

Farm Finances and the Impact of Government Support Programs

Alejandro Plastina
Associate Professor/Extension Economist
Department of Economics
plastina@iastate.edu

IOWA STATE UNIVERSITY
Extension and Outreach

Ag Outlook for College Students
Ag Decision Maker Webinar Series
December 2, 2020

Overview

- Farm financial situation in early 2020
- Costs of crop production in 2020
- Cash revenues in 2020
- How is 2021 shaping up?

IOWA STATE UNIVERSITY
Extension and Outreach

Average Net Farm Income increased in 2019...

Mid-size Iowa farms with Gross Revenue > \$100,000
(accrual, not adjusted for inflation)

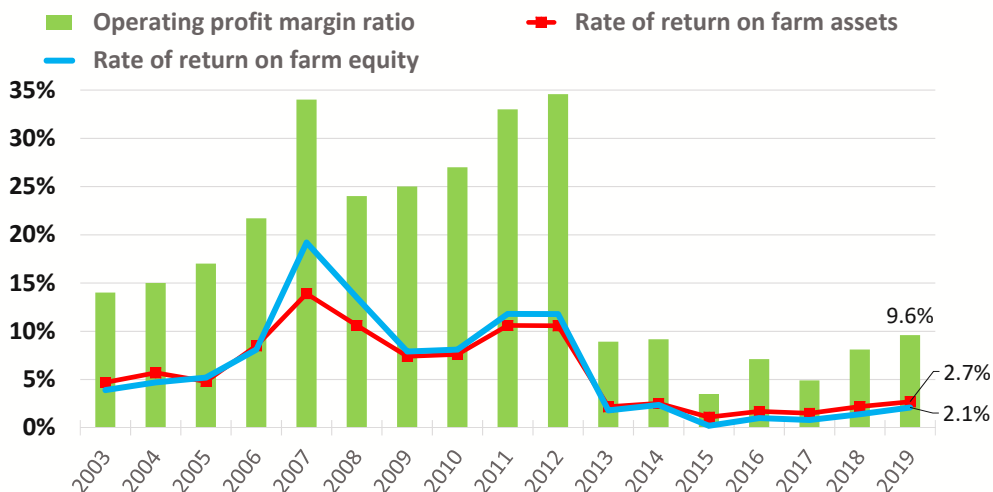


IOWA STATE UNIVERSITY
Extension and Outreach



Source: Iowa Farm Costs and Returns.
Ag Decision Maker File C1-10. Various years.
Based on data from Iowa Farm Business Association

...but Farm Profitability remained subdued

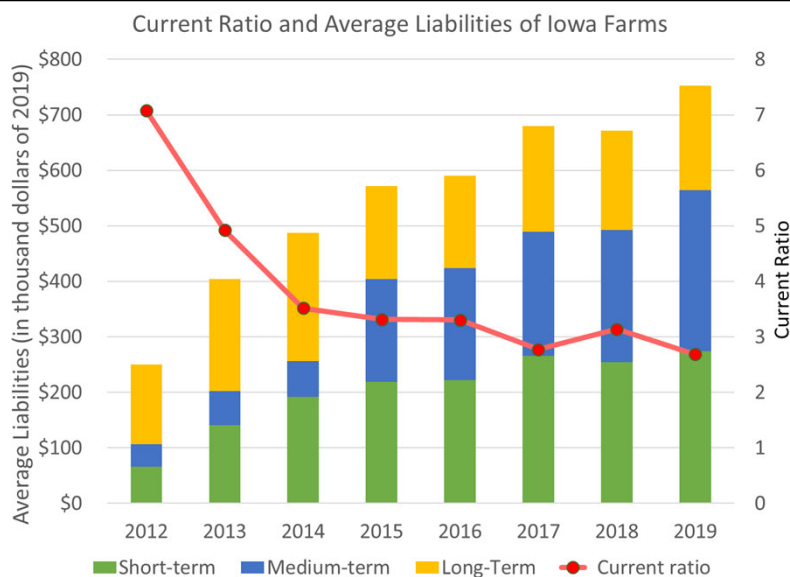


IOWA STATE UNIVERSITY
Extension and Outreach



Source: Iowa Farm Costs and Returns.
Ag Decision Maker File C1-10. Various years.
OPMR = (Accrual Net Farm Income + Interest - Unpaid labor) / Gross revenue

...and non-real estate farm debt increased, and liquidity declined...

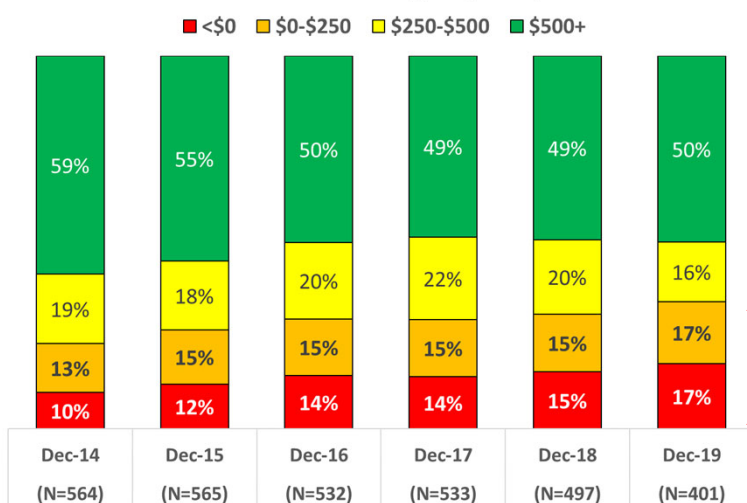


IOWA STATE UNIVERSITY
Extension and Outreach



Source: *Iowa Farm Costs and Returns*.
Ag Decision Maker File C1-10. Various years.
Based on data from Iowa Farm Business Association

Distribution of Working Capital per Acre



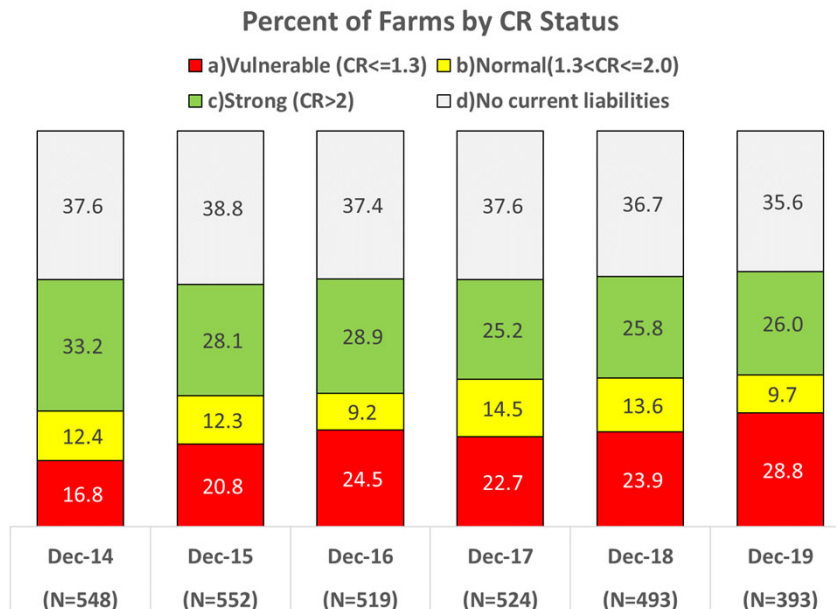
1 in 3 Iowa Farms had less than \$250 in working capital per acre in early 2020...

IOWA STATE UNIVERSITY
Extension and Outreach

Source: Plastina, A. "Mixed liquidity results for Iowa farms in 2019."
AgDM Newsletter, June 2020.

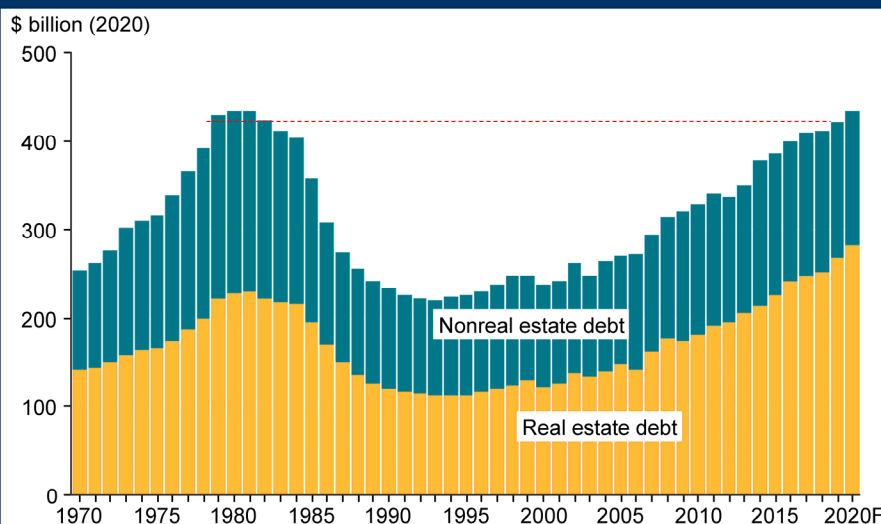
**...and also a
Vulnerable
Current Ratio**

**→ Weak
Liquidity**



Source: Plastina, A. "Mixed liquidity results for Iowa farms in 2019." AgDM Newsletter, June 2020.

Farm sector debt, inflation adjusted, 1970–2020F

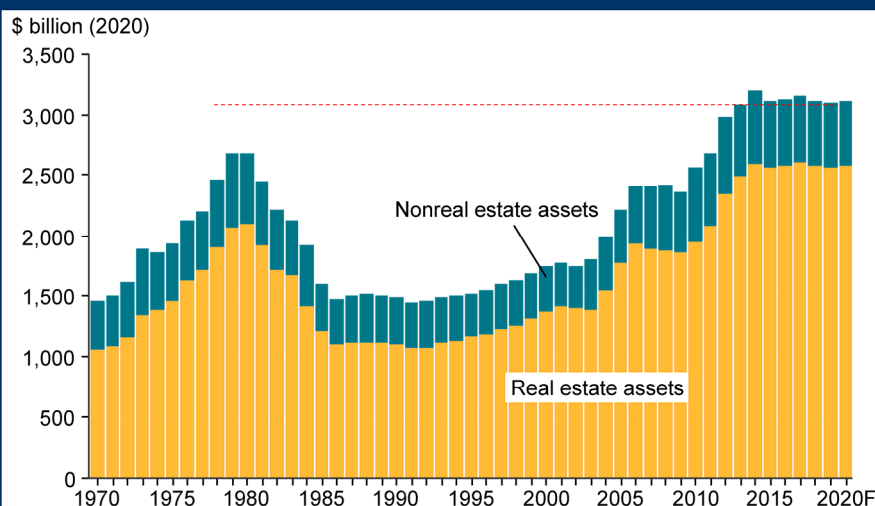


Note: F = forecast. Values are adjusted for inflation using the chain-type GDP deflator, 2020=100.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
Data as of September 2, 2020.

**Farm debt
increased
at the
national
level too,
reaching
1980's
levels...**

But Farm Assets are much higher than in the 1980's... due mostly to land values

Farm sector assets, inflation adjusted, 1970–2020F



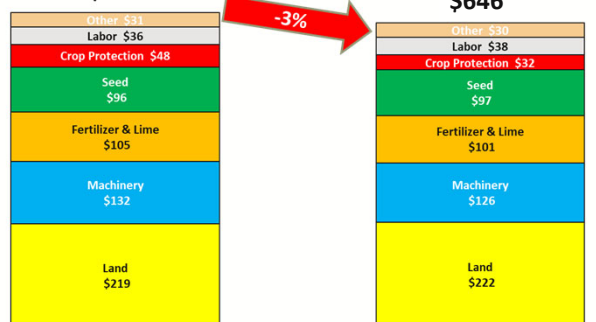
Note: F = forecast. Values are adjusted for inflation using the chain-type GDP deflator, 2020=100.

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
Data as of September 2, 2020.

2020 Projected Costs of crop production on rented land 3% lower than in 2019

Corn following soybeans (199 bu/a)

\$668

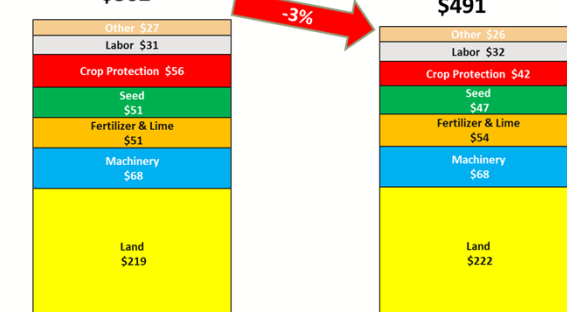


2019

2020

Soybeans following corn (56 bu/a)

\$502

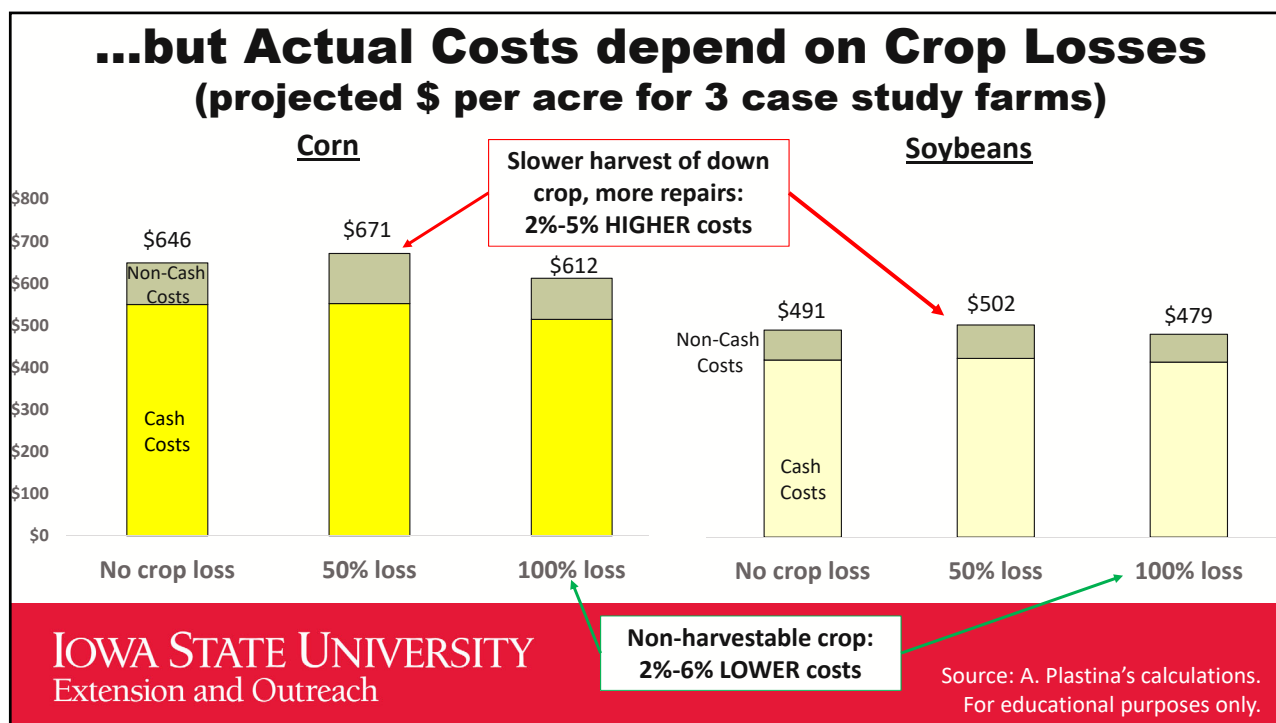


2019

2020

IOWA STATE UNIVERSITY
Extension and Outreach

Source: Cost projections from AgDM File A1-20 (Jan 2020) adjusted with cash rents from AgDM File C2-10 (May 2020).



Cash income in 2020?

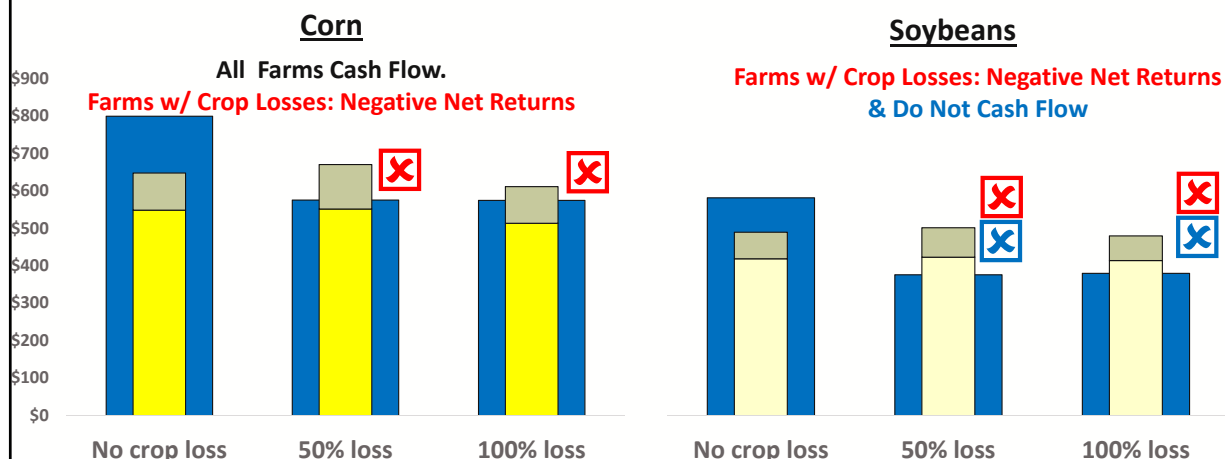
- 1) Cash Receipts from Crop Sales
- 2) Crop Insurance
- 3) ARC/PLC Payments in 2020 from 2019 crop
- 4) Ad-hoc programs:
 - 3rd batch of Market Facilitation Payments (MFP)
 - Coronavirus Food Assistance Program 1 (CFAP 1)
 - CFAP 2
 - Forgiveness of Paycheck Protection Program (PPP) Loans
 - Stimulus payments
 - State Grants (Relief funds, Capacity expansion, etc.)

2020 Cash Receipts & Crop Insurance (per Acre)

Source of Revenue from Corn Acres	No Crop Loss 200 bu	50% Crop Loss 100 bu	Unharvestable Crop (100% Loss)
Cash Receipts (WASDE \$4.00)	\$800	\$400	\$0
Gross Indemnity (RP 80%; APH 180 bu; \$3.88 projected; \$3.99 harvest)	\$0	\$176	\$575
Sub-Total per Acre	\$800	\$576	\$575

Source of Revenue from Soybeans Acres	No Crop Loss 56 bu	50% Crop Loss 28 bu	Unharvestable Crop (100% Loss)
Cash Receipts (WASDE \$10.40)	\$582	\$291	\$0
Gross Indemnity (RP 80%; APH 45 bu; \$9.17 projected; \$10.55 harvest)	\$0	\$84	\$380
Sub-Total per Acre	\$582	\$375	\$380

Cash Receipts & Crop Insurance vs. Total Costs in 2020



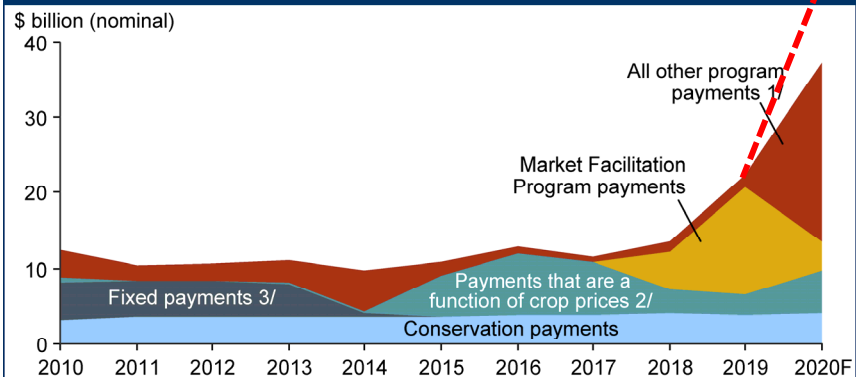
IOWA STATE UNIVERSITY
Extension and Outreach

Source: A. Plastina's calculations.
For educational purposes only.

In September, USDA projected massive government programs: \$37.2 billion.

Since then, CFAP2 added \$14 billion bringing total payments to \$51.2 billion.

Government farm program payments to farm producers, 2010–20F



Note: F = forecast.

1/ All other payments includes supplemental and ad hoc disaster assistance which in 2020 includes payments from the Coronavirus Food Assistance Program and Paycheck Protection Program loans. It also includes tobacco transition, Cotton Ginning Cost Share, and dairy payments.

2/ Includes Price Loss Coverage (PLC), Agriculture Risk Coverage (ARC), counter-cyclical payments (CCP), Average Crop Revenue Election (ACRE) payments, loan deficiency payments (excluding grazeout payments), marketing loan gains, and certificate exchange gains. CCP and ACRE were not continued in the 2014 Farm Bill. PLC and ARC payments began in 2015.

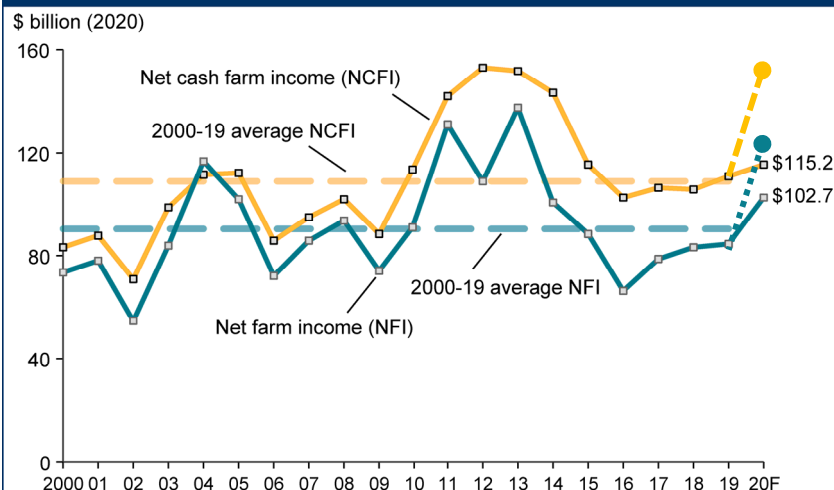
3/ Includes direct fixed payments portion of Direct and Counter-Cyclical Program (DCP) and Cotton Transition Assistance Program (CTAP) payments (in 2014/15).

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.

Data as of September 2, 2020.

Next update: Dec 2, 2020

Net farm income and net cash farm income, 2000–20F



Note: F = forecast. Values are adjusted for inflation using the chain-type GDP deflator, 2020=100.

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.

Data as of September 2, 2020.

Next update: Dec 2, 2020

Commodity prices are up since September, so Farm Income will be higher than expected in 2020:

NFI \$120-\$125

Billion

NCFI \$132-\$137

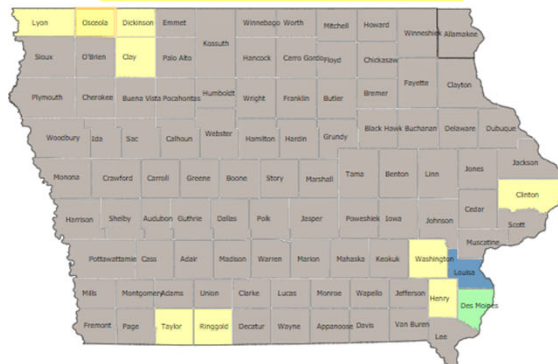
Billion

Source: A. Plastina's calculations.

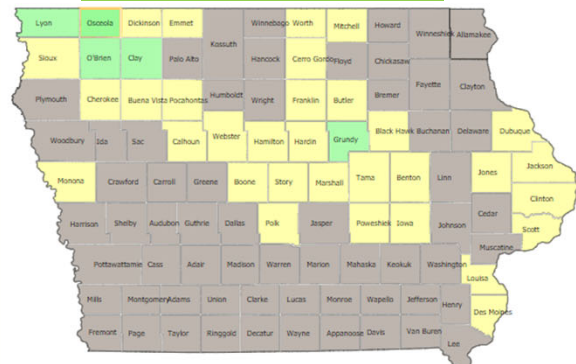
For educational purposes only.

ARC-CO payments per Base Acre in 2020 for the 2019 crop year

Corn Base Acres
Average ARC-CO Payment
\$1.60 per acre



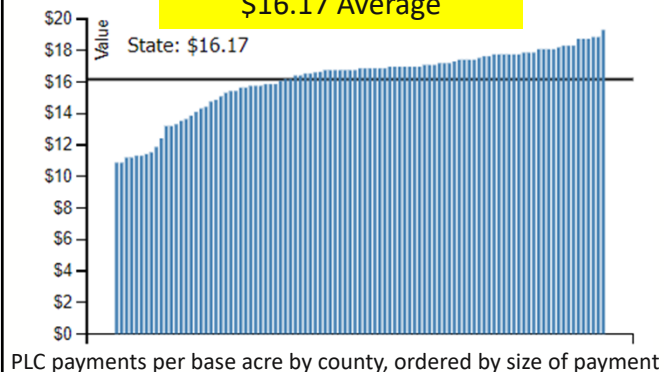
Soybean Base Acres
Average ARC-CO Payment
\$5.00 per acre



N.A. 0\$ \$1 - \$25 \$25 - \$50\$ \$50 - \$75 \$75 - \$100

PLC payments per acre in 2020 for the 2019 crop year

Corn Base Acres
PLC payments
\$16.17 Average



Soybean Base Acres
No PLC payments

ARC-CO & PLC do not depend on planted acres, but Base Acres.

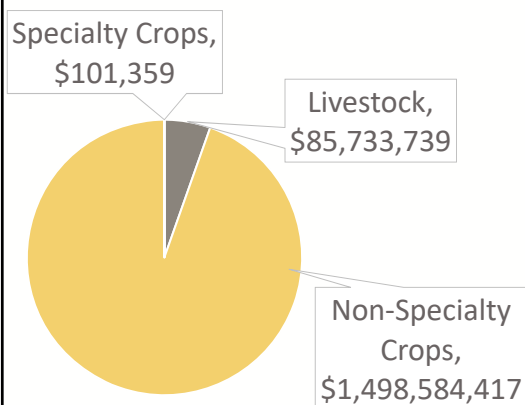
ARC/PLC average 2020 payment for Case Study Farms:

$\frac{2}{3} * \$16.17$ (PLC Corn) + $\frac{1}{3} * \$5.00$ (ARC-CO Soy) = \$12.45 /acre

Selected Ad-Hoc Programs with Payments in 2020

- **Market Facilitation Program (MFP): \$14.5 billion** in direct support for losses caused by Trade Disruption in 2018 and 2019 (paid in 2019 and 2020)
- **Coronavirus Food Assistance Program (CFAP 1): \$16 billion** in direct support for actual losses in the 2020 marketing year caused by COVID-19 (paid in 2020).
- **CFAP 2: \$14 billion** in direct support for increased marketing costs associated with the COVID-19 pandemic in 2020 (payment started in October 2020).
- **Paycheck Protection Program (PPP) Loan:** \$5.2 million loans, with \$525 billion in proceeds disbursed to small businesses (not only farms) for COVID-19.

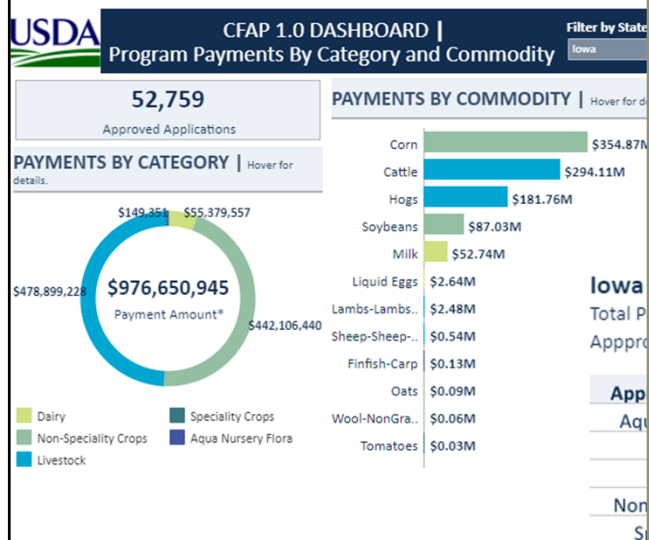
Total MFP Payments in Iowa \$1.6 Billion (11% of national MFP Payments)



Average Pmt. per Planted Acre \$66
 1st & 2nd Batches in 2019: 75%
 3rd Batch in 2020: 25%
\$16.50 per acre in 2020

Source: Farmers.gov
 September 28, 2020

CFAP 1 Approved Payments in Iowa as 11/29/20 Highest in the Nation (9.3% of total)



Case Study Farms

Assume:

1) 2019 Yields:

Corn 200 bu

Soybeans 56 bu

2) 50% of 2019 crop unsold in 2020

CFAP 1 payment per acre in 2020:

Corn: 100 bu x \$0.335 x 50% = **\$16.75/a**

Soy: 28 bu x \$0.475 x 50% = **\$6.65/a**

CFAP 2 for Corn and Soybeans

CORN: the greater of:

- A. Crop acreage × \$15 per acre; OR
- B. Crop acreage × \$0.232 per bushel × producer's weighted 2020 Actual Production History (APH) approved yield.

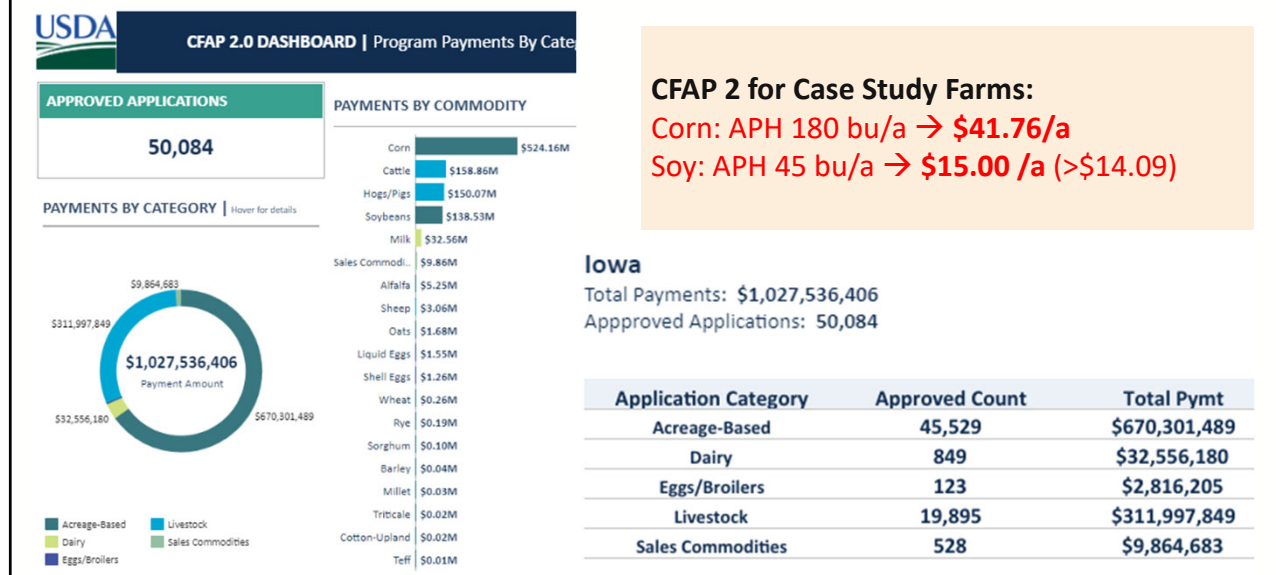
SOYBEANS: the greater of:

- A. Crop acreage × \$15 per acre; OR
- B. Crop acreage × \$0.3132 per bushel × producer's weighted 2020 APH approved yield.

IOWA STATE UNIVERSITY
Extension and Outreach

*USDA is accepting applications for CFAP 2 until December 11, 2020. Paid \$11.15 billion (80%) by 11/29/20

CFAP 2 Approved Payments in Iowa as 11/29/20 Highest in the Nation (9.2% of total)



Paycheck Protection Program (PPP) Loan Forgiveness

- When forgiven, the proceeds of the PPP loan are not included in gross income and will not be subject to taxation.
- Expenses paid with the loan (if it is forgiven) are not deductible.
- There is broad support for Congress to change this rule, but it is unclear whether that will happen.

Source: <https://www.calt.iastate.edu/blogpost/end-year-considerations-unprecedented-year>

Forgiveness of PPP Loans

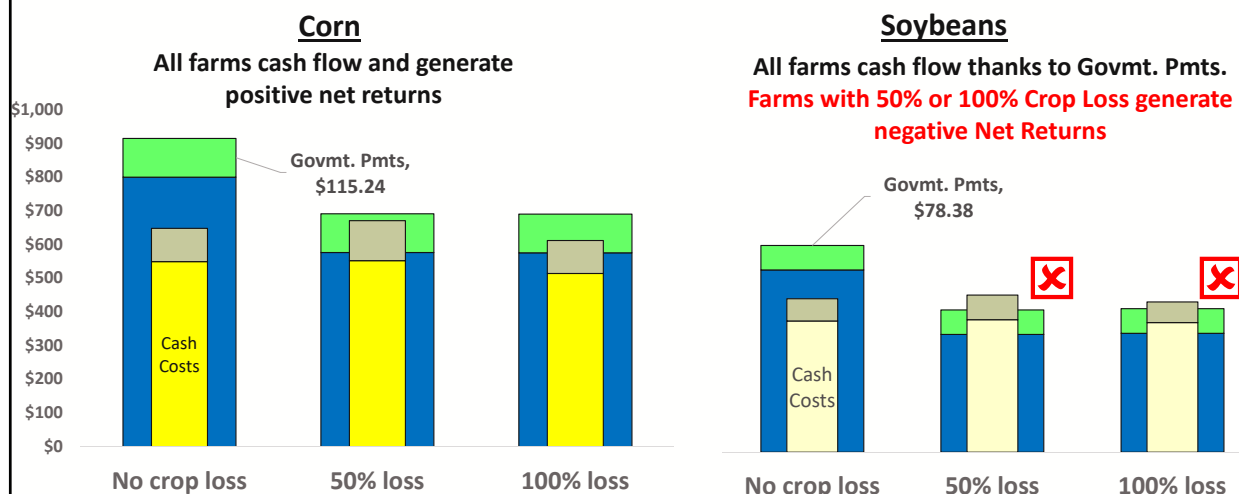
Maximum forgiveness (currently under review):

- cash compensation up to \$20,833 per owner
 - sole proprietors: no tax obligation if taken as a “draw” from farm bank account;
 - corporations: higher taxable income, since paid expenses with forgiven PPP \$ are not deductible from net farm income calculation
- cash compensation up to \$46,154 per non-owner employee
 - If paid with forgiven loan proceeds, this payroll expense is not currently deductible

Case Study Farms: assume SP w/ 750 acres and cash compensation of \$20,833 → govmt. pmt. = \$27.78 per acre

IOWA STATE UNIVERSITY
Extension and Outreach

ALL Cash Revenues vs. Total Costs in 2020



Government Payments per Acre:

Corn: \$12.45 ARC-CO&PLC + \$16.5 MFP + \$16.75 CFAP1 + \$41.76 CFAP2 + \$27.78 PPP = \$115.24

Soy: \$12.45 ARC-CO&PLC + \$16.5 MFP + \$ 6.65 CFAP1 + \$15.00 CFAP2 + \$27.78 PPP = \$ 78.38

Source: A. Plastina's calculations. For educational purposes only.

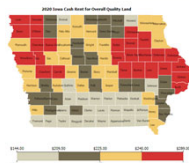
Local conditions will be different...

- Crop damage, combining speed & direction
- Actual ARC/PLC payments

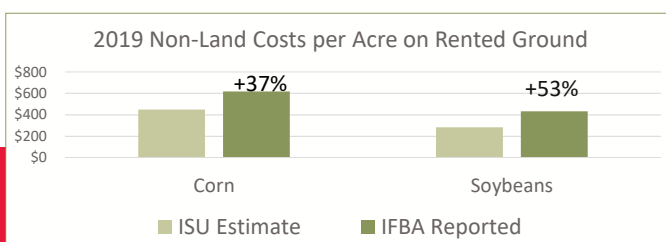


<https://www.card.iastate.edu/tools/farm-bill/arc-plc/>

- Owned vs. rented
- Cash rents
- Actual Yields
- Unsold crop in early 2020
- Other ...



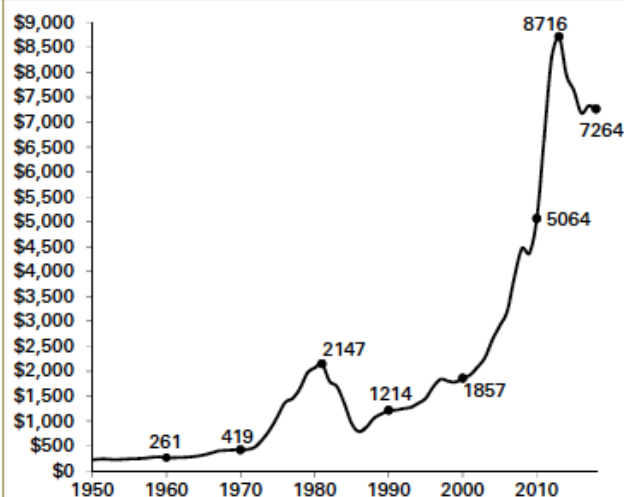
<https://www.card.iastate.edu/tools/ag-risk/cash-rental-rates/>



IOWA STATE UNIVERSITY
Extension and Outreach

**Iowa farmland
values support
the solvency of
owner-operators**

Figure 1. Average value per acre of Iowa farmland



Source: Iowa State University Land Value Survey

IOWA STATE UNIVERSITY
Extension and Outreach

...who account for 37% of all Iowa Farmland

	Percent	Acres
Owner Controlled:	47%	13,851,567
Owner operated	37%	10,819,245
Custom farmed	2%	583,485
Gov't programs and other uses	8%	2,448,837
Leased:	53%	16,771,192
Cash rent (fixed)	35%	11,502,256
Cash rent (flexible)	9%	2,354,117
Crop share	9%	2,875,316
Other types of leases	<1%	39,503
Total:	100%	30,622,759

IOWA STATE UNIVERSITY
Extension and Outreach

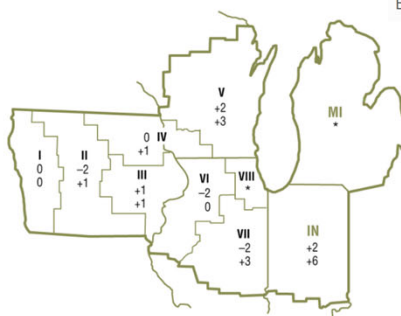
Source: 2017 Iowa Farmland Ownership and Tenure Survey.
<https://store.extension.iastate.edu/product/6492>

Higher Land Values Strengthen their Balance Sheet...

Percent change in dollar value of "good" farmland

	July 1, 2020 to October 1, 2020	October 1, 2019 to October 1, 2020
Illinois	-2	+2
Indiana	+2	+6
Iowa	0	+1
Michigan	*	*
Wisconsin	+1	+3
Seventh District	0	+2

*Insufficient response.



Top: July 1, 2020 to October 1, 2020
Bottom: October 1, 2019 to October 1, 2020

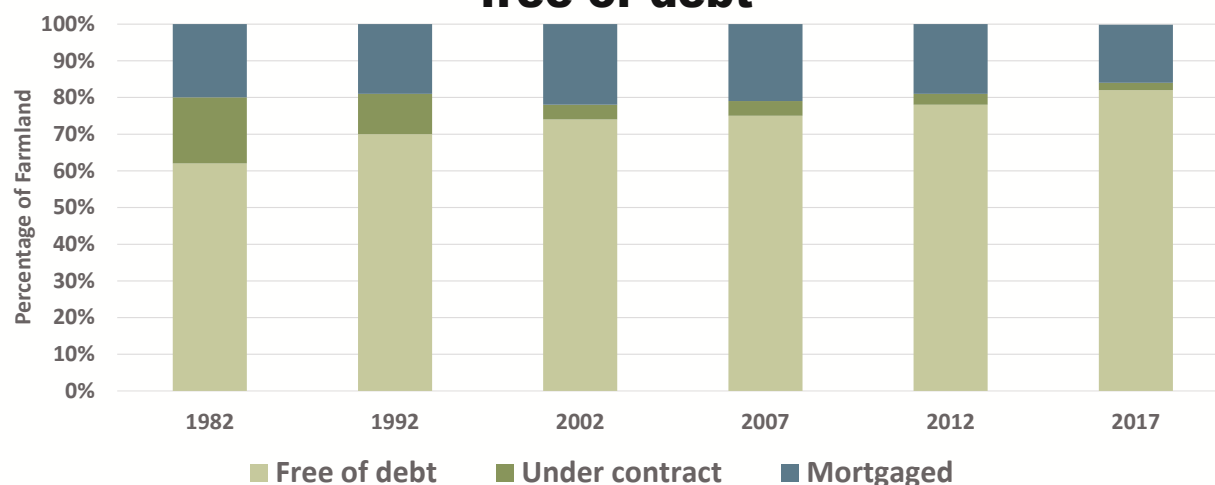
AgLetter, No. 1990, November 2020

AgLetter: November 2020

By David Oppedahl

FEDERAL RESERVE BANK of CHICAGO

...particularly since 82% of Iowa Farmland is owned free of debt



IOWA STATE UNIVERSITY
Extension and Outreach

Source: 2017 Iowa Farmland Ownership and Tenure Survey.
<https://store.extension.iastate.edu/product/6492>

Overall, by Dec 2020 we can expect:

- Stronger Liquidity, Solvency, and Repayment Capacity than in Jan 2020,
- Due to Higher Net Farm Income in 2020 (stronger crop prices at harvest time and massive government payments)

IOWA STATE UNIVERSITY
Extension and Outreach

However, higher land values put upward pressure on land rents (leased ground 53% of all Iowa Farmland)

	Percent	Acres
Owner Controlled:	47%	13,851,567
Owner operated	37%	10,819,245
Custom farmed	2%	583,485
Gov't programs and other uses	8%	2,448,837
Leased:	53%	16,771,192
Cash rent (fixed)	35%	11,502,256
Cash rent (flexible)	9%	2,354,117
Crop share	9%	2,875,316
Other types of leases	<1%	39,503
Total:	100%	30,622,759

IOWA STATE UNIVERSITY
Extension and Outreach

Source: 2017 Iowa Farmland Ownership and Tenure Survey.
<https://store.extension.iastate.edu/product/6492>

Fertilizer Prices strong into 2021: Urea (Granular) FOB US Gulf Futures (CEM)

**Dec 2020 Contract:
March-December 2020**

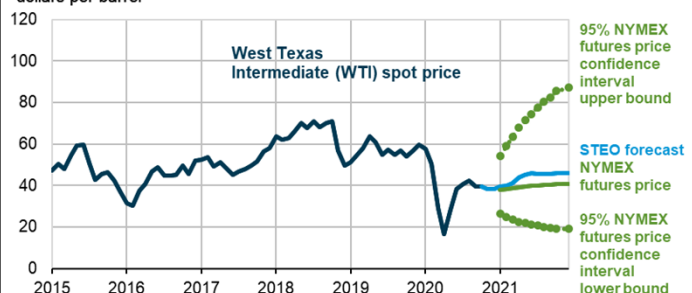


**March 2021 Contract:
April-December 2020**



Energy Prices forecast higher in 2021

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



Note: Confidence interval derived from options market information for the five trading days ending Nov 5, 2020. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2020, CME Group, and Bloomberg, L.P.



IOWA STATE UNIVERSITY
Extension and Outreach

	2018	2019	2020	2021
WTI Crude Oil ^a (dollars per barrel)	65.07	56.99	38.24	44.24
Brent Crude Oil (dollars per barrel)	71.21	64.34	40.61	46.59
Gasoline ^b (dollars per gallon)	2.73	2.60	2.15	2.22
Diesel ^c (dollars per gallon)	3.18	3.06	2.53	2.56
Heating Oil ^d (dollars per gallon)	3.01	3.00	2.43	2.47
Natural Gas ^d (dollars per thousand cubic feet)	10.46	10.46	10.59	10.90
Electricity ^d (cents per kilowatthour)	12.87	13.01	13.10	13.22

^aWest Texas Intermediate.

^bAverage regular pump price.

^cOn-highway retail.

^dU.S. Residential average.

12/1/2020

2021 Government Payments unlikely to be as high as in 2020



Congress must end blank check to use on government farm subsidies

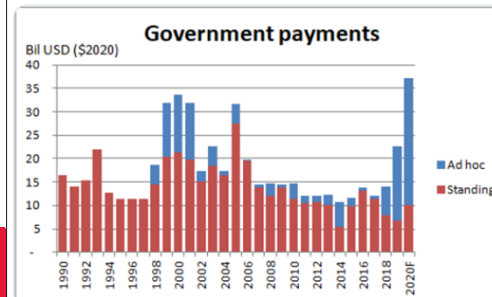
BY VINCENT SMITH AND JOSEPH GLAUBER, OPINION CONTRIBUTOR -- 07/23/20 03:00 PM EDT
THE VIEWS EXPRESSED BY CONTRIBUTORS ARE THEIR OWN AND NOT THE VIEW OF THE HILL

USDA Chief Economist 2008-2014

Tweet

JoeGlauber--IFPRI
@JoeGlauber1

Chart shows farm payments since 1990 adjusted for inflation. Last time ad hoc payments were this high was 1999-2001. One of the consequences of that period was the Brazil cotton case.



7:55 AM · Sep 30, 2020 · Twitter Web App

IOWA STATE UNIVERSITY
Extension and Outreach

Questions? Comments?

Alejandro Plastina
plastina@iastate.edu
515-294-6160

Please share your thoughts about this presentation:
<https://bit.ly/2FkVMBo>

IOWA STATE UNIVERSITY
Extension and Outreach

Tax Management Resources

- End-of-Year Considerations for an Unprecedented Year:
<https://www.calt.iastate.edu/blogpost/end-year-considerations-unprecedented-year>
- IRS Says No 2020 Deduction if PPP Forgiveness Reasonably Expected in 2021:
<https://www.calt.iastate.edu/blogpost/end-year-considerations-unprecedented-year>

IOWA STATE UNIVERSITY
Extension and Outreach