

Leasing As An Option For Acquiring Assets

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Leasing is an option that agricultural producers can use to gain access to costly assets like machinery, equipment, and facilities. Leasing is becoming more common in commercial agriculture and in the future it is likely that more and more producers will utilize this financing option.

The purpose of this paper is to explain some of the concepts of leasing so that the reader can become better acquainted with this financing option. In the initial sections of this paper we will discuss the mechanics of leasing. Next we will consider how leasing compares to financing the purchase of an asset with credit. In the latter sections of this paper we will discuss a spreadsheet one can use to determine whether it is financially advantageous to lease an asset versus purchase the asset with the use of a loan. Hopefully this information will help the reader understand leasing and see how it can be used as a financing option for a farm business.

Concepts of Leasing

When one leases an asset such as a tractor, one agrees to make payments in return for the use of the asset for some period of time. There is no transfer of ownership of the asset with leasing; only the right to use the asset.

Leasing arrangements can be set up for any period of time that is mutually agreeably to both the owner of the asset (the lessor) and the person who will be using it (the lessee). A one-year lease can be negotiated on an asset or an owner and a user can agree to a multiple year lease. There are no restrictions on the number of years two parties can set for a lease but generally the lease period will never exceed the expected life of the leased asset. Thus the maximum lease period for an asset with an expected life of, say, seven years would be typically seven years or less.

The lease payment a user will have to pay in order to gain the right to use an asset is also negotiable. Obviously the lessee (the user) would like this payment to be as low as possible. Alternatively the lessor (the owner) would like the payment to be as high as possible so that the maximum return possible is earned on the asset. These conflicting preferences of the lessee and the lessor mean both parties will generally have to make some concessions when they are negotiating the lease payments.

In general the lease payment agreed to by the user and the owner will be close to the cost the user would incur if the asset in question was purchased. This is not surprising since it would be illogical for a person to agree to a lease payment that is higher than

the costs the person would incur on a loan that was used to finance the purchase of the same asset.

Pros and Cons of Leasing

As with any management decision, there are both pros and cons associated with leasing. One of the advantages of leasing is that it does not require one to come up with a large amount of money to cover the down payment normally required with conventional commercial loans. Another advantage of leasing is that it does not commit a person to owning an asset that could become technologically obsolete as newer and more advanced technology is available in the market place.

While leasing has some advantages it also has some disadvantages. The biggest drawback to leasing is that it does not allow one to build equity in an asset. Another disadvantage of leasing is that it does not guarantee that a person will retain the control of an asset for an extended period of time.

Whether the advantages of leasing outweigh the disadvantages depends on the person who is considering the lease. Some people will place a high value on the fact that no down payment is required with leasing and decide that leasing is best for them. Other people will determine that they are better off owning the asset so they can be sure to capture any capital gains that may be realized if the asset happens to increase in value over time. There is no right or wrong decision when it comes to leasing because people who are faced with these decisions are typically in different situations. As such people make different decisions about leases.

Tax Considerations When Leasing

Lease payments are deductible expenses for tax purposes. This is an important point because it means every dollar one pays as a lease payment reduces one's taxable income. This is not the case when one elects to purchase an asset and finance the purchase with a loan. In this latter case only depreciation expenses and interest paid on loans are tax deductible expenses. This difference in the deductions that can be claimed depending on whether an asset is leased or purchased is something one needs to consider when determining whether it is preferable to lease or own an asset.

Purchasing an Asset When a Lease Expires

Many lease arrangements give a lessee (the user) the option of purchasing the leased

asset at the termination of the lease. This right to purchase a leased asset can be beneficial to a person because it can put them in essentially in the same position they would have been if they had initially purchased the asset in question.

In cases where a person purchases an asset that was previously leased, the price paid for the asset has to be at or near the fair market value of the asset or else the Internal Revenue Service (IRS) will be consider the lease a purchase for tax purposes. This is an important point because if the IRS rules that the lease was actually a purchase arrangement, amended tax returns have to be filed for those years where lease payments were originally claimed as deductions. In the amendment returns the lease payments have to be treated as if they were principal and interest payments on loan that was used to finance the purchase of the asset. Also the amended returns can include the depreciation expenses one could have claimed over time if the asset had originally been considered an owned asset.

In order to insure that one does not have to go through the hassle of filing amended tax returns, one should only exercise a purchase option on a leased asset when the purchase price is at the fair market value of the asset. Failing to do this can result in a lot of headaches and paperwork or, at the extreme, a stressful IRS audit.

Determining Whether it is Less Costly to Lease Versus Finance a Purchase With a Conventional Loan.

When one has the option of leasing an asset, one has to determine whether leasing is the least costly option for obtaining the asset. Making this determination is no easy task because it involves a series of rather complex calculations that the average person would not easily understand. Recognizing that it could be difficult for a person to properly estimate the costs of leasing and purchasing an asset, a spreadsheet was developed for persons to use to compute both the costs of leasing and owning assets. This spreadsheet, named LEASEVBUY, is relatively easy to use and it provides a person the cost information that is needed to determine whether it is less or more costly to lease an asset.

The first two tables presented below are examples of the two worksheets a person must enter the data needed to compute both the costs of leasing and purchasing an asset. The first table pertains to the general input section of the spreadsheet and the second table corresponds with the worksheet where one specifies the depreciation expenses associated with the purchase and lease options.

As shown in Table 1, the inputs for LEASEVBUY are organized into four categories: Opportunity Cost of Capital and Tax Rate, Asset Value and Life, Lease Terms, and Loan Terms. Values have to be assigned to all of these variables in order to compute the costs of leasing and owning an asset.

Table 1: Worksheet 1 of the LEASEVBUY Spreadsheet B General Input Section

LEASE VERSUS BUY COMPARISON

CAPITAL COSTS & TAX RATE

Opportunity cost of capital (Pre-tax)	10 %
Marginal Tax Rate	50.13 %

ASSET VALUES & LIFE

Total Value of Asset	100000
Expected Life of Asset (In Months)	84
Expected Value of Asset at End of Life	0
Minimum Number of Months to Depreciate	60

LEASE TERMS

Monthly Lease Payment	3143
Total Number of Lease Payments	36
Number of Advance Payments	2
Month in Which Lease Initiated	3
<i>(JAN = 1, FEB = 2, MAR = 3 DEC = 12)</i>	
Estimated Residual in Year:	4 10000

LOAN TERMS

Amount Borrowed	100000
Annual Percentage Rate	10 %
Payments per Year	12
Total Number of Payments on Loan	36

The opportunity cost of capital should be set at a level that is equal to the return a person could get if the money used to lease or purchase an asset was instead committed to another investment or used to retire existing debts. This variable, which is used to compute the present values of the cash flows associated with both the leasing and purchase options, accounts for the costs a person incurs on money that is used to make lease payments or principal and interest payments on loans.

The tax rate specification should be set equal to the rate at which a person would pay taxes on income. This rate should reflect the portion of income that will go to paying federal income taxes, federal self-employment taxes, and state income taxes. This tax rate specification is used in computing after-tax cash flows and the after-tax cost of capital.

The specifications for the asset value, the expected life of the asset, and the expected

value of the asset at the end of its useful life are primarily used to compute planned cash flows. In addition these values are used to estimate the straight-line depreciation expenses that could be claimed on the asset for tax purposes.

The lease terms are reflected by the values assigned to four variables: the monthly lease payment, the total number of lease payments, the number of advance payments, and the estimated residual that would be paid at the end of the lease in order to acquire the leased asset. The month in which the lease is originated is also specified to define when lease payments will be made in a calendar tax year running from January to December.

The terms of the loan that could be used to purchase the asset are specified in terms of: the amount borrowed; the annual percentage rate (APR) that will be charged on outstanding loan balances; the number of payments that will be made in a year; and the total number of payments that will be made on the loan. Given this format, a person can specify any type of loan repayment plan. Entering 12 payments per year would reflect a monthly repayment plan and an annual repayment plan would be reflected by an entry of 1 payment per year. The spreadsheet uses all of these specifications that have been mentioned to automatically computes loan payments, interest expenses, and the after-tax cash flows for the loan.

As shown in Table 2, a user of the LEASEVBUY spreadsheet has two options for specifying the depreciation expenses for assets. The first is to use the default values that are automatically computed under the assumption a straight-line depreciation method will be used to estimate depreciation expenses. The other option is to enter different depreciation expenses; such as those that could be claimed when accelerated depreciation methods are used for tax purposes. If no alternative depreciation expenses are specified the spreadsheet automatically uses the straight-line depreciation estimates.

Table 2: Worksheet 2 of the LEASEVBUY Spreadsheet B					
Depreciation Input Section					
PURCHASE			LEASE		
	Straight Line Depreciation	Your Depreciation	Year	Straight Line Depreciation	Your Depreciation
1.00	7142.86	10710.00	4.00	1250.00	
2.00	14285.71	19130.00	5.00	2500.00	
3.00	14285.71	15030.00	6.00	2500.00	
4.00	14285.71	12250.00	7.00	2500.00	
5.00	14285.71	12250.00	8.00	1250.00	
6.00	14285.71	12250.00			
7.00	14285.71	12250.00			
8.00	7142.86	6130.00			

Once a user has entered values for all the variables identified in Tables 1 and 2, the user can then go to the third worksheet of the spreadsheet and view a results report that states the costs of leasing and purchasing an asset. An example of this third section of the spreadsheet is presented in Table 3.

Table 3: Worksheet 3 of the LEASEVBUY Spreadshet B Results Section

LEASE VERSUS BUY COMPARISON

LEASE

Present Value Lease Payments	\$52,815.07
Present Value Residual	\$8,641.59
Less: Present Value Depreciation Tax Savings	(\$3,806.70)
Less: Present Value Sale	\$0.00
Net Cost	\$57,649.96

PURCHASE WITH LOAN

Down Payment	\$0.00
Present Value Loan Payments	\$99,840.01
Less: Present Value Depreciation Tax Savings	(\$41,787.05)
Less: Present Value Sale	\$0.00
	\$0.00
Net Cost	\$58,052.97

The results generated by the LEASEVBUY spreadsheet reflect the net present values of the cash costs and savings (depreciation tax savings) one would experience depending on whether an asset is leased or purchased. A net present value is reported for the lease option and another one is reported for the case where the asset is purchased. By comparing these net present values a person can determine whether it is less or more costly to lease an asset. In cases where the net present value for leasing is less than it is for purchasing, leasing would be the least costly method for acquiring an asset. Alternatively, leasing would be more costly, and therefore not preferable, any time the net present value reported for leasing is greater than it is for purchasing the asset.

The LEASEVBUY spreadsheet can be used to evaluate almost any lease and purchase

arrangement with minimal effort or understanding of the financial concepts underlying net present value analysis. Hopefully this spreadsheet will be helpful to persons needing to determine whether it is financially advantageous to lease assets that could otherwise be purchased.

Summary

Leasing can be a financing option that be more affordable than a loan received form a commercial agricultural lender. Hopefully this paper has given the reader an understanding of some of the concepts of leasing the advantages and disadvantages of leasing versus buying assets. The LEASEVBUY spreadsheet discussed in this paper is intended to help people determine if it is more affordable to lease or finance the purchase of an asset with a loan. This spreadsheet is relatively easy to use and yet it allows one to obtain accurate and useful measures of the costs of leasing and owning an asset. Hopefully this decision-aid will be of value to persons who need to decide if it is financially advantageous for them to lease an asset or borrow money and by the asset outright.