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Representative Farms Economic Outlook for the December 2016 FAPRI/AFPC Baseline

Briefing Paper 16-3

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Agricultural and Food Policy Center

AFPC

REPRESENTATIVE FARMS ECONOMIC OUTLOOK FOR THE DECEMBER 2016 FAPRI/AFPC BASELINE

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EXECUTIVE SUMMARY

The Agricultural and Food Policy Center (AFPC) at Texas A&M University develops and maintains data to simulate 95 representative crop, dairy, and livestock operations in major production areas in 29 states. The chief purpose of this analysis is to project the economic viability of those farms by region and commodity for 2016 through 2021. The data necessary to simulate the economic activity of these operations is developed through ongoing cooperation with panels of agricultural producers in selected states. The Food and Agricultural Policy Research Institute (FAPRI) provided projected prices, policy variables, and input inflation rates in their December 2016 Baseline.

Under the December 2016 Baseline, 17 of the 64 crop farms are considered in good liquidity condition (less than a 25 percent chance of negative ending cash by 2021). Eight crop farms have between a 25 percent and a 50 percent likelihood of negative ending cash, and the remaining 39 crop farms have greater than a 50 percent chance of negative ending cash. Additionally, 28 of the 64 crop farms are considered in good equity position (less than a 25 percent chance of decreasing real net worth during the study period). Six crop farms have between a 25 percent and 50 percent likelihood of losing real net worth, and 30 crop farms have greater than a 50 percent probability of decreasing real net worth by 2021. The following discussion provides an overall evaluation by commodity considering both liquidity and equity measures.

- FEEDGRAIN FARMS: Nine of the 23 feedgrain farms are in good overall financial condition. Four farms are classified in marginal condition, and ten are in poor condition.

- WHEAT FARMS: Three representative wheat farms are classified in good overall financial condition, none are in marginal condition, and eight are in poor condition.

- COTTON FARMS: Four of the 15 cotton farms are classified in good condition, five are in marginal condition, and six are in poor condition.

- RICE FARMS: Four of the 15 rice farms are projected to be in good financial condition. Four rice farms are projected to be in marginal condition; seven are in poor condition.

- DAIRY FARMS: Fifteen of the 20 dairies are in good overall financial condition. One dairy is classified in marginal condition, and four are in poor condition.

- BEEF CATTLE RANCHES: Three of the 11 cattle ranches are classified in good financial condition, five are in marginal condition, and three are projected to be in poor condition.

REPRESENTATIVE FARMS ECONOMIC OUTLOOK FOR THE DECEMBER 2016 FAPRI/AFPC BASELINE

The farm level economic impacts of the FAPRI December 2016 Baseline on representative crop and livestock operations are projected in this report, assuming provisions of the 2014 Farm Bill continue throughout the 2014-2021 study period. Crop farms are assumed to have elected ARC or PLC on a crop-by-crop basis that resulted in the highest projected ending cash reserves at the end of the period. Based on interviews with a sample of producers, farms are currently assumed to not purchase SCO/STAX. The analysis was conducted over the 2014-2021 planning horizon using FLIPSIM, AFPC's whole farm simulation model. Data to simulate farming operations in the nation's major production regions came from two sources:

- Producer panel cooperation to develop economic information to describe and simulate representative crop, livestock, and dairy farms.

- Projected prices, policy variables, and input inflation rates from the Food and Agricultural Policy Research Institute (FAPRI) December 2016 Baseline.

The FLIPSIM policy simulation model incorporates the historical risk faced by farmers for prices and production. This report presents the results of the December 2016 Baseline in a risk context using selected simulated probabilities and ranges for annual net cash farm income values. The probability of a farm experiencing negative ending cash reserves and the probability of a farm losing real net worth are included as indicators of the cash flow and equity risks facing farms through the year 2021.

DEFINITIONS OF VARIABLES IN THE SUMMARY TABLES

- **Overall Financial Position, 2016-2021** -- As a means of summarizing the representative farms' economic efficiency, liquidity, and solvency position, AFPC classifies each farm as being in either a good (green), marginal (yellow) or poor (red) position. AFPC defines a farm to be in a good financial position when it has less than a 25 percent chance each of a negative ending cash position and less than a 25 percent chance of losing real net worth through 2021. If the probabilities of these events are between 25 and 50 percent the farm is classified as marginal. A probability greater than 50 percent places the farm in a poor financial position.
- **Receipts** -- 2016-2021 average cash receipts from all farm related sources, including market sales, PLC/ARC payments, marketing loan gains/LDPs, crop insurance indemnities, and other receipts.
- **Payments** -- 2016-2021 average annual PLC or ARC payments and marketing loan gains/LDPs for crop farms.
- **NCFI** -- 2016-2021 average net cash farm income equals average total receipts minus average total cash expenses.
- **Reserve 2021** -- equals total cash on hand at the end of year 2021. Ending cash equals beginning cash reserves plus net cash farm income and interest earned on cash reserves less principal payments, federal taxes (income and self employment), state income taxes, family living withdrawals, and actual machinery replacement costs (not depreciation).
- **Net Worth 2021** -- equity equals total assets including land minus total debt from all sources and is reported at the end of 2021.
- **CRNW** -- annualized percentage change in the operator's real net worth from January 1, 2016 through December 31, 2021, after adjusting for inflation.

Table 1. FAPRI December 2016 Baseline Projections of Crop and Livestock Prices, 2014-2021.

	2014	2015	2016	2017	2018	2019	2020	2021
Crop Prices								
Corn ($/bu.)	3.70	3.61	3.31	3.62	3.81	3.86	3.85	3.84
Wheat ($/bu.)	5.99	4.89	3.73	4.47	4.90	5.09	5.23	5.22
Cotton ($/lb.)	0.6130	0.6120	0.6464	0.6278	0.6118	0.6209	0.6218	0.6249
Sorghum ($/bu.)	4.03	3.31	2.97	3.29	3.41	3.46	3.49	3.50
Soybeans ($/bu.)	10.10	8.95	9.39	9.42	9.71	9.88	9.76	9.70
Barley ($/bu.)	5.30	5.52	4.71	4.52	4.76	4.89	4.95	4.95
Oats ($/bu.)	3.21	2.12	1.91	2.08	2.18	2.23	2.25	2.25
Rice ($/cwt.)	13.40	12.10	10.52	11.04	11.48	11.57	11.71	11.92
Soybean Meal ($/ton)	351.47	309.57	301.54	307.01	315.43	324.47	323.33	325.13
All Hay ($/ton)	172.00	145.00	131.15	147.67	157.30	161.19	161.67	161.04
Peanuts ($/ton)	440.00	386.00	382.11	365.17	361.49	361.70	362.59	363.35
Cattle Prices								
Feeder Cattle ($/cwt)	225.07	226.52	160.60	150.53	141.38	135.04	134.94	140.38
Fed Cattle ($/cwt)	154.56	148.12	126.42	119.23	114.02	111.09	110.90	113.16
Culled Cows ($/cwt)	104.09	99.76	77.95	72.41	70.36	67.71	67.28	69.35
Milk Price								
U.S. All Milk Price ($/cwt)	24.07	17.21	16.09	16.92	17.96	18.35	18.49	18.59

Source: Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri-Columbia.

Table 2. FAPRI December 2016 Baseline Assumed Rates of Change in Input Prices and Annual Changes in Land Values, 2015-2021.

	2015	2016	2017	2018	2019	2020	2021
Annual Rate of Change for Input Prices Paid							
Seed Prices (%)	0.70	-2.48	-1.55	-1.13	0.32	1.44	1.68
All Fertilizer Prices (%)	-10.86	-21.45	12.18	3.98	1.27	1.95	2.17
Herbicide Prices (%)	-2.10	2.50	-6.34	2.02	6.11	5.28	3.74
Insecticide Prices (%)	-4.37	1.23	-4.47	1.70	4.96	4.25	2.86
Fuel and Lube Prices (%)	-35.14	-12.28	6.14	6.54	15.21	8.85	7.16
Machinery Prices (%)	2.32	-0.08	-0.80	3.21	3.88	3.52	2.96
Wages (%)	3.61	1.97	3.03	3.10	3.21	3.24	3.27
Supplies (%)	0.19	0.16	1.59	1.72	1.91	1.91	1.82
Repairs (%)	0.09	-0.13	3.05	2.64	2.72	2.62	2.53
Services (%)	4.22	2.74	0.49	2.93	3.18	3.12	3.00
Taxes (%)	6.28	3.88	-1.06	2.01	0.87	0.89	0.76
PPI Items (%)	-3.24	-5.37	-2.16	1.72	2.34	2.23	2.17
PPI Total (%)	-2.12	-4.25	-1.81	1.98	2.48	2.30	2.21
Annual Change in Consumer Price Index (%)	0.12	1.22	2.36	2.39	2.45	2.56	2.66
Annual Rate of Change for U.S. Land Prices (%)	2.37	-0.33	-2.15	-0.62	-0.04	0.55	1.67

Source: Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri-Columbia.

Representative Farm: Feed Grains

- Overall, nine feed grain farms are characterized as good, four are marginal, and ten are in poor condition.

- Thirteen of the twenty-three farms will be under severe cash flow stress; ten farms have high likelihoods (greater than a 50 percent chance) of losing real net worth.
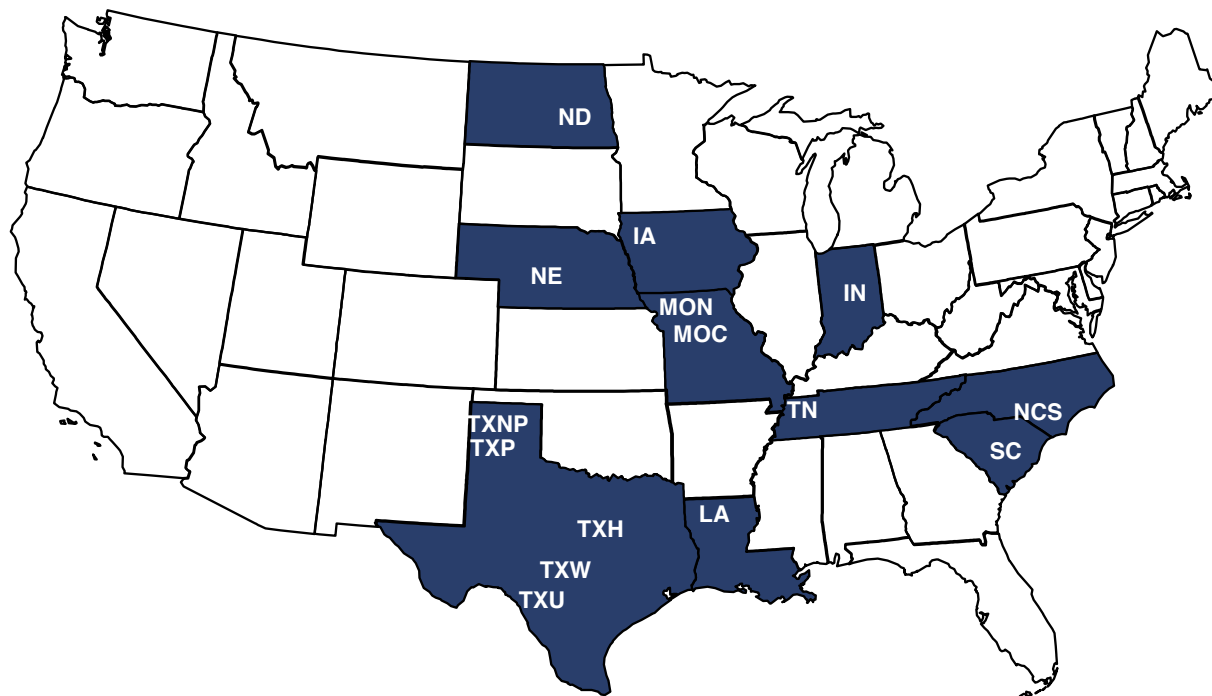
Characteristics of Panel Farms Producing Feed Grains, 2015.

	Cropland	Assets	Debt/Asset	Gross Receipts	Feed Grains
	(acres)	($1,000)	(ratio)	($1,000)	(acres)
IAG1350	1,350	3,584.00	0.23	1,036.70	1,350
IAG3400	3,400	12,493.00	0.18	2,188.80	3,400
NEG2400	2,400	6,190.00	0.23	2,125.50	2,400
NEG4300	4,300	20,173.00	0.21	3,341.80	4,000
NDG3000	3,000	4,181.00	0.24	1,120.40	2,500
NDG8000	8,000	24,532.00	0.21	3,221.50	6,250
ING1000	1,000	3,588.00	0.19	547.00	1,000
ING2200	2,200	10,121.00	0.22	1,309.80	2,200
MOCG2300	2,300	12,748.00	0.19	994.40	2,300
MOCG4200	4,200	16,988.00	0.16	1,759.30	4,200
MONG2300	2,300	10,817.00	0.16	1,642.10	2,250
LAG2640	2,640	1,896.00	0.45	1,602.80	2,244
LANG2500	2,500	8,441.00	0.18	1,857.80	1,750
TNG900	900	2,577.00	0.31	443.00	900
TNG2200	2,200	5,164.00	0.33	955.90	2,200
NCSP1800	1,800	4,885.00	0.40	1,021.40	1,440
SCG3500	3,500	11,774.00	0.23	2,275.10	2,625
TXNP3450	3,450	8,148.00	0.05	1,945.20	1,775
TXNP10640	10,640	16,362.00	0.16	7,221.60	6,105
TXPG2500	2,500	5,415.00	0.25	1,580.90	1,453
TXHG2500	2,500	2,835.00	0.49	612.20	1,700
TXWG1600	1,600	1,605.00	0.31	534.50	1,050
TXUG1600	1,600	577.00	0.21	1,411.50	150

Representative Farm: Feed Grains

Economic Viability of Representative Farms over the 2016-2021 Period

Farm Name	Overall Ranking		P(Negative Ending Cash)	P(Real Net Worth Declines)
9/4/10	2016	2021	2016-2021	2016-2021
IAG1350			99-99	99-99
IAG3400			50-38	31-21
NEG2400			69-67	60-51
NEG4300			85-83	75-63
NDG3000			77-66	58-51
NDG8000			58-30	73-18
ING1000			78-61	23-4
ING2200			98-93	79-38
MOCG2300			18-1	1-1
MOCG4200			1-1	1-1
MONG2300			23-20	3-1
LAG2640			87-70	80-59
LANG2500			80-19	34-1
TNG900			99-94	92-77
TNG2200			99-96	97-75
NCSP1800			99-99	99-99
SCG3500			87-56	26-11
TXNP3450			1-1	1-1
TXNP10640			1-1	10-1
TXPG2500			80-20	19-1
TXHG2500			99-99	99-99
TXWG1600			99-99	99-99
TXUG1600			12-36	10-15

1 Viability is classified as good (green), moderate (yellow), and poor (red) based on the probabilities:

<25	25-50	>50

2 P(NegativeEnding Cash) is the probability that the farm will have a cash flow deficit. Reported values represent the probabilities for 2016 and 2021.

3 P(Real Net Worth Decline) is the probability that the farm will have a loss in real net worth relative to the beginning net worth. Reported values represent the probabilities for losing real net worth from 2014 to 2016 and from 2014 to 2021.

Implications of the December 2016 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Feed Grains and Oilseeds

	Receipts ($1,000)	Payments ($1,000)	NCFI ($1,000)	Reserve 2021 ($1,000)	Net Worth 2021 ($1,000)	CRNW (%)
IAG1350	883.76	25.50	(44.08)	(1,427.34)	1,649.33	(5.83)
IAG3400	1,962.73	58.06	395.68	277.03	10,929.59	0.89
NEG2400	2,003.89	43.12	259.56	(492.28)	4,841.02	0.06
NEG4300	3,547.03	72.81	438.66	(1,820.74)	15,852.73	(0.31)
NDG3000	1,182.39	44.41	190.04	(241.22)	3,194.96	(0.15)
NDG8000	3,542.19	95.43	947.34	989.04	22,199.49	1.76
ING1000	602.32	27.97	207.71	(47.89)	3,211.18	1.41
ING2200	1,447.89	63.62	296.79	(971.41)	8,331.66	0.83
MOCG2300	1,443.08	53.55	697.48	1,126.76	12,848.10	2.83
MOCG4200	2,574.79	54.46	1,343.77	3,997.88	19,315.63	4.15
MONG2300	1,581.83	60.56	426.78	397.61	10,091.62	1.90
LAG2640	1,761.06	92.17	171.87	(549.22)	1,126.61	(0.34)
LANG2500	1,964.95	196.51	469.45	494.32	8,342.07	3.08
TNG900	471.84	11.09	107.53	(486.47)	1,699.44	(0.54)
TNG2200	1,011.44	35.05	194.14	(1,157.30)	3,396.89	(0.04)
NCSP1800	1,128.75	113.60	(40.22)	(2,477.47)	1,659.32	(6.84)
SCG3500	2,330.09	161.44	391.22	(173.95)	10,031.63	1.56
TXNP3450	2,269.04	130.32	839.31	3,522.17	10,834.80	4.78
TXNP10640	6,819.53	355.35	1,763.04	6,996.95	20,471.23	6.02
TXPG2500	1,709.01	117.38	453.99	395.07	5,239.29	4.27
TXHG2500	683.01	83.09	(82.23)	(2,306.08)	74.62	(15.69)
TXWG1600	536.83	50.93	(15.41)	(1,119.94)	410.54	(9.73)
TXUG1600	1,342.35	91.11	194.92	128.83	708.56	6.77

1 Receipts are average annual total cash receipts including government payments, 2016-2021 ($1,000)

2 Payments are average annual total government payments, 2016-2021 ($1,000)

3 NCFI is average annual net cash farm income, 2016-2021 ($1,000)

4 Reserve 2021 is average ending cash reserves, 2021 ($1,000)

5 Net Worth 2021 is average nominal ending net worth, 2021 ($1,000)

6 CRNW is average percentage change in real net worth over 2016-2021 period, (%)

Representative Farm: Wheat

- Three wheat farms are projected to be in good overall financial condition and eight are in poor condition; none are in marginal condition.

- Eight of the eleven wheat farms are expected to feel significant liquidity pressure over the period; seven of those farms also have a greater than 50 percent chance of losing real equity.
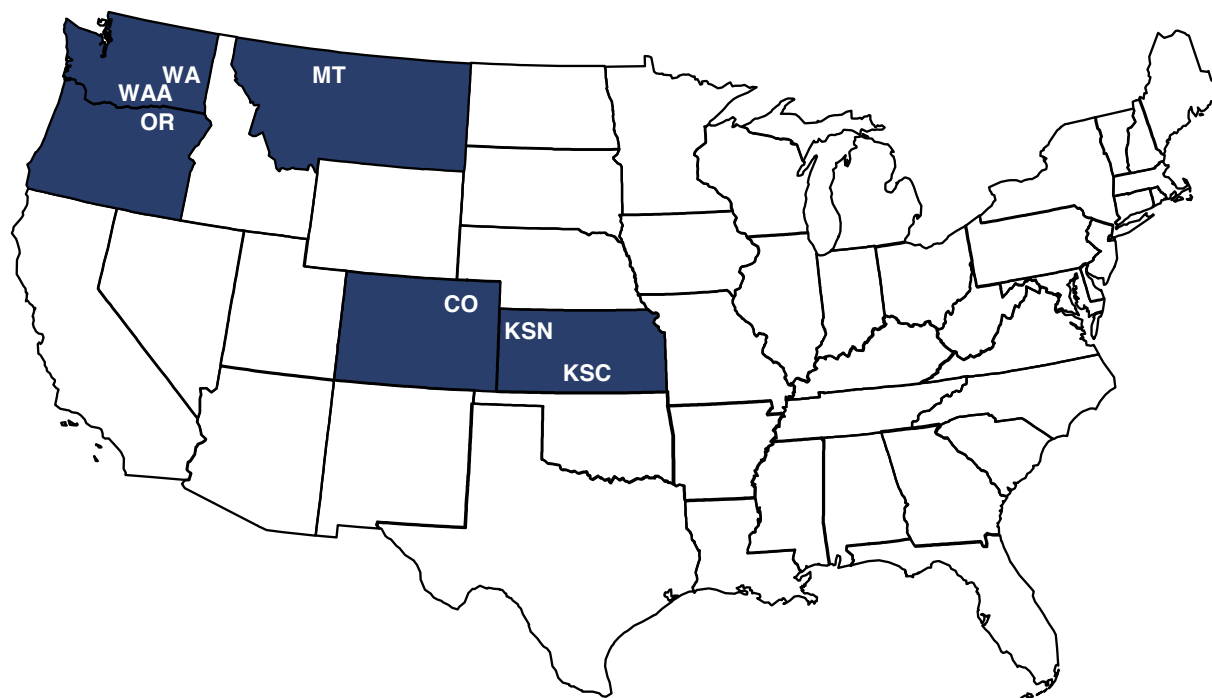
Characteristics of Panel Farms Producing Wheat, 2015.

	Cropland	Assets	Debt/Asset	Gross Receipts	Wheat
	(acres)	($1,000)	(ratio)	($1,000)	(acres)
WAW2000	2,000	2,234.00	0.15	622.40	1,320
WAW8000	8,000	11,376.00	0.26	2,489.10	4,950
WAAW4500	4,000	2,325.00	0.29	419.50	2,000
ORW4100	4,100	1,952.00	0.22	378.20	1,950
MTW7000	7,000	6,488.00	0.21	994.80	4,200
KSCW2000	2,000	2,799.00	0.28	482.40	1,000
KSCW5300	5,300	5,214.00	0.19	1,125.50	3,445
KSNW4000	4,000	4,827.00	0.26	754.50	1,500
KSNW5980	5,980	10,251.00	0.27	1,307.10	1,820
COW3000	3,000	4,141.00	0.17	343.40	1,013
COW5640	5,640	4,247.00	0.27	684.10	1,900

Representative Farm: Wheat

Economic Viability of Representative Farms over the 2016-2021 Period

Farm Name	Overall Ranking		P(Negative Ending Cash)	P(Real Net Worth Declines)
3/0/8	2016	2021	2016-2021	2016-2021
WAW2000			11-1	1-1
WAW8000			99-76	98-60
WAAW4500			99-99	99-99
MTW7000			20-1	2-1
ORW4100			99-79	91-73
KSCW2000			99-98	95-83
KSCW5300			37-14	1-4
KSNW4000			99-97	97-80
KSNW5980			99-99	99-99
COW3000			84-92	2-45
COW5640			99-99	99-97

1 Viability is classified as good (green), moderate (yellow), and poor (red) based on the probabilities:

<25	25-50	>50

2 P(NegativeEnding Cash) is the probability that the farm will have a cash flow deficit. Reported values represent the probabilities for 2016 and 2021.

3 P(Real Net Worth Decline) is the probability that the farm will have a loss in real net worth relative to the beginning net worth. Reported values represent the probabilities for losing real net worth from 2014 to 2016 and from 2014 to 2021.

Implications of the December 2016 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Wheat

	Receipts ($1,000)	Payments ($1,000)	NCFI ($1,000)	Reserve 2021 ($1,000)	Net Worth 2021 ($1,000)	CRNW (%)
WAW2000	770.66	33.87	278.10	645.59	2,549.51	4.94
WAW8000	3,293.54	129.53	441.75	(1,359.64)	8,689.12	0.75
WAAW4500	411.21	27.72	(38.65)	(1,254.67)	791.77	(7.79)
ORW4100	411.59	44.04	98.60	(201.76)	1,401.05	(0.45)
MTW7000	1,131.12	139.25	494.63	1,088.89	6,355.63	3.64
KSCW2000	474.70	21.49	76.35	(664.25)	1,770.81	(1.38)
KSCW5300	1,090.09	58.23	339.20	637.65	5,068.76	3.07
KSNW4000	808.23	73.58	137.04	(851.07)	3,347.92	(0.56)
KSNW5980	1,386.83	103.61	24.42	(2,690.06)	6,140.32	(2.51)
COW3000	367.26	31.19	104.59	(237.15)	3,387.17	(0.36)
COW5640	709.50	63.52	77.10	(1,339.90)	2,511.92	(2.44)

1 Receipts are average annual total cash receipts including government payments, 2016-2021 ($1,000)

2 Payments are average annual total government payments, 2016-2021 ($1,000)

3 NCFI is average annual net cash farm income, 2016-2021 ($1,000)

4 Reserve 2021 is average ending cash reserves, 2021 ($1,000)

5 Net Worth 2021 is average nominal ending net worth, 2021 ($1,000)

6 CRNW is average percentage change in real net worth over 2016-2021 period, (%)

Representative Farm: Cotton

- Four of the fifteen cotton farms are characterized in good overall financial condition over the 2016-2021 period, five are in marginal condition, and six are in poor condition.

- Nine of the farms are projected to experience severe cash flow problems (having a greater than 50 percent chance of a cash flow deficit); six of those farms are also expected to have a greater than 50 percent chance of losing real equity over the period.
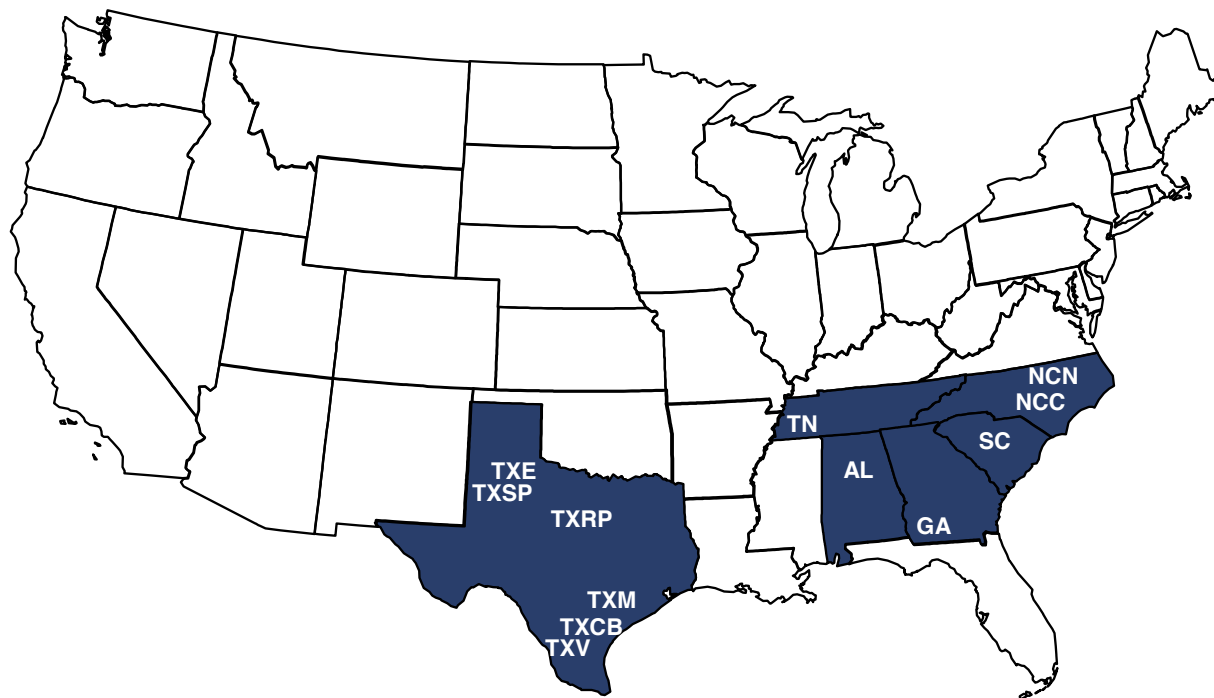
Characteristics of Panel Farms Producing Cotton, 2015.

	Cropland	Assets	Debt/Asset	Gross Receipts	Cotton
	(acres)	($1,000)	(ratio)	($1,000)	(acres)
TXSP2500	2,500	1,228.00	0.27	876.60	1,298
TXSP4500	4,500	3,011.00	0.26	1,955.80	4,047
TXEC5000	5,000	4,105.00	0.28	1,972.90	4,150
TXRP2500	2,500	1,252.00	0.30	445.60	1,000
TXMC1800	1,800	1,582.00	0.30	677.40	810
TXCB3000	3,000	2,499.00	0.18	1,268.20	1,350
TXCB9200	9,200	5,487.00	0.24	4,326.50	3,680
TXVC4500	4,500	6,070.00	0.15	1,841.20	1,395
TNC2500	2,500	2,028.00	0.10	1,309.80	250
TNC4050	4,050	6,795.00	0.28	2,453.00	2,025
ALC3000	3,000	2,315.00	0.57	1,508.50	1,050
GAC2300	2,300	9,969.00	0.27	2,430.30	1,200
SCC1800	1,800	4,175.00	0.31	1,324.30	900
NCC1700	1,700	2,673.00	0.30	950.30	225
NCNP1500	1,500	3,539.00	0.37	949.80	375

Representative Farm: Cotton

Economic Viability of Representative Farms over the 2016-2021 Period

Farm Name	Overall Ranking		P(Negative Ending Cash)	P(Real Net Worth Declines)
4/5/6	2016	2021	2016-2021	2016-2021
TXSP2500			25-26	15-8
TXSP4500			16-16	3-2
TXEC5000			33-10	1-1
TXRP2500			99-99	99-99
TXMC1800			93-87	82-80
TXCB3000			23-32	14-14
TXCB9200			70-75	61-65
TXVC4500			21-6	6-1
TNC2500			2-1	1-1
TNC4050			96-83	69-50
ALC3000			99-99	99-99
GAC2300			97-77	94-32
SCC1800			88-66	54-30
NCC1700			99-98	97-93
NCNP1500			99-99	99-99

1 Viability is classified as good (green), moderate (yellow), and poor (red) based on the probabilities:

<25	25-50	>50

2 P(NegativeEnding Cash) is the probability that the farm will have a cash flow deficit. Reported values represent the probabilities for 2016 and 2021.

3 P(Real Net Worth Decline) is the probability that the farm will have a loss in real net worth relative to the beginning net worth. Reported values represent the probabilities for losing real net worth from 2014 to 2016 and from 2014 to 2021.

Implications of the December 2016 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Cotton

	Receipts	Payments	NCFI	Reserve 2021	Net Worth 2021	CRNW
	($1,000)	($1,000)	($1,000)	($1,000)	($1,000)	(%)
TXSP2500	915.89	199.32	252.53	296.18	1,550.97	6.87
TXSP4500	1,979.26	155.48	490.25	878.40	3,572.51	5.49
TXEC5000	2,218.89	159.61	484.85	598.80	4,317.23	4.06
TXRP2500	414.74	41.02	37.30	(461.09)	600.65	(5.07)
TXMC1800	930.75	91.77	93.27	(490.30)	884.17	(3.16)
TXCB3000	1,128.98	133.78	200.78	222.72	2,209.49	1.64
TXCB9200	3,863.12	375.71	312.94	(1,217.61)	3,291.69	(2.53)
TXVC4500	1,981.82	211.12	422.65	975.02	6,255.55	2.69
TNC2500	1,378.58	45.93	347.19	1,181.34	2,911.88	7.14
TNC4050	2,632.80	188.23	237.55	(735.67)	5,221.90	0.66
ALC3000	1,586.43	98.97	(27.61)	(2,817.33)	(619.59)	(35.02)
GAC2300	2,558.76	395.16	365.35	(405.59)	8,108.91	1.31
SCC1800	1,416.82	172.93	220.77	(259.57)	3,343.26	1.87
NCC1700	998.65	33.25	85.78	(929.99)	1,378.84	(3.85)
NCNP1500	1,011.99	144.00	16.77	(1,989.35)	1,292.34	(6.54)

1 Receipts are average annual total cash receipts including government payments, 2016-2021 ($1,000)

2 Payments are average annual total government payments, 2016-2021 ($1,000)

3 NCFI is average annual net cash farm income, 2016-2021 ($1,000)

4 Reserve 2021 is average ending cash reserves, 2021 ($1,000)

5 Net Worth 2021 is average nominal ending net worth, 2021 ($1,000)

6 CRNW is average percentage change in real net worth over 2016-2021 period, (%)

Representative Farm: Rice

- Four of the fifteen representative rice farms are projected to be in good overall financial condition, four are in marginal condition, and seven are in poor condition.

- Nine of the rice farms are expected to face severe cash flow problems; seven of those farms also have high likelihoods of losing real equity.

Characteristics of Panel Farms Producing Rice, 2015.

	Cropland	Assets	Debt/Asset	Gross Receipts	Rice
	(acres)	($1,000)	(ratio)	($1,000)	(acres)
CAR550	550	3,592.00	0.23	790.00	500
CAR3000	3,000	12,175.00	0.20	4,759.10	3,000
CABR1300	1,300	8,479.00	0.18	2,002.20	1,200
CACR800	800	5,421.00	0.15	1,322.00	800
TXR1500	1,500	2,319.00	0.18	865.80	600
TXR3000	3,000	1,510.00	0.13	1,874.40	1,500
TXBR1800	1,800	1,134.00	0.18	1,013.70	1,200
TXER3200	3,200	2,651.00	0.34	1,361.90	1,067
LASR2000	2,000	2,416.00	0.37	1,356.10	1,000
ARMR6500	6,500	11,526.00	0.53	3,573.50	325
ARSR3240	3,240	5,696.00	0.30	1,987.20	1,296
ARWR2500	2,500	7,591.00	0.23	1,689.50	1,250
ARHR4000	4,000	8,896.00	0.19	2,732.00	2,400
MSDR5000	5,000	17,987.00	0.18	3,354.80	1,667
MOBR4000	4,000	10,104.00	0.30	2,131.90	1,320

Representative Farm: Rice

Economic Viability of Representative Farms over the 2016-2021 Period

Farm Name	Overall Ranking		P(Negative Ending Cash)	P(Real Net Worth Declines)
4/4/7	2016	2021	2016-2021	2016-2021
CAR550			99-99	99-99
CAR3000			86-63	57-24
CABR1300			3-1	2-1
CACR800			39-14	51-14
TXR1500			56-29	21-2
TXR3000			27-49	30-23
TXBR1800			1-1	1-1
TXER3200			99-99	99-99
LASR2000			97-85	83-44
ARMR6500			99-99	99-99
ARSR3240			99-89	97-80
ARWR2500			99-99	89-64
ARHR4000			96-90	77-77
MSDR5000			24-30	3-2
MOBR4000			99-99	99-99

1 Viability is classified as good (green), moderate (yellow), and poor (red) based on the probabilities:

<25	25-50	>50

2 P(NegativeEnding Cash) is the probability that the farm will have a cash flow deficit. Reported values represent the probabilities for 2016 and 2021.

3 P(Real Net Worth Decline) is the probability that the farm will have a loss in real net worth relative to the beginning net worth. Reported values represent the probabilities for losing real net worth from 2014 to 2016 and from 2014 to 2021.

Implications of the December 2016 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Rice

	Receipts	Payments	NCFI	Reserve 2021	Net Worth 2021	CRNW
	($1,000)	($1,000)	($1,000)	($1,000)	($1,000)	(%)
CAR550	757.34	74.06	65.97	(1,071.83)	2,096.25	(3.42)
CAR3000	4,449.10	361.92	408.43	(737.23)	9,731.92	0.68
CABR1300	1,919.55	177.90	562.04	1,822.98	8,568.13	3.50
CACR800	1,242.91	117.66	206.51	95.49	4,664.01	0.60
TXR1500	835.73	127.41	210.57	86.52	2,183.22	2.83
TXR3000	1,662.06	208.14	250.32	(12.53)	1,305.04	3.81
TXBR1800	1,004.08	139.31	285.21	1,160.30	1,795.92	14.08
TXER3200	1,663.00	200.69	40.10	(1,297.43)	1,005.18	(6.66)
LASR2000	1,279.22	150.88	178.83	(386.45)	1,577.85	2.69
ARMR6500	3,922.10	286.18	(878.57)	(13,595.41)	(3,394.12)	(31.88)
ARSR3240	1,985.69	195.75	231.06	(1,105.53)	3,599.60	(0.73)
ARWR2500	1,645.97	192.36	219.48	(1,388.52)	5,755.82	0.15
ARHR4000	2,722.43	314.21	295.33	(1,171.13)	6,868.10	(0.99)
MSDR5000	3,493.73	236.95	981.97	650.01	17,005.51	2.14
MOBR4000	2,349.91	185.59	148.38	(3,449.42)	5,852.34	(2.46)

1 Receipts are average annual total cash receipts including government payments, 2016-2021 ($1,000)

2 Payments are average annual total government payments, 2016-2021 ($1,000)

3 NCFI is average annual net cash farm income, 2016-2021 ($1,000)

4 Reserve 2021 is average ending cash reserves, 2021 ($1,000)

5 Net Worth 2021 is average nominal ending net worth, 2021 ($1,000)

6 CRNW is average percentage change in real net worth over 2016-2021 period, (%)

Representative Farm: Dairy

- Fifteen of the twenty dairy operations are in good overall financial condition. One dairy is classified in marginal condition, and four are in poor condition.

- Four of the dairies are projected to experience both severe liquidity pressure, and three of those have a greater than 50 percent chance of losing real equity.
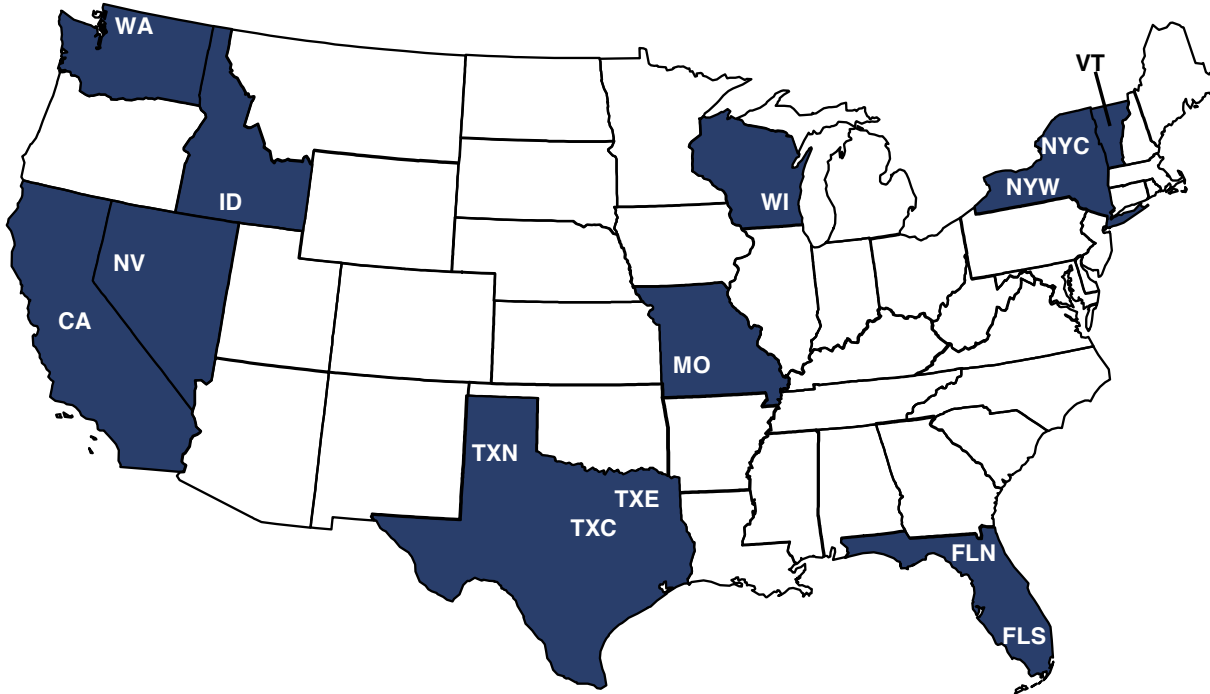
Characteristics of Panel Farms Producing Milk, 2015.

	Cropland	Assets	Debt/Asset	Gross Receipts	Cows
	(acres)	($1,000)	(ratio)	($1,000)	(number)
CAD2000	1,200	27,010.00	0.21	9,360.50	2,000
WAD300	250	4,387.00	0.13	1,192.20	300
WAD850	605	12,385.00	0.20	4,309.20	850
IDD3000	1,500	34,138.00	0.17	14,780.40	3,000
NVD1000	200	8,997.00	0.16	5,066.10	1,000
TXND3800	1,920	33,610.00	0.22	17,612.80	3,800
TXCD1500	616	10,839.00	0.17	6,538.80	1,500
TXED400	950	3,227.00	0.22	1,233.70	400
WID145	600	3,695.00	0.25	841.40	145
WID1000	2,000	12,780.00	0.21	5,845.40	1,000
NYWD500	1,000	6,515.00	0.18	2,793.30	500
NYWD1200	2,100	17,024.00	0.20	6,340.80	1,200
NYCD180	400	3,999.00	0.22	863.80	180
NYCD675	1,500	13,283.00	0.17	3,424.20	675
VTD160	260	2,070.00	0.24	740.80	160
VTD400	1,000	6,924.00	0.23	2,343.50	400
MOGD550	0	3,987.00	0.19	1,495.60	550
MOGD180	0	1,324.00	0.19	542.00	180
FLND550	600	4,678.00	0.18	2,806.90	550
FLSD1750	400	14,177.00	0.17	8,630.60	1,750

Representative Farm: Dairy

Economic Viability of Representative Farms over the 2016-2021 Period

Farm Name	Overall Ranking		P(Negative Ending Cash)	P(Real Net Worth Declines)
15/1/4	2016	2021	2016-2021	2016-2021
CAD2000			1-1	1-1
WAD300			25-70	62-69
WAD850			7-1	1-1
IDD3000			23-31	9-12
NVD1000			1-1	1-1
TXND3800			1-14	3-7
TXCD1500			52-59	15-42
TXED400			98-97	93-96
WID145			46-25	1-1
WID1000			9-1	3-1
NYWD500			1-1	1-1
NYWD1200			1-1	1-1
NYCD180			18-19	1-1
NYCD675			1-1	1-1
VTD160			99-99	98-99
VTD400			8-5	1-1
MOGD550			1-1	1-1
MOGD180			1-1	1-1
FLND550			18-20	3-6
FLSD1750			24-23	9-18

1 Viability is classified as good (green), moderate (yellow), and poor (red) based on the probabilities:

<25	25-50	>50

2 P(NegativeEnding Cash) is the probability that the farm will have a cash flow deficit. Reported values represent the probabilities for 2016 and 2021.

3 P(Real Net Worth Decline) is the probability that the farm will have a loss in real net worth relative to the beginning net worth. Reported values represent the probabilities for losing real net worth from 2014 to 2016 and from 2014 to 2021.

Implications of the December 2016 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Milk

	Receipts	Payments	NCFI	Reserve 2021	Net Worth 2021	CRNW
	($1,000)	($1,000)	($1,000)	($1,000)	($1,000)	(%)
CAD2000	9,919.44	0.72	1,720.12	4,866.96	24,776.33	3.19
WAD300	1,259.08	2.83	95.48	(246.45)	3,465.65	(0.83)
WAD850	4,567.68	2.05	991.90	3,352.33	12,502.82	4.88
IDD3000	14,946.90	0.74	1,561.95	2,443.63	29,409.96	1.69
NVD1000	5,157.26	0.00	854.43	3,242.09	9,141.78	4.50
TXND3800	18,126.36	0.62	2,111.51	4,907.57	27,821.21	2.10
TXCD1500	6,746.00	0.00	325.44	(474.87)	7,517.98	(1.16)
TXED400	1,243.05	0.00	7.71	(923.92)	1,499.77	(4.52)
WID145	865.71	2.56	235.51	189.57	3,014.15	1.89
WID1000	6,113.55	6.84	1,237.70	4,293.63	13,144.09	6.04
NYWD500	2,931.57	6.88	859.34	3,909.16	8,094.37	7.92
NYWD1200	6,652.41	1.49	1,521.17	6,333.43	17,883.23	5.09
NYCD180	897.29	0.00	212.23	161.51	3,358.53	1.34
NYCD675	3,581.43	0.00	987.39	2,803.40	13,622.18	3.72
VTD160	785.77	0.25	41.61	(561.20)	1,083.70	(3.24)
VTD400	2,441.91	1.17	440.65	780.25	5,740.89	2.78
MOGD550	1,525.64	0.00	665.88	2,207.94	5,046.81	8.52
MOGD180	557.29	0.00	213.29	553.97	1,496.50	6.80
FLND550	2,822.22	0.00	340.47	587.02	4,105.49	2.39
FLSD1750	8,726.82	0.00	647.70	1,683.60	11,876.18	1.39

1 Receipts are average annual total cash receipts including government payments, 2016-2021 ($1,000)

2 Payments are average annual total government payments, 2016-2021 ($1,000)

3 NCFI is average annual net cash farm income, 2016-2021 ($1,000)

4 Reserve 2021 is average ending cash reserves, 2021 ($1,000)

5 Net Worth 2021 is average nominal ending net worth, 2021 ($1,000)

6 CRNW is average percentage change in real net worth over 2016-2021 period, (%)

Representative Farm: Cow/Calf

- Three of eleven cow-calf operations are projected to be in good overall financial condition, five are in marginal condition, and three are in poor condition.

- Only three of the operations will face significant liquidity pressure over the period; however, eight of the operations face a severe threat of losing real equity.
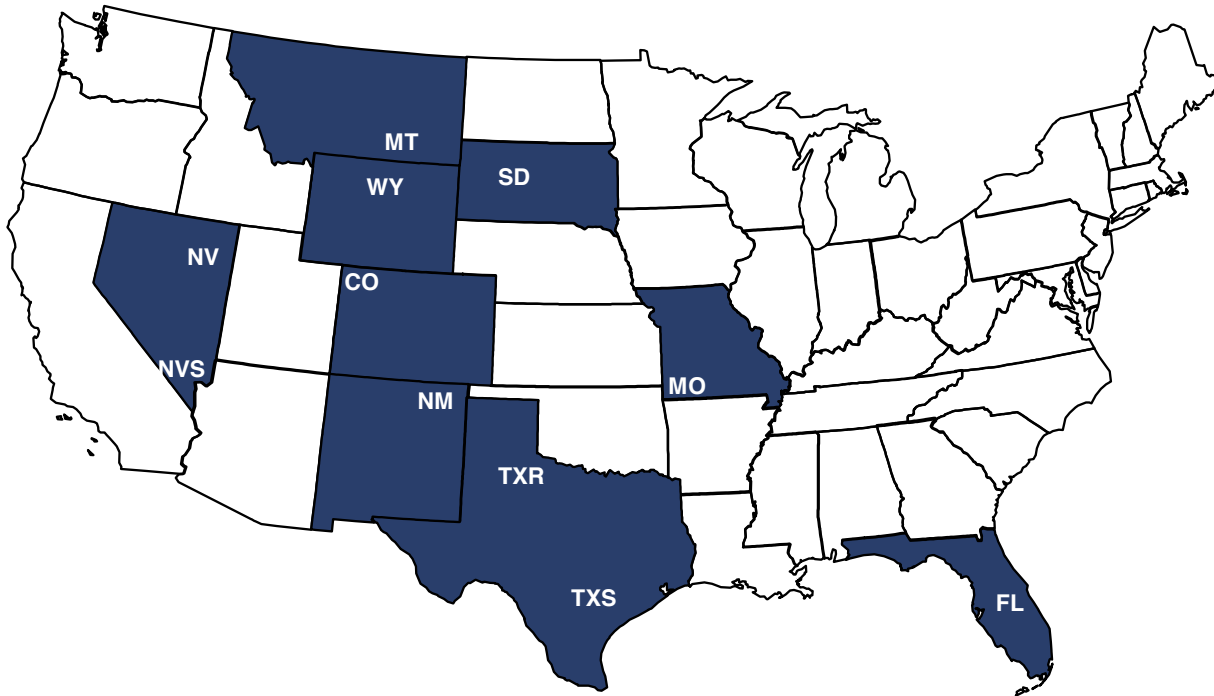
Characteristics of Panel Farms Producing Beef Cattle, 2015.

	Cropland	Assets	Debt/Asset	Gross Receipts	Cows
	(acres)	($1,000)	(ratio)	($1,000)	(number)
NVB650	1,300	8,672.00	0.02	812.60	650
NVSB550	125	3,158.00	0.05	737.80	550
MTB600	0	8,820.00	0.02	676.30	600
WYB475	330	3,327.00	0.05	618.60	475
COB275	650	14,907.00	0.02	406.70	275
NMB240	0	7,738.00	0.01	345.60	240
SDB375	1,150	8,381.00	0.01	456.90	375
MOB250	280	3,463.00	0.03	469.50	250
TXRB400	0	9,265.00	0.01	643.10	400
TXSB275	0	5,479.00	0.02	350.60	275
FLB1155	5,400	26,548.00	0.01	1,194.90	1,155

Representative Farm: Cow/Calf

Economic Viability of Representative Farms over the 2016-2021 Period

Farm Name	Overall Ranking		P(Negative Ending Cash)	P(Real Net Worth Declines)
3/5/3	2016	2021	2016-2021	2016-2021
NVB650			1-1	97-99
NVSB550			1-1	2-1
MTB600			1-16	46-99
WYB475			1-99	93-99
COB275			1-1	99-99
NMB240			1-4	17-99
SDB375			1-87	26-97
MOB250			1-1	3-5
TXRB400			1-11	39-98
TXSB275			32-99	86-99
FLB1155			1-1	4-21

1 Viability is classified as good (green), moderate (yellow), and poor (red) based on the probabilities:

<25	25-50	>50

2 P(NegativeEnding Cash) is the probability that the farm will have a cash flow deficit. Reported values represent the probabilities for 2016 and 2021.

3 P(Real Net Worth Decline) is the probability that the farm will have a loss in real net worth relative to the beginning net worth. Reported values represent the probabilities for losing real net worth from 2014 to 2016 and from 2014 to 2021.

Implications of the December 2016 FAPRI Baseline on the Economic Viability of Representative Farms Primarily Producing Beef Cattle

	Receipts	Payments	NCFI	Reserve 2021	Net Worth 2021	CRNW
	($1,000)	($1,000)	($1,000)	($1,000)	($1,000)	(%)
NVB650	569.11	0.00	165.61	503.25	8,060.64	(0.36)
NVSB550	528.17	0.00	212.25	883.65	3,067.34	1.49
MTB600	429.98	0.00	88.23	92.85	7,953.33	(0.83)
WYB475	432.24	0.00	16.41	(404.47)	2,117.41	(4.23)
COB275	250.63	0.00	70.35	162.79	14,200.81	(0.47)
NMB240	242.64	0.00	104.92	87.99	7,290.62	(0.60)
SDB375	295.07	0.00	77.23	(79.62)	7,688.79	(0.77)
MOB250	359.42	6.35	177.81	415.26	3,346.45	0.27
TXRB400	434.85	0.00	103.68	105.91	8,574.33	(0.71)
TXSB275	242.04	0.00	48.96	(234.43)	4,875.42	(1.15)
FLB1155	807.95	0.00	263.23	1,193.07	26,000.00	(0.08)

1 Receipts are average annual total cash receipts including government payments, 2016-2021 ($1,000)

2 Payments are average annual total government payments, 2016-2021 ($1,000)

3 NCFI is average annual net cash farm income, 2016-2021 ($1,000)

4 Reserve 2021 is average ending cash reserves, 2021 ($1,000)

5 Net Worth 2021 is average nominal ending net worth, 2021 ($1,000)

6 CRNW is average percentage change in real net worth over 2016-2021 period, (%)

Comparison of Projected Overall Economic Viability of AFPC Representative Farms, Dairies, and Ranches Between Previous January Baselines and the December 2016 FAPRI/AFPC Baseline
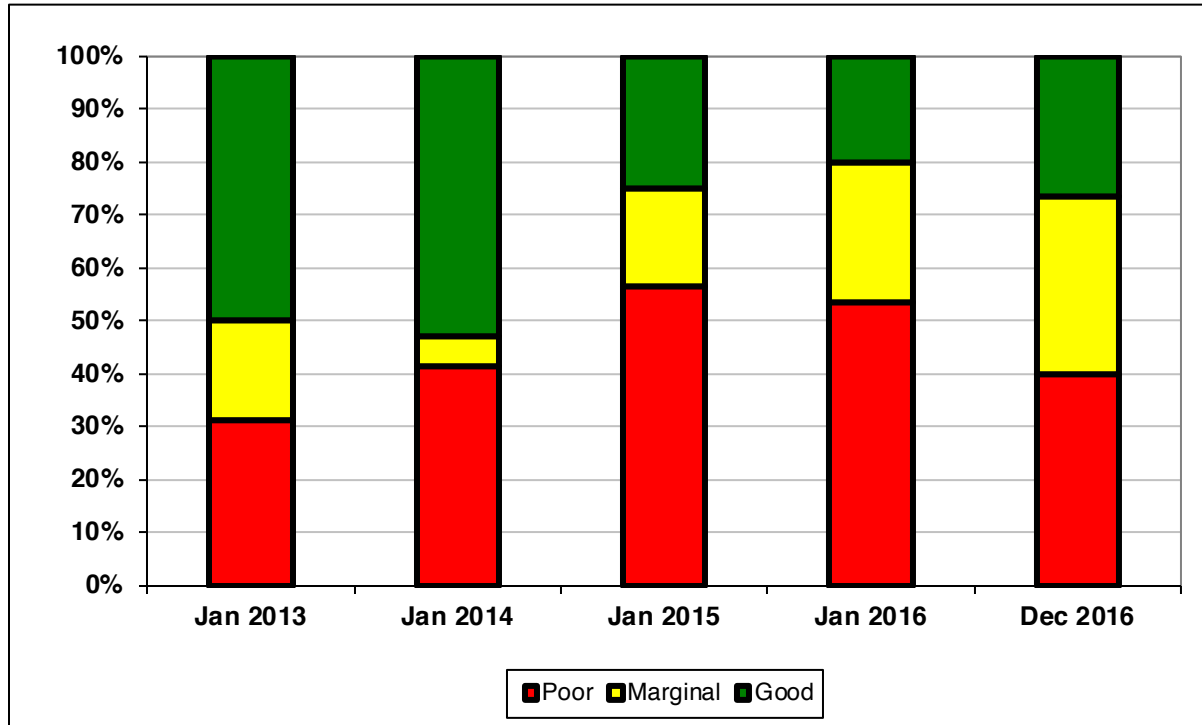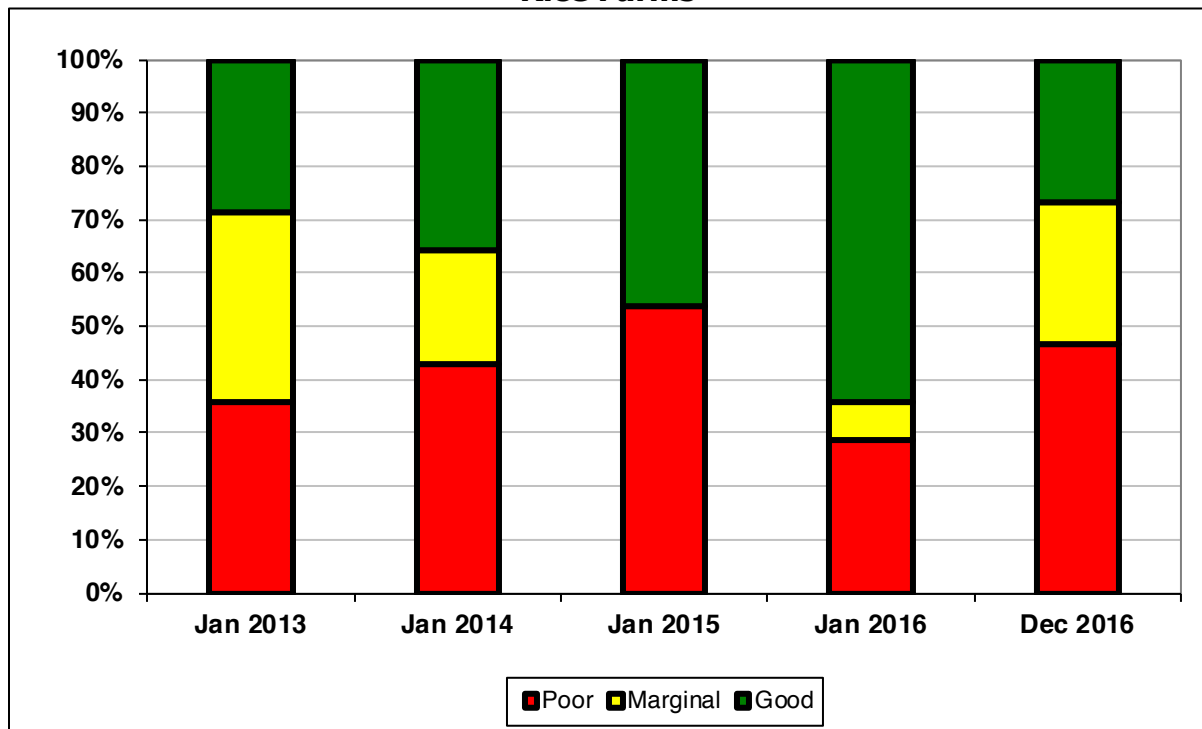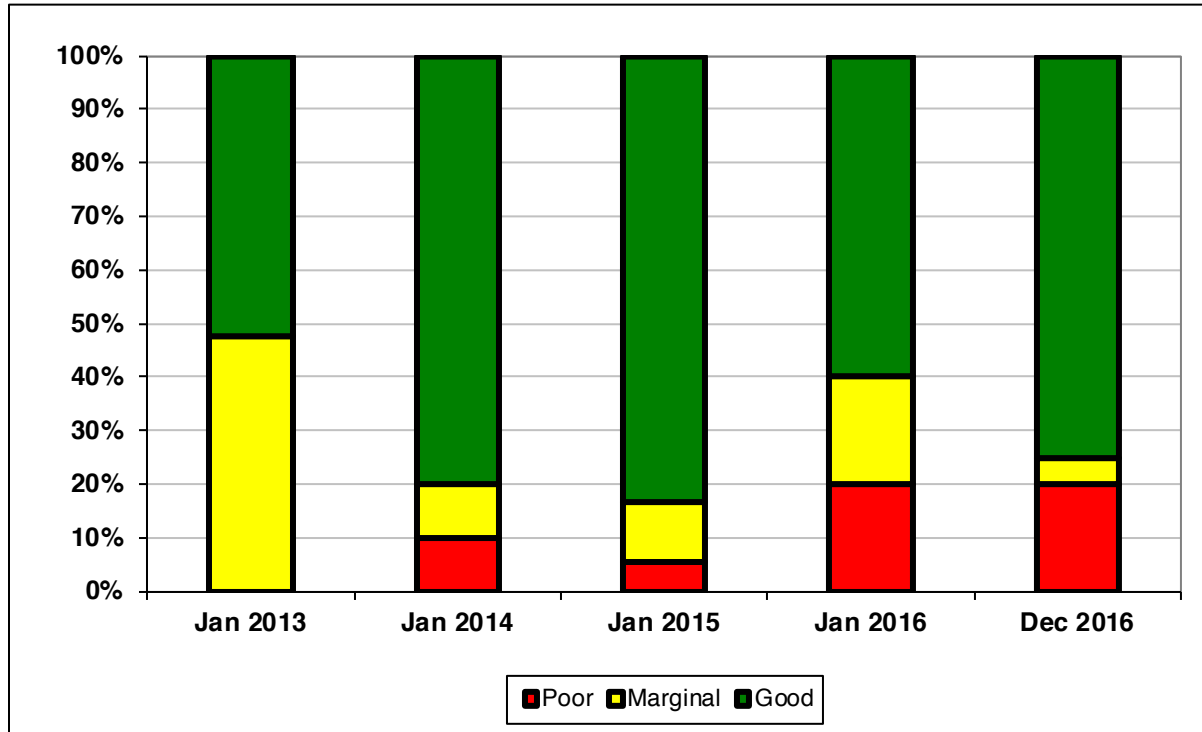
Feedgrain Farms

Legend: ■ Poor ■ Marginal ■ Good

Wheat Farms

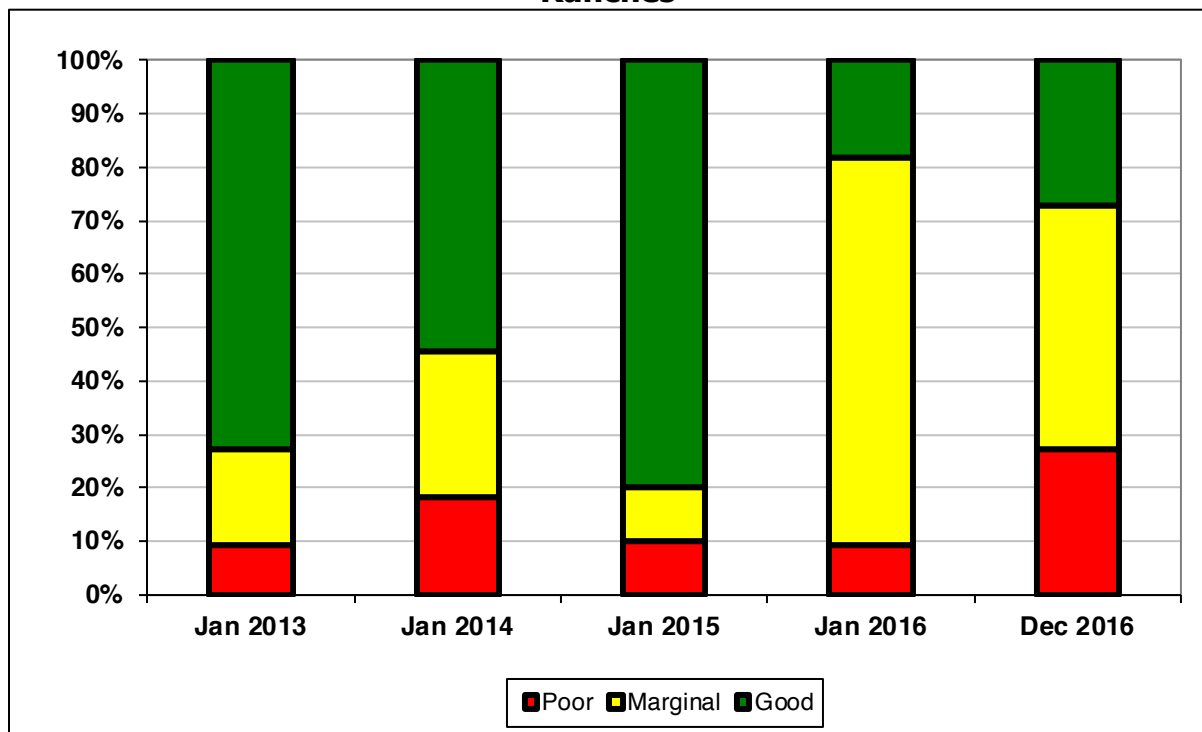Legend: ■ Poor ■ Marginal ■ Good
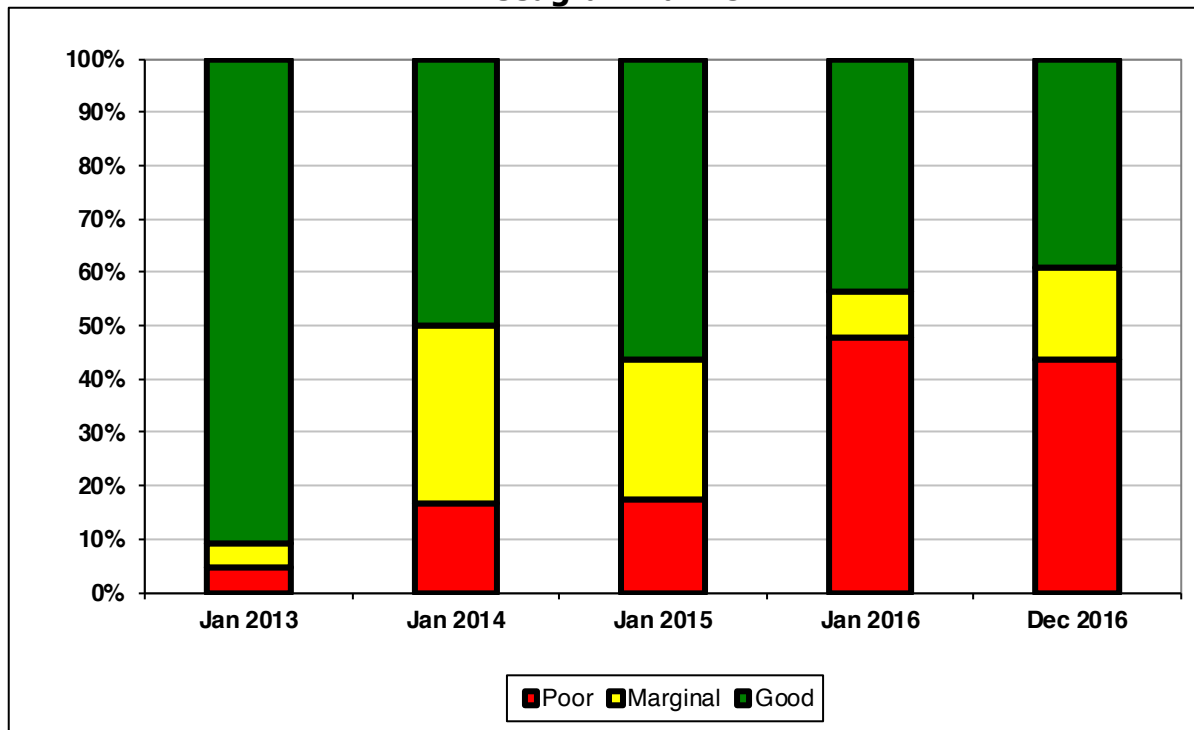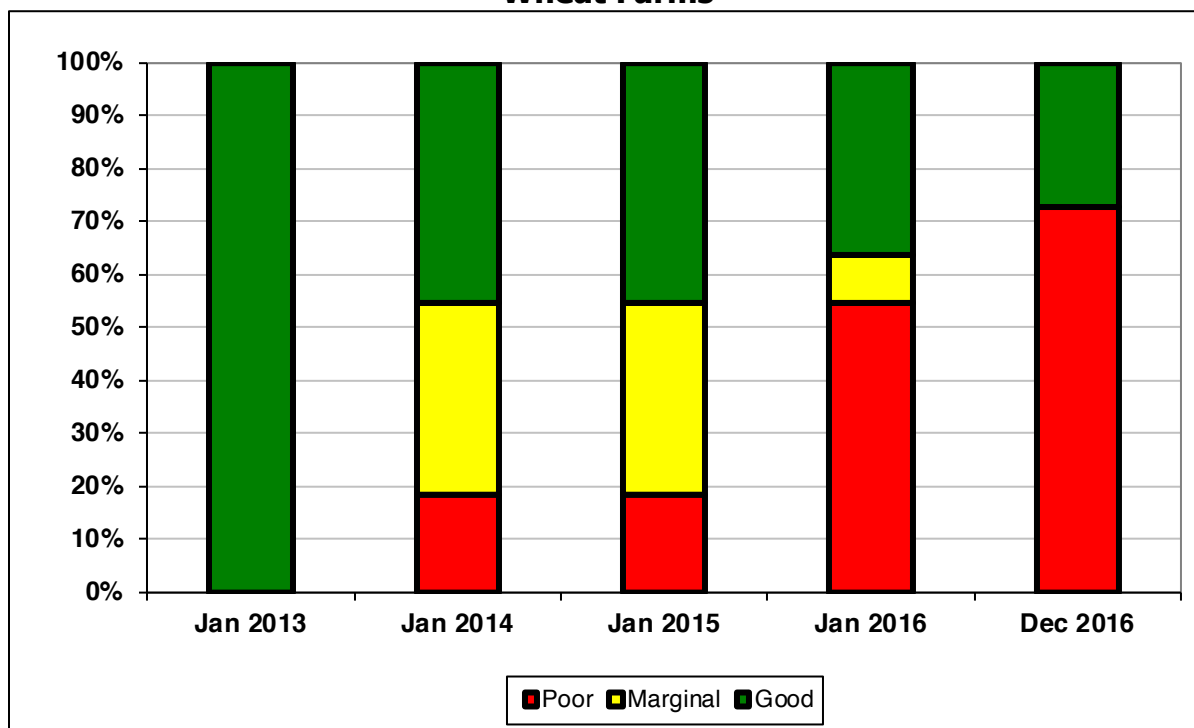
Cotton Farms

Rice Farms

17

Dairies

Ranches

AFPC Briefing Series

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