



Accelerated Depreciation and Machinery Purchases

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It is a common tax management strategy to use accelerated depreciation, which includes bonus depreciation and section 179 depreciation, to reduce taxable income on crop farms. For 2016, up to \$500,000 of section 179 depreciation and 50 percent bonus depreciation can be used when purchasing assets. Relatively low expected net returns make these accelerated depreciation methods less attractive than they were a few years ago. However, above trend yields and stronger than expected soybean prices, increase the likelihood that some farms will be examining the use of accelerated depreciation as a tax management strategy in 2016. It is important to note that in addition to tax management there are several factors that need to be examined when evaluating machinery and equipment purchases. This article discusses the factors that need to be considered when making machinery and equipment purchase decisions.

Machinery Purchases and Liquidity Management

In today's environment of relatively low prices and net returns, it is important to gauge the impact of every major farm decision, which would include asset purchases, on a farm's liquidity. Working capital has taken a hit in the last few years. For example, from 2014 to 2015, the median working capital to value of farm production ratio for Illinois FBFM farms with a value of farm production greater than \$1,000,000 declined from 0.52 to 0.45. For Illinois FBFM farms in the lowest quartile (upper quartile), the working capital to value of farm production ratio declined from 0.20 to 0.09 (0.84 to 0.80).

Table 1 presents projected 2016 value of farm production, depreciation, net farm income, and change in cash flow for a farm in west central Indiana with 3000 tillable acres that utilizes a corn/soybean rotation. Change in cash flow was computed by subtracting family and operator labor, and principal payments on term debt from net farm income. Costs were assumed to be similar to those presented in the 2016 Purdue Crop Cost & Return Guide. A debt to asset ratio of approximately one-third was assumed. The farm was assumed to own 25 percent of their land and to be making payments on three-fourths of the ground that was owned. In addition, the farm was making payments on previous machinery and equipment purchases. This case farm was used to make income and expense projections. These projections were in turn used with assumptions pertaining to liquidity to examine the impact of machinery and equipment purchases on the working capital to value of farm production ratio. The three categories of working capital to value of farm production discussed above (upper quartile, median, and lower quartile) were used in the table to illustrate possible declines in the working capital to value of farm production ratio. Essentially, we are examining what would happen to liquidity for the case farm under

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each working capital category. The scenarios involving machinery and equipment purchases assumed that one-half of the purchase was paid for by drawing down liquidity. The rest was paid for with additional term debt.

Table 1. Liquidity Measures for Three Working Capital Categories, 2016			
	2016	1/1/2016	12/31/2016
<u>Upper Quartile Working Capital</u>			
Value of Farm Production	1,893,339		
Depreciation	150,486		
Net Farm Income	119,190		
Change in Cash Flow	-57,557		
Working Capital to Value of Farm Production			
Without Machinery Purchases		0.80	0.77
With Machinery Purchases		0.80	0.73
<u>Median Working Capital</u>			
Value of Farm Production	1,893,339		
Depreciation	150,486		
Net Farm Income	119,190		
Change in Cash Flow	-57,557		
Working Capital to Value of Farm Production			
Without Machinery Purchases		0.45	0.42
With Machinery Purchases		0.45	0.38
<u>Lower Quartile Working Capital</u>			
Value of Farm Production	1,893,339		
Depreciation	150,486		
Net Farm Income	119,190		
Change in Cash Flow	-57,557		
Working Capital to Value of Farm Production			
Without Machinery Purchases		0.09	0.06
With Machinery Purchases		0.09	0.02

A widely used benchmark for working capital to value of farm production is 0.35 and above. In the long-run, to maintain their machinery set, a farm needs to at least purchase enough machinery and equipment to cover their annual depreciation. Over the long-run, this is considered a minimum level of machinery and equipment purchases. If a farm plans on growing, in the long-run, machinery and equipment purchases will need to exceed annual depreciation levels. The machinery and equipment purchase scenarios presented in table 1 assume that machinery and equipment purchases matched the annual depreciation level. A farm in the upper quartile is projected to stay well above the benchmark working capital to value of farm production ratio even if it purchases \$150,486 of machinery and equipment. The working capital to value of farm production ratio for a farm in the median category declined from 0.45 to 0.42 for the scenario without machinery and equipment purchases, and from 0.45 to 0.38 for the scenario with machinery and equipment purchases. This farm would certainly need to assess whether the drop in liquidity resulting from machinery and equipment purchases is acceptable. The determination of whether this drop in liquidity is too large is a difficult task. At a minimum, it depends on how much of a premium the farm is paying above breakeven cash rent and whether the farm anticipates losses in upcoming years. It is also important to note that it is expensive to sell an asset that has been recently purchased.

In addition to receiving a relatively low price for the asset, the sale may also trigger depreciation recapture. For a farm in the lower quartile category, the working capital to value of farm production ratio declined from 0.09 to 0.06 for the scenario without machinery and equipment purchases, and from 0.09 to 0.02 for the scenario with machinery and equipment purchases. For this farm, it would not be a good idea to purchase additional machinery and equipment.

Other Considerations When Evaluating Machinery Purchases

In addition to examining the impact of machinery and equipment purchases on a farm's liquidity, it is important to assess the benefits and costs of machinery and equipment purchases, the economics of leasing versus buying machinery and equipment, and farm growth plans. The benefits and costs of all potential asset purchases (e.g., machinery and equipment, buildings, and land) should be evaluated before purchasing the asset. For a crop farm, the benefits of purchasing machinery and equipment could potentially include higher yields due to improved timeliness, lower fuel and repair costs, lower labor costs, and lower taxes. Costs associated with purchasing machinery and equipment are primarily related to the additional depreciation and interest associated with the asset purchase. The following question needs to be asked. Do the benefits of each purchase outweigh the costs? If not, in today's environment of tight margins and potential declines in liquidity, the asset should not be purchased. It is also important to evaluate the relative benefits and costs of leasing machinery and equipment. Is it more economical to lease the machinery and equipment rather than purchasing? The answer to this question involves evaluating the costs and tax benefits associated with leasing and buying assets. Finally, a farm that is growing, perhaps because one or more family members are joining the operation, often has more demand for additional machinery and equipment. It is often difficult to expand if the farm does not purchase additional machinery and equipment. Despite this fact, it is important to determine whether a farm that is expanding can at least partially delay the purchase of machinery and equipment. Again, do the benefits of purchasing machinery and equipment outweigh the costs? In addition to the benefits outlined above, the benefits include those pertaining to the expansion of acres (i.e., reduced overhead costs per unit of output) when evaluating growth plans.

Concluding Comments

This article discussed items that need to be considered in addition to tax management strategies when evaluating the decision to purchase machinery and equipment. The bottom line is this: in addition to tax management strategies, a farm's liquidity position, the benefits and costs associated with machinery and equipment acquisitions, an analysis of leasing versus buying machinery, and a farm's growth strategy need to be considered when purchasing machinery and equipment.

References

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