

Cash Rental Rates and the 2002 Farm Bill

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There is a perception among many people that the 2002 Farm Bill will result in windfall profits for crop producers in areas like Southern Minnesota. Further, because of this perceived windfall, many expect land rental rates to increase substantially in the near term future. This paper is an attempt to quantify, by using historical yield and expense information coupled with expected government program receipts, the amount of residual income an average Southern Minnesota acre will produce toward paying cash rent.

Two tools available through the Center for Farm Financial Management (CFFM), University of Minnesota, help quantify the effects of the 2002 Farm Bill on rental returns. FairRent is a software tool that analyzes rental decisions from the producer's standpoint. The newest version, just released, incorporates the 2002 Farm Bill changes. FairRent calculates a breakeven cash rental rate based on forecasted income, expenses, and government program information for a piece of rental cropland.

The second tool is FINBIN, a free web-site maintained by CFFM which supports queries for detailed reports from over 2500 farms that belong either to the MnSCU based Minnesota Farm Business Management Education program or the Extension based Southwest and Southeast Farm Business Management Associations.

To look at the rental question, we queried FINBIN for the average yields and expense levels for corn and soybeans in Southern Minnesota over the past four years (1998-2001). This produced information from over 1,000 producers for each of the four years. We then applied the 2002 farm bill, assuming all acres were eligible for government base and a 50/50 split between the two crops. Table 1 shows the resulting yields, expenses, government payments, and the breakeven rental rate.

The results indicate that, based on past history and future government payments, the average Southern Minnesota producer can cover full costs at approximately \$97 cash rent. Some notes about the data used in this analysis:

- Prices, \$2.00 for corn and \$4.70 for soybeans, were based on fall 2003 futures prices less a 50 cent basis. Lower prices would not have changed the results substantially because of government program protection. See table 3 for the effects of varying price levels.
- Yields were the 1998-2001 averages from FINBIN for cash rented corn and soybeans. This produced surprisingly high average yields. If 1996 and 1997 yields were added, corn would be reduced to 145 bushels while soybeans would be only slightly reduced.

Table 1: Estimated Breakeven Cash Rent, Southern Minnesota

<u>Crop</u>	<u>Corn</u>	<u>Soybeans</u>
Expected yield	150.90 bu.	44.80 bu.
Expected price	2.00	4.70
Crop product income	301.80	210.56
Estimated LDP payments	-	8.06
Direct govt payments	19.16	19.16
Est. CCP payments	15.40	15.40
Other income	7.55	7.72
Gross return	343.91	260.90
Direct expenses		
Seed	35.20	18.99
Fertilizer	45.90	3.77
Chemicals	27.15	21.84
Crop insurance	7.81	10.57
Drying	6.26	-
Custom hire	4.05	3.13
Direct crop labor	0.38	0.34
Fuel	9.66	7.76
Repairs	21.35	17.09
Other direct expense	4.05	3.09
Operating interest	10.06	8.33
Total direct expenses	171.87	94.91
Overhead expenses	51.91	41.27
Operator labor & mgt.	27.76	22.85
Total listed costs	251.54	159.03
Remaining for rent	92.37	101.87
<i>Breakeven cash rent across all crops 97.12</i>		

- FairRent allocates direct and counter-cyclical payments equally to all production acres. This method is used because payments are decoupled from actual production acreage. This analysis assumes that 100% of acres are program base, split 50/50 corn and soybeans. Estimated base yields were 106 for corn and 35 for soybeans for direct payments, and 141 and 42 for counter-cyclical payments.
- The expenses include a charge for unpaid labor and management and fixed machinery costs. Some producers might be willing to bid these items away, thinking their labor and machinery are fixed costs and any contribution to fixed cost in the short term adds to net farm income. In the long run, however, producers need rented land to contribute to family income and machinery replacement.

Comparison to Existing Rental Rates

How does this \$97.12 breakeven compare with existing rental rates? By chance, it is almost exactly equal to the actual rental rate that has been paid by producers in FINBIN over the 1998-2001 period. The actual cash rent paid averaged \$97.05 for corn and \$96.19 for soybeans over the four year period. This rate increased slightly each year. The average rental rate in 2001 was \$98.99 for corn and \$98.12 for soybeans. This analysis indicates that the 2002 Farm Bill will not generate profits to support substantially higher cash rental rates.

Yield and Price Variability

Table 1 is based on average per bushel crop prices of \$2.00 for corn and \$4.70 for soybeans. What if prices are higher or lower? This analysis assumes that, as this general level of prices changes, LDPs and counter-cyclical payment rates change in the opposite direction dollar for dollar until the maximum counter-cyclical rate is reached. So, as Table 2 shows, there is not much downside price risk at these prices. If most acres are covered by program base, the counter-cyclical payments and LDPs adequately support these breakeven rental rates.

What if the general level of prices increases? Unless there is a significant change, price increases have little effect. A 10% increase in prices (\$2.20 corn and \$5.17 soybeans) increases the breakeven rental by only \$7.00 per acre. Prices have to increase beyond an estimated \$2.15 for corn and \$5.25 for soybeans (*local loan rate + maximum counter-cyclical*) in Southern Minnesota before there is much price effect.

The risk/variability of returns is mainly production risk. If average yields are decreased by 10% (136 bu. corn and 40 bu. soybeans), the breakeven rental rate is reduced to \$72. Ten percent higher yields (166 bu. corn and 49 bu. soybeans) will support \$123 cash rent. Producers should be careful when using these estimates to adjust for their production history. Each individual producer needs to analyze their own situation using their yield history, expense levels, and government program bases.

Table 2: Affect of Varying Yields and Prices on Breakeven Cash Rent

Price	- 20 %	- 10 %	Yield Per Acre Expected	+ 10 %	+ 20 %
- 20 %	46	70	94	118	142
- 10 %	46	70	94	118	142
Expected	47	72	97	123	148
+ 10 %	50	77	104	132	159
+ 20 %	68	98	128	158	188

Marketing is Key

The price sensitivity analysis in Table 2 assumes that producers' prices change \$1-for-\$1 with the national average prices used to calculate counter-cyclical payments. It does not take into account the possibility that, by skillful marketing, an individual producer might beat the market. For the purposes of this study, this assumption seems reasonable -- the average producer will probably get the average price.

For the individual producer, marketing can still be the secret to better than average profits. If this same producer managed to sell corn for \$2.20, while the national market still reflected a \$2.00 Southern Minnesota average, they would net an additional \$15.00 per acre. Of course this is a two-edged sword. If they missed the market and sold for \$1.80, they lose that same \$15.00 per acre. Experience indicates that most producers have a hard time consistently beating the average.

Sensitivity to Government Program Bases

How much difference does program base make when bidding on crop land? Table 3 shows the change in estimated breakeven rental rates with varying base acres and yields. The base situation assumes that 100% of the crop land is program base. This may be the exception rather than the rule. As table 3 shows, for each 10% reduction of base, the breakeven is reduced by about \$3.50. So a 25% reduction in base (60 total base acres instead of the full 80 in this example) would result in a substantial reduction in the breakeven rental rate, from \$97.12 to about \$88.50.

Similarly, each 10% change up or down in program yields provides this same \$3.50 change in breakeven.

Table 3. Affect of Program Base Acres and Yields

	Breakeven <u>Rent</u>	<u>Change</u>
Base situation	\$97.12	-
10 percent decrease in total base acres	93.66	-3.46
10 percent decrease in program yields	93.66	-3.46
10 percent increase in program yields	100.58	+3.46
10 percent shift of total base to corn	98.85	+1.73

For most farms, corn base is going to be worth more than soybeans. Given the base yield assumptions used in this study, shifting 10% of the crop base (8 out of 80 acres) from soybean base to corn base increased the breakeven by \$1.73 per acre. If the parcel of land used in this study had 60 acres of corn base and 20 acres of soybean base instead of the 40/40 split assumed in the base analysis, the breakeven rental rate would have increased slightly, from \$97 to \$101.50.

The Landlord's View

Landlord's returns are easier to measure but may be harder to interpret. The normal method to measure rental returns from farm land is to calculate the rate of return on investment in land ownership. The question is what land value to use. FINBIN includes two measures of land valuation, the estimated market value and the original cost valuation of the land. The average estimated market value for Southern Minnesota farm land from FINBIN (1998-2001) was \$1,430 per acre. This looks to be somewhat conservative. The cost value, what the owner originally paid to acquire land ownership, was \$939. Probably the best source available for Minnesota land values is the actual sales data from the Minnesota Land Economics website. Based on 3,148 sales in Southern Minnesota, the average sales price for farm land (1998-2001) was \$1,715.

Table 4 provides three measures of the returns to rental farm land in Southern Minnesota. The cost basis returns are the best estimate of returns on the actual investment in farm land. The other two columns, based on market values, reflect the opportunity cost of keeping funds invested in the farm land.

Table 4: Estimated Landlord Rate of Return

	<u>FINBIN Cost Value</u>	<u>FINBIN Market Value</u>	<u>Actual Sales 1998-2001</u>
Rental rate	\$97.12	\$97.12	\$97.12
Real estate taxes	14.67	14.67	14.67
Insurance	3.79	3.79	3.79
Net landlord return	78.66	78.66	78.66
Value per acre	939	1,430	1,715
Rate of return	8.4 %	5.5 %	4.6 %

Implications

The purpose of this study was not to set the cash rental rates for Southern Minnesota. It was to try to measure the impact of the 2002 farm bill on producers' residual cash available for cash rent and to discuss some of the parameters that come into play when producers bid on crop land. In summary:

- The 2002 Farm Bill will not generate windfall profits for ag producers. This study suggests that the average acre of rented crop land in Southern Minnesota will generate approximately enough income to support existing cash rental rates.
- The farm bill does provide a substantial amount of price risk protection that may help producers feel more confident in their rental bids. Some may feel that there is more protection than in the past. Under Freedom to Farm, Congress made special appropriations of Market Loss Assistance and Oilseed Payments; but producers could never count on that funding when bidding on land. These Market Loss Assistance Payments have been replaced by Counter-Cyclical Payments which will supplement the producer's income when commodity prices are low. The Oilseed Payments have been replaced by the addition of oilseeds as a covered commodity crop under the new bill. Producers now know the calculations for the direct and counter-cyclical payments and can use that information when bidding cash rental rates on land.
- Every rental situation is different. In addition to productivity, producers should pay particular attention to government program base acres and yields when bidding on rental land. A farm that has program base on less than half of its acres may generate \$15 to \$20 less income per acre than a farm with 100% base.
- Landowners also need to be aware of these government program issues. Base acre and yield decisions made during the coming Farm Bill signup will have a major impact on the potential rental value of their property.

While the analysis in this paper is limited to Southern Minnesota, the same relationships between government programs, old and new, will impact other regions. Renters need to carefully weigh the income potential of rental land, including government program payments, when bidding on rental properties. Landowners need to understand the provisions of the 2002 Farm Bill and involve themselves in the signup decisions. These decisions will impact the value of their land and the ability to garner rent well into the future.

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