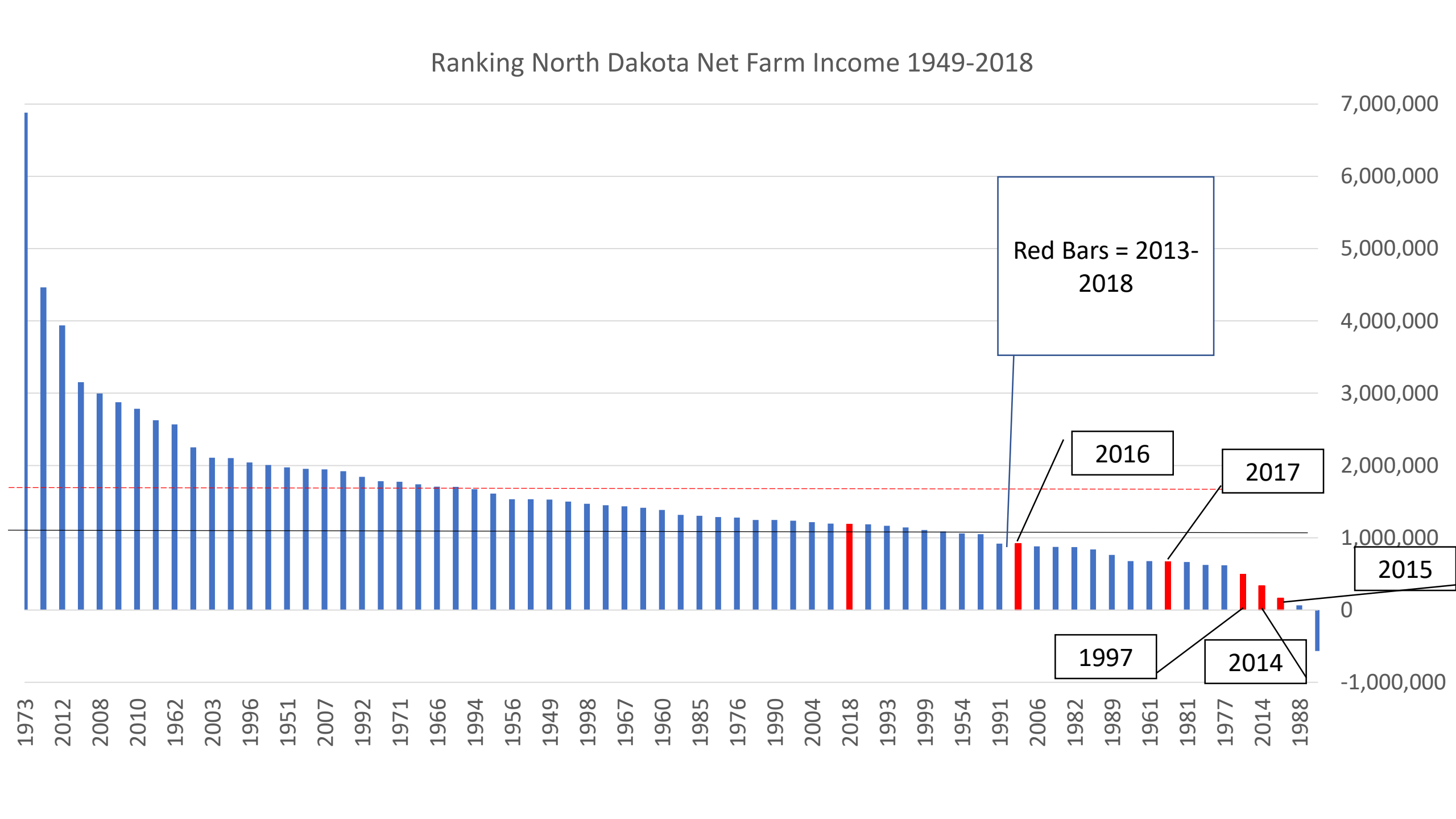
ND Farm Economy and Trade

Bryon J Parman, Ph.D.

Department of Ag. Business and Applied Economics

NDSU Extension


Ranking North Dakota Net Farm Income 1949-2018
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
-1,000,000
Red Bars = 2013-2018
2016
2017
2015
1997
2014
1973
2012
2008
2010
1962
2003
1996
1951
2007
1992
1971
1966
1994
1956
1949
1998
1967
1960
1985
1976
1990
2004
2018
1993
1999
1954
1991
2006
1982
1989
1961
1981
1977
2014
1988

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

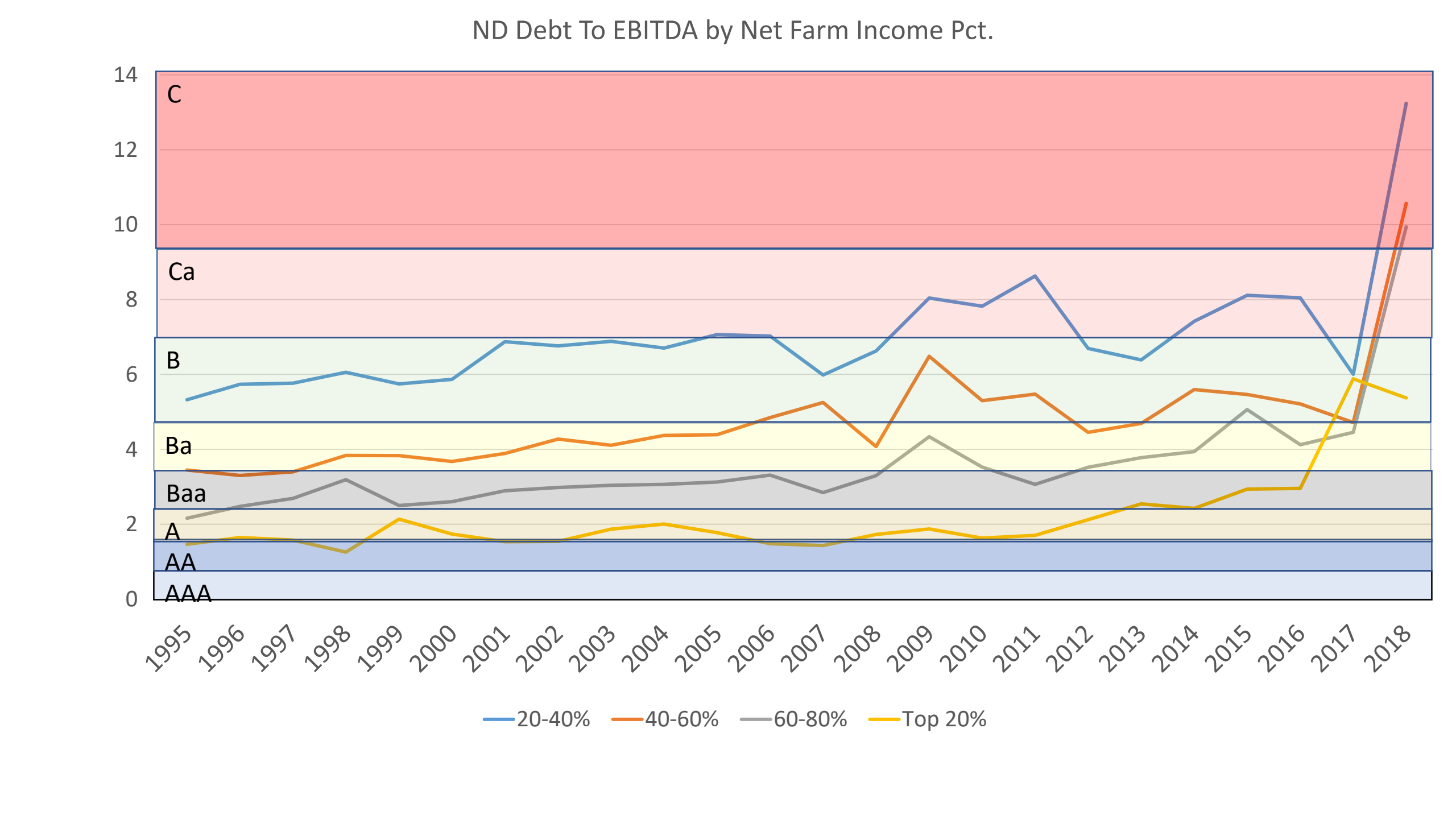
Minneapolis Fed Ag. Credit Survey 3rd Quarter

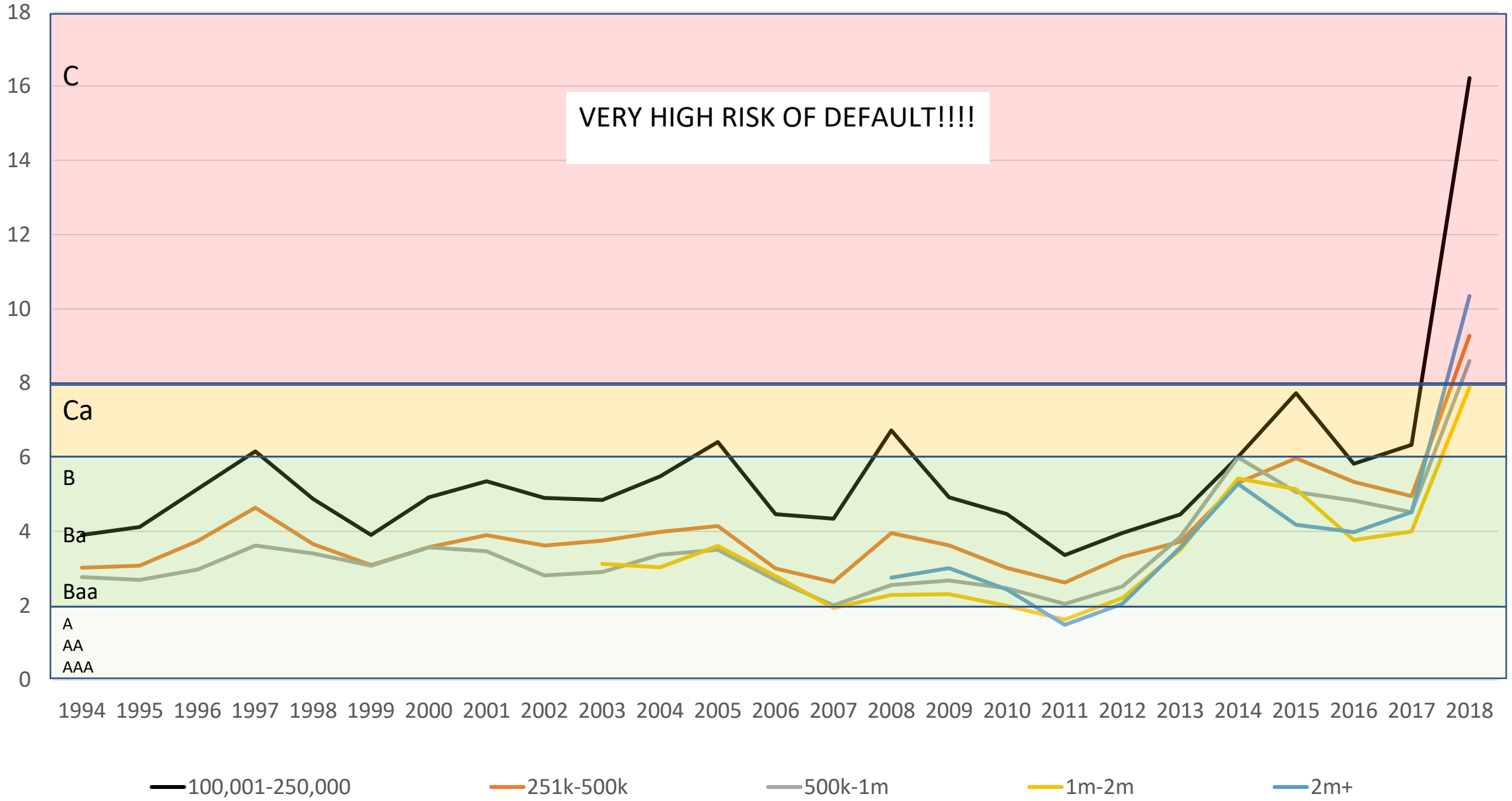
Percent of respondents who reported *increased* levels for the past three months compared with the same period last year:

	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

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


ND Debt To EBITDA by Net Farm Income Pct.
14
12
10
8
6
4
2
0
C
Ca
B
Ba
Baa
A
AA
AAA
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
20-40%
40-60%
60-80%
Top 20%


18
16
14
12
10
8
6
4
2
0
C
Ca
B
Ba
Baa
A
AA
AAA
VERY HIGH RISK OF DEFAULT!!!!
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018
100,001-250,000
251k-500k
500k-1m
1m-2m
2m+

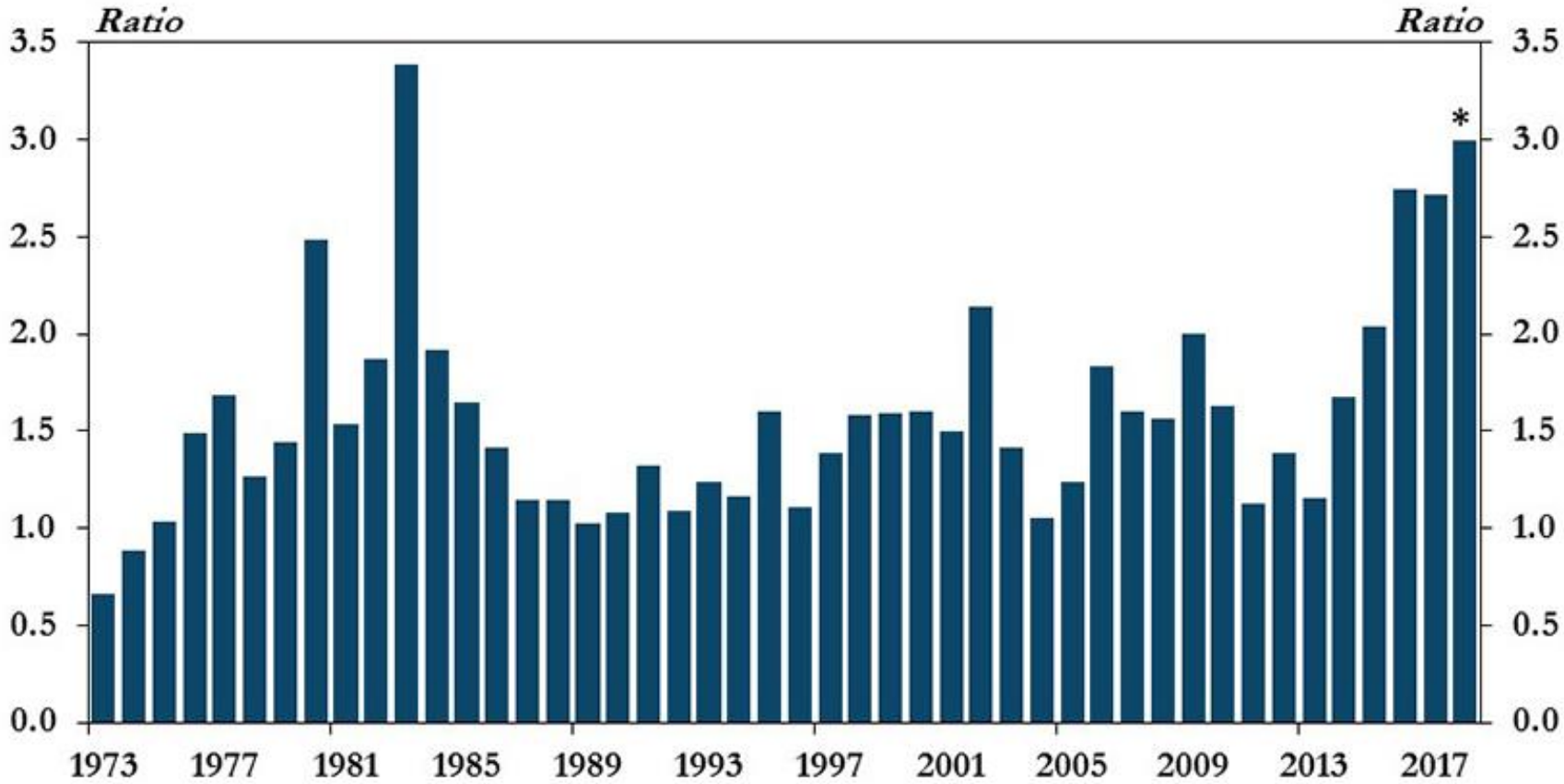
ND Farm Financial Scorecard 2018

	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%**	

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



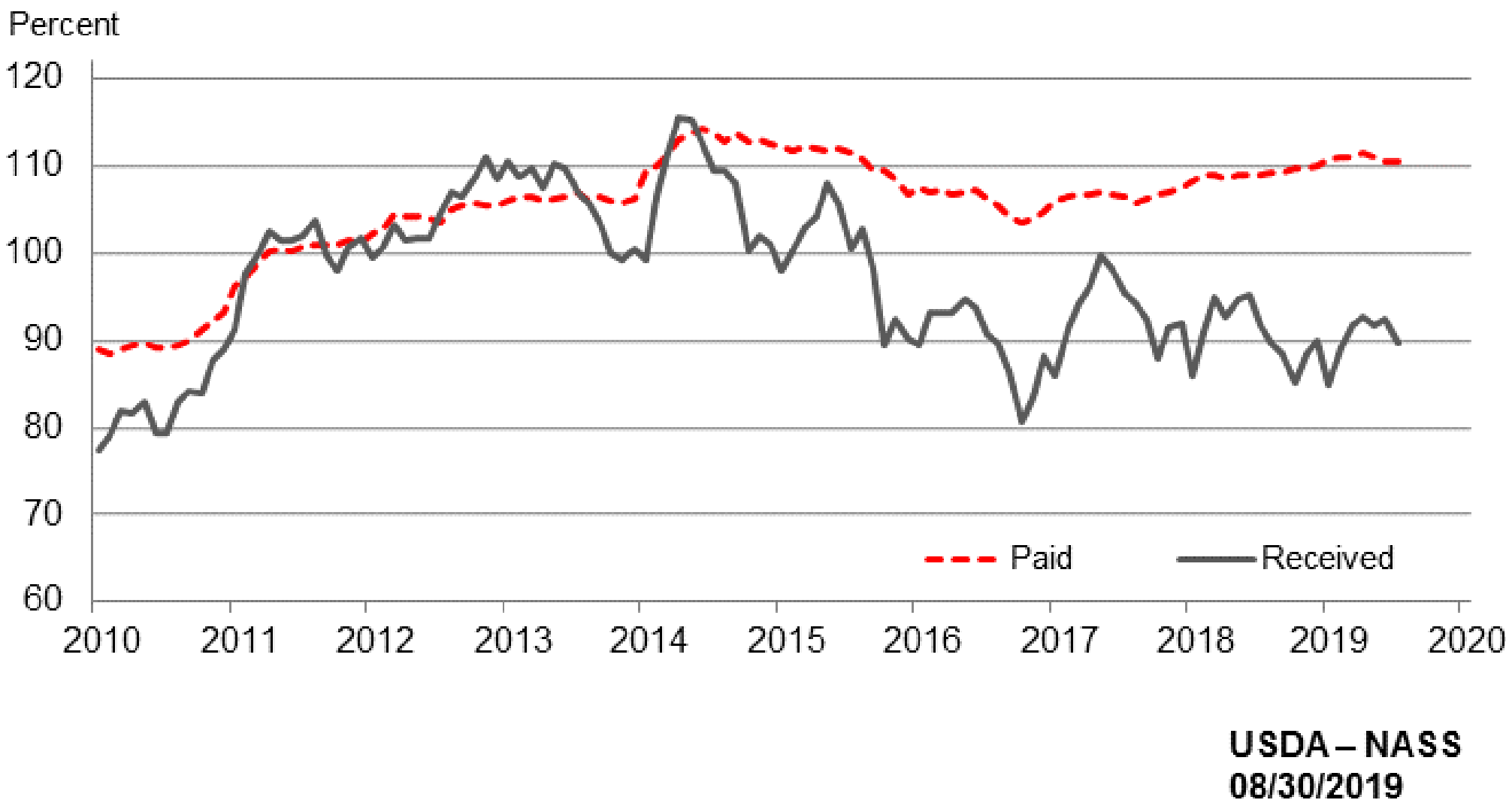
*Based on USDA forecast for 2018 and farm debt at commercial banks rising at the average pace of the past four quarters.

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

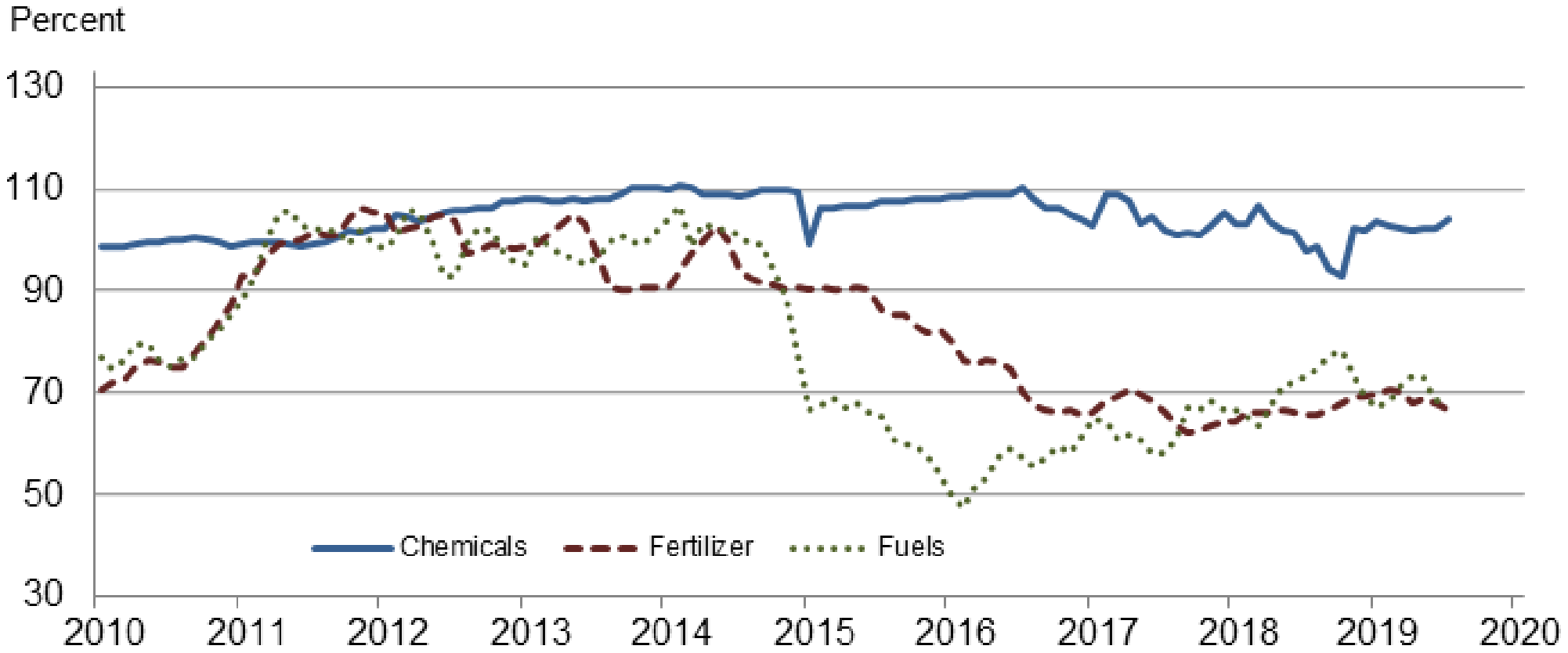
Projections for 2019 Set to Be Higher

- 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).**

Commodity prices index. Prices paid vs. received

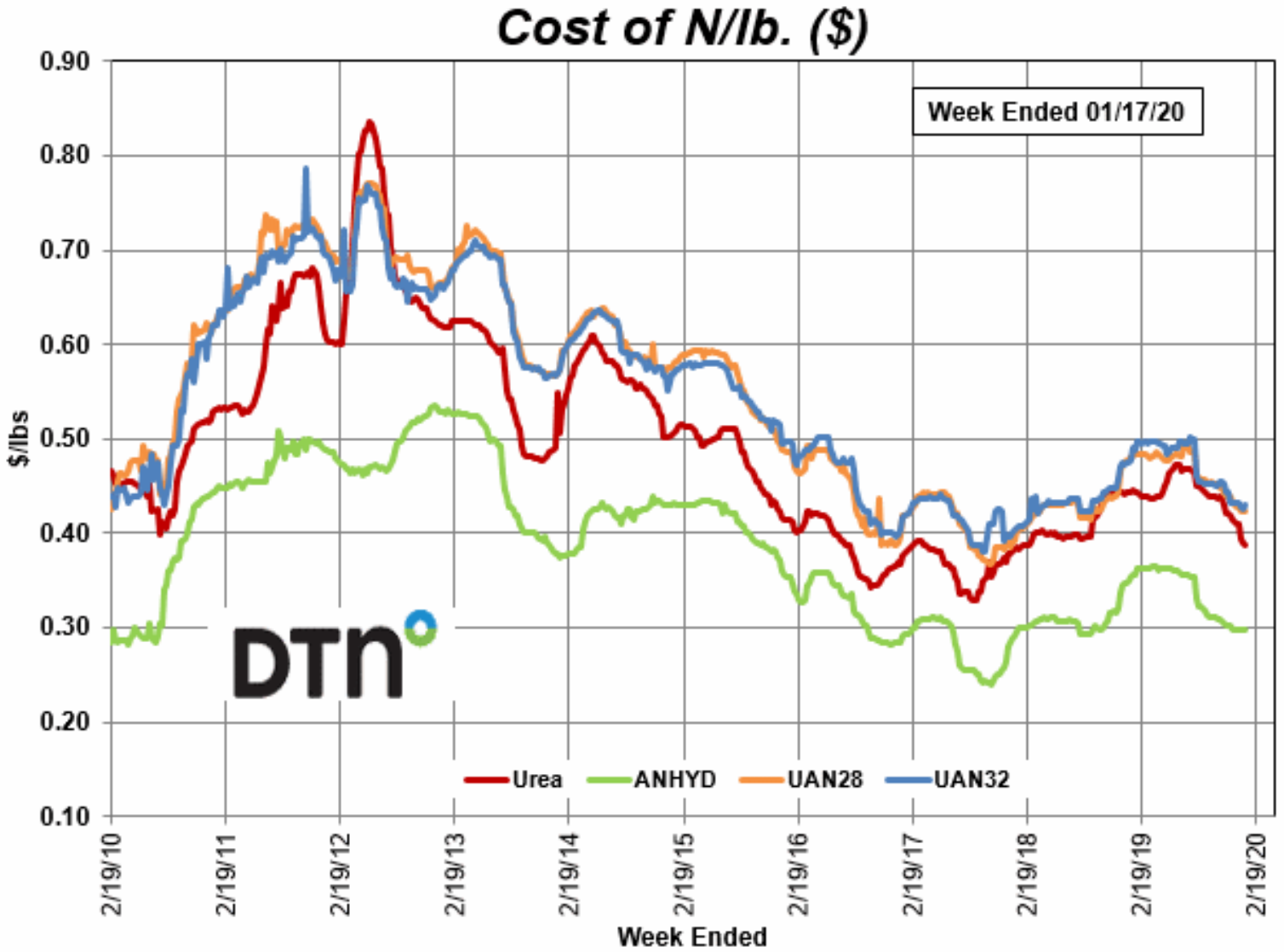


Paid Indexes by Non-farm Origin and Month, Chemicals, Fertilizer, and Fuels – United States: 2011=100

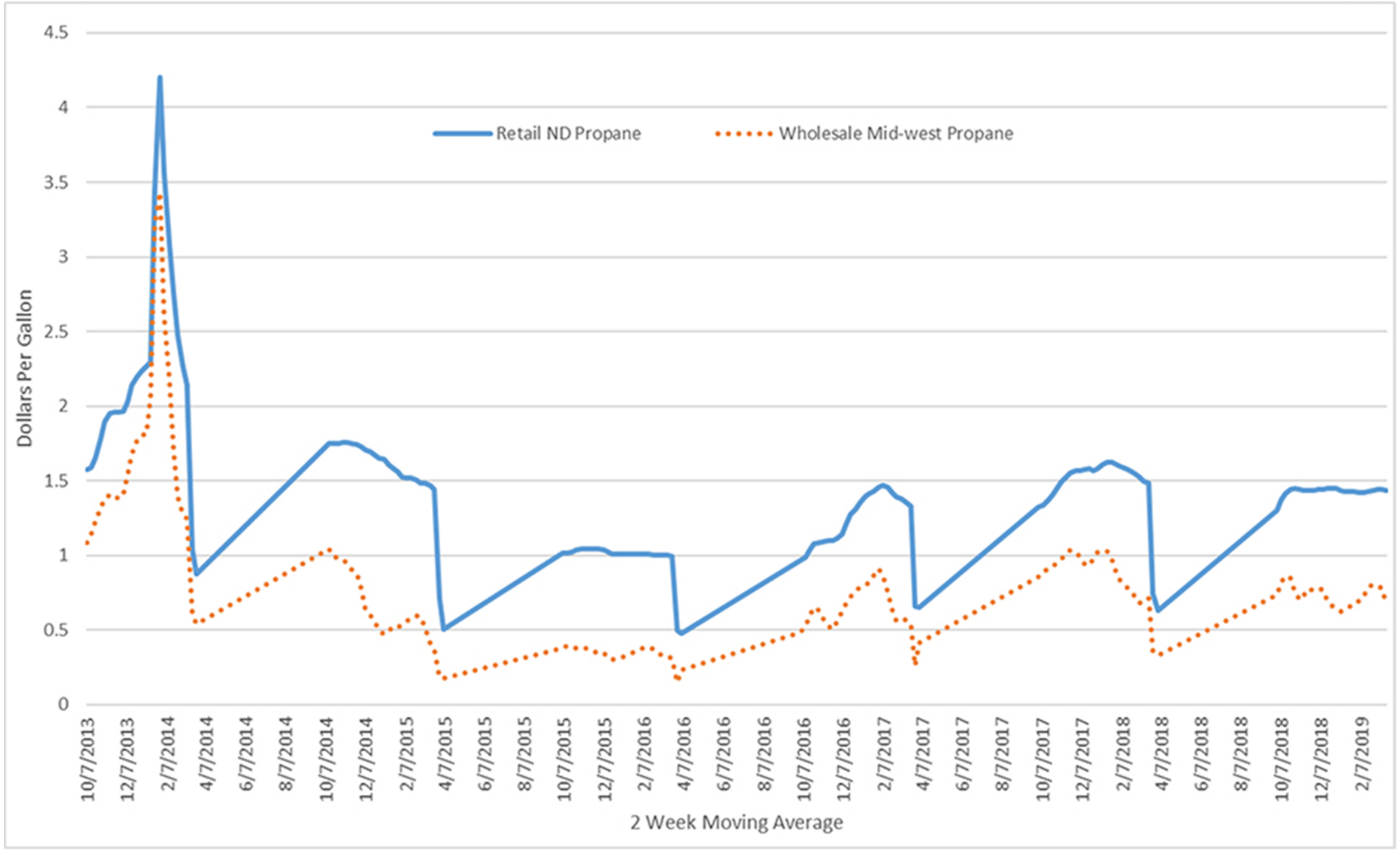


USDA – NASS
08/30/2019

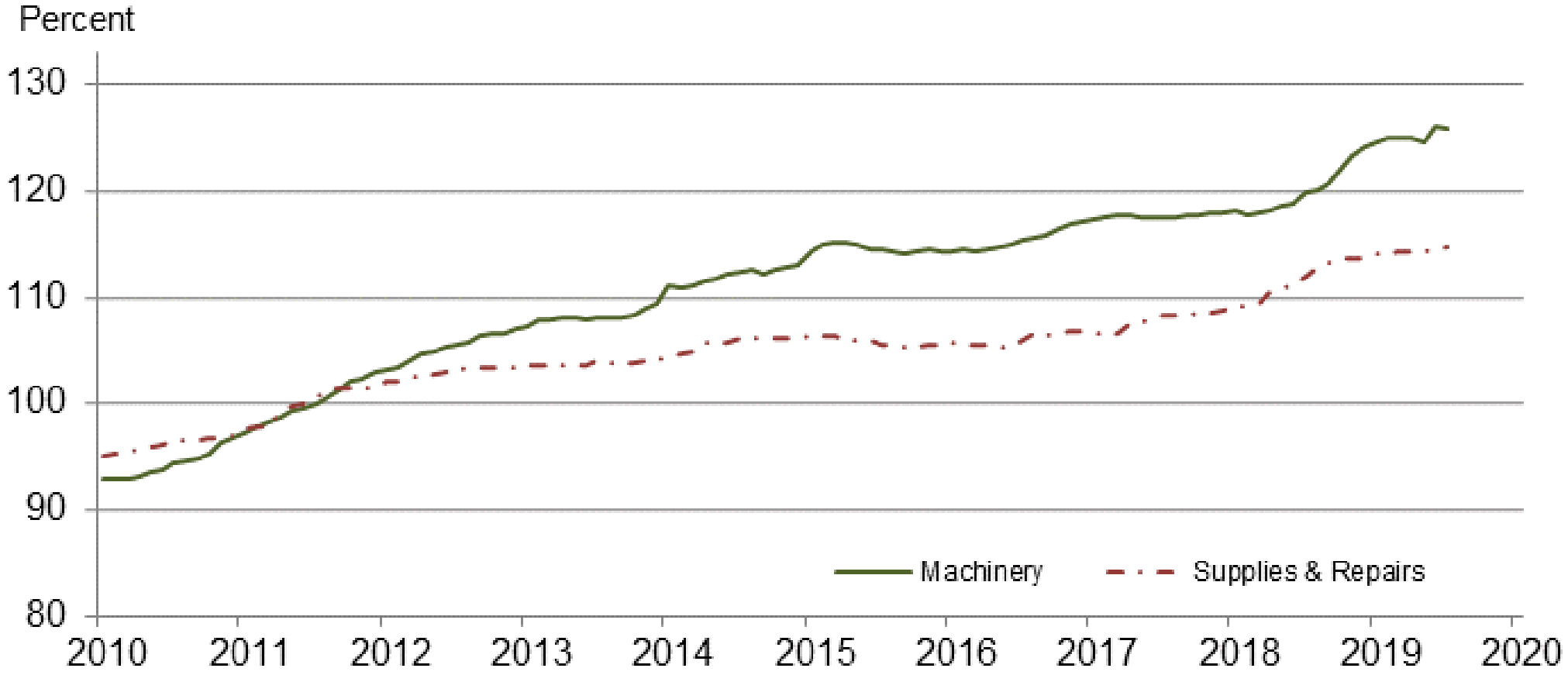
Production Cost Risk – Nitrogen Fertilizer



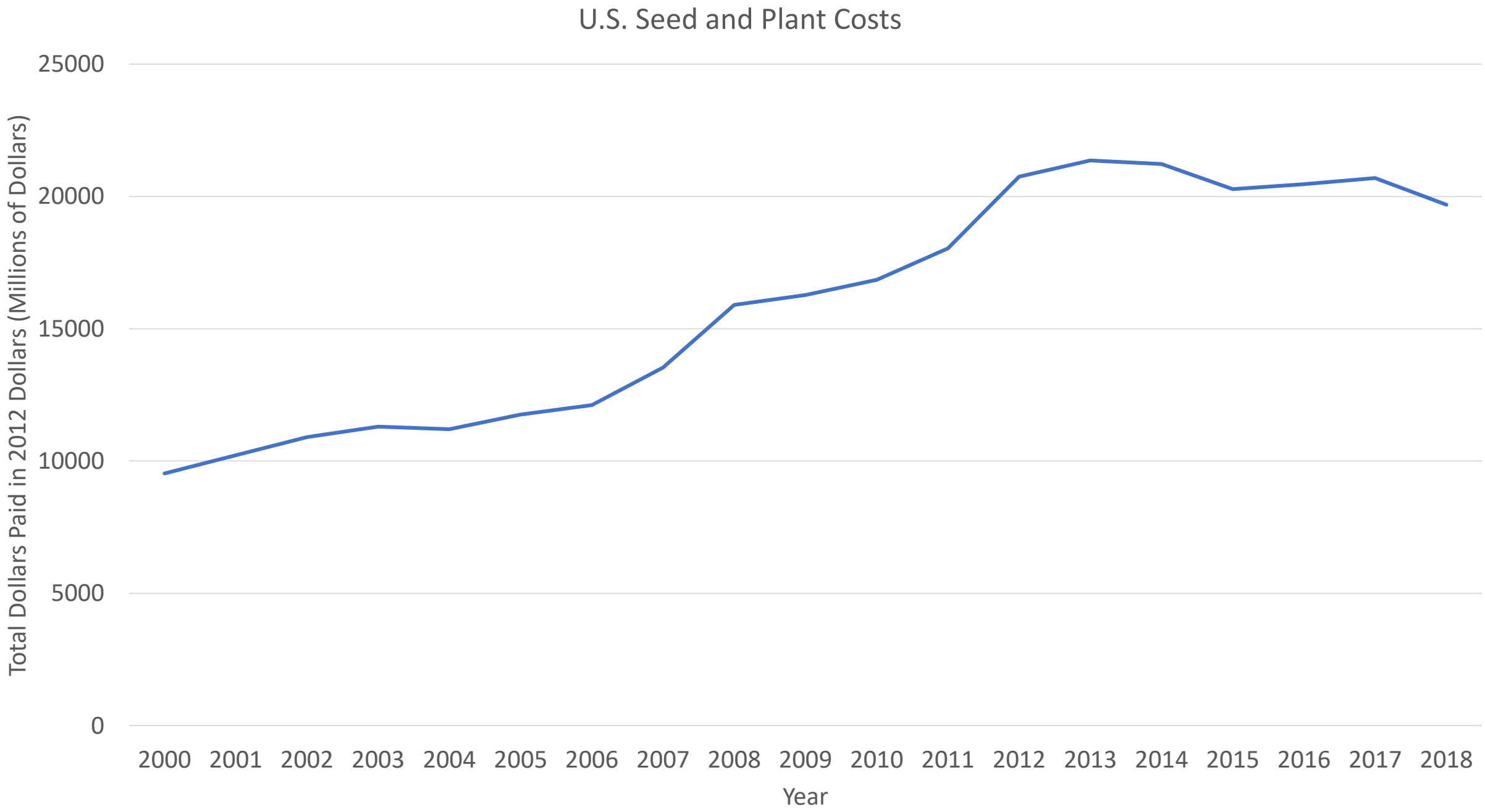
Six Year Price of Propane for N.D. and Midwest



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



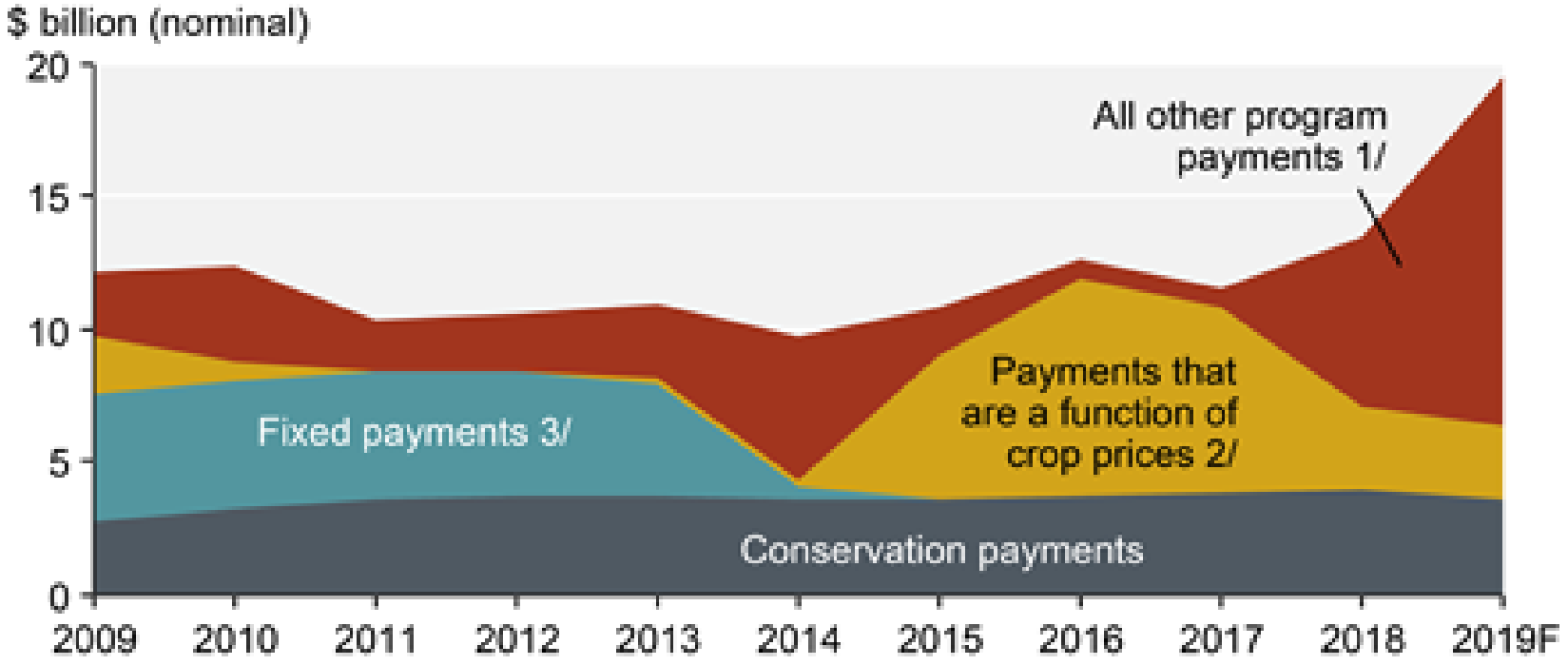
USDA – NASS
08/30/2019


U.S. Seed and Plant Costs
25000
20000
15000
10000
5000
0
Total Dollars Paid in 2012 Dollars (Millions of Dollars)
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Year

Minneapolis FED Quarterly Ag. Interest Rate Survey

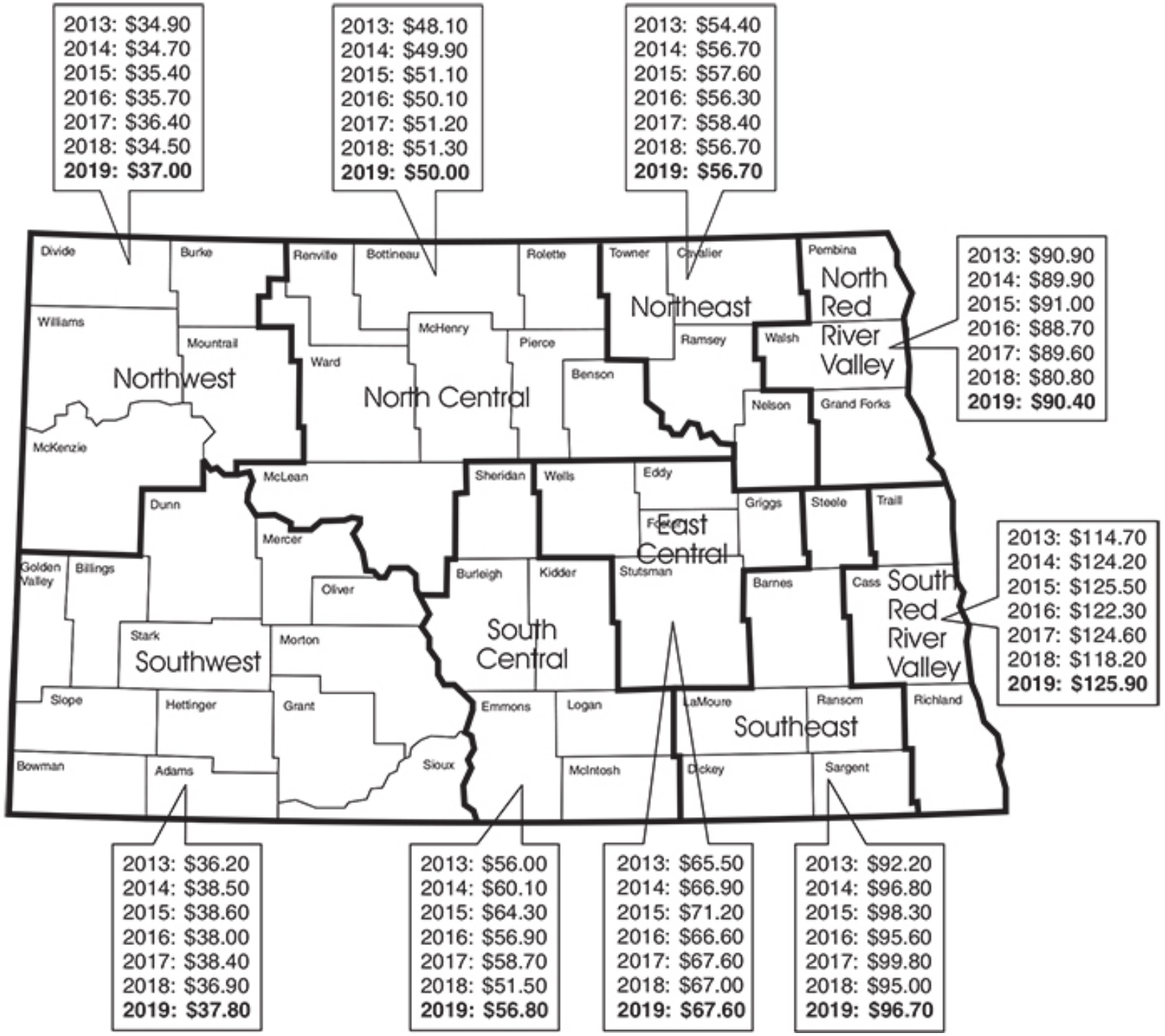
		Operating		Machinery		Real Estate	
		Fixed	Var.	Fixed	Var.	Fixed	Var.
Q1-17	April	5.5	5.2	5.5	5.2	5.3	5.0
Q2-17	July	5.6	5.3	5.5	5.3	5.3	5.1
Q3-17	October	5.5	5.4	5.6	5.4	5.3	5.2
Q4-17	January	5.7	5.5	5.7	5.4	5.5	5.2
Q1-18	April	5.8	5.6	5.8	5.5	5.6	5.3
Q2-18	**July**	**6.0**	**5.8**	**6.0**	**5.7**	**5.7**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

Government farm program payments to farm producers, 2009-19F



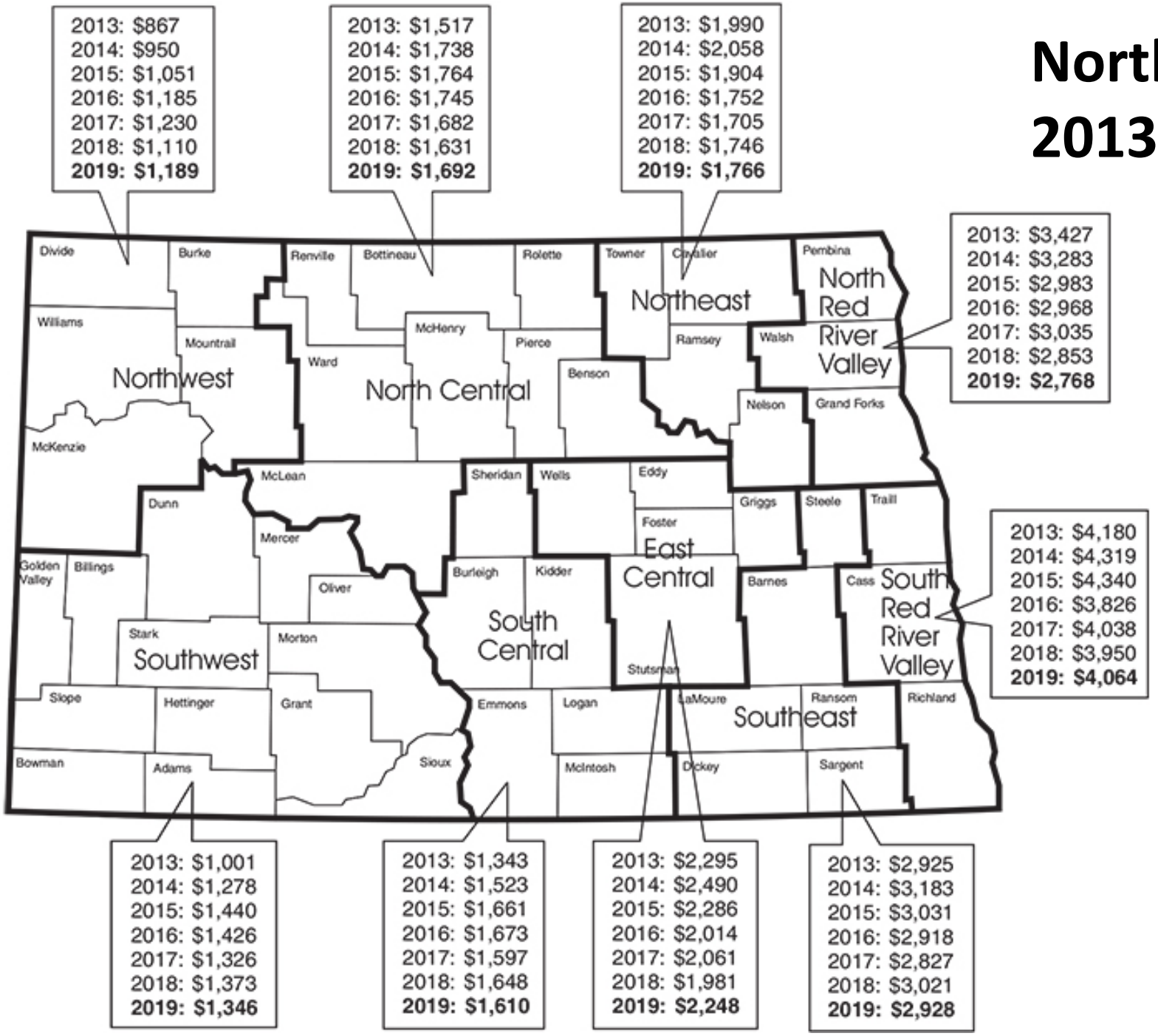
Note: F = forecast.
1/ All other payments include supplemental and ad hoc disaster assistance, tobacco transition, Cotton Ginning Cost Share, dairy, and miscellaneous programs (such as the Market Facilitation Program).
2/ Includes Price Loss Coverage (PLC), Agriculture Risk Coverage (ARC), counter-cyclical 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 August 30, 2019.

North Dakota Cash Rents 2013 - 2019



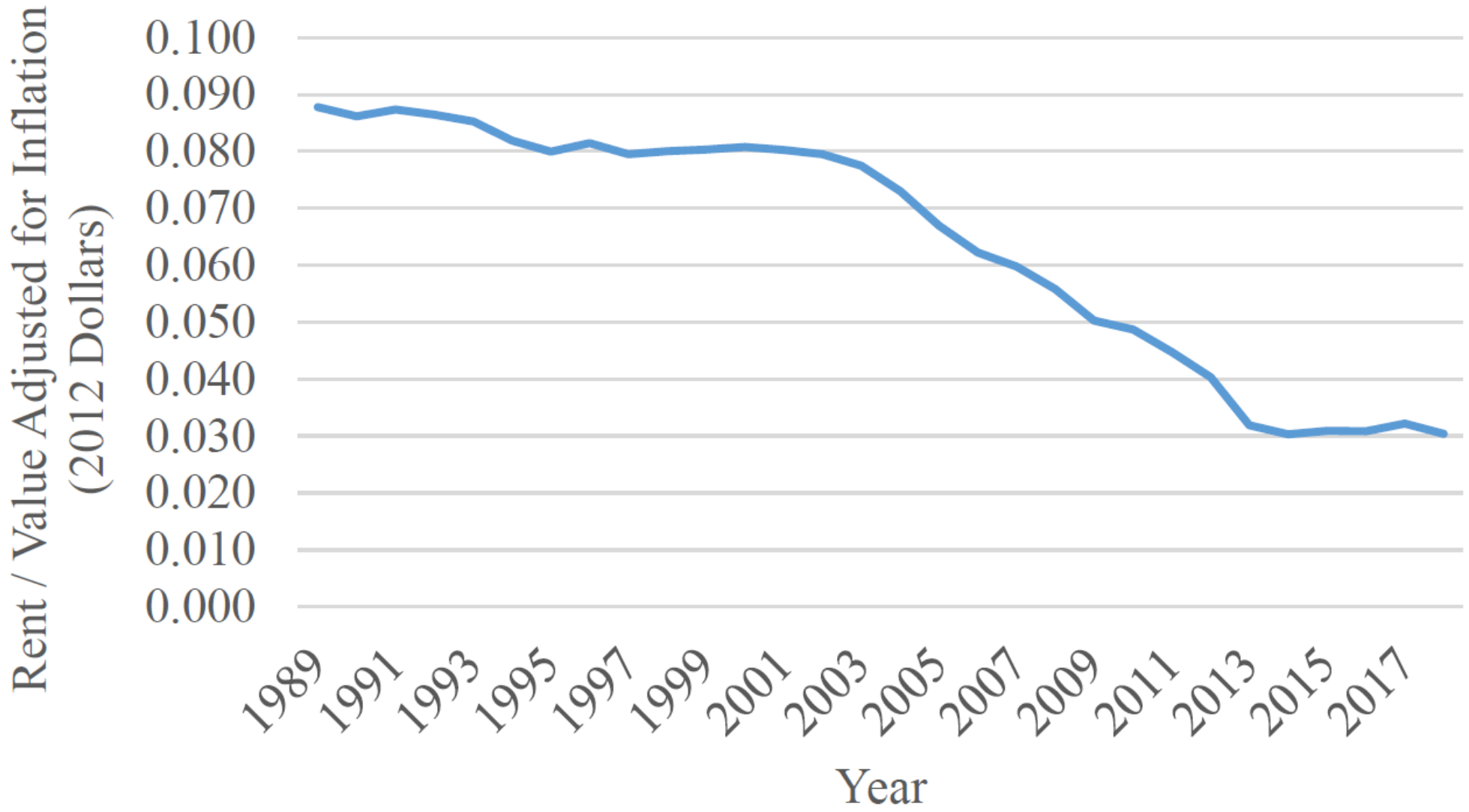
The Red River Valley approaching all time highs while other portions of the state Well off their all time highs.

North Dakota Land Values 2013 - 2019

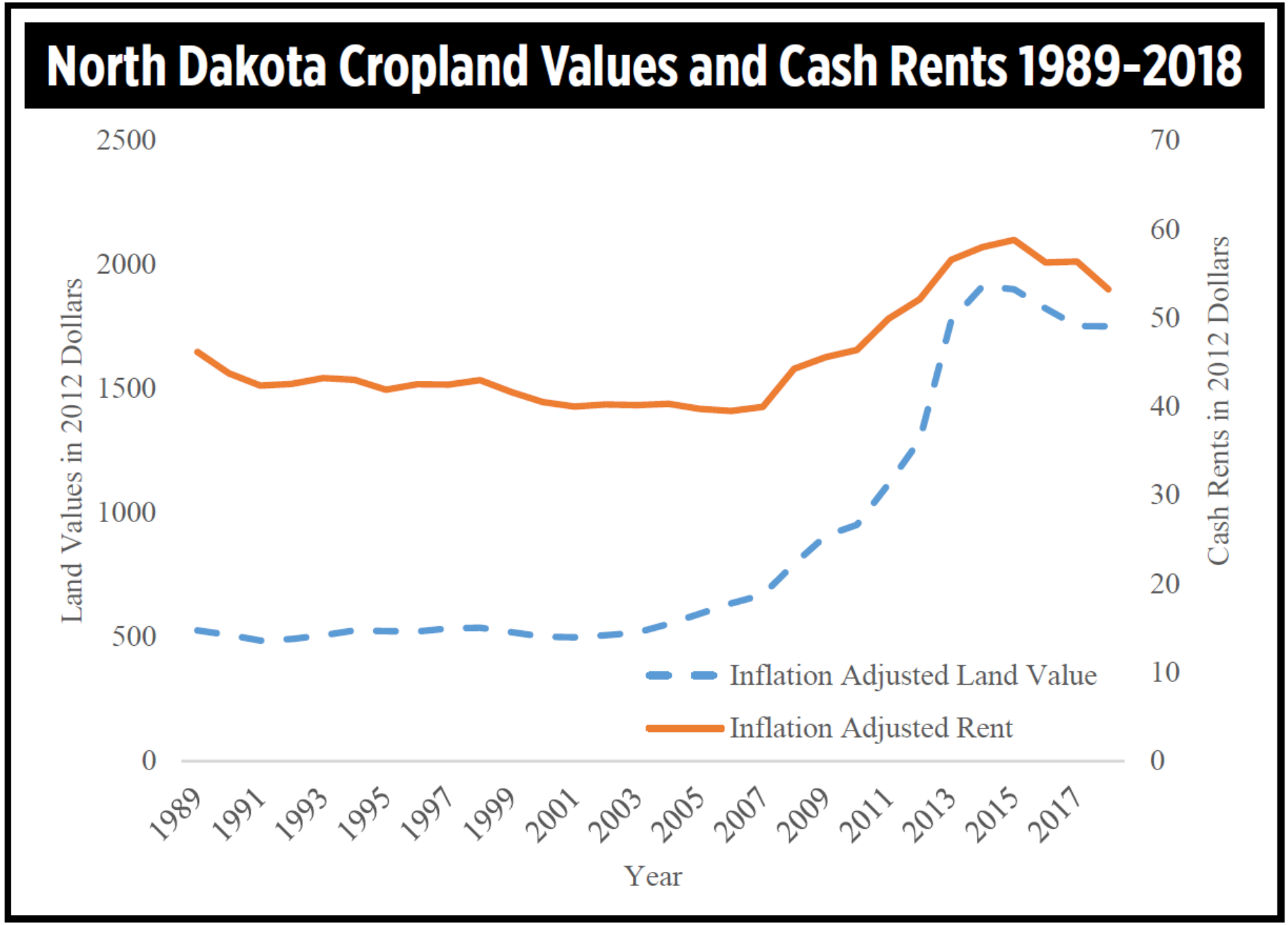


Land values mostly flat since 2016

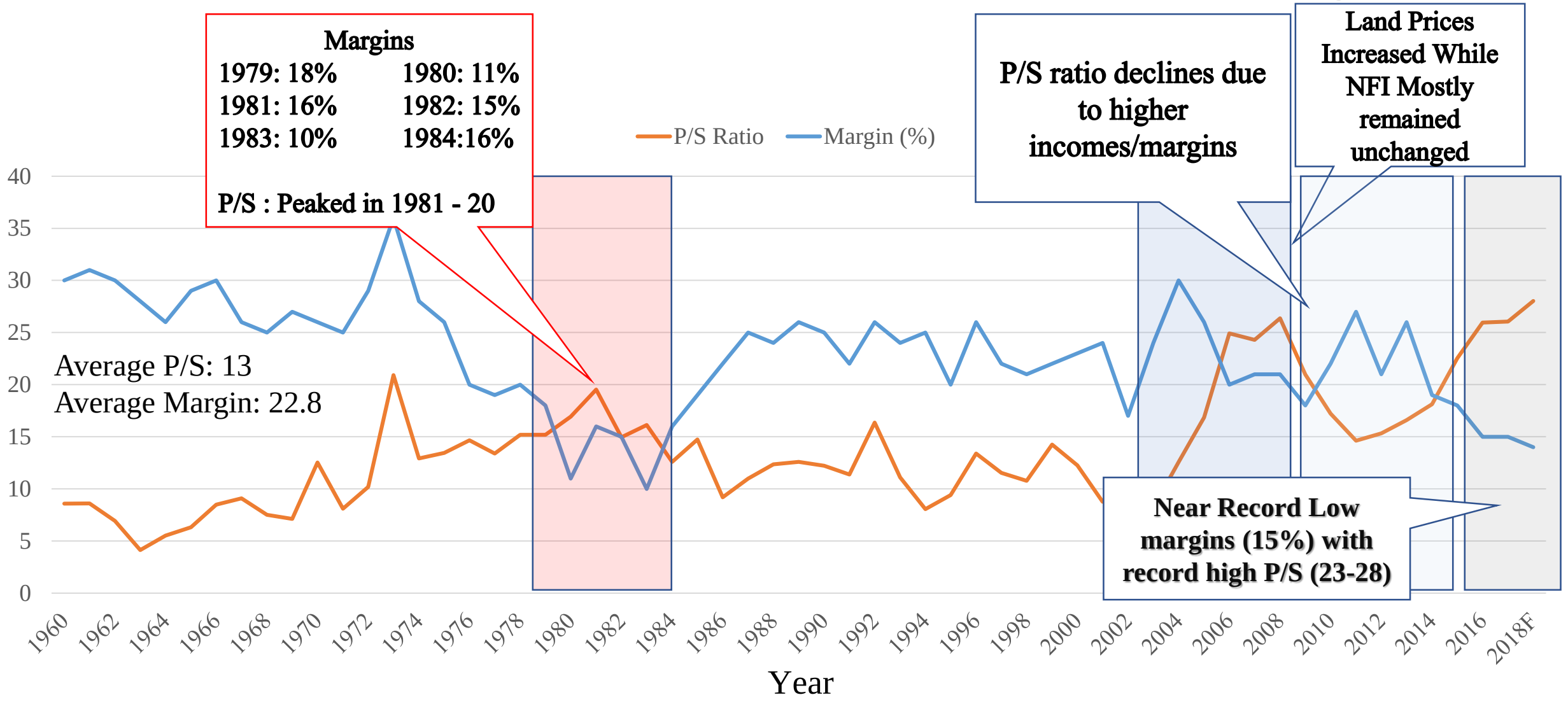
North Dakota Cropland Rent-to-Value Ratio



North Dakota Cropland Values and Cash Rents 1989-2018

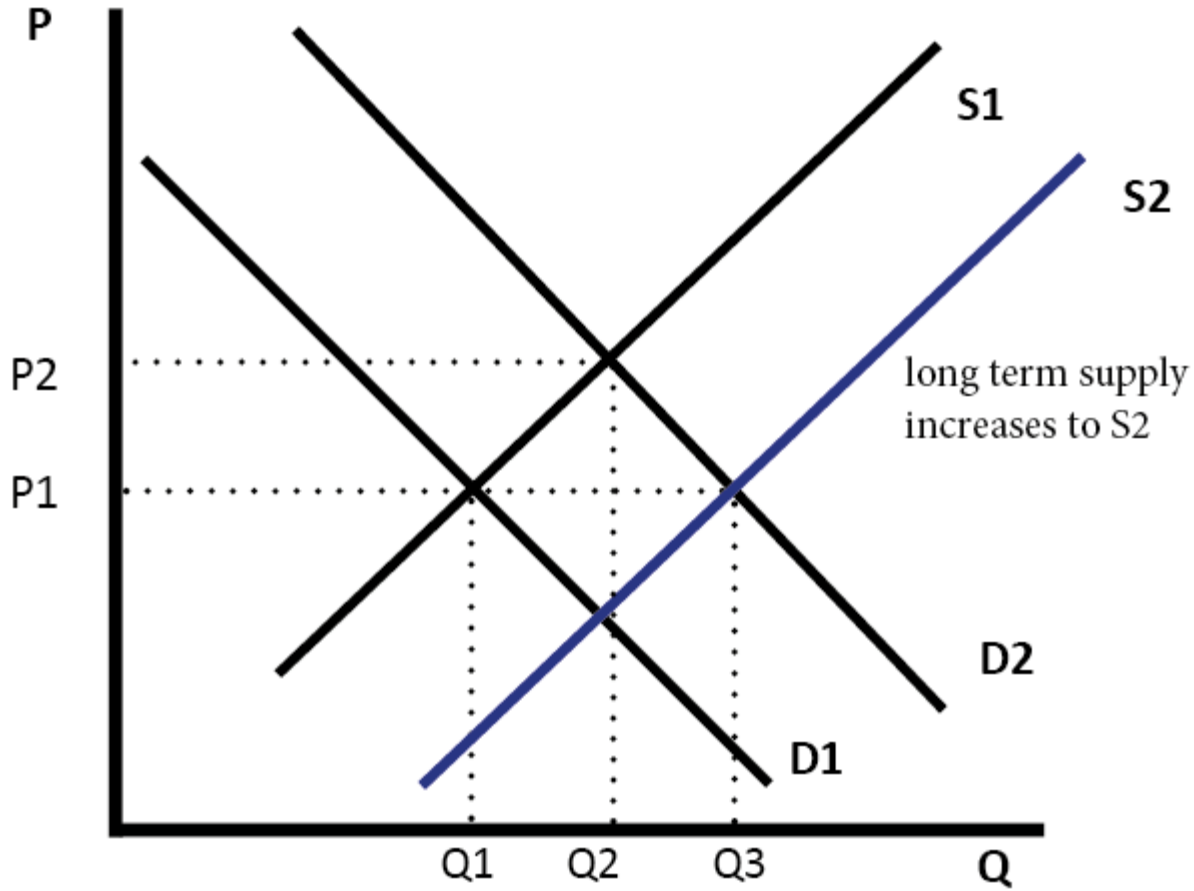


Land Price to Sales Ratio & Income Margin



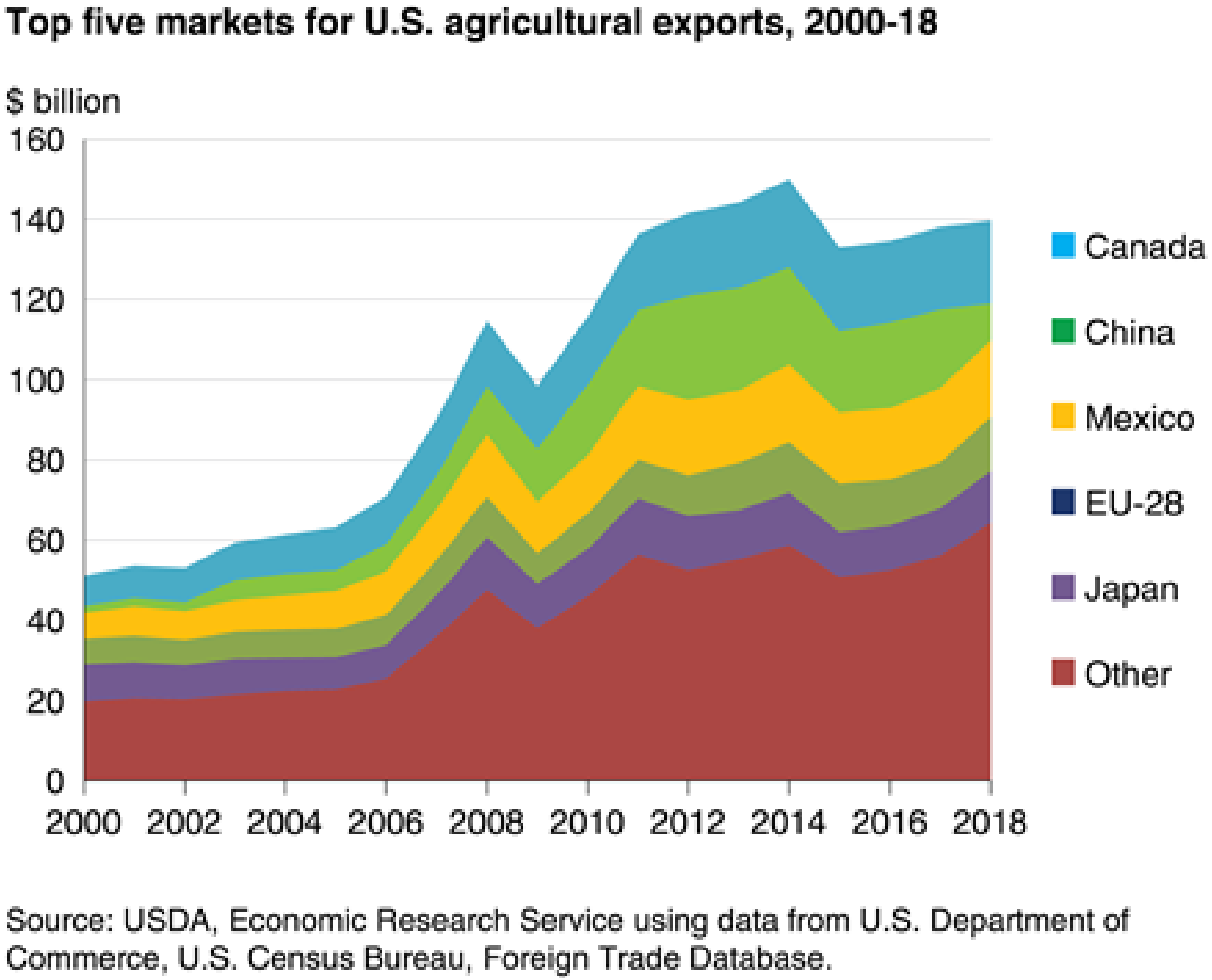
Markets ➔ Perhaps a demand driven year?

- New, updated, or pending trade agreements
  - Japan
  - Mexico/Canada
  - Great Brittan
  - The EU
  - China



USMCA

- President Trump signed USMCA 2 weeks ago
- Canada has yet to sign the deal
  - Reports are that Canada does not want to drag the process out



U.S. Japan Trade Agreement

- The United States and Japan have reached an agreement in which Japan will eliminate or lower tariffs for certain U.S. agricultural products. For other agricultural goods, Japan will provide preferential U.S.-specific quotas.
- Once this agreement is implemented, **over 90 percent of U.S. food and agricultural products imported into Japan will either be duty free or receive preferential tariff access.** For example, under the agreement, Japan will:
- **Reduce tariffs on products such as fresh and frozen beef and pork.**
- **Provide a country-specific quota for wheat and wheat products.**
- **Reduce the mark-up on imported U.S. wheat and barley.**
- Immediately eliminate tariffs for almonds, walnuts, blueberries, cranberries, sweet corn, grain sorghum, broccoli, and more.
- Provide staged tariff elimination for products such as cheeses, processed pork, poultry, beef offal, ethanol, wine, frozen potatoes, oranges, fresh cherries, egg products, and tomato paste.

India Trade Deal set for February?

- Headline from USDA
  - “**U.S. Exports of Chickpeas, Lentils, and Dry Peas Have Dropped Sharply Due to a Steep Decline in Shipments to India**”

- **“**As recently as the first quarter of the 2016/17 marketing year, sales of chickpeas, lentils, and dry peas to India represented nearly 50 percent of all U.S. sales of these pulse crops. In the first quarter of the 2018/19 marketing year, this share had fallen to about 5 percent of aggregate export sales of the same crops.”……..
- ” tariffs of 50 percent for lentils and dry peas and 70 percent for chickpeas remain in place today”
- **Trump to Visit India Feb 24th and 25th.**

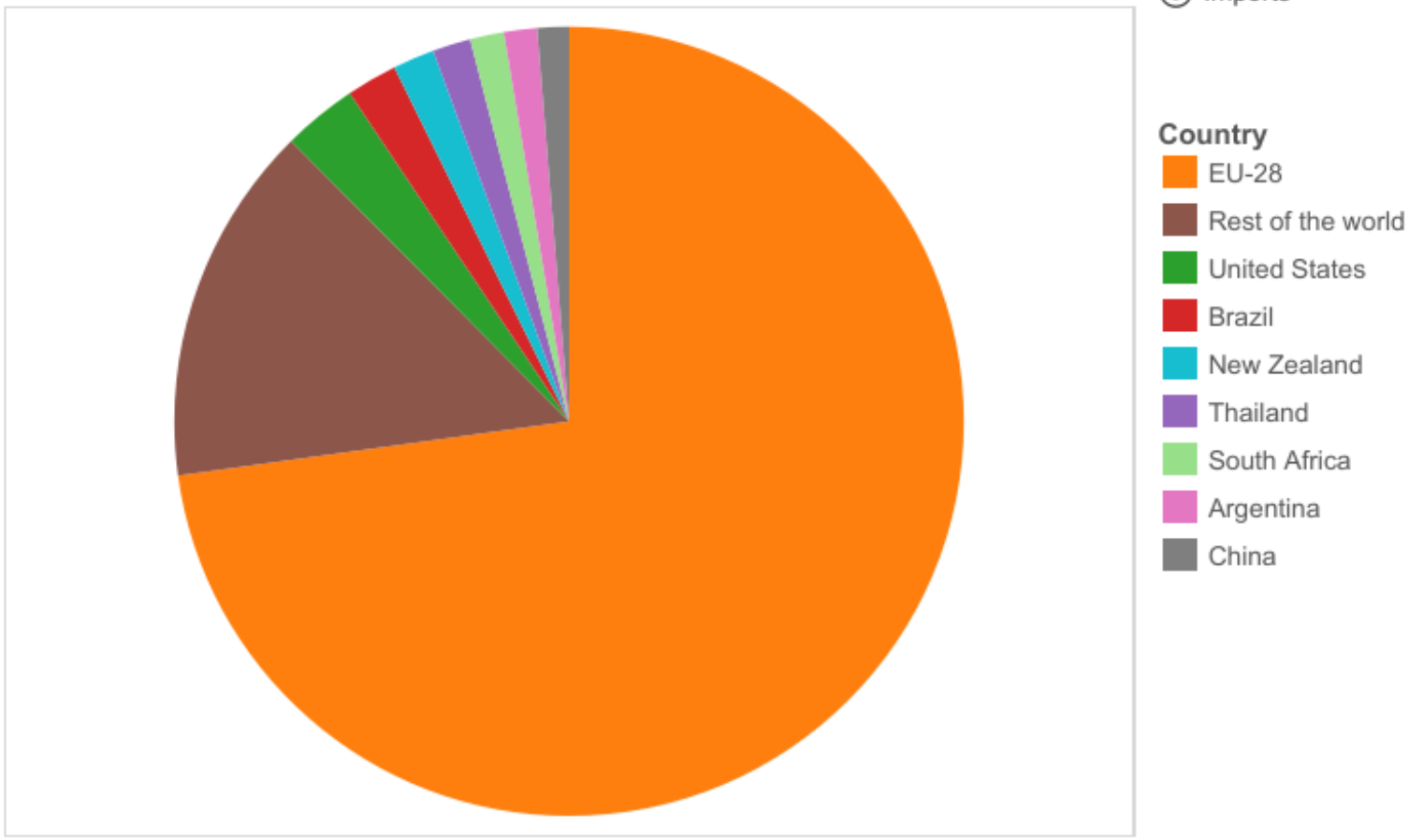
What could Brexit mean for U.S. Agricultural Exports?

“U.S. Treasury Secretary Steven Mnuchin said on Saturday in London that he was optimistic that a bilateral deal with Britain could be reached as soon as this year.”

Reuters

UK agricultural imports and exports

UK agricultural imports, 2015



Note: EU data are a simple sum and do not account for EU internal trade.
Source: USDA, ERS calculations from Global Trade Atlas, UK exports data, 2016.

UK agricultural exports total value $US 20,428,662,599
UK agricultural imports total value $US 59,788,700,115

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:

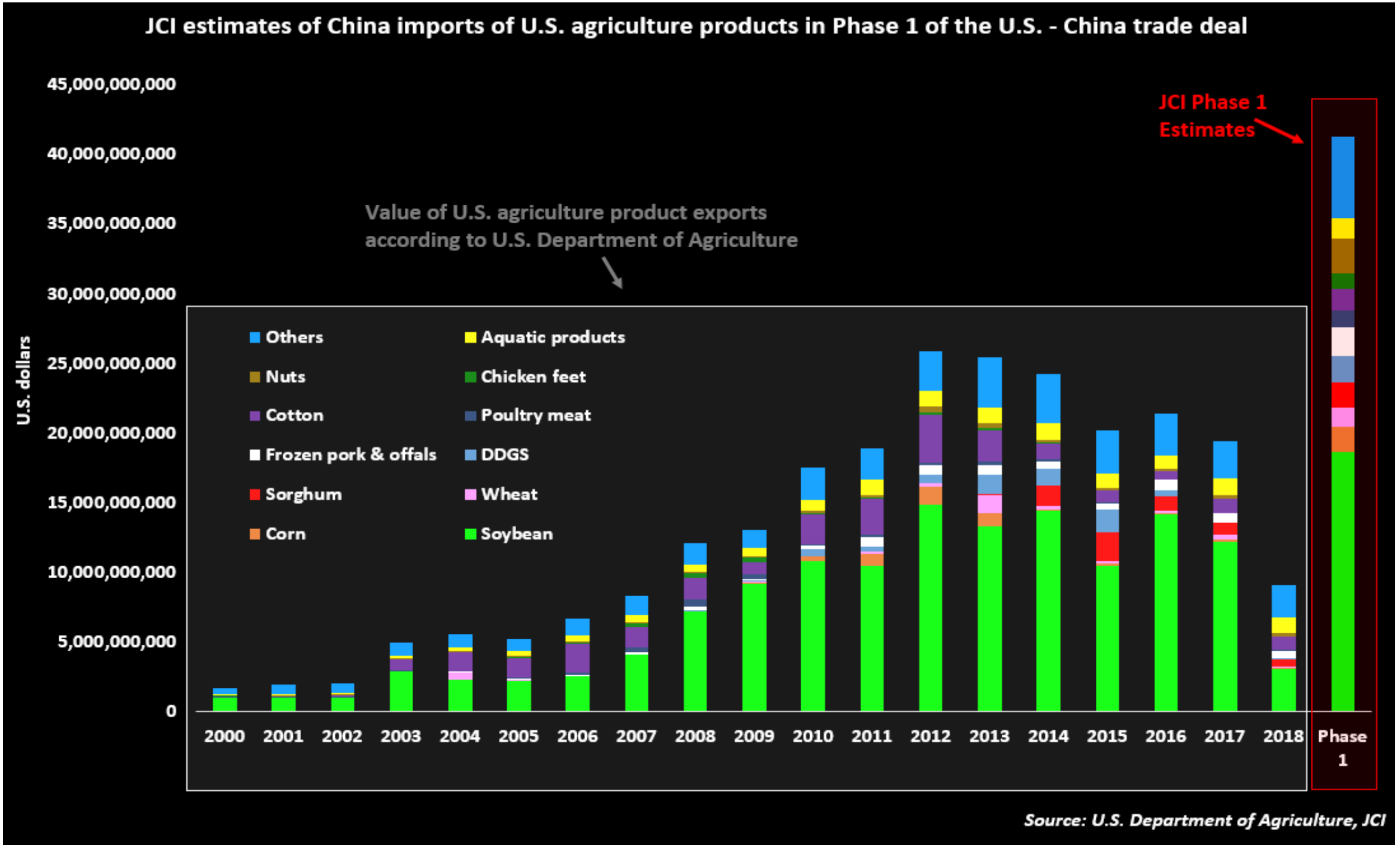
1. The estimate JCI made regarding the purchase volume in the table is under the ideal situation that the weather, the quality and the prices are all favorable for China's purchase.

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
45,000,000,000
40,000,000,000
35,000,000,000
30,000,000,000
25,000,000,000
20,000,000,000
15,000,000,000
10,000,000,000
5,000,000,000
0
U.S. dollars
JCI Phase 1 Estimates
Value of U.S. agriculture product exports according to U.S. Department of Agriculture
Others
Aquatic products
Nuts
Chicken feet
Cotton
Poultry meat
Frozen pork & offals
DDGS
Sorghum
Wheat
Corn
Soybean
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Phase 1
Source: U.S. Department of Agriculture, JCI

And what about the E.U.

- Currently in a cease-fire as far as trade barriers in place but….

- “Robert Lighthizer, President Donald Trump’s point man in the trade war, is threatening to deploy a trade tactic called “carousel retaliation,” whereby a country periodically shifts tariffs on different groups of goods, which spreads out the sanctions pain across diverse industries, creating uncertainty for businesses and headaches for exporters.”

NDSU Crop Compare

Select reference crop		S. Wht
Enter the	S. Wht futures price	$5.60
Enter expected local basis (cash-futures)		-$0.45
Expected	S. Wht local cash price	$5.15

	S. Wht	Barley	Corn	Soybean	Drybeans	Oil Snflr	Conf Snflr	Oats	W.Wht
Yield	65	84	161	41	2050	2130	1740	100	60
Relative Price	$5.15	$3.70	$2.98	$7.22	$0.191	$0.157	$0.207	$2.85	$5.17
Income	$335	$311	$480	$296	$392	$335	$361	$285	$310

	S. Wht	S.Wheat 2	Corn	Soybean	S. Wheat 3	Oil Snflr	Conf Snflr	Oats	W.Wht
Yield	65	60	161	41	70	2130	1740	100	60
Relative Price	$5.15	$5.58	$2.98	$7.22	$4.782	$0.157	$0.207	$2.85	$5.17
Income	$335	$335	$480	$296	$335	$335	$361	$285	$310

	S. Wht	S.Wheat 2	Corn	Soybean	S. Wheat 3	Oil Snflr	Conf Snflr	Oats	W.Wht
Yield	65	60	161	41	70	2130	1740	100	60
Relative Price	$5.15	$5.58	$2.98	$7.22	$4.782	$0.157	$0.207	$2.85	$5.17
Income	$335	$335	$480	$296	$335	$335	$361	$285	$310
Variable costs:									
Seed	$20.50	$20.50	$100.50	$65.80	$20.50	$37.20	$55.00	$12.50	$11.70
Herbicide	21.00	21.00	28.00	35.00	21.00	27.70	29.90	5.40	24.50
Fungicide	17.00	17.00	0.00	0.00	17.00	0.00	0.00	0.00	9.00
Insecticide	0.00	0.00	0.00	4.00	0.00	5.00	10.00	0.00	0.00
Fertilizer	76.53	76.53	97.83	2.77	76.53	47.04	36.53	60.30	69.84
Crop Insurance	5.00	5.00	11.00	6.00	5.00	10.00	15.00	9.50	5.00
Fuel & Lube	18.08	18.08	25.46	14.92	18.08	17.54	16.88	20.90	16.11
Repairs	21.57	21.57	29.31	19.86	21.57	20.61	20.25	23.04	19.86
Drying	0.00	0.00	28.98	0.00	0.00	6.39	5.22	0.00	0.00
Misc.	8.00	8.00	8.00	1.50	8.00	16.00	24.00	8.00	8.00
Operating Int.	5.07	5.07	8.89	4.05	5.07	5.06	5.75	3.77	4.43
Total Var.Costs	$193	$193	$338	$154	$193	$193	$219	$143	$168
Return Over	$142	$142	$142	$142	$142	$142	$142	$142	$142

Sensitivity Analysis under 3 Different Wheat Scenarios

Thank You

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