

Predictions of NFI for 2021 and 2022

GREGG IBENDAHL

Risk and Profit - 2021



KANSAS STATE UNIVERSITY | Agricultural Economics

Cautions with income estimates

A lot can happen between now and the end of the year

- Last year was a perfect example of that
- What was supposed to be a down year last may ended up as a 41% improvement

I assume normal yields for the moment

- That's a big assumption for a crop that is just getting out of the ground

Not every farm will see predicted NFI even if the average prediction is correct

- Always areas of drought and other problems
- Other farm differences

I am only using KFMA grain farms with 3 years of data in my prediction

- Will be expanded to all farm types in the future



KANSAS STATE UNIVERSITY | Agricultural Economics

Main parts of forecast model

Yields

Prices

Crop acres

Expenses

Crop insurance

Government payments from farm bill

Ad hoc government payments



What about 2021 and 2022?

	Net Farm Income			
	2019	2020	2021(p)	Est 2022
NFI	\$ 133,012	\$ 187,209	\$ 231,758	\$ 106,264
% Change		41%	24%	-54%

May estimate

	Net Farm Income			
	2019	2020	2021(p)	Est 2022
NFI	\$ 133,012	\$ 187,209	\$ 227,929	\$ 142,319
% Change		41%	22%	-38%

August estimate



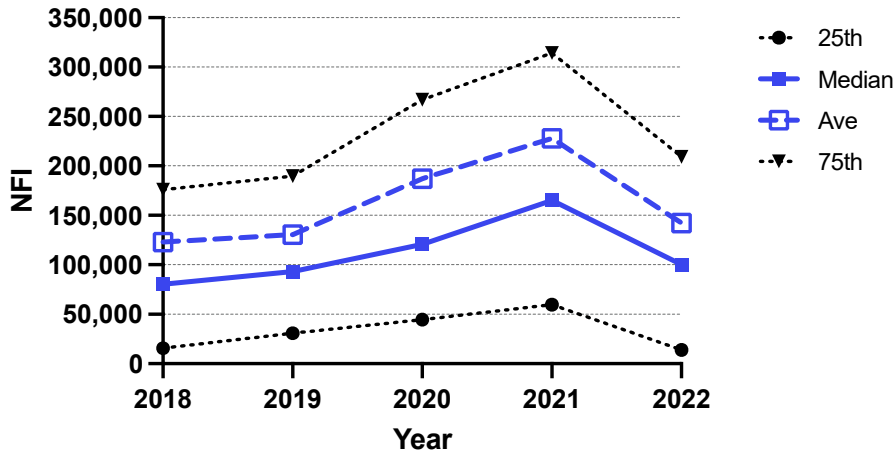
	2019	2020	2021(p)	Est 2022
Income				
Beef	\$ 61,453	\$ 58,806	\$ 64,687	\$ 64,687
Dairy-livestock	113	143	143	143
Dairy-milk	-	-	-	-
Sheep	63	67	67	67
Swine	2,428	1,598	2,077	2,077
Poultry and eggs	244	212	212	212
Other livestock	1,427	1,820	1,838	1,838
Custom feeding	5,118	5,580	5,971	5,971
Ad hoc pmt - Livestock	-	-	3,621	-
<i>minus Feed purchased</i>	<u>21,307</u>	<u>25,058</u>	<u>30,069</u>	<u>30,671</u>
<i>Livestock VFP</i>	\$ 49,540	\$ 43,169	\$ 48,547	\$ 44,324
Corn	228,823	241,000	314,502	323,451
Grain sorghum	30,408	50,869	61,436	57,567
Soybeans	183,768	229,655	267,654	261,124
Sunflowers	1,028	2,321	-	-
Wheat	77,459	73,158	109,434	127,234
Hay and forage	16,791	12,164	12,408	12,408
Other crop	-	-	-	-
Govt payment (farm bill only)	25,025	94,160	-	-
Ad hoc pmt - Crops	70,738	-	44,389	-
Crop ins proceeds	27,630	22,514	18,428	17,276
Machine work	15,570	15,261	15,414	15,568
Other income and hedging	31,090	42,673	44,807	45,703
<i>Crop VFP</i>	\$ 708,331	\$ 783,776	\$ 888,471	\$ 860,330
TOTAL VFP	\$ 757,870	\$ 826,944	\$ 937,018	\$ 904,655



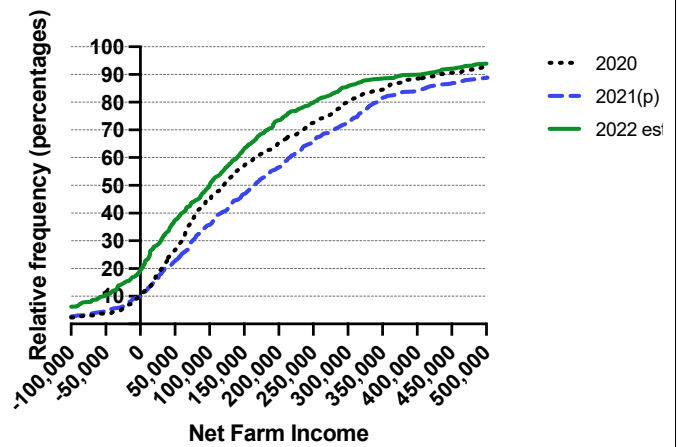
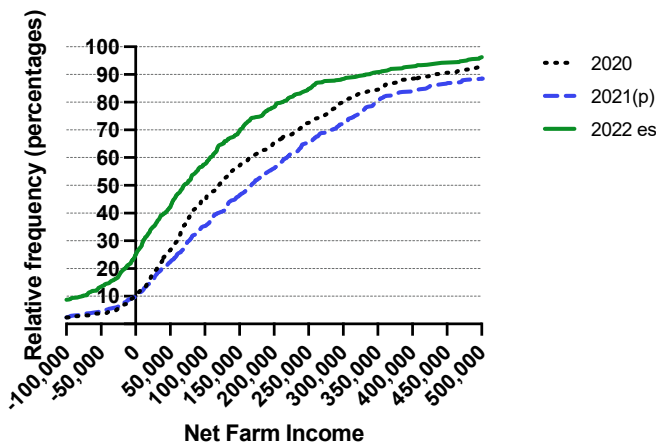
Expenses				
Hired Labor	27,346	28,025	29,930	30,828
Machinery Repairs	50,938	56,614	61,090	62,923
Irrigation Repairs	1,938	2,398	2,518	2,593
Building Repairs	2,999	3,562	3,740	3,852
Seed/Other Crop Expenses	80,705	84,273	88,169	105,803
Crop Insurance	22,330	20,879	22,516	22,967
Fertilizer-Lime	93,146	92,842	123,883	136,272
Machine Hire	25,652	26,330	27,522	28,072
Organization Fees, Publications	5,392	5,495	5,617	5,617
Vet-Med-Drugs	4,013	4,133	4,257	4,385
Misc Crop Expense	3,540	4,990	5,264	5,369
Misc Livestock Expense	2,387	2,400	2,520	2,595
Dairy Expense	-	-	-	-
Gas-Fuel-Oil	28,134	23,306	31,053	34,158
Irrigation Energy	4,303	5,788	6,367	7,003
Real Estate Taxes	11,837	12,638	12,638	12,764
Personal Property Taxes	2,589	2,613	2,669	2,669
General Farm Insurance	14,193	14,564	14,862	14,862
Utilities	6,708	6,680	6,843	6,980
Cash Farm Rent	52,382	53,026	55,678	58,462
Herbicide-Insecticide	78,194	79,930	84,287	88,501
Conservation	779	2,025	1,998	1,998
Auto Expense	905	793	836	852
Other expenses	(9)	(147)	(147)	(147)
<i>Total Operating Expenses</i>	\$ 520,399	\$ 533,158	\$ 594,109	\$ 639,379
Interest paid	31,999	31,973	33,572	34,243
Depreciation - machinery	64,388	66,404	73,044	80,349
Depreciation - buildings	8,072	8,201	8,365	8,365
Total Farm Expenses	\$ 624,858	\$ 639,735	\$ 709,090	\$ 762,336
Net Farm Income	\$ 133,012	\$ 187,209	\$ 227,929	\$ 142,319



Range of NFI



Distribution of NFI



What is happening in 2021

Shift in crop acres

- + 20% sorghum, +11% wheat, -5% corn, -1% soybeans

Much higher grain prices

Much higher expenses

- 30% increase in fuel and fertilizer and 10% in 2022
- 5% increase in seed and 20% in 2022
- Most other expenses up 5% for 2020 and 21
- Depreciation up 10% both this year and next year
 - Likely a lot of new equipment being purchased



Still government payments in 2021

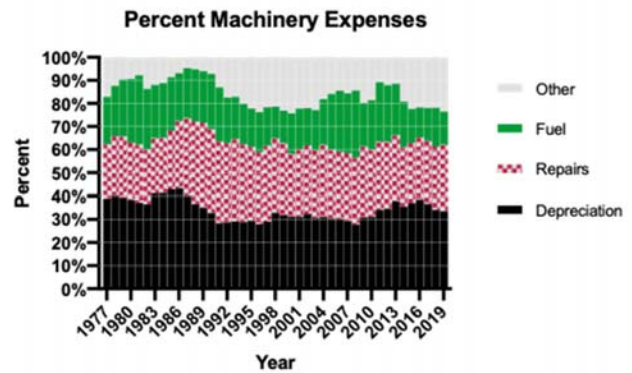
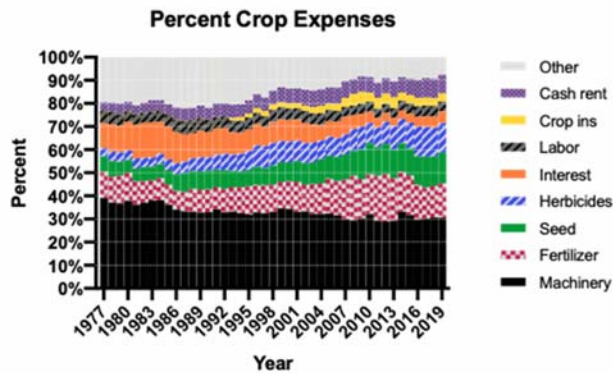
Ad hoc payments of \$20 per acre

Robin Reid is the best source for this information

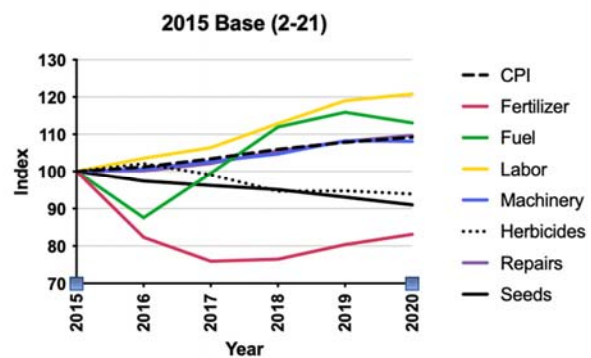
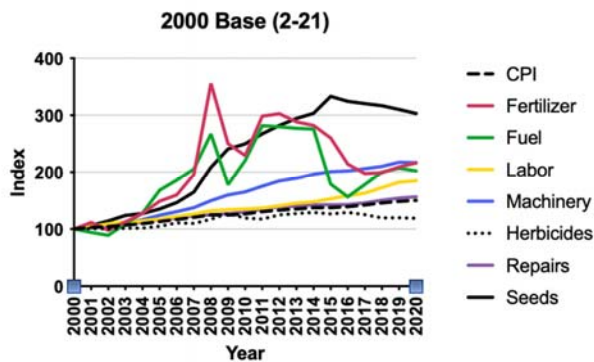
<https://www.agmanager.info/news/recent-videos/usda-pandemic-assistance-producers>



Where do farmers spend their money?



USDA indexes



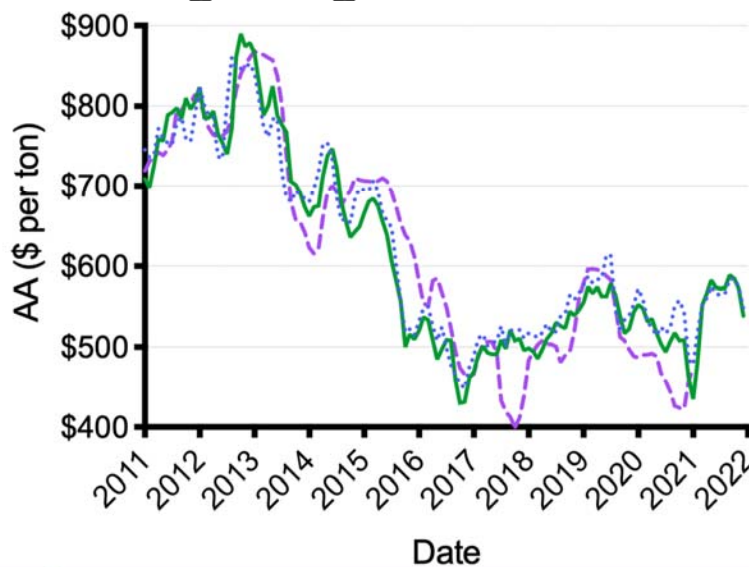
More tractor and combine sales

Deere & Co. Net Sales & Revenues – 2Q21						
(\$ in millions)						
	2Q21	2Q20	Change	YTD 2021	YTD 2020	Change
Production & precision ag net sales	\$4,529	\$3,365	+35%	\$7,599	\$5,872	+29%
Small ag & turf net sales	3,390	2,603	+30%	5,904	4,583	+29%
Total net sales and revenues	\$12,058	\$9,253	+30%	\$21,170	\$16,884	+25%

Source: Company reports



High high will fertilizer go?

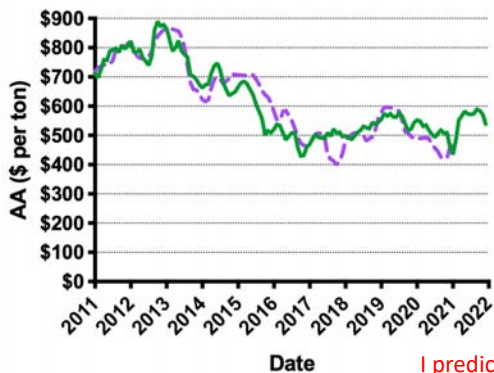


- Predicted AA (2021 model)
- ⋯ Predicted AA (2019 model)
- - - Anhydrous

\$600 AA price is likely conservative. I would not be surprised if AA approached \$700 sometime this summer



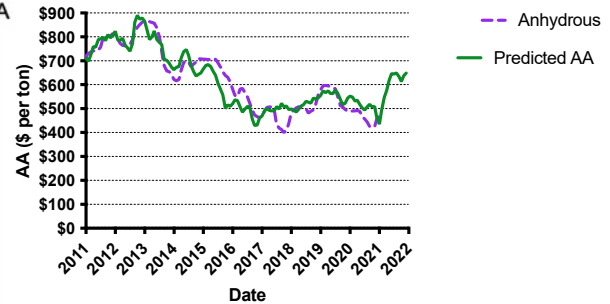
AA price prediction – February 2021



I predicted \$600 was likely on the low side

\$600 is 50% higher than summer of 2020

Figure 6. Actual vs. Predicted Anhydrous Ammonia Prices



Most recent projection and even this is low



Fertilizer price prediction

Anhydrous ammonia (\$/ton) =

$$163 + 53.4 * \text{corn_2 mo lag} (\$/\text{bu}) + 2.96 * \text{oil_9 mo lag} (\$/\text{barrel})$$

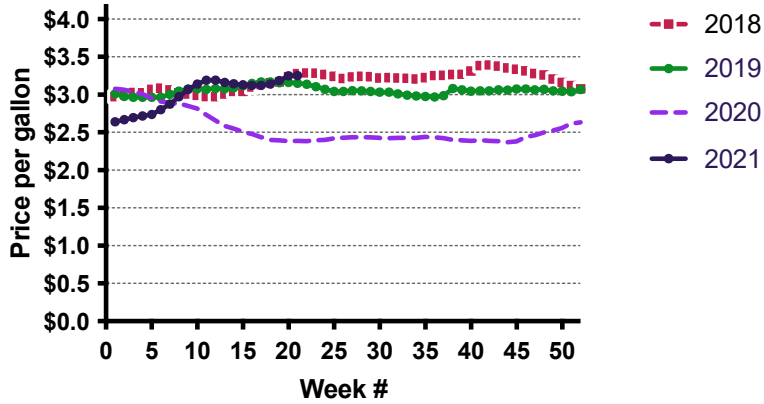
\$6.50 Corn and \$70 oil = \$700 to \$750 AA price by next spring

AA is already in the low \$700 nationally



How high will diesel go?

Diesel prices

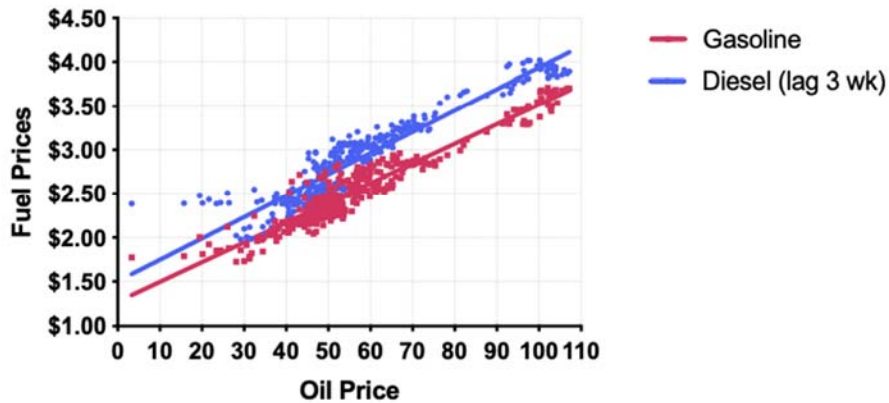


Prices up 40%
from last
summer –
nearly a \$1 a
gallon higher



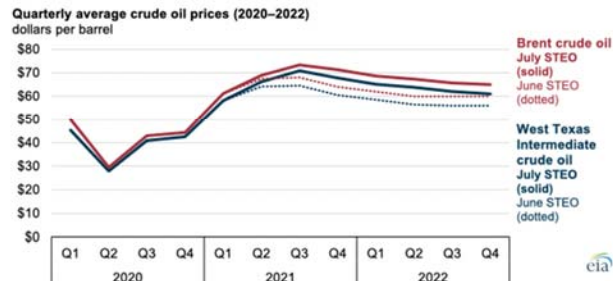
Relationship between oil and diesel

Trend Line for Prices



JULY 15, 2021

Brent crude oil price forecast to average \$72 per barrel in the second half of 2021



West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals



KANSAS STATE UNIVERSITY | Agricultural Economics

Things to worry about going forward

What will happen to expenses when/if grain prices go down in 2022?

What will farmers do with their potential higher NFI

- Buy machinery

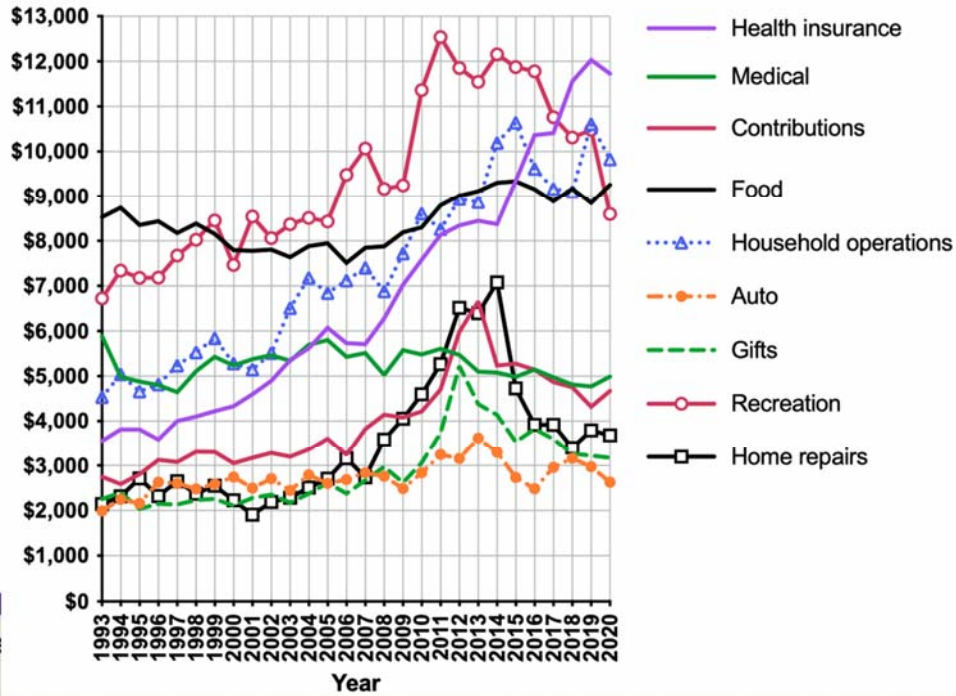
Higher inflation

- Are we entering a new inflation era?
- Many of you can remember the early 1980s
- The Millennial and Gen Z generations don't know what this is



KANSAS STATE UNIVERSITY | Agricultural Economics

Family living (real \$)



rural Economics

Thank you!

Gregg Ibendahl

- email: ibendahl@ksu.edu
- twitter: [@Ibendahl](https://twitter.com/Ibendahl)



KANSAS STATE UNIVERSITY | Agricultural Economics