ABSTRACT

Many people are given farmland and this phenomenon will continue. People who receive the gift of farmland may want to retain ownership for a variety of reasons: the land is already paid for; it may increase in value; it may have been in the family for a long time; or it may allow participation in production agriculture. Lack of land ownership costs may reduce the risk of land ownership. The purpose of this manuscript is to determine whether a person who has been given farmland can afford to retain ownership. A twelve-year analysis was used to determine the net income and risk associated with three strategies for retaining ownership.

What to Do with a Gift of Farmland

By Michael H. Hauger & Robert O. Burton, Jr.

Land owners have many opportunities. Many people are given farmland (often as part of an estate) and a lot of people will continue to receive the gift of farmland in the future. Although some of the Illinois cost data (that did not include land ownership costs) suggest that some per acre input costs associated with farming larger acreages tends to result in lower costs per acre than farming smaller acreages, much of the data indicate that costs per acre may be larger for larger acreages; or that cost differences between small and larger acreages may be small (Krapf, Raab, and Zwilling, 2014). Thus, it may be profitable to farm a small acreage, received as a gift.

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In many cases, farmland that is received as a gift is already paid for. Not needing to consider costs associated with land ownership may significantly reduce the risk of land ownership. The new owner may not want to consider land costs when determining what to do with the land. It might be in the best interests of the new land owner not to consider land ownership costs, especially if the land is expected to increase in value over time.

Moreover, many people who are given farmland may be reluctant to sell the land because the land may have been in the family for a long time. Also, people who are given farmland may have grown up on farms and the land may be located close to where they grew up. Often, such people like to be involved in production agriculture close to where they grew up. People who are given farmland may consult with members of the American Society of Farm Managers and Rural Appraisers (ASFMRA), who are rural appraisers, farm managers, and/or agricultural consultants, as they are deciding what to do with the land. People who are given farmland may work with ASFMRA members as they seek to retain ownership and manage the farmland.

Finally, the issues and concepts addressed in this paper may be useful to ASFMRA members as they seek to decide what to do with (and/or to manage) farmland that has been given to them (and/or as they work with people who seek to analyze what to do with a gift of farmland). For example, this manuscript is based on my Master of Agribusiness (MAB) M.S. thesis, which involved a real situation that was very important to me.

If recipients of land gifts want to maintain ownership, opportunities include cash rent, crop-share rent, and custom farming. Michael Hauger, on whose M.S. thesis this manuscript is based, (for some of the reasons listed above) very much wanted to keep and farm the land (located in Codington County, SD) that had been given to him, each of these possible options involves retaining ownership of the land.

Flexible cash leases could also be considered. They are not considered because, "Flex leases should be viewed as a mix or hybrid of cash rent and crop share agreements…" (Paulson, 2012, p. 167).[1]

Cash rent is a fixed payment given to the land owner by the tenant to farm the land. Cash rent varies with land productivity. Cash rent will provide the land owner a fixed income and is very low risk to the landowner. Because of lower crop prices, cash rents may need to be adjusted downward in the future (e.g., Schnitkey, 2014).

Crop-share rent is usually calculated on a percentage basis. For example, in a 50/50 arrangement the land owner pays half of the variable inputs, provides the land, and gets 50 percent of the crop. The tenant provides all the labor and machinery, pays half of the variable inputs, and receives 50 percent of the crop. For the land owner, crop-share is riskier than cash rent, because the land owner shares the risk with the land operator (e.g., see Gueck, et al., 2010, for a discussion of how crop-share rent might change if market conditions change.).

Another opportunity is for the land owner to have the land custom farmed. In this case, the land owner would buy all the variable inputs such as fertilizer, seed, and chemicals; and pay a custom operator to till, plant, spray, and harvest the crop. The land owner receives the whole crop after harvest. Custom farming allows the land owner to control important aspects of farming, such as

what fertilizer to apply and which crop rotation to plant. Custom farming tends to carry the most risk or income variability to a land owner; but might provide the highest income. (For a discussion of business plans that could be used in developing a plan for custom farming, see Jones, Rebecca, 2000.)

Objectives

To help understand and compare the net returns, and risk associated with cash rent, crop-share, and custom farming, this manuscript will address the objectives below:

- Measure and compare the net income associated with the three opportunities.
- Measure and compare the risk associated with the three opportunities.

Data for 12-Year Analysis

To determine the net returns and income variability of cash rent, crop-share, and custom farming, a 12-year analysis was used. The analysis used annual, average historical data that were available for most of the 12 years (2005-2016) and that seemed reasonable for Codington County, SD, the location of 40 acres of farmland that was given to one of the authors; and projected data for the future. A three-year rotation of corn, soybeans, and spring wheat was used, so the analysis will show net returns for four years on each crop. The analysis is based on data from statistical surveys from various sources including the United States Department of Agriculture (USDA) and Agricultural State Universities.

The average corn, soybean, and wheat yields for Codington County, SD from 2005-2016 is taken from the National Agricultural Statistics Service (NASS). The NASS database had the average yield for years 2005-2012. Yields for 2013-2016 were projected by taking the average of years 2005-2012 (Table 1).

Table 2 shows the average price received for corn, soybeans, and wheat for South Dakota from 2005-2013. The projected prices for corn, soybeans, and wheat from 2014-2016 were taken from the USDA (2014). These commodity prices could change depending on the basis level around Codington County, SD.

Table 3 shows the average cash rent from 2005-2016 in Codington County, SD. For years 2014-2016, because of the projected decrease in commodity prices cash rents were projected to stay flat at the 2013 cost level.

Table 4 shows the annual average input costs for producing corn, soybeans and wheat for the geographical region called the heartland from 2005-2016. The custom operation charge is for applying fertilizer and chemicals. The Economic Research Service had the projected production costs for 2014-2015. Estimates for 2016 were not available. So the senior author projected the 2016 cost of production.

The South Dakota extension service does not publish annual custom farming rates but does recommend using either Iowa State University or North Dakota State University custom rate surveys. Because Iowa State publishes a survey every year, their data were used in the analysis (e.g., see Edwards and Smith, 2005). To project 2014-2016 custom rates the senior author worked with Dr. William Edwards from Iowa State University. Annually custom rates increase about five percent, but are heavily dependent on fuel costs, according to Iowa State University. For this analysis, a five percent

projected increase in custom farming rate per year was used. In the custom farming rate analysis rock picking is only done during the soybean crop year. This is because when combing soybeans the header is on the ground and damage could occur if a rock would enter into the combine. Table 5 shows the average custom farming rates for Iowa in dollars per acre except for hauling grain which is in dollars per bushel (Edwards, 2014; Edwards & Smith, 2005-2010).

Net returns between Custom Farming, Cash Rent, and Crop-Share Rent

In this section a 12-year analysis showing the net returns from each of the three options: custom farming, cash rent or crop-share rent is shown. Table 6 compares the net returns between the options using cash accounting and historical data (when available) and projected data for future years with a corn, soybean, and wheat rotation. The option that provided the highest net returns from 2005 and 2006 is to have the land cash rented. From 2007 through 2013 the option that provided the highest net returns was to have the land custom farmed. The income peaked in 2011 at $19,607 for custom farming compared to $4,240 for cash rent. In 2012, net returns were also very strong for custom farming at $10,933, or more than double the annual net return for cash rent. The future does not look the brightest for custom farming with the projected commodity prices. In 2015, cash rent is projected to provide net returns of $5,920 compared to custom farming of $3,762. If commodity prices occur as is projected, the net returns from custom farming in 2016 would be $1,671. Crop-share through the 12-year analysis follows the trend of custom farming but the variability is less. Following are the long-run (12-year net returns) profits for each option:

- Custom Farming – $82,476
- Cash Rent – $51,512
- Crop-Share 50/50 – $59,808

Risk Analysis between Custom Farming, Cash Rent, and Crop-Share Rent

In this manuscript risk is measured as annual income variability. Table 7 shows the income variability between custom farming, cash rent, and crop-share rent. Cash rent has less variability in net returns and has the highest minimum income of the three options. The only option to guarantee an income of at least $2,672 every year is cash rent.

Conclusion, Recommendations, and Suggestions for further research

Land owners have many options with their land including custom farming, cash renting, or crop-share renting. Each option has it pros and cons with different levels of risk associated with each option. Common economics suggests the higher the risk, the higher the potential profits.

The option that provided the highest return in the long run was having the land custom farmed, which earned net returns over 12 years of $82,476. Before a land owner makes the decision to go with the option providing the highest return, he or she should consider the risk associated with each option. In this study, risk was defined as variability in annual net incomes. Custom farming will have the most risk as income will be the most variable year to year. If the land owner does not want to assume that much risk, crop-share might be the answer. Crop-share earned net returns over the 12 years of $59,808. Crop-share will reward the land owner when yields and prices are good, but also carries risk of low

net income when yields and prices decrease. The recent trend in the farming industry is to go towards a cash rent type lease. Cash rent carries the least risk for the land owner because payments are a fixed cash amount regardless of yield. The 12-year analysis shows that cash rent provided the least net returns at $51,512; this makes sense because it assumes the lowest risk.

The conclusion, that custom farming has the best net income of options considered, fits well with what the land owner in this study wants to do with the land. The land owner has an uncle who is a commercial farmer and who farms very close to the land analyzed in this research. This uncle has already agreed to perform the custom farming operations. The land owner also has a brother, who is an agronomist and works for a Cooperative that is close to the land and plans to provide agronomic advice. Having relatives close by to help with the custom farming and to provide a place to stay when the land owner travels from Kansas, where he lives and works, to the land in South Dakota, is a valuable asset. Other people, who are given farmland, may also have relatives, who live near the land.

During most of the 12-year time period for this analysis, crop prices were high. This resulted in all three options that involved retaining ownership of the land to have positive net income. If retained ownership options do not work out, the owner can still pursue an option such as selling the land.[2]

Recommendations

We recommend that land owners, who want to keep the land, examine the pros and cons with each option before making a decision. Here are some generalizations that this study confirms.

- If the land owner wants to make the most income from the land, wants to farm, but has limited time to invest in farming and is not concerned about risk, the land should be custom farmed.
- If the land owner wants to gain profits when yields and prices are high, the land should be crop-shared.
- If the land owner wants a steady income without risk and management responsibilities, the land should be cash rented.

Suggestions for Further Research

A few suggestions for further research include: flexible farm leases and tax benefits for farmers. Both of these might have an impact on the decision land owners make with their land.

Uncertain yields and unstable prices make it difficult to arrive at a fair cash rental rate for the landlord and tenant each year. To combat this problem, some owners and tenants use a flexible cash lease where the rent is not determined until after the crop is harvested. The final rental rate is determined based on the actual yields and prices. Advantages of a flexible lease include the following (Edwards & Johanns, 2014):

- The actual rent will adjust as yields or prices fluctuate.
- Profit and risk are shared between the land owner and tenant.
- Land owners are paid in cash and do not have to be involved in management of the land.

There may be tax benefits associated with farmland ownership. A person who is given farmland should consider these benefits and probably should consult with a farm tax expert.

Endnotes

1 See Paulson (2012) for more information on Flex Leases.

2 If land prices and crop prices fall, as a lot of agricultural professionals are expecting, sale of the land in the near future may be for a lower price than sale of the land now.

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Table 1. Average Crop Yields – Codington County, SD 2005-2016

			Bushels/Acre		
Year	State	County	Corn	Soybeans	Spring Wheat
2016	SD	Codington	136	35	52
2015	SD	Codington	136	35	52
2014	SD	Codington	136	35	52
2013	SD	Codington	136	35	52
2012	SD	Codington	133	33	51
2011	SD	Codington	143	35	36
2010	SD	Codington	145	36	53
2009	SD	Codington	139	34	56
2008	SD	Codington	135	35	59
2007	SD	Codington	140	39	52
2006	SD	Codington	99	32	50
2005	SD	Codington	155	36	56

Source: NASS: http://quickstats.nass.usda.gov/results/91A27008-B69B-38C7-886F-09DF30D6DA76. Accessed March 2014. Yields for 2013-2016 were projected by taking the average of years 2005-2012. Yields were rounded to the nearest whole number.

Table 2. Commodity Prices Used For Codington County, SD 2005-2016

	$/Bushel		
Year	Corn	Soybeans	Spring Wheat
2016	$3.35	$8.90	$4.30
2015	$3.30	$8.85	$4.35
2014	$3.65	$9.75	$4.90
2013	$4.10	$12.40	$6.75
2012	$6.72	$14.20	$8.33
2011	$6.03	$12.20	$8.42
2010	$5.09	$10.90	$7.40
2009	$3.23	$9.18	$5.42
2008	$3.78	$9.65	$7.46
2007	$4.17	$9.60	$6.77
2006	$2.88	$6.03	$4.52
2005	$1.79	$5.39	$3.82

Source: NASS FOR 2005-2012: http://quickstats.nass.usda.gov/results/81856870-FA0E-3634-AEF6-34E6EE9E3701. Accessed March 2014. For 2014-2016; USDA. USDA Agricultural Projections to 2023, February 2014.