,049,161.	1,063,186.	1,047,836.	1,074,791.	843,202.	851,575.	862,463.	863,082.	882,405.
9	1,058,875.	1,070,168.	1,085,352.	1,070,669.	1,098,187.	853,850.	861,761.	873,822.	875,617.	895,724.
10	1,073,080.	1,087,101.	1,105,299.	1,086,040.	1,119,303.	855,606.	865,598.	880,732.	879,418.	904,554.
11	1,097,217.	1,112,875.	1,132,297.	1,111,325.	1,147,502.	867,253.	878,463.	894,821.	893,005.	921,288.
12	1,127,725.	1,143,347.	1,163,421.	1,143,054.	1,179,874.	884,735.	895,879.	913,041.	912,489.	941,552.
13	1,151,177.	1,166,615.	1,187,591.	1,167,809.	1,205,397.	892,395.	903,023.	921,685.	922,520.	952,845.
14	1,172,188.	1,189,656.	1,214,388.	1,190,365.	1,233,771.	910,920.	923,197.	944,452.	943,742.	978,364.
15	1,204,297.	1,221,859.	1,247,428.	1,223,961.	1,268,340.	931,059.	942,751.	964,704.	966,453.	1,001,309.
16	1,233,125.	1,251,668.	1,278,933.	1,254,323.	1,301,418.	948,623.	960,229.	983,521.	986,766.	1,023,013.
17	1,267,051.	1,284,890.	1,313,381.	1,289,803.	1,337,464.	969,043.	979,632.	1,004,088.	1,009,935.	1,046,376.
18	1,293,645.	1,312,706.	1,343,506.	1,317,941.	1,369,170.	981,787.	993,035.	1,019,822.	1,025,485.	1,056,010.
19	1,325,396.	1,344,098.	1,376,464.	1,351,611.	1,403,883.	999,484.	1,010,122.	1,038,600.	1,046,669.	1,087,316.
20	1,347,921.	1,368,221.	1,404,278.	1,375,591.	1,433,337.	1,006,946.	1,018,823.	1,050,871.	1,057,580.	1,103,134.

XXIII present the mean values of net worth by years, farm type and tax management strategy for the land purchase and land rent growth methods, respectively. Table XXIV illustrates the amount of net worth gained or lost at the end of twenty years by selecting an alternative strategy within each growth method-farm type situation.

Relationship Between Tax Management Strategies

The following description presents the relationship between the tax management strategies for the four growth method-farm type combinations.

Land Purchase - Cash Grain Farm. The ranking of the strategies from largest to smallest ending net worth follows the ranking of the income taxes paid from the least to the most. Strategy five has the largest ending net worth followed by strategy three. Strategy one has the smallest ending net worth with strategy two having the second smallest.

The changes in net worth from the beginning to the end of the twenty year simulation follow the same pattern as the ranking of these strategies. The net worth of strategy five increased the largest amount followed by strategy three with strategies one and two having the lowest and second lowest increases, respectively.

Table XXIV presents the amount of net worth gained or lost by selecting different strategies. By reading down each column, the amount gained (positive number) or lost (negative number) by selecting the row strategy as opposed to the column strategy can be ascertained. For example, if strategy three were selected instead of strategy one, an increase in net worth at the end of the twenty year period of $56,357 could be expected. Or, if strategy two were selected over strategy

TABLE XXIII

MEAN VALUES OF NET WORTH FOR THE LAND RENT GROWTH METHOD
BY FARM TYPE AND TAX MANAGEMENT STRATEGY

Year	Cash Grain Farm					Livestock Farm				
	One	Two	Three	Four	Five	One	Two	Three	Four	Five
1	882,515.	886,453.	887,398.	888,449.	893,115.	762,500.	765,302.	766,064.	773,644.	776,496.
2	906,926.	913,263.	918,476.	913,382.	924,766.	776,228.	780,913.	783,053.	788,376.	794,528.
3	927,772.	936,355.	943,636.	934,844.	950,629.	786,681.	793,053.	796,185.	799,884.	808,649.
4	952,349.	962,376.	970,973.	960,276.	978,921.	800,919.	808,547.	812,679.	815,545.	826,489.
5	977,073.	986,090.	995,764.	985,574.	1,004,717.	813,557.	819,385.	825,804.	829,677.	841,632.
6	998,893.	1,010,246.	1,021,902.	1,008,248.	1,031,762.	826,704.	834,449.	843,176.	844,245.	860,423.
7	1,024,797.	1,035,049.	1,047,252.	1,034,742.	1,058,088.	842,192.	849,273.	858,542.	860,954.	877,321.
8	1,045,234.	1,056,997.	1,071,120.	1,055,924.	1,082,842.	851,538.	859,854.	871,015.	871,680.	891,263.
9	1,070,137.	1,081,019.	1,096,218.	1,082,052.	1,109,290.	875,755.	873,377.	885,623.	887,890.	907,959.
10	1,087,518.	1,101,180.	1,119,393.	1,100,617.	1,133,607.	871,199.	880,962.	896,240.	895,361.	920,611.
11	1,114,928.	1,130,238.	1,149,638.	1,129,201.	1,165,046.	886,463.	897,450.	913,971.	912,649.	940,346.
12	1,148,614.	1,163,837.	1,183,857.	1,164,132.	1,200,567.	907,604.	918,436.	935,681.	935,896.	964,247.
13	1,175,202.	1,190,194.	1,211,092.	1,192,046.	1,299,175.	918,377.	928,644.	947,118.	949,122.	978,292.
14	1,200,885.	1,217,798.	1,242,362.	1,219,315.	1,262,060.	942,109.	954,121.	975,059.	975,665.	1,009,077.
15	1,237,604.	1,254,541.	1,279,916.	1,257,548.	1,301,162.	976,360.	978,636.	1,000,219.	1,003,634.	1,037,027.
16	1,271,138.	1,289,029.	1,316,053.	1,292,654.	1,338.925.	990,156.	1,001,204.	1,024,105.	1,029,294.	1,063,801.
17	1,309,721.	1,326,805.	1,354,960.	1,332,826.	1,379,452.	1,015,856.	1,025,694.	1,049,622.	1,057,877.	1,092,234.
18	1,341,092.	1,359,386.	1,389,790.	1,365,771.	1,415,892.	1,034,067.	1,044,560.	1,070,729.	1,079,040.	1,116,329.
19	1,378,589.	1,396,276.	1,428,256.	1,405,225.	1,456,349.	1,058,178.	1,067,787.	1,095,381.	1,106,773.	1,144,636.
20	1,407,190.	1,426,476.	1,461,891.	1,435,698.	1,491,906.	1,072,444.	1,083,349.	1,114,417.	1,124,600.	1,167,271.

TABLE XXIV

NET WORTH GAINED OR LOST AT THE END OF THE TWENTY YEAR SIMULATION BY SELECTING AN ALTERNATIVE STRATEGY

	Tax Management Strategy				
	One	Two	Three	Four	Five
Land Purchase					
Cash Grain Farm					
One	0.	-20,300.	-56,357.	-27,670.	-85,416.
Two	20,300.	0.	-36,057.	-7,370.	-65,116.
Three	56,357.	36,057.	0.	28,687.	-29,059.
Four	27,670.	7,370.	-28,687.	0.	-57,746.
Five	85,416.	65,116.	29,059.	57,746.	0.
Livestock Farm					
One	0.	-11,877.	-43,925.	-50,634.	-96,188.
Two	11,877.	0.	-32,048.	-38,757.	-84,311.
Three	43,925.	32,048.	0.	-6,709.	-52,263.
Four	50,634.	38,757.	6,709.	0.	-45,554.
Five	96,188.	84,311.	52,263.	45,554.	0
Land Rent					
Cash Grain Farm					
One	0.	-19,286.	-54,701.	-28,508.	-84,716.
Two	19,286.	0.	-35,415.	-9,222.	-65,430.
Three	54,701.	35,415.	0.	26,193.	-30,015.
Four	28,508.	9,222.	-26,193.	0.	-56,208.
Five	84,716.	65,430.	30,015.	56,208.	0.
Livestock Farm					
One	0.	-10,905.	-41,973.	-52,156.	-94,827.
Two	10,905.	0.	-31,068.	-41,251.	-83,922.
Three	41,973.	31,068.	0.	-10,183.	-52,845.
Four	52,156.	41,251.	10,183.	0.	-42,671.
Five	94,827.	83,922.	52,854.	42,671.	0.

five, a decrease of $65,116 could be expected in ending net worth. The largest amounts are gained by selecting strategies five or three over the other strategies and vice versa. These two strategies have the largest amounts of net worth.

Land Purchase - Livestock Farm. The rankings of the size of net worth follows the rankings of income taxes paid except that the position of strategy three and four are reversed. Strategy five has the largest net worth and strategies one and two have the smallest and second smallest net worths, respectively. The relationship between income taxes paid and net worth for strategies three and four are reversed because of the nature of capital gains generating procedure. The breeding livestock asset must be over two years of age before the qualifications of a capital asset are met. During this time, the animal is carried in inventory and as such is a component of total assets. Because income taxes paid for strategies three and four differ very little, the increase in inventory for strategy four overshadows the larger cash account of strategy three which follows from a lower payment of income taxes. The result is a larger net worth associated with more income taxes paid, a contradiction of the rule of higher income tax payments, lower net worth.

The changes in net worth from the beginning of simulation to the end follow the ranking of income taxes paid rather than net worth. The difference in the amount of increase for strategies three and four is only $871. Strategies five and three increased the most and second most, respectively while strategies one and two changed the lease and second least. The largest amounts of net worth are gained if strategies five and four are selected over the other strategies.

Land Rent - Cash Grain Farm. The ranking of the strategies according to net worth from highest to lowest follows the ranking of income taxes paid and has the same ranking as the land purchase-cash grain farm situation. Strategies five and three have the largest and second largest net worths, respectively. Also, the changes in net worth from the first year of simulation to the last bear the same relationship. Strategies one and two have the lowest and second lowest net worths and changes in net worth respectively. The greatest gain in net worth is attained by selecting strategies five and three over the other three strategies.

Land Rent - Livestock Farm. The same relationship between strategies three and four with the land purchase growth method is found for the land rent growth method. Strategy four both pays higher income taxes than three and has a higher net worth. And, again the cause is the increase in inventory caused by the holding of the breeding heifers until they are a little over two years of age to qualify as a capital asset subject to long term capital gains. The ranking from highest to lowest net worth is first, second, third, fourth and fifth for strategies five, four, three, two and one, respectively. The ranking of the change from the first year to the last year of simulation is net worth follows the ranking in net worth.

Cash Grain Farm - Livestock Farm Relationship

Cash grain farms have larger net worths than livestock farms. The cash grain farms have a greater proportion as well as a larger amount of cropland which has a higher value per acre than pastureland. Also, the cash grain farm has more feeders though less cows and calves than

the livestock farm. The larger number of acres of cropland and cattle generate more income than the livestock farm, enabling the cash grain farm to expand for each interaction, accumulate larger cash reserves, and benefit more from the various tax management strategies than the livestock farms.

Land Purchase - Land Rent Relationship

The land rent growth method has larger net worths than land purchase growth methods on a farm type-tax management strategy constant basis. The land rental payment is smaller than the debt payment plus interest charge on the debt. Also, property taxes for the part-owners are less than for the full owner. These factors contribute to a large cash account for the rental strategies. The total assets of the land purchase growth method are greater than those for the land rent growth method, but the size of the total debts for land purchase more than off-set the total assets to result in a smaller net worth for the land purchase growth method.

Not all land rent growth method situations are greater than all land purchase situations. Table XXI presents the ranking for all situations. Strategy five of the land purchase - cash grain farm situation ranks higher than strategies one and two of the land rent - cash grain farm situation. Also, strategy five of the land purchase - livestock farm is ahead of strategies one and two of the land rent - livestock farm situation.

The above comparison of net worth between the land purchase and land rent growth methods does not take into consideration appreciation in land values. No increase in land values was built into the analysis

because of the desire to limit the factors affecting net worth to the tax management variables under study. However, rising land values are an important source of increasing net worth to many land owners. Therefore, leaving out land appreciation limits the study somewhat from a firm growth (as measured by net worth) point of view. However, since the firms are comparable between growth methods, the amount that land values would have to rise per acre per year for the net worths to be equal can be determined. Any rise over this amount would make the land purchase growth method superior.

The farm types own the same amount of land at the start of simulation but expand by different methods. The appreciation of the additional land purchased must account for the difference in net worths because the basic owned land would appreciate resulting in greater net worths but having the same difference.

The smallest difference in net worths for the two growth methods for the cash grain farm is $57,613 for tax management strategy three. If each acre of land purchased for expansion would increase in value $9.47 per year, the two ending net worths would be equal. If the land appreciation were greater than $9.47 the land purchase growth method would have a greater ending net worth. The largest difference for the cash grain farm is associated with strategy four with a value of $60,107. An increase of $9.88 in value per acre per year would equate the ending net worths.

Strategy four had the largest difference for the livestock farm situations with a difference of $67,020. An increase in land values of $11.02 per acre per year would equate the net worths of the two growth methods. The smallest difference was associated with strategy three

with a value of $63,546. The rise in land values per acre per year necessary for the two net worths to be equated for both growth methods is $10.45.

CHAPTER VI

SUMMARY

Over time the size structure of Oklahoma farms has changed. There have been increases in the number of commercial farms of the larger sizes and decreases in the number of the smaller firms. Much of this expansion can be attributed to efforts to attain the goals of (1) making the most annual profits, (2) maintaining or increasing the family living standard, (3) increasing the net worth of the business and (4) avoiding years of low profits or losses.

As far size increases, the appropriate use of available provisions to reduce federal income taxes becomes more and more important in determining the amount of money available for reinvestment in the business. Because of the progressive nature of the income tax, as taxable income rises, taxes rise. At the lower levels of taxable income, taxes are less important in percentage and absolute values than at the upper levels. As taxable income increases, the amount liable to taxation increases and the tax rate rises also. The progressive nature of federal income taxation constitutes the factor which makes income taxes an increasingly important cost.

The effects of the progressive income tax on income after taxes available for reinvestment and family living needs to be determined. Also, which federal income tax provisions are important in reducing taxes and what affect does the use of these provisions have on funds

available for reinvestment, the subsequent rate of growth and ultimately income taxes paid in the future must be determined. The objectives of the study are to develop a model to estimate taxable income and taxes paid for a variety of farm firms under alternative provisions of the Federal Tax Law, to estimate the effects of selected federal tax provisions on federal income taxes payable by conducting simulation experiments, and to estimate the effects on growth of selected tax provisions.

The geographic area to which the study is specifically targeted is Northwest Oklahoma. Over time, the number of farms in the area has been declining while average size has been increasing. The dominant types of farms are cash-grain farms, livestock farms and livestock ranches. Northwest Oklahoma was chosen as the study area because the size of the units, the farm types, and yield variability are such that the effects of the combinations of federal income tax provisions selected for analysis can be delineated.

Theory of the firm does not typically address itself to the consideration of the effects of income taxes on the firm. And, when taxes are considered, the emphasis is on lump sum or per unit taxes on inputs or outputs at one point in time.

The effects of income tax provisions on income taxes and the effects of the income taxes themselves are not limited to one point in time, but are felt over several points in time. The analysis of different combinations of income tax provisions essentially involves the comparison of the effects of these provisions on the costs and revenues of a representative firm over time. The analysis over time introduces the concept of economic dynamics. Economically dynamic situations can be

evaluated by discounting to the present and comparing the discounted present values.

Simulation was chosen as the method to analyze the effects of the different income tax provisions because in general it can represent a framework that is dynamic in both the time and uncertainty sense. The general agricultural firm simulator is the specific simulator for the analysis because of its prior usage at Oklahoma State University and with income tax modifications is able to (1) account for the passage of time, (2) consider uncertain yields and prices, (3) account for the cash-flow of the firm, (4) calculate taxable income and income tax liability, (5) allow for different methods of depreciation, and (6) allow for the conversion of ordinary income to capital gain income.

The basic thrust for the management of federal income taxes is to influence the amount of taxable income which occurs over time and to adjust the tax liability based upon this taxable income in order to lower the amount of income taxes paid. A lower amount of income taxes paid implies that more income is available for reinvestment and growth. The provisions selected for study can be divided into two groups depending upon the emphasis of their effects. The focus of the first group of selected tax provisions (1) depreciation method and (2) conversion of ordinary income to capital gains income is on influencing taxable income. The emphasis of the second group (1) investment credit, (2) income averaging, and (3) net operating loss carryback and carryover is on reducing the primary income tax liability based upon taxable income.

Five tax management strategies developed utilizing the selected provisions are as follows: (1) straight line depreciation - no income

conversion to capital gains - no tax liability control, (2) fast depreciation - no income conversion to capital gains - no tax liability control, (3) fast depreciation - no income conversion to capital gains - tax liability control, (4) straight line depreciation - income conversion to capital gains - no tax liability control, and (5) fast depreciation - income conversion to capital gains - tax liability control.

The General Agricultural Firm Simulator was modified to include selected income tax provisions as well as additional features in order to analyze the different tax management strategies. In order to perform the modifications made in the simulator, data in addition to the original data is required. This additional data controls the modifications and provides information that is necessary for some of the modifications to function. Also, an external data file containing correlated yield information is read to supply the grain and pasture yield coefficients. Two methods of calculating depreciation and additional first year depreciation were added to the straight line depreciation procedure. The calculation of long term capital gains and losses for real and personal property was incorporated into the simulator. The income tax computational procedure was modified to more closely follow the Internal Revenue Service Form 1040 and its supporting schedules or forms. The social security calculating procedure was modified to include the regular and optional methods of calculating the self-employment tax. Procedures to calculate investment credit, average incomes and net operating losses were also included. Selected variables were organized and written on an external data set to facilitate summarization of the results.

Representative farm situations were developed based upon census data. Some of the factors considered were farm type, farm size in acre terms, proportion of cropland, proportion of pasture land, proportion of other land, and economic class. Enterprise budgets were developed from area agent budgets, and starting farm organizations were determined using linear programming. The income tax provisions selected for analysis were grouped into five strategies designed to provide the greatest amount of useful information. Two growth methods were developed. Twenty growth method-farm type-tax management strategy situations (two growth methods, two farm types, and five tax management strategies) were identified. Each situation was simulated for twenty years and was replicated fifteen times.

Estimates of net cash income, off-farm income, gains/losses taxed as ordinary income, and total depreciation were made. In addition, capital gains, adjusted gross income, standard deductions and dependents exemption, taxable income, primary income tax liability were estimated. Estimates of credit for investment credit, credit for income averaging, credit for net operating loss carryback and carryover, and final income tax liability were also made. These estimates were summarized for each year of the simulation for all replicates for each situation. Also, the mean, standard deviation, high, low and range were estimated for each year.

Estimates of net worth and total acres operated were summarized for each year of the planning horizon for all replicates for each situation were also presented. Replicate data was used to estimate the mean, standard deviation, high, low and range for net worth for each year simulated. Net worth was used to estimate firm growth. The number of

replicates that did not expand at the four specified decision points was used to estimate the ability to expand.

Results

Taxable Income

For both growth methods, the cash grain farm has a larger taxable income than the livestock farm. The cash grain farm has a greater net cash income because of greater production than the livestock farm. Because of the same per unit income generating ability for both the cash grain farm and livestock farm, a greater number of units implies that a larger income is generated. The cash grain farm accumulated a greater absolute amount of cash and hence generated more off-farm income. The cash grain farm has a lower amount of depreciation taken because the livestock farm has more cows to depreciate. Those strategies which generated capital gains have a lower capital gains income for the cash grain farm because fewer breeding heifers are sold. For these reasons, the cash grain farm has a larger taxable income than the livestock farm.

For both farm types, the land rent growth method has a larger taxable income than the land purchase growth method. After expansion, the land rent growth method has a greater net cash income than the land purchase growth method because of lower interest costs and lower property taxes. The property taxes are paid by the property owner and no debt is incurred to rent the land used. Lower rent payments than purchase payments plus a greater net cash income result in a greater cash accumulation and hence larger off-farm income. A lower depreciation for the land rent growth method results from fence depreciation accuring to the

property owner and not the renter. The greater cash accumulation results in more replicates expanding for the land rent growth method. Consequently, on the average, where there is a difference in capital gains and gains/losses taxed as ordinary income between the land purchase and land rent growth methods, the land rent growth method values are greater. There are the reasons the land rent growth strategies result in a greater taxable income.

Income Taxes Paid

The discounted present values indicate that within all growth method-farm type situations the ranking of the strategies remains the same. Strategy five and strategy three pay the lowest and second lowest income taxes, respectively. Strategies one and two pay the most and second most income taxes, respectively; while strategy four pays the median amount of income taxes. The ranks are the same on a non-discounted basis between strategies for all growth method-farm type situation except for the Land Rent Livestock Farm situation where strategies three and four switch positions.

For all situations across all strategies, investment credit reduced income taxes paid by the largest amount. Income averaging lowered income the second most and net operating loss carryback and carryover the least. The price and physical relationships chosen for the simulation resulted in very few losses occurring and hence a small effect from this provision. The amount of savings due to income averaging depends upon the variability of the returns while the reduction because of investment credit stems from the investment in capital goods. Had the variability of yields and prices been greater, the savings from

income averaging would have been greater, and contra-wise for less variability. A firm having less investment in capital goods, then would reduce taxes less through using investment credit and vice versa. There is no particular relationship between any of these provisions to indicate one provision would reduce income taxes liability more than the other. The situation determines the results of these provisions.

The land rent growth method situations paid more taxes relative to the land purchase growth method across farm types and tax management strategies. The cash grain farm type of firm paid more income taxes than the livestock farm type across both growth methods and all tax management strategies. For the land rent situations, the extra off-farm income which is generated by the accumulation of cash rather than as payments on capital plus lower property taxes and interest expenses on debt result in a higher taxable income on which income taxes are based. The cash grain farm generates more taxable income than the livestock farm and therefore pays more taxes. The ordering from the largest tax paying growth method-farm type situation to the least is as follows: (1) rent-cash grain farm, (2) purchase-cash grain farm, (3) rent-livestock farm, and (4) purchase-livestock farm.

Net Worth

Cash grain farms have larger year end net worths than livestock farms. The cash grain farm has a greater proportion as well as a larger amount of cropland which has a higher value per acre than pastureland. Also, the cash grain farm has more feeders though less cows and calves than the livestock farm. The larger number of acres of cropland and cattle generate more income than the livestock farm, enabling the cash

grain farm to expand at each decision point, accumulate larger cash reserves, and benefit more from the various tax management strategies than the livestock farm.

The land rent growth method has larger net worths than land purchase growth methods on a farm type-tax management strategy constant basis. The land rental payment is smaller than the debt payment plus interest charge on the debt. Also, property taxes for the part-owners are less than for the full owner. These factors contribute to a large cash account for the rental strategies. The total assets of the land purchase growth method are greater than those for the land rent growth method, but the size of the total debts for land purchase more than off-set the total assets to result in a smaller net worth for the land purchase growth method.

Not all land rent growth method situations are greater than all land purchase situations. Strategy five of the land purchase - cash grain farm situation ranks higher than strategies one and two of the land rent - cash grain farm situation. Also, strategy five of the land purchase - livestock farm is ahead of strategies one and two of the land rent - livestock farm situation.

The above comparison of net worth between the land purchase and land rent growth methods does not take into consideration appreciation in land values. No increase in land values was built into the analysis because of the desire to limit the factors affecting net worth to the tax management variables under study. However, rising land values are an important source of increasing net worth to many land owners. Therefore, leaving out land appreciation limits the study somewhat from a firm growth (as measured by net worth) point of view. However, since

the firms are comparable between growth methods, the amount that land values would have to rise per acre per year for the net worths to be equal can be determined. Any rise over this amount would make the land purchase growth method superior.

The farm types own the same amount of land at the start of simulation but expand by different methods. The appreciation of the additional land purchased must account for the difference in net worths because the basic owned land would appreciate resulting in greater net worths but having the same difference.

The smallest difference in net worths for the two growth methods for the cash grain farm is $57,613 for tax management strategy three. If each acre of land purchased for expansion would increase in value $9.47 per year, the two ending net worths would be equal. If the land appreciation were greater than $9.47 the land purchase growth method would have a greater ending net worth. The largest difference for the cash grain farm is associated with strategy four with a value of $60,107. An increase of $9.88 in value per acre per year would equate the ending net worths.

Strategy four had the largest difference for the livestock farm situations with a difference of $67,020. An increase in land values of $11.02 per acre per year would equate the net worths of the two growth methods. The smallest difference was associated with strategy three with a value of $63,546. The rise in land values per acre per year necessary for the two net worths to be equated for both growth methods is $10.45.

Limitations of the Study

The analysis of a question without limiting the relationships involved in the study is, in many cases, a very great undertaking in terms of time and cost. Many of the results may not bear or may only bear marginally on the question. Simplifying assumptions about these peripheral relationships may reduce the extend and/or rigor of the study without affecting the basic results and implications significantly.

In order to reduce the factors which influence cash accumulation and net worth, two of the elements primarily affected by the different tax management strategies, family living expenditures were assumed to be a constant over the planning horizon. The influences of the different strategies would have been much harder to isolate and explain if this assumption were not made because family living expenditures change with profits, age and size of the family, life cycle of the firm and other factors.

In this study variable family living expenses would change the amount of excess cash accumulated and therefore affect the amount of off-farm income and net worth. Family living expenses that change might affect the first expansion but the amount of cash on hand for the remaining three expansions was great enough to accomodate most family living expenses. Therefore, the changing family living expenses would not materially affect the expansion but would affect net worth and off-farm income thereby adding another source of variation to the simulation.

Hatch in his analysis of growth potential and survival capability of southern plains dryland farms utilized an estimated consumption function to determine family living expenses. For farms similar in size and other characteristics, the average family living expense which

fluctuated was smaller than the assumed constant expenditure for this thesis. While the assumption of a fixed family living expenditure limits the general applicability of the study it does not affect, to a great degree, the results and implications based on the tax management strategies, the major emphasis of the study.

The strategies were applied to one farm size for two farm types with two growth methods. The two farm types (cash grain farm and livestock farm) of the class I farm size were chosen because the effects of the strategies would be more pronounced and hence more easily recognized. Also, these farm types account for a significant percentage of the farms and acreage in the study area. To analyze more farm types and more sizes would not result in enough new information to justify the cost. The farm type and size was selected to be representative of a group of farms as well as for ease of recognition of the interactions. The implications of the results are applicable to other situations without the need of more simulation. The two growth methods are also representative of growth techniques and while a greater number of specific growth methods would generate more information, the general implications would not change. The number of farm types, growth methods, and farm sizes were limited to reduce the problem to a manageable size in terms of the logistics and mechanics of conducting the experiments.

Some additional limitations are associated with the two growth rules used in the study. There is no allowance for dis-investment in order to reduce debt or to expand in a different direction. The growth methods only permit the status quo to be maintained or for the total acres operated to be increased. The number of brood cows and stockers as well as the machinery complement is maintained or expanded along

with the land size. No changes in organization are allowed. All fully depreciated capital items (machinery, brood cows, and depreciable real estate) used by the enterprises in the organization as inputs must be replaced by purchasing at new cost in the next production period regardless of the financial condition of the firm. The flexibility which a farm or ranch operator has in replacing capital items is not reflected by this decision rule. The assumption that land can be bought or rented in 160 acre increments as desired in the specified cropland-pastureland ratio with no price increase over the entire 20 year simulation may not adequately reflect the competition for land in a given locale.

Another limit is the income tax provisions selected for inclusion in the study. This exclusion of some provision confines the analysis. The inclusion of more provisions would increase the flexibility and range of choice of provisions for study and would allow the analysis of special cases.

Some other general assumptions can be considered limitations also. Capital input costs are assumed to be constant over time and there is no allowance for increased technical efficiency of these capital items. Produce prices, input prices and yield levels are not trended over time. Labor was assumed to be available in the required amounts at the specified price over the planning horizon. The single proprietorship form of ownership was assumed. The analysis addressed itself only to the growth years of the firm ignoring the income tax problems which occur upon entry into and exit from farming.

Suggestions for Further Research

This study evaluates the effects of different income tax provisions

on taxable income, income taxes paid and net worth for dryland farms by simulating farm operations for a twenty year planning horizon using an experimental approach. The emphasis was on incorporating selected income tax provisions and as a consequence, the effects of a relatively small number of variables dealing with firm growth and survival were investigated. Assuming a workable model which incorporates common income tax provisions, many questions can now be attacked. For example, the consequences of purchasing versus leasing or renting of capital items may need to be reappraised. Also, the effects of entry and exit strategies of a firm may be altered with the consequences of different income tax provisions outlined.

The single proprietorship was the form of ownership assumed. As firms become larger the effects of a change in structure to that of a closely held corporation may be of significant importance. Under what conditions would such a change enhance the growth ability of the farm firm operator(s) combination? When would this type of change be a disadvantage?

Because the experimental approach was used with respect to the tax management strategies, a behavioral approach might provide useful information. One example is to examine when changes in depreciation schedules would be appropriate to increase tax savings. Another example would allow the strategy components to be chosen by the simulator given various characteristics of the firm such as age, planning horizon, goals, ownership organization, farm type, non-farm business relationships, and various operator characteristics.

An analysis of the consequences of managing the sale of products and purchase of inputs with emphasis on income taxes is another example

of useful additional research. Under what conditions is an advantage gained or lost by the early or late sale of production as well as the early or late purchase of operating inputs? Are there advantages to be gained or lost by replacing capital items before or after they have been fully depreciated?

An analysis of the relationship between the capital structure of the firm and investment credit and fast depreciation would prove useful. Do these two provisions encourage over-capitalization? What are the effects on an optimal machinery complement of various income tax provisions? What are the effects of an income tax influenced capital structure on the other parts of a farm firm?

Still another example of further research though with a different emphasis is the effects of changes in income tax laws on the firm. What would happen if cash accounting for farmers were dis-allowed? What are the consequences of increasing investment credit or eliminating it altogether? How would changes in the requirements to qualify breeding stock as capital items subject to capital gains affect the breeding stock industry as well as the commercial livestockman?

The above suggestions are only part of the many avenues of additional research that would prove profitable in the area of income taxes. Much additional work must be undertaken in analysis of decision making for the farm firm of which income taxes are a part. Without adequate information as to goals and how decisions are made, the analysis of income taxes and their effects will only be partially influencial on the understanding of growth and development of farm firms.

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APPENDIX A

SUMMARIES OF TAXABLE INCOME, INCOME TAXES PAID AND NET WORTH BY FARM TYPE, GROWTH METHOD AND TAX MANAGEMENT STRATEGY OVER A 20-YEAR PLANNING HORIZON

TABLE XXV

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	36,250	10,912	34,936	52,020	17,084
2	47,017	13,099	43,961	65,594	21,633
3	43,980	11,413	39,524	63,325	23,801
4	45,573	10,244	36,323	65,283	28,960
5	54,615	14,187	41,383	75,857	34,474
6	46,621	13,650	48,832	72,738	23,906
7	43,698	10,723	35,807	65,630	29,823
8	48,678	15,132	49,569	71,920	22,352
9	48,506	16,675	49,885	71,942	22,057
10	53,528	14,978	54,894	78,525	23,631
11	53,060	17,273	71,528	85,140	13,612
12	57,616	13,672	39,221	80,724	41,503
13	64,487	10,405	37,558	81,998	44,440
14	58,290	18,008	60,319	86,758	26,439
15	62,638	10,605	33,713	79,072	45,358
16	63,276	18,987	62,231	87,259	25,028
17	66,531	20,805	64,672	99,405	34,733
18	61,374	14,611	55,065	90,690	35,625
19	74,514	13,260	40,119	93,930	53,811
20	67,897	20,185	80,002	104,300	24,298

TABLE XXVI

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	10,855	4,639	14,507	18,071	3,563
2	15,935	6,123	20,394	25,297	4,903
3	14,360	5,378	18,466	24,062	5,596
4	15,043	5,048	17,651	25,126	7,474
5	19,698	7,306	21,242	30,941	9,699
6	15,730	6,615	23,596	29,226	5,630
7	14,166	5,232	17,506	25,317	7,811
8	16,820	7,390	23,644	28,776	5,132
9	16,850	8,038	23,750	28,788	5,038
10	19,237	7,442	26,943	32,484	5,542
11	19,157	8,393	33,658	36,321	2,663
12	21,214	7,281	20,898	33,760	12,862
13	24,800	5,625	20,219	34,499	14,280
14	21,771	9,356	30,722	37,260	6,538
15	23,806	5,680	18,062	32,802	14,739
16	24,478	9,892	31,520	37,550	6,030
17	26,259	11,261	35,015	44,823	9,808
18	23,243	7,857	29,412	39,594	10,182
19	30,390	7,427	22,518	41,538	19,020
20	27,020	10,926	42,079	47,846	5,767

TABLE XXVII

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	882,515	6,342	20,429	891,069	870,640
2	906,926	11,790	42,331	923,031	880,700
3	927,772	13,952	57,628	947,759	890,131
4	950,814	15,213	53,774	969,452	915,678
5	974,053	14,070	57,318	996,985	939,667
6	994,258	14,014	54,546	1,011,550	957,004
7	1,018,477	14,170	47,042	1,039,047	992,005
8	1,037,219	19,192	65,932	1,066,907	1,000,975
9	1,058,875	19,106	69,402	1,098,367	1,028,965
10	1,073,080	20,794	72,749	1,113,490	1,040,741
11	1,097,217	26,204	100,913	1,152,543	1,051,630
12	1,127,725	30,159	117,754	1,193,239	1,075,485
13	1,151,177	31,765	119,187	1,214,664	1,095,477
14	1,172,188	29,025	111,440	1,227,823	1,116,383
15	1,204,297	30,179	106,205	1,251,720	1,145,515
16	1,233,125	29,455	101,185	1,286,128	1,184,943
17	1,267,051	32,859	118,108	1,334,366	1,216,258
18	1,293,645	36,092	128,816	1,363,558	1,234,742
19	1,325,396	36,191	130,104	1,403,577	1,273,473
20	1,347,921	39,652	145,573	1,424,945	1,279,372

TABLE XXVIII

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	26,188	10,912	34,936	41,958	7,022
2	42,360	13,123	44,050	60,940	16,890
3	39,844	11,423	39,722	59,253	19,531
4	43,295	10,246	36,293	62,981	26,688
5	57,572	14,175	41,353	78,848	37,495
6	42,809	13,627	48,812	68,919	20,108
7	47,168	10,704	35,656	68,915	33,259
8	46,743	15,165	49,688	70,085	20,397
9	51,226	16,641	49,933	74,721	24,788
10	49,286	14,991	55,047	74,414	19,366
11	51,308	17,329	71,812	83,444	11,631
12	59,325	13,685	39,206	82,377	43,171
13	66,402	10,441	37,655	83,876	46,221
14	55,986	17,993	60,264	84,422	24,158
15	64,241	10,642	33,588	80,612	47,025
16	63,251	18,939	62,136	87,317	25,181
17	69,704	20,812	64,785	102,647	37,862
18	60,917	14,633	55,147	90,288	35,142
19	76,995	13,253	40,084	96,471	56,387
20	66,837	20,218	80,098	103,176	23,078

TABLE XXIX

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	6,917	3,804	11,886	13,080	1,194
2	13,753	5,801	19,289	22,798	3,509
3	12,463	5,124	17,655	21,904	4,249
4	13,960	4,978	17,252	23,880	6,628
5	21,219	7,425	21,659	32,672	11,013
6	13,945	6,355	22,711	27,126	4,414
7	15,822	5,375	17,934	27,123	9,189
8	15,894	7,279	23,260	27,767	4,507
9	18,157	8,218	24,373	30,317	5,944
10	17,130	7,182	25,945	30,146	4,203
11	18,296	8,290	33,158	35,337	2,179
12	22,112	7,342	21,057	34,719	13,662
13	25,843	5,683	20,418	35,588	15,170
14	20,590	9,220	30,188	35,905	5,717
15	24,673	5,736	18,123	33,695	15,572
16	24,462	9,869	31,499	37,584	6,085
17	27,984	11,431	35,643	46,821	11,178
18	23,003	7,850	29,373	39,353	9,980
19	31,797	7,489	22,678	43,063	20,385
20	26,452	10,874	41,784	47,149	5,365

TABLE XXX

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	886,453	7,184	23,050	896,060	873,010
2	913,263	12,901	46,141	930,734	884,593
3	936,355	15,141	62,248	957,834	895,586
4	960,953	16,391	58,331	980,991	922,660
5	983,229	15,267	62,069	1,007,630	945,561
6	1,005,724	15,079	58,281	1,023,311	965,030.
7	1,028,917	15,082	51,003	1,049,673	998,670
8	1,049,161	20,241	70,338	1,079,177	1,008,839
9	1,070,168	19,886	74,634	1,110,574	1,035,940
10	1,087,101	21,702	74,214	1,128,546	1,054,332
11	1,112,875	27,433	106,871	1,169,410	1,062,539
12	1,143,347	31,290	123,726	1,210,004	1,086,278
13	1,166,615	32,950	125,312	1,231,303	1,105,991
14	1,189,656	30,238	117,590	1,246,430	1,128,840
15	1,221,859	31,424	112,562	1,270,517	1,157,955
16	1,251,668	30,554	107,689	1,305,936.	1,198,247
17	1,284,890	33,759	124,499	1,353,265.	1,228,766
18	1,312,706	37,091	130,458	1,383,715.	1,253,257
19	1,344,098	37,139	131,782	1,423,318.	1,291,536
20	1,368,220	40,718	149,871	1,446,308	1,296,437

TABLE XXXI

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	26,188	10,912	34,936	41,958	7,022
2	42,412	13,123	44,050	60,992	16,942
3	40,131	11,423	39,928	59,547	19,619
4	43,696	10,269	36,561	63,543	26,982
5	58,041	14,144	41,427	79,210	37,783
6	43,334	13,672	49,135	69,639	20,504
7	47,801	10,745	35,608	69,560	33,952
8	47,408	15,173	49,533	70,517	20,985
9	51,997	16,674	49,730	75,497	25,766
10	50,121	14,972	54,661	75,015	20,355
11	52,309	17,344	71,778	84,442	12,664
12	60,393	13,706	39,081	83,389	44,308
13	67,506	10,447	37,726	85,049	47,323
14	57,140	17,964	59,993	85,445	25,452
15	65,601	10,670	33,776	82,139	48,363
16	64,657	18,967	62,426	88,731	26,305
17	71,203	20,814	64,674	104,121	39,447
18	62,484	14,678	55,506	92,092	36,586
19	78,689	13,209	40,114	98,188	58,074
20	68,617	20,231	80,249	105,116	24,867

TABLE XXXII

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	5,972	3,804	11,886	12,134	249
2	9,537	3,510	11,873	14,764	2,892
3	10,681	4,138	15,477	19,004	3,527
4	13,115	4,562	15,763	22,136	6,373
5	20,668	7,059	20,498	31,445	10,947
6	12,494	6,389	22,867	25,730	2,863
7	15,888	5,350	17,522	26,786	9,264
8	14,623	7,282	23,037	26,177	3,139
9	17,769	8,242	24,427	30,014	5,567
10	14,951	7,193	25,765	27,694	1,929
11	18,072	8,327	33,490	35,253	1,762
12	22,529	7,297	20,672	34,802	14,130
13	26,045	5,629	20,108	35,518	15,410
14	17,988	9,185	29,603	32,648	3,045
15	25,196	5,771	18,339	34,385	16,047
16	24,173	9,881	31,434	36,944	5,510
17	28,257	11,211	34,595	46,159	11,564
18	22,260	7,897	29,750	38,797	9,048
19	31,926	7,403	22,998	43,391	20,394
20	24,534	10,866	42,455	45,075	3,139

TABLE XXXIII

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	887,398	7,184	23,050	897,006	873,955
2	918,476	14,623	51,673	937,881	886,208
3	943,636	16,629	68,375	966,385	898,010
4	969,479	17,365	60,825	990,493	929,669
5	992,775	15,559	61,973	1,017,286	955,313
6	1,017,246	15,769	60,645	1,037,401	976,756
7	1,041,008	15,970	52,966	1,064,344	1,011,378
8	1,063,186	20,955	72,232	1,095,767	1,023,535
9	1,085,352	20,857	74,000	1,125,745	1,051,745
10	1,105,299	22,488	76,586	1,146,698	1,070,112
11	1,132,297	28,102	105,880	1,188,646	1,082,766
12	1,163,421	31,897	122,623	1,229,768	1,107,145
13	1,187,591	33,527	124,180	1,251,889	1,127,709
14	1,214,388	30,730	116,506	1,270,764	1,154,258
15	1,247,428	31,972	111,490	1,295,715	1,184,225
16	1,278,933	31,194	106,283	1,332,737	1,226,454
17	1,313,381	34,618	124,180	1,382,203	1,258,023
18	1,343,506	38,032	133,042	1,414,925	1,281,883
19	1,376,464	37,874	133,600	1,455,916	1,322,316
20	1,404,278	41,383	149,576	1,482,559	1,332,983

TABLE XXXIV

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	33,375	10,907	34,896	49,126	14,230
2	46,141	13,104	43,973	64,716	20,743
3	42,936	11,433	39,537	62,277	22,740
4	44,098	10,302	36,631	63,963	27,332
5	53,896	14,192	41,310	75,090	33,779
6	45,367	13,634	48,651	71,351	22,699
7	43,049	10,694	35,521	64,941	29,420
8	47,700	15,144	49,400	70,875	21,474
9	46,796	16,700	50,236	70,396	20,159
10	52,151	14,979	54,959	77,001	22,042
11	51,661	17,327	71,939	84,009	12,069
12	56,303	13,702	39,369	79,475	40,105
13	63,304	10,392	37,633	80,939	43,305
14	56,948	18,000	60,265	85,475	25,209
15	61,477	10,588	33,674	77,903	44,228
16	62,251	19,031	62,428	86,414	23,986
17	65,529	20,844	64,748	98,625	33,877
18	60,649	14,712	55,497	90,032	34,535
19	73,479	13,233	40,086	93,005	52,919
20	66,328	20,680	80,985	103,510	22,524

TABLE XXXV

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	9,657	4,421	13,805	16,623	2,817
2	15,513	6,067	20,196	24,814	4,617
3	13,876	5,326	18,250	23,507	5,256
4	14,341	5,009	17,541	24,400	6,859
5	19,334	7,278	21,112	30,519	9,407
6	15,134	6,528	23,219	28,463	5,243
7	13,862	5,187	17,283	24,937	7,653
8	16,350	7,334	23,349	28,201	4,851
9	16,039	7,922	23,507	27,938	4,431
10	18,545	7,350	26,567	31,601	5,033
11	18,468	8,324	33,387	35,665	2,277
12	20,528	7,254	20,844	33,035	12,190
13	24,161	5,594	20,158	33,884	13,726
14	21,080	9,278	30,420	36,515	6,095
15	23,180	5,645	17,949	32,124	14,174
16	23,940	9,855	31,404	37,060	5,655
17	25,727	11,231	34,906	44,355	9,448
18	22,864	7,874	29,474	39,199	9,724
19	29,806	7,386	22,436	40,983	18,547
20	26,196	11,127	42,168	47,356	5,187

TABLE XXXVI

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	888,449	6,556	21,090	897,234	876,143
2	913,382	12,038	43,165	929,739	886,574
3	934,843	14,233	58,712	955,171	896,459
4	958,724	15,522	54,972	977,810	922,838
5	982,527	14,341	58,372	1,005,863	947,490
6	1,003,567	14,254	55,322	1,020,910	965,588
7	1,028,364	14,398	47,770	1,048,972	1,001,201
8	1,047,836	19,473	66,906	1,077,625	1,010,718
9	1,070,669	19,382	70,875	1,110,792	1,039,917
10	1,086,040	21,085	73,816	1,127,135	1,053,319
11	1,111,325	26,612	102,973	1,167,560	1,064,587
12	1,143,054	30,553	120,078	1,209,603	1,089,525
13	1,167,809	32,214	121,766	1,232,482	1,110,716
14	1,190,365	29,435	114,025	1,247,180	1,133,155
15	1,223,961	30,573	108,795	1,272,534	1,163,739
16	1,254,323	29,919	103,826	1,308,521	1,204,695
17	1,289,803	33,276	120,979	1,358,469	1,237,490
18	1,317,941	36,635	130,758	1,389,303	1,258,545
19	1,351,611	36,668	132,145	1,431,323	1,299,178
20	1,375,591	40,192	147,317	1,453,140	1,305,823

TABLE XXXVII

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	23,326	10,884	34,713	39,064	4,351
2	41,295	13,130	44,066	59,873	15,806
3	38,931	11,440	39,935	58,348	18,412
4	42,086	10,332	36,884	62,093	25,208
5	56,653	14,144	41,336	77,769	36,433
6	41,979	13,654	48,954	68,151	19,197
7	46,484	10,716	35,340	68,212	32,872
8	46,236	15,187	49,375	69,286	19,910
9	50,342	16,696	50,080	74,005	23,925
10	48,800	14,977	54,757	73,567	18,809
11	50,966	17,398	72,172	83,366	11,194
12	59,141	13,736	39,241	82,193	42,951
13	66,386	10,433	37,787	84,033	46,245
14	55,862	17,953	59,919	84,220	24,301
15	64,507	10,655	33,716	81,020	47,303
16	63,701	19,010	62,602	87,959	25,357
17	70,272	20,857	64,771	103,415	38,644
18	61,832	14,782	55,955	91,516	35,560
19	77,729	13,186	40,074	97,339	57,264
20	67,115	20,730	81,224	104,376	23,151

TABLE XXXVIII

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	5,005	3,517	10,773	10,773	0
2	9,052	3,459	11,824	14,118	2,293
3	10,100	4,041	15,138	18,263	3,124
4	12,340	4,485	15,557	21,292	5,734
5	19,861	6,964	20,219	30,559	10,340
6	11,882	6,290	22,464	24,941	2,476
7	15,233	5,265	17,139	25,950	8,810
8	14,059	7,189	22,524	25,323	2,799
9	16,959	8,142	24,277	29,184	4,906
10	14,313	7,103	25,444	26,926	1,482
11	17,396	8,220	33,035	34,454	1,419
12	21,877	7,283	20,674	34,147	13,473
13	25,417	5,586	19,951	34,822	14,871
14	17,330	9,101	29,313	31,944	2,630
15	24,596	5,745	18,220	33,736	15,516
16	23,664	9,846	31,233	36,402	5,168
17	27,752	11,193	34,568	45,770	11,202
18	21,918	7,925	29,863	38,463	8,599
19	31,579	7,348	22,729	43,054	20,324
20	23,607	11,063	42,089	44,553	2,464

TABLE XXXIX

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	893,115	7,424	23,912	903,084	879,172
2	924,765	14,874	52,563	944,656	892,093
3	950,629	16,921	69,469	973,882	904,413
4	977,378	17,734	61,957	998,793	936,835
5	1,001,680	15,797	62,804	1,026,628	963,824
6	1,027,026	15,962	61,378	1,047,454	986,076
7	1,051,743	16,139	53,567	1,075,371	1,021,803
8	1,074,791	21,228	73,129	1,107,745	1,034,615
9	1,098,187	21,113	75,118	1,139,186	1,064,068
10	1,119,303	22,858	77,670	1,161,347	1,083,677
11	1,147,502	28,546	107,595	1,204,866	1,097,271
12	1,179,874	32,326	124,557	1,247,362	1,122,805
13	1,205,397	34,006	126,361	1,270,969	1,144,608
14	1,233,771	31,098	118,664	1,291,396	1,172,732
15	1,268,340	32,363	113,489	1,317,840	1,204,351
16	1,301,418	31,689	108,355	1,356,473	1,248,118
17	1,337,464	35,098	126,421	1,407,643	1,281,222
18	1,369,170	38,486	135,114	1,442,041	1,306,927
19	1,403,883	38,361	135,731	1,484,890	1,349,159
20	1,433,337	42,042	151,321	1,512,123	1,360,802

TABLE XL

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	19,839	7,297	25,539	31,476	5,937
2	26,134	8,788	29,921	38,674	8,753
3	24,210	6,995	26,197	36,923	10,725
4	26,064	6,314	23,247	37,910	14,662
5	39,753	9,649	28,504	54,006	25,502
6	26,020	8,503	30,489	42,357	11,869
7	23,817	7,184	23,199	37,249	14,049
8	26,717	9,595	30,205	39,629	9,424
9	26,839	10,624	32,024	41,676	9,652
10	28,628	9,781	34,078	44,743	10,665
11	28,949	11,423	47,583	51,132	3,549
12	31,104	8,979	25,037	45,588	20,550
13	48,378	7,078	24,574	61,091	36,517
14	33,776	11,459	38,938	50,808	11,869
15	36,222	6,861	21,707	47,576	25,870
16	37,544	12,105	38,350	51,351	13,000
17	39,082	13,189	40,690	58,579	17,889
18	34,573	9,426	35,136	54,509	19,373
19	44,645	8,823	28,936	60,649	31,713
20	38,145	12,471	49,847	62,209	12,362

TABLE XLI

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	4,566	2,138	7,468	8,456	988
2	6,734	2,930	9,998	11,543	1,546
3	5,951	2,365	8,776	10,755	1,980
4	6,554	2,298	8,274	11,199	2,926
5	12,315	4,393	12,923	19,123	6,201
6	6,671	3,034	11,040	13,272	2,231
7	5,833	2,487	8,130	10,902	2,772
8	6,998	3,408	10,280	11,973	1,693
9	7,127	3,723	11,201	12,944	1,743
10	7,716	3,550	12,465	14,431	1,966
11	7,953	4,207	17,083	17,626	543
12	8,598	3,710	10,298	14,854	4,556
13	16,320	3,559	12,306	22,878	10,573
14	9,863	4,674	15,233	17,464	2,231
15	10,608	2,993	9,515	15,848	6,333
16	11,517	5,086	15,225	17,735	2,510
17	12,250	5,847	17,758	21,547	3,789
18	10,030	4,084	15,186	19,390	4,204
19	14,553	4,268	14,096	22,644	8,548
20	11,754	5,571	21,120	23,471	2,350

TABLE XLII

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	762,500	5,193	18,009	770,244	752,235
2	776,228	10,144	36,913	790,684	753,770
3	786,681	11,957	48,988	803,698	754,709
4	799,347	13,085	46,745	815,316	768,571
5	810,563	12,242	49,632	830,263	780,630
6	821,986	12,181	47,100	837,812	790,712
7	835,650	12,568	41,680	854,226	812,545
8	843,202	16,557	56,916	869,129	812,212
9	853,850	16,514	58,812	887,795	828.974
10	855,606	18,395	64,228	891,065	826,838
11	867,253	22,951	84,658	915,009	830,352
12	884,735	26,394	98,642	940,748	842,106
13	892,395	27,679	99,463	946,946	847,483
14	910,920	25,190	93,503	959,445	865,942
15	931,059	26,157	89,033	973,558	884,525
16	948,623	26,409	95,604	997,175	901,571
17	969,043	29,245	106,908	1,027,843	920,935
18	981,787	32,088	119,247	1,043,595	924,348
19	999,484	32,768	121,828	1,069,201	947,373
20	1,006,946	35,383	124,750	1,076,081	951,331

TABLE XLIII

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	9,320	7,172	25,546	20,862	-4,684
2	21,071	8,742	29,706	33,576	3,870
3	19,807	6,992	26,207	32,548	6,341
4	23,392	6,329	23,274	35,167	11,893
5	44,399	9,632	28,481	58,638	30,157
6	21,534	8,491	30,538	37,893	7,355
7	26,749	7,178	23,108	40,068	16,961
8	24,428	9,628	30,339	37,414	7,075
9	29,349	10,617	32,009	44,213	12,204
10	24,510	9,786	34,246	40,949	6,703
11	27,392	11,404	47,560	49,512	1,951
12	32,906	8,892	24,981	47,308	22,328
13	50,620	7,060	24,403	63,264	38,862
14	31,213	11,474	39,299	48,523	9,224
15	39,030	6,886	21,642	50,327	28,684
16	39,183	12,025	38,289	53,294	15,005
17	42,735	13,196	40,766	62,271	21,505
18	34,335	9,484	35,528	54,412	18,884
19	47,148	8,810	29,012	63,168	34,155
20	36,656	12,405	49,426	60,622	11,196

TABLE XLIV

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	1,902	1,414	4,656	4,656	0
2	5,037	2,555	8,724	9,322	598
3	4,541	2,099	7,825	8,890	1,065
4	5,639	2,152	7,754	9,990	2,237
5	14,471	4,633	13,637	21,578	7,941
6	5,170	2,708	9,934	11,192	1,257
7	6,845	2,664	8,644	12,173	3,529
8	6,204	3,236	9,772	10,976	1,204
9	8,053	3,938	11,856	14,166	2,311
10	6,241	3,230	11,462	12,595	1,134
11	7,376	4,067	16,533	16,816	283
12	9,312	3,791	10,589	15,714	5,125
13	17,499	3,601	12,402	24,030	11,628
14	8,835	4,465	14,672	16,322	1,649
15	11,852	3,127	9,856	17,223	7,367
16	12,227	5,186	15,734	18,746	3,011
17	13,889	6,125	18,642	23,503	4,862
18	9,934	4,092	15,271	19,338	4,068
19	15,764	4,359	14,414	23,979	9,565
20	11,109	5,449	20,546	22,630	2,083

TABLE XLV

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	765,302	5,728	20,154	774,044	753,890
2	780,913	10,906	40,090	796,827	756,736
3	793,053	12,810	52,530	811,434	758,904
4	806,998	14,048	50,355	824,337	773,982
5	816,478	13,176	53,359	837,430	784,071
6	829,746	13,114	51,012	846,777	795,764
7	842,825	13,421	45,921	862,526	816,605
8	851,575	17,579	60,585	877,698	817,112
9	861,761	17,328	63,427	896,450	833,023
10	865,598	19,338	65,595	901,800	836,205
11	878,463	24,096	89,599	927,145	837,545
12	895,879	27,383	103,926	942,691	848,764
13	903,023	28,705	105,024	958,420	853,396
14	923,197	26,318	99,217	972,381	873,164
15	942,751	27,392	95,243	986,172	890,929
16	960,229	27,277	96,096	1,009,546	913,450
17	979,632	29,987	107,264	1,038,938	931,674
18	993,035	32,924	119,843	1,055,391	935,548
19	1,010,122	33,674	122,568	1,080,310	957,742
20	1,018,823	36,503	128,429	1,088,452	960,022

TABLE XLVI

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	9,320	7,172	25,546	20,862	-4,684
2	21,113	8,757	29,758	33,628	3,870
3	19,926	6,992	26,278	32,679	6,401
4	23,470	6,382	23,380	35,375	12,015
5	44,587	9,616	28,491	58,805	30,314
6	21,862	8,508	30,603	38,247	7,644
7	27,148	7,231	23,134	40,633	17,499
8	24,881	9,597	30,222	37,849	7,627
9	29,898	10,617	31,993	44,806	12,813
10	25,174	9,689	33,682	41,430	7,748
11	28,318	11,325	47,515	50,328	2,812
12	33,720	8,953	25,032	48,185	23,153
13	51,441	7,323	26,376	64,295	37,919
14	32,139	11,594	39,486	49,840	10,354
15	40,100	6,995	21,644	51,421	29,777
16	40,408	12,038	38,399	54,408	16,010
17	44,011	13,198	40,525	63,472	22,948
18	35,614	9,547	35,209	55,781	20,572
19	48,719	8,727	28,847	64,562	35.715
20	38,078	12,790	51,846	62,086	10,240

TABLE XLVII

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	1,140	1,197	3,710	3,710	0
2	3,701	1,924	6,415	6,415	0
3	3,668	1,742	7,118	7,270	151
4	4,861	1,842	6,520	8,367	1,848
5	12,554	3,437	10,185	18,023	7,838
6	3,278	2,625	9,275	9,275	0
7	6,744	2,650	8,347	11,811	3,464
8	4,801	3,220	9,616	9,616	0
9	7,473	3,954	11,984	13,690	1,706
10	4,012	2,925	9,773	9,773	0
11	7,002	4,034	16,537	16,537	0
12	9,387	3,712	10,763	16,013	5,249
13	16,803	3,459	11,542	22,377	10,834
14	7,192	4,461	13,878	13,878	0
15	12,273	3,211	9,977	17,711	7,734
16	12,054	5,232	15,649	18,233	2,584
17	14,035	6,112	18,473	23,440	4,968
18	8,909	4,179	15,387	18,395	3,007
19	15,658	4,260	14,498	23,961	9,463
20	9,095	5,476	20,398	20,398	0

TABLE XLVIII

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	766,064	6,021	21,099	774,989	753,890
2	783,053	11,653	42,651	799,985	757,334
3	796,185	13,418	55,092	815,562	760,471
4	811,031	14,610	51,543	829,037	777,494
5	822,641	12,871	51,637	843,578	791,941
6	838,229	12,979	49,460.	855,483	806,022
7	851,825	13,382	44,142	871,931	827,789
8	862,463	17,307	60,396.	890,710	830,313
9	873,822	17,255	60,910	908,308.	847,397
10	880,732	19,161	66,061	916,640	850,579
11	894,821	23,714	86,653	943,079	856,426
12	913,041	27,083	100,887	969,203	868,315
13	921,685	28,316	101,067	975,697	874,630
14	944,452	25,918	95,331	992,254	896,924
15	964,704	26,908	91,237	1,006,771	915,534
16	983,521	26,976	91,989	1,031,390.	939,402.
17	1,004,088	29,738	103,203	1,062,047	958,844
18	1,019,822	32,684	115,276	1,080,742	965,466
19	1,038,600	33,185	116,785	1,107,074	990,289
20	1,050,870	36,169	130,465	1,118,770	988,305

TABLE XLIX

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	14,194	7,172	24,883	25,729	846
2	23,926	8,779	29,871	36,455	6,584
3	21,875	7,014	26,073	34,561	8,488
4	22,970	6,457	23,992	35,089	11,097
5	37,354	9,662	28,313	51,421	23,107
6	23,497	8,498	30,080	39,500	9,419
7	21,926	7,140	22,801	35,481	12,679
8	24,481	9,563	29,882	37,228	7,346
9	23,919	10,717	33,073	39,162	6,088
10	26,392	9,744	33,700	42,372	8,671
11	26,582	11,411	47,914	49,260	1,346
12	28,789	9,013	25,629	43,517	17,887
13	46,286	7,052	24,794	59,266	34,472
14	31,544	11,525	39,524	49,348	9,823
15	34,213	6,803	21,608	45,580	23,971
16	35,806	12,204	38,777	49,967	11,190
17	37,351	13,290	40,908	57,343	16,434
18	33,249	9,679	36,171	53,419	17,248
19	43,034	8,834	29,615	59,396	29,780
20	37,004	12,651	50,188	61,081	10,893

TABLE L

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	2,992	1,777	6,164	6,282	118
2	5,967	2,768	9,434	10,545	1,111
3	5,185	2,238	8,248	9,736	1,487
4	5,506	2,170	7,896	9,957	2,061
5	11,248	4,249	12,396	17,770	5,374
6	5,809	2,841	10,222	11,915	1,692
7	5,212	2,361	7,692	10,122	2,429
8	6,217	3,217	9,637	10,893	1,255
9	6,120	3,496	10,746	11,762	1,016
10	6,893	3,351	11,750	13,278	1,527
11	7,085	4,032	16,498	16,690	191
12	7,707	3,550	10,039	13,828	3,788
13	15,285	3,491	12,213	21,911	9,698
14	8,969	4,522	14,952	16,734	1,781
15	9,745	2,859	9,199	14,850	5,650
16	10,787	4,983	14,962	17,043	2,081
17	11,505	5,760	17,510	20,891	3,381
18	9,501	4,082	15,202	18,812	3,609
19	13,787	4,199	14,185	21,980	7,794
20	11,275	5,567	20,856	22,873	2,016

TABLE LI

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	773,643	5,459	18,769	781,892	763,122
2	788,376	10,417	37,891	803,448	765,556
3	799,884	12,214	50,106	817,551	767,445
4	813,892	13,510	47,836	830,419	782,583
5	826,562	12,580	50,936	847,097	796,161
6	839,367	12,550	48,254	855,484	807,229
7	854,203	13,001	42,738	873,006	830,267
8	863,082	17,110	58,440	889,367	830,926
9	875,616	17,154	62,028	911,426	849,398
10	879,417	19,043	66,331	916,746	850,414
11	893,004	23,734	88,946	943,219	854,273
12	912,488	27,308	104,034	971,378	867,343
13	922,519	28,741	105,702	980,385	874,682
14	943,741	26,371	100,050	995,512	895,462
15	966,452	27,411	95,877	1,012,166	916,288
16	986,766	27,807	97,697	1,038,751	941,053
17	1,009,934	30,800	109,535	1,072,603	963,067
18	1,025,484	33,830	122,938	1,091,533	968,594
19	1,046,669	34,695	125,822	1,120,926	995,104
20	1,057,580	37,602	135,373	1,131,507	996,134

TABLE LII

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	3,739	7,155	25,456	15,115	-10,340
2	18,668	8,695	29,536	31,150	1,613
3	17,410	6,991	26,063	30,133	4,069
4	20,425	6,482	24,111	32,543	8,431
5	41,825	9,634	28,304	55,813	27,509
6	19,215	8,497	30,077	35,241	5,163
7	24,611	7,150	22,694	38,092	15,398
8	22,449	9,555	29,907	35,339	5,432
9	27,031	10,745	33,057	42,303	9,245
10	22,831	9,669	33,412	38,648	5,235
11	25,809	11,379	47,911	48,468	557
12	31,506	8,954	25,664	46,130	20,466
13	49,514	7,043	24,709	62,446	37,736
14	30,042	11,513	39,456	47,810	8,354
15	38,269	6,749	21,577	49,474	27,897
16	38,739	12,194	38,832	53,016	14,183
17	42,379	13,310	40,762	62,264	21,501
18	34,452	9,694	36,140	54,708	18,567
19	47,112	8,855	29,494	63,341	33,846
20	37,169	12,563	49,769	61,022	11,252

TABLE LIII

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	383	649	2,093	2,093	0
2	2,888	1,689	5,647	5,647	0
3	2,962	1,609	6,318	6,318	0
4	3,883	1,699	6,154	7,213	1,058
5	10,978	3,066	9,263	15,929	6,666
6	2,528	2,341	7,945	7,945	0
7	5,852	2,463	7,727	10,621	2,893
8	4,009	2,963	8,506	8,506	0
9	6,406	3,736	11,522	12,419	896
10	3,278	2,605	8,432	8,432	0
11	6,098	3,810	15,541	15,541	0
12	8,490	3,553	10,596	14,985	4,389
13	15,621	3,211	10,151	20,885	10,733
14	6,392	4,164	12,750	12,750	0
15	11,418	3,019	9,734	16,737	7,003
16	11,308	5,150	15,190	17,317	2,127
17	13,297	6,067	18,274	22,779	4,504
18	8,423	4,139	15,435	17,858	2,423
19	14,842	4,256	14,635	23,313	8,678
20	8,654	5,409	19,867	19,867	0

TABLE LIV

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND PURCHASE GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	776,496	6,528	22,626	786,081	763,454
2	794,527	12,196	44,451	811,944	767,492
3	808,649	13,892	57,159	828,603	771,444
4	824,785	15,106	53,179	843,227	790,048
5	838,329	13,429	53,788	859,974	806,185
6	855,275	13,579	51,569	872,702	821,132
7	870,346	14,002	46,708	891,145	844,437
8	882,405	17,969	63,456	911,560	848,104
9	895,724	18,041	65,276	932,223	866,947
10	904,554	19,886	67,771	942,546	874,775
11	921,288	23,515	88,465	971,587	883,122
12	941,552	27,062	98,239	1,000,149	901,909
13	952,845	28,329	99,074	1,009,463	910,388
14	978,364	25,869	91,805	1,028,646	936,841
15	1,001,309	26,829	87,607	1,045,769	958,161
16	1,023,012	27,169	94,342	1,073,481	979,138
17	1,046,375	30,203	105,982	1,107,355	1,001,373
18	1,065,010	33,289	119,038	1,129,257	1,010,218
19	1,087,316	34,059	121,651	1,159,392	1,037,740
20,	1,103,134	37,123	138,400	1,174,805	1,036,405

TABLE LV

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	36,250	10,912	34,936	52,020	17,084
2	47,017	13,099	43,961	65,594	21,633
3	43,980	11,413	39,524	63,325	23,801
4	48,542	10,244	36,323	68,251	31,928
5	57,665	14,191	41,396	78,917	37,521
6	49,749	13,651	48,831	75,866	27,035
7	46,912	10,724	35,816	68,843	33,027
8	51,983	15,132	49,576	75,240	25,664
9	54,855	16,676	49,901	78,283	28,382
10	60,030	14,980	54,970	85,069	30,099
11	59,710	17,273	71,519	91,749	20,229
12	64,419	13,654	39,240	87,538	48,298
13	71,439	10,400	37,599	88,956	51,357
14	68,270	18,041	60,534	96,862	36,328
15	72,842	10,602	33,769	89,259	55,491
16	73,590	18,993	62,310	97,626	35,315
17	76,948	20,797	64,619	109,749	45,130
18	71,890	14,590	54,924	101,193	46,269
19	88,097	13,278	40,014	107,392	67,378
20	81,608	20,195	79,946	117,979	38,032

TABLE LVI

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	10,855	4,639	14,507	18,071	3,563
2	15,935	6,123	20,394	25,297	4,903
3	14,360	5,378	18,466	24,062	5,596
4	16,486	5,164	18,126	26,758	8,632
5	21,269	7,436	21,687	32,712	11,025
6	17,249	6,786	24,194	30,946	6,753
7	15,698	5,375	17,992	27,084	9,091
8	18,432	7,586	24,343	30,602	6,259
9	19,959	8,467	25,095	32,344	7,249
10	22,571	7,777	28,362	36,280	7,918
11	22,534	8,820	35,776	40,229	4,453
12	24,836	7,479	21,503	37,712	16,209
13	28,608	5,775	20,815	28,554	17,739
14	27,082	9,857	32,809	43,297	10,488
15	29,394	5,902	18,826	38,736	19,910
16	30,074	10,437	33,703	43,755	10,052
17	32,005	11,753	36,599	51,224	14,625
18	28,961	8,156	30,725	45,920	15,195
19	38,211	7,791	23,485	49,763	26,278
20	34,631	11,595	24,072	56,327	11,255

TABLE LVII

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	882,515	6,342	20,429	891,069	870,640
2	906,926	11,790	42,331	923,031	880,700
3	927,772	13,952	57,628	947,759	890,131
4	952,349	15,164	53,807	970,945	917,138
5	977,073	14,080	57,334	999,901	942,567
6	998,893	13,955	54,358	1,015,892	961,534
7	1,024,797	14,110	46,978	1,044,962	997,984
8	1,045,234	18,979	65,376	1,074,301	1,008,925
9	1,070,137	18,832	69,181	1,109,027	1,039,846
10	1,087,518	20,421	70,410	1,127,198	1,056,788
11	1,114,928	25,580	98,687	1,168,952	1,070,265
12	1,148,614	29,374	114,922	1,212,472	1,097,550
13	1,175,202	30,924	116,225	1,237,058	1,120,833
14	1,200,885	28,378	108,811	1,255,213	1,146,402
15	1,237,604	29,415	103,753	1,284,065	1,180,312
16	1,271,138	28,776	98,894	1,322,813	1,223,919
17	1,309,721	31,878	114,965	1,374,977	1,260,012
18	1,341,092	34,962	123,453	1,408,800	1,285,347
19	1,378,589	35,030	124,565	1,454,042	1,329,477
20	1,407,190	38,236	140,206	1,481,431	1,341,225

TABLE LVIII

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	26,188	10,912	34,936	41,958	7,022
2	42,360	13,123	44,050	60,940	16,890
3	39,844	11,423	39,722	59,253	19,531
4	46,550	10,246	36,293	66,236	29,943
5	60,637	14,180	41,370	81,926	40,556
6	45,948	13,629	48,805	72,054	23,249
7	50,393	10,705	35,664	72,138	36,474
8	50,052	15,165	49,692	73,404	23,712
9	57,866	16,646	49,966	81,359	31,393
10	55,797	14,991	55,109	80,957	25,848
11	57,965	17,327	71,805	90,063	18,259
12	66,132	13,668	39,227	89,204	49,977
13	73,351	10,432	37,703	90,838	53,134
14	66,242	18,027	60,501	94,815	34,314
15	74,446	10,637	33,653	90,815	57,162
16	73,556	18,951	62,232	97,675	35,442
17	80,102	20,802	64,731	112,976	48,246
18	71,403	14,605	54,969	100,738	45,769
19	90,828	13,276	39,999	110,190	70,191
20	80,511	20,230	80,056	116,833	36,777

TABLE LIX

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	6,917	3,804	11,886.	13,080	1,194
2	13,753	5,801	19,289	22,798	3,509
3	12,463	5,124	17,655	21,904	4,249
4	15,514	5,090	17,792	25,650	7,858
5	22,830	7,543	22,050	34,457	12,407
6	15,409	6,563	23,430	28,850	5,420
7	17,424	5,494	18,343	28,896	10,553
8	17,485	7,494	24,024	29,592	5,568
9	21,488	8,614	25,705	34,128	8,423
10	20,389	7,577	27,570	33,895	6,325
11	21,637	8,730	35,326	39,218	3,892
12	25,765	7,538	21,654	38,702	17,048
13	29,677	5,836	21,021	39,683	18,661
14	25,985	9,763	32,437	42,069	9,632
15	30,299	5,958	18,873	39,669	20,796
16	30,053	10,414	33,679	43,785	10,106
17	33,796	11,885	37,043	53,225	16,183
18	28,691	8,180	30,693	45,637	14,944
19	39,825	7,858	23,673	51,498	27,825
20	34,006	11,568	44,927	55,617	10,689

TABLE LX

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	886,453	7,184	23,050	896,060	873,010
2	913,263	12,901	46,141	930,734	884,593
3	936,355	15,141	62,248	957,834	895,586
4	962,376	16,336	58,332	982,341	924,010
5	986,090	15,245	62,085	1,010,418	948,333
6	1,010,246	15,000	58,002	1,027,514	969,512
7	1,035,049	15,005	50,821	1,055,409	1,004,588
8	1,056,997	20,003	69,579	1,086,339	1,016,760
9	1,081,019	19,630	74,327	1,120,903	1,046,576
10	1,101,180	21,312	71,794	1,141,941	1,070,147
11	1,130,238	26,770	104,613	1,185,517	1,080,904
12	1,163,837	30,436	120,860	1,228,907	1,108,047
13	1,190,194	32,028	122,307	1,253,308	1,131,001
14	1,217,798	29,557	114,948	1,273,337	1,158,389
15	1,254,541	30,652	110,075	1,302,300	1,192,225
16	1,289,029	29,799	105,355	1,342,029	1,236,674
17	1,326,805	32,878	121,360	1,393,249	1,271,889
18	1,359,386	35,926	125,688	1,428,322	1,302,634
19	1,396,276	36,026	127,491	1,472,902	1,345,411
20	1,426,476	39,308	144,525	1,501,928	1,357,402

TABLE LXI

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	26,188	10,912	34,936	41,958	7,022
2	42,412	13,123	44,050	60,992	16,942
3	40,131	11,423	39,928	59,547	19,619
4	46,951	10,269	36,561	66,798	30,237
5	61,110	14,147	41,434	82,282	40,848
6	46,480	13,673	49,130	72,781	23,652
7	51,034	10,747	35,648	72,820	37,172
8	50,724	15,169	49,520	73,839	24,319
9	58,642	16,681	49,754	82,134	32,380
10	56,633	14,975	54,726	81,552	26,826
11	58,967	17,340	71,748.	91,065	19,317
12	67,199	13,687	39,093.	90,208	51,114
13	64,452	10,435	37,754	92,011	54,257
14	67,392	17,992	60,202	95,803	35,601
15	75,797	10,661	33,819	92,314	58,496
16	74,952	18,977	62,499	99,068	36,569
17	81,589	20,805	64,615	114,441	49,826
18	72,952	14,653	55,344	102,522	47,178
19	92,500	13,231	40,007	111,870	71,863
20	82,270	20,232	80,160	118,736	38,576

TABLE LXII

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	5,972	3,804	11,886	12,134	249
2	9,537	3,510	11,873	14,764	2,892
3	10,681	4,138	15,477	19,004	3,527
4	14,598	4,663	16,075	23,779	7,704
5	22,226	7,133	20,682	33,034	12,352
6	13,959	6,583	23,563	27,433	3,870
7	17,518	5,504	18,205	28,857	10,651
8	16,235	7,504	23,860	28,079	4,219
9	21,189	8,616	25,574	33,757	8,182
10	18,211	7,544	27,085	31,198	4,113
11	21,452	8,759	35,569	39,094	3,525
12	26,213	7,498	21,208	38,741	17,533
13	29,898	5,754	20,570	39,514	18,944
14	23,468	9,657	31,503	38,630	7,127
15	30,841	5,992	19,066	40,374	21,308
16	29,799	10,414	33,450	43,066	9,616
17	34,153	11,733	36,343	52,988	16,645
18	27,988	8,233	31,044	45,137	14,093
19	39,922	7,761	23,795	51,746	27,951
20	32,330	11,578	44,922	53,773	8,851

TABLE LXIII

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	887,398	7,184	23,050	897,006	873,955
2	918,476	14,623	51,673	937,881	886,208
3	943.636	16,629	68,375	966,385	898,010
4	970,973	17,213	60,304	991,816	931,512
5	995,764	15,414	61,284	1,020,032	958,747
6	1,021,902	15,520	59,747	1,041,665	981,919
7	1,047,252	15,764	52,387	1,070,103	1,017,716
8	1,071,120	20,609	71,107	1,102,992	1,031,885
9	1,096,218	20,509	73,305	1,136,149	1,062,844
10	1,119,393	22,085	74,455	1,160,146	1,085,691
11	1,149,638	27,433	103,282	1,204,847	1,101,565
12	1,183,857	31,040	119,419	1,248,746	1,129,327
13	1,211,092	32,658	120,831	1,273,950	1,153,119
14	1,242,362	30,000	113,446	1,297,592	1,184,146
15	1,279,916	31,117	108,460	1,327,377	1,218,917
16	1,316,053	30,436	103,531	1,368,665	1,265,134
17	1,354,960	33,491	120,206	1,421,588	1,301,382
18	1,389,790	36,652	127,629	1,458,871	1,331,242
19	1,428,256	36,570	128,113	1,504,883	1,376,770
20	1,461,891	39,801	143,552	1,537,295	1,393,742

TABLE LXIV

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	33,375	10,907	34,896	49,126	14,230
2	46,141	13,104	43,973	64,716	20,743
3	42,936	11,433	39,537	62,277	22,740
4	47,066	10,302	36,631	66,931	30,300
5	56,946	14,196	41,324	78,151	36,827
6	48,497	13,635	48,648	74,479	25,831
7	46,266	10,694	35,526	68,153	32,626
8	51,008	15,145	49,409	74,199	24,789
9	53,150	16,701	50,256	76,742	26,485
10	58,659	14,981	55,041	83,554	28,512
11	58,318	17,327	71,933	90,625	18,691
12	63,115	13,684	39,389	86,299	46,909
13	70,267	10,387	37,678	87,908	50,229
14	66,939	18,035	60,487	95,597	35,109
15	71,695	10,586	33,733	88,105	54,372
16	72,581	19,037	62,508	96,800	34,291
17	75,964	20,837	64,693	108,984	44,290
18	71,184	14,690	55,351	100,555	45,204
19	87,083	13,251	39,976	106,485	66,509
20	80,848	20,257	80,002	117,213	37,210

TABLE LXV

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	9,657	4,421	13,805	16,623	2,817
2	15,513	6,067	20,196	24,814	4,617
3	13,876	5,326	18,250	23,507	5,256
4	15,766	5,136	18,035	26,032	7,997
5	20,896	7,410	21,555	32,267	10,712
6	16,635	6,713	23,864	30,183	6,319
7	15,384	5,336	17,781	26,704	8,923
8	17,948	7,542	24,085	30,029	5,944
9	19,109	8,369	24,895	31,450	6,554
10	21,862	7,708	28,101	35,401	7,299
11	21,817	8,760	35,541	39,555	4,013
12	24,134	7,455	21,478	36,993	15,514
13	27,957	5,738	20,751	37,926	17,174
14	26,361	9,797	32,572	42,538	9,966
15	28,752	5,865	18,725	38,043	19,317
16	29,516	10,416	33,637	43,260	9,622
17	31,454	11,738	36,544	50,750	14,205
18	28,571	8,217	30,862	45,524	14,662
19	37,612	7,750	23,401	49,201	25,799
20	34,198	11,602	44,967	55,852	10,884

TABLE LXVI

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	888,449	6,556	21,090	897,234	876,143
2	913,382	12,038	43,165	929,739	886,574
3	934,843	14,233	58,712	955,171	896,459
4	960,276	15,464	54,972	979,303	924,330
5	985,573	14,338	58,385	1,008,807	950,422
6	1,008,247	14,181	55,102	1,025,282	970,180
7	1,034,742	14,315	47,698	1,054,940	1,007,241
8	1,055,924	19,239	66,310	1,085,072	1,018,762
9	1,082,052	19,092	70,641	1,121,575	1,050,934
10	1,100,617	20,683	71,361	1,140,965	1,069,604
11	1,129,201	25,951	100,858	1,184,117	1,083,259
12	1,164,132	29,819	117,328	1,228,986	1,111,658
13	1,192,046	31,347	118,905	1,255,048	1,136,143
14	1,219,315	28,797	111,499	1,274,771	1,163,272
15	1,257,548	29,899	106,461	1,305,119	1,198,658
16	1,292,654	29,251	101,663	1,345,481	1,243,818
17	1,332,826	32,381	117,960	1,399,377	1,281,417
18	1,365,771	35,506	125,159	1,434,866	1,309,707
19	1,405,225	35,523	126,359	1,482,133	1,355,774
20	1,435,698	38,796	142,668	1,511,467	1,368,799

TABLE LXVII

SUMMARY OF TAXABLE INCOME FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	23,326	10,884	34,713	39,064	4,351
2	41,295	13,130	44,066	59,873	15,806
3	38,931	11,440	39,935	58,348	18,412
4	45,341	10,332	36,884	65,348	28,463
5	59,725	14,147	41,346	80,844	39,498
6	45,128	13,656	48,955	71,298	22,342
7	49,721	10,719	35,382	71,480	36,097
8	49,557	15,181	49,361	72,611	23,249
9	56,994	16,703	50,101	80,649	30,547
10	55,320	14,979	54,818	80,099	25,281
11	57,636	17,390	72,129	89,997	17,867
12	65,958	13,713	39,246	89,019	49,773
13	73,346	10,421	37,820	91,011	53,191
14	66,129	17,984	60,147	94,616	34,468
15	74,720	10,642	33,767	91,206	57,439
16	74,014	19,021	62,705	98,323	35,617
17	80,679	20,850	64,704	113,741	49,037
18	72,322	14,750	55,763	101,968	46,204
19	91,564	13,208	39,957	111,029	71,072
20	81,591	20,296	80,198	118,026	37,827

TABLE LXVIII

SUMMARY OF INCOME TAXES PAID FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	5,005	3,517	10,773	10,773	0
2	9,052	3,459	11,824	14,118	2,293
3	10,100	4,041	15,138	18,263	3,124
4	13,775	4,583	15,837	22,849	7,012
5	21,423	7,047	20,455	32,174	11,719
6	13,318	6,489	23,158	26,609	3,451
7	16,845	5,426	17,778	27,947	10,168
8	15,660	7,431	23,564	27,428	3,864
9	20,351	8,541	25,483	32,939	7,456
10	17,523	7,456	26,831	30,388	3,556
11	20,779	8,709	35,355	38,474	3,119
12	25,516	7,457	21,200	38,063	16,862
13	29,266	5,717	20,584	38,964	18,379
14	22,787	9,595	31,222	37,873	6,651
15	30,236	5,956	18,941	39,688	20,747
16	29,257	10,371	33,260	42,460	9,199
17	33,643	11,736	36,331	52,582	16,250
18	27,640	8,267	31,198	44,805	13,606
19	39,365	7,721	23,708	51,224	27,516
20	31,928	11,571	44,833	53,347	8,514

TABLE LXIX

SUMMARY OF NET WORTH FOR THE CASH GRAIN FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	893,115	7,424	23,912	903,084	879,172
2	924,765	14,874	52,563	944,656	892,093
3	950,629	16,921	69,469	973,882	904,413
4	978,921	17,564	61,307	1,000,115	938,808
5	1,004,717	15,654	62,054	1,029,417	967,363
6	1,031,761	15,711	60,410	1,051,775	991,364
7	1,058,088	15,927	52,838	1,081,187	1,028,348
8	1,082,842	20,851	71,827	1,115,029	1,043,202
9	1,109,209	20,741	74,277	1,149,691	1,075,414
10	1,133,607	22,327	75,259	1,174,934	1,099,675
11	1,165,046	27,737	104,757	1,221,035	1,116,278
12	1,200,567	31,385	121,097	1,266,330	1,145,233
13	1,22o,175	33,041	122,737	1,293,036	1,170,299
14	1,263,060	30,277	115,370	1,318,276	1,202,906
15	1,301,162	31,442	110,407	1,349,585	1,239,178
16	1,338,925	30,690	105,429	1,392,515	1,287,086
17	1,379,452	33,935	122,275	1,447,165	1,324,890
18	1,415,892	37,107	128,823	1,486,141	1,357,318
19	1,456,349	37,026	129,283	1,534,205	1,404,922
20	1,491,906	40,281	145,906	1,568,590	1,422,684

TABLE LXX

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	19,839	7,297	25,539	31,476	5,937
2	26,134	8,788	29,921	38,674	8,753
3	24,210	6,995	26,197	36,923	10,725
4	28,511	6,322	23,247	40,605	17,358
5	42,338	9,648	28,514	56,810	28,295
6	28,708	8,585	30,482	45,239	14,757
7	26,548	6,847	20,215	37,249	17,033
8	29,577	9,892	30,216	42,758	12,542
9	32,506	10,407	32,050	47,580	15,531
10	34,684	9,522	33,675	51,285	17,610
11	35,202	11,929	51,155	57,374	6,219
12	37,376	9,244	27,207	51,980	24,773
13	54,741	7,467	26,338	67,824	41,487
14	43,056	11,705	39,939	61,252	21,312
15	45,718	7,130	21,752	57,340	35,587
16	47,195	11,906	38,518	61,452	22,934
17	48,944	13,273	40,571	68,594	28,023
18	44,510	9,561	34,785	64,697	29,912
19	57,605	8,629	28,675	73,594	44,918
20	51,092	13,022	51,714	75,437	23,723

TABLE LXXI

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	4,566	2,138	7,468	8,456	988
2	6,734	2,930	9,998	11,543	1,546
3	5,951	2,365	8,776	10,755	1,980
4	7,452	2,444	8,790	12,430	3,640
5	13,498	4,557	13,394	20,609	7,215
6	7,655	3,267	11,730	14,680	2,949
7	6,756	2,506	7,353	10,902	3,549
8	8,080	3,732	11,068	13,464	2,396
9	9,271	4,129	12,707	15,850	3,143
10	10,101	3,920	13,992	17,703	3,711
11	10,490	4,781	19,866	20,908	1,042
12	11,221	4,186	12,112	18,050	5,938
13	19,579	3,886	13,670	26,523	12,854
14	13,942	5,489	18,163	22,963	4,800
15	15,010	3,504	10,723	20,890	10,167
16	15,949	5,675	17,751	23,069	5,319
17	16,839	6,559	19,837	26,946	7,109
18	14,501	4,680	16,958	24,803	7,846
19	21,096	4,553	15,177	29,696	14,519
20	17,887	6,519	25,139	30,711	5,571

TABLE LXXII

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY ONE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	762,500	5,193	18,009	770,244	752,235
2	776,228	10,144	36,913	790,684	753,770
3	786,681	11,957	48,988	803,698	754,709
4	800,919	13,368	48,478	817,049	768,571
5	813,557	12,831	52,771	833,401	780,630
6	826,704	13,108	51,708	842,420	790,712
7	842,192	13,496	48,112	860,658	812,545
8	851,538	17,679	65,094	877,307	812,212
9	865,755	17,517	68,790	899,487	830,698
10	871,199	19,026	67,448	906,306	838,858
11	886,463	23,995	97,018	933,210	836,192
12	907,604	27,435	112,338	962,142	849,803
13	918,377	28,964	114,809	971,611	856,803
14	942,109	27,313	111,058	989,998	878,939
15	967,360	28,498	108,961	1,009,988	901,027
16	990,156	28,558	109,662	1,038,364	928,702
17	1,015,856	31,229	123,030	1,073,629	950,599
18	1,034,067	33,790	128,630	1,094,532	965,902
19	1,058,178	34,407	134,847	1,126,013	991,166
20	1,072,444	37,278	140,411	1,139,692	999,281

TABLE LXXIII

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	9,320	7,172	25,546	20,862	-4,684
2	21,071	8,742	29,706	33,576	3,870
3	19,807	6,992	26,207	32,548	6,341
4	26,076	6,333	23,274	38,149	14,875
5	46,993	9,632	28,494	61,464	32,970
6	24,230	8,571	30,525	40,783	10,258
7	29,492	6,844	20,108	40,068	19,961
8	27,298	9,928	30,344	40,549	10,205
9	35,298	10,390	32,035	50,410	18,375
10	30,416	9,551	33,803	47,116	13,313
11	33,571	11,943	51,175	55,771	4,596
12	39,105	9,185	26,757	53,716	26,959
13	56,966	7,482	26,382	70,006	43,625
14	40,473	11,684	39,860	58,578	18,718
15	48,551	7,156	21,678	60,122	38,444
16	48,951	11,785	38,466	63,409	24,942
17	52,605	13,275	40,647	72,294	31,647
18	44,268	9,600	34,965	64,584	29,620
19	60,372	8,650	28,781	76,387	47,605
20	49,542	13,023	51,767	73,823	22,055

TABLE LXXIV

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	1,902	1,414	4,656	4,656	0
2	5,037	2,555	8,724	9,322	598
3	4,541	2,099	7,825	8,890	1,065
4	6,560	2,321	8,328	11,307	2,979
5	15,717	4,765	14,008	23,076	9,068
6	6,059	2,943	10,639	12,516	1,877
7	7,846	2,671	7,804	12,173	4,369
8	7,236	3,554	10,538	12,404	1,865
9	10,421	4,342	13,340	17,265	3,925
10	8,380	3,630	13,030	15,618	2,588
11	9,815	4,656	19,325	20,059	733
12	11,981	4,258	12,244	18,970	6,725
13	20,739	3,936	13,844	27,723	13,880
14	12,762	5,311	17,525	21,546	4,021
15	16,407	3,597	10.925	22,365	11,440
16	16,796	5,715	18,107	24,107	5,999
17	18,657	6,740	20,459	28,981	8,522
18	14,387	4,689	17,010	24,741	7,732
19	22,556	4,614	15,382	31,244	15,863
20	17,118	6,442	24,784	29,822	5,037

TABLE LXXV

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY TWO

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	765,302	5,728	20,154	774,044	753,890
2	780,913	10,906	40,090	796,827	756,736
3	793,053	12,810	52,530	811,434	758,904
4	808,547	14,278	52,087	826,067	773,982
5	819,385	13,722	56,427	840,498	874,071
6	834,449	14,019	55,492	851,257	795,764
7	849,273	14,346	52,154	868,759	816,605
8	859,854	18,706	68,865	885,977	817,112
9	873,377	18,440	73,248	907,795	834,547
10	880,962	20,149	72,016	916,866	844,851
11	897,450	25,321	102,209	945,200	842,991
12	918,436	28,667	117,683	973,872	856,189
13	928,644	30,236	120,362	982,796	862,434
14	954,121	28,648	116,834	1,002,819	885,986
15	978,636	29,917	115,153	1,022,242	907,089
16	1,001,204	29,704	115,340	1,050,287	934,947
17	1,025,694	32,304	128,700	1,084,173	955,473
18	1,044,560	34,913	134,507	1,105,760	971,253
19	1,067,787	35,604	140,921	1,136,310	995,389
20	1,083,349	38,627	146,983	1,151,329	1,004,346

TABLE LXXVI

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	9,320	7,172	25,546	20,862	-4,684
2	21,113	8,757	29,758	33,628	3,870
3	19,926	6,992	26,278	32,679	6,401
4	26,253	6,347	23,380	38,377	14,997
5	47,220	9,616	28,491	61,626	33,135
6	24,583	8,596	30,594	41,156	10,562
7	29,972	6,857	20,112	40,633	20,520
8	27,807	9,892	30,180	40,967	10,787
9	35,912	10,425	32,003	51,006	19,003
10	31,089	9,534	33,673	47,601	13,928
11	34,405	11,929	51,126	56,583	5,457
12	40,014	9,208	26,598	54,593	27,995
13	57,914	7,498	26,409	71,051	44,642
14	41,489	11,673	39,726	59,574	19,848
15	49,702	7,110	21,660	61,185	39,525
16	50,138	11,815	38,589	64,503	25,914
17	53,864	13,306	40,441	73,478	33,036
18	45,584	9,603	34,945	65,904	30,958
19	61,811	8,606	28,659	77,750	49,090
20	51,059	12,987	51,591	75,230	23,639

TABLE LXXVII

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	1,140	1,197	3,710	3,710	0
2	3,701	1,924	6,415	6,415	0
3	3,668	1,742	7,118	7,270	151
4	5,737	1,936	6,728	9,414	2,685
5	13,657	3,552	10,373	19,262	8,889
6	4,113	2,966	10,619	10,619	0
7	7,485	2,653	7,480	11,811	4,331
8	5,853	3,569	10,611	11,048	437
9	9,949	4,341	13,457	16,893	3,436
10	6,021	3,568	12,560	12,738	178
11	9,411	4,638	19,455	19,688	233
12	12,166	4,202	12,196	19,295	7,098
13	20,459	3,836	12,928	26,984	14,057
14	11,313	5,272	16,852	19,333	2,481
15	16,914	3,610	11,002	22,869	11,867
16	16,665	5,736	17,962	23,632	5,670
17	18,889	6,759	20,348	29,087	8,740
18	13,462	4,742	17,175	23,873	6,698
19	22,572	4,535	15,377	31,317	15,940
20	15,164	6,465	24,897	27,738	2,840

TABLE LXXVIII

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY THREE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	766,024	6,021	21,099	774,989	753,890
2	783,053	11,653	42,651	799,985	757,334
3	796,185	13,418	55,092	815,562	760,471
4	812,679	14,811	53,173	830,667	777,494
5	825,804	13,388	54,777	846,718	791,941
6	843,176	13,858	54,292	860,315	806,022
7	858,542	14,184	51,024	878,814	827,789
8	871,015	18,316	68,950	899,264	830,313
9	885,623	18,197	70,709	919,613	848,904
10	896,240	19,854	69,396	931,626	862,230
11	913,971	24,852	99,316	961,142	861,826
12	935,681	28,277	114,678	990,366	875,688
13	947,118	29,721	116,526	1,000,028	883,501
14	975,059	28,010	113,075	1,022,486	909,412
15	1,000,219	29,146	111,192	1,042,563	931,371
16	1,204,105	28,995	111,066	1,071,812	960,746
17	1,049,622	31,751	124,439	1,106,777	982,337
18	1,070,729	34,378	130,060	1,130,541	1,000,481
19	1,095,381	34,876	136,208	1,162,381	1,026,173
20	1,114,416	37,802	142,196	1,180,821	1,038,625

TABLE LXXIX

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	14,194	7,172	24,883	25,729	846
2	23,926	8,779	29,871	36,455	6,584
3	21,875	7,014	26,073	34,561	8,488
4	25,379	6,460	23,992	37,784	13,792
5	39,917	9,651	28,325	54,230	25,905
6	26,160	8,560	30,073	42,387	12,313
7	24,640	6,806	19,810	35,481	15,670
8	27,327	9,855	29,847	40,326	10,479
9	29,599	10,502	33,089	45,071	11,982
10	32,283	9,539	33,631	48,531	14,899
11	32,748	11,946	51,520	55,516	3,996
12	35,037	9,301	27,517	49,927	22,410
13	52,677	7,446	26,499	66,039	39,540
14	40,818	11,692	39,857	59,166	19,309
15	43,749	7,078	21,665	55,384	33,718
16	45,505	12,017	38,985	60,138	21,153
17	47,269	13,378	40,765	67,397	26,631
18	43,254	9,789	35,806	63,663	27,856
19	56,069	8,611	29,342	72,386	43,043
20	50,017	13,158	51,837	74,380	22,542

TABLE LXXX

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	2,992	1,777	6,164	6,282	118
2	5,967	2,768	9,434	10,545	1,111
3	5,185	2,238	8,248	9,736	1,487
4	6,324	2,326	8,434	11,142	2,708
5	12,386	4,418	12,896	19,242	6,345
6	6,725	3,074	10,947	13,285	2,338
7	6,091	2,383	6,944	10,122	3,177
8	7,240	3,535	10,371	12,296	1,925
9	8,137	3,920	12,339	14,595	2,256
10	9,118	3,748	13,340	16,325	2,984
11	9,477	4,621	19,304	19,923	619
12	10,223	4,074	11,872	17,023	5,151
13	18,508	3,838	13,608	25,541	11,933
14	12,917	5,344	17,671	21,858	4,186
15	14,061	3,404	10,471	19,853	9,381
16	15,143	5,628	17,624	22,373	4,749
17	16,026	6,524	19,681	26,288	6,607
18	13,916	4,720	17,193	24,241	7,048
19	20,292	4,513	15,431	29,032	13,601
20	17,360	6,535	24,935	30,129	5,193

TABLE LXXXI

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FOUR

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	773,643	5,459	18,769	781,892	763,122
2	788,376	10,417	37,891	803,448	765,556
3	799,884	12,214	50,106	817,551	767,445
4	815,545	13,768	49,677	832,260	782,583
5	829,677	13,142	54,186	850,347	796,161
6	844,245	13,476	52,999	860,229	807,229
7	860,954	13,933	49,376	879,643	830,267
8	871,679	18,242	67,134	898,061	830,926
9	887,890	18,186	72,104	923,286	851,182
10	895,361	19,803	71,148	932,245	861,097
11	912,649	24,931	101,655	961,741	860,085
12	935,896	28,505	117,814	993,112	875,297
13	949,121	30,139	121,089	1,005,401	884,311
14	975,665	28,514	117,695	1,026,596	908,900
15	1,003,633	29,755	115,939	1,049,259	933,319
16	1,029,294	29,940	117,170	1,080,668	963,497
17	1,057,877	32,756	131,367	1,119,161	987,794
18	1,079,040	35,454	137,610	1,143,305	1,005,694
19	1,106,773	36,158	144,232	1,178,619	1,034,386
20	1,124,600	39,180	150,660	1,196,078	1,045,417

TABLE LXXXII

SUMMARY OF TAXABLE INCOME FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	3,739	7,155	25,456	15,115	-10,340
2	18,668	8,695	29,536	31,150	1,613
3	17,410	6,991	26,063	30,133	4,069
4	23,072	6,486	24,111	35,525	11,413
5	44,401	9,620	28,304	58,640	30,336
6	21,894	8,569	30,163	38,162	7,999
7	27,354	6,814	19,667	38,092	18,424
8	25,318	9,860	29,934	38,471	8,537
9	33,010	10,518	33,064	48,522	15,457
10	28,699	9,534	33,558	44,830	11,271
11	31,964	11,957	51,544	54,753	3,208
12	37,686	9,291	26,992	52,565	25,572
13	55,865	7,488	26,606	69,238	42,631
14	39,275	11,679	39,693	57,582	17,888
15	47,759	7,065	21,603	59,292	37,688
16	48,478	11,939	39,065	63,201	24,135
17	52,221	13,421	40,675	72,318	31,643
18	44,361	9,827	35,884	64,910	29,026
19	60,310	8,599	29,275	76,580	47,305
20	50,021	13,155	51,854	74,249	22,394

TABLE LXXXIII

SUMMARY OF INCOME TAXES PAID FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	383	649	2,093	2,093	0
2	2,888	1,689	5,647	5,647	0
3	2,962	1,609	6,318	6,318	0
4	4,638	1,807	6,333	8,140	1,806
5	11,978	3,196	9,511	17,139	7,628
6	3,285	2,671	9,236	9,236	0
7	6,792	2,483	6,898	10,621	3,723
8	4,957	3,348	9,896	9,896	0
9	8,730	4,129	13,106	15,565	2,459
10	5,140	3,255	11,302	11,302	0
11	8,436	4,465	18,772	18,772	0
12	11,093	4,070	11,993	18,219	6,226
13	19,249	3,761	12,520	25,533	13,012
14	10,296	5,095	16,118	18,049	1,931
15	15,917	3,529	10,825	21,865	11,040
16	15,859	5,724	17,951	22,981	5,029
17	18,075	6,758	20,308	28,473	8,165
18	12,874	4,775	17,402	23,347	5,944
19	21,768	4,505	15,626	30,674	15,047
20	14,654	6,491	24,705	27,148	2,442

TABLE LXXXIV

SUMMARY OF NET WORTH FOR THE LIVESTOCK FARM WITH THE LAND RENT GROWTH METHOD FOR TAX MANAGEMENT STRATEGY FIVE

Year	Mean	Standard Deviation	Range	High	Low
	Dollars	Dollars	Dollars	Dollars	Dollars
1	776,496	6,528	22,626	786,081	763,454
2	794,527	12,196	44,451	811,944	767,492
3	808,649	13,892	57,159	828,603	771,444
4	826,489	15,386	54,901	844,949	790,048
5	841,631	13,984	57,107	863,292	806,185
6	860,423	14,499	56,898	878,031	821,132
7	877,320	14,897	53,852	898,289	844,437
8	891,262	19,112	72,328	920,432	848,104
9	907,958	19,082	75,407	943,950	868,543
10	920,610	20,734	74,545	958,065	883,519
11	940,346	25,968	105,500	990,131	884,631
12	964,246	29,611	121,750	1,021,867	900,117
13	978,291	31,128	124,342	1,034,401	910,059
14	1,009,077	29,554	121,299	1,059,664	938,364
15	1,037,027	30,733	119,680	1,082,487	962,806
16	1,063,801	30,750	120,195	1,114,795	994,599
17	1,092,234	33,652	134,360	1,152,981	1,018,620
18	1,116,329	36,389	140,664	1,180,004	1,039,339
19	1,144,636	36,993	147,261	1,215,695	1,068,434
20	1,167,271	40,132	154,160	1,237,934	1,083,774

APPENDIX B

RANDOM YIELDS AND PRICES DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON FOR INCLUDED CROP AND LIVESTOCK ENTERPRISES

TABLE LXXXV

SUMMARY OF RANDOM PRICES DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, WHEAT FOR GRAIN, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	1.60	2.34	1.70	2.21	1.78	1.86	1.50	2.05	2.59	2.48
2	2.13	2.23	1.82	1.90	2.33	2.33	2.23	2.25	2.19	2.28
3	1.79	2.23	1.99	1.92	2.44	1.56	2.14	2.25	2.01	2.20
4	2.03	2.03	1.81	2.00	2.65	1.87	1.95	1.89	1.89	2.07
5	2.10	2.28	1.73	1.53	2.43	2.03	1.84	1.65	1.55	1.87
6	1.95	2.41	2.25	1.79	1.59	1.55	1.99	2.61	2.12	1.91
7	2.52	1.95	2.09	1.60	2.15	2.47	1.96	1.65	1.74	1.53
8	1.92	1.80	1.66	2.20	2.00	2.02	2.46	2.33	1.86	1.85
9	2.14	2.47	2.06	2.49	1.72	1.48	1.91	2.02	1.83	1.77
10	1.78	1.54	1.67	2.12	2.29	2.04	1.70	1.84	2.27	1.60
11	2.42	2.15	2.16	2.14	1.81	2.45	1.80	2.37	1.54	1.99
12	2.55	1.89	2.32	2.11	1.52	1.93	2.25	2.00	2.21	2.12
13	1.59	1.80	1.71	1.63	2.17	1.92	2.37	1.71	2.21	2.70
14	1.98	1.83	1.90	2.40	1.65	1.59	1.96	2.55	1.49	2.45
15	2.32	1.80	2.17	1.95	2.11	1.80	1.96	2.31	2.16	2.06
High	2.55	2.47	2.32	2.49	2.65	2.47	2.46	2.61	2.59	2.70
Low	1.59	1.54	1.66	1.53	1.52	1.48	1.50	1.65	1.49	1.53
Range	0.96	0.93	0.66	0.96	1.13	0.99	0.96	0.96	1.10	1.17
Mean	2.05	2.05	1.94	2.00	2.04	1.93	2.00	2.10	1.98	2.06
Standard Deviation	0.30	0.27	0.23	0.28	0.35	0.31	0.25	0.31	0.31	0.33

	11	12	13	14	15	16	17	18	19	20
1	2.59	1.66	1.88	2.56	2.55	1.65	2.09	2.66	1.50	2.17
2	1.85	2.21	2.27	1.72	1.47	2.04	2.27	1.86	1.74	2.16
3	1.40	1.98	1.60	2.21	2.28	1.40	1.76	1.92	2.54	2.22
4	1.82	2.69	1.69	2.01	2.28	2.55	2.50	1.99	1.99	1.50
5	2.46	2.43	2.57	1.87	2.43	1.68	2.52	2.25	2.20	1.88
6	2.53	1.92	2.41	2.39	2.25	2.18	1.59	1.94	2.05	2.24
7	2.15	1.74	2.68	2.36	2.17	1.66	1.60	1.58	2.06	2.04
8	1.81	1.76	2.28	1.63	2.04	2.56	1.72	2.09	1.48	1.74
9	2.03	2.25	1.86	1.83	2.13	1.81	1.85	1.81	1.91	2.04
10	2.09	1.81	1.67	1.65	1.84	2.22	2.31	2.12	2.02	1.50
11	2.09	1.56	1.75	2.47	2.55	1.49	2.40	2.69	2.22	2.09
12	1.99	2.59	2.04	1.89	2.02	1.81	1.55	2.41	1.90	2.07
13	1.75	1.80	1.82	2.03	2.06	2.28	1.91	2.09	2.29	2.43
14	2.23	2.25	2.07	2.51	2.10	1.87	1.86	2.19	2.59	2.00
15	2.17	2.44	1.91	1.56	1.81	2.21	2.61	1.39	2.69	2.64
High	2.59	2.69	2.68	2.56	2.55	2.56	2.61	2.69	2.69	2.64
Low	1.40	1.56	1.60	1.56	1.47	1.40	1.55	1.39	1.48	1.50
Range	1.19	1.13	1.08	1.00	1.08	1.16	1.06	1.30	1.21	1.14
Mean	2.06	2.07	2.03	2.05	2.13	1.96	2.04	2.07	2.08	2.05
Standard Deviation	0.32	0.36	0.34	0.35	0.29	0.36	0.37	0.35	0.36	0.31

TABLE LXXXVI

SUMMARY OF RANDOM PRICES DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, CULL COWS, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	277.53	293.67	290.82	283.64	279.50	284.21	283.17	285.32	293.91	277.03
2	289.86	282.41	290.19	280.42	297.78	277.49	278.74	278.27	287.17	285.42
3	289.30	281.21	289.45	285.22	285.53	283.55	282.24	290.35	285.56	285.82
4	281.95	282.38	283.14	286.66	289.67	285.96	284.07	286.36	292.76	285.28
5	283.50	292.25	285.53	278.07	282.06	285.85	275.17	286.71	288.38	285.60
6	287.95	275.53	279.84	290.82	283.83	283.20	286.67	286.33	289.13	283.80
7	293.14	281.36	292.38	283.44	291.61	287.96	282.16	289.06	288.15	297.59
8	283.07	283.41	288.02	291.65	282.67	277.42	285.00	285.11	282.11	289.59
9	277.69	283.00	281.54	283.57	272.47	282.80	286.23	288.53	282.89	292.81
10	286.97	293.22	281.51	289.20	290.94	283.46	290.60	279.22	277.26	290.82
11	283.12	282.31	283.22	282.26	284.64	296.88	282.96	283.23	292.76	287.88
12	284.31	284.83	286.28	278.84	289.85	289.24	283.72	288.07	284.12	285.19
13	293.09	277.96	283.77	281.80	280.81	288.01	291.90	286.41	278.07	285.80
14	282.89	292.61	286.23	280.03	285.99	280.72	282.90	291.53	288.28	279.93
15	290.28	283.12	280.80	286.77	287.41	286.39	287.45	288.57	283.01	286.32
High	293.14	293.67	292.38	291.65	297.78	296.88	291.90	291.53	293.91	297.59
Low	277.53	275.53	279.84	278.07	272.47	277.42	275.17	278.27	277.26	277.03
Range	15.61	18.14	12.54	13.58	25.31	19.46	16.73	13.26	16.65	20.56
Mean	285.64	284.62	285.51	284.16	285.65	284.88	284.20	286.20	286.24	286.59
Standard Deviation	4.94	5.66	3.97	4.19	6.03	4.82	4.20	3.69	5.06	4.93

	11	12	13	14	15	16	17	18	19	20
1	288.42	286.64	284.53	289.28	281.10	288.81	280.43	286.77	291.36	290.30
2	294.96	285.05	289.06	285.58	286.03	288.63	288.30	274.37	284.18	293.92
3	285.76	276.98	293.84	283.79	289.11	290.30	278.20	292.96	288.75	291.38
4	285.83	283.06	280.96	284.75	291.72	282.53	285.67	291.52	293.15	288.45
5	290.02	291.63	282.76	280.57	289.71	278.04	277.21	282.39	296.41	284.74
6	289.96	295.18	288.97	281.84	285.20	286.09	289.65	283.53	284.61	283.33
7	280.88	294.36	287.57	285.40	281.38	279.74	281.31	288.60	290.81	285.70
8	289.05	279.46	291.20	286.81	288.56	290.65	286.64	275.79	292.25	282.09
9	285.98	274.89	288.37	291.79	294.11	282.02	292.36	282.50	279.87	285.79
10	282.52	289.05	284.11	287.42	282.40	292.33	284.66	282.44	277.42	291.99
11	284.42	281.59	281.32	290.53	286.95	284.57	289.77	279.27	277.77	277.58
12	292.05	296.00	299.80	283.71	296.33	286.31	292.25	281.10	291.24	277.62
13	284.94	279.95	292.10	286.47	281.08	288.50	298.59	288.15	291.22	287.05
14	288.60	279.97	277.41	273.22	286.89	278.71	279.63	296.66	280.48	284.09
15	282.66	289.49	283.24	282.22	285.66	282.49	281.51	275.26	283.48	281.77
High	294.96	296.00	299.80	291.79	296.33	292.33	298.59	296.66	296.41	293.92
Low	280.88	274.89	277.41	273.22	281.08	278.04	277.21	274.37	277.42	277.58
Range	14.08	21.11	22.39	18.57	15.25	14.29	21.38	22.29	18.99	16.34
Mean	287.07	285.55	287.02	284.89	287.08	285.31	285.74	284.09	286.87	285.72
Standard Deviation	3.84	6.84	5.81	4.53	4.64	4.57	6.12	6.65	6.11	4.92

TABLE LXXXVII

SUMMARY OF RANDOM PRICES DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, STEER CALVES, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	244.09	237.08	245.61	250.24	241.11	237.34	242.65	241.02	243.74	244.00
2	239.08	242.82	249.26	241.56	236.60	239.03	238.62	239.19	244.44	240.80
3	224.10	228.07	231.08	242.58	238.52	238.49	231.88	237.84	240.08	232.50
4	240.44	232.68	245.41	242.12	240.47	251.23	234.74	242.14	240.08	229.60
5	235.41	233.60	241.56	243.33	236.33	234.60	250.77	236.91	235.17	238.49
6	237.33	239.90	246.32	242.70	236.39	245.66	250.29	240.44	242.15	233.02
7	230.54	236.53	236.79	240.32	246.33	245.95	244.41	246.17	249.07	230.15
8	237.15	245.32	232.51	241.54	245.73	229.47	244.14	243.16	232.20	244.70
9	240.99	240.85	243.71	240.38	241.28	240.48	239.99	247.69	248.99	244.42
10	244.83	243.59	236.19	245.79	237.60	243.03	234.04	242.93	238.11	239.64
11	241.08	233.97	233.92	241.99	247.16	237.66	238.22	235.02	235.98	236.04
12	244.65	234.45	236.05	241.41	243.52	237.23	242.66	247.65	239.46	234.68
13	238.79	244.27	233.81	235.03	242.76	233.23	244.57	235.51	246.45	240.89
14	233.86	226.54	252.44	250.77	235.07	240.82	235.85	244.13	246.31	243.04
15	246.52	241.96	238.34	247.70	236.89	242.46	245.75	228.78	238.01	242.85
High	246.52	245.32	252.44	250.77	247.16	251.23	250.77	247.69	249.07	244.70
Low	224.10	226.54	231.08	235.03	235.07	229.47	231.88	228.78	232.20	229.60
Range	22.42	18.78	21.36	15.74	12.09	21.76	18.89	18.91	16.87	15.10
Mean	238.59	237.44	240.20	243.16	240.38	239.78	241.24	240.57	241.35	238.32
Standard Deviation	5.95	5.86	6.61	4.05	4.01	5.47	5.70	5.20	5.10	5.29

	11	12	13	14	15	16	17	18	19	20
1	245.97	235.96	233.80	240.23	235.76	248.26	241.68	246.26	246.56	247.59
2	240.84	237.37	246.82	240.26	227.18	238.31	230.80	238.18	229.35	241.32
3	248.94	233.17	244.35	238.57	241.06	241.06	241.75	234.08	239.50	244.74
4	244.41	228.54	242.71	244.76	239.15	236.71	243.52	238.67	244.55	236.15
5	239.60	255.16	232.87	239.09	229.90	240.82	252.20	248.66	236.36	241.26
6	247.63	234.91	249.24	237.98	243.35	229.59	243.77	248.01	239.25	224.74
7	238.42	249.98	250.71	239.32	236.72	241.24	247.88	239.54	244.47	235.53
8	246.49	240.20	241.21	228.64	244.43	237.11	243.60	223.68	232.38	245.11
9	237.81	232.85	237.87	238.56	236.65	239.20	233.14	237.24	241.40	234.80
10	230.94	246.99	235.65	250.95	241.01	242.75	234.61	246.27	234.82	232.91
11	248.64	236.41	234.87	242.77	247.86	238.20	239.45	228.27	250.23	241.06
12	243.95	240.68	231.64	233.55	253.72	251.47	247.68	253.83	251.17	248.70
13	231.99	239.19	241.89	234.09	235.63	248.90	241.29	245.90	234.56	247.45
14	233.20	234.04	227.79	242.16	242.35	242.33	246.32	232.36	231.21	239.69
15	232.63	240.69	238.26	243.60	231.66	230.22	239.74	235.82	237.36	238.54
High	248.94	255.16	250.71	250.95	253.72	251.47	252.20	253.83	251.17	248.70
Low	230.94	228.54	227.79	228.64	227.18	229.59	230.80	223.68	229.35	224.74
Range	18.00	26.62	22.92	22.31	26.54	21.88	21.40	30.15	21.82	23.96
Mean	240.76	239.01	239.31	239.64	239.10	240.41	241.83	239.78	239.54	239.97
Standard Deviation	6.39	6.93	6.72	5.22	6.93	6.11	5.78	8.33	6.75	6.49

TABLE LXXXVIII

SUMMARY OF RANDOM PRICES DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, AGED BULL, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	558.49	524.10	563.23	551.82	542.60	545.85	575.87	550.01	546.85	556.83
2	567.19	578.42	574.35	564.12	573.64	545.98	568.43	572.96	549.96	555.30
3	560.80	554.42	563.41	558.51	552.34	575.03	559.85	552.17	548.42	538.35
4	534.92	542.61	580.87	571.08	548.81	573.13	543.50	564.00	561.89	546.90
5	563.76	567.46	551.83	563.86	545.96	566.98	562.45	546.81	542.92	538.76
6	535.06	566.99	573.72	561.06	527.56	538.85	534.42	563.24	565.31	552.29
7	563.55	548.02	536.94	568.64	537.94	550.82	540.06	568.28	565.20	552.35
8	552.29	549.32	542.68	571.39	559.19	553.72	561.58	539.25	579.73	561.89
9	576.17	560.96	566.04	568.90	537.37	555.73	570.00	565.65	577.89	561.13
10	566.85	541.87	546.55	560.55	568.86	557.57	531.22	565.20	546.54	562.88
11	563.15	587.57	569.22	552.48	561.65	553.88	552.08	584.47	564.24	549.05
12	556.43	554.76	562.48	558.92	559.98	548.83	553.14	538.25	559.62	551.29
13	555.06	553.68	539.12	527.61	580.70	538.26	557.93	568.14	567.65	545.16
14	556.15	554.61	557.99	586.36	568.24	563.81	584.37	558.43	558.22	536.15
15	568.51	558.78	535.76	550.85	538.05	551.52	554.86	588.73	556.79	576.59
High	576.17	587.57	580.87	586.36	580.70	575.03	584.37	588.73	579.73	576.59
Low	534.92	524.10	535.76	527.61	527.56	538.26	531.22	538.25	542.92	536.15
Range	41.25	63.47	45.11	58.75	53.14	36.77	53.15	50.48	36.81	40.44
Mean	558.56	556.24	557.61	561.08	553.52	554.66	556.65	561.71	559.41	552.33
Standard Deviation	11.38	15.39	14.68	13.07	15.50	11.17	15.02	14.68	11.16	10.82

	11	12	13	14	15	16	17	18	19	20
1	538.85	555.85	536.41	555.33	553.57	563.87	562.27	545.47	553.97	547.79
2	537.43	557.79	551.42	559.81	546.44	535.36	585.92	546.31	560.57	555.79
3	537.37	568.82	542.94	551.71	558.39	543.12	519.70	566.67	543.10	567.35
4	551.38	571.32	534.84	564.77	562.26	537.68	569.12	561.79	581.38	561.84
5	559.95	538.19	548.77	550.64	562.28	553.45	559.36	550.78	553.21	575.30
6	547.41	551.07	545.76	553.35	531.62	549.93	550.75	576.97	558.46	551.02
7	555.31	590.17	564.05	556.50	561.79	511.71	557.21	550.59	568.30	567.64
8	555.38	554.93	583.71	565.93	555.12	545.14	530.12	547.10	527.71	559.03
9	544.14	564.61	569.28	546.81	546.28	555.03	542.22	534.91	553.32	578.63
10	539.97	567.26	538.80	562.16	549.22	548.58	539.59	554.73	530.07	534.04
11	567.30	544.45	542.50	566.30	563.14	535.64	554.64	538.89	547.82	547.92
12	563.39	568.89	546.12	570.48	582.07	575.65	546.58	552.48	570.88	579.18
13	565.50	542.63	565.81	552.61	561.72	565.94	565.07	572.18	553.16	575.92
14	531.24	558.93	570.89	551.47	550.76	542.31	562.68	545.77	570.82	562.48
15	562.25	558.67	547.48	551.34	556.51	573.80	557.85	571.39	567.85	538.95
High	567.30	590.17	583.71	570.48	582.07	575.65	585.92	576.97	581.38	579.18
Low	531.24	538.19	534.84	546.81	531.62	511.71	519.70	534.91	527.71	534.04
Range	36.06	51.98	48.87	23.67	50.45	63.94	66.22	42.06	53.67	45.14
Mean	550.46	559.57	552.58	557.28	556.08	549.15	553.54	554.40	556.04	560.19
Standard Deviation	11.86	13.16	14.62	7.18	11.19	16.65	16.33	12.71	15.01	14.25

TABLE LXXXIX

SUMMARY OF RANDOM PRICES DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, HEIFER CALVES, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	197.41	189.41	195.74	190.44	191.43	186.96	193.86	200.56	199.21	200.54
2	196.08	190.93	191.93	197.29	197.37	196.12	196.34	195.53	196.65	191.26
3	196.10	193.05	192.17	198.74	187.70	194.87	196.34	193.27	195.62	185.60
4	193.51	190.81	193.21	201.38	191.59	192.52	191.75	191.83	194.02	190.88
5	196.68	189.81	187.31	203.46	193.55	191.13	188.82	187.52	191.59	198.98
6	198.37	183.69	190.49	188.05	187.56	193.04	200.82	194.72	192.02	199.80
7	192.59	194.30	188.10	195.10	199.01	192.71	188.79	189.95	187.25	195.00
8	190.65	188.91	195.70	193.23	193.42	198.97	197.31	191.48	191.35	190.77
9	199.08	193.95	199.29	189.63	186.70	191.99	193.43	191.03	190.35	193.49
10	187.35	188.98	194.72	196.76	193.65	189.42	191.18	196.58	188.14	194.26
11	195.05	195.19	194.90	190.74	198.80	190.68	197.75	187.43	193.03	194.29
12	191.81	197.22	184.20	187.18	192.27	196.32	193.22	195.79	194.73	193.01
13	190.62	189.59	188.49	195.25	192.21	197.76	189.53	195.86	201.89	189.99
14	191.03	191.89	184.92	188.83	188.01	192.63	200.06	186.76	198.77	196.06
15	190.61	195.31	192.53	194.54	190.61	192.63	197.03	195.18	193.98	195.35
High	199.08	197.22	199.29	203.46	199.01	198.97	200.82	200.56	201.89	200.54
Low	187.35	183.69	184.20	187.18	186.70	186.96	188.79	186.76	187.25	185.60
Range	11.73	13.53	15.09	16.28	12.31	12.01	12.03	13.80	14.64	14.94
Mean	193.80	191.54	191.58	194.04	192.26	193.18	194.42	192.90	193.91	193.95
Standard Deviation	3.46	3.41	4.30	4.93	3.92	3.19	3.91	3.94	4.08	4.00

	11	12	13	14	15	16	17	18	19	20
1	188.86	191.71	200.23	200.01	188.85	194.28	201.41	186.87	195.27	197.96
2	195.83	196.51	189.71	186.51	193.64	196.55	191.48	189.89	195.13	194.08
3	192.95	188.11	185.17	196.64	185.69	190.15	192.18	199.91	195.96	189.33
4	201.79	189.34	193.33	196.63	200.02	199.42	193.01	193.07	186.90	191.69
5	198.56	200.31	191.56	198.59	189.19	199.64	196.30	195.71	191.66	191.65
6	192.22	198.35	198.01	196.26	195.42	188.08	192.46	193.79	196.17	197.52
7	189.86	201.67	197.71	195.29	184.98	188.20	187.92	193.90	193.67	195.25
8	190.19	196.69	188.57	193.67	200.17	189.64	194.27	186.70	189.98	194.49
9	196.26	191.45	191.03	194.80	190.76	191.35	190.74	192.02	193.73	199.49
10	190.85	188.98	188.74	191.18	195.92	197.07	194.69	183.31	186.95	193.61
11	187.61	190.09	199.00	200.13	186.80	198.16	201.79	195.90	194.24	196.15
12	200.59	193.62	191.75	193.42	190.76	187.48	198.34	191.94	194.01	197.72
13	190.67	190.89	193.55	193.95	196.67	192.03	194.30	196.80	184.58	190.12
14	196.35	194.03	199.51	194.44	203.00	191.36	195.51	200.52	193.21	190.00
15	198.67	192.01	187.62	190.77	195.81	200.81	185.58	201.86	201.16	192.11
High	201.79	201.67	200.23	200.13	203.00	200.81	201.79	201.86	201.16	199.49
Low	187.61	188.11	185.17	186.51	184.98	187.48	185.58	183.31	184.58	189.33
Range	14.18	13.56	15.06	13.62	18.02	13.33	16.21	18.55	16.58	10.16
Mean	194.08	193.58	193.03	194.82	193.18	193.61	194.00	193.48	192.84	194.08
Standard Deviation	4.51	4.24	4.82	3.60	5.57	4.64	4.43	5.31	4.26	3.23

TABLE XC

SUMMARY OF RANDOM PRICES DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, BEEF, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	51.83	51.71	51.25	50.79	50.22	50.99	51.95	51.07	47.03	50.66
2	50.95	51.10	51.64	52.00	52.65	51.25	49.60	51.78	49.24	48.74
3	52.85	50.89	52.81	51.22	51.53	48.92	51.58	54.67	48.63	47.87
4	50.56	51.24	51.80	50.91	50.80	50.85	49.18	48.45	51.74	50.65
5	51.59	49.85	50.01	49.08	51.37	50.98	49.44	53.28	47.59	51.61
6	47.85	55.80	48.95	49.95	49.45	54.87	52.13	51.58	50.37	48.28
7	50.33	51.03	48.74	51.36	54.11	52.79	48.19	49.72	54.16	51.50
8	52.42	51.38	50.26	50.92	50.52	53.72	50.43	46.63	52.85	50.08
9	52.16	51.89	46.38	50.07	52.41	52.52	50.87	49.80	51.00	49.75
10	47.96	49.42	53.27	50.24	50.75	53.66	50.13	50.60	49.29	53.70
11	46.73	51.71	54.37	52.84	47.66	53.65	53.11	51.46	50.31	53.37
12	52.09	54.03	52.58	50.13	53.48	45.79	51.54	51.66	50.42	52.20
13	50.94	50.21	46.30	54.32	48.86	50.42	49.79	52.72	50.02	54.33
14	52.51	48.43	51.72	49.27	49.25	50.25	54.00	55.10	53.41	52.98
15	50.32	50.62	53.21	49.80	48.42	49.93	53.12	50.66	53.56	50.81
High	52.85	55.80	54.37	54.32	54.11	54.87	54.00	55.10	54.16	54.33
Low	46.73	48.43	46.30	49.08	47.66	45.79	48.19	46.63	47.03	47.87
Range	6.12	7.37	8.07	5.24	6.45	9.08	5.81	8.47	7.13	6.46
Mean	50.74	51.29	50.89	50.86	50.77	51.37	51.00	51.28	50.64	51.10
Standard Deviation	1.87	1.78	2.43	1.39	1.87	2.29	1.67	2.20	2.17	1.98

	11	12	13	14	15	16	17	18	19	20
1	52.45	51.61	53.19	49.19	51.19	53.30	50.67	51.88	49.46	47.97
2	51.54	53.40	49.68	49.32	49.99	52.13	55.98	51.75	50.46	52.22
3	48.32	49.20	51.34	53.04	51.11	51.64	53.61	47.33	52.14	53.05
4	55.28	52.73	51.29	55.04	52.62	49.78	52.41	53.61	52.71	52.64
5	50.37	51.00	48.94	49.18	53.13	54.72	51.90	49.47	53.40	50.52
6	51.57	52.84	50.47	50.17	52.32	53.24	50.23	48.56	48.33	53.18
7	51.78	51.31	49.82	48.79	50.94	52.58	47.00	56.88	51.47	50.14
8	50.59	50.70	50.54	55.30	50.02	49.30	50.98	48.77	52.30	52.85
9	52.07	50.85	48.63	47.48	51.62	55.04	53.83	53.47	53.01	54.15
10	49.64	51.06	45.72	51.49	50.56	48.23	53.38	48.25	52.58	46.94
11	49.47	50.34	51.69	53.08	48.90	50.20	51.78	52.03	51.88	48.79
12	51.53	52.41	51.10	50.24	56.31	48.73	49.73	52.35	51.29	51.26
13	46.31	51.20	49.18	51.98	49.04	54.23	52.05	52.30	50.24	51.71
14	53.63	50.85	54.24	48.61	55.21	48.28	48.21	51.79	51.49	54.22
15	53.30	52.88	47.90	47.58	51.23	48.18	54.20	55.19	51.12	50.89
High	55.28	53.40	54.24	55.30	56.31	55.04	55.98	56.88	53.40	54.22
Low	46.31	49.20	45.72	47.48	48.90	48.18	47.00	47.33	48.33	46.94
Range	8.97	4.20	8.52	7.82	7.41	6.86	8.98	9.55	5.07	7.28
Mean	51.19	51.49	50.25	50.70	51.61	51.31	51.73	51.58	51.46	51.37
Standard Deviation	2.22	1.15	2.10	2.52	2.07	2.49	2.36	2.69	1.39	2.19

TABLE XCI

SUMMARY OF RANDOM PRICES DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, SUMMER BEEF, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	44.67	43.34	44.39	43.51	43.68	42.94	44.08	45.19	44.97	45.19
2	44.45	43.59	43.76	44.65	44.66	44.45	44.49	44.36	44.54	43.65
3	44.45	43.95	43.80	44.89	43.06	44.25	44.49	43.98	44.37	42.71
4	44.02	43.58	43.97	45.32	43.71	43.86	43.73	43.74	44.11	43.59
5	44.55	43.41	43.00	45.67	44.03	43.63	43.25	43.03	43.71	44.93
6	44.83	42.40	43.52	43.12	43.04	43.94	45.23	44.22	43.78	45.06
7	43.87	44.15	43.13	44.29	44.93	43.89	43.24	43.43	42.99	44.27
8	43.55	43.26	44.38	43.98	44.01	44.93	44.65	43.69	43.66	43.57
9	44.94	44.09	44.98	43.38	42.89	43.77	44.01	43.61	43.50	44.02
10	43.00	43.27	44.22	44.56	44.04	43.34	43.64	44.53	43.13	44.15
11	44.28	44.30	44.25	43.56	44.90	43.55	44.72	43.02	43.94	44.15
12	43.74	44.64	42.48	42.97	43.82	44.49	43.97	44.40	44.22	43.94
13	43.54	43.37	43.19	44.31	43.81	44.73	43.36	44.41	45.41	43.44
14	43.61	43.75	42.60	43.25	43.11	43.88	45.11	42.91	44.89	44.44
15	43.54	44.32	43.86	44.19	43.54	43.88	44.60	44.30	44.10	44.33
High	44.94	44.64	44.98	45.67	44.93	44.93	45.23	45.19	45.41	45.19
Low	43.00	42.40	42.48	42.97	42.89	42.94	43.24	42.91	42.99	42.71
Range	1.94	2.24	2.50	2.70	2.04	1.99	1.99	2.28	2.42	2.48
Mean	44.07	43.69	43.70	44.11	43.82	43.97	44.17	43.92	44.09	44.10
Standard Deviation	0.58	0.57	0.71	0.82	0.65	0.53	0.65	0.66	0.68	0.67

	11	12	13	14	15	16	17	18	19	20
1	43.25	43.72	45.13	45.10	43.25	44.15	45.33	42.92	44.31	44.76
2	44.41	44.52	43.39	42.86	44.04	44.53	43.69	43.42	44.29	44.12
3	43.93	43.13	42.64	44.54	42.73	43.47	43.80	45.08	44.43	43.33
4	45.39	43.33	43.99	44.54	45.10	45.00	43.94	43.95	42.93	43.72
5	44.86	45.15	43.70	44.86	43.31	45.04	44.48	44.39	43.72	43.71
6	43.81	44.82	44.77	44.48	44.34	43.12	43.85	44.07	44.46	44.69
7	43.42	45.37	44.72	44.32	42.61	43.14	43.10	44.09	44.05	44.31
8	43.47	44.55	43.20	44.05	45.12	43.38	44.15	42.90	43.44	44.18
9	44.48	43.68	43.61	44.24	43.57	43.66	43.56	43.78	44.06	45.01
10	43.58	43.27	43.23	43.64	44.42	44.61	44.22	42.33	42.94	44.04
11	43.05	43.46	44.93	45.12	42.91	44.79	45.39	44.42	44.14	44.46
12	45.19	44.04	43.73	44.01	43.57	43.02	44.82	43.76	44.11	44.72
13	43.55	43.59	44.03	44.09	44.54	43.78	44.15	44.57	42.54	43.46
14	44.49	44.11	45.01	44.18	45.59	43.67	44.35	45.18	43.97	43.44
15	44.88	43.77	43.05	43.57	44.40	45.23	42.71	45.40	45.29	43.79
High	45.39	45.37	45.13	45.12	45.59	45.23	45.39	45.40	45.29	45.01
Low	43.05	43.13	42.64	42.86	42.61	43.02	42.71	42.33	42.54	43.33
Range	2.34	2.24	2.49	2.26	2.98	2.21	2.68	3.07	2.75	1.68
Mean	44.12	44.03	43.94	44.24	43.97	44.04	44.10	44.02	43.91	44.12
Standard Deviation	0.75	0.71	0.80	0.60	0.92	0.77	0.73	0.88	0.71	0.54

TABLE XCII

SUMMARY OF RANDOM YIELDS DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, WHEAT FOR GRAIN, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	23.91	23.72	22.41	26.00	18.02	19.45	19.18	18.53	17.04	19.89
2	19.00	30.56	17.83	20.64	24.62	19.51	21.77	25.00	20.27	23.13
3	20.22	19.31	21.87	19.54	20.72	18.59	15.94	19.34	17.24	17.37
4	19.21	21.63	20.05	22.42	23.86	17.63	18.88	16.04	27.44	17.36
5	20.93	23.04	26.97	24.50	26.99	23.77	21.93	20.87	21.40	29.22
6	20.97	20.38	22.85	22.05	26.88	22.48	19.80	19.21	26.52	14.57
7	14.11	22.38	30.48	20.40	20.77	19.93	17.67	19.92	25.69	25.79
8	19.61	26.01	20.52	14.51	28.51	21.34	18.76	18.64	17.49	22.78
9	23.63	24.70	19.67	24.30	16.02	19.93	17.37	18.99	21.28	23.09
10	19.37	19.93	26.23	19.59	21.20	21.79	22.83	23.43	25.24	23.15
11	18.77	24.80	19.02	26.26	22.03	23.49	19.86	20.87	13.65	22.21
12	18.40	24.06	23.18	23.15	16.11	23.87	21.26	20.76	21.15	25.48
13	14.90	16.51	23.64	23.61	26.00	20.36	28.09	11.25	24.90	18.05
14	24.32	27.26	22.78	21.98	19.33	29.90	9.72	20.42	11.58	24.76
15	23.47	30.99	25.77	22.03	29.93	13.67	22.58	25.83	23.15	21.40
High	24.32	30.99	30.48	26.26	29.93	29.90	28.09	25.83	27.44	29.22
Low	14.11	16.51	17.83	14.51	16.02	13.67	9.72	11.25	11.58	14.57
Range	10.21	14.48	12.65	11.75	13.91	16.23	18.37	14.58	15.86	14.65
Mean	20.05	23.69	22.88	22.07	22.73	21.05	19.71	19.94	20.94	21.88
Standard Deviation	3.02	3.99	3.38	2.95	4.39	3.61	4.01	3.50	4.76	3.86

	11	12	13	14	15	16	17	18	19	20
1	21.81	20.67	19.73	19.32	21.85	23.88	24.55	16.59	24.74	19.88
2	23.89	22.39	23.82	14.31	33.02	21.94	23.33	19.17	18.92	29.45
3	26.75	25.26	22.47	30.27	17.71	21.80	22.22	18.78	23.55	26.79
4	20.09	22.74	23.46	22.99	20.92	24.51	23.07	22.83	22.17	19.50
5	17.07	23.68	24.04	20.14	13.28	17.87	24.58	18.62	21.27	22.59
6	21.68	22.63	18.23	24.42	25.10	25.16	15.75	23.62	28.58	29.61
7	15.81	18.10	23.22	25.93	24.43	20.96	21.32	26.26	18.84	22.86
8	20.68	22.12	21.90	30.73	21.67	26.46	21.31	19.81	20.45	20.77
9	22.94	15.73	22.79	23.82	23.35	29.84	19.39	19.98	21.66	16.30
10	19.31	23.11	25.75	23.21	20.35	20.84	22.18	21.45	18.97	18.42
11	24.07	32.95	25.31	22.73	23.31	15.94	21.26	23.53	18.18	21.72
12	14.55	16.39	16.78	22.07	18.32	26.09	16.72	12.67	25.67	22.65
13	16.42	19.81	24.05	22.68	25.07	25.21	21.00	17.70	28.48	14.69
14	18.37	16.93	18.63	28.13	20.94	13.37	24.52	22.00	22.33	24.10
15	28.45	22.95	23.70	27.25	16.45	28.84	23.58	21.19	22.36	15.03
High	28.45	32.95	25.75	30.73	33.02	29.84	24.58	26.26	28.58	29.61
Low	14.55	15.73	16.78	14.31	13.28	13.37	15.75	12.67	18.18	14.69
Range	13.90	17.22	8.97	16.42	19.74	16.47	8.83	13.59	10.40	14.92
Mean	20.79	21.70	22.26	23.87	21.72	22.85	21.65	20.28	22.41	21.62
Standard Deviation	4.02	4.26	2.69	4.27	4.57	4.59	2.67	3.32	3.30	4.63

TABLE XCIII

SUMMARY OF RANDOM YIELDS DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, WHEAT GRAZING BEFORE MARCH 1, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	0.54	0.53	0.50	0.59	0.40	0.44	0.43	0.42	0.38	0.45
2	0.43	0.69	0.40	0.46	0.55	0.44	0.49	0.56	0.46	0.52
3	0.45	0.43	0.49	0.44	0.47	0.42	0.36	0.43	0.39	0.39
4	0.43	0.49	0.45	0.50	0.54	0.40	0.42	0.36	0.62	0.39
5	0.47	0.52	0.61	0.55	0.61	0.54	0.49	0.47	0.48	0.66
6	0.47	0.46	0.51	0.50	0.61	0.51	0.45	0.43	0.60	0.33
7	0.32	0.50	0.69	0.50	0.47	0.45	0.40	0.45	0.58	0.58
8	0.44	0.59	0.46	0.32	0.64	0.48	0.42	0.42	0.39	0.51
9	0.53	0.56	0.44	0.55	0.36	0.45	0.39	0.43	0.48	0.52
10	0.44	0.45	0.59	0.44	0.48	0.49	0.51	0.53	0.57	0.52
11	0.42	0.56	0.43	0.59	0.50	0.53	0.45	0.47	0.31	0.50
12	0.41	0.54	0.52	0.52	0.36	0.54	0.48	0.47	0.48	0.57
13	0.33	0.37	0.53	0.53	0.59	0.46	0.63	0.25	0.56	0.41
14	0.55	0.61	0.51	0.49	0.43	0.67	0.22	0.46	0.26	0.56
15	0.53	0.70	0.58	0.50	0.68	0.31	0.51	0.58	0.52	0.48
High	0.55	0.70	0.69	0.59	0.68	0.67	0.63	0.58	0.62	0.66
Low	0.32	0.37	0.40	0.32	0.36	0.31	0.22	0.25	0.26	0.33
Range	0.23	0.33	0.29	0.27	0.32	0.36	0.41	0.33	0.36	0.33
Mean	0.45	0.53	0.51	0.50	0.51	0.48	0.44	0.45	0.47	0.49
Standard Deviation	0.07	0.09	0.08	0.07	0.10	0.08	0.09	0.08	0.11	0.09

	11	12	13	14	15	16	17	18	19	20
1	0.49	0.46	0.44	0.43	0.49	0.54	0.55	0.37	0.56	0.45
2	0.54	0.50	0.54	0.32	0.75	0.49	0.53	0.43	0.43	0.66
3	0.60	0.57	0.51	0.68	0.40	0.49	0.50	0.42	0.53	0.60
4	0.45	0.51	0.53	0.52	0.47	0.55	0.52	0.51	0.50	0.44
5	0.38	0.53	0.54	0.45	0.30	0.40	0.55	0.42	0.48	0.51
6	0.49	0.51	0.41	0.55	0.57	0.57	0.35	0.53	0.64	0.67
7	0.35	0.41	0.52	0.58	0.55	0.47	0.48	0.59	0.42	0.51
8	0.46	0.50	0.49	0.69	0.49	0.60	0.48	0.45	0.46	0.47
9	0.52	0.35	0.51	0.54	0.53	0.67	0.44	0.45	0.49	0.37
10	0.43	0.52	0.58	0.52	0.46	0.47	0.50	0.48	0.43	0.41
11	0.54	0.74	0.57	0.51	0.52	0.36	0.48	0.53	0.41	0.49
12	0.33	0.37	0.38	0.50	0.41	0.59	0.38	0.28	0.58	0.51
13	0.37	0.45	0.54	0.51	0.56	0.57	0.47	0.40	0.64	0.33
14	0.41	0.38	0.42	0.63	0.47	0.30	0.55	0.50	0.50	0.54
15	0.64	0.52	0.53	0.61	0.37	0.65	0.53	0.48	0.55	0.34
High	0.64	0.74	0.58	0.69	0.75	0.67	0.55	0.59	0.64	0.67
Low	0.33	0.35	0.38	0.32	0.30	0.30	0.35	0.28	0.41	0.33
Range	0.31	0.39	0.20	0.37	0.45	0.37	0.20	0.31	0.23	0.34
Mean	0.47	0.49	0.50	0.54	0.49	0.51	0.49	0.46	0.51	0.49
Standard Deviation	0.09	0.10	0.06	0.10	0.10	0.10	0.06	0.08	0.07	0.10

TABLE XCIV

SUMMARY OF RANDOM YIELDS DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, SMALL GRAIN PASTURE BEFORE MARCH 1, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	0.82	0.81	0.77	0.89	0.62	0.67	0.66	0.64	0.58	0.68
2	0.65	1.05	0.61	0.71	0.85	0.67	0.75	0.86	0.70	0.79
3	0.69	0.66	0.75	0.67	0.71	0.64	0.55	0.66	0.59	0.60
4	0.66	0.74	0.69	0.77	0.82	0.60	0.65	0.55	0.94	0.59
5	0.72	0.79	0.93	0.84	0.93	0.82	0.75	0.72	0.73	1.00
6	0.72	0.70	0.78	0.76	0.92	0.77	0.68	0.66	0.91	0.50
7	0.48	0.77	1.05	0.77	0.71	0.68	0.61	0.68	0.88	0.89
8	0.67	0.89	0.70	0.50	0.98	0.73	0.64	0.64	0.60	0.78
9	0.81	0.85	0.67	0.83	0.55	0.68	0.60	0.65	0.73	0.79
10	0.66	0.68	0.90	0.67	0.73	0.75	0.78	0.80	0.87	0.79
11	0.64	0.85	0.65	0.90	0.76	0.81	0.68	0.72	0.47	0.76
12	0.63	0.83	0.80	0.79	0.55	0.82	0.73	0.71	0.73	0.88
13	0.51	0.57	0.81	0.81	0.89	0.70	0.97	0.38	0.86	0.62
14	0.84	0.94	0.78	0.75	0.66	1.03	0.33	0.70	0.39	0.85
15	0.81	1.07	0.89	0.76	1.03	0.47	0.77	0.89	0.79	0.73
High	0.84	1.07	1.05	0.90	1.03	1.03	0.97	0.89	0.94	1.00
Low	0.48	0.57	0.61	0.50	0.55	0.47	0.33	0.38	0.39	0.50
Range	0.36	0.50	0.44	0.40	0.48	0.56	0.64	0.51	0.55	0.50
Mean	0.69	0.81	0.79	0.76	0.78	0.72	0.68	0.68	0.72	0.75
Standard Deviation	0.11	0.14	0.12	0.10	0.15	0.13	0.14	0.12	0.16	0.13

	11	12	13	14	15	16	17	18	19	20
1	0.75	0.71	0.69	0.66	0.75	0.82	0.84	0.57	0.85	0.68
2	0.82	0.77	0.82	0.49	1.14	0.75	0.80	0.66	0.65	1.01
3	0.92	0.87	0.77	1.04	0.61	0.75	0.76	0.64	0.81	0.92
4	0.69	0.78	0.81	0.79	0.72	0.84	0.79	0.78	0.76	0.67
5	0.58	0.81	0.83	0.69	0.45	0.61	0.84	0.64	0.73	0.78
6	0.74	0.78	0.62	0.84	0.86	0.86	0.54	0.81	0.98	1.02
7	0.54	0.62	0.80	0.89	0.84	0.72	0.73	0.90	0.65	0.78
8	0.71	0.76	0.75	1.06	0.74	0.91	0.73	0.68	0.70	0.71
9	0.79	0.54	0.78	0.82	0.80	1.03	0.66	0.69	0.74	0.56
10	0.66	0.79	0.88	0.80	0.70	0.71	0.76	0.74	0.65	0.63
11	0.83	1.13	0.87	0.78	0.80	0.55	0.73	0.81	0.62	0.75
12	0.50	0.56	0.57	0.76	0.63	0.90	0.57	0.43	0.88	0.78
13	0.56	0.68	0.83	0.78	0.86	0.87	0.72	0.61	0.98	0.50
14	0.63	0.58	0.64	0.97	0.72	0.46	0.84	0.76	0.77	0.83
15	0.98	0.79	0.81	0.94	0.56	0.99	0.81	0.73	0.84	0.51
High	0.98	1.13	0.88	1.06	1.14	1.03	0.84	0.90	0.98	1.02
Low	0.50	0.54	0.57	0.49	0.45	0.46	0.54	0.43	0.62	0.50
Range	0.48	0.59	0.31	0.57	0.69	0.57	0.30	0.47	0.36	0.52
Mean	0.71	0.74	0.76	0.82	0.75	0.78	0.74	0.70	0.77	0.74
Standard Deviation	0.14	0.15	0.09	0.15	0.16	0.16	0.09	0.11	0.12	0.16

TABLE XCV

SUMMARY OF RANDOM YIELDS DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, SMALL GRAIN PASTURE AFTER MARCH 1, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1.	1.78	1.76	1.66	1.93	1.34	1.44	1.42	1.38	1.27	1.48
2	1.41	2.27	1.32	1.53	1.83	1.45	1.62	1.86	1.51	1.72
3	1.50	1.43	1.63	1.45	1.54	1.38	1.18	1.44	1.28	1.29
4	1.43	1.61	1.49	1.67	1.77	1.31	1.40	1.19	2.04	1.29
5	1.56	1.71	2.01	1.82	2.01	1.77	1.63	1.55	1.59	2.17
6	1.56	1.51	1.70	1.64	2.00	1.67	1.47	1.43	1.97	1.08
7	1.05	1.66	2.27	1.66	1.54	1.48	1.31	1.54	1.91	1.92
8	1.46	1.93	1.52	1.08	2.12	1.59	1.39	1.38	1.30	1.69
9	1.76	1.84	1.46	1.81	1.19	1.48	1.29	1.41	1.58	1.72
10	1.44	1.48	1.95	1.46	1.58	1.62	1.70	1.74	1.88	1.72
11	1.39	1.84	1.41	1.95	1.64	1.75	1.48	1.55	1.01	1.65
12	1.37	1.79	1.72	1.72	1.20	1.77	1.58	1.54	1.57	1.89
13	1.11	1.23	1.76	1.75	1.93	1.51	2.09	0.83	1.85	1.34
14	1.81	2.03	1.69	1.63	1.44	2.22	0.72	1.52	0.86	1.84
15	1.74	2.31	1.92	1.64	2.23	1.01	1.68	1.92	1.72	1.59
High	1.81	2.31	2.27	1.95	2.23	2.22	2.09	1.92	2.04	2.17
Low	1.05	1.23	1.32	1.08	1.19	1.01	0.72	0.83	0.86	1.08
Range	0.76	1.08	0.95	0.87	1.04	1.21	1.37	1.09	1.18	1.09
Mean	1.49	1.76	1.70	1.65	1.69	1.56	1.46	1.49	1.56	1.63
Standard Deviation	0.22	0.30	0.25	0.22	0.33	0.27	0.30	0.26	0.35	0.29

	11	12	13	14	15	16	17	18	19	20
1	1.62	1.54	1.47	1.44	1.62	1.78	1.83	1.23	1.84	1.48
2	1.78	1.66	1.77	1.06	2.46	1.63	1.73	1.42	1.41	2.19
3	1.99	1.88	1.67	2.25	1.32	1.62	1.65	1.40	1.75	1.99
4	1.49	1.69	1.74	1.71	1.55	1.82	1.71	1.70	1.65	1.45
5	1.27	1.76	1.79	1.50	0.98	1.33	1.83	1.38	1.58	1.68
6	1.61	1.68	1.35	1.82	1.87	1.87	1.17	1.76	2.13	2.20
7	1.17	1.34	1.73	1.93	1.82	1.56	1.58	1.95	1.40	1.70
8	1.53	1.64	1.63	2.29	1.61	1.97	1.58	1.47	1.52	1.54
9	1.71	1.17	1.69	1.77	1.74	2.22	1.44	1.48	1.61	1.21
10	1.43	1.72	1.91	1.73	1.51	1.55	1.65	1.59	1.41	1.37
11	1.79	2.45	1.88	1.69	1.73	1.18	1.58	1.75	1.35	1.61
12	1.08	1.22	1.25	1.65	1.36	1.94	1.24	0.94	1.91	1.68
13	1.22	1.47	1.79	1.69	1.86	1.87	1.56	1.31	2.12	1.09
14	1.36	1.26	1.38	2.09	1.56	0.99	1.82	1.64	1.66	1.79
15	2.12	1.71	1.76	2.03	1.22	2.14	1.75	1.57	1.81	1.12
High	2.12	2.45	1.91	2.29	2.46	2.22	1.83	1.95	2.13	2.20
Low	1.08	1.17	1.25	1.06	0.98	0.99	1.17	0.94	1.35	1.09
Range	1.04	1.28	0.66	1.23	1.48	1.23	0.66	1.01	0.78	1.11
Mean	1.54	1.61	1.65	1.78	1.61	1.70	1.61	1.51	1.68	1.61
Standard Deviation	0.30	0.32	0.20	0.32	0.34	0.34	0.20	0.25	0.25	0.34

TABLE XCVI

SUMMARY OF RANDOM YIELDS DRAWN BY REPLICATE OVER THE 20-YEAR PLANNING HORIZON, NATIVE PASTURE, NORTHWEST OKLAHOMA

Year Iteration	1	2	3	4	5	6	7	8	9	10
1	0.84	0.85	0.81	0.79	0.79	0.78	0.83	0.78	0.79	0.76
2	0.79	0.79	0.70	0.81	0.80	0.79	0.79	0.79	0.80	0.83
3	0.80	0.77	0.78	0.82	0.76	0.83	0.82	0.82	0.79	0.78
4	0.76	0.80	0.73	0.84	0.86	0.74	0.82	0.82	0.82	0.82
5	0.77	0.85	0.80	0.71	0.78	0.83	0.85	0.80	0.86	0.88
6	0.80	0.84	0.82	0.76	0.84	0.81	0.80	0.81	0.78	0.75
7	0.83	0.76	0.84	0.83	0.76	0.88	0.88	0.74	0.77	0.82
8	0.83	0.78	0.88	0.73	0.81	0.79	0.79	0.75	0.79	0.88
9	0.84	0.80	0.77	0.82	0.75	0.75	0.77	0.84	0.76	0.81
10	0.74	0.76	0.82	0.80	0.78	0.72	0.77	0.75	0.79	0.82
11	0.83	0.83	0.79	0.85	0.80	0.75	0.78	0.78	0.67	0.77
12	0.74	0.81	0.88	0.78	0.78	0.87	0.82	0.76	0.78	0.82
13	0.76	0.80	0.82	0.78	0.88	0.80	0.79	0.75	0.79	0.75
14	0.75	0.77	0.82	0.77	0.79	0.87	0.75	0.72	0.79	0.76
15	0.76	0.82	0.81	0.75	0.83	0.81	0.82	0.81	0.84	0.81
High	0.84	0.85	0.88	0.85	0.88	0.88	0.88	0.84	0.86	0.88
Low	0.74	0.76	0.70	0.71	0.75	0.72	0.75	0.72	0.67	0.75
Range	0.10	0.09	0.18	0.14	0.13	0.16	0.13	0.12	0.19	0.13
Mean	0.79	0.80	0.80	0.79	0.80	0.80	0.81	0.78	0.79	0.80
Standard Deviation	0.04	0.03	0.05	0.04	0.04	0.05	0.03	0.04	0.04	0.04

	11	12	13	14	15	16	17	18	19	20
1	0.78	0.81	0.76	0.80	0.81	0.81	0.77	0.82	0.85	0.82
2	0.80	0.78	0.80	0.81	0.88	0.81	0.83	0.81	0.82	0.83
3	0.82	0.88	0.83	0.84	0.76	0.76	0.75	0.71	0.78	0.81
4	0.70	0.79	0.78	0.81	0.71	0.83	0.79	0.83	0.72	0.75
5	0.72	0.72	0.80	0.78	0.74	0.81	0.79	0.79	0.74	0.84
6	0.81	0.78	0.79	0.81	0.79	0.82	0.71	0.79	0.83	0.81
7	0.75	0.78	0.86	0.88	0.80	0.77	0.80	0.82	0.85	0.82
8	0.80	0.79	0.70	0.79	0.82	0.81	0.85	0.73	0.75	0.71
9	0.79	0.73	0.84	0.77	0.75	0.85	0.73	0.83	0.82	0.78
10	0.81	0.77	0.81	0.82	0.77	0.73	0.75	0.82	0.72	0.79
11	0.81	0.85	0.85	0.83	0.79	0.80	0.81	0.83	0.85	0.75
12	0.74	0.76	0.78	0.84	0.82	0.82	0.78	0.70	0.84	0.81
13	0.73	0.74	0.76	0.81	0.80	0.77	0.76	0.83	0.84	0.76
14	0.71	0.69	0.78	0.78	0.70	0.79	0.81	0.81	0.75	0.86
15	0.87	0.80	0.88	0.80	0.78	0.82	0.80	0.86	0.84	0.81
High	0.87	0.88	0.88	0.88	0.88	0.85	0.85	0.86	0.85	0.86
Low	0.70	0.69	0.70	0.77	0.70	0.73	0.71	0.70	0.72	0.71
Range	0.17	0.19	0.18	0.11	0.18	0.12	0.14	0.16	0.13	0.15
Mean	0.78	0.78	0.80	0.81	0.78	0.80	0.78	0.80	0.80	0.80
Standard Deviation	0.05	0.05	0.05	0.03	0.05	0.03	0.04	0.05	0.05	0.04

VITA

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