

Transferring Farm Machinery through a Lease Agreement

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There are numerous methods to transfer the ownership of farm machinery. As outlined by Edwards and Hofstrand (2013), these methods include outright sale, installment sale, gradual sale over a period of years, lease agreement, and gift. These five methods have their own advantages and disadvantages pertaining to financial considerations and income tax considerations. The fourth method outlined by the authors, lease agreement, is appealing when dealing with a situation where an older generation on the farm is trying to transfer farm machinery to a younger generation. Lease agreements can include an option to buy or a gradual sale. Lease agreements often lower the cash flow requirements of the younger generation. Lease payments are taxed as they are received by the owner (typically, the older generation), and are a deductible expense to the younger generation. To meet IRS guidelines, lease payments must reasonably reflect the value of the farm machinery.

This article describes a conceptual approach that can be used to transfer farm machinery through a lease agreement, and provides an illustration of how this approach can be used in practice. The illustration also depicts how the lease payments may evolve over time.

Components of Farm Lease Payments for Farm Machinery Rental Arrangements

A contributions model, typically used to divide farm business income (see Langemeier, 2017); can be used as a conceptual framework to compute lease payments. The contributions model recognizes the annual contribution of farm machinery for each party (e.g., younger and older generations). Here, we are interested in the net contribution between the two parties. For example, if the older generation owns most of the machinery, there will be a net payment from the younger generation to the older generation. In the discussion below, the difference in annual contributions between the two parties is referred to as the “net lease payment”.

Net lease payments are typically computed using economic depreciation and an opportunity interest charge, which is included regardless of whether the owner of farm machinery has debt obligations pertaining to the farm machinery. It is important to note that all machinery costs are typically not included in the net lease payment {see Langemeier (2015) for a discussion of machinery costs}. Specifically, in the example illustrated below, repairs, fuels and utilities, insurance, and property taxes are not included in the net lease payment. Repairs, insurance, and property taxes are assumed to be paid by the respective owners of the farm machinery. Fuel and utilities are an expense covered by the farm, and are thus not included in net lease payments.

Assuming an average machine life of 10 years, straight-line economic depreciation, and a 5% opportunity charge for interest, to obtain the annual contributions for each party we would multiply the farm machinery investment for each party by 15%. The annual contributions are then netted to obtain the net lease payment. Beginning, ending, or an average of the beginning and ending balance sheet values for farm machinery can be used to come up with the farm machinery investment for each party. This assumes that the balance sheet values for farm machinery accurately represent the true farm machinery values. In some cases, it may be prudent to use farm machinery values that are relatively lower than the

balance sheet values. If interest rates increase in the next few years, an argument could be made for using a higher percentage than the 15% suggested above to compute the annual contributions.

Case Farm Illustration

The case farm has 3000 acres, of which 500 acres are owned by the older generation. In addition to owning land, the older generation owns the vast majority of machinery and equipment, which is the focus of this article. Tables 1-3 present the annual contributions of both parties and net lease payments over a three-year horizon.

Table 1 illustrates the annual value of the contributions for each party (younger and older generations) and net lease payment for the first year. The younger generation is just returning to the farm as a full-time operator so they own only a small percentage of the machinery and equipment. Specifically, in this case, the younger generation has recently purchased one-half of a combine. The older generation paid for the remaining portion of the combine. At this time, this is the only asset they own. The machinery and equipment owned by the older generation is from one to ten years old. The annual contributions in the first year were \$24,581 for the younger generation and \$129,732 for the older generation. This yields a net lease payment of \$105,152 for the younger generation (\$129,732 minus \$24,581).

In the second year, the younger and the older generation purchased a tractor together. The other assets were depreciated using straight-line depreciation and a salvage value of 20% of the original price. The annual contributions in the second year were \$44,978 for the younger generation and \$128,267 for the older generation, resulting in a net lease payment of \$83,289 for the younger generation (\$128,267 minus \$44,978). Though not shown in the table, an older tractor was sold with the proceeds going to the older generation.

The younger generation purchased another tractor in the third year. In this instance, the tractor was purchased without the help of the older generation. Again, an older tractor was sold with the proceeds accruing to the older generation. The remaining assets were depreciated using straight-line depreciation and a salvage value of 20% of the original price. The annual contributions in the third year were \$86,971 for the younger generation and \$108,892 for the older generation. The net lease payment in the third year was \$21,920 (\$108,892 minus \$86,971).

In the example discussed above, the net lease payment dropped substantially from the first to the third year. This was due to the large asset purchases in all three years, and in particular to the large asset purchased by the younger generation in the third year. If these large asset purchases would not have occurred, or occurred to a lesser extent, the net lease payment would not have dropped near as much as it did in the illustrations. It is also important to note that the approach used in this paper would need to be updated in the fourth and subsequent years as the percentage of machinery and buildings owned by the respective generations change. If the younger generation continues to be responsible for purchasing assets in the fourth and subsequent years, eventually the older generation would not own any of the machinery.

Concluding Comments

This article described a conceptual approach that can be used to transfer farm machinery through a lease agreement, and provided an illustration of how this approach can be used in practice. The illustration assumed that there were two generations involved in the transfer of assets, and that the older generation started out with the vast majority of the owned machinery. The conceptual framework illustrated in this paper could easily be modified for situation where there are three or more parties involve in the farm machinery transfer.

Citations

Edwards, William and Don Hofstrand. "Transferring Ownership of Farm Machinery." *Ag Decision Maker*, A3-32, Iowa State University, August 2013.

Langemeier, Michael. "How Should Farm Business Income be Divided?" Center for Commercial Agriculture, Purdue University, March 2017.

Langemeier, Michael. "Benchmarking Crop Machinery Investment and Cost per Acre." Center for Commercial Agriculture, Purdue University, September 2015.

Table 1. Annual Value of Contributions and Net Lease Payments for Year 1.

Item	Younger Generation	Older Generation
<u>Power Unit Complement</u>		
Tractors	\$0	\$230,100
Combine	\$163,870	\$163,870
Trucks	\$0	\$35,000
Sub-Total	\$163,870	\$428,970
<u>Machinery Complement</u>		
Anhydrous Applicator	\$0	\$10,115
Chisel	\$0	\$22,855
Combine Heads	\$0	\$115,385
Drill	\$0	\$25,380
Field Cultivator	\$0	\$14,270
Grain Cart	\$0	\$9,225
Planter	\$0	\$72,110
Sprayer	\$0	\$166,570
Sub-Total	\$0	\$435,910
<u>Contributions and Net Lease Payment</u>		
Contributions	\$163,870	\$864,880
Annual Contributions	\$24,581	\$129,732
Net Lease Payment	\$105,152	

Table 2. Annual Value of Contributions and Net Lease Payments for Year 2.

Item	Younger Generation	Older Generation
<u>Power Unit Complement</u>		
Tractors	\$150,230	\$294,565
Combine	\$149,620	\$149,620
Trucks	\$0	\$30,000
Sub-Total	\$299,850	\$474,185
<u>Machinery Complement</u>		
Anhydrous Applicator	\$0	\$8,925
Chisel	\$0	\$20,450
Combine Heads	\$0	\$104,720
Drill	\$0	\$18,130
Field Cultivator	\$0	\$11,100
Grain Cart	\$0	\$7,550
Planter	\$0	\$61,015
Sprayer	\$0	\$149,035
Sub-Total	\$0	\$380,925
<u>Contributions and Net Lease Payment</u>		
Contributions	\$299,850	\$855,110
Annual Contributions	\$44,978	\$128,267
Net Lease Payment	\$83,289	

Table 3. Annual Value of Contributions and Net Lease Payments for Year 3.

Item	Younger Generation	Older Generation
<u>Power Unit Complement</u>		
Tractors	\$444,439	\$239,635
Combine	\$135,370	\$135,370
Trucks	\$0	\$25,000
Sub-Total	\$579,809	\$400,005
<u>Machinery Complement</u>		
Anhydrous Applicator	\$0	\$7,735
Chisel	\$0	\$18,045
Combine Heads	\$0	\$94,055
Drill	\$0	\$10,880
Field Cultivator	\$0	\$7,930
Grain Cart	\$0	\$5,875
Planter	\$0	\$49,920
Sprayer	\$0	\$131,500
Sub-Total	\$0	\$325,940
<u>Contributions and Net Lease Payment</u>		
Contributions	\$579,809	\$725,945
Annual Contributions	\$86,971	\$108,892
Net Lease Payment	\$21,920	