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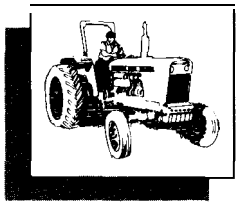
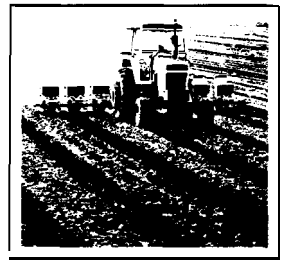
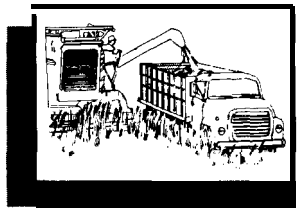
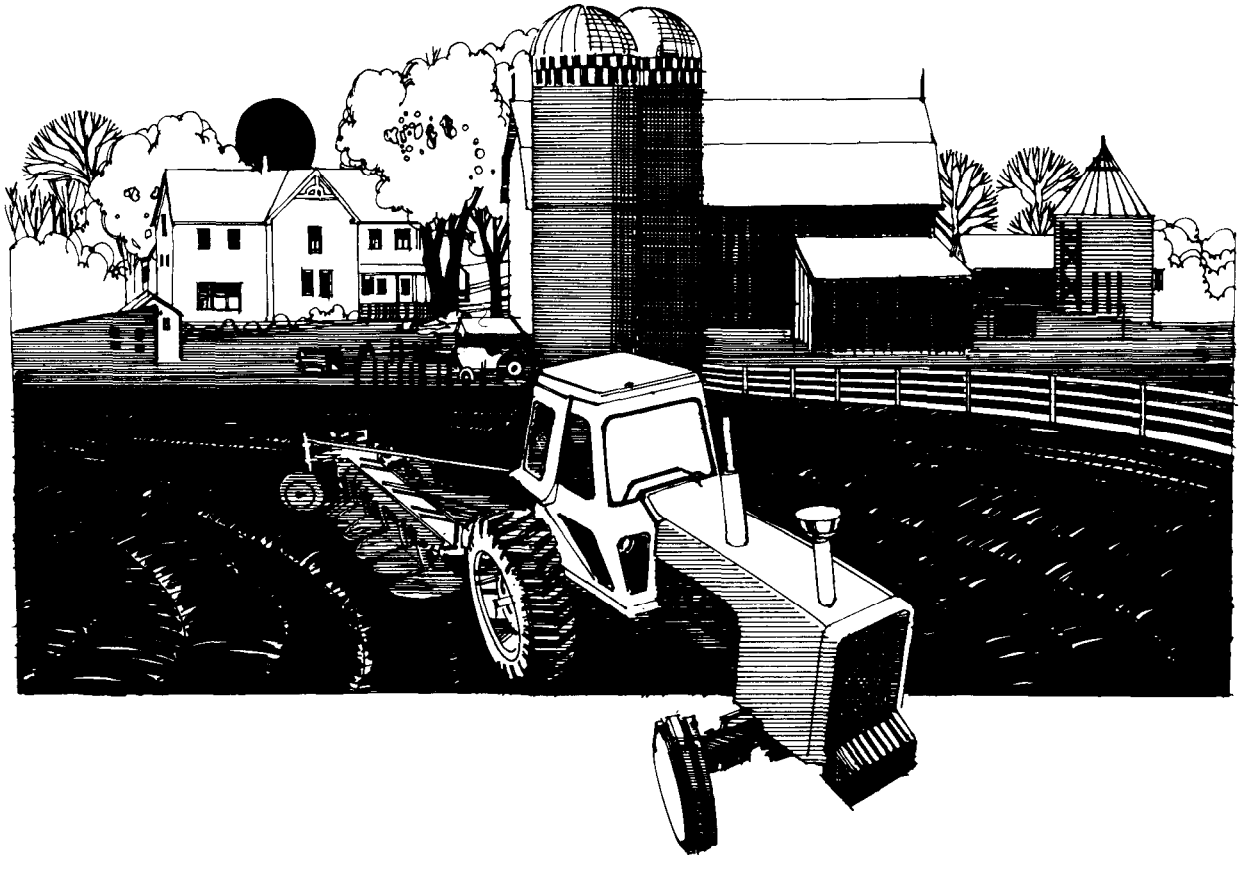
Leasing

as an Alternative Method of Financing for Agricultural Cooperatives









Abstract

Leasing as an Alternative Method of Financing for Agricultural Cooperatives

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under a cooperative research agreement with
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Economic incentives for agricultural cooperatives to lease capital assets such as structures, machinery, equipment, and other depreciable items are explored and illustrated. Selected aspects of lease contracts are reviewed. The lease or purchase problem is analyzed using capital budgeting (discounted cash flow) and whole-firm financial simulation methods. Results for a case farmer cooperative situation are compared under pre- and post-1986 Tax Reform Act rules and various interest rate and lease rate conditions. The analyses suggest that the attractiveness of facility leasing for cooperatives has declined in the post-1986 period. However, leasing will likely continue to be used selectively by farmer cooperatives.

Key Words: Agricultural cooperatives, finance, leasing, capital budgeting, simulation, lease contracts.

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Preface

Leasing is an economic alternative to traditional debt financing of capital investments. Leasing provides the use of, and usually the option to acquire, capital assets. For agricultural cooperatives, certain changes in the economy might force cooperatives to try to selectively improve both cash flow and profit performance through use of long-term capital leasing arrangements. The economic incentives for agricultural cooperatives to lease structures, machinery, equipment, and other depreciable assets are primarily financial and tax-related issues. The advantages of leasing such capital assets depend on a careful analysis of the options and terms that are available.

This study had two primary objectives: (1) to identify the economic incentives for agricultural cooperatives to use finance (capital) leases, and (2) to evaluate the relative economic advantages and impacts of finance leases at the project and whole-firm levels using an agricultural cooperative illustration.

This report attempts to provide a background on leasing activities in agriculture, a discussion of lease contracts and concepts, and a set of illustrations that provide direction to cooperative managers on what to consider when evaluating a lease.

The authors are indebted to numerous individuals for their assistance during the development of this report, They are Edward Barchenger, Vicki Knapp, Douglas Leicht, and Kenneth Reiners at Farm Credit Leasing Services Corporation: Bruce Hatteberg of Harvest States Cooperatives; Frank Smith at the University of Minnesota; Donald Scott at North Dakota State University; and Charles Kraenzle, Jeffrey Royer, and Donald Frederick at Agricultural Cooperative Service. Susan Pohlod provided excellent typing support on earlier drafts and the final report. This project was completed under cooperative research agreement 58-3J31-4-1010 between North Dakota State University and Agricultural Cooperative Service.

Contents

Highlights

Concern about the financial condition and performance of agricultural cooperatives has increased because of the farm sector recession of the early and mid-1980's. Escalating debt levels and interest expense are contributing factors to the erosion of cooperative income. Both the decline of internally generated equity and reliance on debt financing increase the exposure of agricultural cooperatives to financial risk. Under such conditions, cooperative managers and directors need to consider the potential for alternative financial arrangements to rebuild and stabilize cooperatives. Leasing is one such financial option.

Leasing Activity

The use of leasing by agricultural cooperatives is small and has grown at a slower pace when compared with that observed in the computer, transportation, and telecommunications industries. The reasons for this slower growth appear to be a lack of:

- acceptance of leasing by agricultural managers, with a traditional preference for debt-financed ownership,
- knowledge by small potential agricultural lessees concerning the advantages, and how to evaluate the financial impacts, of leasing, and
- widespread lessor familiarity with agriculture's capital needs, and a corresponding lack of available leasing services in rural areas.

As a result, only large cooperatives tend to be users of financial leases and related purchase-leaseback arrangements.

Large cooperatives typically negotiate larger lease deals through national leasing companies and regional commercial banks, where leasing expertise exists. The leasing needs of large, regional farmer cooperatives tend to be similar to their non-agricultural, corporate counterparts. Therefore, leasing services have tended to be more easily adapted to large cooperative situations. Financial performance and documentation of large regional cooperatives also tend to be more acceptable to large leasing entities, as compared with the financial picture presented by small farmer cooperatives. Another reason for less use of financial leasing by small cooperatives is the relative absence of leasing services in rural business communities. Finally, where large cooperative financial managers have sought out leasing opportunities, small farmer cooperative managers have often lacked management experience and rejected leasing in favor of traditional debt-financing arrangements.

The lease-financing option is explored in two related ways: First, the incentives to leasing that represent the basic underlying reasons for leasing an asset (as opposed to debt financing or a cash purchase). These incentives include improved financial risk control through diversified financing, increased cooperative profitability, and the cooperative's own management of cash and working capital. Second, analysis of the conditions that potentially favor leasing requires the use of capital budgeting techniques to adequately compare leasing and debt-financed purchase of capital assets. Alternatively, a simulation analysis can be used to

compute the financial impacts on both future cooperative financial performance and patron benefits. Systematic analysis of these conditions requires that cash flows be evaluated in terms of profitability and feasibility of each financing choice under a variety of assumptions.

Capital Budgeting and Simulation

Leasing as a financial choice is investigated under two sets of economic conditions-those prevailing in 1985 and those in 1987 (to represent pre- and post-1986 Tax Reform Act conditions). Results from capital budgeting confirm similar analyses that have appeared in the applied leasing literature. Sensitivity analysis is performed on a case lease using the 1985 capital budgeting model. Results from the 1985 analysis indicate that while the base lease situation faced by the cooperative slightly favored debt financing at all tax rate levels, variations in the interest rate on borrowed funds and potential nonuse of investment tax credit (ITC) were sufficiently large to support the cooperative's actual decision to lease. In this regard, opposing changes in interest rates, tax rates, and lease rates can be potentially more important than (and different from) single-factor effects. For example, the availability of a slightly lower interest rate on debt can be completely offset by the inability to use the ITC generated by purchasing, thus making the lease attractive.

Results from the 1987 capital budgeting model are similar to those obtained with the 1985 model. However, debt financing for 1987 appears to be more highly favored given the elimination of the ITC and decline of interest rates. In this economic environment, a slight reduction in the lease rate makes the lease reasonably competitive with the debt-financing alternative. Capital budgeting results are shown to provide useful information to cooperative decisionmakers regarding the most profitable financing choice. Moreover, capital budgeting allows the cooperative manager to consider which factors are most critical to the financing choice.

Simulation results indicate that leasing versus debt financing can be evaluated by their impacts on future cooperative financial performance and the stream of patron benefits. Patron benefits (especially cash refunds) are shown to be quite sensitive to the lease rate, patron tax rates, and interest rate levels. A lower interest rate is highly favorable to patron cash refunds with (or without) the lease. A lower lease rate provides a similar but smaller effect when the lease-financing option is selected (the lease is only 10 percent of the modeled capital structure). Other patron benefits (retirement of member debt and the revolving fund) respond similarly to cash refunds when rate adjustments are made.

Debt financing is found to produce the highest present value of patron benefits in all situations that are simulated. However, cooperative financial performance varies depending on the model being used. The 1985 model produces stronger cooperative financial performance with the lease when interest rates were allowed to rise, business rates of return and business volume were declining, and

the annual lease rate was held constant. In sharp contrast, the 1987 model indicates that debt financing produces higher cooperative net savings and cash availability in all situations that are analyzed. This consistent result under a range of assumptions suggests that the attractiveness of selected leases (such as the facility lease modeled here) has declined in the post-1986 (Tax Reform Act) period.

Future Cooperative Leasing

The future use of leasing by agricultural cooperatives remains uncertain. First, changes in tax and financial market conditions, volatile financial performance, and the availability of alternative interest rate pricing arrangements through banks for cooperatives have reduced the incentives for small cooperatives to engage in facility leases. However, small-to middle-sized farmer cooperatives continue to successfully use leases to finance vehicles and other "rolling-stock" capital investments.

Second, farmer cooperatives are recovering from a difficult financial era, and both reorganization and restructuring are occurring. The scenario of rising interest rates on loans, falling returns on cooperative assets, constant business volume, and market-level lease rates (simulated in the 1987 model in this report) result in a high probability that a business plan for expansion will be financially infeasible under both debt and lease financing. As cooperatives emerge from the mid-1980's period and experience improved financial conditions, caution needs to be exercised regarding asset acquisitions. Additional economic analysis of the financial returns and risk is advisable before assuming new lease and debt obligations.

The "leasing is dead" view expressed by some observers tends not to be generally correct for large cooperatives. Large cooperatives continue to negotiate leases and lease-purchase deals. Several cooperatives are in the process of selective financial restructuring, and others are developing joint ventures where lease financing is playing a role. A financial lease will likely continue to be the higher cost alternative for most farmer cooperatives, and better-than-average leases will be required to be competitive with debt-financed purchases, as long as interest rates remain relatively low and stable. The methods of analysis presented in this study are important for cooperative decisionmakers to use in identifying profitable leasing opportunities.

This report does not address the broader issue of combining leases and/or term debt with nonqualified notices of allocation. Additional research could productively focus on how to develop financing strategies that increase the present value of future patron benefits under alternative assumptions about the future course of interest rates, tax rates, tax benefits of ownership, lease rates, and cooperative earnings. Presumably, a cooperative gains additional financial flexibility and gcncratcs greater benefits to patrons if all three financing options arc jointly considered.

Leasing as an Alternative Method of Financing for Agricultural Cooperatives

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Introduction

Public concern about the financial condition of agricultural cooperatives and other agribusiness firms has increased as a result of the farm sector economic recession during the early and mid-1980's. Farmer cooperatives participated in that recession because of their reliance on farm sector sales and profitability. Reduced farm earnings have been reflected in the impaired earnings (net margins) of farmer cooperatives between 1980 and 1984 (Royer, 1985). The problem has been documented as more critical among cooperatives that carry relatively heavy debt loads (Cinder et al., 1985).

Turner (1985) compared the 1984-85 financial audits of 480 grain and farm supply cooperatives in the Omaha Farm Credit District. Thirty-five percent (170 firms) reported operating losses, and 65 percent (310 firms) reported net savings. One of the more significant contrasts between these two groups was the high average term-debt/equity capital ratio reported by the cooperatives with losses and the low leverage ratio reported by profitable cooperatives.

The escalation of both debt levels and interest expense has been one of the major factors contributing to the selective erosion of cooperative profits. In addition, the recession in agriculture has reduced the ability of farmers to invest funds in their cooperatives. The combination of these events raises questions about how cooperatives will be capitalized in the future.

Boehlje and Pederson (1988) suggest that one of the major lessons to be learned from financial stress of the 1980's is that the financial base of agriculture is too narrow. Heavy reliance has been placed on internally generated equity and debt financing. As a consequence, the exposure to, and consequences of, financial risk are great for farm and agribusiness firms. They argue that agricultural managers, financial institutions, and policy makers need to consider the potential for new financial arrangements and instruments in the mix of alternatives used to rebuild and stabilize the financial position of agricultural businesses. Leasing of production assets is part of that array of financing options.

This study looks at the past, present, and future role of leasing in financing agricultural cooperative investments. This report also investigates the impacts which selective changes in the federal tax law during 1986 will have on leasing and its attractiveness to farmer cooperatives.

Figure la Types of Equipment Under Financing Lease Arrangements, 1983-1987.

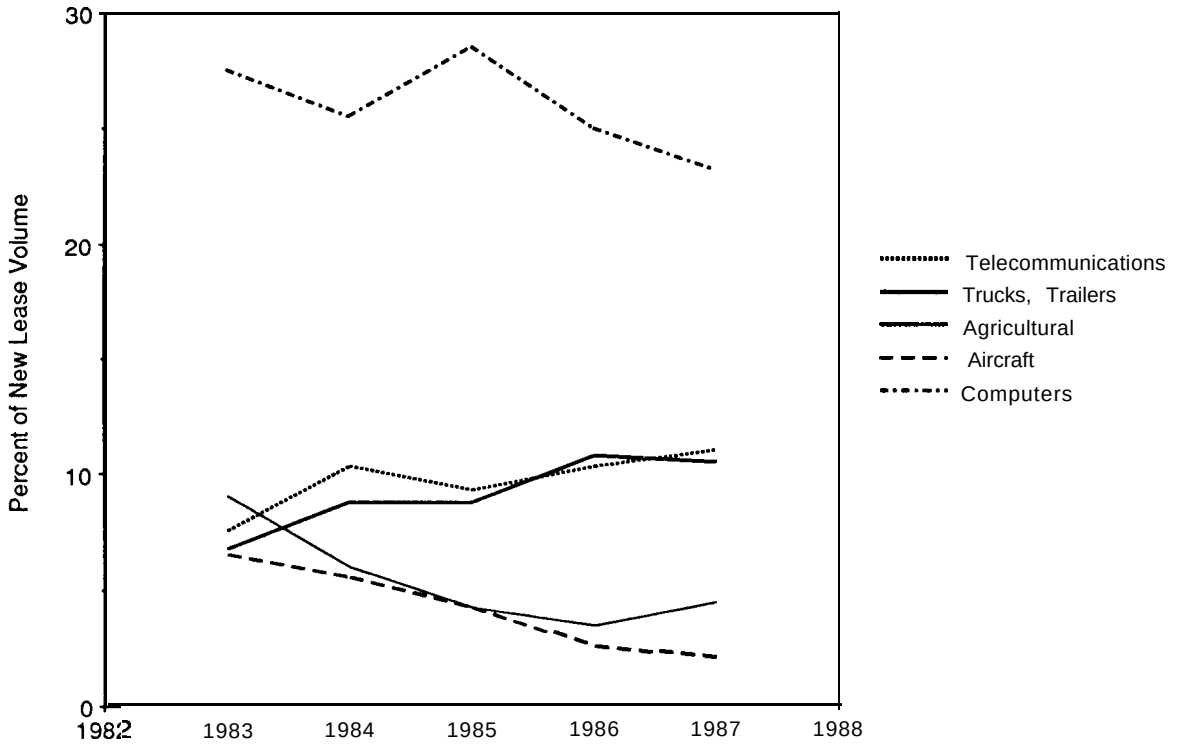
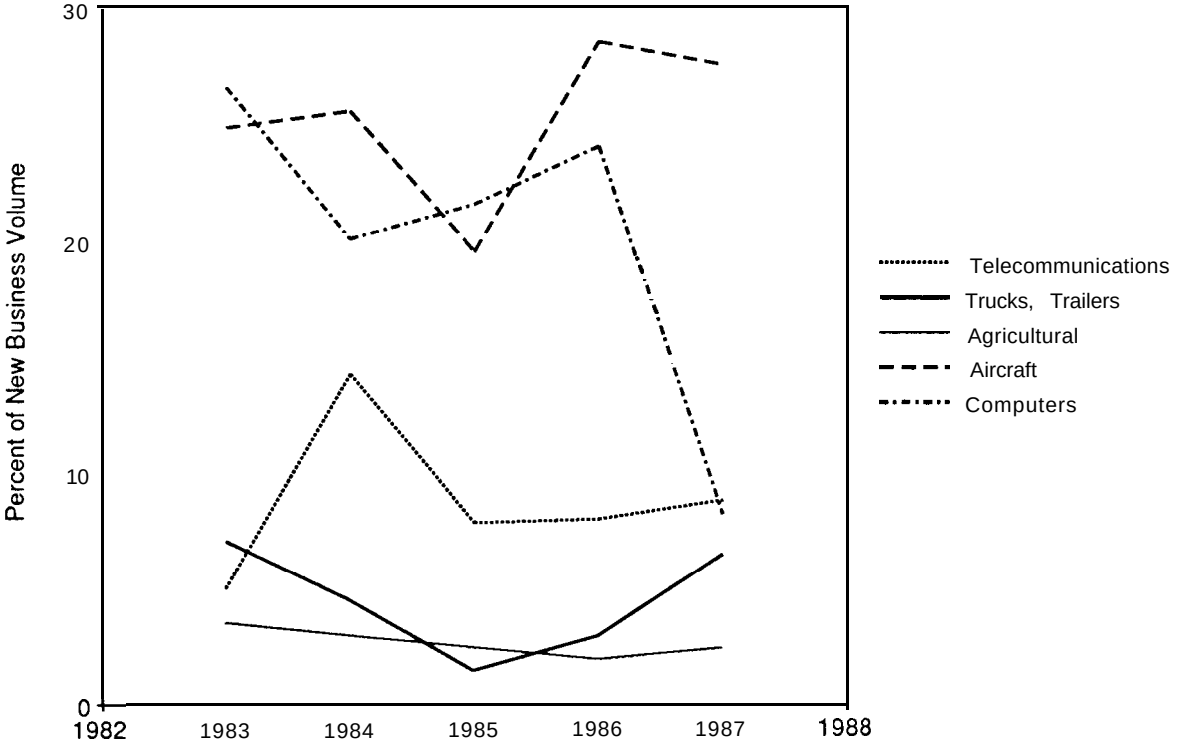


Figure 1 b Types of Equipment Under Leveraged Lease Arrangements,1 983-l 987.



Background on Leasing Activity

Generally, leasing (including agricultural leasing) has been increasing during the 1980's. The Department of Commerce estimates that about $90.6 billion in equipment was purchased for lease in the United States during 1987. That represents about 29 percent of all business investment in durable capital equipment (American Association of Equipment Lessors, 1988). Despite the loss of investment tax credit and the introduction of the alternative minimum tax (AMT), the outlook for aggregate U.S. leasing volume is that it would reach $108 billion in 1987 (Berg).

In contrast, agricultural equipment has not been among the active areas in this growing industry. Figures la and 1b indicate that direct (financing) and leveraged leases of agricultural equipment have accounted for a small percentage of total new leasing business volume during 1983-87 (American Association of Equipment Lessors, 1988). Computers, aircraft, and telecommunications remained the dominant forms of leased equipment, through 1987. Leveraged leasing of computers declined dramatically in 1987 (fig. lb).

Reasons for the lack of past agricultural leasing activity can be suggested along three lines: (1) lack of acceptance of this form of financing by agricultural decisionmakers because of traditional preferences for ownership, (2) lack of knowledge of potential agricultural lessees about the advantages of leasing, and (3) lack of lessor familiarity with agriculture's capital needs, and the perception that agricultural firms (farms and cooperatives) are not a growth market.

Use of capitalized financial leases has occurred primarily among the largest 100 cooperatives, with 31 using leasing in 1986 to provide 6.8 percent of their total borrowed capital (Davidson and Kane, 1987, 1988). Although the volume of agricultural leasing has been small relative to the total industry, the range of assets leased by agricultural firms is quite extensive. For example, equipment directly leased includes automobiles, light-duty trucks, tractors, fertilizer equipment, trailers, forklifts, plant equipment, storage tanks, and an array of other miscellaneous small equipment. Mid-size and larger scale leased assets include computers, transportation equipment, processing equipment, office buildings, warehouses, grain elevators, service facilities, railroad cars, and storage facilities.

As part of the growth in agricultural leasing activity, 10 of the 12 district banks of the Farm Credit System (FCS) jointly acquired the Interregional Service Corporation (ISC) in 1984. Between 1971 and 1984, ISC had served the leasing needs of Midwest and Southeast regional cooperatives and their affiliates. The new leasing entity, Farm Credit Leasing Services Corporation (FCL), expanded the range of leasing services beyond what ISC had provided.

FCL provided direct leases through 1986, by which investment tax credits were "passed through" to cooperative leases. FCL continues to provide tax-oriented leases, but ownership is retained by FCL and the capital item is leased to the cooperative for an annual rental fee. FCL provides direct finance and leveraged lease services and syndicates leases for the FCS. The majority of FCL's leasing volume is in the form of operating leases. Property under operating lease contracts was $86.3 million in 1985, $74.8 million in 1986, and $87.4 million in 1987 (Farm Credit Leasing Services). Net investment in direct finance leases increased from about $7.5 million in 1984 to nearly $16 million in 1985, $33.8 million in 1986, and $52.8 million in 1987.

FCL's equipment lease portfolio in 1986 and 1987 was dominated by autos, trucks, and truck trailers and bodies (fig. 2a). The geographic distribution of FCL's 1987 lease portfolio is illustrated in fig. 2b. The St. Paul and Columbia Farm Credit Districts account for the largest shares of FCL's lease volume. A majority of FCL's lease volume was under fixed-rate leasing arrangements (68 percent) in 1987. Variable-rate leases accounted for the remaining 32 percent of lease value.

Prior to 1986, the Farm Credit System's banks for cooperatives (BC's) became an active lessor to cooperatives. The St. Paul BC tripled its direct lease and leveraged lease loan volumes between 1984 and 1985, reflecting the selective growth in tax-oriented leasing business in the Seventh Farm Credit District. A significant proportion of the BC's 1984-85 lease

Figure 2a Farm Credit Leasing Services Lease Portfolio by Equipment Type, 1986-87.

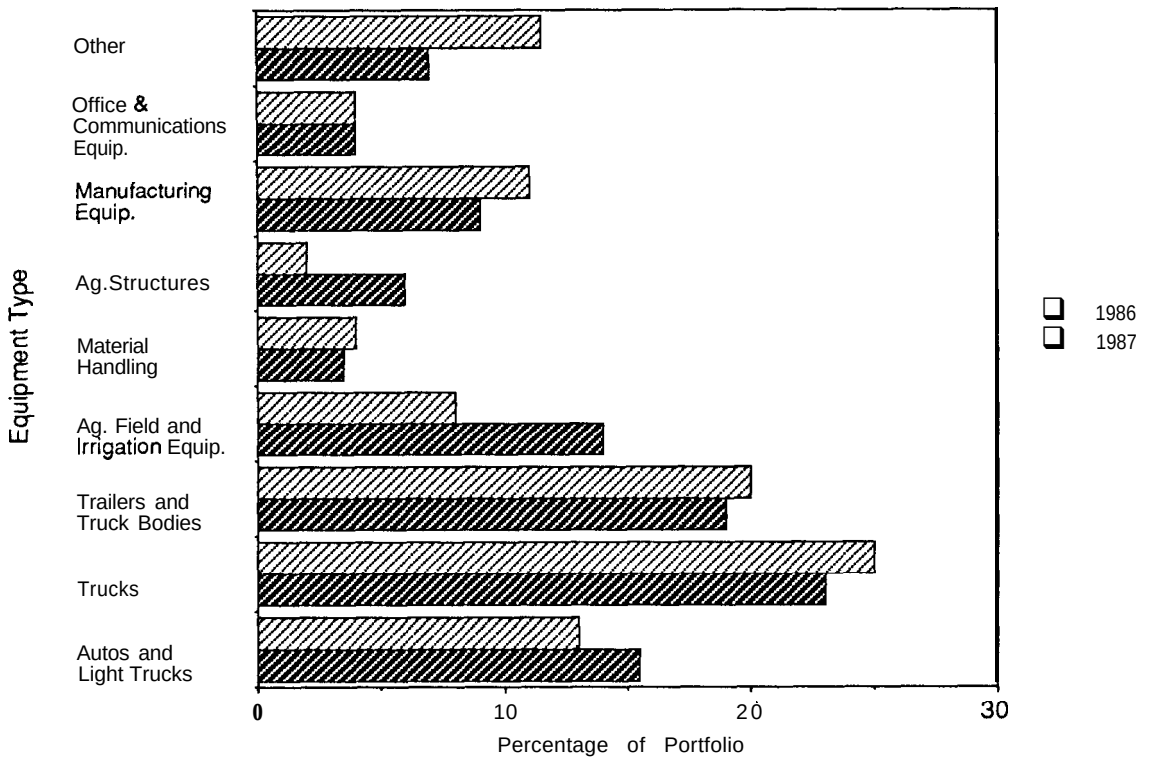
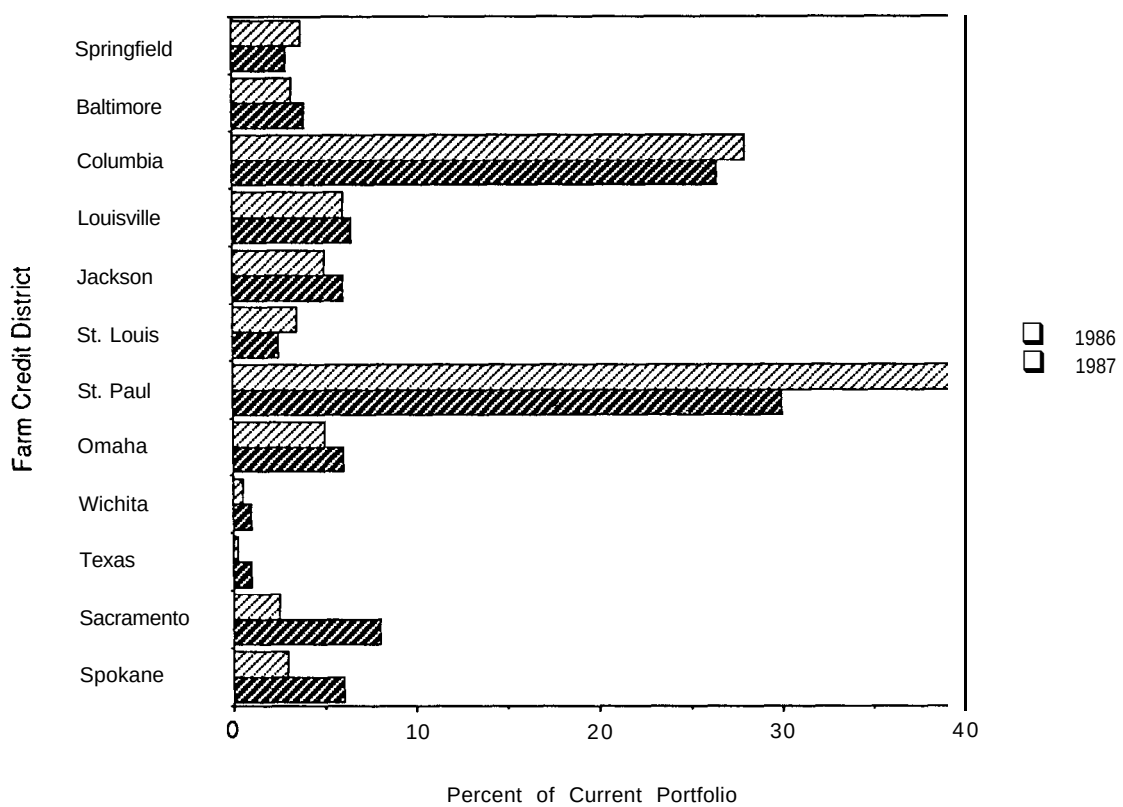


Figure 2b Farm Credit Leasing Services Lease Portfolio by Farm Credit District, 1986-87.



Source: Farm Credit Leasing Services Corporation

volume was generated on a few large lease contracts with rural electric cooperatives. Leasing activity at the St. Paul BC declined sharply in 1986 (the bank generated less taxable income and less incentive to write tax-oriented leases), and FCL expanded its role as lessor to BC customers.

Federal tax policy is a major determinant of leasing industry activity. A favorable tax treatment of leasing transactions is influential in attracting firms into leasing and in shaping the terms of lease contracts, making them more competitive with traditional debt financing. Underlying a lease transaction is the general assumption that it is the productive use of a depreciable asset, rather than its ownership, that results in profits necessary to operate a business. Based on that approach, an investing firm would first determine which projects are profitable to undertake, then determine how best to finance those projects. Tax policies play a role by either enhancing or reducing the underlying profitability of the project on an after-tax basis.

The 1986 U.S. Congress modified the income tax law as it applies to depreciable assets. The modifications that have particular relevance for financial leasing are: (1) repeal of the investment tax credit on items purchased after December 31, 1985[1], (2) adjustment of expensing provisions and rules for depreciation, (3) consolidation of tax brackets and reduction of the top rate (with elimination of selected business deductions), and 4) application of the alternative minimum tax provision.

These modifications in the tax code have significantly altered the tax incentives for lessors to write leases and will potentially lead to changes in the characteristics of lease contracts that will be offered in the future. Leasing contracts will likely be restructured (with some leasing options discontinued) and repriced to reflect the loss of selected tax benefits.

Study Objectives

An evaluation of finance and tax developments at both the National and the agricultural levels is clearly beyond the scope of this study. The more limited concern here is to explore capital leasing by agricultural cooperatives as an innovation that may selectively improve cooperative financial performance within this changing economic environment.

Two general objectives of this study are to:

1. Identify the economic incentives for agricultural cooperatives to use finance (capital) leases, and

2. Evaluate the impacts of finance leases at the project and whole-firm levels using an agricultural cooperative illustration.

The economic incentives for farmer cooperatives to lease structures, machinery, equipment, and other depreciable items are primarily finance and tax-related issues. The advantages of leasing such capital assets depend on a careful analysis of the financing options and terms that are available. The current and projected tax situations of the cooperative and its farmer members are of equivalent importance in the leasing decision. These factors, and associated incentives are identified in this study through a review of selected changes in financing terms and lease-related tax laws.

The financial impacts of capital leases are analyzed by (1) studying the profitability of the lease or purchase alternative using capital budgeting, and (2) simulating the whole-firm financial effects for a farmer cooperative employing equity, debt, and lease capital. The results are then evaluated after making selective adjustments to the tax and financial variables.

[1] Farm Finance Leases (as a special category) were allowed the investment tax credit through December 31, 1987.

Financial capital is required in all phases of cooperative management: initial formation, daily operation and maintenance, asset replacement, and plant expansion. Capital acquisition and funding of these activities can occur through the use of equity, debt, and/or leases. Although use of these sources of funds by cooperatives has changed in recent years, balance sheet statistics indicate that those changes arc not widespread by cooperatives regardless of size.

Changing Financial Structure of Large Cooperatives

Table 1 contains a description of the major categories of financial capital used by the Nation's 100 largest farmer cooperatives for selected years between 1970 and 1986. The trend between 1970 and 1980 was away from equity capital and toward growing dependence on debt and other liabilities. After 1980, equity formation occurred to reverse the earlier trend. A dramatic substitution of long-term for short-term debt occurred between 1980 and 1982, while total debt declined. The substitution moderated during 1982-85, as the total use of debt continued to decline. Other liabilities increased from 22 percent in 1970 to 29.2 percent in 1980, and declined slightly to 26.8 percent in 1986. As a reflection of reduced debt, the ratio of percentage total (short- and long-term) borrowed funds to total equity (based on table 1) fell from 1.46 at the end of 1982 to 1.14 at the end of 1984, and to 1.04 at the end of 1986. These falling leverage ratios reflect the response to higher interest rates on debt and the efforts by large agricultural cooperatives to strengthen their financial positions.

Debt financing has traditionally been obtained through regional BC's, commercial banks, insurance companies, the issuance of debt securities, and from other cooperatives. As indicated in table 2, the long-term trend among the 100 largest agricultural cooperatives has been away from conventional loans by BC's and commercial banks and toward the use of capital leases, industrial development revenue bonds, and other sources. The decline in traditional debt and the increased use of other sources is quite noticeable during 1980-86. BC financing has typically been provided on a variable interest rate basis.

Table l-Financial structure of the 100 largest U.S. farmer cooperatives in selected years, 1970-86

Category	1970	1980	1981	1982	1983	1984	1985	1988
				Percent of total capital				
Equity capital	**39.1**	**28.6**	**29.8**	**30.0**	**31.6**	**33.8**	**35.9**	**35.9**
Borrowed capital	**38.9**	**42.2**	**42.1**	**43.7**	**41.1**	**38.6**	**37.0**	**37.3**
Short term	**n.a.**	**21.1**	**18.5**	**17.9**	**16.9**	**15.4**	**14.1**	**15.0**
Long term	n.a.	**21.1**	**23.6**	**25.8**	**24.2**	**23.2**	**22.9**	**22.3**
Other liabilities	**22.0**	**29.2**	**28.1**	**26.3**	**27.3**	**27.6**	**27.1**	**26.8**

n.a. = not available.

Source: Davidson and Street (1984b), and Davidson and Kane (1988).

Consequently, interest expense on BC borrowings has been rising and less stable in the post-1979 period. Farmer cooperatives have sought opportunities to convert to fixed-rate debt and insulate their earnings from rate fluctuations.

Financial leases, industrial revenue bonds and other sources have provided some opportunity to "lockin" interest rates on these liability items. Capital leases totaled $368 million in 1983, $377 million in 1984, $398 million in 1985, and $390 million in 1986 (Davidson and Street, 1984; Davidson and Kane, 1988). Industrial revenue bonds showed a similar small increase from $394 million in 1983 to $400 million in 1985, and fell to $364 million in 1986. In 1986 the "other sources" category accounted for 16.8 percent of total debt. This included Commodity Credit Corporation and other Government sources (5.3 percent), commercial paper (2.2 percent), other nonfinancial businesses-cooperative and noncooperative (3.6 percent), insurance companies (5.4 percent), and various others (1.6 percent).

Small Cooperatives

Balance sheet data obtained from the St. Paul Bank for Cooperatives for three major types of farmer cooperatives (dairy, grain, and farm supply) indicates no consistent pattern of financial restructuring occurred among smaller farmer cooperatives in the Seventh Farm Credit District during 1980-85 [table 3). In 1985, these smaller cooperatives varied in average total investment from nearly $17.5 million among dairy, $2.7 million among grain, and $2.5 million among farm supply cooperatives. By comparison, the Nation's largest 100 cooperatives reported an average total investment of about $165 million in 1984.

Table 3 contains percentages of financing by liability category. Although these data are not available in a form that is directly comparable with the largest 100 cooperatives, they do suggest that dairy cooperatives (the largest number of the three categories) have also moved toward an increased use of industrial revenue

Table 2-Sources of debt capital for the 100 largest U.S. farmer cooperatives in selected years, 1970-85

Source	1970	1976	1980	1981	1982	1983	1984	1985
				Percent of total liabilities				
Banks for Cooperatives	*62.0*	*56.9*	**58.4**	*57.7*	*51.7*	*51 .o*	*54.6*	**48.2**
Debt Certificates [1]	**23.4**	**22.7**	**13.6**	**15.5**	**16.0**	**16.8**	**16.3**	**15.9**
Commercial Banks	**10.7**	**10.0**	**12.4**	**5.9**	**5.9**	**5.2**	**5.3**	**6.7**
Leasing/Industrial Revenue Bonds	**n.a.**	**4.8**	**7.8**	**9.2**	**9.7**	**11.0**	**12.3**	**13.8**
Other	**3.9 [2]**	**5.6**	**7.8**	**11.7**	**16.7**	**16.0**	**11.5**	**15.4**

n.a. = not available.

[1] Debt certificates include bonds, notes, and certificates issued by cooperatives.

[2] In 1970 other sources included capitalized leases and industrial revenue bonds.

Source: Davidson and Street (1984), and Davidson and Royer (1986).

bonds and contracts. Contracts payable (which includes leases) at dairy cooperatives moved up to 4.9 percent of total liabilities in 1985. Industrial revenue bonds provided 3.7 percent of total liabilities in 1985. Small-scale grain and general farm supply cooperatives made increasing (but less significant) use of contracts and revenue bonds as sources of funds by 1985.

The relative stability of these balance sheet percentages for smaller cooperatives suggests that financial leasing by small cooperatives has been quite limited when compared with the trend among large cooperatives. This may reflect the relatively recent use of financial leasing as an option for farmer cooperatives and the absence of leasing services in rural areas.

Table 3-Term liabilities of selected U.S. farmer cooperatives in the Seventh Farm Credit District by type of cooperative, 1980-85 [1]

Cooperative Type	Liability Category	1980	1981	1982	1983	1984	1985
		Percent of total liabilities					
Dairy	Bank for Cooperatives loans	18.0	16.2	19.3	18.4	19.2	17.1
	Notes payable	0.7	.6	.6	.7	.7	0.4
	Patron notes payable	1.9	1.8	1.3	.9	1.0	0.9
	Contracts payable [2]	.4	.3	.7	1.8	2.9	4.9
	Industrial revenue bonds	2.9	2.3	1.8	1.3	4.5	3.7
	Other term liabilities [3]	.2	.1	.1	.1	.1	0.1
	Total	24.1	21.3	23.8	23.2	28.4	27.1
Grain	Bank for Cooperatives loans	16.4	17.9	19.3	15.4	15.2	17.5
	Notes payable	.6	.5	.7	.6	.7	.1
	Patron notes payable	2.3	2.4	2.6	2.0	2.2	2.4
	Contracts payable	.2	.2	.2	.1	.2	.8
	Industrial revenue bonds	1.2	1.1	1.6	1.2	1.2	1.6
	Other term liabilities	0	0	.2	.1	.1	.2
	Total	20.7	22.1	24.6	19.4	19.6	22.6
General Farm Supply	Bank for Cooperatives loans	16.4	19.8	22.4	22.5	21.8	21.8
	Notes payable	1.8	1.4	1.4	2.0	1.9	3.2
	Patron notes payable	1.6	1.2	1.1	1.2	1.2	1.3
	Contracts payable	0.6	0.5	0.7	0.9	0.7	1.3
	Industrial revenue bonds	1.2	1.1	1.1	0.5	0.5	1.3
	Other term liabilities	0.2	0	0	0	0.1	0.3
	Total	21.8	24.0	26.7	27.1	26.2	29.2

[1] Only cooperatives which were borrowing from the Seventh District BC were included.

[2] Contracts payable include financial leases and real estate contracts for deed.

[3] Other term liabilities include deferred income tax items and deferred compensation for employees.

Additional explanations would be that the financial costs and benefits of leases have not been widely known by local cooperative decisionmakers, or that leasing rates were known but were not sufficiently competitive to displace the use of term debt. Leasing may have been more attractive for some cooperatives (for example, dairy) than for others due to the nature of the assets most commonly leased.

The preceding balance sheet trends suggest a high level of financial uniformity and stability among farmer cooperatives. That uniformity tends to obscure the variety of financing choices available to individual cooperatives and for individual investment projects of these cooperatives.

Financing Alternatives

The selection of a mode of financing from alternative financing sources depends upon economic and noneconomic factors. For instance, financing at a lower projected interest expense is an important economic consideration, but it may be of less importance in some situations than obtaining an ownership position. Similarly, a new financing opportunity may be rejected in favor of a more traditional method due to a lack of management experience with the proposed new financing method.

An additional consideration for a farmer cooperative is the influence of the financing choice on future patron benefits. If an asset is financed with debt, current patrons would gain the tax benefits of ownership, and future patrons would share the interest costs. The benefits of leasing (lower, stable lease payments) would be distributed among current and future patrons. This report does not explicitly analyze the issue of how financing choice alters the distribution of patron benefits over time.

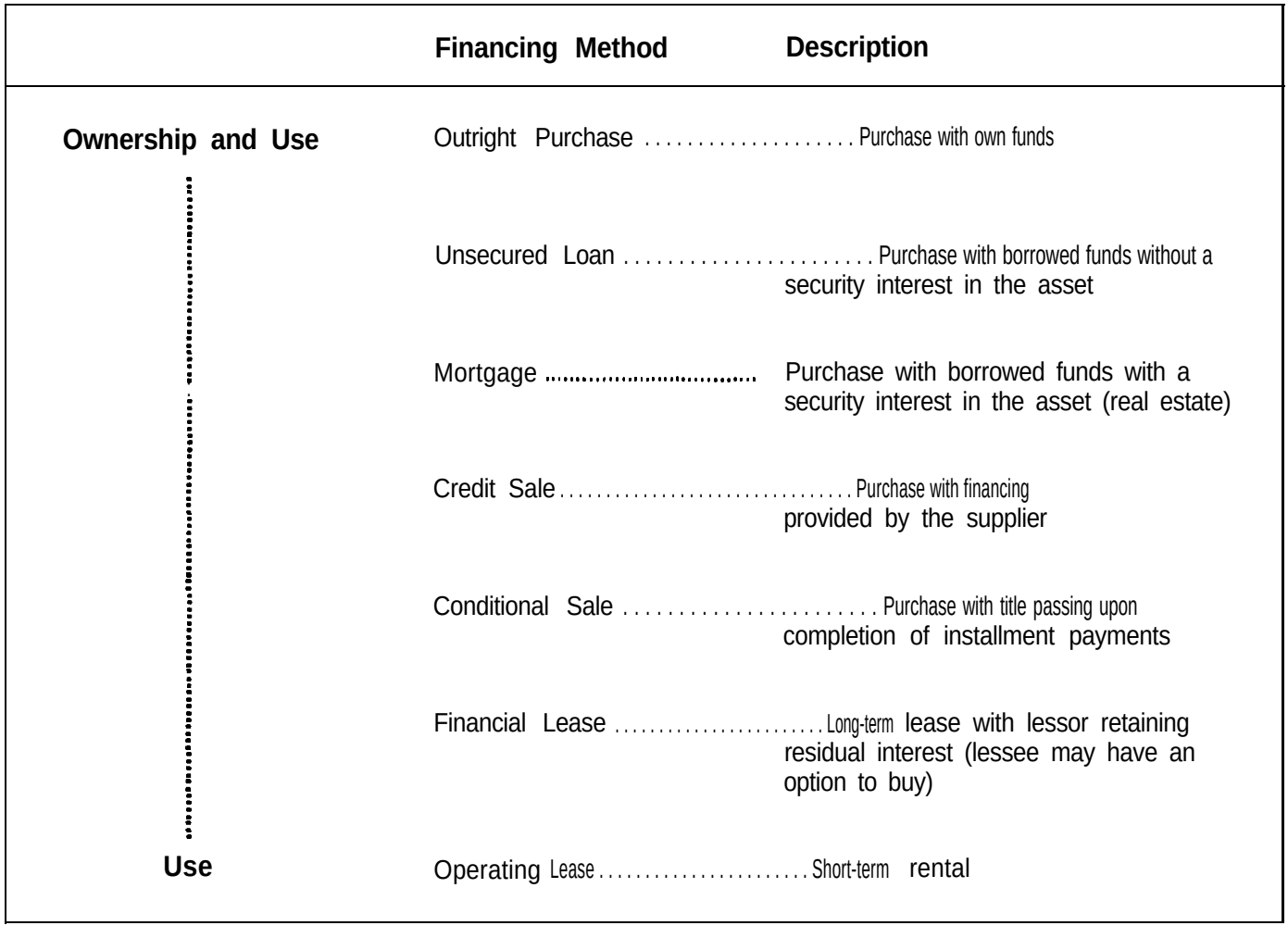
Each of the financing methods shown in figure 3 has different tax, balance sheet, and cash flow characteristics than the other methods of asset control shown. These various financing choices extend from full ownership (through an outright purchase using 100-percent equity capital) to exclusive use rights with no ownership (through an operating lease arrangement). An outright purchase provides the owner with tax benefits and the right to collateralize or sell the asset at any time, in addition to its long-term use. At the other extreme, an operating lease conveys just the contractual right to short-term use of the asset. Between these two extremes the debt-financing alternatives (unsecured loan, mortgage, credit sale, and conditional sale) provide for various levels of ownership and associated rights to claim tax benefits, collateralize, or sell the asset prior to maturity.

Debt Financing Interest expense is typically a primary concern when negotiating a project loan because it directly influences the cash flow and the financial profitability of the investment project and the cooperative. Both the level and the variability of interest rates paid on debt are important.

Inflationary pressures in the latter 1970's, coupled with gradual deregulation of interest rates, pushed interest rates up during the post-1979 period. Through variable-rate lending, this instability translated into higher interest expense for cooperative borrowers. Variable interest rates on term loans through the St. Paul Bank for Cooperatives, for example, escalated from 7.75 percent in 1978 to **13.75** percent in 1982, declined to 11.75 percent in 1985, and fell to **10.25** percent in late 1986. More recently, the variable rate offered by the St. Paul BC has fluctuated between **10.25** percent in early 1987 and 9.25 percent in mid-1988 for middle-sized cooperatives in relatively strong financial positions.

Variable-rate loans allow for the periodic adjustment of interest rates when market conditions change. By adjusting the rate, a lender (for example, the bank for cooperatives) is able to achieve a closer "match" between the interest rate charged and the cost of funds acquired for lending. The disadvantage to the borrower (the farmer cooperative) is that the interest 21 expense is not highly predictable in distant years. Situations may occur where interest expenses fluctuate upward at a time when earnings are low, resulting in cash flow stress. If cash reserves are depleted, the cooperative may find it difficult to generate cash to make larger debt payments.

Figure 3 Alternative Financing Methods in Agriculture for Acquiring Various Levels of Asset Ownership and Use.



Variations in liquidity (due to rising interest expense) is partially manageable through the use of fixed-rate financing. In an effort to provide greater cooperative flexibility and control in the term debt-financing decision, some BC's have initiated lending programs that allow variable- or fixed-rate contracts. For example, the St. Paul District BC allows a cooperative to finance on a l-year, variable rate or fix the rate for 1, 3, 5, 7, or 10 years with rate spreads (set according to market interest rate yield curve relationships) to reflect maturity differences. Availability of this form of rate selection flexibility provides a cooperative with additional options for reducing the adverse effects of rising interest rates. It also allows a better choice of debt financing versus lease financing by comparing effective interest rates.

Lease Financing A direct financial lease (fig. 4) provides asset control with generally no ownership rights, except for the opportunity to acquire the asset at lease termination through a purchase option. This financing technique has been used by cooperatives for the past 35 years or so and is typically used to finance relatively small, short-term asset requirements. Some tax benefits (for example, investment tax credit under previous tax law provisions) were occasionally "passed through" by the lessor to the lessee under direct finance leasing arrangements. The financial lease is a long-term (typically noncancelable) financial arrangement and, therefore, differs from an annual operating lease. Financing terms of an operating lease may be adjusted on an annual basis in contrast with a financial lease where the terms remain unchanged for several years.

A leveraged lease (fig. 5) involves a number of parties-a cooperative lessee, a lessor (or equity participant), a lender, a contractor (or manufacturer), an owner trustee (or indenture trustee), and potentially an agent (investment banker). An owner trustee holds title to the leased asset for the lessor(s) and issues trust certificates to them as evidence of ownership, whereas an indenture trustee holds a security interest in the leased property for the benefit of debt lenders. This financing arrangement provides an alternative to the direct financial lease when large capital outlays are required on depreciable real and personal property. A leveraged lease operates the same for the lessee as would a direct lease. The lessee contracts to make the periodic lease payments and is entitled to the use of the asset. The lessor's role is altered. The lessor acquires the asset, financing a minor part of it as an equity investment, and borrowing to finance the remaining amount. The loan is usually secured by a mortgage, as well as by an assignment of the lease and lease payments. Since the lessor is a borrower, the lease rate must be set at a level that will cover the interest expenses incurred under the loan and provide the lessor with an acceptable after-tax rate of return. The lessor is entitled to all tax benefits of depreciation and investment credits that apply.

The leasing option can be explored in two related ways: (1) the lessee's incentives to lease, and (2) conditions (factors) that are favorable to lease financing. Incentives to lease include the general underlying reasons that a lessee might have for pursuing a lease opportunity. Conditions favoring a lease include specific factors that weigh the advantage of leasing over a debt-financed purchase.

Incentives to Lease. The primary incentive to lease is to capture favorable financing terms of the lease contract. Proponents of leasing cite the "freeing up" of working capital and the improved cash flow that result from favorable leasing terms. An increase in working capital means that the downpayment required with debt financing exceeds the initial capital requirements of the lease. Some leases may require a security deposit that, along with the first lease payment (usually in advance), would significantly raise the initial cash outlay of the lease. This may compare to a situation where a cooperative can obtain nearly 100-percent debt financing, given a strong equity position.

Financial leases may be more predictable in terms of their cash flow impact than credit line or variable-rate debt financing, where the interest rate can be periodically adjusted. Unanticipated increases in interest rates and the cash flow requirement to service the project's debt may make a project infeasible due to potential cash flow shortages, even though the project represents a profitable use of funds over its life. Since the timing of lease and debt

Figure 4 Direct (single-investor) Lease Transactions.

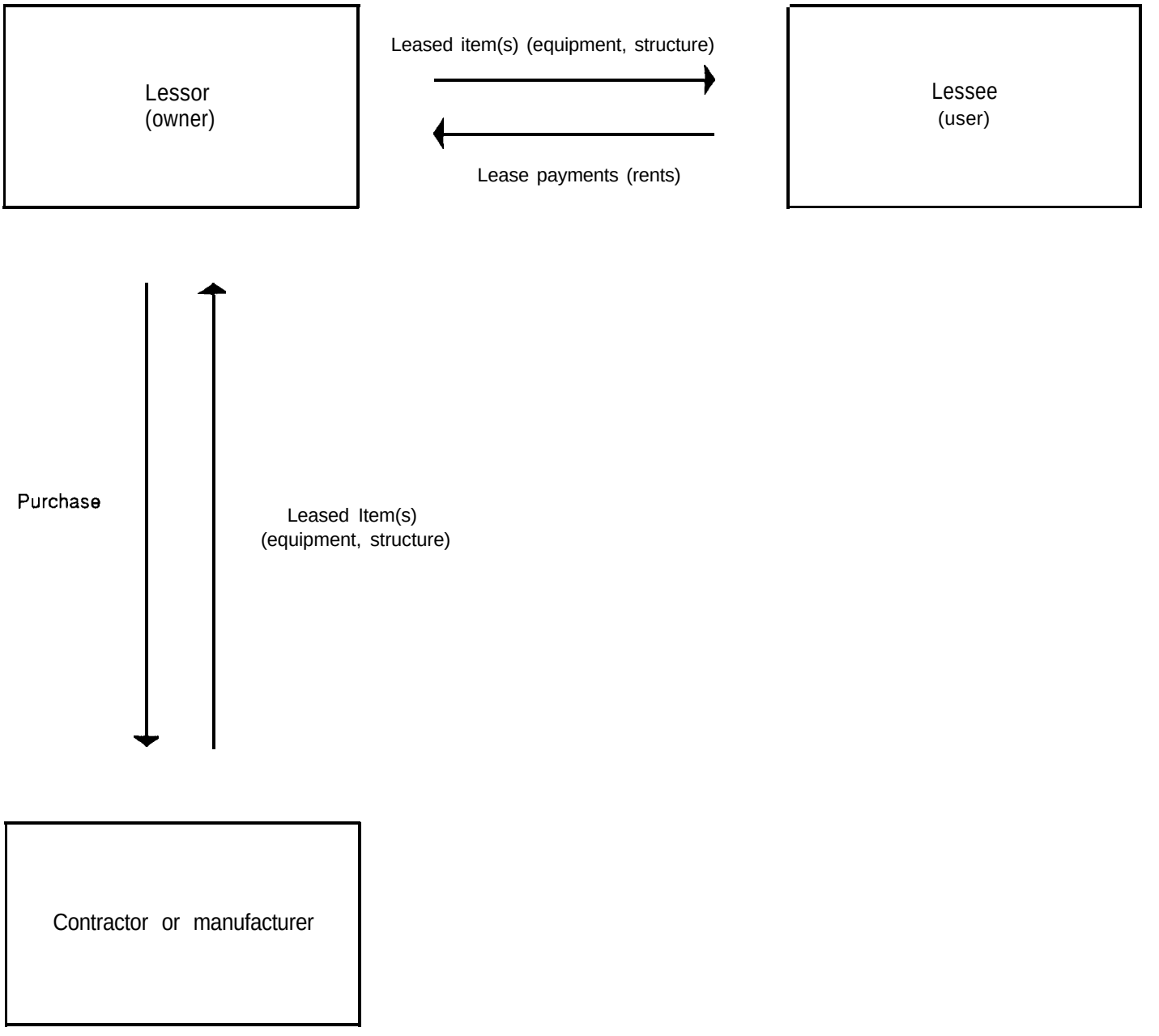
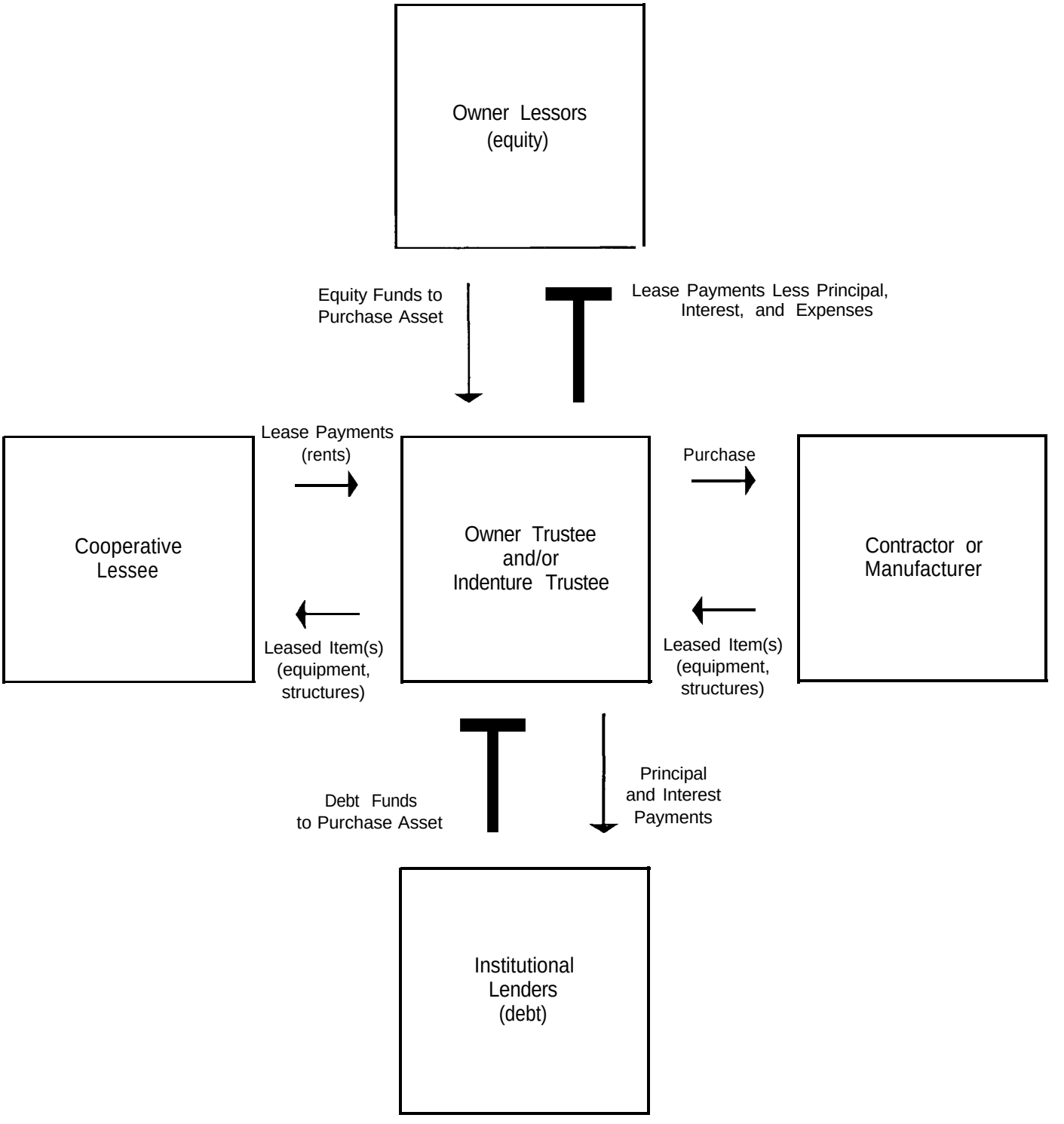


Figure 5 Leveraged Lease Transactions (adapted from Griffen and Finsterstock, 1974).



payments varies, the feasibility of either financing alternative requires that cash inflows and outflows of the project be listed along with their time of occurrence to develop a clear picture of the net cash flow stream on at least an annual basis. The cash flow advantage of leasing over debt financing is strongly influenced by the repayment period of the loan. A loan with a term shorter than the lease period will frequently result in a cash flow advantage to leasing. In addition, a lease may free the lessee from loan indenture agreements or other restrictive covenants that apply to the use of cash.

A secondary incentive to lease is to avoid obsolescence (residual value) risk. Leasing provides the lessee with protection from risks of ownership losses when technological advancement reduces the market (resale) value of capital assets. The lease contract provides the option for the lessee to purchase the asset without a legal requirement to do so. The purchase price may be specified as the asset's "fair market value" or as some predetermined, fixed percentage of the initial value (a "bargain purchase"). If the lessee estimates that the asset is worth less than the purchase option price due to obsolescence, the associated loss is borne by the lessor.[2] In anticipation of this risk problem, the lessor will typically set the lease term appreciably shorter than the economic life of the asset and reduce the purchase option price sufficiently to encourage purchase by the lessee.[3]

Conditions that Favor Leasing. Major economic factors that may combine to make leasing the preferred financing option are: anticipated income tax bracket, interest rate level, residual value versus purchase option price, pass through of lessor volume purchase discounts on leased assets to the lessee, and agreements concerning repairs, insurance, taxes (sales or use taxes and personal property taxes), and lease termination. Each of these items influences lease profitability either directly or indirectly. A comparison of purchasing (using debt) and leasing requires that an analysis of the discounted, after-tax cash flows be completed. Casual observations may be quite misleading. (A later section of this report demonstrates some results using capital budgeting.)

A cooperative that projects a low tax bracket (due to reduced earnings or the method chosen to distribute earnings) may find that the tax benefits from ownership would have a lower value to the cooperative and its members. If the cooperative conveys tax credits and deductions to a lessor, and receives a lower lease rate in return, both parties may gain through leasing. The cooperative is still able to deduct annual lease payments as an expense, and the lessor would likely be in a position to make full use of the tax benefits.

The marginal tax rate plays a dual role in profitability analysis. Cash flows are adjusted to an after-tax basis using the projected tax bracket of the cooperative. A lower tax rate increases the after-tax net cash flows and profitability of both financing options. The tax rate is also used when determining the appropriate after-tax discount rate. For a given cost of capital, a lower tax rate raises the after-tax discount rate and reduces the profitability of both options, but it may affect one option more than the other due to differences in timing of cash flows.

A relatively higher interest rate on debt tends to favor leasing. The effect of an interest rate increase (holding the lease percentage rate constant) would make the lease more profitable than the use of term debt.[4] The advantage of leasing cannot be determined by a simple comparison of the annual percentage rates (APR) of interest paid on debt and the percentage lease rate because different tax rules apply. Also, the quoted lease rate would already reflect tax benefits used by the lessor. Interestingly, simply having a lease rate lower than the interest rate on debt may not be sufficient, by itself, to make

[2] It is entirely possible that an asset is considered obsolete to a given lessee but is not obsolete to alternative potential purchasers at the time the purchase option is being negotiated.

[3] Adjustments to the tax law in 1981 reduced the "at risk" requirement for lessors. Additionally, more latitude was provided in the length of lease term and the expected residual value that could be used when establishing the lease payment amount.

[4] The important point to note here is that interest rates on debt and lease rates do not necessarily move in parallel fashion. Divergence between these rates results in situations that may favor a given financing option.

the lease more profitable. The size of the spread between these two rates and their relative stability over time are likely to be more important considerations. The interest rate on debt also plays the major role of setting the discount rate to be used in profitability analysis.

The residual (resale) value of a capital asset can potentially affect lease costs when the lessee has a fair market value purchase option. Since the capital item is owned by the lessor, a general increase in market values may translate into a larger-than-expected cash outlay by the lessee to purchase the asset at lease termination. This would tend to make a lease with a market value purchase option less attractive to cooperatives in periods when asset prices are rising due to inflation or other factors. When asset prices are falling, a market value purchase option would generate a gain for the leasing cooperative. In response, lessors have increasingly moved toward low, fixed-price purchase option leases in agriculture to reduce residual value effects on profitability. Lessees in agriculture have been generally quite receptive to these fixed-price purchase contracts because uncertainty about cash flow is reduced. It is useful to note that while lessees generally prefer a fixed-price purchase option, the difference between the purchase price and the anticipated residual value is irrelevant to the lessee's position. It is only the magnitude of the actual lease rate charged (which theoretically reflects the difference) that has significance for the lessee.

Contractual agreements by which the lessor makes financial concessions on repair, insurance, and/or tax items reduce the lessee's expected cash outlay and favor the lease option. Normal maintenance of equipment and structures is usually the responsibility of the cooperative lessee. Major repairs expenses (those not due to negligence by the lessee) may or may not be covered by a manufacturer's warranty or be paid for by the lessor.[5] If major repairs can be anticipated to occur during the lease period, and are not covered by a warranty, they should be incorporated into the lease profitability analysis. Since disagreements can arise over what constitutes a major repair, as opposed to normal maintenance, this should also be clearly specified in the lease contract.

Insurance expenses are usually borne by the owner of an asset and are an expense item that the cooperative may seek to avoid through leasing. However, payment of insurance premiums may (or may not) be a negotiable item. Whose responsibility it becomes needs to be specified in the lease. The magnitude of the cost saving is usually small when compared with other costs of ownership, but it should be factored into the analysis of lease profitability.

"Net lease" is a term frequently used in the leasing industry. Under a net lease agreement the lessee becomes responsible for all costs of insurance, maintenance, and taxes (excluding income taxes). The lessee is required to maintain the asset in good working condition and appearance, considering normal wear and tear.

Termination of leases on structures creates a unique situation for the cooperative lessee. Usually, lessors will set the purchase price option deliberately low to provide an incentive for the lessee to purchase the asset at lease termination. If the lessee elects to not purchase the structure at the end of the lease term, however, either the lessor or the lessee will incur an additional expense associated with disassembly and removal from the site. It is important that the lease specify who is responsible for this and the condition of the site after removal. This is an important consideration if there are large structures, which might require concrete footings or other site preparation before installation. If the cooperative lessee is made responsible for removal, lease profitability will certainly be reduced for the cooperative.

[5] Lease contracts frequently contain "warranty disclaimer" clauses that stipulate since the lessor is not a manufacturer nor engaged in the sale of the equipment, it is not liable for the failure of the asset to perform for its intended use. The lessee's only recourse is to pursue the manufacturer under the provisions of the warranty if major repairs occur. See, for example, section 15 of the sample lease agreement in appendix B.

Terms of the Lease. In addition to the conditions that favor a lease, several financing terms are important to consider.[6] These "lease contract" items may be negotiable and do frequently influence lease profitability- directly or indirectly. It is expected that the lessor and the lessee will take opposing views concerning how leases should be structured and a compromise must be found.

The following is a partial list of lease contract items to consider:

1. Timing of lease payments. Since lease payments are typically made in advance, timing of these payments (monthly, annually) will alter the pattern of project cash inflows and outflows during the year.

2. Security deposit. Although security deposits are primarily a feature of operating leases, their presence in a financial lease increases the cost of the lease. Both the size of the deposit and whether it bears interest should be considered.

3. Origination or service fees. When the lease contract is initiated, a service fee may be applied at a percentage of the value of the leased asset. Fee charges increase the effective interest costs of the lease.

4. Duration. Extension of the lease term directly affects the amount of each lease payment. The longer the lease, the smaller the lease payment, other factors being constant. Tax laws place effective limits on the term of some lease contracts.

5. Purchase option. Under the "fair market value" purchase option, purchase price determination is delayed until the lease terminates. In the case of a vehicle lease, a "Terminal Rental Adjustment Clause" (TRAC) may provide the lessor with the option to adjust the lease rental upward to recover the difference between the projected and actual value at the termination of the lease.

6. Penalties. Failure of the lessee to perform under the terms of the lease contract may trigger a penalty fee, or in extreme cases nullify the lease. Under a noncancelable lease, a penalty may arise due to lessor or lessee action to cancel. Additionally, a prepayment penalty would occur when the lessee attempts to pay off the lease before maturity. Late payment penalties are also likely to be imposed on the lessee. Clauses that accelerate the lease payment schedule may be quite severe.

7. Flexible lease options. Several factors that may add financial flexibility to the lease are trial periods, provision of nonfinancial services of the lessor, and sharing of delivery, installation, and licensing expenses.

8. Lease rate. A fixed-rate lease may be preferred by the lessee due to the predictability of each payment. In exchange, the lessor may be willing to accept a variable-term lease arrangement to compensate for the risk associated with changing borrowing costs.

Most (if not all) of these financing terms appear on a lease contract; selected items represent areas for lessee/lessor negotiation.

Appendix B contains sample lease agreements and attendant documents, used by Farm Credit Leasing Services Corporation, which are representative of documents designed for executing lease arrangements. An application agreement (of the type shown) is used to initiate the leasing process. In addition to the lease application agreement, a release of credit and financial information is typically requested of the lessee. The lessee has the option to enter into a lease agreement (like the one shown) for each leased asset, or into a master lease agreement (not shown) that provides for the current lease and future lease transactions under a continuing lease arrangement. A purchase option schedule (shown in the appendix) may be a part of, or a document that is supplemental to, the lease agreement. A guaranty agreement (shown in the appendix) may also be required by the lessor, depending on the financial strength of the lessee. Several other lease documents may be important in lease transactions, depending on the type of lease and applicable State laws. These

[6] Additional discussion of lease contract terms can be found in Isom and Amembal (1982).

include: purchase order, invoice, bill of sale (from the supplier), acknowledgment of delivery and acceptance, and security agreement.

Lease rates are expressed in various ways depending on the underlying yield to be generated by the lessor and several of the lease contract items identified above. Factors such as the lessor's pretax yield, the residual purchase percentage, the number of advance payments, the frequency of lease payments, the term of the lease, availability of investment tax credit, and risk all directly or indirectly enter the lease payment computation and, therefore, are determinants of the lease rate.

The "implicit lease rate" is the discount rate that, when applied to the lease payments (excluding costs of executing the lease) and any unguaranteed residual, results in a present value sum of the cash inflows equal to the fair market value of the leased property (less any ITC claimed by the lessor) acquired at the inception of the lease.[7] This discount rate is commonly referred to as the "internal rate of return" to the lessor. For example, a leased asset with an initial fair market value of $100,000, an $8,000 ITC, monthly advance lease payments of $2,900 for 47 months, and an expected residual fair market value of $18,000 at the end of 48 months, yields an implicit (annual) lease rate of 25.64 percent. Elimination of the ITC drops the implicit rate to 21.12 percent (assuming the lease payments remain unchanged).

The lease rate factor (which is used to determine the size of the periodic lease payment) is related to the above implicit rate calculation. The periodic lease payment amount ($2,900) is divided by the initial lease investment ($100,000) to derive the monthly lease rate factor (0.029). The corresponding annual lease rate factor is 0.348 (0.029 x 12). As the term of the lease is lengthened, the lease rate factor declines, reflecting the smaller periodic lease payments.

Lease applications and lease agreements will frequently bear the lease rate factor and corresponding scheduled lease payment amounts. It is important for the lessee to distinguish between the lease rate factor and an annual percentage rate (which is often quoted on a loan). Since lease rates reflect the use of tax benefits by the lessor, and interest rates on loans do not reflect tax benefits of ownership, these two rates cannot be directly compared without significant computational adjustments.

In addition, special purpose clauses may appear on the lease contract. A "tax indemnification clause" makes provision for the loss of tax benefits by the lessor if the lease "unwinds," that is, does not pass the tests for a true lease. In this case, the lessee indemnifies (insures) the lessor for any loss of tax benefits. Tax indemnification is a clause that the lessor would want to insert into a tax-oriented lease agreement in anticipation of any change in the tax law that would apply retroactively. A "hell-or-high-water clause" reiterates a lessee's unconditional legal obligation to make lease payments for the entire term of the lease, regardless of events that may affect the leased equipment or structure and its use, or any change in the lessee's circumstances. This no-escape clause provides the lessor with a high level of assurance that the lease payments will be made, barring bankruptcy of the lessee's business.

[7] The "running rate" is occasionally quoted by lessors. It is the discount rate that sets the present value of the lease payments (excluding the residual asset value) equal to the initial fair market value of the leased asset.

Table 4-Monthly lease payments and annual lease rate factors for a $100,000 investment at selected buyout percentages and lease terms for two alternative lessor implicit yield levels.

Lessor Implicit Yield Level (%)	Term (months)	Buyout (purchase option) percentage		
		18	20	22
10.5	60	$1,903[1] 0.2284[2]	$1,878 0.2254	$1,852 0.2220
10.5	72	$1,682 0.2018	$1,662 0.1994	$1,642 0.1970
10.5	84	$1,526 0.1831	$1,510 0.1812	$1,494 0.1793
11.5	60	$1,957 0.2347	$1,932 0.2318	$1,908 0.2290
11.5	72	$1,737 0.2084	$1,718 0.2062	$1,699 0.2039
11.5	84	$1,583 0.1899	$1,567 0.1880	$1,552 0.1862

[1] The lease payment is expressed as a constant monthly amount.

[2] The lease rate factor is expressed as an annual rate in decimal form. This is done by dividing the monthly lease payment by the initial investment ($100,000) and multiplying the result by 12.

Leasing contract terms involve tradeoffs that are analogous to those in loan arrangements. Table 4 illustrates the relationships between three factors that influence the lease rate: (1) the lessor's implicit yield (internal rate of return), (2) the term of the lease, and (3) the buyout percentage.

Increases in the lease term (holding other factors constant) significantly reduce the size of the monthly lease payment and the corresponding annual lease rate factor. For example, extension of the lease contract from 60 to 84 months drops the monthly lease payment from $1,878 to $1,510 (assuming a 20-percent buyout and a 10.5-percent lessor yield). The corresponding decrease in the annual lease rate is from 0.2254 to 0.1812.

A l-percent increase in the lessor's implicit yield from 10.5 percent to 11.5 percent increases the monthly lease payment from $1,878 to $1,932 (in the 20-percent buyout and 60-month lease situation). The associated annual lease rate factor increases from 0.2254 to 0.2318 (or by 0.64 percent). One implication is that a cooperative seeking longer lease terms may find that the lessor requires a higher pretax yield (to compensate for the longer financing term) and the lease payment may not be appreciably reduced.

A comparison of monthly payments and annual lease rates in table 4 also shows that increases in the buyout percentage are as influential as increases in the length of lease term. When the lessor's yield is 10.5 percent and the purchase option is 18 percent, monthly lease payments fall from $1,903 to $1,526 when the lease term is increased form 60 to 84 months. This represents a 20-percent decrease in the monthly payment when the lease term increases 40 percent. However, an increase of just 4 percent in the purchase option (from 18 to 22 percent) decreases the monthly payment by about 2.5 percent (from $1,903 to $1,852). Leasing cooperatives should evaluate all aspects of leasing and, especially, consider the cash flow impacts of changes in the lease term and the buyout percentage. This is an important consideration when making lease comparisons to identify the most favorable lease contract.

Agricultural Cooperative Tax Management Alternatives

Cooperatives, like other corporations, pay Federal income taxes. But because of unique cooperative operating methods, special rules were established to regulate cooperative and patron taxation. The basic concept is a single tax on net margins at either the cooperative or patron level. Subchapter T of the Internal Revenue Code regulates cooperative taxation.[8] It applies to any corporation, with a few exceptions, operating on a cooperative basis. This section reviews some of the tax management alternatives available to farmer cooperatives. Special attention is given to past provisions regarding the use of the investment tax credit.

A cooperative's tax management decisions depend on many factors, and each cooperative may find itself in a unique situation. According to Subchapter T, cooperatives are able to manage taxation on net margins from patronage business at the cooperative level. To accomplish this, margins must be distributed on a patronage basis, and special rules must be met. Cooperatives meeting the rules can deduct certain allocations from gross taxable income.

[8] Consisting of sections 1381, 1382, 1383, 1385, and 1388.

Cooperatives and the Investment Tax Credit (ITC)

Repeal of the ITC allowance under the 1986 Tax Reform Act (effective January 1, 1986) eliminated the tax credit as a financing incentive.[9] However, cooperative use of the ITC has been a problem area in the past due partly to the unique position of cooperatives as representatives for their member/patrons. Prior to 1978, a cooperative that met Subchapter T requirements was limited in the amount of qualified investment property that was eligible for the ITC. The available ITC was based on the amount of taxable income retained by the cooperative. In most situations, a sizable amount of taxable income was distributed to patrons, resulting in little or no ITC available to the cooperative.

Provisions of the Revenue Act of 1978 altered the methods of determining available ITC, making it available to cooperatives in the same manner as other corporations. It was required that any part of the currently-generated ITC not usable at the cooperative

[9] The effect of eliminating the ITC on the purchase versus lease decision is analyzed in a later section of this report.

Table 5—Illustration of the computation and use of the investment tax credit (ITC) under pre-1986 tax rules.

Taxable net savings (annual total)		$100,000
Income tax before ITC		$26,750
Qualified investment	$500,000	
ITC (optional) rate	x .10	
ITC earned	= $50,000	
First $25,000 of tax liability	- $25,000	
85% over $25,000 (0.85 times $1750)	+ $ 1,488	
ITC allowed in the current year	= $26,488	$26,488
Income tax after ITC ($26,750 - $26,488)		$ 262
ITC allocated to patrons ($50,000 - $26,488)		$23,512

level was to be passed through to patrons. ITC recapture remained the responsibility of the cooperative.

Past use of the investment tax credit is illustrated in table 5. Assume the cooperative made a qualified investment of $500,000 with an 8-year useful life in the 1985 tax year. The available ITC was $100,000 in taxable net savings and a $26,750 tax liability. The ITC could be used to offset the $25,000 in taxes plus 85 percent of the taxes over $25,000. A tax liability of $262 remained and $23,512 of ITC was passed through to the cooperative's patrons. If the cooperative sustained a net operating loss, the entire ITC was passed through to the cooperative's patrons that year. The ITC could not be carried back or forward at the cooperative level, but patrons could carry unused credits back or forward.

A potential tradeoff existed between the cooperative and its member/patrons concerning how to maximize the benefit of ITC use. If the cooperative projected sufficiently high tax liability, patrons would benefit if the cooperative fully utilized the credit. This would raise after-tax net savings and either increase the distribution of cooperative earnings to the patrons or stimulate cooperative growth (if retained). Alternatively, if patrons were expected to face a higher tax bracket than that of the cooperative, an allocation of ITC to the patron level would be a more desirable arrangement. A significant obstacle to implementing this strategy was the lack of information about the tax situation of patrons.

Summary of Lease-Related Federal Tax Law

The Federal income tax law related to leasing has been altered through a series of court cases, Internal Revenue Service rulings and procedures, and changes in the tax law itself. Most of these developments apply to lessees in general and are not specific to agricultural cooperatives. Appendix C contains a more detailed review of past tax legislation related to leasing.

Two major investment incentives altered the leasing strategies of many firms: accelerated depreciation deductions (1954), and the investment tax credit (1962). Tax guidelines were later liberalized with passage of the Economic Recovery Tax Act (ERTA) of 1981. ERTA established "safe harbor" leases as an investment incentive for firms unable to take advantage of the ITC and accelerated depreciation rules. While safe harbor lease rules stimulated leasing activity, the result was significant tax revenue losses to the Federal Government. Provisions of the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982 curbed the problem by gradually eliminating the safe harbor lease guidelines. Beginning with 1984, TEFRA created "finance leases" to replace safe harbor leases. The new finance lease provisions served as transitional rules by placing limits on leasing volume and reducing the tax benefits available to lessors. At the same time, liberalization of the rules related to limited-use property and fixed-price purchase options served as incentives to lessees.

The Tax Reform Act of 1984 instituted revised finance lease guidelines and postponed, until 1988, rules on finance leases for leases entered into after March 6, 1984. Most leases continue to fall under the pre-safe harbor (pre-ERTA) lease guidelines. The intent of the pre-ERTA guidelines was to ensure that the lessor retained some of the benefits, costs, and risks of ownership without providing the lessee an equity (ownership) interest in the leased item.

At this time, cooperative leasing transactions are covered under provisions of the Tax Reform Act of 1986 (TRA). The 1986 act generally repealed the statutes that imposed finance lease rules (those used to determine whether a transaction is a lease or a purchase, that is, conditional sales contract, for tax purposes) on contracts entered into after December 31, 1986. Under the 1984 act, these rules had been postponed until after 1987. Under the nonstatutory lease rules (which applied beginning in 1987), the courts and the IRS determine property ownership for tax purposes based on the "economic substance" of the transaction. Transitional rules enacted in 1984 continue to apply for selected contracts (Commerce Clearing House 1986). A major change in the 1986 Tax Reform Act was the repeal of the investment tax credit for property placed in service after December 31, 1985.

Lease Versus Purchase Decision

A financing alternative should be shown to be economically profitable and financially feasible to be clearly preferred. The profitability test suggests that the preferred financing option would be that minimizing the present cost (discounted, after-tax cash outflows) to the firm. Discounting the after-tax, net cash outflows associated with the lease and purchase alternatives using a common, after-tax discount rate places the two financing options on the same basis for direct comparison. It is argued here, and elsewhere (Van Horne 1983), that the appropriate discount rate to use is the cooperative's after-tax cost of debt because the firm is analyzing a financing alternative-whether to purchase or lease the asset.

The financial feasibility test involves the comparison of the two undiscounted, after-tax net cash outflow streams associated with the project financing alternatives be compared with the common cash inflow (revenue) stream of the project. The objective is to identify if and when cash flow deficits occur. In addition, the magnitude of the annual net cash flow surplus (deficit) is estimated. With this information, the investor may elect to accept or reject the project under either/or both financing arrangements. Financial feasibility becomes an important consideration whenever outside funds (debt or lease) are involved in a project.

The analysis of the lease or loan/purchase decision that follows concentrates on the profitability test aspect. A computerized capital budgeting model developed for this purpose is used to evaluate the sensitivity of the lease or purchase decision to changes in key financial variables. The model is briefly described, along with an actual cooperative leasing situation. Analysis of the case lease provides insight into the importance of conditions and terms that are favorable to leasing.

Capital Budgeting Model

Capital budgeting analysis involves a comparison of the net present cost (discounted, after-tax net cash expenses) of purchasing versus leasing. These alternatives are compared over a common holding period to incorporate all of the tax benefits generated by each financing option.[10]

The net present cost (NPC) of the purchase alternative is most compactly expressed by the accounting equation,

$$NPC\ (purchase) = D_0 + \sum_{m=1}^{M} \frac{D_m}{(1+r)^m} - t\left(\sum_{m=1}^{M} \frac{A_m + I_m}{(1+r)^m} - \frac{C_q}{(1+r)^q}\right)$$

The accounting equation states that the net present cost of purchasing is equal to the initial cash downpayment (D_0), plus the discounted sum of end-of-period (principal and interest) payments (D_m), minus the tax savings associated with the discounted sum of annual depreciation allowance (A_m) and interest expense (I_m) in each period m, minus the investment tax credit (C_q), if any, which is taken in period q (presumably period zero). By discounting each of these after-tax net cash flow items at the after-tax interest rate (r) on debt, and summing, the resulting NPC can be compared to other acquistion alternatives expressed on an after-tax present value basis with identical lengths of contract.

Similarly, the net present cost of the lease is

$$NPC\ (lease) = \sum_{n=0}^{N} \frac{LP_n}{(1+r)^n} + \frac{B_N}{(1+r)^N} - t\left(\sum_{n=0}^{N} \frac{LP_n}{(1+r)^n} + \sum_{m=N+1}^{M} \frac{A_m}{(1+r)^m}\right)$$

The net present cost of leasing is equal to the discounted sum of the periodic advance lease payments (LP_n), plus the cash purchase outlay at the end of the lease term (B_N), minus the tax savings associated with deductibility of the periodic lease payments (expressed as the tax rate times the sum of the discounted lease payments) and the sum of the discounted tax deductions associated with annual depreciation allowance (A_m) after purchasing the asset at lease termination (in period N). Under the lease alternative, the ITC (if available) is assumed to be retained by the lessor. Downpayments, rebates, and other cash expenses are not considered in the lease cash flow estimates.

Results of the capital budgeting computations are summarized in a set of estimates of the net advantage to leasing (NAL). The NAL is computed as the difference between the net present costs of the two financing alternatives.

$$NAL = NPC\ (purchase) - NPC\ (lease)$$

When the NAL estimate is positive, the lease will result in the lowest financing cost to the cooperative over the life of the lease." When the NAL is negative, the cooperative should purchase the asset, based on comparison of costs. The NAL tells nothing about the size of the alternative net costs, only the magnitude of the difference in those costs. As the NAL approaches zero, the dollar consequence (gain or loss) from choosing one financing alternative over another becomes smaller, and other factors become relatively more important considerations in the decision.

An alternative way of expressing the net advantage to leasing is by "annualizing" the NAL. This is done by amortizing the net present cost of each financing alternative and then subtracting the annualized net present cost of the lease from the annualized net present cost of the loan:

$$NALA = \frac{NPC\ (purchase)}{PVIFA\ (r,m)} - \frac{NPC\ (lease)}{PVIFA\ (r,n)}$$

Where NALA is the annualized net advantage to leasing, PVIFA is the present value interest factor for a discount rate of r, associated with either an m-year loan or an n-year lease. By annualizing the NPCs, loans and leases with different contract lengths can be directly compared.

The lease-versus-purchase model is used to generate the discounted cash flow of these two financing options under various terms to determine their

[10] Under the assumption that the leased asset is purchased at the end of the lease contract at a fair market price, there would be no differential in the after-tax cash flows at the end of the common holding period.

[11] It is important to remember that these NAL estimates pertain only to the cooperative and do not reflect the net value of ITC passed through to patrons.

separate present value costs. A 15-year plan is allowed, which makes the model applicable for machinery, equipment, and single-purpose structures (that is, 5-year property). Income tax liability is determined, and taxes are assumed to be paid quarterly. If leased, the capital item is assumed to be purchased when the lease expires under either a fixed-price purchase or a fair market value option (provided by the model user). Sales tax is assumed paid at the time of purchase, or in the case of a lease, the tax is capitalized into the periodic lease payments. In addition to information on the terms of the lease and loan, some financial information on the cooperative is required.

Loan repayment options in the model allow for various amortization schedules (fixed or declining total payments) on annual, semiannual, quarterly, or monthly terms. Interest rate charges may be computed on a fixed- or variable-rate basis. Purchased 3- or 5-year property is depreciated using either pre-1987 ACRS classlife percentages or the optional straight-line method. The election to expense in the first year is also available with reduction of ITC (when the ITC is assumed to exist). The choice of constant or declining periodic lease payments is an option within the model. Periodic lease payments can be scheduled in advance or in arrears. Finally, the model provides for sensitivity analysis on the after-tax cost of capital and the marginal ordinary income tax rate. Each cost of capital and tax rate combination is assumed to be constant over time.

Description and Analysis of a Cooperative Lease

A grain-handling cooperative located in a prime cash-grain-producing region of the Seventh Farm Credit District was selected for illustration of the lease versus purchase analysis. The cooperative elevator handles spring and winter wheat, durum wheat, flax, rye, barley, oats, corn, and sunflower seed. In addition, it supplies feed, dry and liquid fertilizers, seed, and other farm supplies. In 1984, 80 percent of total sales were generated through commodity handling. Total grain volume in 1984 was 6.7 million bushels, which represented a 114-percent net increase over 1980.

In 1985, the cooperative initiated a major expansion of its facilities with the construction of a 52-car unit train, grain storage and loading facility. The majority of the project was financed with debt in the form of a term loan through the St. Paul BC. But a significant amount was financed with a direct lease, also with the BC. The total cost of the unit train facility was about $2.75 million, of which $780,679 was leased. The equipment included in the lease contract is described in table 6. The lease was a 5-year contract with monthly payments due in advance. Monthly payments (including sales tax)

Table 6-Description of case lease expense items.

Item	Equipment Cost and Setup	Sales Tax	Total cost
Truck scales	$142,516	$3,465	**$145,981**
Legs, distributor, and spouts	328,718	6,911	335,629
Draw-off and loading systems	101,429	2,293	103,722
Manlift	22,585	$594	23,179
Rail receiving conveyor and grain sampler	28,195	804	28,999
Bulk weight system	62,962	1,792	64,754
Dust control system	77,029	1,386	78,415
Total	$763,434	$17,245	**$780,679**

were $14,304. A fixed-price purchase option of 20 percent of the original cost was available at the end of the 5 years.

The alternative to the lease was to purchase the capital items with additional term debt. The loan was scheduled for repayment using a constant principal and declining interest scheme. A 20-percent downpayment was required. The loan was for 5 years (60 monthly payments) at an 11.75 annual percentage rate of interest. If the cooperative were to purchase the machinery and equipment, 100 percent of the purchase price would serve as the tax basis and a 10 percent ITC option would be elected. Initially, the cooperative was assumed to be able to use just 50 percent of the ITC generated. Accelerated depreciation was assumed with no first-year expensing.

Strategy of Analysis

Sensitivity analysis is performed on (1) the cooperative's marginal tax rate, (2) the annual loan interest rate, (3) the cooperative's use of ITC, and (4) the annual lease rate. The analysis is performed for the 1985 situation (when the case lease was written) and a representative 1987 situation for the case lease. Results from these computations illustrate how the effects of adjustments in the initial values for these factors in a given situation (year) and the effects of adjustments between situations (years) alter the annualized net advantage to leasing. Table 7 summarizes the parameter adjustments that were made.

The 1985 *base* situation parameters describe the actual lease with two additional assumptions: a marginal tax rate of 25 percent, and an ITC use of 50 percent (with the other 50 percent of ITC passed through to member patrons). Alternatives were sequentially analyzed for projected high-tax-rate and low-tax-rate positions (alternatives 1 and 2), projected high-interest-rate and low-interest-rate conditions (alternatives 3 and 4), low and high lease rates (alternatives 5 and 6), and zero versus total use of available ITC (alternatives 7 and 8). In alternative 1, the 50-percent marginal tax rate is set to illustrate the top bracket and its effects on profitability. Prior to the 1986 Tax Reform Act, the top marginal rate was actually 46 percent plus a 5-percent surcharge for incomes of $1,000,000 to $1,405,000. The annual lease rate was set at a level consistent with the actual monthly lease payments and terms incurred by the cooperative under the case lease contract.

The 2987 *base* situation was developed to be consistent with the 1985 lease contract. [12] However, adjustments were made to reflect (1) the general decline in the level of interest rates on loans between 1985 and 1987, (2) changes in tax rates, and (3) the elimination of the ITC allowance. The base interest rate of 10.25 percent reflects the level of rates at the St. Paul Bank for Cooperatives in early 1987. The annual lease rate of 23.4 percent makes the additionai assumption that the lessor derives an implicit yield of about 10 percent. The increase in the annual lease rate from 22 percent to 23.4 percent is an estimate of the net increase in the lease rate that would occur from elimination of the ITC tax benefit to the lessor and slightly lower market interest rates in 1987 (compared with 1985). Since the capital budgeting results are sensitive to the yield level (and the corresponding lease rate), sensitivity analysis is performed at lease rates varying between 0.18 and 0.28.

[12] Revision of the accelerated depreciation percentages (to reflect changes made in the 1986 tax law) was not done in the 1987 analysis. As a result, the net present cost of purchasing in 1987 is slightly underestimated, but the difference is quite small.

Results of 1985 Analysis

Tax Rates (Alternatives 1 and 2). Capital budgeting results for various marginal tax rate levels projected in 1985 are shown in figure 6. The base line results indicate that the annualized net advantage to leasing was slightly negative (-$1,100 to -$3,918 per year) for all marginal tax rates analyzed. As the tax rate is increased, the annualized net advantage of the lease alternative becomes more negative, and leasing becomes less attractive (holding all other factors constant at 1985 baseline levels). This result reflects the increasing opportunity cost of forgone tax benefits of ownership, if the lease option is pursued. A higher marginal tax rate also reduces the after-tax discount rate in the analysis. A lower discount rate increases the present value of distant future cash outflows. This penalizes the lease due to the buyout payment at the end of the lease term.

Adjustments to the interest rate (from 11.75 percent to 8.75 and 13.75 percent) shift the baseline. A lower interest rate on the loan (holding the lease rate fixed) shifts the baseline down and favors the loan. As a result, the annualized net advantage to leasing becomes more negative at all tax rate levels. A rise in the loan interest rate, conversely, favors the fixed-rate lease and the base line shifts up. Interestingly,

Table 7-Situations and ranges of factors **for sensitivity analysis.**

Year and situation	Annual lease rate [1]	Cooperative marginal tax rate	Annual interest rate	ITC use [2]
1985				
Base situation	**0.22**	**0.25**	**0.1175**	**50**
Alternative situation:				
1	0.22	0.50	0.1175	50
2	0.22	0.15	0.1175	50
3	0.22	0.25	0.1575	50
4	0.22	0.25	0.0875	50
5	0.18	0.25	0.1175	50
6	0.28	0.25	0.1175	50
7	0.22	0.25	0.1175	0
8	0.22	0.25	0.1175	100
1987				
Base situation	**0.234**	**0.25**	**0.1025**	**0**
Alternativesituation:				
1	0.234	0.34	0.1025	0
2	0.234	0.15	0.1025	0
3	0.234	0.25	0.1375	0
4	0.234	0.25	0.0875	0

[1] In each instance, the fixed residual (buyout) price is $156,000 (or 20 percent of the purchase price).

[2] ITC use is expressed as a percentage of available ITC. In 1985 the 1 O-percent ITC option was used in each case to estimate the amount of ITC available. In 1987 the ITC was not available.

Figure 6 Annualized Net Present Values of the Advantage to Leasing at Alternative Levels of Marginal Tax Rates, 1985 Model.

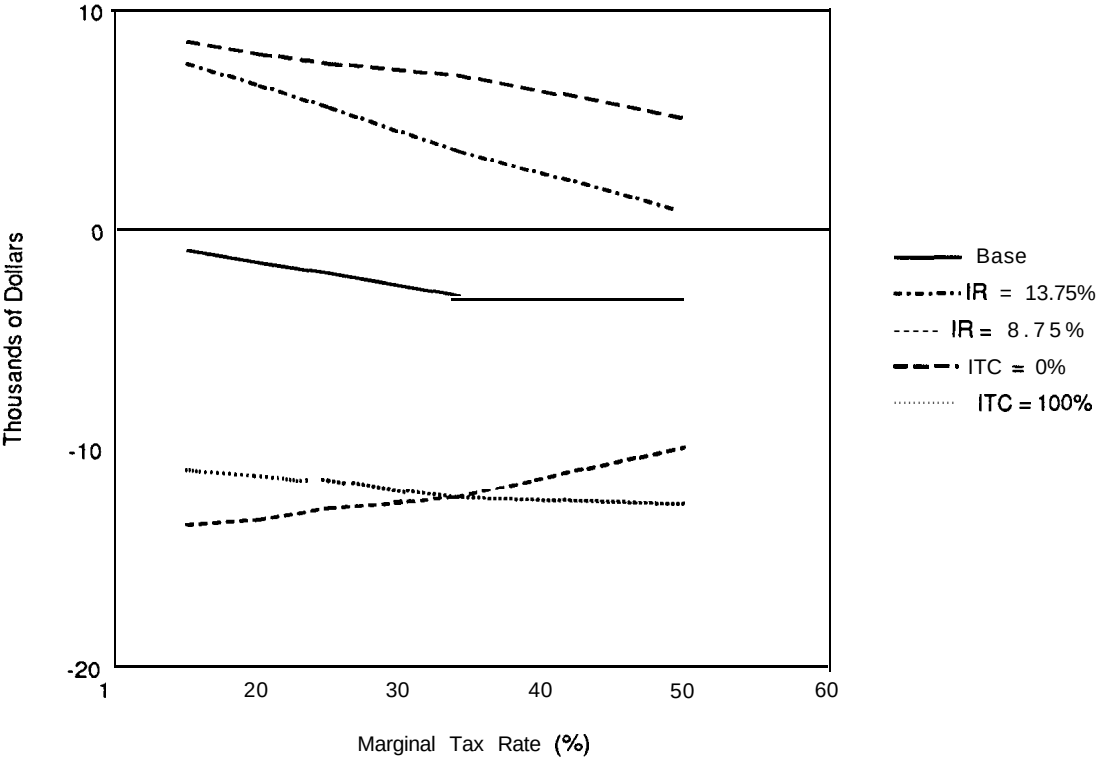
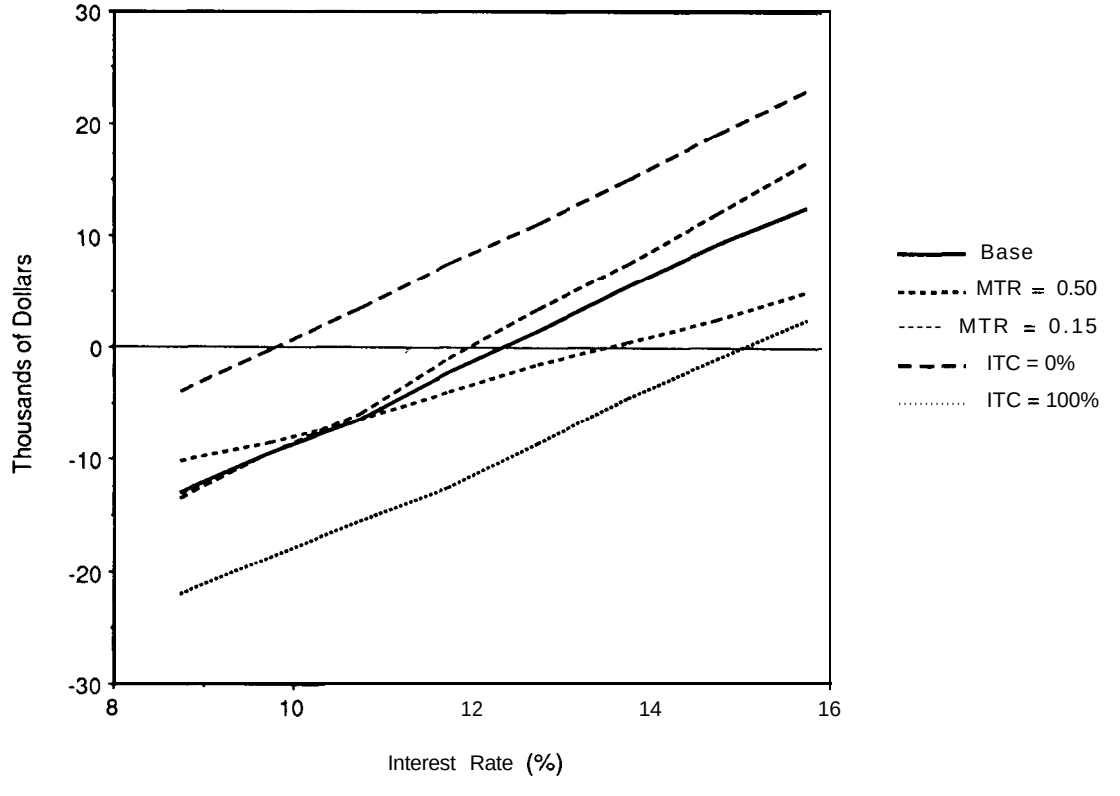


Figure 7 Annualized Net Present Values of the Advantage to Leasing at Alternative Levels of Iinterest Rates, 1985 Model.



the low- and high-interest rate lines move toward the base line as the projected marginal tax rate is raised. This is a reflection of the effects of raising tax rates, thereby decreasing the after-tax discount rate, and the role of discounting in computing relative profitability.

Changes in the percentage of ITC also shift the baseline. As ITC use increases from zero to 100 percent, the loan is favored and the net advantage to leasing becomes negative. For example, when the tax rate is 15 percent and ITC use is zero percent, the annualized net advantage to leasing is positive (between $5,000 and $10,000) and favors the lease option. An increase to 100-percent ITC shifts the line down between -$lO,OOO and -$15,000, and the loan is the more profitable choice. Intermediate levels of ITC use (between zero and 100 percent) at higher marginal tax rates have similar effects on the financing choice. Low levels of ITC tend to favor the lease financing alternative. The result is apparently quite sensitive to the ITC use assumption and could be considered a major factor in the purchase/lease decision of the cooperative in the 1985 model.

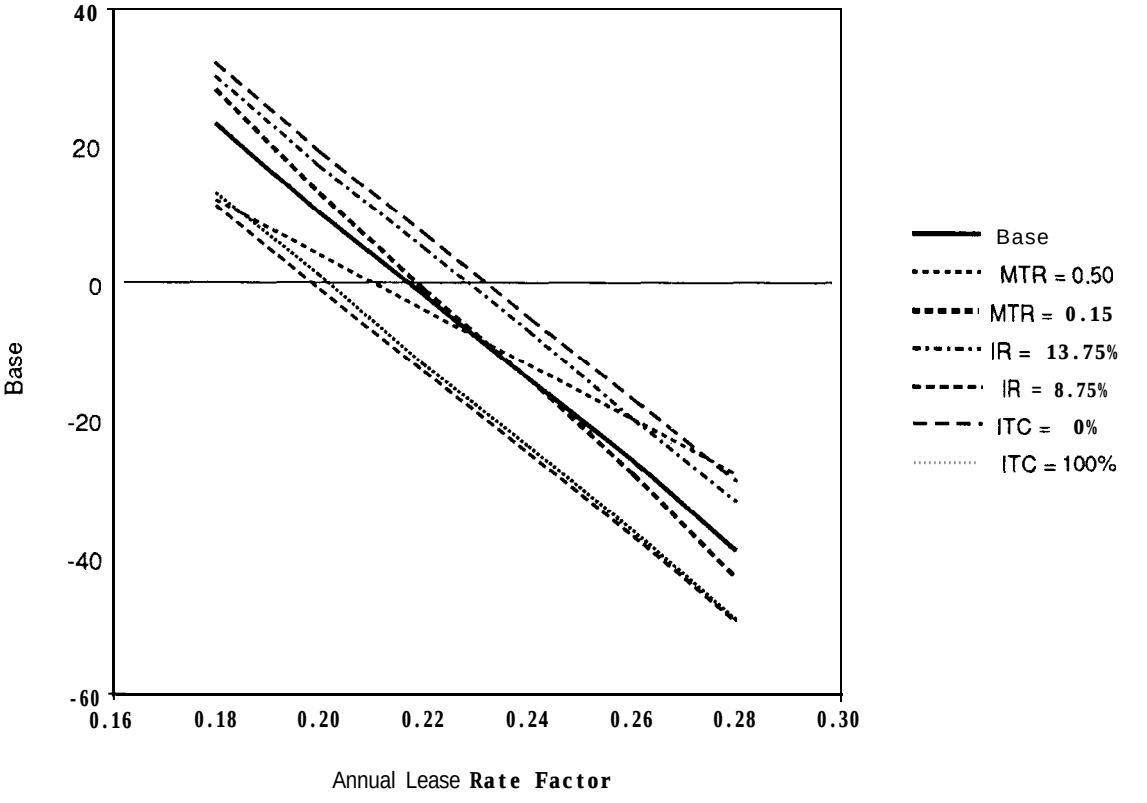
Given the combination of factors that prevailed in 1985, the cooperative's decision to lease the facilities appears to be supportable. The cooperative was, and continues to be, in a low tax bracket. A combination of low ITC use and relatively high projected interest rates, with the tax position that existed in 1985 yields a result that would appear to be close to (or above) the zero (horizontal) line.

Interest Rates (Alternatives 3 and 4). A similar sensitivity analysis of the interest rate variable is illustrated in figure 7. Generally, as the interest rate is increased, the leasing option is favored as the upward sloping lines indicate. The baseline situation crosses the interest rate axis between 11.75 and 12.75 percent. This indicates that when all other factors are projected at their 1985 base levels, the lease option will yield a lower cost financing result when the interest rate on debt is projected at levels exceeding 12 percent. When the ITC use level is increased to 100 percent, the interest rate at which the lease contract becomes competitive shifts up to about 15 percent (assuming a tax rate of 25 percent). This higher interest rate level is comparable to other published results, where the standard assumption has been loo-percent, immediate ITC use by the decisionmaker. [13]

Adjustments in the tax rate (in combination with interest rate level changes) result in modest shifts in the baseline. A higher tax rate (50 percent) rotates the line downward at high interest rates (those above 10 percent), and upward at low interest rates to the point where it crosses the horizontal (zero) line between 12.75 and 13.75 percent. The reduction of slope indicates that the tax deductibility of interest at high interest rates is an advantage to the purchase option and, therefore, the annualized net advantage to leasing is reduced. The small reduction in tax rate to 15 percent is not a significant adjustment to the base situation. Changes in the level of ITC use lead to roughly parallel shifts in the base line similar to those illustrated in figure 6.

[13] See, for example LaDue (1977, 1979) and Wickham and Boehlje (1986).

Figure 8 Annualized Net Present Values of the Advantage to Leasing at Alternative Levels of Annual Lease Rate Factors, 1985 Model.

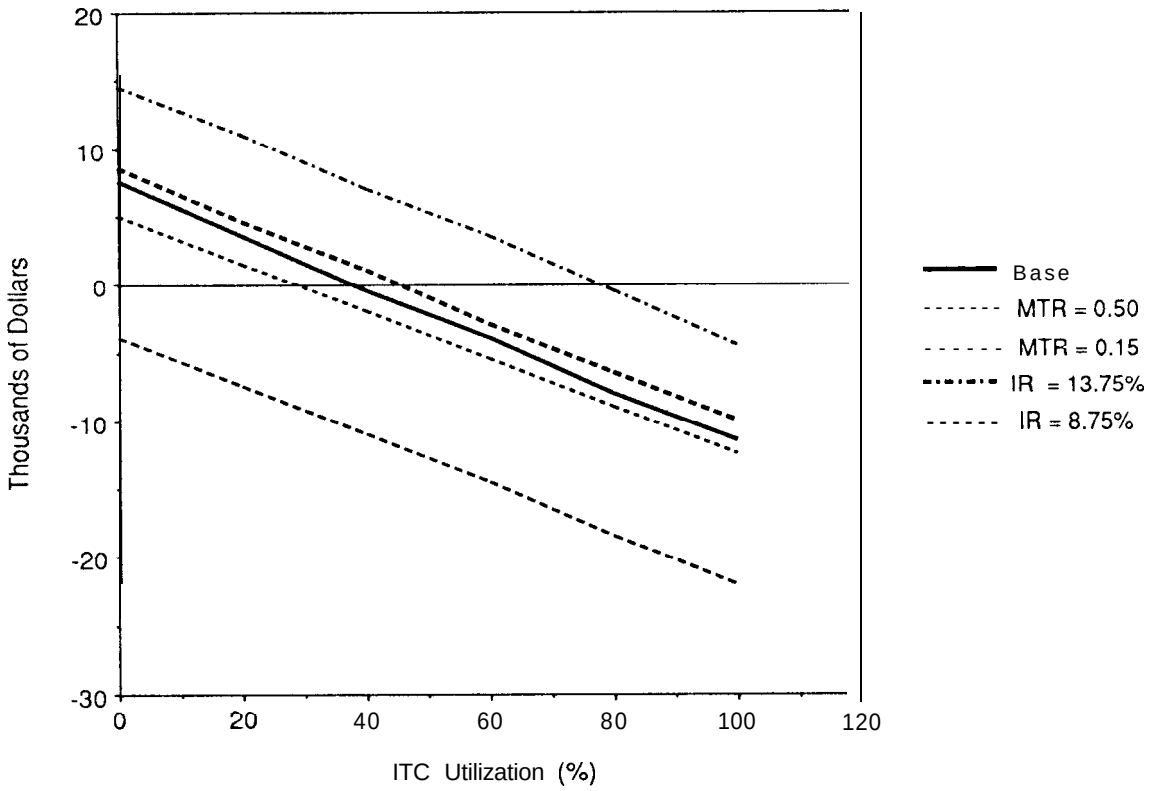


Lease Rates (Alternatives 5 and 6). Annual lease rates were adjusted from 18 to 28 percent, as illustrated in figure 8. As the lease rate is increased, the net advantage to leasing decreases. The baseline crosses over the horizontal (zero) line slightly under the 22-percent annual lease rate level. At lease rates below that level the lease generates an advantage to the cooperative.

Tax rate adjustments shift the baseline in a nonparallel fashion in figure 8. A higher tax rate rotates the baseline to a flatter position, and a lower tax rate rotates it to a slightly steeper position. The higher tax rate (at lease rates under 22 percent) reduces the net advantage to leasing for two reasons. The tax benefits of ownership take on additional value to the cooperative when it is in a high tax bracket. The second factor operating here is the reduction in the after-tax discount rate. A reduction in the discount rate increases the present value of the cash outflow at the end of the lease (the buyout) and makes the lease more expensive. When the lease rate is increased (in combination with the high tax rate), the advantage to leasing remains negative, but less negative than in the base situation. At high lease rates, the cooperative is able to claim a larger lease payment tax expense, so the cost of the lease is reduced slightly. Analogous explanations can be made for the observed shift to a flatter line when the tax rate is reduced to 15 percent.

Interest rate increases (decreases) result in upward (downward) shifts in the baseline in figure 8. Clearly, the higher the interest rate paid on a loan (while holding the lease rate constant), the greater is the present value advantage of the lease. To say it another way, as interest rates rise, lease rates can also be raised without affecting competitiveness. This is illustrated in figure 8 by the adjustment in the lease rates at which the low- and high-interest-rate lines cross over the horizontal (zero) line relative to the baseline.

Figure 9 Annualized Net Present Values of the Advantage to Leasing at Alternative Levels of Tax Investment, 1985 Model



Parallel shifts of the baseline occur when the ITC percentage is adjusted. The important point to note is that when the ITC is reduced from 50 percent to zero, the "crossover lease rate" shifts from just under 22 percent to about 23 percent. Similarly, a shift to 100-percent ITC results in a 20-percent lease rate at the point where the NAL is zero. This suggests that inability to use any of the ITC generated by a purchase would have an effect which is equivalent to a lease rate increase of about 3 percent (under the conditions assumed in this analysis).

investment Tax Credit (Alternatives 7 and 8). Figure 9 reflects the impact of changes in the level of ITC use in combination with tax rates and interest rates. The baseline situation indicates that leasing retained an advantage up to the level of 40 percent ITC use (ignoring benefits passed through to members). [14] Above that level of use, the cooperative would have found purchasing to be the lower cost alternative. Increases in the tax rate will shift the baseline downward, making the lease less attractive and more costly at ITC use rates above 30 percent. A reduction in the tax rate has just the opposite effect.

Unlike tax rate effects, interest rate increases (decreases) shift the baseline up (down) in a parallel fashion. As the projected interest rate is raised, the use of debt to finance the acquisition becomes relatively more expensive due to higher debt service. The interest rate increase illustrated in figure 9 shifts the crossover ITC level to nearly 80 percent when other factors are held constant.

Results of 1987 Analysis

Analysis of the 1987 purchase versus lease decision is reported here for comparison with the 1985 results. Sensitivity analysis is performed on the interest rate and lease rate variables in combination with 1986 changes in the tax law.

Interest Rates. The baseline interest rate assumption for 1987 is 10.25 percent. Results for the baseline and two alternative marginal tax rates (0.15 and 0.34) in combination with interest rates from 8.75 percent to 15.75 percent are illustrated in figure 10. This sensitivity analysis assumes that factors other than the interest rate on debt and the marginal tax rate are known at the time the lease-financing decision is made.

[14] The passthrough of tax benefits to patron members would tend to improve the overall profitability of the purchase option due to greater after-tax earnings when the cooperative and members are jointly considered. This issue is explored in greater detail in the whole-firm simulation in the next section of this report.

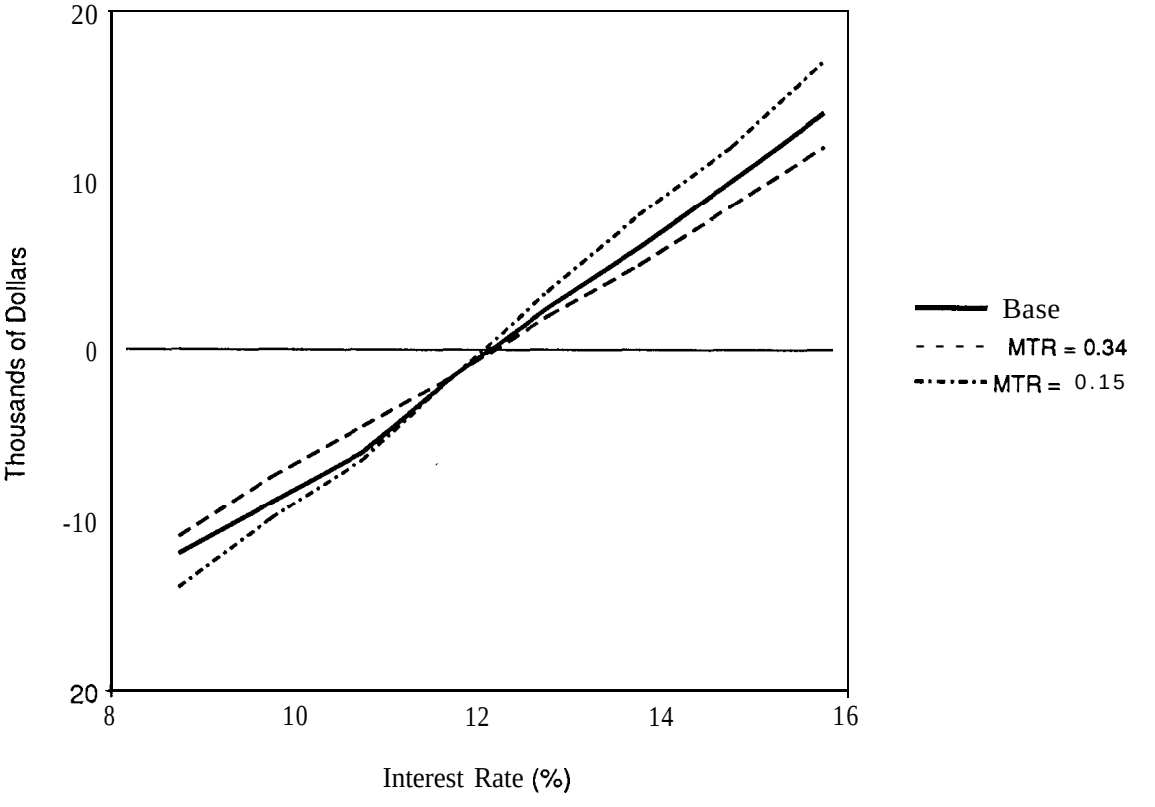
The 1987 baseline has about the same positive slope but is shifted upward slightly when compared to the 1985 baseline (shown in fig. 7). Two underlying factors cause the baseline to shift in favor of the lease alternative. First, elimination of the ITC allowance in the 1987 analysis increases the after-tax present cost of the purchase option, making the lease-financing option relatively less costly. Second, the annual lease rate factor is increased from 22 to 23.4 percent to reflect the loss of ITC benefits to the lessor and a lower lessor yield.

The lease rate factor is adjusted upward by an amount that is smaller than the change in the lessor's yield due to the loss of ITC alone. Loss of ITC (by itself) implies a 5-6-percent reduction in the lessor's yield. The small lease rate factor increase reflects an assumption that the lessor was willing to accept a slightly lower yield of 11.5 percent in 1987 (since all market rates had fallen). [15] The 1987 baseline crosses the horizontal (zero) line at about 12 percent, where the 1985 baseline crossed at a slightly higher rate. Expected interest rates below 12 percent in the baseline situation make debt financing the preferred financing option.

The 1986 tax law collapsed the marginal tax rate schedule from 0.15-0.46 to 0.15-0.34. As a result, the case lease becomes competitive in the 12-12.25-percent interest rate range in 1987 (fig. 10) compared

[15] In the 1985 analysis the lessor was assumed to generate a 12.5 percent yield based on advance monthly lease payments and full use of the ITC allowance.

Figure 10 Annualized Net Present Values of the Advantage to Leasing at Alternative Interest rates, 1987 Model.

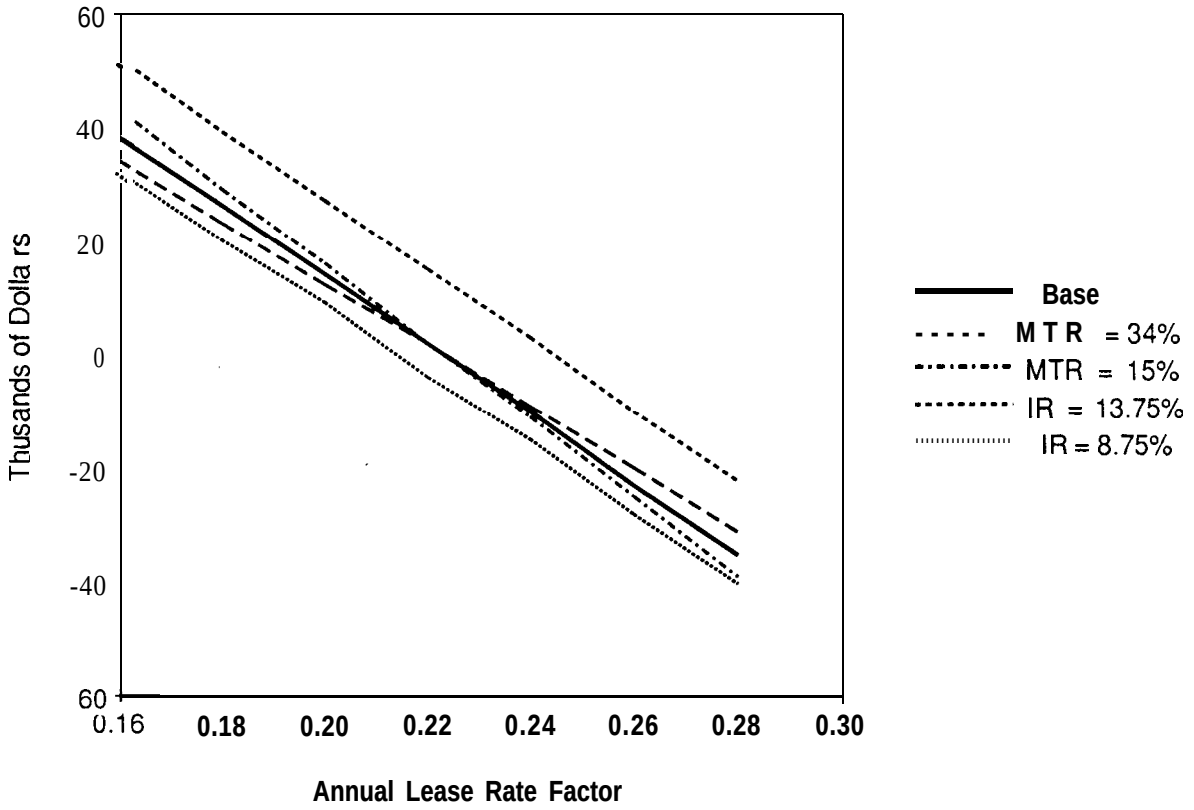


to the 12-13.5-percent range in 1985 (fig. 7). The general result of comparing 1985 and 1987 sensitivity with interest rate changes is that the financial lease option is still relatively more expensive than debt financing at typical borrowing rates faced by financially stronger cooperatives,

Lease Rates. Sensitivity of the purchase/lease decision to changes in the annual lease rate (in combination with different tax rates and interest rates) is illustrated in figure 11. A comparison of the 1987 baseline with the 1985 baseline (fig. 8) indicates that an upward shift occurs due to reductions in the underlying tax benefits of ownership and the interest rate on debt. The baseline lease rate at which the lease and purchase options yield equivalent levels of profitability shifts from under 0.22 in the 1985 model (fig. 8) to just over 0.22 in the 1987 model (fig. 11).

Sensitivity to interest rate changes indicates that interest rates of 13.75 percent are competitive with annual lease rates over 24 percent in 1987. Lease rates below that range favor the lease option when interest rates are held high. The corresponding lease rate is about 23 percent in 1985 (fig. 8). At the low end of the interest rate spectrum, an interest rate of 8.75 percent is competitive with a lease rate of about 21 percent in the 1987 analysis. The corresponding lease rate in the 1985 analysis is 20 percent.

Figure 11 Annualized Net Present Values of the Advantage to Leasing at Alternative Levels of Annual Lease Factors, 1987 Model.



Whole-Firm Lease Simulation Analysis

The preceding capital budgeting analysis is adequate as the basis for making a financing decision if the investing firm is the only entity involved. In a cooperative setting, there are multiple taxable entities-the cooperative and the patrons of the cooperative. In this situation, capital budgeting needs to be supplemented by additional analysis that considers the broader tax situation of the patrons. Secondly, capital budgeting is "project specific," since it considers the cash flows and profitability of the individual project in isolation. Comparison of the financing impacts of purchasing versus leasing on the cooperative can be supplemented through a whole-firm analysis that considers the alteration of cash and capital flows over time for the cooperative and its patrons.

This section employs a computer-simulation model of a cooperative firm (Beierlein and Schrader, 1978) to analyze the impact of lease financing. Simulation models are typically "learning" models in the sense that they require (1) a number of assumptions, and (2) an interpretation of the sensitivity of results to changes in those assumptions. The model used here is briefly described and then applied to the leasing situation. The simulation exercise looks at changes in the financial structure of the cooperative, interest rates, lease rates, tax rates, and selected aspects of cooperative financial management,

Description of the Simulation Model

The simulation model is illustrated in figure 12. The model is designed to compute cooperative cash flows and the after-tax present value of patron benefits associated with the use of alternative financing strategies. The cooperative and patron groups (members and nonmembers in various tax brackets) interact over a preset planning horizon.[16] The financing strategy is input to the simulator in terms of the initial mix of equity capital, term debt, and financial leasing.

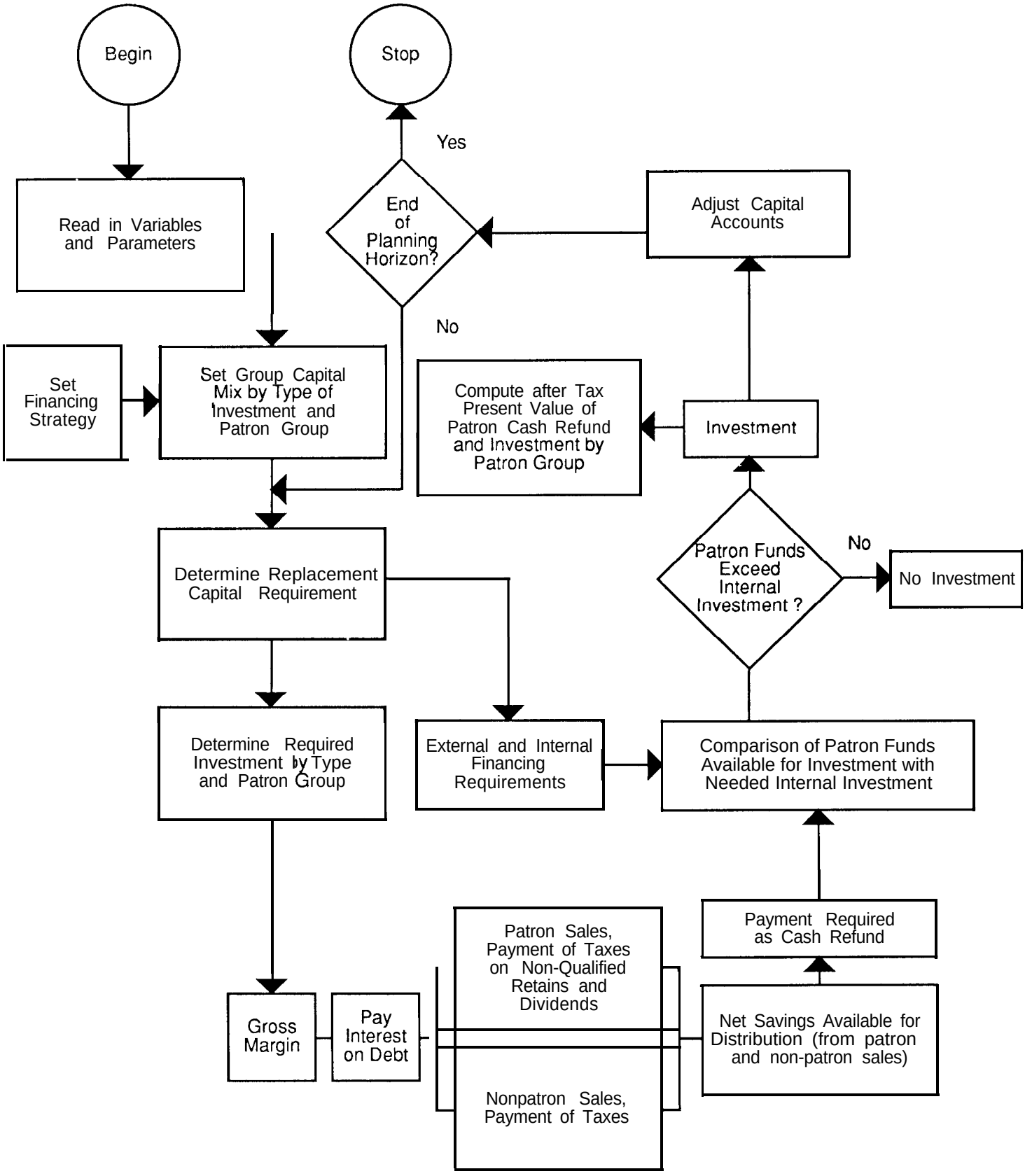
The model initially computes the annual amount of replacement capital required to retire capital (stock and revolving-fund equities), member-held debt, and nonmember-held debt. The model also computes new investment required due to growth in patron business. Total capital requirements are met according to the financing strategy through external financing (debt or lease) and internal financing (generated earnings). A comparison of patron funds available for investment with the required level of internal investment is used to determine if the plan is financially feasible. Here, patron funds available for investment is equal to the amount of patron funds after payment of taxes and interest, required cash payments, and allowances for dividends, retained savings, and nonqualified patronage refunds.[17] Assuming that the plan is feasible, the after-tax present value of patron cash refunds and patron investment in the cooperative are computed. The values of the cooperative's cash and capital accounts and the present value of patron benefits serve as the measures by which alternative financing strategies are compared.

Two versions of the simulator are used. One version corresponds to the 1985 tax environment (1985 model). The second version incorporates changes in the tax law made during 1986 (1987 model).

[16] Patrons are separated into two groups. The two patron groups differ according to growth of cooperative patronage, after-tax opportunity cost of capital, and marginal personal income tax rates.

[17] An investment plan is defined as financially infeasible if earnings (after payments of interest and taxes) net of the required cash refund to patrons is not sufficient to meet the internal financing requirements.

Figure 12 Schematic Representation of the Cooperative Financial Simulator (adapted from Beierlein and Schrader).



Simulation Strategy

The case lease (examined earlier using capital budgeting) is initially simulated in a baseline situation that incorporates several assumptions about the cooperative and its patrons. Table 8 contains assumptions of the 1985 model for the baseline situation with the lease and without the lease. The baseline model without the lease assumes that the asset is acquired with commercial debt financing. The buyout under the lease agreement is member-debt financed at the end of the fifth year.

Variables that are sequentially changed from their baseline model values are identified in table 9 for the 1985 and 1987 models. Those variables include the interest rate on member debt, marginal tax rates for patron groups, the lease rate percentage, the rate of

Table 8-l 985 baseline model assumptions.

Varlable	Base model with lease	Base model without lease
Number of patron groups	2	2
Planning horizon	6 yr	8 yr
Total invested capital	$7,800,000	$7,800,000
Rate of return on total invested capital	11%	1 1%
Sales from: Patron sources	80%	80%
Nonpatron sources	20%	20%
Interest rate on member debt [1]	1 1%	11%
Length of: Debt instrument	5 yr	5 yr
Revolving fund	10 yr	10 yr
Nonqualified refund	10 yr	10 yr
Dividend	0.5%	0.5%
New investment:		
Stock	0 %	0 %
Revolving fund	40%	40%
Nonqualified revolving fund	0%	0%
Unqualified retained savings	5%	5%
Member debt	10%	10%
Nonmember debt	35%	45%
Lease: Amount	$780,000	$0
Rate (annual)	22%	0%
Buyout	20%	0%
Patron group 1:		
Annual growth in sales	1%	1%
Proportion of total patronage	50%	50%
Marginal tax rate	0.15	0.15
Patron group 2:		
Annual growth in sales	1%	1%
Proportion of total patronage	50%	50%
Marginal tax rate	0.15	0.15

[1] The average interest rate on member debt serves as the before-tax discount rate for computing the present value of patron benefits. The before-tax cost of member debt is adjusted downward by the simulation model according to each patron group's assumed marginal tax rate to arrive at the appropriate after-tax discount rate for use in computing the present value of patron benefits.

return on assets, and the rate of growth in sales. Both the 1985 baseline model and all variations assume full use of the IO-percent investment tax credit.

The case lease is also simulated under 1987 conditions. Several variables carry the same values assumed in the 1985 baseline model. However, interest rates, lease rates, and the range of tax rates are systematically lower in the 1987 model. The 1987 baseline model and all variations assume the repeal of the investment tax credit.

Simulations are performed along two lines Sensitivitv analysis involves systematic adjustment of a single variable. Comparisons are made of the model results with those derived in the baseline situation and with results from previous simulations assuming other values of that single variable. Scenario analysis allows for a single variable, or sets of variables, to be sequentially adjusted over the 6 years of simulated time to reflect alternative patterns of change. Scenario analysis is in recognition that change variables under analysis tend to be interrelated and should be analyzed jointly. Results from scenario simulations are also compared with baseline model results and with other simulated scenarios.

Table 9—Change variables for the 1985 and 1987 simulation models.

	1985 model		1987 model	
Change Variable	**Baseline**	**Range**	**Baseline**	**Range**
		Percent		
Interest Rate on Member Debt	11	9-14	9	8-13
Patron Marginal Tax Rate	15	15-50	15	15-34
Annual Lease Rate Factor [1]	20	18-22	22	21-24
Rate of Return on Assets	11	8.5-l 1	9	6.5-9
Growth in Business Volume	1	-1-I	1	-1-I

[1] Baseline lease rate factors were computed based on annual lease payments made in advance and were set at levels about equivalent (on a pretax yield basis) to baseline interest rates on member debt. Due to annual payments in the simulation model (as opposed to monthly payments in the earlier capital budgeting analysis) the annual lease rate is 22 percent in the 1987 base simulation model (compared to the 23.4 percent rate in the 1987 base capital budgeting model).

1985 Model

Baseline simulation results reported in table 10 indicate that, generally, the cooperative's plan is financially feasible and profitable over the 6-year horizon either with the lease (Panel A) or without the lease (Panel B). A comparison of the two base models indicates that total patron benefits are greater without the lease ($1,382,500) than with the lease ($1,195,300). One difference between the two financing choices is that more member debt ($120,400) is retired and greater revolving fund disbursements ($160,800) are made under the lease situation.

The most significant difference is that more cash ($1,168,700) is paid out and $51,200 in ITC is passed through to patrons when the cooperative does not finance with the lease. Although the lease and debt alternatives both represent 5-year financing (this was done to eliminate maturity effects), cash refunds to patrons are quite evenly distributed during all 6 years when only debt financing is used. When leasing is employed, a sharp increase in both the total cash available for patron refunds and the distribution of cash occurs in the sixth year (the year after the asset is purchased from the lessor). Therefore, later timing of cash flows to patrons explains a major part of the lower present value of cash benefits in the lease financing situation.

A review of the base model undiscounted annual cash available amounts under the two financing options indicates that both alternatives result in cash flows sufficient to consider the additional investment financially feasible (that is, cooperative net cash flows are sufficient to meet the annual debt payments or lease payments). Although not reported in table 10, the lease option generates slightly higher cash available in the first three years. Conversely, the debt-financing option tends to generate somewhat higher levels of cash available in the fourth and fifth years.

Cooperative performance at the end of the fifth year (EOY5) reveals that greater cash is available without the lease ($426,100) than with the lease ($419,600) and net savings are higher by $13,800 ($384,000 versus $370,200). The higher fixed-expense coverage ratio without the lease (1.91) is consistent with the higher available cash position at EOY5.[18] Cash available with the lease at EOY6 (not reported in table 11) rises sharply to $578,500 (versus $434,000 without the lease) and the fixed-coverage ratio at EOY6 rises to 2.43 (versus 1.93 without the lease).

The cooperative's leverage position (debt/equity ratio) adjusts from 1.13 (at EOY1) to 0.86 (at EOY6) with the lease. The debt/equity ratio falls from 1.22 (EOY1) to 1.08 (EOY6) without the lease. Even though the lease obligation is included as a "debt" item in the leverage ratio, the cooperative makes all lease payments in advance. Therefore, the end-of-year leverage position is stronger with the lease.

Sensitivity Results. A reduction of the interest rate from 11 percent to 9 percent on member and nonmember debt improves financial performance measures for both the lease and debt alternatives (see Model A in table 10). In present value terms, dollar increases in member debt and revolving fund patron benefits are greater in the leasing situation. Increases in cash refunds are greater in the all-debt situation. As expected, the largest present value of total benefits accrues to patrons under the all-debt financing strategy. The percentage increases in present values are equivalent across financing choices.

Significant increases in available cash and net savings at EOY5 occurred under both financing situations. The largest dollar increases in these items occurred without the lease. The larger increase in the fixed expense coverage ratio without the lease is consistent with the observed larger earnings in the fifth year.

An increase in the interest rate on debt from 11 to 13 percent reduces financial performance (see Model B in table 10). The all-debt financing situation was more severely affected, as reflected by the $355,600 ($1,382,500 - $1,026,900) decrease in patron benefits from the baseline simulation result. The leasing situation generated a $309,000 ($1,195,300 - $886,300) decrease in total patron benefits when compared with the baseline simulation. Similarly, cooperative liquidity and profitability were reduced by larger dollar amounts under the all-debt situation, as evidenced by the cash available and net savings at EOY5. This is an initial demonstration that the impact of an interest rate increase (holding the lease

[18] The fixed-coverage ratio equals the gross margin on sales before taxes, interest, lease payments, and dividends by the value of fixed obligations (interests, dividends, and lease payments).

Table lo-1985 model simulation results.

Item	Units	Model [1]						
		Base	A	B	C	D	E	F
		Panel A (with lease):						
Patron beneflts:								
Member debt	$000	120.4	123.9	116.9	75.6	114.4	110.5	87.8
Revolving fund	$000	160.8	210.4	120.7	56.9	153.4	143.1	103.6
Cash refunds	$000	914.1	1,219.3	648.7	595.2	993.5	959.8	762.3
Total	$000	1,195.3	1,553.6	886.3	727.7	1,261.3	1,213.4	953.7
Cooperative performance: [2]								
Cash avail. @ EOY5	$000	419.6	489.5	349.4	419.6	437.1	365.6	180.5
Net savings @ EOY5	$000	370.2	434.5	312.7	370.2	387.2	328.8	163.6
Fixed coverage @ EOY5	ratio	1.76	2.01	1.56	1.76	1.82	1.60	1.31
Debt/equity @ EOY6	ratio	0.86	0.86	0.86	0.86	0.86	0.86	0.86
		Panel B (without lease):						
Patron benefits								
Member debt	$000	66.8	68.6	65.0	41.9	66.7	64.3	42.0
Revolving fund	$000	95.8	125.4	72.0	34.0	95.8	89.4	49.6
Cash refunds	$000	1,168.7	1,543.7	889.9	750.3	1,168.8	1,134.5	963.3
ITC	$000	51.2	44.3	63.0	51.2	51.2	44.3	43.0
Total	$000	1,382.5	1,782.0	1.026.9	877.4	1,382.5	1,332.5	1,097.9
Cooperative performance: [2]								
Cash avail. @ EOY5	$000	426.1	510.9	341.2	426.1	426.1	341.2	172.1
Net savings @ EOY5	$000	384.0	455.9	312.7	384.0	384.0	312.7	162.4
Fixed coverage @ EOY5	ratio	1.91	2.34	1.62	1.91	1.91	1.62	1.33
Debt/equity @ EOY6	ratio	1.08	1.08	1.08	1.08	1.08	1.08	1.08

[1] A: lower interest rate
B: higher interest rate
C: higher patron tax rate
D: lower lease rate
E: rising interest rate combined with a lower lease rate
F: rising interest rate and falling returns combined with a lower lease rate and no growth.

[2] Cash available, net savings, and fixed expense coverage measures are all at the end of the fifth year (EOY5). The debt/equity ratio is at end of the sixth year (EOY6).

Table 1 I-1987 Model Simulation results.

Item	Units	Model [1] Base	A	B	C	D	E	F	G
Panel A (with lease)									
Patron benefits:									
Member debt	$000	130.2	132.2	[2]	104.1	127.1	[4]	[4]	75.5
Revolving fund	$000	220.1	250.7		153.3	215.3			87.6
Cash refunds	$000	486.6	639.4		398.9	529.8			649.8
Total	$000	836.9	1,022.3		656.3	872.22			812.9
Cooperative performance: [3]									
Cash avail. @ EOY5	$000	295.4	330.8	[2]	295.4	304.1	[4]	[4]	178.1
Net savings @ EOY5	$000	263.9	297.4		263.9	272.6			165.3
Fixed coverage @ EOY5	ratio	1.59	1.71		1.59	1.62			1.31
Debt/equity @ EOY6	ratio	.86	.86		.86	.86			.86
Panel B (without lease)									
Patron benefits:									
Member debt	$000	68.6	69.6	[2]	54.8	68.6	65.2	[4]	20.8
Revolving fund	$000	125.4	142.7		87.4	125.4	102.6		15.8
Cash refunds	$000	927.2	1,103.3		750.0	927.2	695.1		1,014.6
Total	$000	1,121.2	1,315.6		892.2	1,121.2	862.9		1,051.2
Cooperative performance: [3]									
Cash avail. @ EOY5	$000	348.6	391.0	[2]	348.6	348.6	221.3	[4]	204.6
Net savings @ EOY5	$000	323.2	356.4		323.2	323.2	206.6		199.1
Fixed coverage @ EOY5	ratio	1.91	2.15		1.91	1.91	1.44		1.44
Debt/equity @ EOY6	ratio	1.08	1.08		1.08	1.08	1.08		1.08

[1] A: lower interest rate
B: higher interest rate
C: higher patron tax rate
D: lower lease rate
E: rising interest rate combined with a lower lease rate
F: rising interest rate and falling returns combined with a lower lease rate and no growth in business volume
G: rising interest rate and constant returns combined with a lower lease rate and declining business volume.

[2] Infeasible in period 1 (needed internal investment funds exceed patron funds available for investment).

[3] Cash available, net savings, and fixed expense coverage measures are all at the end of the fifth year (EOY5). The debt/equity ratio is at end of the sixth year (EOY6).

[4] Infeasible in period 5 (needed internal investment funds exceed patron funds available for investment).

rate fixed) results in benefits to the cooperative and its patrons when leasing is selected. [19]

The fixed expense coverage ratio decreases for both situations when the interest rate is increased, due to the higher annual interest expense. The decrease in the fixed coverage ratio is greater in the all-debt situation because of the higher level of debt involved.

An increase in patron marginal tax rates from 15 to 50 percent sharply reduces the present value of total patron benefits under both financing alternatives (see Model C in table 10). Tax rate increases produce two opposing effects-the higher tax rate results in a lower discount rate (and higher present values) and lower after-tax cash flows (and lower present values). Total patron benefits declined by $467,600 (39.1 percent) ($1,195,300 - $7~7,700) under the leasing option. Comparable total benefits decline by $505,100 ($1,382,500 - $877,400) (36.5 percent) in the all-debt situation. Cash refunds is the largest single patron benefit item to decline. The reduction in cash accounts for 82 percent of the decrease in total benefits in the all-debt situation and 68 percent in the lease situation. Cooperative financial performance measures are not directly affected by the increase in patron marginal tax rates.

An alternative specification of Model C was done to analyze the impact of placing patron group 1 in the 15-percent marginal tax bracket and patron group 2 in the 34-percent marginal tax bracket. The financial impacts (not reported in table 10) are that present values of total patron benefits are decreased from $1,195,300 (baseline simulation) to $1,071,000 with the lease, and from $1,382,500 (baseline) to $1,249,100 with the all-debt strategy. This result suggests that differential (as opposed to uniform) tax rates can be analyzed in a similar fashion. A cooperative could identify the "losers" and the "gainers" from selection of a leasing or debt-financing strategy.

The lease-financing option becomes more competitive with the debt-financing option when the annual lease rate is reduced from the initial 22 percent to 18 percent (see Model D in table 10). The present value of total patron benefits with the lease increases by nearly 12 percent (over the baseline result) to $1,261,300. Patron benefits in the all-debt situation are unchanged. The increase in benefits with the lease are attributable to an increase in cash refunds (from $834,300 in the base model to $993,500), which more than offsets the decrease in member debt and revolving fund benefits. Total patron benefits with the lease remain $121,200 less than total benefits without the lease when the lease rate is reduced. Cooperative performance (cash available and net savings) with the lease exceeds that without the lease when the lease rate is reduced. This simulation demonstrates that a competitive lease rate is a major factor in the determination of patron and cooperative financial incentives to lease.

Scenario Results. The first of two scenarios illustrates the impact of a rising interest rate (from 9 to 14 percent) and a constant annual lease rate of 18 percent. Results in Model E (table 10) indicate that the total patron benefits increased by about 8 percent (to $1,213,400) with the lease, and decreased by about 4 percent (to $1,332,500) without the lease. Member debt and revolving fund benefits fell slightly, and cash refunds increased significantly in the leasing situation when compared to the past simulation. All three categories of patron benefits declined when all debt was used. Results are qualitatively similar to those derived from the previous sensitivity analysis (Model B). However, with the leasing strategy, the combination of a rising interest rate and a constant lease rate improves total patron benefits and reduces the negative impacts of a rising interest rate on cooperative financial performance (cash available and net savings). Financial results for both the patrons and the cooperative deteriorate to a greater extent in the all-debt situation in this scenario.

The second scenario reflects a financially stressing combination of rising interest rates (from 9 to 14 percent) and a gradually declining rate of return on assets (from 11 percent in the first year to 8.5 percent in the sixth year). When combined with an 18-percent annual lease rate, this situation is expected to be favorable to the leasing option. Results reported in table 10 (Model F) confirm that the all-debt financing option deteriorated to a greater extent.

[19] The present value of patron benefits is influenced by an interest rate change in two ways-the effect on interest payments on debt and the effect of a higher discount rate. Both effects tend to reduce the present values of benefits, but the all-debt situation is influenced to a greater extent because of the larger debt on which interest must be paid.

When compared with the base simulation, total patron benefits with the lease fell by about 15 percent (a decrease of $174,900 in present value) versus a 21-percent decline in total patron benefits (a $284,600 decrease) in the all-debt situation. Cash refunds, member debt, and revolving fund distribution to members all declined by larger dollar and percentage amounts when all-debt is used to finance the cooperative.

Cooperative financial performance is also more stable with the lease, as reflected by a comparison of cash available and net savings generated in the fifth year with those items in the baseline simulation. Cash available, net savings, and the fixed-expense coverage ratio at EOY5 are all nearly equal in the debt and lease situations. These results tend to slightly favor the leasing option.

Table 12—Simulation of financial effects due to 1986 changes in the tax law.

		Patron tax rate = 0.15		Patron tax rate = 0.34	
item	Units	1985	1987	1985	1987
		Panel A (with lease)			
Patron benefits:					
Member debt	$000	120.3	126.3	[1]	101.6
Revolving fund	$000	160.8	168.1		105.2
Cash refunds	$000	914.2	828.8		680.5
Total	$000	1,195.3	1,123.2		887.3
Cooperative performance:					
Cash avail. @ EOY5	$000	420.6	402.1	[1]	402.1
Net savings @EOY5	$000	370.2	358.0		358.0
Fixed coverage @ EOY5	ratio	1.76	1.70		1.70
Debt/equity @ EOY6	ratio	0.86	0.86		0.86
		Panel B (without lease)			
Patron benefits:					
Member debt	$000	66.7	66.7	53.6	53.6
Revolving fund	$000	95.8	95.8	60.0	60.0
Cash refunds	$000	1,168.8	1,152.8	950.9	938.8
ITC	$000	51.2	0	51.2	0
Total	$000	1,382.5	1,315.3	1,115.7	1,052.4
Cooperative performance:					
Cash avail. @ EOY5	$000	426.1	426.1	426.1	426.1
Net savings @EOY5	$000	384.0	389.1	384.0	389.1
Fixed coverage @ EOY5	ratio	1.91	1.91	1.91	1.91
Debt/equity @ EOY6	ratio	1.08	1.08	1.08	1.08

[1] Infeasible in period 6 (needed internal investment funds exceed patron funds available for investment).

1987 Model

Simulation results for post-1986 conditions (1987 model) are reported in table 11. A lower interest rate (9 percent), a lower return on assets (9 percent), and a lease rate of 22 percent are assumed in the 1987 base model. [20] These changes reflect reductions in market rates and cooperative net margins that occurred between 1985 and 1987. In contrast to the 1985 simulation results, some of the simulations performed with the 1987 model were not financially feasible and could not be compared with the baseline model. Results of the 1987 baseline simulation are qualitatively similar to those found with the 1985 base model. The all-debt financing alternative generates greater total patron benefits ($1,121,200 versus $836,900 with leasing). Cash refunds to patrons is again larger in present value dollars with the use of debt only. Cooperative financial performance is also stronger without the lease.

Sensitivity Results. An interest rate increase (from 9 to 10 percent) results in an infeasible financial plan. Required internal investment funds (after applying funds from external debt sources) exceed investment funds available from patron sources. A l-percent increase in the interest rate on debt (holding the cooperative's rate of return on assets at 9 percent) causes the plan to become infeasible in the first year.

An increase in the patron marginal tax rate (Model C in table 11) from 15 to 34 percent (the highest marginal rate under the 1986 tax law) yields results which are qualitatively similar to those in the 1985 simulation. Patron benefits are reduced from baseline levels in both the all-debt (20.4 percent decrease) and lease (21.6 percent decrease) situations.

A reduction of the annual lease rate from 22 to 21 percent (Model D in table 11) makes the lease slightly more competitive. This is reflected by the higher levels of total patron benefits, cooperative cash available, and net savings. The availability of a lower lease rate in the post-1986 situation would be possible if it were the net result of a lower lessor yield objective.

[20] The base model lease rate reflects an annual lease payment in advance. Due to the use of annual rates in the simulation model, as opposed to monthly payments in the capital budgeting model, the annual lease rate is initially 22 percent in the 1987 simulation.

Scenario Results. The combination of a rising interest rate (from 8 percent in the first year to 13 percent in the sixth year) and a constant lease rate of 21 percent results in an infeasible financial plan in period 5 with the lease. The debt-financing strategy is feasible, however, even though interest rates on debt are allowed to increase.

A scenario of rising interest rates (from 8 to 13 percent), a falling return on assets (from 9 to 6.5 percent), constant business volume, and an annual lease rate of 21 percent results in a financially infeasible plan for both financing alternatives (Model F). The cooperative's financial plan becomes infeasible in the fifth year of the simulation. The erosion of earnings becomes too great by EOY5 to fund the required investment in assets and meet other cash requirements (debt service and retirement, dividends, etc.).

A revision of the pessimistic scenario in model F is feasible, Model G maintains a constant g-percent return on assets, but allows patron and nonpatron business volume to decrease by 1 percent per year. This scenario results in lower total patron benefits with the lease strategy ($812,900) and lower patron benefits with the all-debt strategy ($1,051,200) when compared with the base simulation. Although member debt and revolving fund distributions fall sharply with the lease, patron cash refunds dramatically increase to $649,800 (nearly a 34-percent increase over the base result). The 6-percent decrease in patron benefits with the all-debt strategy is primarily due to the sharp decrease in member debt and revolving fund benefits. Cooperative financial performance is stronger with the lease. Cash available at EOY5 is $178,100 with the lease and $204,600 without the lease. Net savings with the lease ($165,300) are lower than net savings generated with the all-debt strategy ($199,100).

Simulation of Tax Law Change Effects

The significance of changes in the Federal tax code that were made in 1986 (as they relate to the lease versus debt financing decision) can be directly considered with the aid of the simulation model. Table 12 contains results for the case cooperative using the 1985 and 1987 models and inputs identical to the 1985 base model. The two tax aspects under

investigation are the revision of the corporate tax rate schedule and the elimination of the investment tax credit. The marginal tax rate of patrons is set at 15 percent, then at 34 percent, to identify the magnitude of the effects on patron benefits.

The three financial measures influenced by the change in tax law are: (1) cash refunds to patrons, (2) investment tax credit passed through to patrons, and (3) cooperative net savings (after tax).

The impact on cash refunds to patrons is the most complex. Cash refunds to patrons equals the sum of required cash distributions and additional cash (cash patronage refunds in excess of the required cash refund). Required cash refunds is equal to 20 percent of net savings available for distribution from patron business (after deduction of taxes and payment of dividends and unallocated retained savings). The additional cash refund is equal to the difference between patron funds available for investment (after payment of taxes, investment, required cash refunds, dividends, and retained savings) and the amount of needed internal investment in the period.

Invcstmcnt tax credit has direct and indirect component effects. The indirect component arises through cooperative utilization of ITC generated in a given year. Utilization of the ITC increases patron funds available for investment and net savings available for distribution to patrons. The direct impact is attributable to the passthrough of ITC to patrons. A "passthrough" occurs when the ITC generated by the cooperative in a single year exceeds its tax liability. The excess ITC is assumed to be allocated to patrons on the basis of patronage.

The net financial impacts of the tax change items are reported in table 12. When the patron marginal tax rate is 15 percent, total patron benefits decline by about 6 percent with the leasing strategy (from $1,195,300 in the 1985 model to $1,123,200 in the 1987 model). The decline in patron benefits with the lease is primarily due to lower present value of cash refunds. Cooperative net savings at EOY5 with the lease decreases slightly (from $370,200 to $358,000). A larger increase in net savings occurs at EOY6 (from $517,300 in 1985 to $528,900 in 1987) with the lease. The increase in net savings is primarily due to the revised cooperative tax rate schedule.

The impacts on the cooperative and patrons are qualitatively similar in the all-debt situation. Total patron benefits decrease by 4.9 percent (from $1,382,500 to $1,315,300). The decrease in benefits is caused by (1) a reduction in present value of cash refunds (from $1,168,800 to $1,152,800), and (2) the elimination of the ITC and reduction of the passthrough from $51,200 (which occurred during the first year in the 1985 model) to zero (in the 1987 model). The larger decrease in patron cash refunds with all-debt financing is attributable to the combined effect of higher cooperative earnings and greater utilization of ITC in the 1985 model. The increase in after-tax net savings at EOY5 with all-debt financing is nearly identical to the savings generated with the lease. The EOY6 net savings improvement with debt financing is smaller (it rose from $391,800 to $397,000) than the $11,600 increase with lease financing.

The cooperative's financial plan becomes infeasible in period 6 with the lease when the marginal tax rate of patrons is raised to 34 percent throughout the simulation period (table 12).[21] The debt-financing strategy is feasible, however, and total patron benefits decrease from $1,115,700 to $1,052,400.

This analysis of the financial impacts of tax law changes on the lease versus debt-financing alternatives is only a partial analysis. Obviously, factors such as interest rates, lease rates, and cooperative assets and debt management strategies were changing at the time the 1986 tax law was being formulated. Several of those corresponding changes could be evaluated by establishing additional scenarios similar to those reported in tables 10 and 11.

[21] Patron business earnings that are taxable include the proportion of dividends not charged to nonpatronage business and unallocated retained savings not paid from patronage earnings, and the amount of nonqualified patronage refund retained. Since these are after-tax values, the model requires the cooperative to retain more than a dollar out of gross margin to meet both the tax liability and the amount of dollar capital needs. The higher patron tax rate pushes the required level of cooperative earning to be retained above feasible level in period 6.

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Appendix A: Glossary of Leasing Terms

Annual Percentage Rate:	An interest rate that expresses the "true cost" of credit as an annual rate.
Broker:	A company or person arranging lease transactions between lessees and lessors for a fee.
Certificate of Acceptance:	A document whereby the lessee acknowledges that the equipment to be leased has been delivered, is acceptable, and has been manufactured or constructed in accordance with specifications.
Closed End Lease:	A category of lease under which the lessee does not participate in gain or loss on sale at the end of the lease term; a "walkaway lease." The full risk of residual value loss rests with the lessor.
Conditional Sale Lease:	A lease in form but a conditional sale in substance. A conditional sale is a transaction where the holder of an asset, the lessee, is treated as the owner of the asset for tax purposes. The lessee or user treats the property as owned, depreciates the property for the purposes, claims ITC, and deducts the interest portion of rent for tax purposes. The lessor treats the transaction as a loan and will not offer the lower lease rate associated with a true lease since tax benefits of ownership are not retained.
Debt-Financing:	Acquisition of an asset through use of borrowed capital.
Economic Life:	The time period over which an asset is expected to be usable, with normal repairs and maintenance.
Fair Market Value:	A form of residual asset value determined in an open, competitive market transaction between a willing buyer and a willing seller at the end of the lease term.
Finance Lease (Direct Lease, Capital Lease):	A long-term noncancelable contract giving the lessee use of an asset in exchange for a series of lease payments to the lessor. The lessee acquires the right to use the asset while the lessor retains ownership of the asset. The term of a financial lease usually covers a major portion of the economic life of the asset. The lease is a substitute for purchase.
Financing Statement:	A notice of a security interest in an asset filed under the Uniform Commercial Code.
Full-Payout Lease:	A lease in which the sum of the lease rental payments alone (excluding purchase at the end of the lease term) pay the lessor sufficiently to cover the full costs of the leased asset (including the lessor's cost of financing and overhead) and provide a satisfactory rate of return to the lessor.
Hell-or-High-Water Clause:	A lease clause that reiterates the lessee's unconditional obligation to make lease payments for the entire term of the lease, regardless of any event affecting the equipment or any change in the circumstance of a lessee.

Implicit Lease Rate:	The "implicit rate" is a frequently quoted rate of return earned by the lessor. It is calculated based on lessor returns from the scheduled lease payments and the unguaranteed residual amount. It is the rate that equates the present value of these inflows to the fair market value of the lease at its inception.
Lease Rate Factor:	The decimal rate applied to the leased equipment initial cost to arrive at the periodic lease payment.
Lease:	A contractual agreement that conveys the right to use an asset for a predetermined length of time in return for a fee.
Lessee:	A person or company acquiring the use of an asset through a lease agreement.
Lessor:	The actual owner of an asset: the person or company with an asset to lease.
Leveraged Lease:	A contract involving at least three parties: the lessee, the lessor, and the long-term lender. From the lessee's standpoint, there is no difference between a leveraged lease and any other type of lease. The lessor holds title to the asset, but its acquisition is financed partly by the lessor and partly by the lender. The lessor provides a percentage (usually 20-40 percent) of necessary capital, with the lender providing the remainder as nonrecourse debt financing. The lessor, rather than the lessee, is the borrower.
Master Lease Agreement:	The basic documentation that allows the addition of equipment under the same basic terms and conditions without negotiating a new lease contract.
Net Lease:	A lease under which the lessee is obligated to pay several cost items (e.g., sales tax, property tax, insurance premiums, maintenance and repair, licenses, registration, etc.) in addition to the basic lease payments.
Nonrccoursc Lender:	The lender in a leveraged lease. If the lessee defaults on the lease, the lender in a nonrecourse loan has no recourse against the borrower (i.e., the lessor). The lender looks solely to the lessee and the strength of the lessee's credit in making the loan decision.
Open-End Lease:	A net lease, where title to the asset passes to the lessee after exercising a purchase option or payment of a guaranteed residual price. Frequently, these leases are structured on a full-payout basis (lessor recovers all costs plus anacceptable rate of return). Part of the residual value risk is passed to the lessee. Ownership potential is "open" to the lessee.
Operating Lease:	A short-term contract giving the lessee use of an asset for a period of time substantially less than its economic life. Operating leases are used to meet seasonal or cyclical needs of the lessee when purchase of the asset is not a viable alternative.
Purchase Option:	A written agreement in the lease contract stating that at the end of the lease term, the lessee has the option of buying the leased asset. A bargain purchase option is one that allows the lessee to purchase the asset at the end of the lease period for a price that is significantly below the expected fair market value.

Renewal Option:	An option to renew the lease at the end of the initial lease term.
Residual Value:	The remaining value of leased equipment or machinery when the lease expires. The actual residual value is the price the lessor could obtain by disposing of the equipment when the lease expires.
Sale-Leaseback:	A arrangement through which the owner of an asset (usually a structure or expensive machinery or equipment item) sells it to a second party and simultaneously agrees to lease it back from the purchaser.
Severance Agreement:	An agreement whereby landowners, land contract holders, or mortgage holders release any rights of claim against, or possession to, the leased property, and agree that the leased property shall remain severed from the land on which it is located.
Sublease:	A transaction in which leased property is released by the original lessee to a third party. The lease agreement between the two original parties remains in effect.
Tax Indemnification Clause:	A lease contract clause whereby the lessee indemnifies (insures) the lessor from loss of tax benefits, if the lease unwinds.
Tax-Oriented Lease:	A transaction where the lessor takes into account the investment tax credit and depreciation when determining the lease rate.
Terminal Rental Adjustment Clause:	A provision in a motor vehicle rental agreement that permits the lessor to make an upward (or downward) adjustment of the rental payment at the end of the lease to make up the difference between the projected value and the actual value of the vehicle at the termination of the agreement. This results in an open-end lease.
True Lease:	An agreement qualifying as a lease for tax purposes by Internal Revenue Service standards. A true lease qualifies for such tax benefits as deductible lease payments, depreciation, and investment tax credit. The lessor holds the title and assumes the risks of ownership.
Wash Lease:	A lease under which transfer of tax benefits from the owner-user to an investor is arranged. This is a "hybrid" leveraged lease, sale-leaseback arrangement through which the lessor (investor) is considered the owner for tax purposes, but the lessee (user) is the legal owner. The owner-user provides his own financing by extending nonre course debt (leverage) to the lessor (investor). The lessor acts as if he had purchased the asset from the lcsscc (sale-leascback). Lease payments to the lessor exactly equal (wash out) loan payments to the lessee.

Appendix B: Sample Lease Agreements Representative of Lease Arrangements

Farm Credit Leasing Services Corporation

10 Second Street N.E.
Minneapolis. Minnesota 55413
(612) 376-1733

LESSEE: Name and Billing Address

VENDOR: Name and Billing Address

ESTIMATED IN SERVICE DATE:

Quantity	Model No.	Equipment Description	Unit Cost	TOTAL COST TO LESSOR
		SAMPLE		EQUIP. COST FREIGHT LABOR TAX TOTAL COST

INSTALLATION ADDRESS: _____
Street end Number City County State

Lease Rate Factor	Rental Amount	No. of Payments	Rental Payment Periods	Security Deposit	Residual Amount	Lease Term	Commencement Date

APPLICATION AGREEMENT

1. This Application is made bv the above named Lessee ("Lessee") to enter into alease with Farm Credit Leasing ServicesCorporation("Lessor") of the equipment described above("Equipment"). LESSEE CONFIRMS THAT THE EOUIPMENT AND THE ABOVE NAMED VENDOR ("VENDOR") HAVE BEEN SELECTED BY LESSEE. LESSOR DOES NOT HAVE ANY RESPONSIBILITY FOR THE EQUIPMENT AND MAKES NO REPRESENTATIONS OR WARRANTIES AS TO THE EQUIPMENT'S CONDITION. MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE OR THAT IT IS SUITABLE FOR LESSEE. NONE OF THE PROVISIONS OF THIS APPLICATION AGREEMENT OR OF ANY LEASE AGREEMENT CAN BE CHANGED BY THE VENDOR OR MANUFACTURER OR THEIR REPRESENTATIONS. ANY ORAL REPRESENTATIVES OR PROMISES BY ANYONE ARE NOT ENFORCEABLE AGAINST LESSOR. LESSEE WAIVES ALL CLAIMS AGAINST LESSOR ARISING OUT OF THE DESIGN. MANUFACTURE. ACQUISITION. USE, POSSESSION. CONDITION OR DISPOSITION OF THE EOUIPMENT. INCLUDING CLAIMS THAT THE EQUIPMENT IS NOT SUITABLE FOR LESSEE'S PURPOSES, IS NOT MERCHANTABLE. OR IS IN ANY WAY DEFECTIVE. INADEQUATE, UNSAFE OR UNUSABLE.

2. THE LEASE WILL BE A NET LEASE. Lessee will be required to pay all costs of maintaining end repairing the Equipment and all costs. fees and taxes relating to the use or possession of the Equipment. THE LEASE AGREEMENT WILL BE NON-CANCELLABLE. All rent will be payable to Lessor whether or not the Equipment is destroyed or fails to perform as expected. Any claims of any kind relating to Equipment must be made against the Vendor or manufacturer of such Equipment.

3. LESSEE REPRESENTS AND AGREES THAT:

(a) Lessee has not relied upon Lessor to select the Equipment or the Vendor of the Equipment end will use the Equipment solely for business or farming purposes.

(b) Lessee will indemnify Lessor against any claims by third parties against Lessor arising out of the design, manufacture, purchase. lease. use, possession. operation or condition of the Equipment.

(c) The Vendor, its salesmen and agents. are not authorized to mske any promises. claims, or representations for or on behalf of Lessor or to waive or change any terms or provisions of this Application, the Lease Agreement or any schedule or attachment thereto.

(d) Unless otherwise stated on the reverse side of this Application. Lessee's principal place of business is the "Billing Address" specified above. The Equipment will be kept at the "Installation Address" specified above and will not be moved without Lessor's prior written approval.

(e) Lessee has reviewed and hereby accept8 the terms of the Lease Agreement.

4. This Application does not obligate Lessor. Lessor mey reject this Application for any or no reason without obligation to Lessee. Upon acceptance of this Application by Lessor and the execution of aLease Agreement by Lessor end Lessee, the Lease Agreement shall become the enforceable agreement between Lessor and Lessee. Notwithstanding Lessor's acceptance of this Application, Lessor may terminate such acceptance end have no further obligation to lease the Equipment to Lessee it any of the following events occur:

(a) The Equipment is not available for service within 30 days of the "Estimated In Service Date" noted above.

(b) If Lessee fails to accept the Equipment meeting specifications contained in any purchase agreement between Lessee and Vendor.

(c) Acceptance/or deposit by Lessor of any advance payments, deposits or other funds provided by or on behalf of Lessee does not constitute acceptance of the Lease Agreement by Lessor.

6. Lessee grants permission to Lessor to obtain from any source any information relating to Lessee's credit standing. including but not limited to the Lessee's operating lender, trade suppliers, real estate lenders, installment creditors. end others with whom the Lessee does business. The Lessee expressly authorizes these sources to divulge any information that the Lessor may reasonably require including exact figures and dates. Lessee agrees to supply to Lessor (without charge) such financial statements and other information as may reasonably be requested and warrants the accuracy of the information on the reverse side of this Application and the information submitted to Lessor bv Lessee in connection with this Application.

FOR LESSOR INTERNAL USE ONLY

DATE RECEIVED _____

REVIEWED BY: _____ DATE

ACTION TAKEN: _____

LESSEE CONTACTED: _____ DATE
Phone/Letter

VENDOR CONTACTED: _____ DATE
Phone/Letter

PRINT LESSEE'S FULL NAME

_____ Title _____ Date _____

_____ Title _____ Date _____

_____ Title _____ Dste _____

_____ Title _____ Date _____

Farm Credit Leasing Services Corporation

10 Second Street N.E.
Minneapolis, Minnesota 55413
(612) 376-1733

LESSEE: Name and Billing Address

SAMPLE

VENDOR: Name and Billing Address

1

ACCOUNT NUMBER:

LESSOR UNIT NUMBER

Quantity	Model No.	Equipment Description	Unit Cost	TOTAL COST TO LESSOR
				EQUIPMENT COST
				FREIGHT
				LABOR
				TAX
				TOTAL COST

INSTALLATION ADDRESS: Street and Number | City | County | State

Lease Rate Factor	Rental Amount	No. of Payments	Rental Payment Periods	Security Deposit	Residual Amount	Lease Term	Commencement Date

LEASE AGREEMENT

THIS LEASE is made as of this _____ day of _____, 19____ between FARM CREDIT LEASING SERVICES CORPORATION, a corporation organized under the Farm Credit Act of 1971. as amended ("Lessor") and the above named lessee ('Lessee").

1. Leasing. Lessor hereby rents and leases to Lessee and Lessee hereby rents and leases from Lessor the equipment described above subject to terms and conditions contained herein.

2. Equipment. The equipment leased hereunder (hereinafter referred to as "Equipment") is described above and/or shall be described in schedules attached hereto and incorporated herein.

3. Term, Rental and Deposit. The Lease term shall be as set forth above and shall commence on the Commencement Date above described. All rental amounts described above shall be due and payable to Lessor in accordance with the Rental Payment Periods noted above at Lessor's address designated herein or at such other place(s) as Lessor may direct in writing. Upon the written request of Lessor, Lessee agrees lo make a security deposit in an amount equal lo the Security Deposit specified above The Security Deposit, if any, may be used at the Lessor's election to cure any default of Lessee. Lessee shall promptly restore the Security Deposit lo lull amount specified. If Lessee has fulfilled all terms and conditions herein, the Security Deposit shall be returned without interest or it may be applied lo any purchase option exercised by Lessee.

4. Location end Use of Equipment.

4.1 The Equipment leased hereunder shall at all limes be located at the address indicated above. The Equipment shall not be removed from such location without the prior written consent of Lessor.

4.2 Lessee will not use, operate, maintain or keep any Equipment leased hereunder improperly, carelessly or in violation of any laws or regulations relating to the possession, use or maintenance thereof. or in a manner or for a use other than contemplated by the manufacturer thereof as indicated by the instructions furnished therewith. Lessee at its own expense will keep and maintain the Equipment in good condition and working order, paying when due all costs and expenses of every character occasioned by or arising out of the use and maintenance of the Equipment. Insignia. tags, decals or other identification furnished by Lessor will be maintained on the Equipment and will not be removed by Lessee. Lessor may Inspect any Equipment at any reasonable time.

5. Indemnity, Insurance.

5.1 Lessee assumes all responsibility for the maintenance, repair, testing, use and operation of the Equipment and assumes all risk of loss or damage to the Equipment from whatsoever cause during the lease term. Lessee agrees lo indemnify, reimburse and hold Lessor harmless from any and all claims, losses, liabilities, demands, suits, judgments or causes of action, and all legal proceedings, and all costs associated therewith, including attorney's fees and expenses which may result from or arise in any manner out of the condition, use or operalion of the Equipment, or any defect in the Equipment regardless of when such defect shall be discovered. Ail the indemnities contained herein shall continue in full force and effect notwithstanding the expiration or termination of the Lease.

5.2 During the term of this Lease, Lessee will maintain fire insurance, including standard extended coverage, for the full value of the Equipment. Lessee also will maintain public liability and property damage insurance with respect to the Equipment in such amounts and with such insurers as approved by Lessor. Such insurance shall name Lessor as an additional insured and loss payee and shall provide that such insurance may be altered or cancelled only after thirty (30) days prior written notice to Lessor. Such insurance shall further provide that losses shall be adjusted only with, and paid lo, Lessor. If any such loss shall be paid by check or draft payable to Lessor and Lessee jointly, Lessor may endorse Lessee's name thereon as Lessee's agent. Lessee shall deliver lo Lessor, prior lo the beginning of the lease term or prior to the effective date of any cancellation or expiration of such insurance, the insurance policy or a certificate or other evidence, satisfactory to Lessor, of the maintenance of such insurance.

6. **Loss or Damage to Equipment.** All risks of loss, theft, destruction and damage lo the Equipment, from whatsoever cause, are assumed by Lessee. Should the Equipment be damaged or destroyed and the applicable insurance proceeds not be adequate to repair the same, Lessee shall **either repair or replace the same at its expense or Lessee shall pay lo Lessor an amount equal to the Slipulated Loss Value, if any, applicable lo such Equipment at the date of such damage or destruction or Lessee shall otherwise pay lo Lessor an amount which will cause Lessor lo realize the same yield Lessor would have realized if the Lease of the Equipment would have been in effect for the entire lease term.**

SEE REVERSE SIDE AND ANY LEASE AGREEMENT SCHEDULES FOR ADDITIONALTERMS AND CONDITIONS

THE UNDERSIGNED AGREES TO ALL THE TERMS AND CONDITIONS STATED ABOVE AND ON THE REVERSE SIDE OF THIS PAGE AND IN ANY LEASE AGREEMENT SCHEDULES INCORPORATED HEREIN.

LESSOR: Farm Credit Leasing Services Corporation

BY: _____

TITLE _____

LESSEE: _____
Print Full Name

BY: _____ Title _____ Date _____

_____ Title _____ Dale _____

_____ Title _____ Date _____

_____ Title _____ Dale _____

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7. Expenses, Fees, Taxes. Lessee shall pay all costs, expenses, fees and charges incurred in connection with the use and operation of the Equipment during the term of this Lease. Lessee shall pay any and all taxes whatsoever paid, payable or required lo be collected by lessor (except income taxes based upon Lessor's net income) on or relating lo the Equipment leased hereunder and the rental. use or operation thereof.

8. Delivery, Installation, Acceptance and Return of Equlpmenl. Upon delivery of the Equipment lo Lessee and the installation of such Equipment. if any, Lessee shall execute and deliver lo Lessor a dated receipt identifying the Equipment and acknowledging acceptance thereof. By such acceptance, Lessee agrees that such Equlpment is in good operating order, repair, condition and appearance and in all respects satisfactory lo Lessee. After the expiration or other termination of the lease term pertaining lo the Equipment, or any renewal thereof, Lessee, upon notice by Lessor, will promptly return the Equipment to Lessor in the same operating order, repair. condition and appearance as when received, excepting only for reasonable wear and tear. Lessee will load the Equipment al Lessee's expense on board such carrier as Lessor, may specify and ship the same lo the destination specified by Lessor.

9. Renewal Option. If no Event of Default has occurred or is continuing, Lessee shall be entitled lo renew this Lease with respect lo the Equipment. If Lessee intends to exercise this renewal option, Lessee shall give notice lo Lessor al least ninety (90) days prior lo the exoiration of the term of this Lease. The duration of any such renewal term, the rental rate and the Stipulated Loss Value Schedule, if any. for any such *renewal term* shall be *determined* by Lessor. All other *terms and conditions of this Lease, including the terms* contained in this Section 9. shall apply during such renewal term

10. Title. Title lo the Equipment shall al all times remain in Lessor and al no time during term of this Lease shall title become vested in Lessee.

11. Assignment and Subleasing. Lessee shall not delegate. sublet, *transfer, or encumber the Equipment* or any of its rights or obligations hereunder without the prior written consent of Lessor. Lessor may, at Lessor's sole discretion and without notice to Lessee. assign this Lease and all of Lessor's right, title, and interest in and lo the Equlpment and all rents and other amounts due or to become due to Lessor under this Lease lo any other party

12. Tax. Benefits and Indemnification. Lessor shall *retain the benefit* of the *Investment Tax Credit, depreciation deductions and* other lax benefits as are provided by federal, stale and local law applicable lo each unit of Equipment ("Tax Benefits"). However, upon written request by Lessee lo Lessor, Lessor may elect lo pass through certain fax benefits lo Lessee utilizing forms to be furnished by Lessor or by filing the information and forms required by the regulations governing the pass through of the Tax Benefits. II Lessor shall not have or shall lose *the right* lo claim, *or if all* or any portion of *the Tax Benefits* as *are provided to* an *owner of property* with respect lo any Equlpment shall be disallowed or recaptured with respect lo Lessor (hereinalter called "Tax Benefit Loss") then on the naxt succeeding rental payment date alter written notice lo Lessee by Lessor that a Tax Benefit Loss has occurred (or if there he no such date, thirty (30) days following such notice). Lessee shall pay Lessor an amount which. after deduction of all taxes required to be paid by Lessor with respect to the receipt of such *amount, will* cause *the Lessor's* net after-lax *yield* over *the term of the* Lease in respect of such Equipment lo equal the net after-tax yield that would have been realized by Lessor if Lessor had been entitled lo the utilization of all the Tax Benefits.

13. Events of Default. The following shall constitute events of default:

a) Lessee shall fail lo pay 'all *or any* part of a rental *payment* or any other payment when due and payable;

b) Lessee shall fail lo perform or shall breach any of the other covenants herein and shall continue lo fail lo observe or perform the same for a period of ten (10) days alter written notice thereof by Lessor;

c) If Lessee becomes insolvent. makes an assignment for the benefit or creditors, ceases or suspends its business or bankruptcy *reorganization* or other proceedings for the relief of debtors or benefit of creditors shall be instituted by or against Lessee;

d) Any representation or warranty made by Lessee herein or in any document or certificate furnished Lessor may prove lo be incorrect in any material respect;

e) 'If Lessee is a business entity, the dissolution, merger or reorganization of Lessee.

14. Remedies Upon Default. Upon the occurrence of any event of default, Lessor may exercise any one or more of the following:

a) Demand immediate payment of entire amount of Lease payments and residual due hereunder;

b) Take immediate possession of any and all Equlpment wilhout notice:

c) Sell or Lease any Equipment or otherwise dispose, hold or use such Equipmenl al Lessor's sole'discretion;

d) Demand payment in an amount equal to the Stipulated Loss Value, if any, applicable lo the Equipment;

e) Demand payment of all additional costs incurred by Lessor in the course of correcting any default;

f) Proceed against any or all security given in connection herewith which Includes but is not limited lo co-signers, chattel liens and real estate.

g) Exercise any other right or remedy available lo Lessor under applicable law.

Lessor's rights and remedies provided hereunder or by law shall be cumulative and shall bo in addition lo all other rights and remedies available lo Lessor. Lessor's failure lo strictly enforce any provisions of this Lease shall not be construed as a waiver thereof or as excusing Lessee from future performance.

15. Warranties.

15.1 Assignment of Manufacturer's Warranties. Lessor hereby assigns lo Lessee, for and during the Lease term with respect lo the Equipmenf, any warranty of the manufacturer, express or implied, issued on the Equipment and hereby authorizes Lessee lo obtain the service furnished by the manufacturer in connection therewith al Lessee's expense. Lessee acknowledges and agrees that the Equipment is a size, design, capacity and manufacture selected solelv bv Lessee and suitable for its purposes.

15.2 DISCLAIMER OF WARRANTIES. LESSOR IS NOT A MANUFACTURER NOR IS LESSOR ENGAGED IN THE SALE OR DISTRIBUTION OF THE EQUIPMENT. LESSOR MAKES NO REPRESENTATIONS. PROMISES. STATEMENTS OR WARRANTIES, EXPRESSED OR IMPLIED, WITH RESPECTTO THE'CONDITION, MERCHANTABILITY, SUITABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE EQUIPMENT OR ANY OTHER MATTER CONCERNING THE EQUIPMENT. LESSEE AGREES THAT LESSOR SHALL NOT BE LIABLE TO LESSEE FOR ANY LOSS, CLAIM. DEMAND, LIABILITY. COST. DAMAGE OR EXPENSES OF ANY KIND, CAUSED, OR ALLEGED TO BE CAUSED. DIRECTLY OR INDIRECTLY, BY THE EQUIPMENT OR BY ANY INADEQUACY THEREOF FOR ANY PURPOSE, OR BY'ANY DEFECTS THEREIN, OR IN THE USE OR MAINTENANCE THEREOF, OR ANY REPAIRS, SERVICING OR ADJUSTMENTS THERETO;: OR ANY DELAY IN PROVIDING, OR FAILURE TO PROVIDE THE SAME. OR ANY INTERRUPTION OR'LOSS OF SERVICE OR USE THEREOF, OR ANY LOSS OF BUSINESS OR ANY DAMAGE WHATSOEVER AND HOWSOEVER CAUSED. LESSEE AGREES THAT ITS OBLIGATIONS HEREUNDER TO PAY THE RENTALS HEREIN PROVIDED FOR SHALL NOT, IN ANY WAY, BE AFFECTED BY ANY DEFECT OR FAILURE OF THE EQUIPMENT.

16. Miscellaneous.

16.1 This agreement is and is intended lo be a Lease. and Lessee does not hereby acquire any right, title or interest in and to the Equipment except the right lo use the same under the terms hereof.

16.2 The relationship between Lessor and Lessee shall always and only be that of Lessor and Lessee. Lessee shall not hereby become the agent of Lessor and Lessor shall not be responsible for the acts or omissions of Lessee.

16.3 This Lease shall be governed in all respects by the laws of the State of Minnesota.

16.4 Lessee hereby irrevocably appoints and constitutes Lessor and each of Lessor's officers, employees or agents as Lessee's true and lawful agent and attorney-in-fact for the purpose of filing financing statements, including amendments thereto. pursuant lo the Uniform Commercial Code as adopted in the state or slates where the Equipment is located or for filing similar documents or instruments in locations which have not adopted the Uniform Commercial Code; Lessor being hereby authorized and empowered to sign Lessee's Name on one or more of such financing statements. documents or instruments.

17. Option lo Purchase Upon the expiration of the Lease term as indicated herein, Lessee may al its sole option purchase the Equipment in accordance with the terms specified in the applicable schedule attached hereto.

Farm Credit Leasing Services Corporation

10 Second Street N.E.
Minneapolis. Minnesota 55413
(612) 376-1733

LESSEE: Name and Billing Address

r SAMPLE

VENDOR: Name and Billing Address

r 1

ACCOUNT NUMBER: LESSOR UNIT NUMBER:

Quantity	Model No.	Equipment Description	Unit Cost	TOTAL COST TO LESSOR
				EQUIPMENT COST
				FREIGHT
				LABOR
				TAX
				TOTAL COST

INSTALLATION ADDRESS: Street and Number City County State

Lease Rate Factor	Rental Amount	No. of Payments	Rental Payment Periods	Security Deposit	Residual Amount	Lease Term	Commencement Date

PURCHASE OPTION SCHEDULE

This Purchase Oplion Schedule is hereby made a par! of that certain Lease Agreement dated _____ between the parties hereto ("Lease") and is applicable to the Equipment described above. The terms hereof apply only to the lease of the Equipment described herein and shall be deemed to be a part of the Lease.

1.0 PURCHASE OPTION.

Unless a Default or event of Default shall have occurred and is continuing, Lessee may purchase the Equipment described above at the expiration of the term of this Lease at a cash price equal to the 'Option Price" as defined below. Lessee shall notify Lessor no later than sixty (60) days prior lo the expiration of the Lease term.

'OPTION PRICE" shall be one of the following (check one):

☐ "Fair Market Value" (FMV) of Equipment at the end of the lease term. FMV is defined as the price negotiated between an informed and willing purchaser and an informed and willing seller. If the parties cannot agree as lo what constitutes Fair Market Value, an appraiser shall be selected by the parties whose determination of Fair Market Value shall be binding on Lessor and Lessee.

☐ $_____ Which is percent (%) of the Total Cost as listed above. Both parties agree that this is a reasonable estimate of the anticipated market value of the Equipment at the expiration of the Lease.

2.0 WARRANTY OF FARM FINANCE LEASE ELIGIBILITY

☐ By checking this box Lessee hereby warrants that the above referenced Equipment is eligible for farm finance lease treatment. Lessee warrants that the above Equipment has not been placed in service more than three (3) months prior lo the commencement of the Lease and that all Equipmen! is NEW and qualities as Section 36 Property under the Internal Revenue Code of 1966. The Equipment will be used solely for agricultural purposes and if the Equipment is a fixture, it is used for a single purpose in the production or storage of an agricultural commodity, Lessee also warrants that the total cost of all property leased pursuant to finance leases of farm properly, as provided for under Section 209 (d)(I)(B) of the Tax Equity and Fiscal Responsibility Act of 1962, ("TEFRA") as amended by the Tax Reform Act of 1964. during the current calendar year will not exceed $150,000. The parties *hereby:* a) agree lo characterize transactions hereunder as farm finance leases under Section 209 (d)(I)(B) of TEFRA for federal tax purposes; and b) agree lo have the provisions of Section 209 (d)(I)(B) of TEFRA apply to the transactions hereunder. If this Section 2.0 is made applicable to the Lease of Equipment described herein, any staled purchase option shall be al least 10% of the Total Cost of Equipment noted above.

THE UNDERSIGNED AGREES TO ALL THE TERMS AND CONDITIONS STATED ABOVE AND IN ANY OTHER LEASE AGREEMENT SCHEDULES. EACH PERSON SIGNING FOR A LESSEE REPRESENTS THAT SUCH PERSON IS AUTHORIZED TO ACT FOR SUCH LESSEE.

LESSOR: Farm Credit Leasing Services Corporation

BY: _____

TITLE _____

LESSEE: _____
Print Full Name

By: _____ Title _____ Dale _____

_____ Title _____ Date

_____ Title _____ Dale

_____ Title _____ Dale

MK018 (03/87)

Farm Credit Leasing Services Corporation

10 Second Street N.E.
Minneapolis, Minnesota 55413
(612) 378-1733

LESSEE: Name and Billing Address

r ┐

L ┘

ACCOUNT NUMBER:

VENDOR: Name and Billing Address

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L J

LESSOR UNITNUMBER:

Quantity	Model No.	Equipment Description	Unit Coal	TOTAL COST TO LESSOR
		SAMPLE		EOUIPMENT COST _____ FREIGHT _____ LABOR _____ TAX _____ TOTAL COST _____

INSTALLATION ADDRESS: _____

			Street and Number	City	County		State
Lease Rate Factor	Rental Amount	No. of Payments	Rental Payment Periods	Security Deposit	Residual Amount	Lease Term	Commencement Date

GUARANTY

In order to induce and in consideration of FARM CREDIT LEASING SERVICES CORPORATION (hereinafter "FCL"), a federally chartered corporation organized under the Farm Credit Act of 1971, es amended, entering into a Lease Agreement, dated _____, for the lease of equipment described in certain Purchase Option Schedules signed and acknowledged by the UNDERSIGNED GUARANTOR and appended hereto (such Lease Agreement and Purchase Option Schedues hereinafter referred to as the 'Lease Agreement") with the Lessee whose name and address appears above (hereinafter the "Lessee") the UNDERSIGNED GUARANTOR hereby unconditionally guarantees to FCL, its successors and assigns, the prompt and full pay ment when due of all sums due from Lessee to FCL under the Lease Agreement and the prompt full performance by Lessee of each and every provision and warranty of Lessee set forth In the Lease Agreement.

The UNDERSIGNED GUARANTOR hereby expressly waives (i) notice of acceptance of the Guaranty by FCL; (ii) presentment, demand for payment, protest and notice of protest, default, non-payment or partial payment by Lessee: (iii) all other notices and formalities to which Lessee and/or the UNDERSIGNED GUARANTOR might be entitled, by statute or otherwise; and (iv) any other circumstance whatsoever which might constitute a defense to enforcement of this Guaranty. The UNDERSIGNED GUARANTOR further agrees that no renewal, modification, amendment or supplement of or lo the Lease Agreement or any extension or compromise of Lessees obligations arising under the said Lease Agreement shall affect the Ilability of the UNDERSIGNED GUARANTOR hereunder and the UNDERSIGNED GUARANTOR hereby consents to and waives notice of any of the foregoing.

The UNDERSIGNED GUARANTOR further waives any right of set-off or counterclaim against Lessor with respect to any claim or demand the UNDERSIGNED GUARANTOR may have against the Lessee. As further security to Lessor, any and all debts or liabilities now or hereinafter owing to the UNDERSIGNED GUARANTOR by Lessee, and any lien, security or collateral given to the UNDERSIGNED GUARANTOR in connection therewith are hereby subordinated to the claims and liens of. and assigned to, Lessor.

The obligations of the UNDERSIGNED GUARANTOR hereunder are and shall at all times be the original, direct and primary obligations of the UNDERSIGNED GUARANTOR and Lessor shall not be obligated to pursue or exhaust any rights or remedies against the Lessee as a prerequisite to enforcing this Guaranty against the UNDERSIGNED GUARANTOR.

No modification or waiver of any of the provisions of this Guaranty shall be effective unless in writing and signed by the UNDERSIGNED GUARANTOR and an officer of Lessor. If any provision of this Guarenty or the application thereof is hereafter held invalid or unenforceable, the remainder of this Guaranty shall not be affected thereby, and to this end the provisions of this Guaranty are declared severable.

If the UNDERSIGNED GUARANTOR is a corporation, each signatory on behalf of each such corporation warrants that (s)he has authority to sign on behall of such corporation and by so signing. to bind said corporation hereunder. This Guaranty is absolute, unconditional and continuing and shall remain in effect until all of Lessee's obligations under the Lease Agreement shall have been paid. performed and discharged.

This Guaranty and every part hereof shall be binding upon the UNDERSIGNED GUARANTOR and upon the successors and assigns of the UNDERSIGNED GUARANTOR, and shall inure to the benefit of FCL, its successors and assigns. The provisions of this Guaranty shall be construed and enforced In accordance with the laws of the State of Minnesota.

IN WITNESS WHEREOF, this Guaranty has been duly executed by the UNDERSIGNED GUARANTOR this _____ day of _____, 19____.

GUARANTOR: _____
Print Full Name

_____

_____

MK022 (03/87)

Appendix C: Summary of Federal Tax Law Related to Leasing

This appendix provides a brief review of the tax laws and codes that contains major lease provisions. It is not intended to be an exhaustive treatment of the subject.

1954 internal Revenue Code

The 1954 Internal Revenue Code distinguished between a true lease and a conditional sale. According to section 167, a lessor could deduct any ordinary expenses incurred in the taxable year that were attributable to the lessor's earnings. The lessor was allowed to depreciate the leased assets and, beginning in 1962, to also claim the investment tax credit (ITC). If the transaction was a true lease, the lessor retained the ITC and depreciation deductions.

The introduction of accelerated depreciation and ITC altered the leasing strategy of many firms. The ITC had the effect of reducing an asset's purchase price by reducing the firm's tax liability on a dollar-for-dollar basis. As a result of these incentives, deductions available to a purchaser in the early years were greater than those available to a lessee. Firms with higher marginal tax rates began leasing property to firms with little or no income tax liability (lower marginal tax rates). The lessor could take advantage of the accelerated depreciation deductions and ITC allowance to offset income tax liability. The lessee would have little use for these benefits. To compensate the lessee, a lessor could afford to offer a lower lease rate and still realize an acceptable rate of return on an after-tax basis.

Revenue Procedure 75-21

A set of lease structuring guidelines was established in 1975 as a result of Revenue Procedure 75-21. The guidelines applied specifically to the structure of leveraged leases. If the following conditions were met, an agreement would be considered an operating (true) lease by the IRS for tax purposes:

. The lessor was required to maintain a minimum "at-risk" investment of 20 percent through the lease term. The lessor must have required the lessee to purchase the asset being leased for an estimated residual value of at least 20 percent of the asset's original cost. The asset was required to have a remaining economic life which exceeded the lease term by more than 1 year or 20 percent of the estimated depreciation life.

- The lease term included all renewals or extensions, except those at the lessee's option.

- The lessee must have paid fair market value for the leased asset. The fair market value paid for the leased asset at lease termination must represent at least 20 percent of the asset's original cost. No bargain purchase options were allowed. The lessor could not abandon the asset at the end of the lease term. There could be no written contractual statement requiring the lessee to purchase the leased asset.

- The lessee could not provide to the lessor any part of the cost of the leased item at the time of asset acquisition.

- The lessee could not lend any funds necessary to purchase the asset by the lessor at the time of asset acquisition.

- The lessor must have shown profit beyond the benefits derived from the ITC and depreciation tax shield. The lease must have resulted in a projected positive cash flow.

- Limited use property (that is, readily usable only by the lessee) was not eligible for lease treatment.

The intent of these guidelines was to ensure that the lessor retained some of the benefits, costs, and risks of ownership while a lessee did not obtain an equity interest. Although these guidelines were set up specifically for leveraged leases, they were adopted as guidelines for most leases. They were considered by most lessors as minimum requirements for a true lease for tax purposes.

Economic Recovery Tax Act of 1981

Tax guidelines were liberalized by tax law changes in provisions of the Economic Recovery Tax Act of 1981 (ERTA). Just as the concepts of ITC and accelerated depreciation had substantial effects on leasing, so did the provisions of ERTA. ERTA established a "safe harbor" lease transaction. The purpose behind the safe harbor lease was to generate investment incentives for firms unable to take advantage of the ITC and accelerated cost recovery allowances. The safe harbor provisions nearly guaranteed the parties of a lease transaction that the agreement would be considered a true lease for income tax purposes if the six safe harbor guidelines were met.

The following conditions had to be met according to section 168(8)8 of the Internal Revenue Code for a lease to be considered a safe harbor lease transaction.

- The lessor had to have been a regular corporation. Others qualifying included partnerships (where all partners were corporations) and grantor trusts (where the grantor and beneficiaries were corporations).
- The lessor must have maintained a minimum "at-risk" investment of at least 10 percent of the cost of the leased asset.
- The maximum lease term could not exceed the greater of 90 percent of the useful life of the asset or 150 percent of the asset depreciation range (ADR) class life of the property. The lease term must have equaled or exceeded the ACRS life of the asset (i.e., for 5-year property the lease term must be at least 5 years).
- Only certain property was qualified for safe harbor treatment:

  —Property must have been placed in service after January 1, 1981.

  —It must have been recovery property eligible for ACRS (i.e., qualify for tax depreciation).

  -It must have been new section 38 property (property eligible for ITC).

  -Limited use property (i.e., readily usable only by the lessee) did not qualify.

- The lessor and lessee must have agreed in writing that the transaction was to be characterized as a lease for IRS tax treatment.
- The lessor and lessee must have agreed in writing that they elected to have safe harbor provisions apply to the lease transaction.

The lease could still be classified as a true lease by the IRS even though it included a bargain purchase option, fixed-price purchase option, or fair market value purchase option. With the safe harbor lease provisions, those firms unable to use their income tax benefits could trade them to a lessor in need of tax benefits in exchange for a more favorable lease payment. For those leases not meeting the safe harbor requirements, previously established guidelines would have to be followed. This includes those guidelines established through Revenue Procedure 75-21, IRS rulings and procedures, and tax court rulings.

Tax Equity and Fiscal Responsibility Act of 1982

The safe harbor lease provisions of ERTA were very successful, but at a great expense to the Federal Government in lost tax revenue. Provisions of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) curbed the problem by placing restrictions on safe harbor leases.

TEFRA gradually repealed the safe harbor lease guidelines. Any safe harbor lease arranged after July 1, 1982, and before January 1, 1984, under ERTA, became subject to several restrictions:

- Depreciation was determined using the 150 percent declining-balance method in the early years, switching to straight-line in later years. The lease term could not exceed the greater of the specially designated recovery period or 120 percent of the property's class life. The recovery periods were established at 5 years for 3-year property, 8 years for 5-year property, and 15 years for lo-year property. The ITC were required to be rated over a 5-year period (20 percent of the ITC

allowance in each of the first 5 years), The income tax basis adjustment was made in year one.

- The lease term could not exceed the upper asset depreciation range (ADR) limit for the property as of January 1, 1981.

- Only 40 percent of a lessee's "qualified base property" placed in service during a year qualified for safe harbor treatment. Qualified base property included:

  -all property under a safe harbor lease election,

  -all other ***new*** ITC property, and

  -new property eligible for the ITC under non-safe harbor lease rules,

- The lessor could not apply cost recovery deductions or ITC's to reduce income tax liability by more than 50 percent. Deductions that could not be used in the current year could be carried forward, but not backward. Cooperatives were an exception to this rule. Any deductions not usable by the cooperative in the current year must have been passed through to its patrons.

ERTA repealed the safe harbor provisions for leases entered into after December 31, 1983. Safe harbor leasing was completely eliminated after 1983.

TEFRA created "finance leases" to replace safe harbor leases starting in 1984. Finance leases failed to retain many of the benefits of safe harbor leases. As a result, leases lost some of their previous attractiveness. Finance lease guidelines included the following provisions:

- They must generally have met the non-safe harbor lease guidelines.

- Purchase of the leased property by the lessee must have been permitted for a price. The price was set at the start of the lease at 10 percent or greater of the original property cost. This option was exercisable by the lessee at the end of the lease term.

- The asset must have been new Section 38 property (eligible for ITC) to qualify.

- The transaction must have contained economic substance in addition to any guaranteed tax benefit.

- The lessor must have expected to show a profit from the lease transaction aside from any expected tax benefits (the "profit test").

- The lease arrangement could not be a financing arrangement or conditional sale.

Transitional rules were scheduled to be in effect during 1984 and 1985.

The new finance lease provisions were expected to put some limits on leasing volume and reduce the tax benefits available to the lessor. Liberalization of the rules relating to limited-use property and fixed-price purchase options were expected to be quite attractive to many potential lessees.

TEFRA included some specific changes for ACRS and the ITC. TEFRA eliminated the accelerated depreciation rates scheduled to go into effect in 1985 and the faster rates for years after 1985. For 1982, the ITC could be used to offset up to $25,000 of income tax liability, plus 90 percent of income tax liability above $25,000. Starting in 1983, TEFRA reduced the maximum ITC allowance from 90 percent to 85 percent of the income tax liability over $25,000.

Tax Reform Act of 1984

Revised leasing rules incorporated in TEFRA (1982) were replaced by new finance lease guidelines in 1984. Provisions of the Tax Reform Act of 1984 (TRA) postponed until 1988 provisions on finance leases entered into after March 6, 1984. During 1984 and 1985, most leases fell under the pre-safe harbor (pre-ERTA) lease guidelines.

The introduction of finance leases was to be phased in with transitional rules scheduled to apply during 1984 and 1985. The TRA of 1984 delayed these transitional rules until 1988 and 1989. The transitional rules are as follows:

- No more than 40 percent of a lessee's property qualifies for finance lease treatment if placed in service during any year before 1990.

- A lessor cannot use finance lease rules to reduce tax liability by more than 50 percent in any year except for property placed in service after September 3, 1989, in taxable years starting after that date.

- The ITC for finance lease property will only be allowed ratably over 5 years, except for property placed in service after September 30, 1989.

Tax Reform Act of 1986

The statutes that imposed finance lease rules, determining whether a transaction is a lease or a purchase for tax purposes, are generally repealed for contracts entered into after December 31, 1986. Under the 1984 act, these rules had been generally postponed until after 1987. Under the nonstatutory lease rules that apply beginning in 1987, the courts and the IRS will determine property ownership for tax purposes based on the "economic substance" of the transaction.

Transitional rules enacted in 1984 continue to apply for (1) property used for farming purposes (Section 38 property), (2) certain auto manufacturing property, and (3) contracts which were binding before March 7, 1984.

Repeal of the 10-percent investment tax credit for property placed in service after December 31, 1985, affects both purchase and leasing of new property. The ITC carryover rules continue to apply for property placed in service before 1986. In addition, the ACRS depreciation method is modified to reclassify certain 3-year property (cars and light-duty trucks) as 5-year property, and to establish a new 7-year property classification (railroad track and single-purpose agricultural and horticultural structures).

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Agricultural Cooperative Service (ACS) provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The agency (1) helps farmers and other rural residents develop cooperatives to obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs.

ACS publishes research and educational materials and issues ***Farmer Cooperatives*** magazine. All programs and activities are conducted on a nondiscriminatory basis, without regard to race, creed, color, sex, age, marital status, handicap, or national origin.