

ND Farm Economy and Farm Financial Stress

Bryon J Parman, Ph.D.

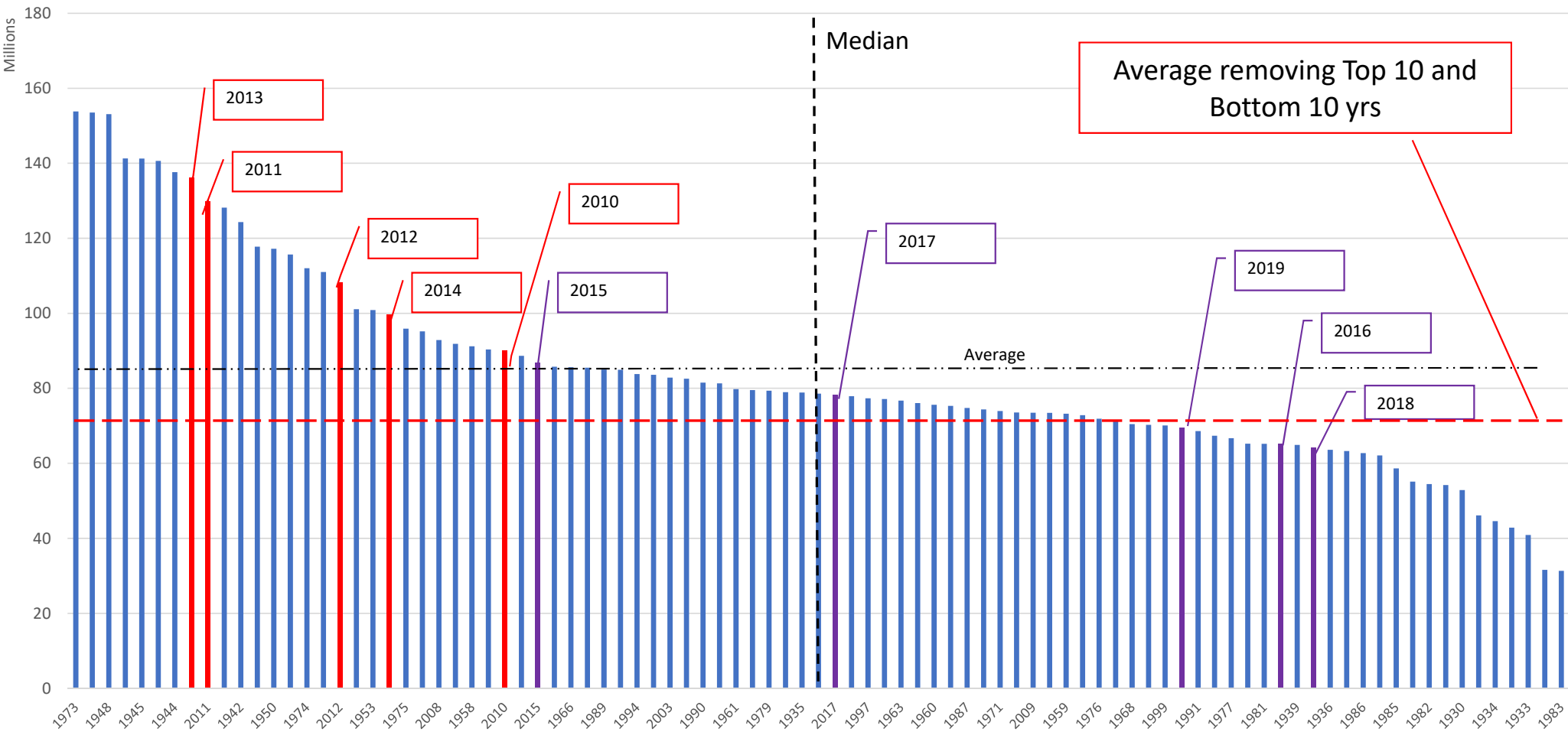
Department of Ag. Business and Applied Economics

NDSU Extension

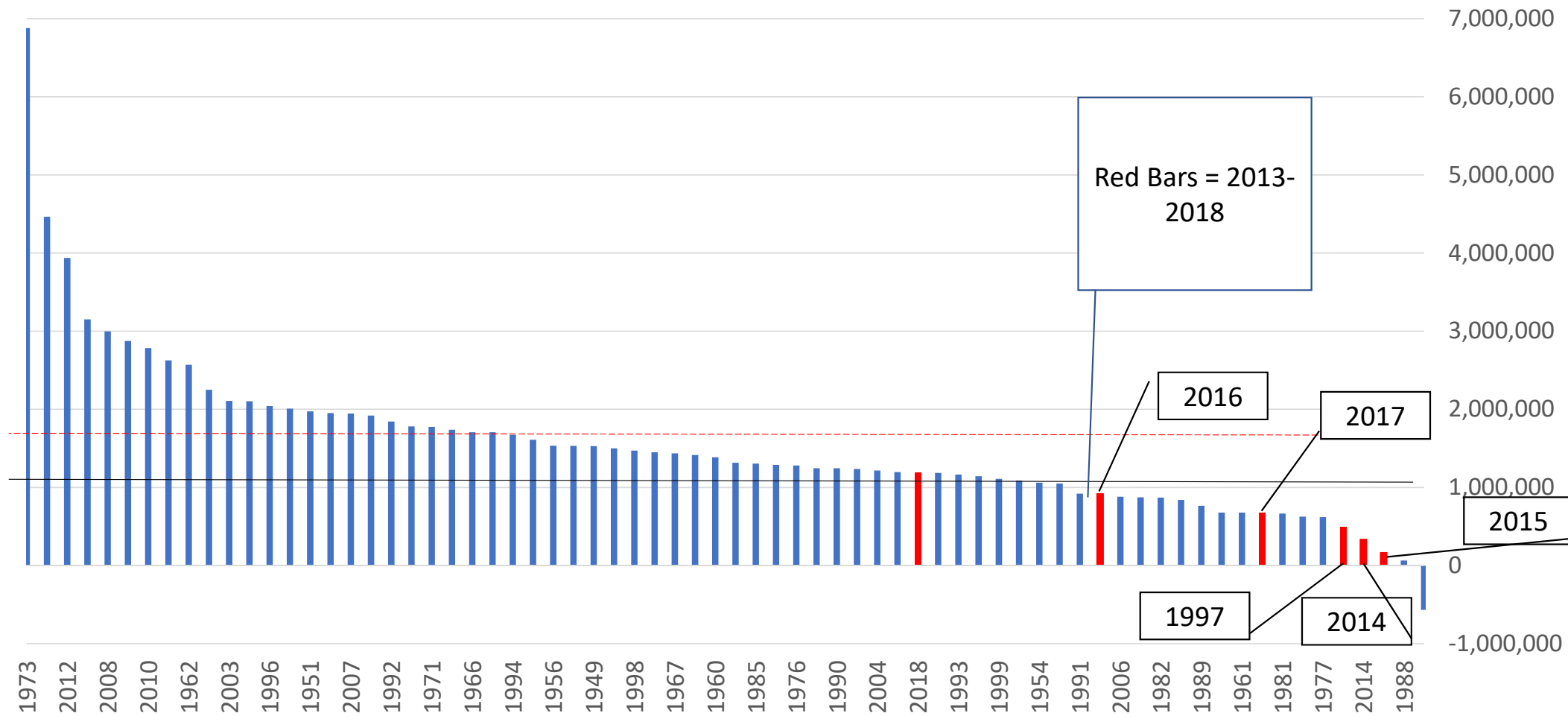
NDSU

EXTENSION

Ranking Net Farm Income 1929 - 2019



Ranking North Dakota Net Farm Income 1949-2018

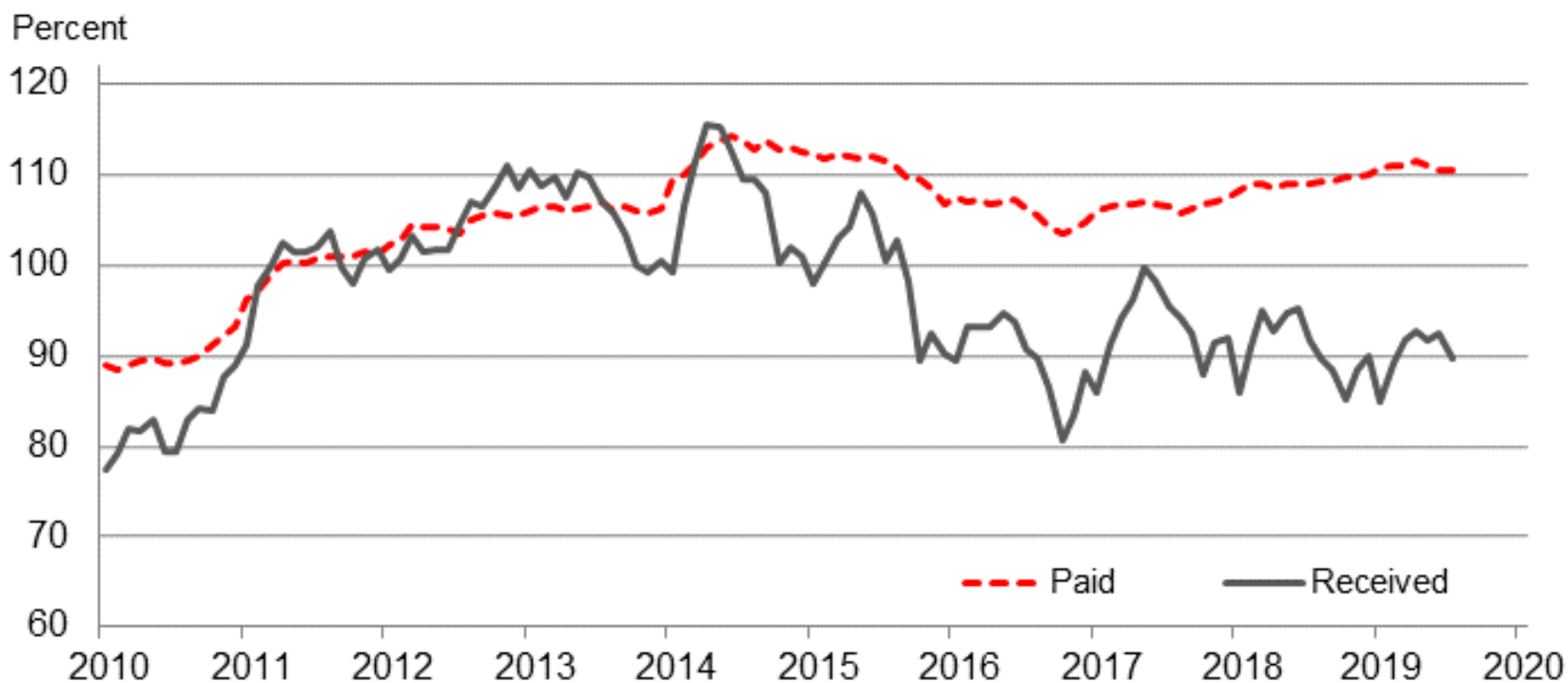


Projections for 2019 Set to Be Higher

- Net farm income, a broad measure of profits, is forecast to increase \$8.5 billion (10.2 percent) to \$92.5 billion in 2019, after increasing in both 2017 and 2018.
- In inflation-adjusted 2019 dollars, net farm income is forecast to increase \$7.0 billion (8.2 percent) from 2018.
- If realized, in inflation-adjusted terms, net farm income **in 2019 would be 32.3 percent below its peak of \$136.6 billion in 2013 but 2.8 percent above its 2000-18 average (\$90.1 billion).**

Received and Paid Indexes, All Items by Month – United States: 2011=100

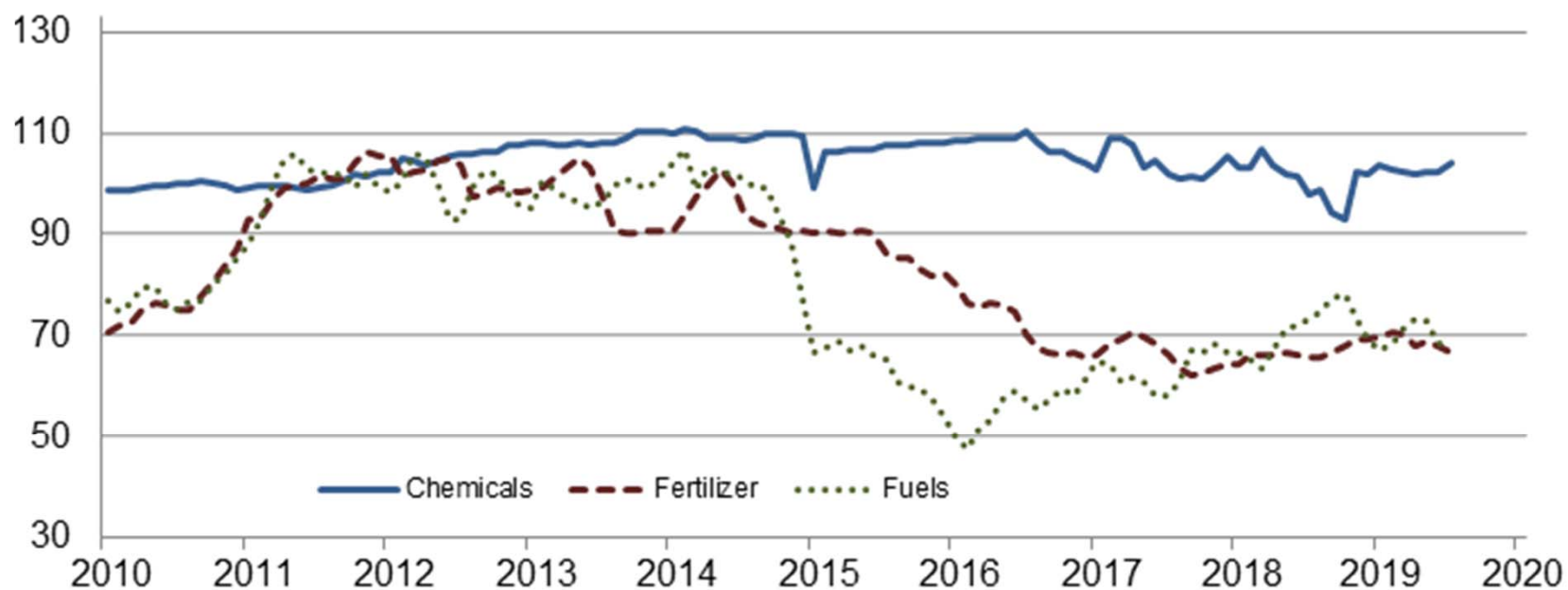
Commodity prices index. Prices paid vs.
received



USDA – NASS
08/30/2019

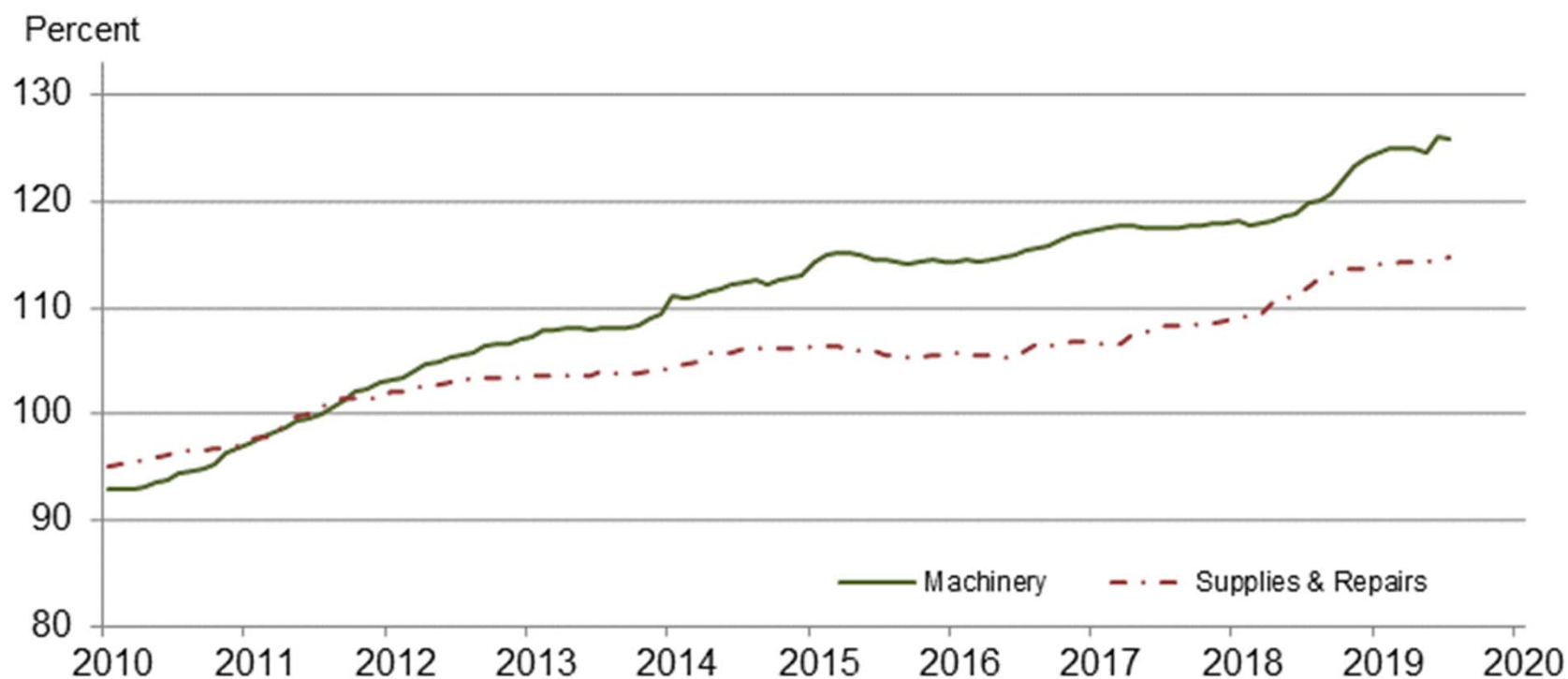
Paid Indexes by Non-farm Origin and Month, Chemicals, Fertilizer, and Fuels – United States: 2011=100

Percent



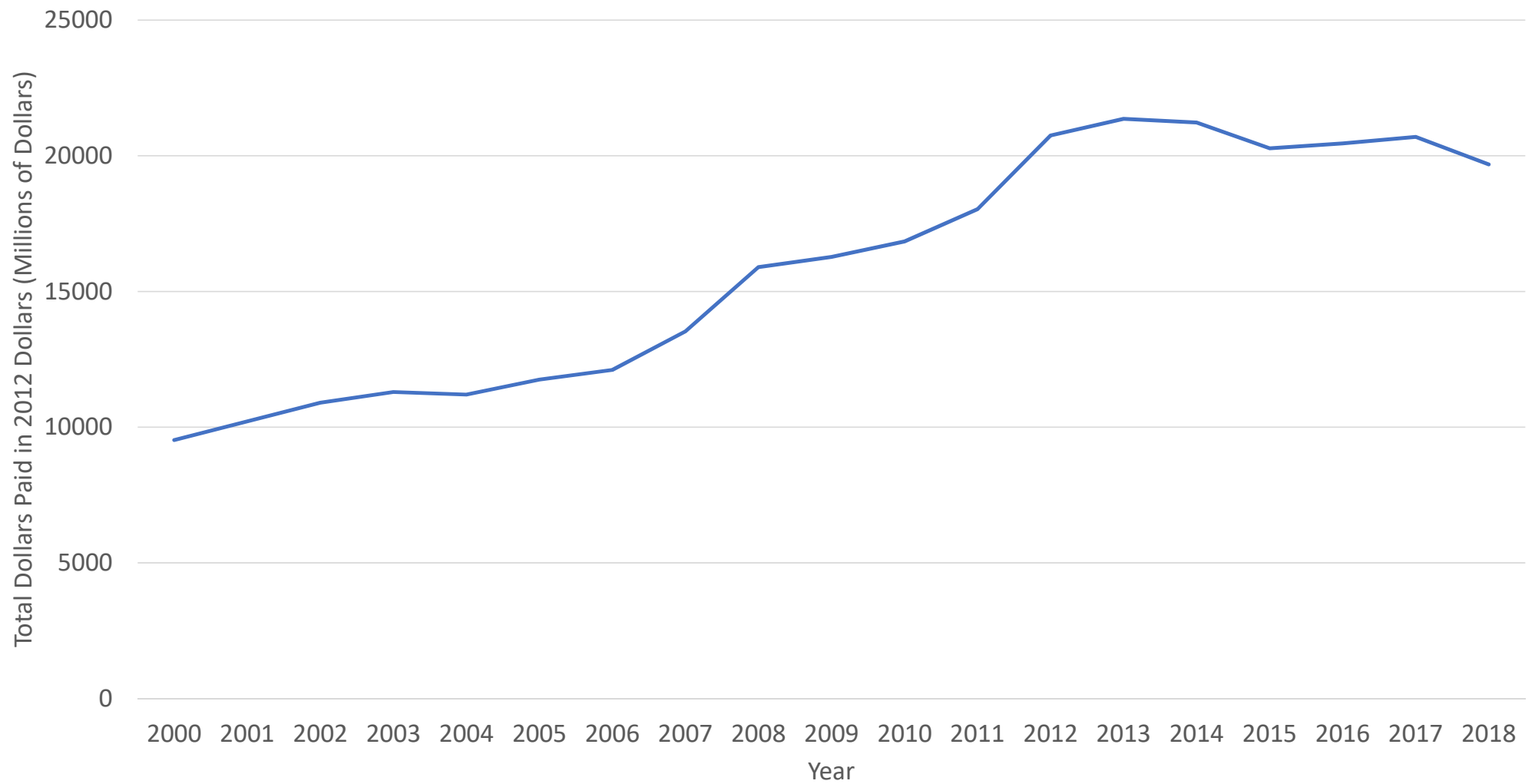
USDA – NASS
08/30/2019

**Paid Indexes by Non-farm Origin and Month,
Machinery and Supplies & Repairs –
United States: 2011=100**



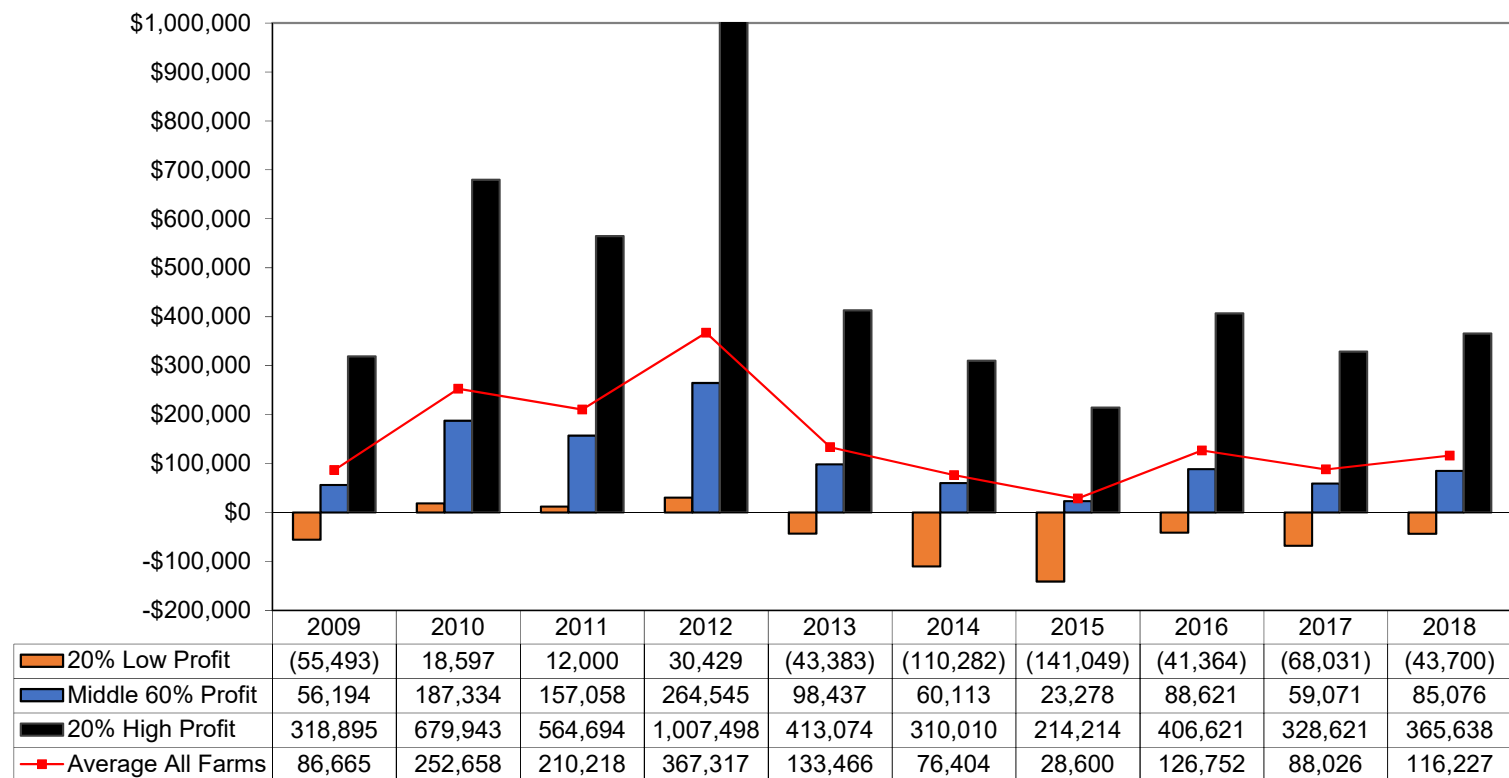
USDA – NASS
08/30/2019

U.S. Seed and Plant Costs



ND State Net Farm Income (Accrual) Per Farm

N.D. Farm Business Management Education Program



ND Farm Financial Scorecard 2018

	Vulnerable				Strong
Current Ratio		<1.3	1.7	<2.0	
Working Capital/Gross Revenues		<10%		<30%	34.6%
Debt to asset		>60%	34%	>30%	
Equity to asset		<40%	66%	<70%	
Debt to equity		>1.5		>0.43	.51
RoR on farm assets		<4%	4.5%	<8%	
RoR on farm equity		<3%	4.5%	<10%	
Operating profit margin	12.3%	<15%		<25%	
Term-debt coverage		<1.25		<1.75	1.85
Replacement margin coverage		<1.1	1.3	<1.5	
Asset Turnover	29.2%	<30%		<45%	
Operating expense		>80%	73.4%	>60%	
Depreciation expense		>10%	8%	>5%	
Interest Expense		>10%		>5%	4.7%
Net Farm income		<10%	12.8%	<20%	

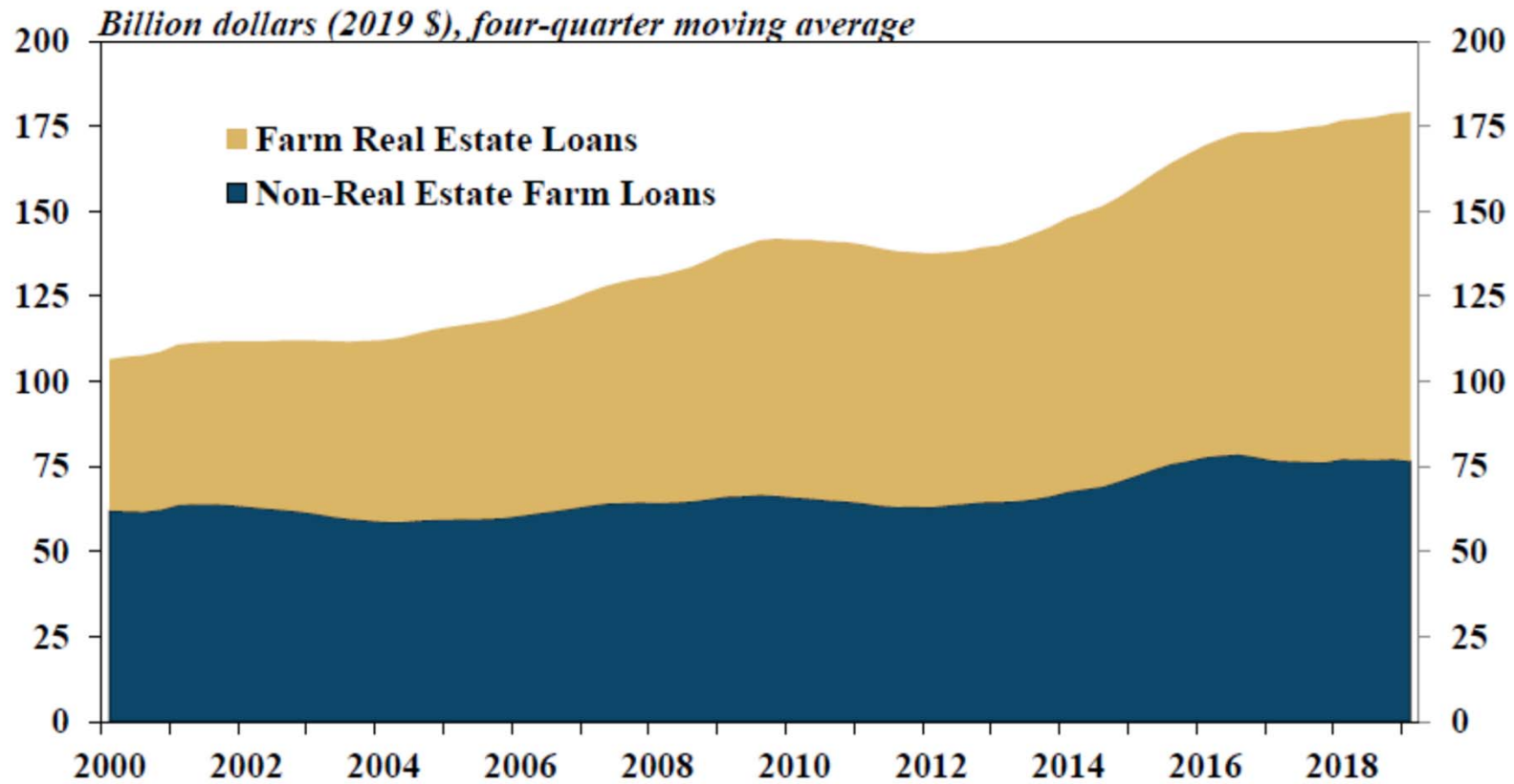
ND Farm Financial Scorecard 2017

	Vulnerable				Strong
Current Ratio		<1.3	1.85	<2.0	
Working Capital/Gross Revenues		<10%		<30%	41.2%
Debt to asset		>60%	31%	>30%	
Equity to asset		<40%	69%	<70%	
Debt to equity		>1.5	.45	>0.43	
RoR on farm assets	3.6%	<4%		<8%	
RoR on farm equity		<3%	3.3%	<10%	
Operating profit margin	10.8%	<15%		<25%	
Term-debt coverage		<1.25	1.55	<1.75	
Replacement margin coverage		<1.1	1.3	<1.5	
Asset Turnover		<30%	33.2%	<45%	
Operating expense		>80%	74%	>60%	
Depreciation expense		>10%	8.6%	>5%	
Interest Expense		>10%		>5%	4.6%
Net Farm income		<10%	12.8%	<20%	

ND Farm Financial Scorecard 2018 (W/o top 20%)

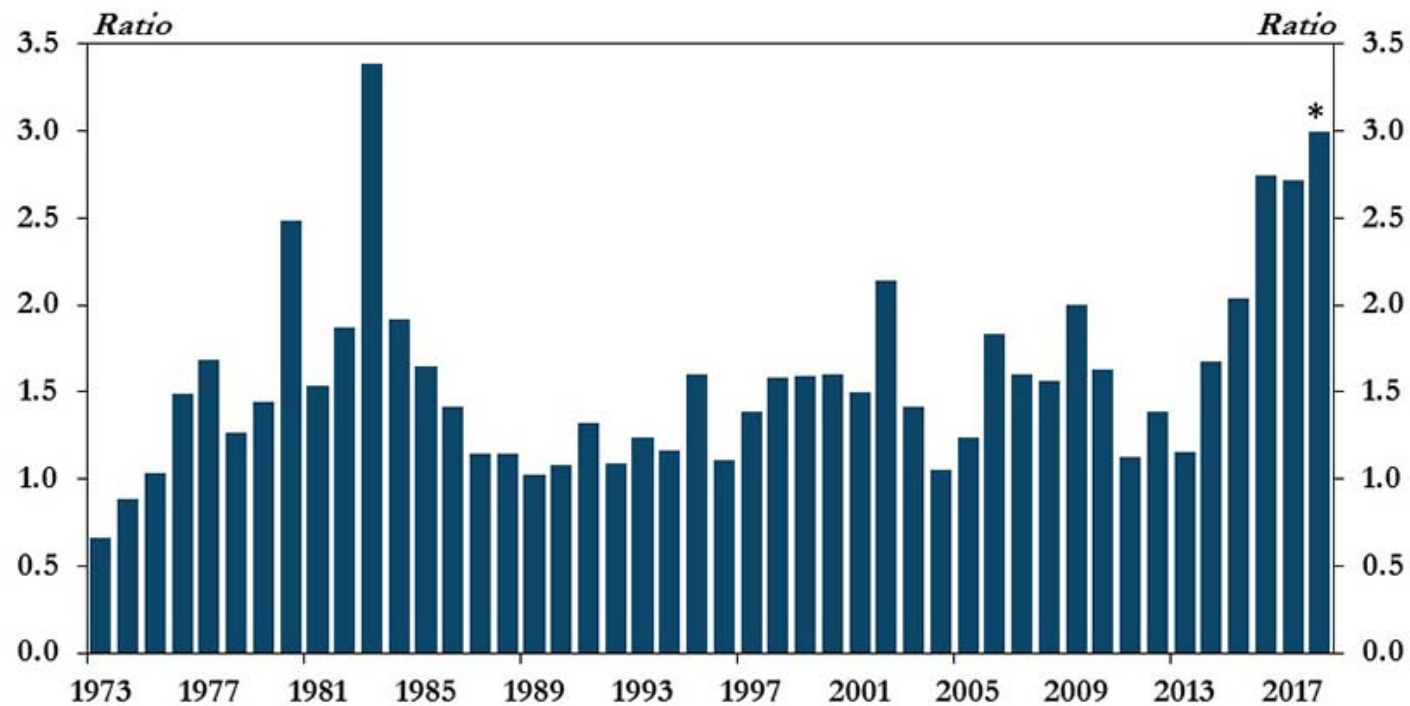
	Vulnerable				Strong
Current Ratio		<1.3	1.42	<2.0	
Working Capital/Gross Revenues		<10%	22.8%	<30%	
Debt to asset		>60%	38%	>30%	
Equity to asset		<40%	62%	<70%	
Debt to equity		>1.5	0.6	>0.43	
RoR on farm assets	2.2%	<4%		<8%	
RoR on farm equity	0.1%	<3%		<10%	
Operating profit margin	6.3%	<15%		<25%	
Term-debt coverage	1.13	<1.25		<1.75	
Replacement margin coverage	0.83	<1.1		<1.5	
Asset Turnover		<30%	34.8%	<45%	
Operating expense		>80%	78.8%	>60%	
Depreciation expense		>10%	7.9%	>5%	
Interest Expense		>10%	5.9%	>5%	
Net Farm income	7.4%	<10%		<20%	

Kansas City Federal Reserve – Farm Debt Outstanding at Commercial Banks



Source: Agricultural Finance Databook, Table B.1.

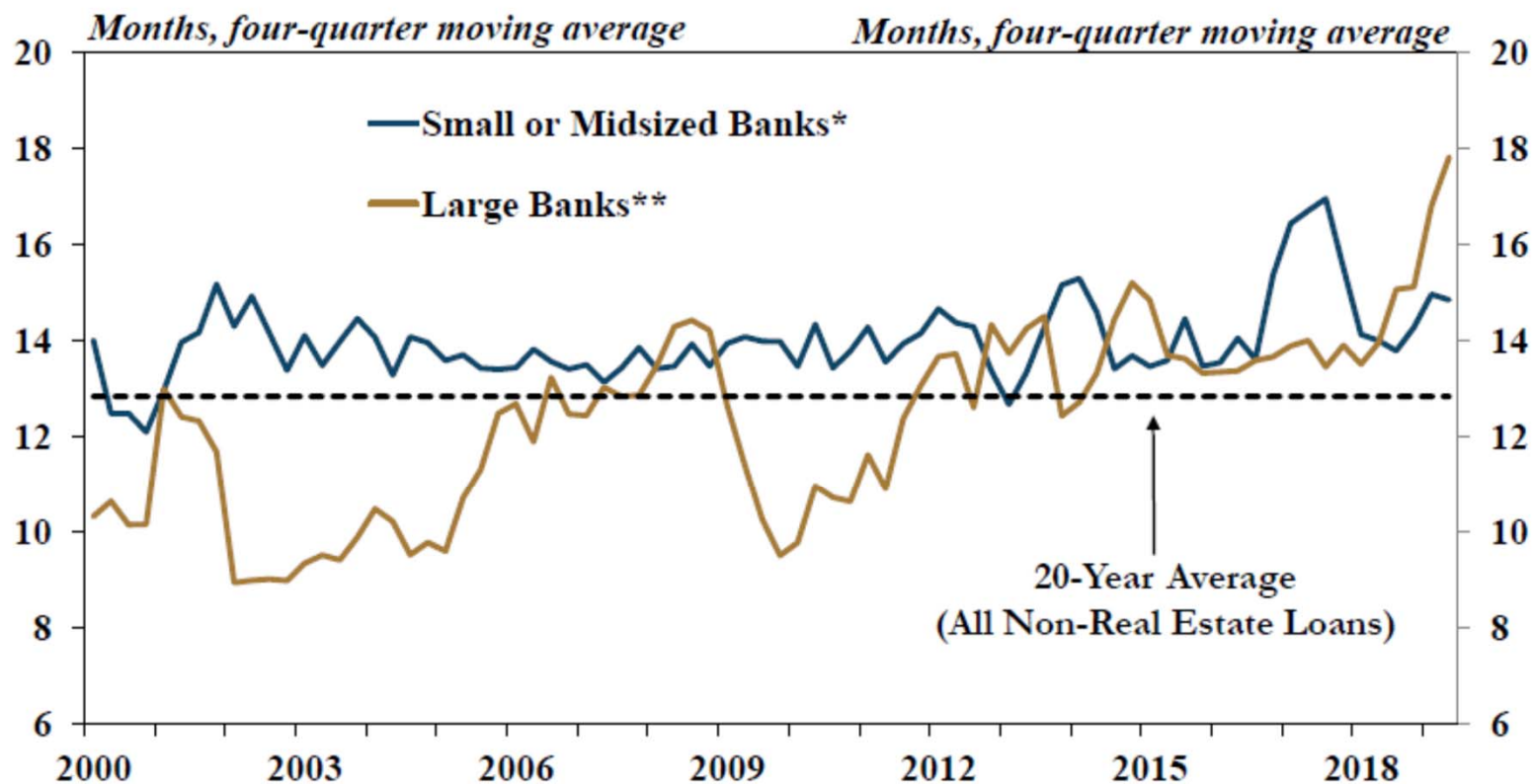
Chart 8: Ratio of Farm Debt at Commercial Banks to U.S. Farm Income



*Based on USDA forecast for 2018 and farm debt at commercial banks rising at the average pace of the past four quarters.

Source: Agricultural Finance Databook, Table B.1 and USDA

Chart 4: Average Maturity of Non-Real Estate Farms Loans



Increasing loan Maturity indicates Either many new Purchases or a lot Of restructuring.

Chart 4: Change in Tenth District Crop Producer Working Capital, Third Quarter

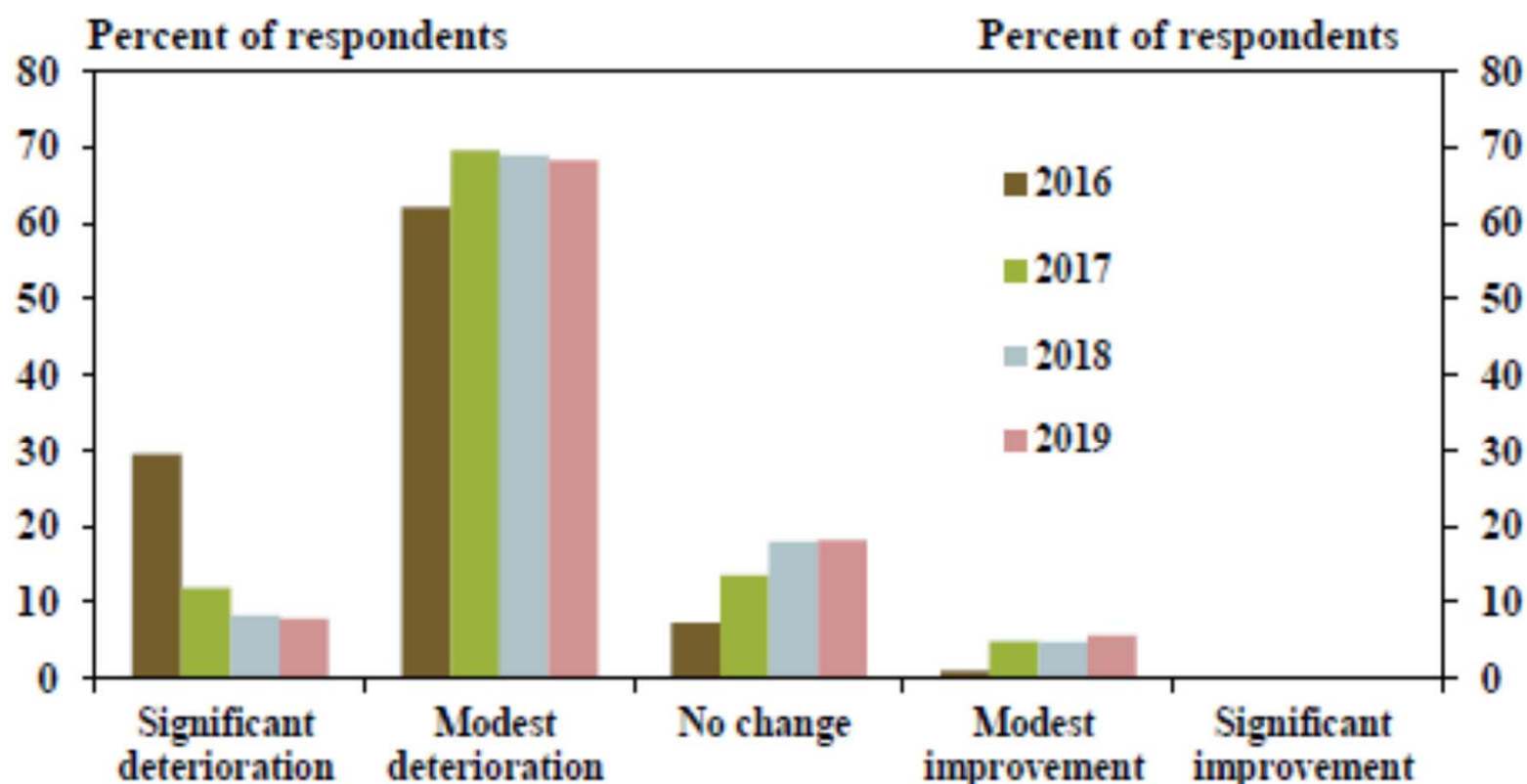


Chart 5: Share of Tenth District Borrowers Planning to Sell Mid- to Long-Term Assets*, Third Quarter

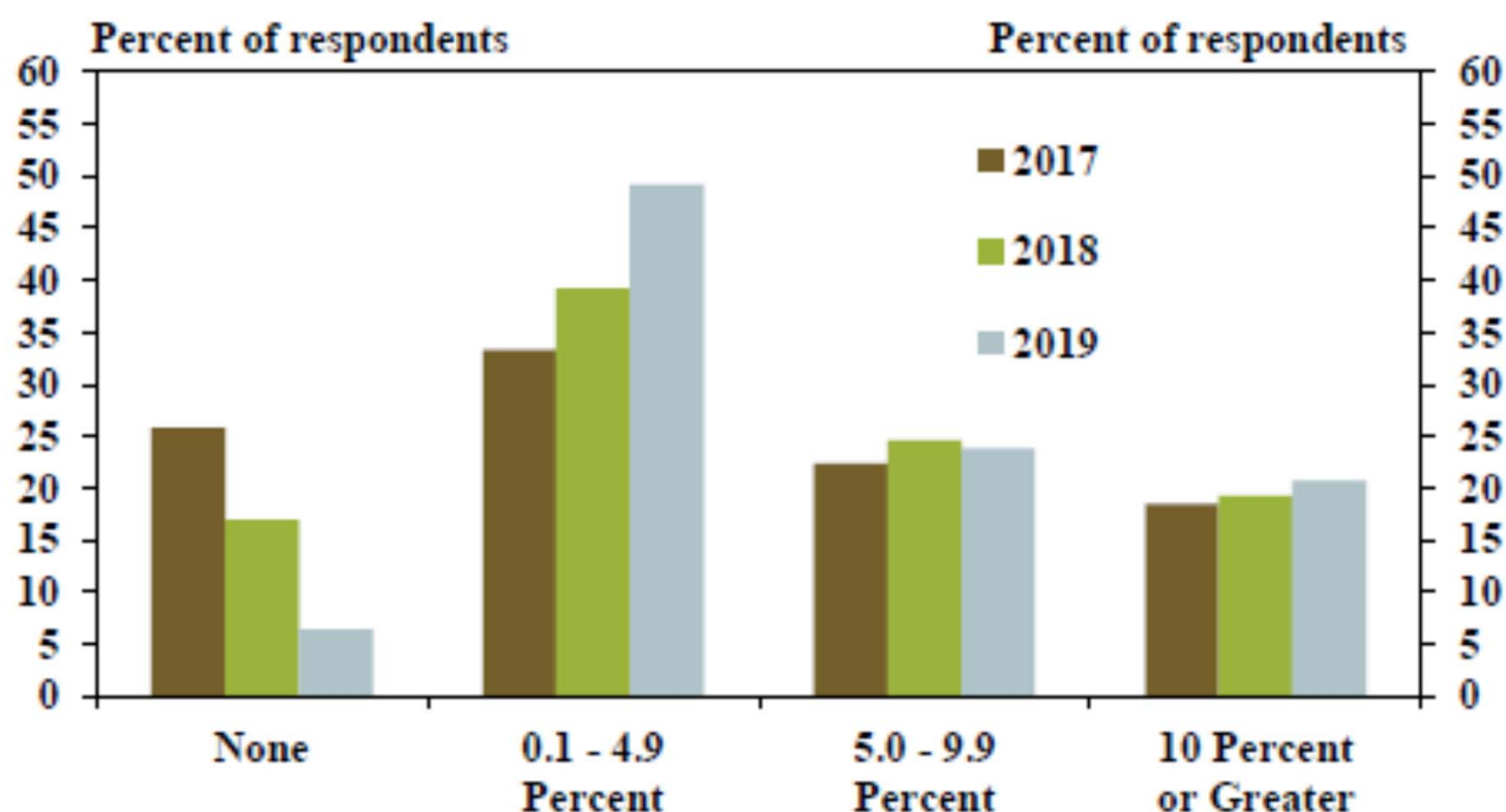
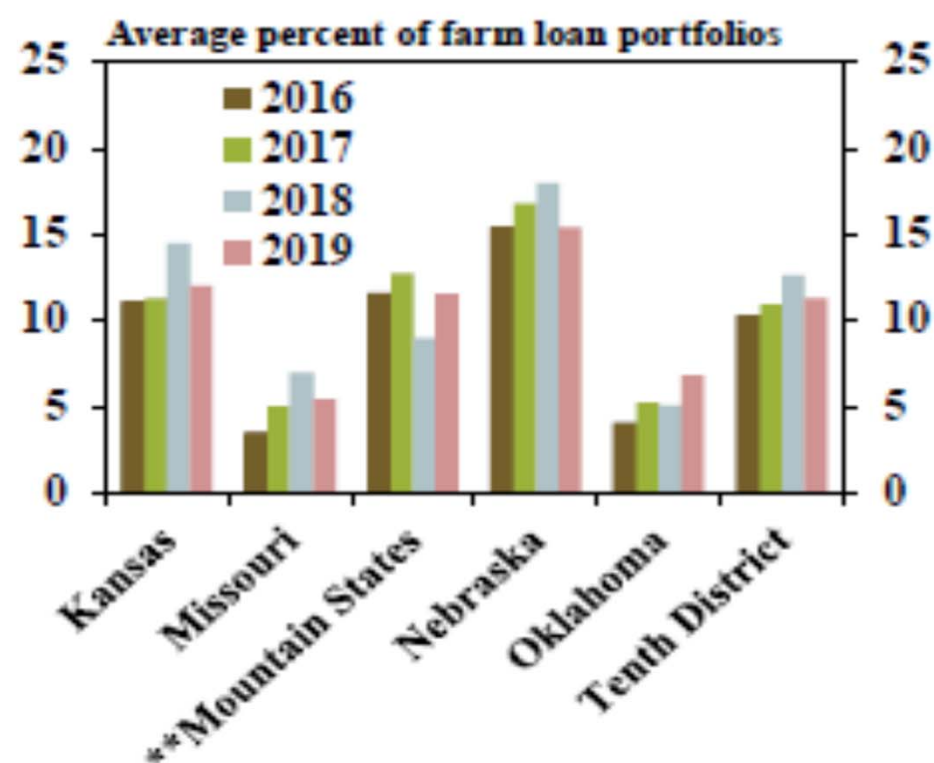
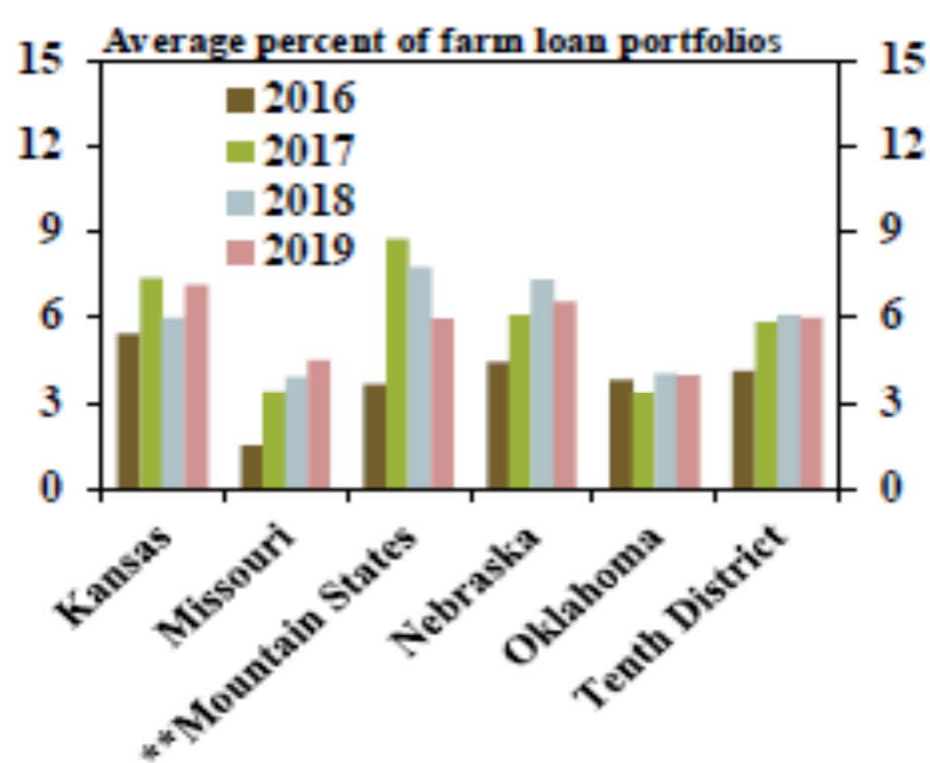


Chart 9: Tenth District Problem Loan Rates, Third Quarter

Watch List*



Classified List*



Minneapolis Fed Ag. Credit Survey – 2nd Quarter

Percent of respondents who reported **decreased** levels for the past three months compared with the same period last year:

	MN	MT	ND	SD	WI	Ninth District
Rate of loan repayments	41	14	47	58	33	44
Net farm income	62	57	<u>74</u>	58	50	62
Farm household spending	44	-	42	37	50	38
Farm capital spending	63	29	<u>68</u>	78	50	64
Loan demand	19	29	16	16	17	18

Minneapolis Fed Ag. Credit Survey – 3rd Quarter

Percent of respondents who reported **decreased** levels for the past three months compared with the same period last year:

	MN	MT	ND	SD	WI	Ninth District
Rate of loan repayments	54	-	56	42	17	44
Net farm income	65	60	76	58	17	62
Farm household spending	35	20	47	37	17	36
Farm capital spending	54	25	71	72	33	59
Loan demand	19	20	29	16	-	19

Minneapolis Fed Ag. Credit Survey 2nd Quarter

Percent of respondents who reported **increased** levels
for the past three months compared with the same period last year:

	MN	MT	ND	SD	WI	Ninth District
Loan renewals or extensions	41	14	<u>63</u>	32	50	42
Referrals to other lenders	8	29	6	16	-	11
Amount of collateral required	13	-	11	42	-	21
Loan demand	33	14	<u>47</u>	42	67	40

Minneapolis Fed Ag. Credit Survey 3rd Quarter

Percent of respondents who reported **increased** levels
for the past three months compared with the same period last year:

	MN	MT	ND	SD	WI	Ninth District
Loan renewals or extensions	58	-	76	28	33	49
Referrals to other lenders	12	-	-	-	-	5
Amount of collateral required	20	-	-	32	17	17
Loan demand	35	40	18	26	17	27

Using Debt To EBITDA Ratio (Earnings Before Interest, Taxes, Depreciation, and Amortization)

- -It may be too late by the time poor solvency ratios (D/A or D/E) are the predominant reason for credit denials
- The following charts use debt – average EBITDA where earnings are averaged over a two year period.

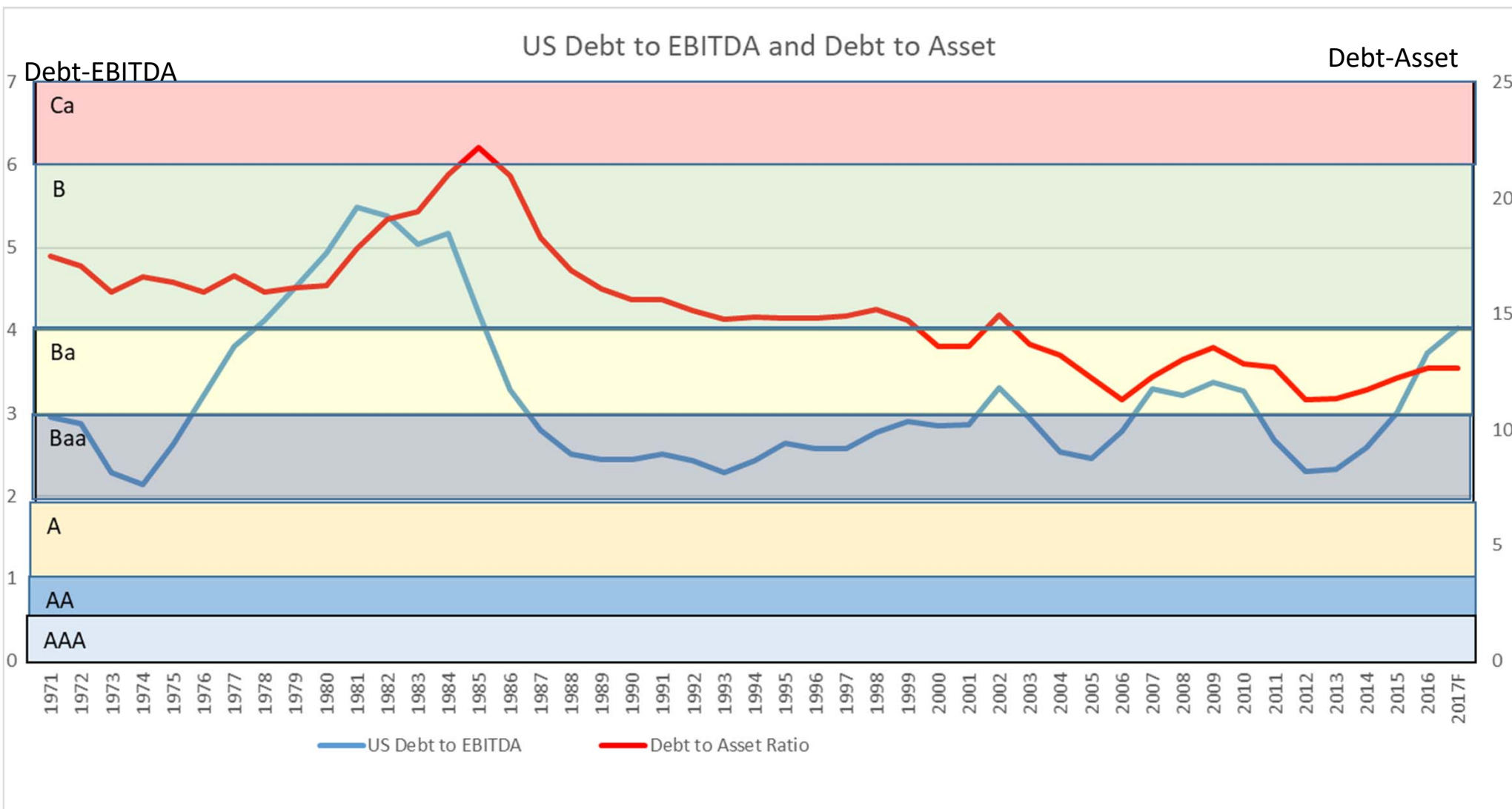
Debt – EBITDA Ratio Credit Rating for Ag.

Moody's Rating		
Investment Grade		
AAA	0 – 0.50	Highest – Lowest Credit Risk
AA	0.51 – 1.00	High - Grade
A	1.01 – 2.00	Upper – Medium Grade
Speculative Grade		
Baa	2.01 – 3.00	Medium Grade
Ba	3.01 – 4.00	Speculative elements
B	4.01 – 6.00	Subject to high credit risk
Ca	6.01 – 8.00	Highly Speculative
C	> 8.00 or < 0	Lowest Rating – In default w/ low recovery prospects

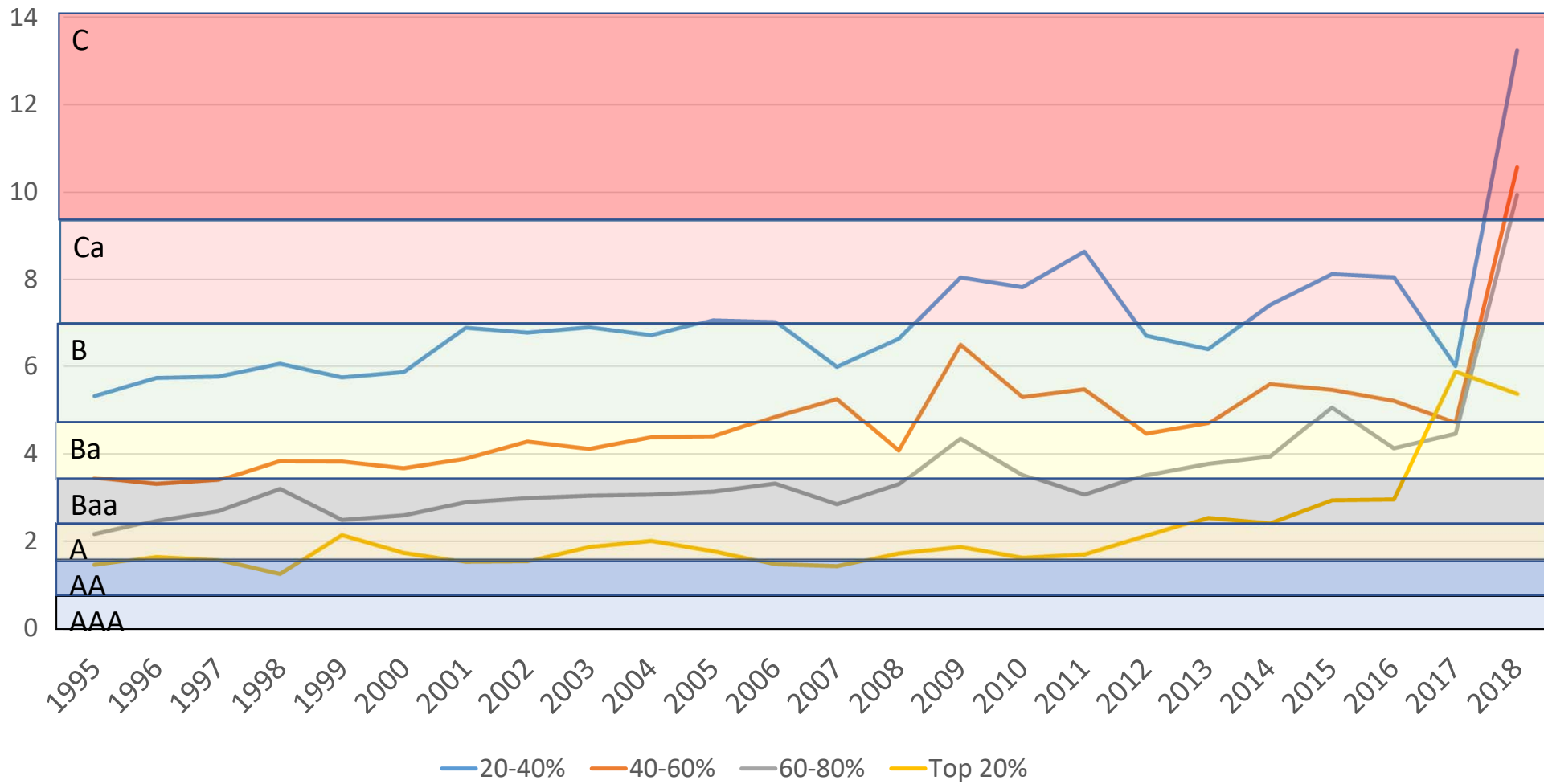
US Debt to EBITDA and Debt to Asset

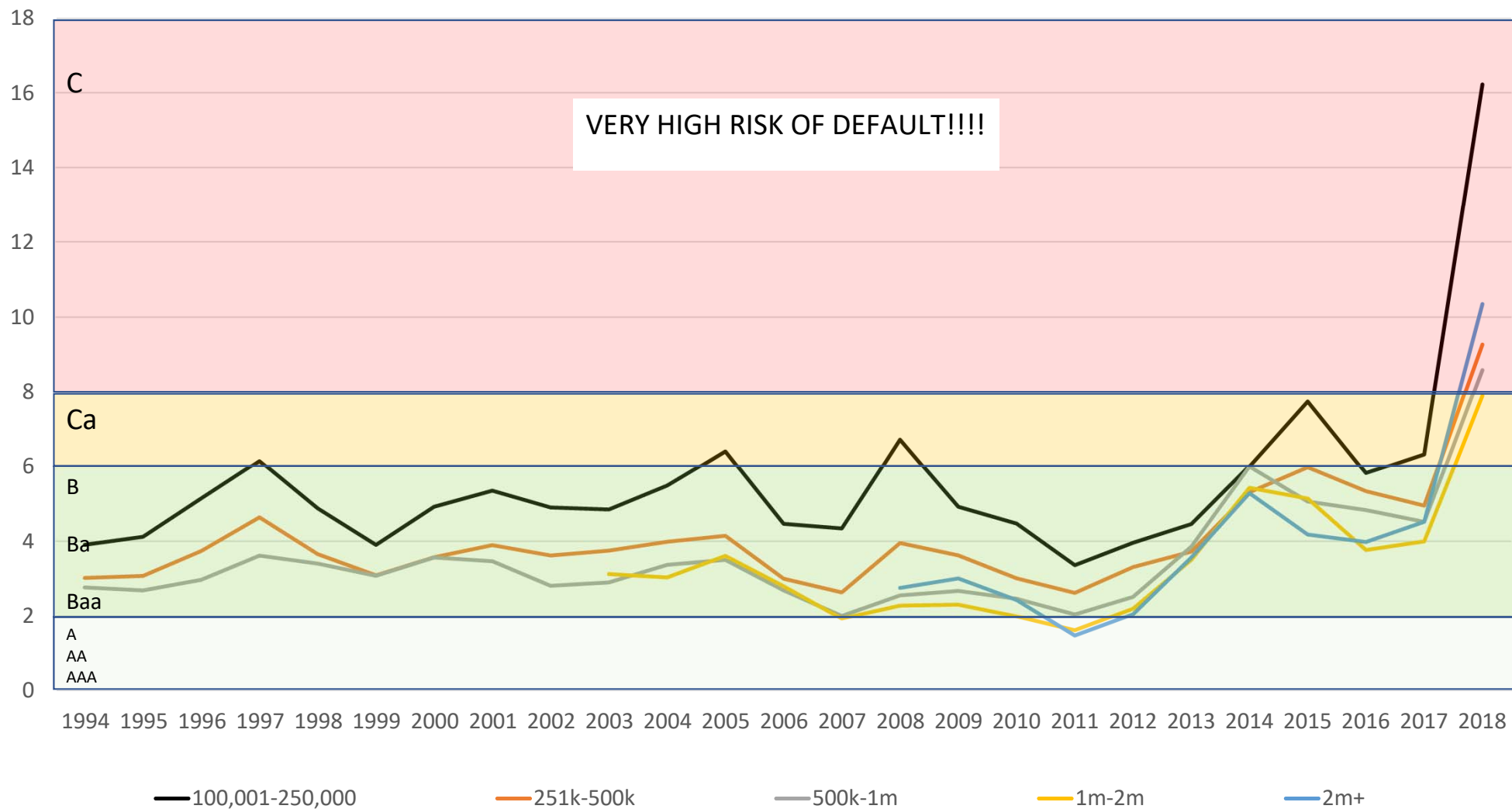
Debt-EBITDA

Debt-Asset



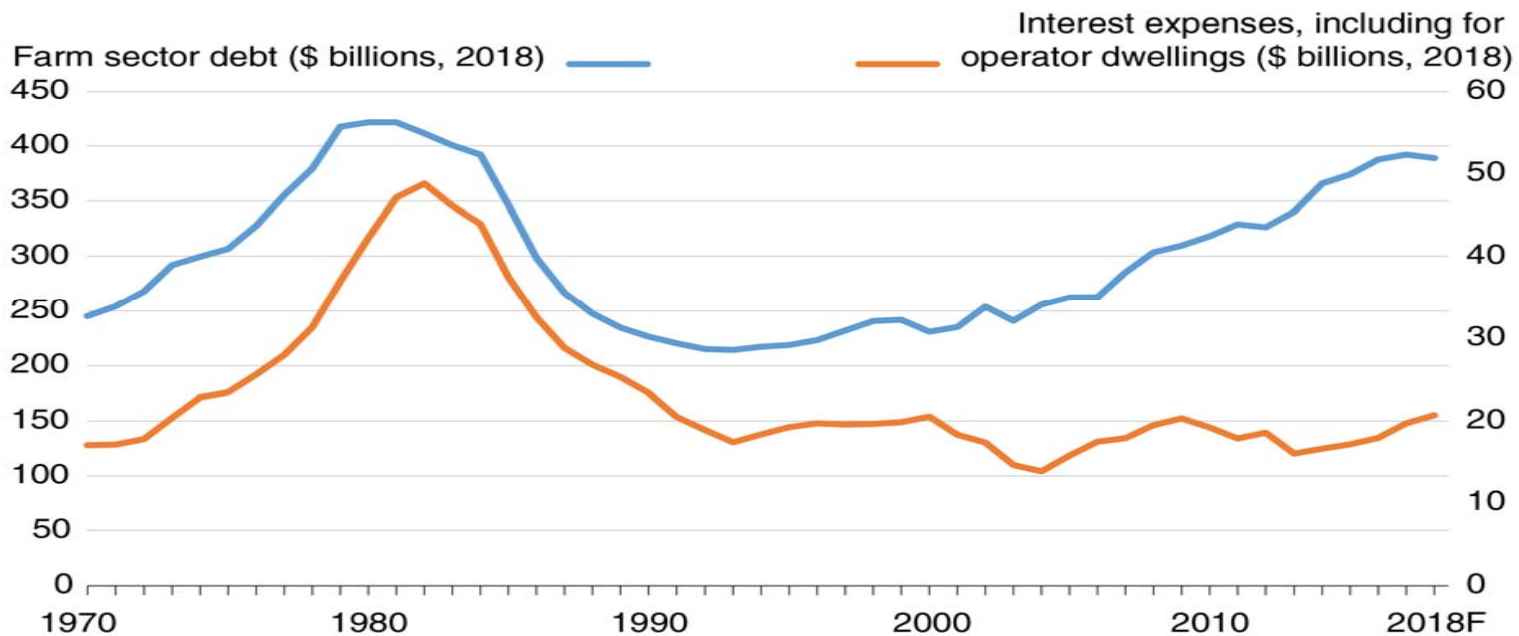
ND Debt To EBITDA by Net Farm Income Pct.





Interest Rates Impact on Agriculture

Farm sector debt at 30-year high, though interest expenses remain low



Note: F= Forecast. The GDP chain-type price index is used to allow purchasing power comparisons over time, converting the nominal (current-dollar) statistics to real (inflation-adjusted) amounts (2018=100).

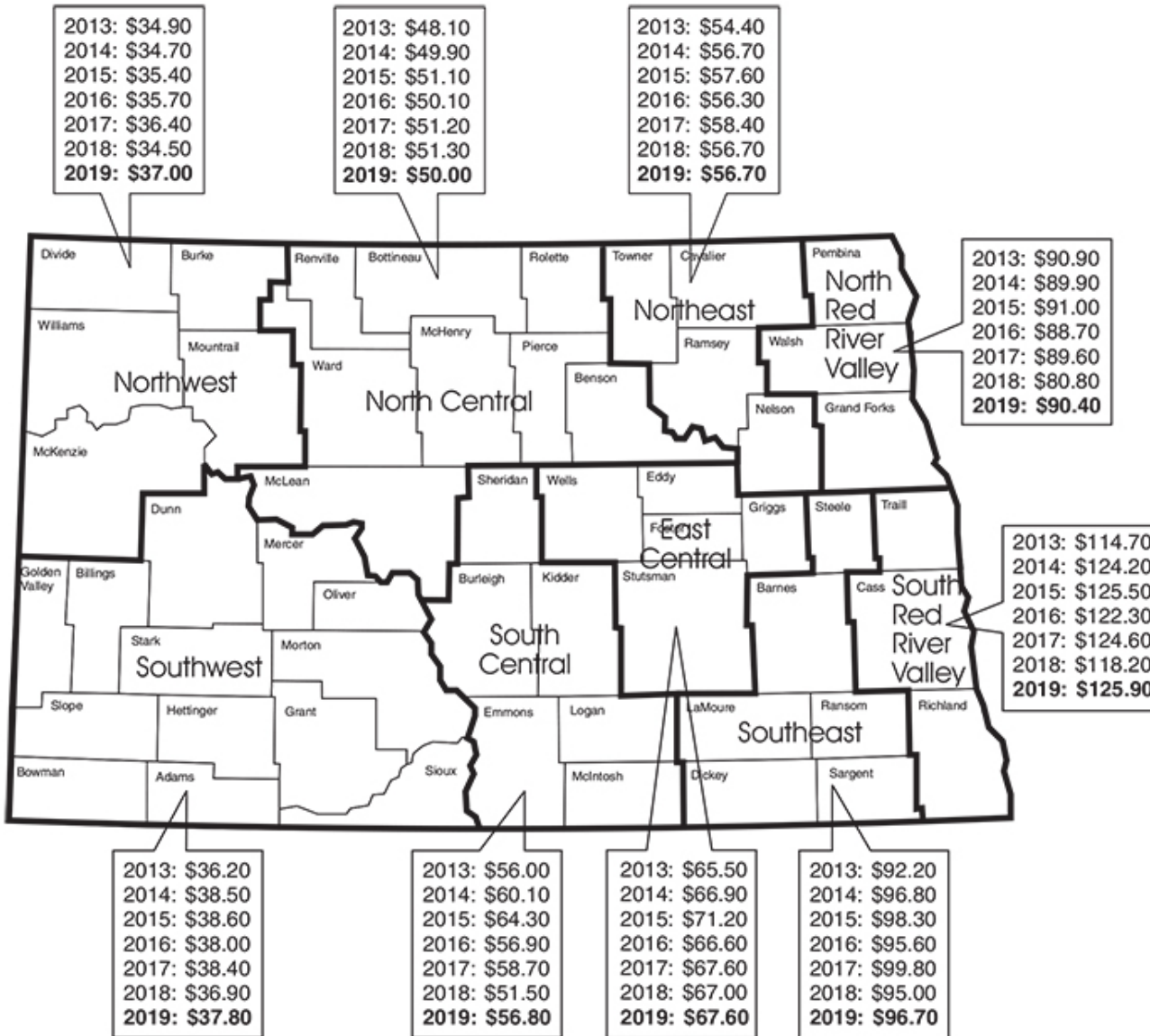
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics Data as of February 7, 2018.

Minneapolis FED Quarterly Ag. Interest Rate Survey

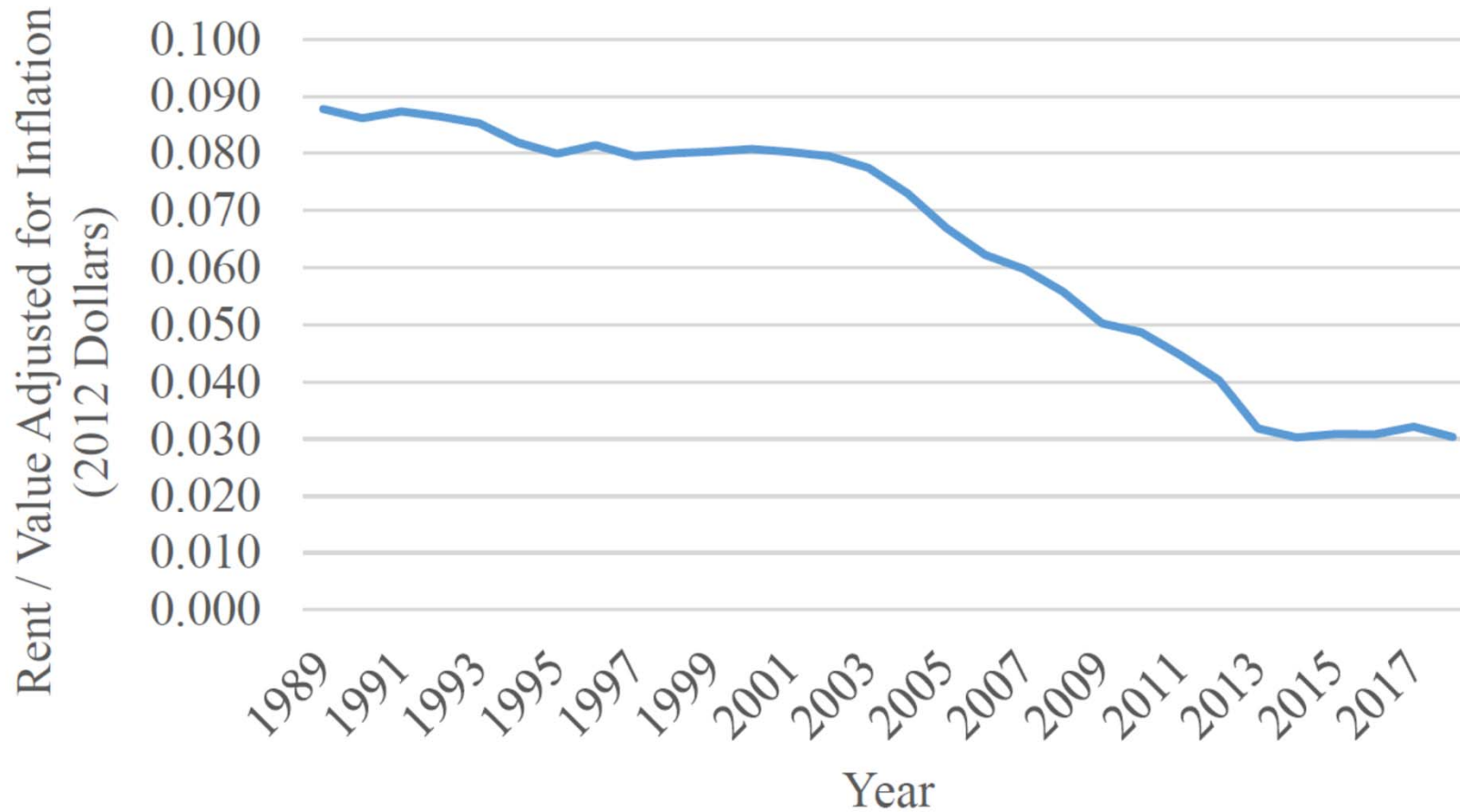
		Operating		Machinery		Real Estate	
		Fixed	Var.	Fixed	Var.	Fixed	Var.
Q1-17	April	5.5	5.2	5.5	5.2	5.3	5.0
Q2-17	July	5.6	5.3	5.5	5.3	5.3	5.1
Q3-17	October	5.5	5.4	5.6	5.4	5.3	5.2
Q4-17	January	5.7	5.5	5.7	5.4	5.5	5.2
Q1-18	April	5.8	5.6	5.8	5.5	5.6	5.3
<u>Q2-18</u>	<u>July</u>	<u>6.0</u>	<u>5.8</u>	<u>6.0</u>	<u>5.7</u>	<u>5.7</u>	<u>5.5</u>
Q3-18	October	6.1	5.9	6.1	5.8	5.9	5.6
Q4-18	January	6.2	6.0	6.1	5.9	5.9	5.7
Q1-19	April	6.4	6.2	6.2	6.0	6.0	5.8
<u>Q2-19</u>	<u>July</u>	<u>6.3</u>	<u>6.1</u>	<u>6.1</u>	<u>6.0</u>	<u>5.9</u>	<u>5.7</u>
<u>Q3-19</u>	<u>October</u>	<u>6.1</u>	<u>5.9</u>	<u>5.9</u>	<u>5.8</u>	<u>5.7</u>	<u>5.5</u>

North Dakota Cash Rents 2013 - 2019

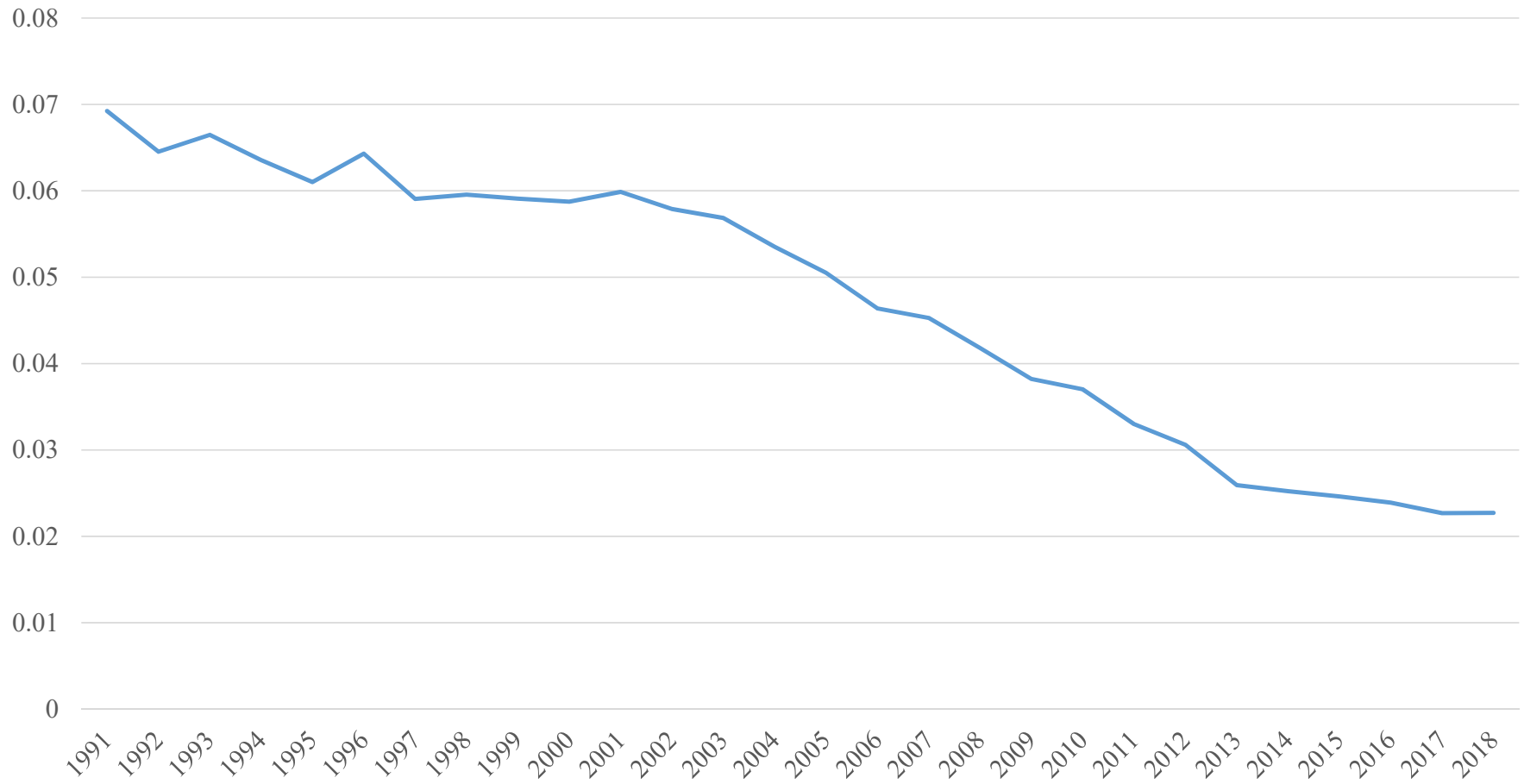
The Red River Valley approaching all time highs while other portions of the state well off their all time highs.



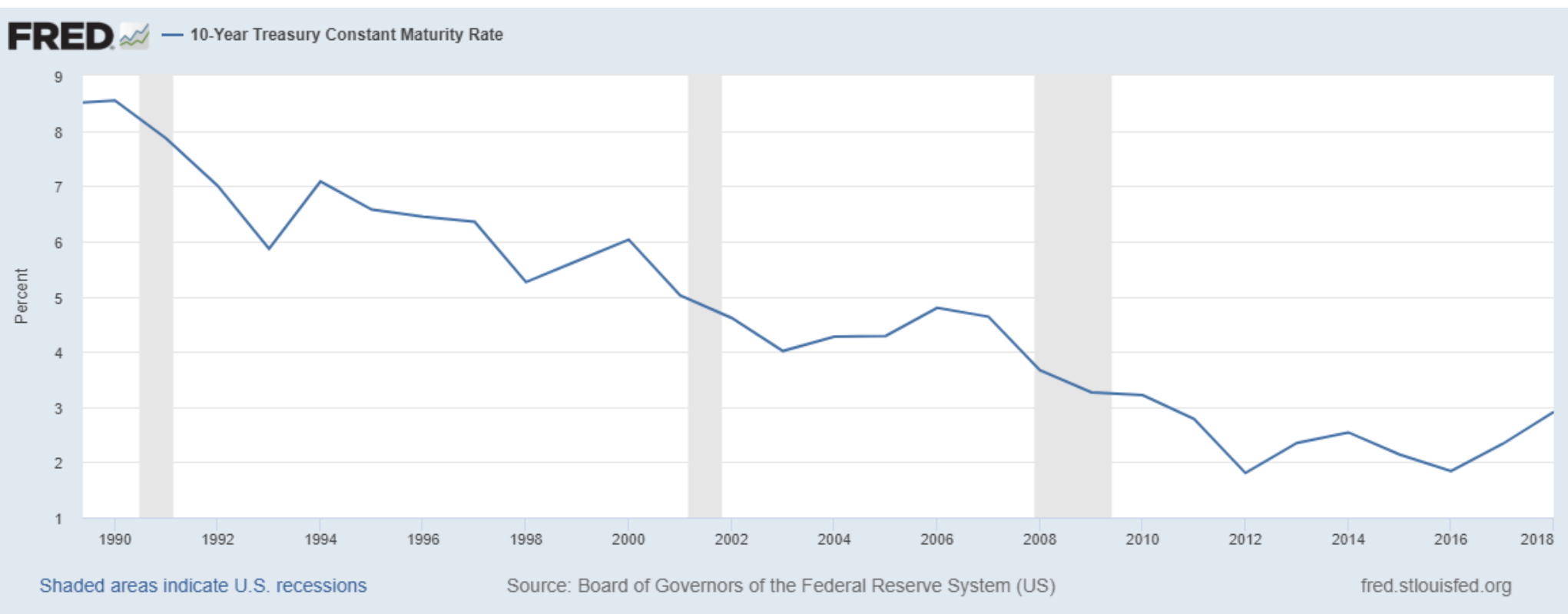
North Dakota Cropland Rent-to-Value Ratio



Pasture Rent to Value Ratio



10 Year T-Bill Yield 1989 - 2019



FAPRI Commodity Price Forecast

\$/bu

16.00

14.00

12.00

10.00

8.00

6.00

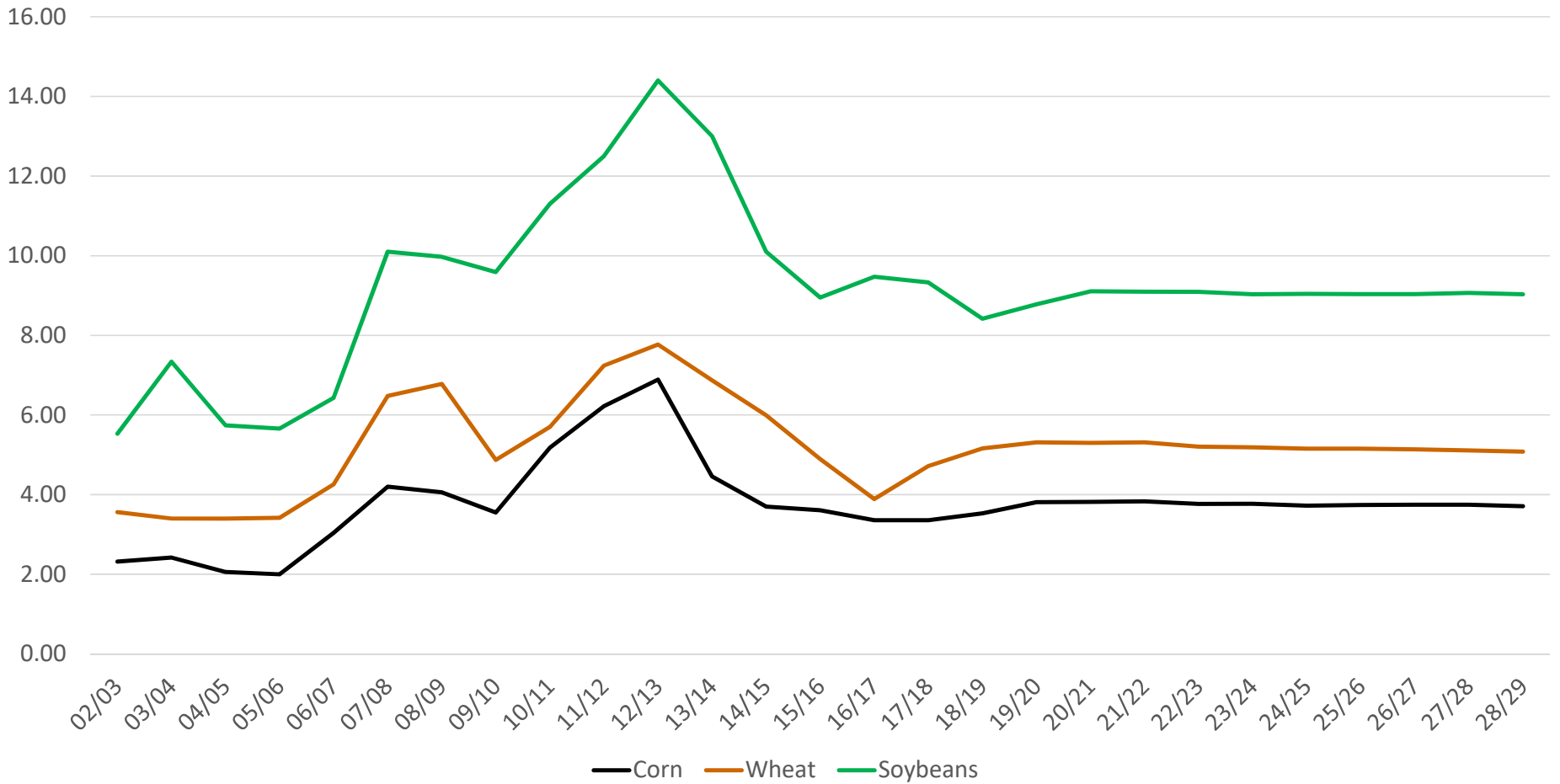
4.00

2.00









0.00

02/03 03/04 04/05 05/06 06/07 07/08 08/09 09/10 10/11 11/12 12/13 13/14 14/15 15/16 16/17 17/18 18/19 19/20 20/21 21/22 22/23 23/24 24/25 25/26 26/27 27/28 28/29

— Corn — Wheat — Soybeans



JCI estimate of China's annual purchase volume of U.S. farm products under Phase 1 of the U.S.-China trade deal

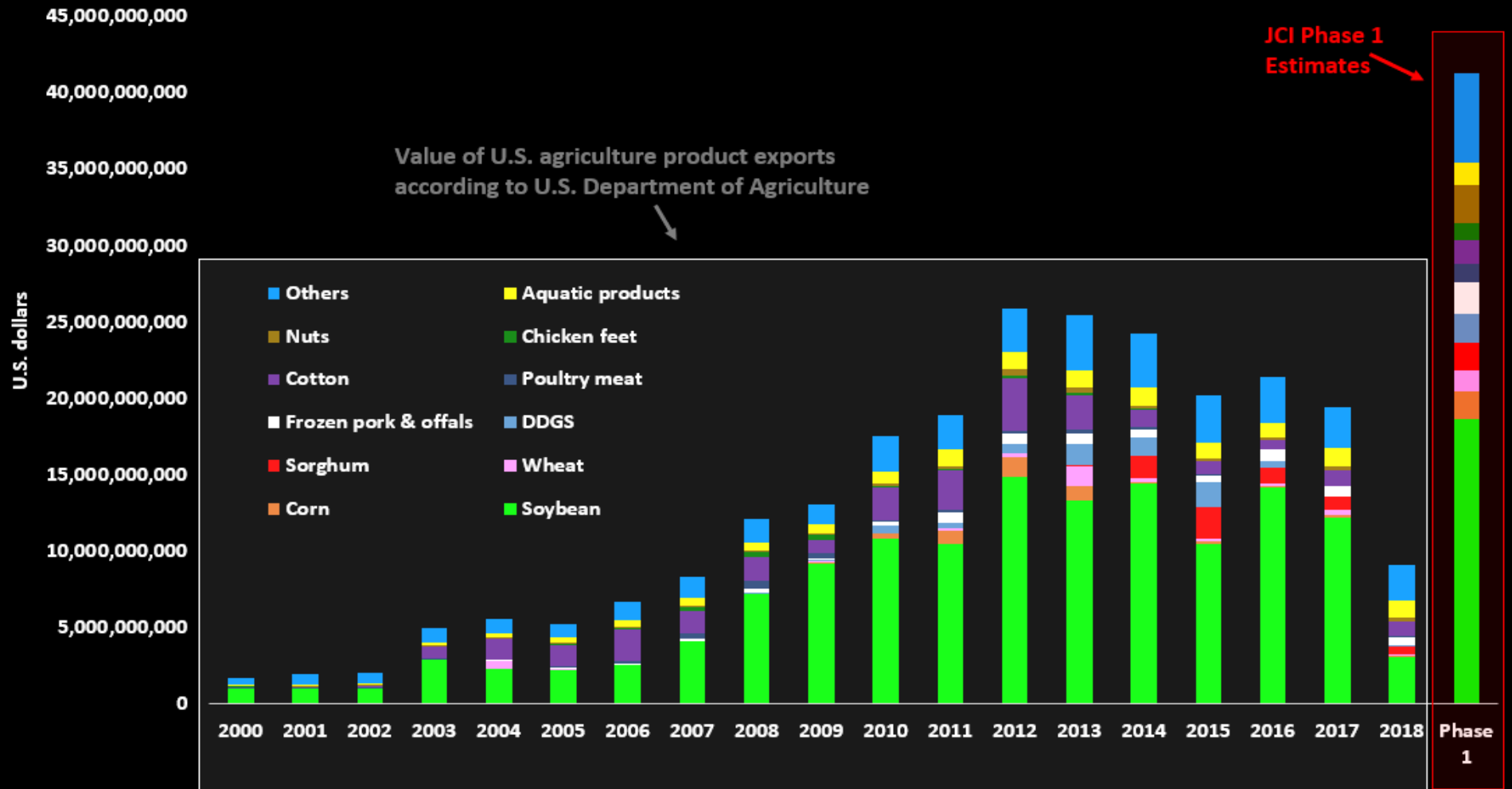
Products	Projected import volume (Tonnes)	Projected import value (USD)	Record high import volume (Tonnes)	Year of record import volume	Projected volume change vs record
Soybean	45,000,000 	18,675,000,000	33,660,000	2016	34%
Corn	8,000,000 	1,760,000,000	5,110,000	2012	57%
Wheat	5,000,000 	1,425,000,000	3,820,000	2013	31%
Sorghum	8,000,000 	1,832,000,000	8,970,000	2015	-11%
DDGS	8,000,000 	1,840,000,000	6,820,000	2015	17%
Frozen pork & offals	1,000,000 	2,073,000,000	300,000	2011	233%
Poultry meat	450,000 	1,203,000,000	350,000	2013	29%
Cotton	800,000 	1,567,000,000	530,000	2018	51%
Chicken feet	500,000 	1,071,000,000	140,000	2017	257%
Nuts	-	2,500,000,000			
Aquatic products	460,000	1,478,000,000			
Others		5,900,000,000			
Total		41,324,000,000			

Notes:

1. The estimate JCI made regarding the purchase volume in the table is under the ideal situation that the weather, the quality and the prices are all favorable for China's purchase.
2. The volume here does not include the purchase volume that may be recruited for Chinese state reserves
3. The volume here does not include transit trade from Hong Kong to mainland China and the volume smuggled to China.
4. The volume here does not include the import volume of agricultural machinery and forestry products.

Source: JCI

JCI estimates of China imports of U.S. agriculture products in Phase 1 of the U.S. - China trade deal



Source: U.S. Department of Agriculture, JCI

Thank You

Bryon J. Parman, Ph.D
Agricultural Financial Specialist
North Dakota State University Extension
701-231-8248
bryon.parman@ndsu.edu





Responding to Rural Stress Concerns

Sean Brotherson, Ph.D., Extension Family Science Specialist
ND Crop Insurance Conference, Jan. 13, 2020

NDSU EXTENSION
SERVICE

Which Matters More? Tractor Maintenance vs. Farmer Maintenance

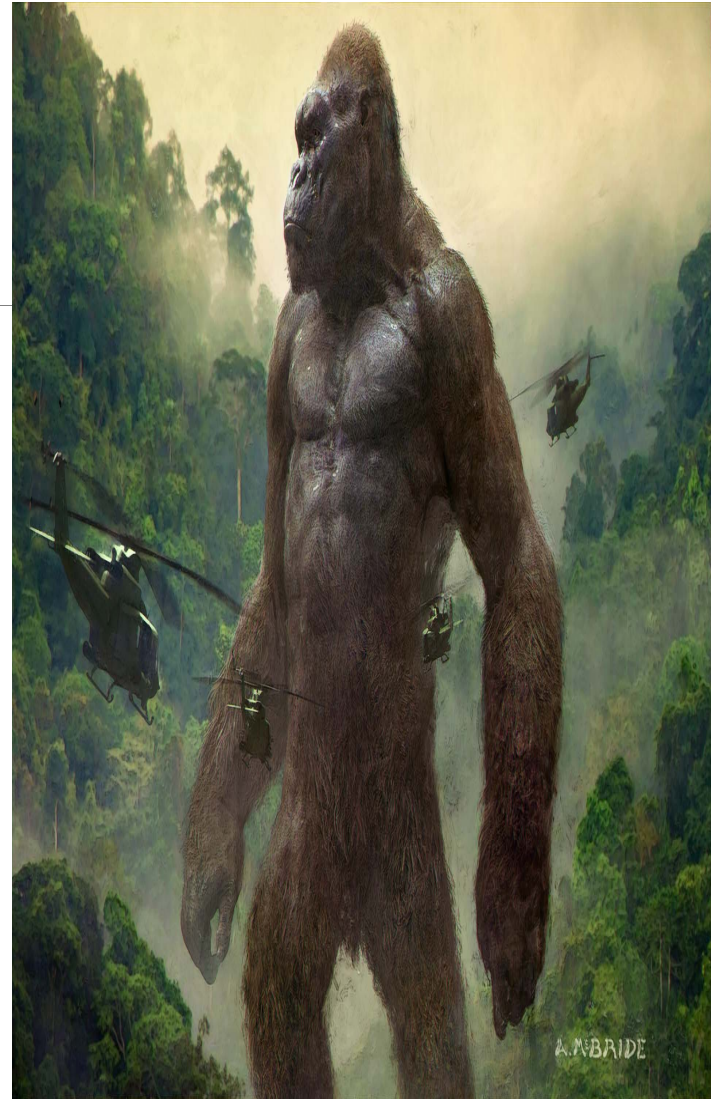


Farming ranks in the
top ten most stressful occupations
in the United States.



Why So Much Stress?

- ❖ King Kong-size Sources of rural stress
- ❖ Weather – drought or moisture
- ❖ Prices – crop prices drop by a third to half



Why is Rural Stress Hard on Individuals?

- ❖ Individual levels of stress are linked to how a person perceives the source of stress - their orientation to the stressor.
- ❖ Many persons see it not as a change of job, but as a loss of self.
- ❖ Many practice the 11th Commandment orientation - **“Thou shalt farm!”**



Key Messages on Rural Stress

- Your health is your most important asset as a farmer, rancher or agricultural worker.
- Farmer and farmworker health and safety is the most important priority in managing any farm or ranch operation.

Good stress management is good farm management!

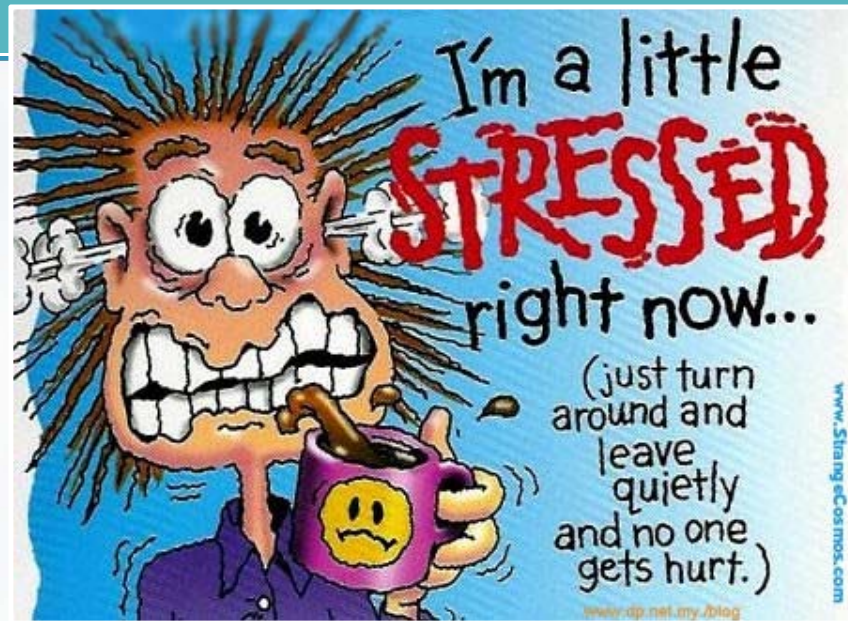
Your Health = Your Horsepower



What is Stress?

Stress definition:

A state of physical, mental or emotional strain or tension resulting from difficult or demanding circumstances

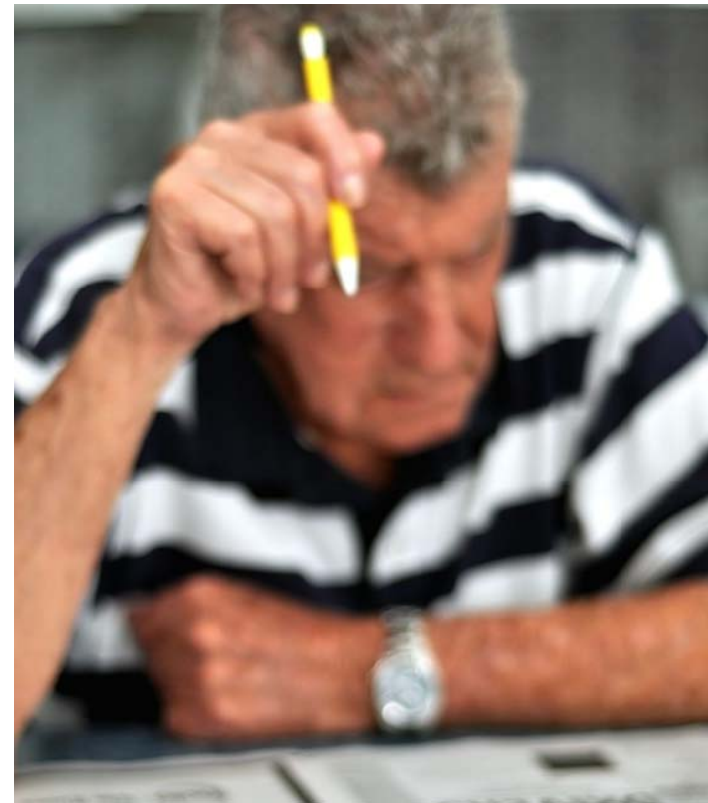


Discussion Question

- How do you know you are feeling stressed?
- Physical, mental, emotional, social signs

Key Sources of Rural Stress – Farm Financial Situation

- Net farm/ranch income decline
- Debt/asset ratio – meeting debt payments
- Cash flow on the operation
- Arranging financing
- Complicated or strained decision making – tendency to make worse decisions under stress



Key Sources of Rural Stress – Family Financial Situation



- Ability to meet family living expenses
- Long hours, two or three jobs, balancing work and family
- Sense of inadequacy due to economic difficulties
- Facing the challenge of having to leave the farm (generational legacy)

Warning Signs of Stress

Stress signs are **warning signals** to slow down and focus on wellness.



Stress Signals – Physical and Emotional / Mental

Physical Signs of Stress

- Head/Tooth aching
- Tension in the body
- Stomach upset, Ulcers
- Breathing short, labored
- Sweating, Shaking
- Body fatigue, tiredness
- Numbness

Emotional Signs of Stress

- Irritable about little things
- Sense of frustration, anger
- Impatient, restless
- Feeling discouraged, hopeless
- Withdrawal from others, isolation
- Anxiety, panic feelings
- Difficulty concentrating

Stress Signals – Behavioral and Relationship

Behavioral Signs of Stress

- Difficulties with sleep
- Inability to relax, concentrate
- Getting angry easily
- Trouble making decisions
- Increased use of alcohol or other drugs
- Difficulty being flexible
- Overeating or loss of appetite

Relationship Signs of Stress

- Communication difficulties
- Picking fights
- Lack of satisfaction
- Verbal or physical outbursts, abuse
- Avoiding others
- Lack of time with spouse, children, others
- Withdrawal and Isolation

Coping Methods for Stress – Positive or More Effective Methods

What helps you relax?

Exercise

Work on
manageable
project

Go for a drive

Call a friend

Watch a movie

Family
conversation

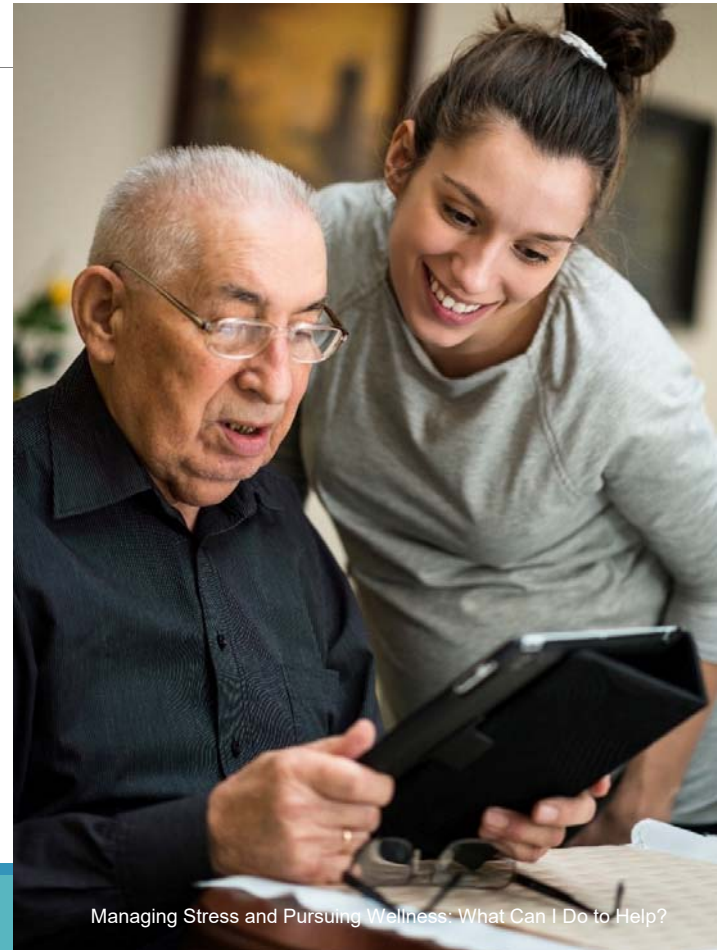
Stretch

Asking for Help – How to Make It Easier

- Build rapport – people are more likely to ask for help from someone they trust and perceive as warm, empathetic, and genuine.
- Confidentiality is key.
- Avoid labels or minimizing the situation.
- Know your resources and **be prepared to refer.**
- **Always follow up.**

What can I do to help?

- Be consistent and patient in your expression of concern.
- Be direct in your approach.
- Exhibit a nonjudgmental attitude.
- Give specific examples of behaviors that concern you.
- Use statements such as, “I am concerned about **you.**”




What can I do to help?

- Be aware of resources and be prepared with referral information. Is help needed you can't provide?
- Discuss referral – “_____ could help.”
- Don't be discouraged if the person is not ready to accept your assistance.
- Don't worry if you don't say things perfectly.
- Encourage the person to get proper professional assistance.



Resources for Responding to Farm/Ranch Stress

- ❖ Hotline Numbers, Healthcare Visit
 - ❖ Thematic Resource Pages Online on Farm Stress & Related Issues
 - ❖ Educational Resources & Publications – brochures; fact sheets; etc.
 - ❖ Variety of Farm Stress Resources
- 

Key Resources – Mental and Emotional Health

- **Call 2-1-1** – Statewide 24-hour helpline, health and human services information and referral (FirstLink)
- **Refer to a local health-care provider or mental health professional.** If you or someone you know needs help, contact and connect with a local professional such as a clergy member, medical professional, law enforcement, school counselor or social worker.
- **National Suicide Prevention Lifeline:**
1-800-273-8255 (TALK)

Links to Further Information Online

- NDSU Extension – Related Websites
 - Farm/Ranch Stress
 - <https://www.ag.ndsu.edu/farmranchstress>

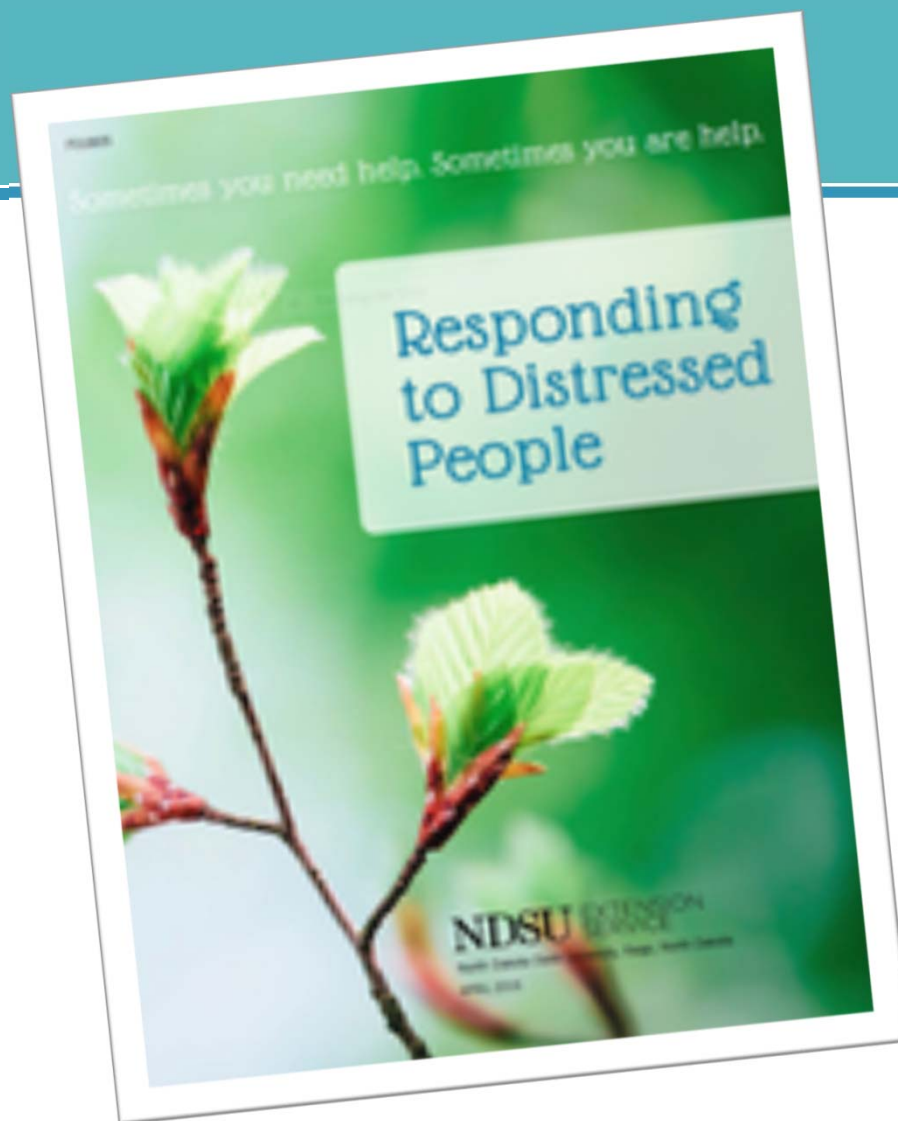
- ND Human Services Resource – Website
 - <http://www.nd.gov/dhs/info/pubs/docs/human-services-resources-for-farmers-ranchers-and-others.pdf>

- MN Dept. of Agriculture – Farm Stress
 - <https://www.mda.state.mn.us/about/mnfarmerstress>

Educational Publications and Resources on Farm/Ranch Stress



- “Stress Management Series for Farm/Ranch Families” (FS282, FS283, FS284, FS285, FS286, FS287)
- “Farming and Ranching in Tough Times” (FS1804)
- “Responding to Distressed People” (FS1805)
- “Working With Distressed Clientele” (FS1789)
- Links:
<https://www.ag.ndsu.edu/farmranchstress>



“Bootstrap” Wallet Handout & Table Tent

- Wearing out your bootstraps?
- You don't have to go it alone.
- Where to get help

- LSS-ND, NDSU
Extension, Other



Start A Wellness Toolbox

- Start your Wellness Commitment – select 3 and start today.
- Pick a wellness partner
- Link:
<https://www.ag.ndsu.edu/publications/kids-family/12-tools-for-your-wellness-toolbox-in-times-of-farm-stress>



Video and Audio Resources

- Online Farm Stress Management Course – MSU – “Weathering the Storm” - To find out more details or to register for a class, visit www.msue.msu.edu/onlinefarmstress.
- NDSU Extension – Farm Stress Videos (10-15 minutes) – show on phone; tablet; kitchen table; send link –
 - <https://www.youtube.com/watch?v=M266Fd1vlfM&list=PLnn8HanJ32l7KMkfgSJbS7lKqzpfYQleM> (YouTube playlist)
 - <https://www.ag.ndsu.edu/farmranchstress> (NDSU Ext Web page)
- TransFormation Podcast series – U of MN Ag Dept; Red River Valley Farm Network –
 - <https://www.rrfn.com/transformation/>
- New Zealand – Farm Strong Initiative
 - <https://farmstrong.co.nz/>

Connect with Others via Their Stories – TransFarmation Podcast

The TransFarmation Podcast series – by MN Dept. of Agriculture; Red River Valley Farm Network

<https://www.rrfn.com/transfarmation/>



Join the FarmStrong Initiative

New Zealand FarmStrong Initiative –
focus on living well in agriculture

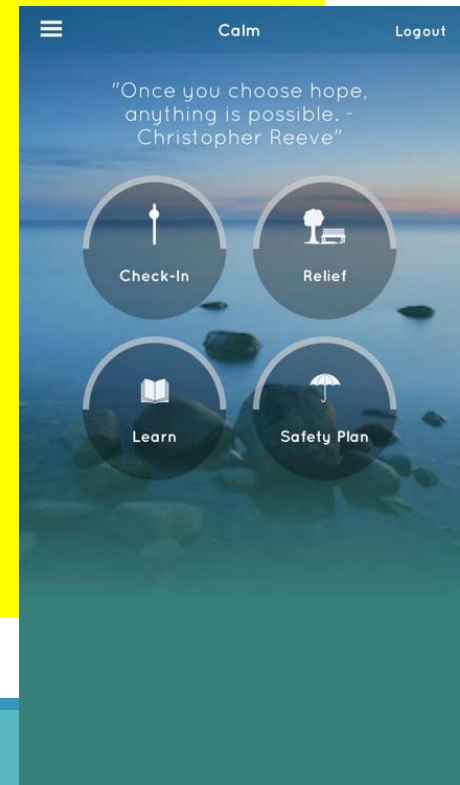
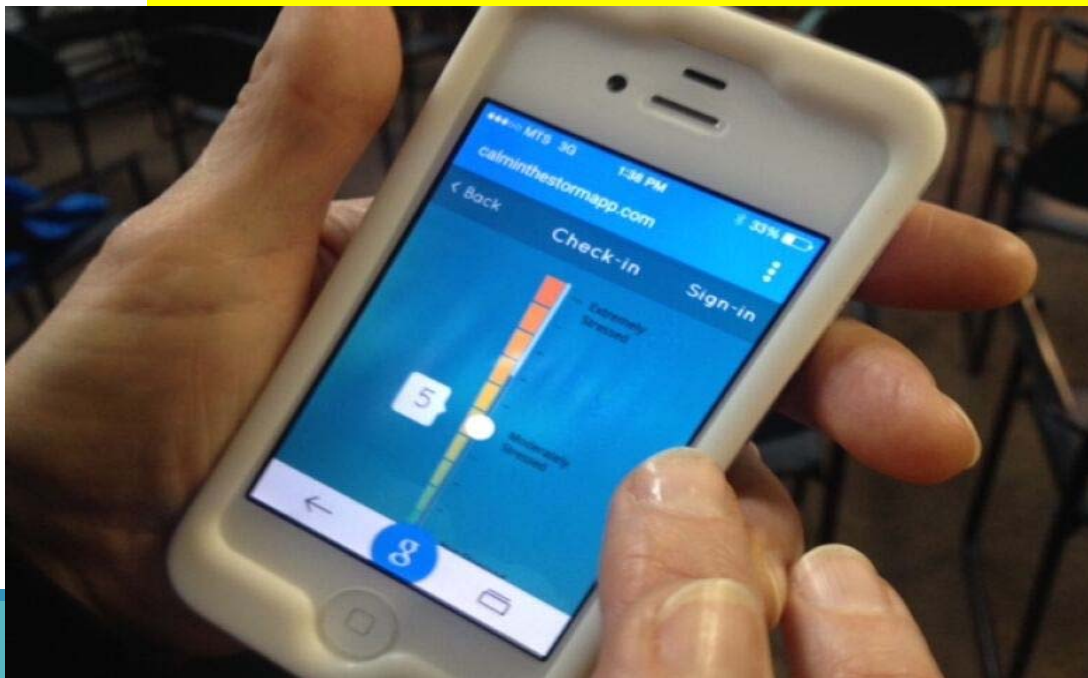
<https://farmstrong.co.nz/>



There's An App for That . . .

Calm in the Storm – Mobile Stress app

<http://calminthestormapp.com/>



Farmers and Suicide Risk – Key Issue

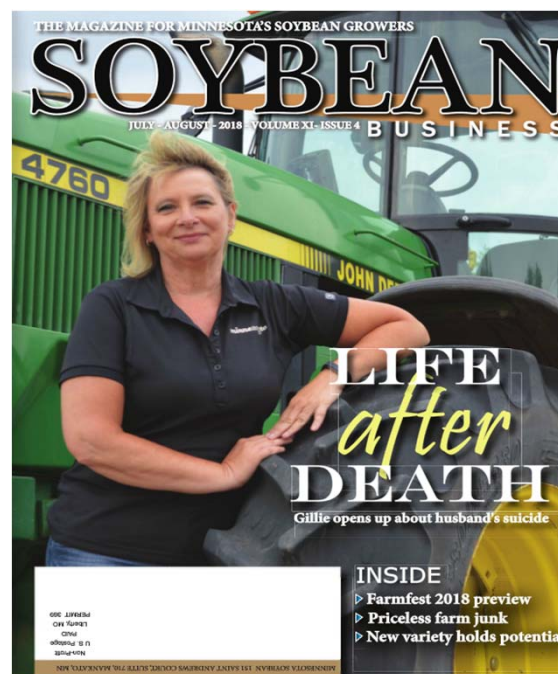
Increased attention to the issue of farm stress and suicide rates among farmers

Suicide rate of farmers high among occupational groups

“Preventing Farmer Suicide: Collaboration and Communication” (5 minutes)

<https://www.youtube.com/watch?v=iPDlyVAkeEo>

(RHIHub – UND)



More Information on Farm Stress Resources

Search for us online at:

“NDSU” and “Farm Stress”

The logo for North Dakota State University (NDSU) features the letters "NDSU" in a bold, yellow, serif font. The letters are set against a dark green rectangular background. This background is part of a larger design that includes a light blue horizontal bar at the bottom of the slide and a small light blue square at the bottom left corner.

NDSU

NORTH DAKOTA
STATE UNIVERSITY
EXTENSION