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Changes made in the Federal tax law in 1986 and New York tax law in 1987 may affect the lease-purchase decision of those farmers who acquire assets for use in their business. The same laws also affect the profitability of the lessor who leases assets to farmers. The purpose of this paper is to discuss some of the changes in the tax laws that affect the leasing decision and provide some examples to illustrate the effect of the changes. In the lessee section, the emphasis is on the method of comparing a financial lease with a purchase and the effect of the tax law changes, not on whether a farmer should lease or purchase assets.

The most important change in the Tax Reform Act of 1986 (TRA86) that will affect the leasing decision is the elimination of the 10 percent investment credit for assets acquired after 1985. However, a transition provision of TRA86 provided that assets leased under a "farm finance lease" continued to be eligible for the investment credit if the lease is initiated before 1988.

The depreciation rule changes in TRA86 also affect leasing. The accelerated cost recovery system (ACRS) was replaced by the modified ACRS (MACRS). In general, the depreciation period for many farm assets was lengthened. However, the depreciation method for assets such as cattle and equipment was changed from 150 percent to 200 percent declining balance so that assets such as dairy cows which stayed in the same class actually are depreciated more rapidly under MACRS than under ACRS.

A provision in TRA86 requires that farmers must capitalize, rather than expense, pre-productive costs if the pre-productive period is longer than two years. This provision will affect dairy and beef herd owners who raise replacements as well as those farmers who are developing orchards and vineyards. Most farm taxpayers may elect out of the capitalization rules but in return they must depreciate all assets acquired in the future with the alternative depreciation system (ADS) using straight line over the ADR midpoint life which is usually longer than the MACRS recovery period. For example, farm machinery falls in the 7 year MACRS class but the ADR midpoint life is 10 years. Farmers who make this election will be faced with a greater slowdown in depreciation than the

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change from ACRS to MACRS on farm machinery. Depreciation percentages for farm machinery under ACRS, MACRS and the alternative depreciation system are shown in Table 1.

Table 1. Depreciation of farm machinery under ACRS, MACRS and ADS straight line

Year	Rapid ACRS	Rapid MACRS	ADS straight line
	----------	Percentage	----------
1	15	14.29	5
2	22	24.49	10
3	21	17.49	10
4	21	12.49	10
5	21	8.93	10
6		8.93	10
7		8.93	10
8		4.45	10
9			10
10			10
11			5

New York passed two tax laws in 1987 which will affect taxpayers beginning in 1987. The Tax Reform and Reduction Act of 1987 applies to non-corporate taxpayers. It gradually lowers rates and increases the standard deduction beginning in 1987. It also eliminated the 6 percent NY investment credit beginning in 1989. Later, the Business Tax Reform Act was passed which affected corporate taxpayers but also reinstated investment credit for individuals at four percent, rather than the previous six percent, beginning in 1987.

Lessee Comparison Before and After TRA86 and 1987 New York Tax Law Changes

The example below shows a comparison of a lease vs. purchase of a $50,000 farm machine. The first comparison is before TRA86 and the 1987 New York tax law changes. The taxpayer (potential lessee) is in the 33 1/3 percent tax bracket. To simplify the calculations, it is assumed that the machine has either no salvage value or that if initially leased it can be purchased for $1 at the end of the lease. The machine will be held long enough to be fully depreciated by the taxpayer. If he purchases the machine, he will make a $10,000 down payment and pay the $40,000 balance over five years amortized at 12 percent interest with annual payments. The lease payments are $11,971 per year for four years with the first payment due when the machine is delivered. The comparison is made by using net present value. The discount rate is the after-tax interest rate which is 12 x (1 - .33 1/3) = 8 percent.

Under the leasing alternative the farmer will make the lease payments year zero through 4. The lease payments are fully deductible expenses and the assumption is made that the tax savings are realized one year after the payments are made. Therefore, the tax savings from the lease payments are in years 1 through 5 as shown in the calculations below.

If the farmer purchases the machine, he will receive tax savings from the interest payments, the depreciation, and the 10 percent Federal and 6 percent NY investment credits. The interest tax savings are "built in" to the present value calculations so that the present value of the discounted after-tax payments on the machine are equal to the initial amount of the loan or $40,000. The investment credits are assumed to be used to save taxes one year after the machine is acquired. Under the Federal tax law in effect before TRA86, half the IC had to be deducted from the cost leaving 95 percent of the $50,000 to be depreciated. The tax savings over the 5 year ACRS period are $50,000 x .95 x .33 1/3 = $15,833 or $12,532 when discounted to year zero at 8 percent.

Pre-TRA 1986 and 1987 NY Law Changes

Lease Year		8% Factor	Present Value
0-4	Lease payments = 11,971	4.3121	51,620
1-5	Tax savings on lease payments = 11,971 x .33 1/3 = 3990	3.9927	-15,932
	Present value of after-tax cost to lease =		35,688

Purchase and Loan

0	Down payment		10,000
1-5	Present value of after-tax loan payments		40,000
1	IC = 50,000 x .16 = 8,000	.9259	-7,407
1-5	Depreciation tax savings 50,000 x .95 x .33 1/3 = 15,833	.7915	-12,532
	Present value of after tax cost to own =		30,061
	Advantage of own vs. lease = 5,627		

In this example, the present value of the after-tax cost of the purchase and loan is $5,627 less than the present value of the after-tax cost of the lease.

Now let's look at the lease vs. purchase comparison for a taxpayer who is in the zero tax bracket. There are no tax savings from the lease payments, the interest payments, the depreciation or the investment credits. The discount rate is the 12 percent loan rate because the taxpayer is in the zero tax bracket. The advantage of the lease over the purchase and loan is $1,668, suggesting that it is the superior alternative in this example and a zero tax bracket.

Lease

Year	12% Factor	Present Value
0-4 Lease payments = 11,971	4.0374	48,332
Present value of after-tax cost to lease =		48,332

Purchase and Loan

0	Down payment	10,000
1-5	Loan payments	40,000
	Present value of after tax cost to own =	50,000

Advantage of lease over ownership = 1,668

After TRA86 and 1987 New York Tax Law Changes

The example is used to make a comparison of the lease vs. purchase decision after TRA86 and the 1987 NY tax law changes are in effect. There is no Federal IC and NYIC is four percent. Depreciation is calculated with 7 year MACRS (the last depreciation is claimed in year 8). The tax bracket is assumed to remain at 33 1/3 percent, but in fact might be lower because of the effects of the tax law changes.

Lease

Year	8% Factor	Present Value
0-4 Lease payments = 11,971	4.3121	51,620
1-5 Tax savings on lease payments = 11,971 x .33 1/3 = 3990	3.9927	-15,932
Present value of after-tax cost to lease =		35,688

Purchase and Loan

Year		8% Factor	Present Value
0	Down payment		10,000
1-5	Loan payments, after tax		40,000
1	IC = 50,000 x .04 = 2,000	.9259	-1,852
1-8	Depreciation tax savings 50,000 x .33 1/3 = 16,667	.7661	-12,769
	Present value of after tax cost to own =		35,379

The advantage of the purchase and loan over the lease is $309, suggesting that the the purchase and loan is now only slightly superior to the lease. This is in direct contrast to the result prior to the tax law changes where the purchase was far superior to the lease. Keep in mind that the lease payment is assumed to be exactly the same as it was in the pre-tax law change examples. It will be shown later that this assumption may not be realistic.

Post-TRA86 and After 1987

After 1987, farm finance leases will no longer qualify for investment credit and MACRS depreciation must be used. Less-Or's tax rate is likely to be lower. Present value of tax savings to Less-OR in our example using a 42% tax rate (7 percent after tax discount rate) are shown below:

Year		7% Factor	Present Value
1-8	MACRS depreciation = 50,000 x .42 = 21,000	.7902	16,594
	P.V. of tax benefits =		16,594

$50,000 - 16,594 tax savings = $33,406 that must be recovered from after-tax lease payments, in present value terms.

$\frac{33,406}{4.3872}$ = 7,614 per year, after tax

The before-tax lease payment required to break even is $7,614 ÷ (1-.42) = $13,138. The loss of investment credit and the requirement to use slower depreciation under MACRS suggests that lessors of farm equipment will need to increase lease rates for leases initiated after 1987 if their profitability of leasing is to be maintained. In this example, the lowering of the tax rate tends to lower the minimum lease payment, but the effect is minor in comparison to the upward effect of the slower depreciation and loss of investment credit.

Conclusion

If lessors in fact do increase lease rates beginning in 1988 to offset the loss of tax benefits, the lease vs. purchase comparisons made earlier in this paper will be affected. That is, the "After TRA86 and 1987 NY Tax Law Changes" calculations should use a higher lease payment than the one used in the lessee calculations. It is possible that the lease payments will be enough higher that the effect of the 1986 and 1987 tax law changes will leave the results of the lease/purchase comparison for a potential lessee in a tax bracket above zero in about the same relationship at they were before the tax law changes.

The potential lessee in a zero tax bracket may find that the tax law changes increase lease payments enough that the lease/purchase comparison is less favorable to leasing than before the tax law changes.