

A Preliminary Estimate of 2019 Enterprise Profitability

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Introduction

Every year the Kansas Farm Management Association (KFMA) publishes the whole farm and enterprise summaries of farmers in the program. The KFMA has been helping farmers since the 1930s and has computerized farm records back to the early 1970s. There are currently around 2,000 farms in the KFMA system and in any given year about 1,100 of those farms will have records that are useable for research, teaching, and Extension analysis. This is one of the best systems in the country and the data provided by the KFMA can answer questions of farmer profitability and also the profitability of specific crop and livestock enterprises.

Since 2019 has now passed and information is available from the USDA for state grain yields and prices, many people are wondering about how profitable crop enterprises were in the state during 2019. Rather than wait for the official KFMA enterprise reports to be completed, this paper will estimate the corn, soybean, wheat, and grain sorghum enterprise profitability based on information currently available. Actual enterprise results may vary from this estimate.

Methods

The 2018 KFMA enterprise summaries are used for a baseline and then adjusted into a 2019 estimate. Based on prices obtained as part of the crop budgeting process, good estimates of the expenses are available for 2018 and 2019. Most of the expense categories changed little from 2018 to 2019. Seed and fuel prices were a little lower while pesticides, cash rent, and fertilizer were slightly higher. These percentage changes in the expense categories were used to adjust the KFMA 2018 enterprise expenses.

Additional categories of machinery costs in the estimates include the machinery repair category and the depreciation category. The lower profitability over the last several years has curtailed machinery purchases. This has resulted in farmers' equipment getting older. Older equipment will have less depreciation and higher repairs. These assumptions were applied to the enterprise estimates where repairs were estimated to be 8% higher and depreciation 2% lower.

The biggest changes to the enterprise estimates occurred on the revenue side due to changes in yields, prices, crop insurance, and government payments. As with the expenses, percent changes in the USDA estimates of yields were used to adjust the KFMA 2018 yields for the 2019 estimates.

Price received in the KFMA enterprise summaries is often different from the reported USDA calendar year average price because of how KFMA farmers may have marketed their grain. Estimates may deviate from the final KFMA enterprise report as a result of this pricing uncertainty. As of mid-January, the USDA has not reported the state grain price for December. Thus, the 2019 price used in these estimates is the average monthly price from January through November as reported by the USDA.



Crop insurance revenue is estimated to be a function of yield. For corn, soybeans, and grain sorghum, yields were very similar in 2018 and 2019. Wheat, however, saw a large yield increase in 2019 that resulted in estimated crop insurance revenue being reduced.

The last major revenue category is government payments. ARC and PLC payments are averaged across all acres in the enterprise summaries. These payments varied widely from county to county, and farm to farm, across the state this past year and are dependent on how an individual farm is signed up in the programs. The estimated income represents an estimated mix of the program sign up of those farms included in the KFMA summary. In 2019 there was a substantial change in how Market Facilitation Program (MFP) payments were figured. The bulk of the 2018 payment went to soybeans and grain sorghum while in 2019, the payment was spread across the major crops equally. The combination of these changes results in our 2019 estimates of lower government payments for soybeans and grain sorghum but higher payments for wheat and corn. The estimated total government payments averaged for all crops is \$57.50 per acre for these projections.

Results

Tables 1, 2, 3, and 4 have the 2018 KFMA state enterprise summaries for corn, soybeans, wheat, and grain sorghum, respectively. The tables also include projected estimates for 2019.

The KFMA corn enterprise summary is for the state non-irrigated corn enterprise. KFMA reported corn yield will almost always be less than the USDA reported state corn yield which is a mix of irrigated and non-irrigated corn production. In 2018, the reported KFMA non-irrigated corn yield was 109 bushels per acre, while the USDA estimate was 129 bushels per acre. USDA estimated corn yields were up by 3% in 2019 and this estimated increase was used to adjust the KFMA 2018 baseline yield. In 2018, KFMA farmers received nearly the same price for corn as that reported by the USDA. The projection for prices is \$0.21 per bushel higher in 2019. Because of how the MFP payments were calculated in 2019, government revenue was much higher for corn in 2019. The result of higher yields, prices and government payments means the 2019 estimate of corn revenue jumped from \$367 per acre to \$443 per acre. This led to an estimated average net return to management of \$33 per acre in 2019 compared to a loss of \$39 per acre in 2018.

Soybean yield in the KFMA summary is slightly higher than the USDA reported yields for 2018. USDA estimated yields were 1.5 bushels per acre lower in 2019. This percentage decrease was used to adjust the KFMA yield number. In 2018, KFMA farmers received a lower price per bushel compared to the USDA average price. The USDA price declined by nearly 9% in 2019 from 2018 levels. Assuming that KFMA farmers market their grain at the state average price, the effect on the 2019 soybean enterprise estimate is a price decline of less than 1%. The changes of slightly lower soybean yields, different distribution of MFP, along with lower per bushel prices in 2019, means total gross revenue for soybeans is projected to drop from \$412 to \$382 per acre for the average farm. When combined with the nearly flat expenses, net returns to management is forecast to drop to \$40 per acre from \$72 per acre in 2018.

Wheat yields and prices changed by large amounts in 2019. KFMA farmers received a wheat price that was \$0.20 per bushel higher than the 2018 USDA state average price. Prices reported by the USDA are 8% lower in 2019. Using the USDA 2019 price for the KFMA 2019 wheat enterprise estimate, prices dropped from \$4.88 to \$4.33 per bushel. Offsetting the large decrease in prices is a large increase in yield. 2018 was a poor year to grow



wheat with a state average of 38 bushel per acre reported by the USDA. For 2019, USDA is reporting a state yield of 52 bushels per acre. Since the KFMA yield runs slightly above the USDA number, the estimated 2019 wheat enterprise yield is 56 bushels per acre. Combining the lower price, the higher yield, and the higher government payment, the gross revenue from wheat jumps from \$196 to \$267 per acre. With relatively flat expenses, the net return to management is forecast to be \$33 per acre, up from a loss of \$36 in 2018.

Grain sorghum, per USDA estimate, is expected to have a 3 bushels per acre lower yield in 2019 compared to 2018 while prices are expected to increase by \$0.12 per bushel. The MFP payment in 2018 was greater than corn and wheat but less than soybeans. The MFP payment in 2019 will be lower than 2018 resulting in less government payments in 2019. The combination of a lower yield and lower government payments, but higher price, results in a \$8 decrease in gross revenue to \$292 per acre. Grain sorghum, like the other crops, has expenses that have increased only slightly from 2018 to 2019. Thus, the projected net returns to management decreases from \$35 per acre to \$23 per acre.

Conclusion

This should be a better overall income year for Kansas farmers. Corn and Wheat enterprises have much higher net returns while the soybean and grain sorghum net returns, while lower, are still positive. Thus, net farm income for the state in 2019 should be higher than it was in 2018. However, this comes with a caveat as the improvement in net farm income occurs mainly due to higher government payments. Without these, many enterprises would likely not be profitable.



Table 1. 2018 and Estimated 2019 Corn Enterprise Cost and Returns

Year	Corn 2018	Corn 2019
Yield (bu/ac)	109.4	112.8
Price	3.51	3.72
Operator %	86%	86%
Income		
Grain revenue	\$ 329.16	\$ 359.67
Government payments	9.00	57.50
Crop insurance	22.53	20.00
other revenue	5.88	5.88
Gross income	\$ 366.57	\$ 443.05
Expenses		
Hired labor	15.76	16.29
Machinery repairs	21.22	22.90
Interest	11.36	11.36
Fuel	13.72	13.20
Auto	0.46	0.46
Fees	2.51	2.51
Personal property tax	1.45	1.45
General farm insurance	6.31	6.31
Conservation	0.16	0.16
Utilities	2.47	2.47
<i>Indirect Expenses</i>	<i>75.42</i>	<i>77.11</i>
Seed	53.17	52.67
Crop insurance	17.08	16.56
Fertilizer	64.16	64.54
Machine hire	12.48	13.47
Misc	1.75	1.75
Cash rent	28.41	29.37
Pesticides	38.60	39.39
<i>Direct Expenses</i>	<i>215.65</i>	<i>217.75</i>
Total Variable Costs	291.07	294.86
Return above variable costs	\$ 75.50	\$ 148.19
Depreciation	34.14	33.46
Real estate tax	2.95	2.95
Unpaid operator labor	36.74	37.96
Interest charge	14.94	14.94
Land charge	25.25	26.11
<i>Total fixed expenses</i>	<i>114.02</i>	<i>115.42</i>
Total Expenses	405.09	410.28
Net Return to Management	\$ (38.52)	\$ 32.77
Net Return to Labor-Management	\$ 13.98	\$ 87.02



Table 2. 2018 and Estimated 2019 Soybean Enterprise Cost and Returns

Year	Soybeans 2018	Soybeans 2019
Yield (bu/ac)	47.5	45.8
Price	8.11	8.04
Operator %	85%	85%
Income		
Grain revenue	\$ 328.48	\$ 314.29
Government payments	75.02	57.50
Crop insurance	3.51	5.00
other revenue	5.32	5.32
Gross income	\$ 412.33	\$ 382.11
Expenses		
Hired labor	8.70	8.99
Machinery repairs	22.29	23.44
Interest	12.11	12.11
Fuel	13.11	12.62
Auto	0.40	0.40
Fees	2.64	2.64
Personal property tax	1.53	1.53
General farm insurance	6.57	6.57
Conservation	0.21	0.21
Utilities	2.89	2.89
<i>Indirect Expenses</i>	<i>70.45</i>	<i>71.39</i>
Seed	52.93	52.37
Crop insurance	10.61	10.24
Fertilizer	12.58	11.44
Machine hire	8.74	9.19
Misc	0.63	0.63
Cash rent	28.57	29.54
Pesticides	49.63	49.54
<i>Direct Expenses</i>	<i>163.69</i>	<i>162.96</i>
Total Variable Costs	234.14	234.35
Return above variable costs	\$ 178.19	\$ 147.76
Depreciation	34.06	33.38
Real estate tax	2.56	2.56
Unpaid operator labor	37.16	38.40
Interest charge	11.98	11.98
Land charge	20.64	21.34
<i>Total fixed expenses</i>	<i>106.40</i>	<i>107.66</i>
Total Expenses	340.54	342.01
Net Return to Management	\$ 71.79	\$ 40.10
Net Return to Labor-Management	\$ 117.65	\$ 87.49

Table 3. 2018 and Estimated 2019 Wheat Enterprise Cost and Returns

Year	Wheat 2018	Wheat 2019
Yield (bu/ac)	40.53	55.5
Price	4.88	4.33
Operator %	83%	83%
Income		
Grain revenue	\$ 163.17	\$ 197.90
Government payments	13.30	57.50
Crop insurance	15.48	8.00
other revenue	3.88	3.88
Gross income	\$ 195.85	\$ 267.28
Expenses		
Hired labor	7.55	7.80
Machinery repairs	18.64	19.93
Interest	8.10	8.10
Fuel	10.83	10.42
Auto	0.53	0.53
Fees	1.95	1.95
Personal property tax	1.01	1.01
General farm insurance	4.83	4.83
Conservation	0.03	0.03
Utilities	2.00	2.00
<i>Indirect Expenses</i>	<i>55.47</i>	<i>56.60</i>
Seed	11.13	11.02
Crop insurance	9.46	9.01
Fertilizer	39.40	39.07
Machine hire	10.96	11.72
Misc	0.63	0.63
Cash rent	11.84	12.24
Pesticides	17.57	17.57
<i>Direct Expenses</i>	<i>100.99</i>	<i>101.26</i>
Total Variable Costs	156.46	157.86
Return above variable costs	\$ 39.39	\$ 109.41
Depreciation	22.31	21.86
Real estate tax	3.28	3.28
Unpaid operator labor	29.55	30.54
Interest charge	7.79	7.79
Land charge	12.91	13.35
<i>Total fixed expenses</i>	<i>75.84</i>	<i>76.82</i>
Total Expenses	232.30	234.68
Net Return to Management	\$ (36.45)	\$ 32.60
Net Return to Labor-Management	\$ 0.65	\$ 70.93

Table 4. 2018 and Estimated 2019 Grain Sorghum Enterprise Cost and Returns

Year	Grain Sorghum 2018	Grain Sorghum 2019
Yield (bu/ac)	87.0	84.0
Price	3.09	3.21
Operator %	81%	81%
Income		
Grain revenue	\$ 216.41	\$ 217.15
Government payments	66.76	57.50
Crop insurance	13.39	14.00
other revenue	3.39	3.39
Gross income	\$ 299.95	\$ 292.04
Expenses		
Hired labor	7.67	7.93
Machinery repairs	16.64	17.96
Interest	8.12	8.12
Fuel	9.40	9.05
Auto	0.53	0.53
Fees	1.87	1.87
Personal property tax	0.82	0.82
General farm insurance	4.22	4.22
Conservation	0.01	0.01
Utilities	1.71	1.71
<i>Indirect Expenses</i>	<i>50.99</i>	<i>52.21</i>
Seed	12.71	12.59
Crop insurance	12.47	12.09
Fertilizer	38.83	39.06
Machine hire	18.29	19.74
Misc	1.87	1.87
Cash rent	13.30	13.75
Pesticides	41.63	42.48
<i>Direct Expenses</i>	<i>139.10</i>	<i>141.58</i>
Total Variable Costs	190.09	193.79
Return above variable costs	\$ 109.86	\$ 98.25
Depreciation	20.16	19.76
Real estate tax	2.91	2.91
Unpaid operator labor	27.62	28.54
Interest charge	8.92	8.92
Land charge	14.76	15.26
<i>Total fixed expenses</i>	<i>74.37</i>	<i>75.39</i>
Total Expenses	264.46	269.18
Net Return to Management	\$ 35.49	\$ 22.86
Net Return to Labor-Management	\$ 70.78	\$ 59.32



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