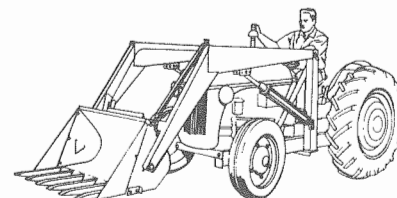
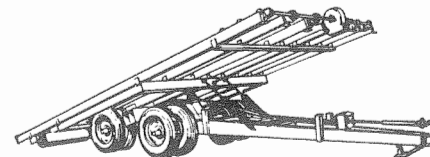
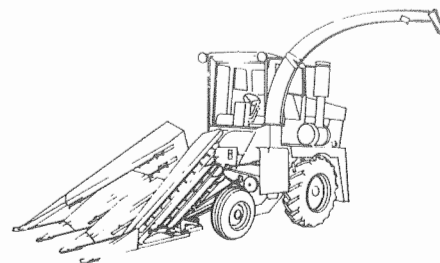


Leasing vs. Buying Equipment



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Traditionally farmers have found it to their advantage to credit finance rather than lease farm equipment. There are, however, situations where leasing is a viable alternative. Lease plans are available for larger machinery items, irrigation systems, and semi-portable buildings such as farrowing houses or dairy calf barns.

This guide reviews the important factors that you should consider in evaluating a financial lease. The guide also shows how to compare the cost of a lease with the cost of a credit-financed purchase. The term lessor is used to refer to the company or firm who owns the equipment. The term lessee refers to the user of the leased equipment.

TYPES OF LEASES

There are several types of leases and many variations of each type. This guide deals only with the long-term (several years) financial lease.

Financial Lease: The financial lease is a long-term contract in which the lessee acquires sole use of the equipment in return for lease payments. Typically, the lessee pays for the cost of maintenance and insurance on the equipment. The financial lease is similar to the credit-financed sale except that the lessor maintains title to the equipment as well as the right to charge depreciation on the equipment. Investment credit can be taken either by the lessee or the lessor but not by both parties.

Adapted from "Leasing Vs. Buying Equipment," Norlin Hein, Agricultural Economist, University of Missouri, September, 1980.

The lease payments are a tax deductible farm expense, provided the lease agreement meets Internal Revenue Service (IRS) requirements for a true lease. One of the most important requirements is that there can be no agreement in the lease for the lessee to obtain title to the equipment once the lease runs out. For details on criteria used by the IRS to distinguish a lease from a purchase contract, check the "Farmers Tax Guide," published by the IRS.

Lease Purchase: A lease-purchase option is, in many respects, similar to a financial lease except that the lease agreement contains some provision for the lessee to obtain the equipment at the end of the lease period at some pre-arranged cost. This lease does not meet IRS requirements for a true lease. The IRS treats this type of lease as a credit-financed purchase. Only the interest portion of the annual lease payments is tax deductible.

Operating Lease: An operating lease is a contract in which the lease period is relatively short. The lease payments are generally based on a set charge per hour, week, month, etc. Often with an operating lease the equipment is leased to several different operators. An operating lease is commonly referred to as machinery or equipment rental.

GET THE BEST LEASE DEAL

Leases may be obtained through the dealer selling the equipment. However, it is also possible to buy the equipment from a dealer and obtain a lease

through another firm. Insurance companies, banks and special lease companies may offer better lease terms than the dealer offers.

Try to make a deal on the purchase price of the equipment first before discussing leasing or financing. Then, after negotiating the purchase, look for the best lease or financing arrangement. Lease computations should begin at the actual purchase price. Some dealers try to begin at the list price.

LEASE PROVISIONS TO CHECK

Lease Rate and Terms: Generally, leasing firms figure annual lease payments as a percent of the price of the equipment. The lease rate will vary between leasing firms since the money cost, tax rate and profit goals of the various firms will be different. This rate will also vary depending on length of the lease. Some companies will have a lower rate for leases which involve large sums of money.

Lease companies will usually try to tailor lease payments to the needs of the lessee. They may be willing to negotiate some items such as the due date for payments. In some cases, they have been willing to write a payment schedule that has lower lease payments in the early life of the lease.

Investment Credit: Either the lessee or the lessor, (but not both) may take the investment credit. Some firms will write the lease either way. If the lessee takes the investment credit, the lease rate will be higher than if the lessor takes the credit.

Insurance: The lessee is responsible for damage to leased equipment just as though he owned it. If damage occurs, the lessee is responsible for repairs and is still liable for the remaining lease payments. Many lease firms insist on some type of insurance.

Some lease companies will simply accept proof that the lessee's current insurance covers the lease payments. Most firms writing irrigation leases will include an insurance fee as a part of the lease package. Some firms will charge the entire insurance premium at the start of the lease; others will add the cost of the insurance to the purchase price of the equipment and incorporate the insurance premium cost into the annual lease payment.

Repairs: Generally, in a financial lease, the costs of repairs are the responsibility of the lessee, but be sure to check. New equipment will usually be under warranty, which should cover the repair cost in the early part of the lease. Dealers may be more interested than an outside leasing firm in including a warranty and repair service in a lease.

Getting Out of a Lease: Most leases obligate the lessee to lease payments for the entire life of the lease. There are, however, times when a lessee may want to terminate the lease at an earlier date. The lease agreement should specify the conditions and ways a lease can be terminated early. Some leases

can be transferred to another lessee with approval of the lessor. Some lessors are willing to sell the equipment before the end of the agreed period to liquidate the lease. However, the lessee often is obligated to reimburse the lessor for any unrecovered cost lost because of the sale. Be sure to check how you can get out of a lease and how much you might have to pay.

Expiration of Lease: Be sure to find out who pays the cost of dismantling and removing the lease property, such as buildings or irrigation equipment, once the lease expires. Leases vary greatly in this respect. If your lease states that the lessee is responsible for dismantling and delivering the property to the lessor, then this will be an added expense to you. This would also put you in a weaker position to negotiate purchase of the equipment at the end of the lease.

EVALUATING A FINANCIAL LEASE

Does it Make the Best Use of Scarce Funds?: Purchasing equipment ties up funds and/or credit. In the past, most farmers have found it more profitable to buy rather than lease machinery. There may, however, be advantages in leasing for some farmers. Annual lease payments may be lower than loan payments. This is particularly true in the early years of a lease when the lease is figured over a longer period than the loan. In the early years, therefore, a lease can help cash flow more than a credit-financed purchase can.

The higher payments on a loan in the early years can be offset partially by accelerated depreciation methods and investment credit. The value of accelerated depreciation methods, of course, depends on the lessee's tax bracket.

Generally, the interest rate used in setting a lease rate is greater than that used for a credit-financed purchase. But this is not always true. Some dealer-financed credit is considerably higher than conventional credit.

It generally takes just as good a credit rating to obtain a lease as it does to obtain a loan. Most leasing companies require financial statements and income records prior to writing a lease agreement. Therefore, a person in a tight financial situation may not be able to obtain a lease.

Tax Implications: Generally, a lease will offer a slight advantage for those in the higher income brackets. As indicated earlier, where a lease meets IRS requirements, you can deduct payments from income as an operating expense. Either the lessee or the lessor may take the investment credit. Investment credit is most valuable to those who can turn it to cash by carrying it back or charging it against current taxes. Taxpayers who must carry it forward will find it of less value and may want the lessor to take the credit in return for a lower lease payment. Generally, where the lessor takes the investment credit, the lease payments will be lower than where the lessee takes the investment credit.

With a credit-financed purchase, the farmer can charge depreciation and interest on the loan as a tax deduction. He also can take investment credit on the purchase. Fast depreciation methods will give larger tax deductions in the early years of life.

End of Lease Considerations: In a true financial lease, the lessor retains ownership to the equipment. Only at the end of the lease can the lessor and lessee negotiate a sale.

Most leasing companies are only interested in recovering a small percent of the value of the equipment at the end of a leasing period. Some will say that at the end of a two to three-year lease extension period, they abandon the equipment. The "usual" practice will depend on the company, the type of equipment under consideration, and the length of the lease period.

Being able to anticipate and accept what happens at the expiration of the lease may be one of the most important considerations in deciding whether to lease. For instance, it will probably be easier to bargain on a center pivot than on a tractor since a tractor would be easier for most lease companies to resell.

In situations where true residual value of the equipment is low because equipment is worn out or has become technologically obsolete, the advantages of ownership at the end of the lease period may not be great. However, in periods of high inflation and with equipment that has a useable life longer than the lease period, owning the equipment may have an advantage.

OTHER FACTORS

Several factors can make a lease more attractive than a credit-financed purchase.

With a lease, landlord/tenant agreements often are easier to work out. Since the entire ownership cost of an irrigation system is an annual lease payment, share arrangements also are easier to work out. The lease cost can be split on the same basis as the other expenses are shared.

Some farm lenders are not interested in getting involved in financing irrigation systems. Some do not consider an irrigation system to be very good collateral. This is particularly true if the system is on rented land.

All banks are legally limited in the amount they can loan to a single customer without working in cooperation with another bank. This limit depends on the size of the bank. In cases where a customer is approaching this limit and the bank is reluctant to work with another bank, a lease is one way of keeping the credit line under this limit.

FINANCIAL POTENTIAL FOR THE LEASE

Probably the best method of showing how to compare the cost of a lease to a credit-financed purchase is by a specific example. Let's assume a farmer wants to acquire the use of a center pivot irrigation system. He can purchase the equipment with the aid of a loan from the bank, or he can obtain a financial lease.

Example:

Buy alternative:

Equipment: \$60,000 Center Pivot, pump & motor
 Loan terms: 20% down; 5-yr. commercial loan at 15%
 Tax situation: 35% tax bracket
 \$6000 salvage
 10 year life
 Straight-line depreciation
 Insurance: \$360 per year

Lease alternative:

Lease cost: Equipment	\$60,000
Insurance	3,600
Total	63,600
Investment	\$63,600

Number of years: 10

Annual Lease Payment

as a % of Investment: 17.0%

Annual lease Payment: \$10,800

Who takes investment credit: Lessor

Insurance: The \$3,600, 10-year premium is added to the purchase cost before figuring lease payment.

The basic method of making a financial comparison of a credit-financed purchase to a lease is to compare the after-tax cash flows. In this example, we computed the after-tax cash flows for the credit-financed purchase in Table 1. The computations of after-tax cash flow of the lease are shown in Table 2. Table 2 also shows the comparison of the after-tax cash flow of the lease to the credit-financed purchase.

The cash outflow with the credit-financed option is greater than the lease for four of the first five years (Col. 18 Table 2). However, in the sixth year, after the equipment is paid for under the credit-financed plan, cash outflow under the lease plan is considerably greater.

At the end of the analysis period of our example, the equipment is sold in the credit-financed plan for the 10 percent salvage value. In the lease alternative, another way of handling this would be for the lessee to purchase the equipment, based on the estimated end-of-lease value.

The total after-tax outflows for the lease alternative is \$70,200 (Col. 16, Table 2) compared to the credit-financed alternative which is \$45,480 (Col. 17). This shows a \$24,720 advantage to the credit-financed alternative.

TABLE 1. BUY ALTERNATIVE

AFTER TAX CASH OUTFLOW COMPARISON

End of Year	Principal Payment	Interest Payment	Added Operating Expense	Total Cash Outflow	Salvage Value* (Sale)	Depreciation	Total Deductible Expense	Reduction in Taxes from Expenses	Investment Credit	Net After Tax Cash Outflow
Start	\$12,000		\$360	\$12,360	\$					\$12,360
1	9,600	\$7,200	360	17,160		\$5,400	\$12,960	\$4,536	\$6,000	6,624
2	9,600	5,760	360	15,720		5,400	11,520	4,032		11,688
3	9,600	4,320	360	14,280		5,400	10,080	3,528		10,752
4	9,600	2,880	360	12,840		5,400	8,640	3,024		9,816
5	9,600	1,440	360	11,400		5,400	7,200	2,520		8,800
6			360	360		5,400	5,760	2,016		-1,656
7			360	360		5,400	5,760	2,016		-1,656
8			360	360		5,400	5,760	2,016		-1,656
9			360	360		5,400	5,760	2,016		-1,656
10					6,000	5,400	5,760	2,016		-8,016
Total	\$60,000	\$21,600	\$3,600	\$85,200	\$6,000	\$54,000	\$79,200	\$27,720	\$6,000	\$45,580
How to Compute				1 + 2 + 3			2 + 3 + 6	7 x Tax Rate		4-5-8-9
Col. No.	1	2	3	4	5	6	7	8	9	10

*NOTE: At the end of the analysis period enter salvage as a sale (cash inflow) in Col. 5 in the Buy Alternative OR as a purchase (cash outflow) in Col. 11 in Lease Alternative.

TABLE 2. LEASE ALTERNATIVE AND COMPARISON

AFTER TAX CASH OUTFLOW COMPARISON

End of Year	Lease Payment	Added Operating Expense	Tax Deductible Expense	Reduction in Taxes	Investment Credit	LEASE Net After Tax Cash Outflow	BUY Net** After Tax Cash Outflow	Difference (Saving from Buying)	Discount Factor	Discounted Difference*** (Value of Saving)
Start	\$ 10,800					\$10,800	\$12,360	\$-1,560	1.0	\$-1,560
1	10,800		\$ 10,800	\$ 3,780		7,020	6,624	+ 396	.901	+ 357
2	10,800		\$ 10,800	\$ 3,780		7,020	11,688	-4,668	.812	-3,790
3	10,800		\$ 10,800	\$ 3,780		7,020	10,752	-3,732	.731	-2,728
4	10,800		\$ 10,800	\$ 3,780		7,020	9,816	-2,796	.659	-1,843
5	10,800		\$ 10,800	\$ 3,780		7,020	8,880	-1,860	.593	-1,103
6	10,800		\$ 10,800	\$ 3,780		7,020	-1,656	+ 8,676	.535	+ 4,631
7	10,800		\$ 10,800	\$ 3,780		7,020	-1,656	+ 8,676	.482	+ 4,182
8	10,800		\$ 10,800	\$ 3,780		7,020	-1,656	+ 8,676	.434	+ 3,765
9	10,800		\$ 10,800	\$ 3,780		7,020	-1,656	+ 8,676	.391	+ 3,392
10	-0-		\$ 10,800	\$ 3,780		-3,780	-8,016	+ 4,236	.352	+ 1,491
Total	\$108,000		\$108,000	\$37,800		\$70,200	\$45,580	\$24,720		\$ + 6,794
How to Compute			11 + 12	13 x Tax Rate		13-14-15	From Col. 10	16-17	Table 3	18-19
Col. No.	11	12	13	14	15	16	17	18	19	20

** Obtain from Column 10, Table 1.

*** A positive (+) number indicates dollar advantage of BUY over LEASE. A minus (-) number gives dollar advantage of LEASE over BUY.

Discount Factors: But, there is one more factor to consider before deciding between buying and leasing. The lease option keeps more money available for your use during the early years of the plan. You can put these extra dollars to work to earn more dollars. To adjust the lease vs. buy cost comparison to include this potential added earnings, you need to apply discount factors to the after-tax cash flows. Discount factors are listed in Table 3.

The specific discount rate that you would apply depends on the rate at which the dollars could earn in your business (for the lease option) or the interest rate on borrowed money (for the credit-finance option). In either case, the rate should be adjusted to an after-tax rate. For example, if extra dollars could earn 17 percent in the business and a tax rate of 35 percent applies to the business, then the discount rate should be 11 percent. The 17 percent rate is reduced by the 35 percent tax rate: $(1-.35) \times .17 = .1105$ or about 11 percent.

In our example the discount factor in Column 19 (obtained from Table 3) shows the present value of a dollar for the various years at 11 percent interest. This figure, when multiplied times the actual dollar difference between the lease and buy options, gives a more accurate cost comparison.

The sum of the discounted savings is found in the lower right-hand corner of Column 20. The \$6,794 shows that the credit-financed purchase is more advantageous than the lease.

However, the cost of the lease plan in the example is not as high as one might first assume. If the discount rate were raised above 11 percent, the lease plan would become more competitive. On the other hand, if a lower discount rate were used, the credit-finance plan would appear even more favorable.

USE THIS WORK SHEET

You can use the work sheet in this example on any individual situation to compare the estimated cost of

a lease to a credit-purchase plan. Sometimes there are differences in repairs or insurance cost between a lease and purchase plan, depending on the specific terms of the lease. You can enter this difference as an operating expense on the work sheet.

Once you make this analysis, then use it along with other factors to determine which plan is best for your situation.

SUMMARY

The analysis procedure reviewed here shows how to compare a lease with a purchase plan. The financial advantage of lease vs. purchase will depend on a number of interrelated factors. The following are some of the forces which operate.

Loan vs. Lease Terms: A lease will tend to be competitive with a loan where the interest rate differences between the two are very narrow. A lease will tend to have an advantage when it can be stretched out over a longer period than the loan.

However, a farmer who can obtain a favorable interest rate on a loan, a long repayment schedule and/or an amortized loan will find few lease plans that can compete.

Fast Depreciation Methods: Generally, for equipment on which fast depreciation methods are eligible, the purchase option will have a relative advantage to leasing. However, this factor alone may not be enough to choose a purchase over a lease option.

Income Tax Rate: The higher the income tax rate the greater will be the relative advantage to the leasing alternative.

Alternative Uses for Funds: Where a lease plan has cash flow advantages in early life and alternative uses for this capital are great, leasing will tend to have an advantage over borrowing. The higher the return on the earnings of the cash released, the greater the advantage.

Landlord/Tenant Arrangements: Sometimes lease plans make it easier to work out cost-sharing arrangements between landlord and tenant.

TABLE 3. DISCOUNT VALUE FACTORS

No. of Years	Annual Interest Rate									
	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	.943	.935	.926	.917	.909	.901	.893	.885	.877	.870
2	.890	.873	.857	.842	.826	.812	.797	.783	.769	.756
3	.840	.816	.794	.772	.751	.731	.712	.693	.675	.658
4	.792	.763	.735	.708	.683	.659	.636	.613	.592	.572
5	.747	.713	.681	.650	.621	.593	.567	.543	.519	.497
6	.705	.666	.630	.596	.564	.535	.507	.480	.456	.432
7	.665	.623	.583	.547	.513	.482	.452	.425	.400	.376
8	.627	.582	.540	.502	.467	.434	.404	.376	.351	.327
9	.592	.544	.500	.460	.424	.391	.361	.333	.308	.284
10	.558	.508	.463	.422	.386	.352	.322	.295	.270	.247
11	.527	.475	.429	.388	.351	.317	.288	.261	.237	.215
12	.497	.444	.397	.356	.319	.286	.257	.213	.208	.187

Work Sheet 1. Buy Alternative.

After Tax Cash Outflow Comparison

End of Year	Principal Payment	Interest Payment	Added Operating Expense	Total Cash Outflow	Salvage Value* (Sale)	Depreciation	Total Deductible Expense	Reduction in Taxes from Expenses	Investment Credit	Net After Tax Cash Outflow
Start										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
TOTAL										
How to Compute				1+2+3			2+3+6	7 x Tax Rate		4-5-8-9
Col. No.	1	2	3	4	5	6	7	8	9	10

*Note. At end of analysis period, enter salvage as a sale (cash inflow) in Col. 5 in the Buy Alternative OR as a purchase (cash outflow) in Col. 11 in Lease alternative.

Work Sheet 2. Lease Alternative and Comparison.

After-Tax Cash Outflow Comparison

Lease Alternative						Comparison: Lease vs. Buy				
End of Year	Lease Payment	Added Operating Expense	Tax Deductible Expense	Reduction in Taxes	Investment Credit	<u>LEASE</u> Net After Tax Cash Outflow	<u>BUY</u> Net** After Tax Cash Outflow	Difference (Saving from Buying)	Discount Factor	Discounted Difference*** (Value of Saving)
Start									1.0	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
TOTAL										
How to Compute			11 + 12	13 x Tax Rate		13 - 14 - 15	From Col. 10	16 - 17	Table 1	18 - 19
Col. No.	11	12	13	14	15	16	17	18	19	20

**Obtain from Column 10, Table 2.

***A positive (+) number indicates dollar advantage of BUY over LEASE. A minus (-) number gives dollar advantage of LEASE over BUY.