

Ex-Post Analysis of the 2018 and 2019 Market Facilitation Programs

Anil Giri, E. Wesley F. Peterson, Sankalp Sharma, and Iuliia Tetteh

JEL Classifications: Q10, Q12, Q13, Q17, Q18

Keywords: Agricultural exports, Corn, International trade, Market facilitation program, Soybeans

Ex Post Analysis of the 2018 and 2019 Market Facilitation Programs

In late 2019, after decades of bilateral trade liberalization, and following 18 months of escalating retaliatory tariffs (see Box 1), the U.S. and China reached agreement on the first phase of a trade deal, the details of which were made public in January 2020. The Chinese government agreed to purchase substantial amounts of U.S. goods, including \$32 billion of agricultural products (Lawder et al., 2020). Prior to this agreement, U.S. agricultural producers had suffered severe economic losses as a result of the retaliatory tariffs implemented by several governments and the U.S. government had established programs of direct payments to producers to offset these losses. The Market Facilitation Program (MFP) was first implemented in 2018 and a second version of this program was established in 2019. The purpose of this article is to compare the 2018 and 2019 Market Facilitation Programs in 14 Midwest and Plains states.

Comparisons of the Two MFP Payments

It is not possible to directly compare the two versions of the MFP because the compensatory payments are based on different criteria. In 2018, the payments were tied to the production of a limited set of specific crops with compensation equal to a set of crop-specific payment rates multiplied by actual output. In 2019, set payments for each county were calculated on the basis of the total number of acres planted to eligible non-specialty crops (corn, sorghum, soybeans and 24 others). The change in the bases for the payment calculations was made to avoid incentivizing increased production of a particular crop over others. One way to get a sense of the different effects of these two programs is to consider a hypothetical grower producing either corn or soybeans in both years. In 2018, this hypothetical producer received a payment based on a payment rate tied to a particular commodity such as corn or soybeans times the number of bushels produced while in 2019 the producer received a payment based on

the total number of acres planted in 2019 to any of the eligible non-specialty crops, which include corn and soybeans, times the county rate based on a broader set of commodity damages. In the following analysis, we will compare the payments received by this hypothetical corn or soybean producer, who produced the same crop (corn or soybean) on a per-acre basis (i.e. for one planted acre of corn or soybean) in both years.

There were some similarities between the programs. For both years:

- 1) producers or legal entities had to have followed all conservation regulations, and
- 2) their average Adjusted Gross Income (AGI) had to have been less than \$900,000 for the previous three years or they had to have gotten 75% or more of their income from agricultural activities.

Aside from the differences in the way payment rates were calculated there were three other important differences:

- 1) The 2019 program allowed a producer or entity to receive up to \$250,000, double the 2018 cap. Total compensation from any combination of MFP payments (non-specialty crops, dairy and hogs, and specialty crops) could not exceed \$500,000.
- 2) Additional agricultural commodities were included in the 2019 program beyond the limited number covered in the 2018 program (U.S. Department of Agriculture, 2018, 2019b).
- 3) The 2019 MFP program was announced in May 2019, before planting had ended for many farmers, particularly in the Midwest. In order to avoid incentivizing crop selection among producers, payments were made using an uniform county-level payment rate, rather than a crop-specific rate as was done for 2018.

To differentiate the payments by commodity, we use 2019 yields to compare the differences in received MFP

Box 1. Chronology of U.S.—China Retaliatory Tariffs and Tariff Offset Actions

- Prior to the presidential election in 2016, candidate Trump repeatedly talked about high trade imbalances with China. He also talked about taking several measures to decrease the high trade imbalance (Corasaniti, Burns, and Appelbaum, 2016; Ahmann and Chance, 2016).
- In 2017, President Trump ordered a review of U.S. trade deficits and initiated trade talks with Chinese President Xi. In July 2017, the trade talks failed, but both sides expressed willingness to continue discussions (Reuters, 2019; CNBC, 2017; Heatley, 2017; Bown and Kolb, 2020).
- In April 2018, the U.S. administration announced the imposition of 25% tariffs on \$50 billion of Chinese machinery and electrical goods and China responded with 25% tariffs on \$50 billion of U.S. automobiles, aircraft, and agricultural goods (Mason, 2018; Bown and Kolb, 2020).
- In June 2018, the tariff war escalated as both sides added new tariff lines: on \$34 billion of Chinese imports from the United States and \$200 billion of U.S. imports from China. The Chinese response included tariffs on \$27 billion of agricultural products, and the Trump administration created programs to compensate farmers for the effects of these tariffs (Bown and Kolb, 2020).
- In August and September 2018, U.S. tariff rates were raised from 10% to 25% on \$200 billion of Chinese goods and threats are made that an additional \$267 billion of imports from China would be subjected to tariffs. China retaliated with additional tariffs on \$60 billion of U.S. goods (Bown and Kolb, 2020).
- Following the G20 Summit in Buenos Aires, Argentina, in early 2019, all new tariffs were put on hold and trade talks between the two countries were resumed. These negotiations failed in April 2019 and the U.S. gave formal notice that tariffs on \$200 billion of Chinese imports would be raised from 10% to 25%; the Chinese government responded by increasing its tariffs on \$60 billion of U.S. goods (Bown and Kolb, 2020).
- In August 2019, after trade negotiations had failed, China announced new tariffs on \$75 billion of U.S. goods to take effect on December 15, 2019, and the Trump administration threatened 15% tariffs on an additional \$300 billion of Chinese goods. In September 2020, the two sides reached a temporary agreement suspending the new tariffs (Bown and Kolb, 2020).
- In late 2019, the two sides announced a Phase 1 deal, which was signed on January 15, 2020. The Phase 1 agreement calls for China to purchase \$77.7 billion of U.S. manufactured goods, \$52.4 billion of energy, \$37.6 billion in services, and \$32.0 billion of agricultural goods. In addition, China agreed to lower some tariff rates and the U.S. agreed to cancel tariffs scheduled to go into effect in December 2019 (Bown and Kolb, 2020; Lawder, Shalal and Mason, 2020).

payments for the two years by producers of different regions and commodities. Giri, Peterson, and Sharma (2018) found that 2018 payments, for those who received them, exceeded the impacts of price declines from the retaliatory tariffs. In terms of market access Carter and Steinbach (2020) and Grant et al. (2020) estimated export sales losses in line with MFP trade damage estimates. Paulson et al. (2019) compared the 2018 and 2019 program impacts on county farm income but they did not use 2019 yields to generate comparable measures for the two years and did not differentiate returns by commodity. Using 2019 yield and the 2018 MFP structure to calculate the payments under the previous MFP model helps one compare whether a producer of a certain crop in a certain region received smaller or larger payments per acre in 2019 under the new MFP payment structure. There have been no studies that develop equivalent measures of the two payment approaches that would allow a full comparison of the payment amounts received by particular

producers under the two programs. In this paper, we compare the 2018 and 2019 payment rates received by corn and soybean producers in the two years as well as the percentage change from 2018 to 2019 at the county level for 14 Plains and Midwest states. The 2018 MFP payment rate was calculated on a per-unit basis with differing commodity-specific rates. The 2019 rates were the same for all commodities and based on the number of acres planted to a more expansive set of commodities. To make them comparable we calculate the per acre payment received under the 2018 MFP for corn and soybeans (per-bushel payment rate under 2018 MFP times the yield).

For 2019, there is a flat payment rate based on total acreage planted to any of the eligible non-specialty crops and that varies from county to county. According to the U.S. Department of Agriculture (2019b), "county payment rates range from \$15 to \$150 per acre, depending on the impact of unjustified trade retaliation in

that county.”¹ As with the 2018 MFP, 2019 county payments for non-specialty crops were based on the estimated trade damage to commodities targeted by retaliatory tariffs from China and other major trade partners. Trade damages were estimated using a partial equilibrium Armington-type model (U.S. Department of Agriculture, 2019c). For each county, commodity payment rates² were first multiplied by historic acreage and yield data for those commodities. The resulting total estimated trade damages for the county were then divided by total acres planted to obtain the county per-acre rate (U.S. Department of Agriculture, 2019c). It is noteworthy that the estimated commodity payment rates for corn and soybeans for 2019 were equivalent to \$0.14 and \$2.05 per bushel equivalent, respectively, based on the analysis of the USDA (U.S. Department of Agriculture, 2019c). The 2018 MFP rates were \$0.01 and \$1.65 per bushel for corn and soybean, respectively. Detailed information about the methods used to calculate the payment rates is available at the U.S. Department of Agriculture (2019c). We do our analysis at a county level because public data is available at the county level from the National Agricultural Statistics Service (NASS).

More specifically, the calculations used for this study are:

- Difference in MFP payments per acre = $M_{2019} - M_{2018}$
- M_{2019} is a flat county rate for all non-specialty crops that comes directly from USDA
- M_{2018} is different for corn and soybean producers
- For corn producers, $M_{2018} = \$0.01 \times \text{Yield}_{2018}$
- For soybean producers, $M_{2018} = \$1.65 \times \text{Yield}_{2018}$
- Percentage change in payment = $\frac{M_{2019} - M_{2018}}{M_{2018}} \times 100$

Results

Figures 1–4 show the changes in MFP payments at the county level, in dollars (1, 3) and percentages (2, 4), for 14 corn and soybean producing Midwest and Plains states: Arkansas, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Texas, and Wisconsin. These states accounted for 88% of both total U.S. corn production and total U.S. soybean production in 2019 (U.S. Department of Agriculture, 2020c).

Corn

There were 706 counties in the 14 states for which data on payments to average producers who produced corn (but also could have grown other crops) for both 2018 and 2019 were available to make the comparisons (i.e. NASS had reported corn yield for 2018 and 2019 implying that there were corn producers in that county

although the set of corn producers in the county may have differed). Figure 1 shows the changes in dollar payments for producers on a per acre basis from 2018 to 2019, while Figure 2 shows the percentage change in payments per acre for the same set of counties. All the county average payment rates increased in 2019 compared to 2018. The lowest increase, measured in dollars per acre, was for producers of Mountrail County, North Dakota (\$13.94), and the lowest increase, measured in percentage change, was for producers of Deuel County, Nebraska (753%).

It is not feasible to report results for all 706 counties so in Table 1 we report the top and bottom ten counties in terms of the change in payments from the two programs. Producers in counties with lower average corn yields saw the highest increase in the payments per acre because the 2018 payment was based on total production and the per unit MFP payment rate by commodity, whereas there was a flat rate for 2019 irrespective of the commodity. From Table 1, it is clear that the bottom ten counties are those that had a lower 2019 MFP payment rate. Note that for the top ten counties producers did not receive the maximum payment (\$150/acre). Instead, these are the counties with the greatest change in payment rates from 2018 to 2019. Some counties had low planted acres and/or yield and producers in those counties received large increases in payments per acre, on average, in 2019 compared to 2018 because of the shift to flat county rates.

It is important to note that the counties in Table 1 are not in major corn producing states. Furthermore, it should also be noted that weather problems and flooding in 2019 delayed and prevented planting in many of these states which may have affected the planted acres. For the entire United States, there does not seem to have been a significant change in total planted acres for corn in 2019 compared to 2018 even though producers who planted corn received larger MFP payments. Total planted corn acres in the United States increased slightly in 2019 (89.75 million) compared to 2018 (88.87 million) (U.S. Department of Agriculture, 2020c). The additional 874,000 acres in 2019 represented only about a one-percent increase compared to 2018.

We examine the changes in planted acres at county and state level for the 14 states. Figures 3 and 4 show the percentage and acres change in corn planted acres for the 14 states. For some states such as Iowa, Kansas, Nebraska, North Dakota, and Texas acreage increased, with Texas registering the highest increase (13%). In others, Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio, South Dakota, and Wisconsin acreage fell, with Michigan reporting the largest decrease (11%). Among

¹ County payment rates can be found at: <https://www.farmers.gov/sites/default/files/documents/PaymentRates.pdf>.

² Commodity rates were based on the estimated trade damages to the commodity per unit of production.

Figure 1. Change in MFP Payments per Acre for Corn Planted Acres at County Level, 2018-2019

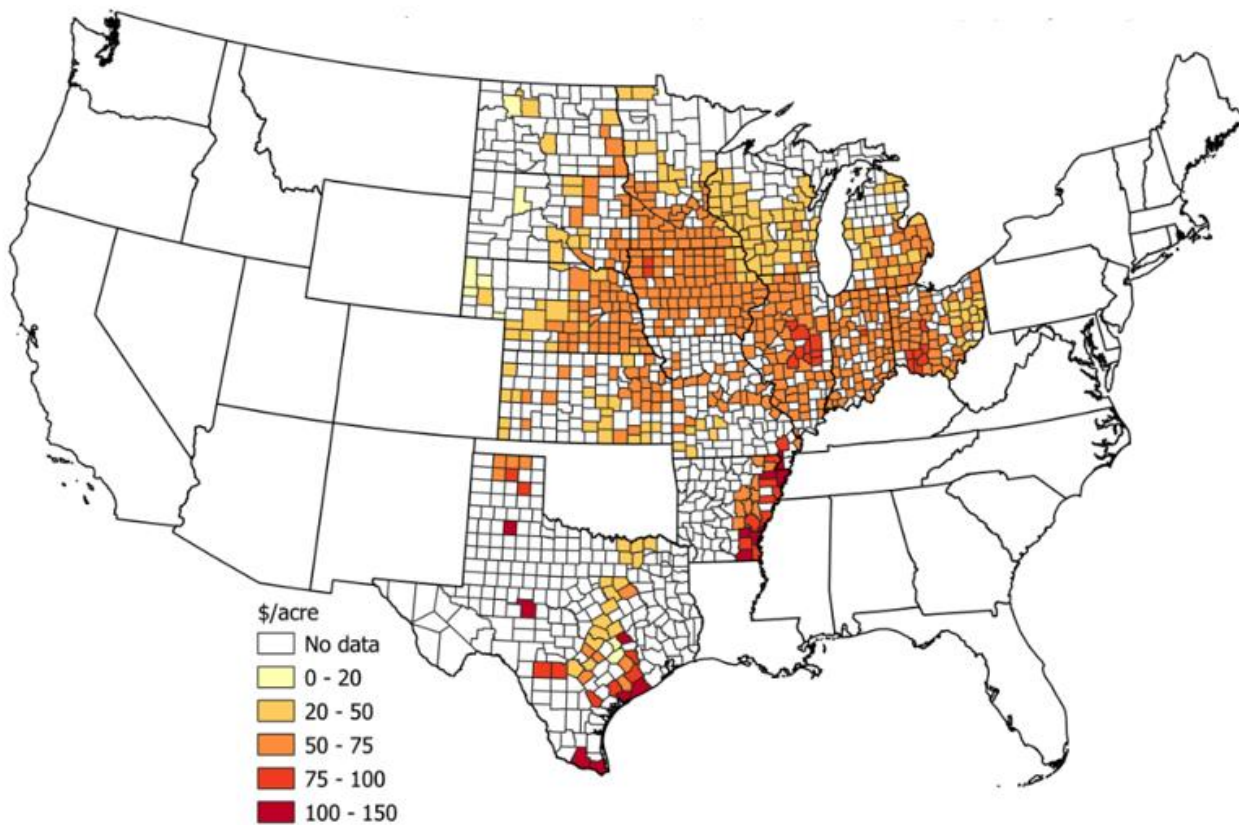


Figure 2. Percentage Change in MFP Payments per Acre for Corn Planted Acres at County Level, 2018-2019

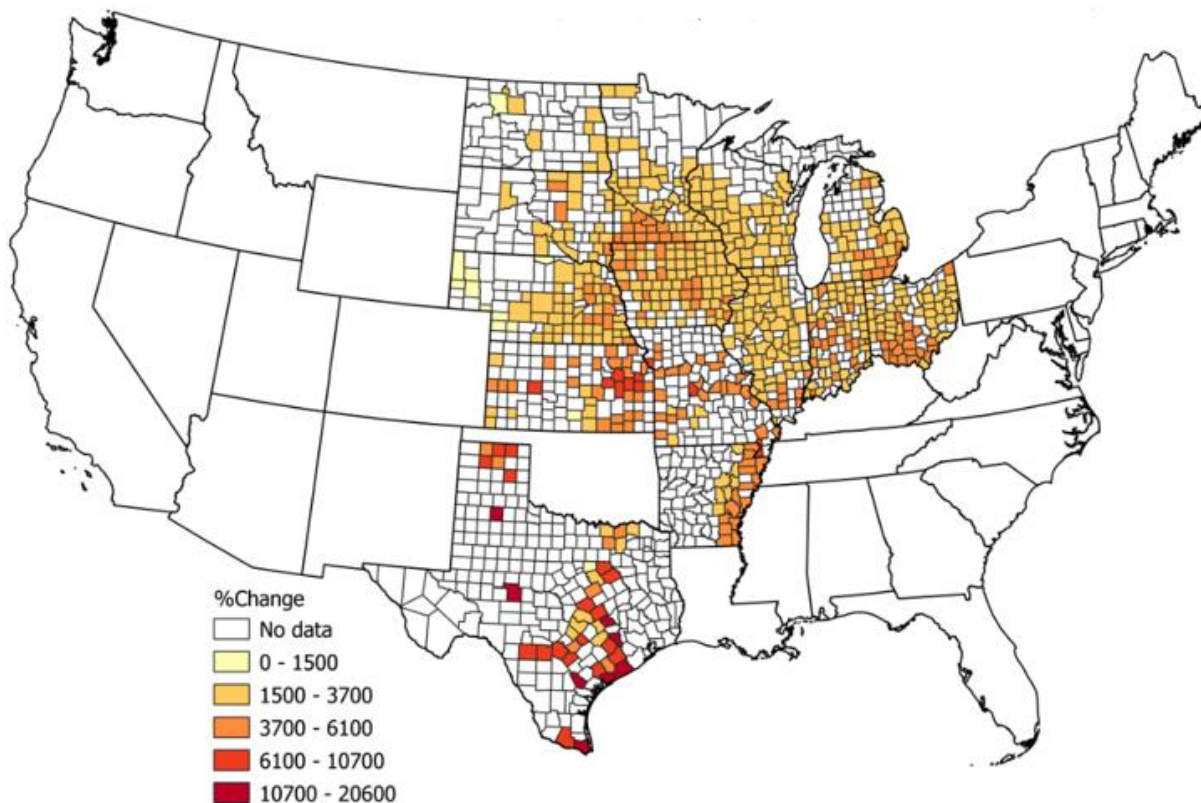


Figure 3. Percentage Change in Corn Planted Acres at County Level, 2018-2019

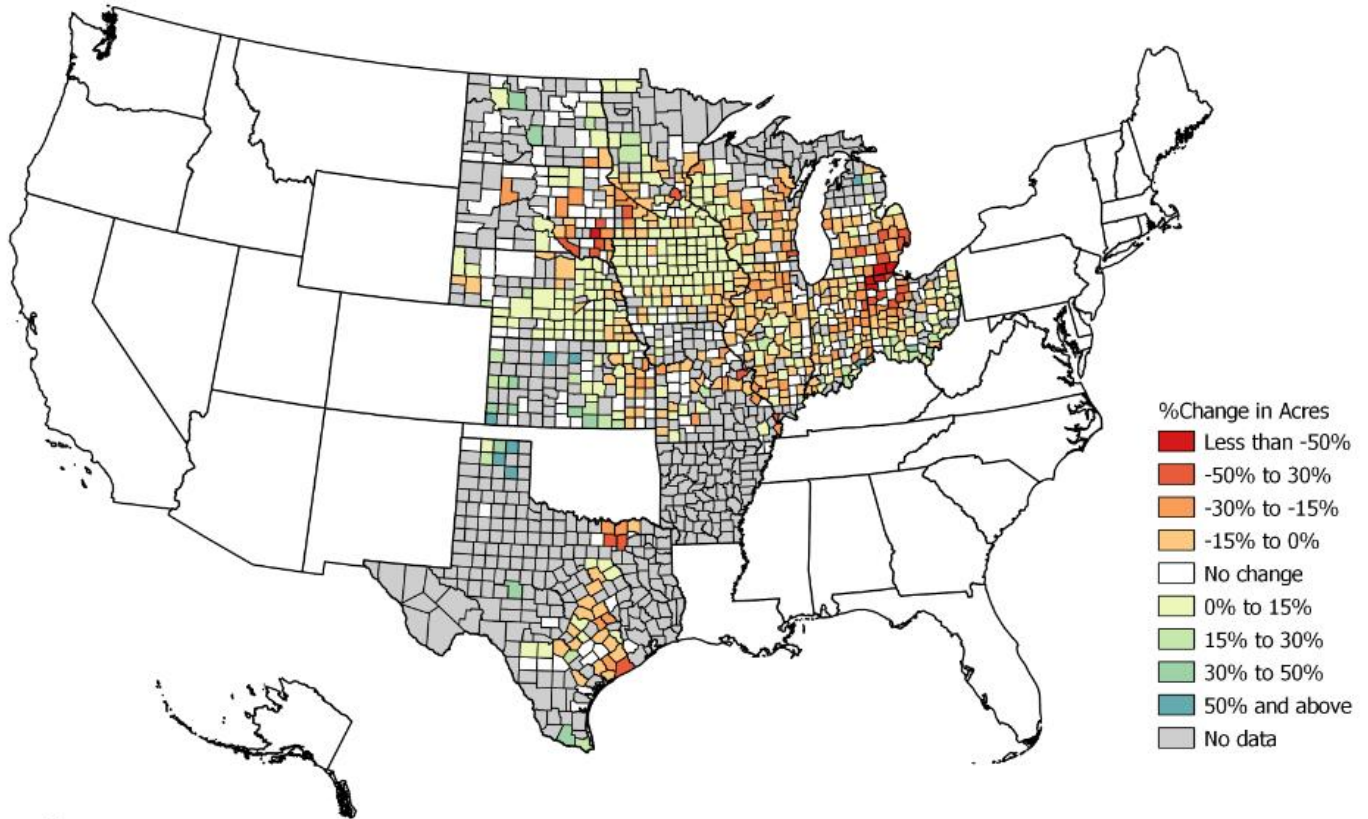


Figure 4. Change in Corn Planted Acres at County Level, 2018-2019

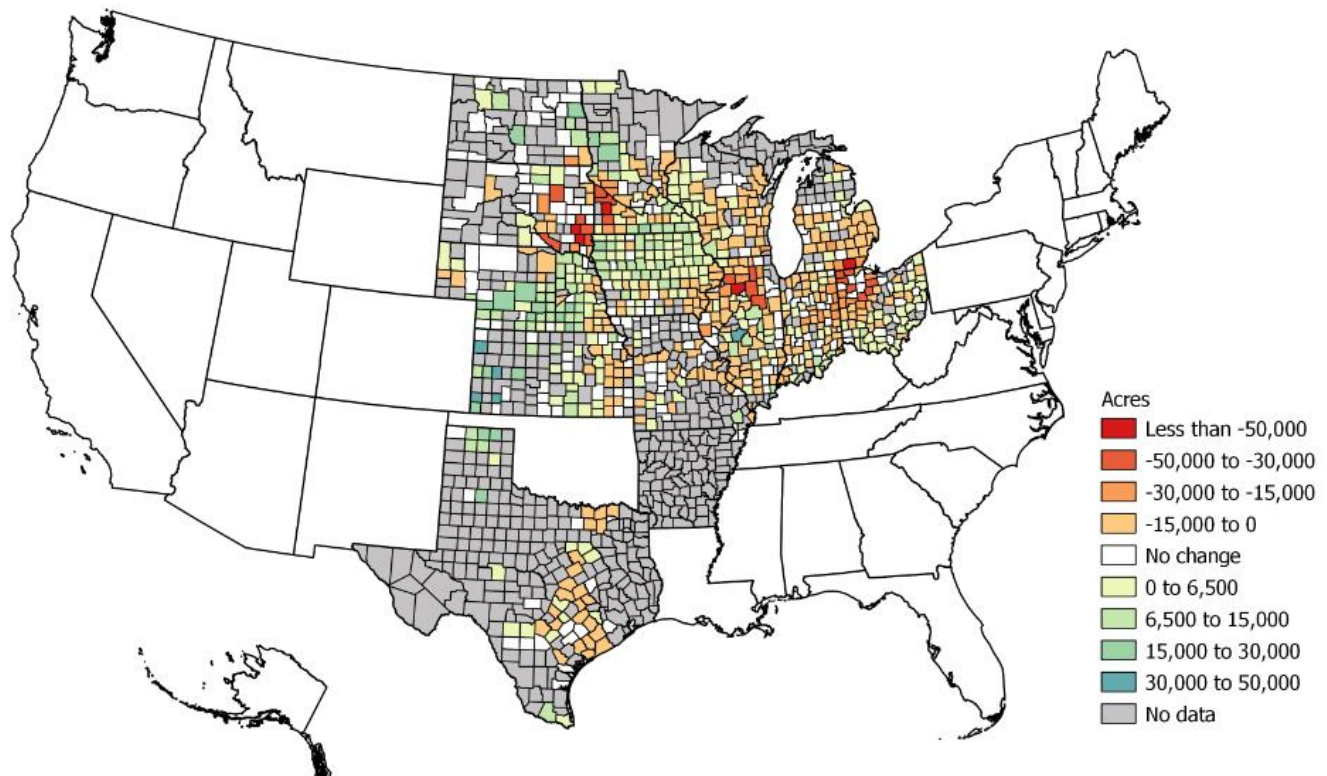


Table 1. Change in MFP Payments per Acre for Corn Planted Acres at County Level (top ten), 2018-2019

State	County	Per Acre MFP Payment (\$)		Change per Acre, 2018–2019		Corn Planted Acres		2019 Corn Yield (bushels per acre)
		2019	2018	(\$)	(%)	2018	2019	
Top ten counties								
Texas	Cameron	135.00	0.65	134.35	20,637	32,900	38,000	81
Texas	Floyd	132.00	0.70	131.30	18,730	12,900	35,000	131
Missouri	Dunklin	125.00	1.45	123.55	8,509	29,200	29,200	181
Arkansas	Mississippi	122.00	2.00	120.00	6,000	19,700	21,600	164
Arkansas	Craighead	118.00	1.96	116.04	5,908	34,100	35,900	192
Texas	Burleson	114.00	0.68	113.32	16,689	10,600	7,800	83
Texas	Matagorda	113.00	0.68	112.32	16,591	22,800	14,100	104
Arkansas	Desha	109.00	1.92	107.08	5,568	26,200	35,700	182
Arkansas	Ashley	109.00	1.95	107.06	5,504	27,300	37,000	166
Texas	Hidalgo	108.00	1.45	106.56	7,374	34,800	47,000	111
Bottom ten counties								
Nebraska	Morrill	24.00	1.54	22.46	1,460	72,800	72,000	159
Texas	Johnson	24.00	1.93	22.07	1,144	16,600	17,000	80
Nebraska	Scotts Bluff	22.00	1.54	20.46	1,329	81,800	77,700	151
Texas	Fayette	21.00	0.67	20.33	3,030	9,200	8,500	109
Nebraska	Box Butte	19.00	1.98	17.02	861	89,300	94,400	150
Nebraska	Sioux	19.00	2.01	16.99	847	14,300	15,200	172
Nebraska	Deuel	18.00	2.11	15.89	753	41,000	52,300	110
Texas	Lee	16.00	0.69	15.32	2,236	800	600	129
South Dakota	Ziebach	15.00	0.79	14.21	1,804	21,500	18,100	98
North Dakota	Mountrail	15.00	1.06	13.94	1,315	5,200	5,600	117

Source: USDA data and authors' calculation.

the top counties, Scott, Kansas registered the largest increase in planted acreage between 2018 and 2019, 44,200 acres (49%) while McCook county, South Dakota had the largest decrease in acreage 77,330 acres (64%). Extensive flooding in South Dakota resulted in 3.9 million acres of prevented planting and this may have contributed to the large decrease in acreage for this county (Farm Bureau 2019).

Average nominal corn prices increased over the most recent three years, from \$3.36 per bushel in 2017 to \$3.85 in 2019, and these price increases may have played a role in the anticipated acreage increase (U.S. Department of Agriculture, 2020c). Corn acreage in 2019 had been expected to increase even before the announcement of the MFP payments because relative prices and expected returns favored corn over soybeans (Rook 2019).

Soybeans

There were 564 counties in the 14 states for which data for both 2018 and 2019 were available to compare payment rates to producers who had planted soybeans. As noted before these producers may also have planted other crops. Figure 5 shows the changes in dollar payments on a per acre basis for the producers from 2018 to 2019, while Figure 6 shows percentage changes for the same counties. Unlike producers who had planted corn both years, not all producers who planted soybeans both years received an increase in MFP payments per acre in 2019 compared to 2018. In fact, in only 32 counties did producers receive higher payment rates. The largest increase was for producers in Dunklin County, Missouri (\$54.54, or 77%). The greatest decrease was for producers of Grant County, Wisconsin (-\$60.45 or -58%).

Table 2 lists the ten counties in which producers received the greatest increase in payments and the ten counties in which producers received the greatest

Figure 5. Change in Dollar per Acre MFP Payments for Soybean Planted Acres, 2018–2019

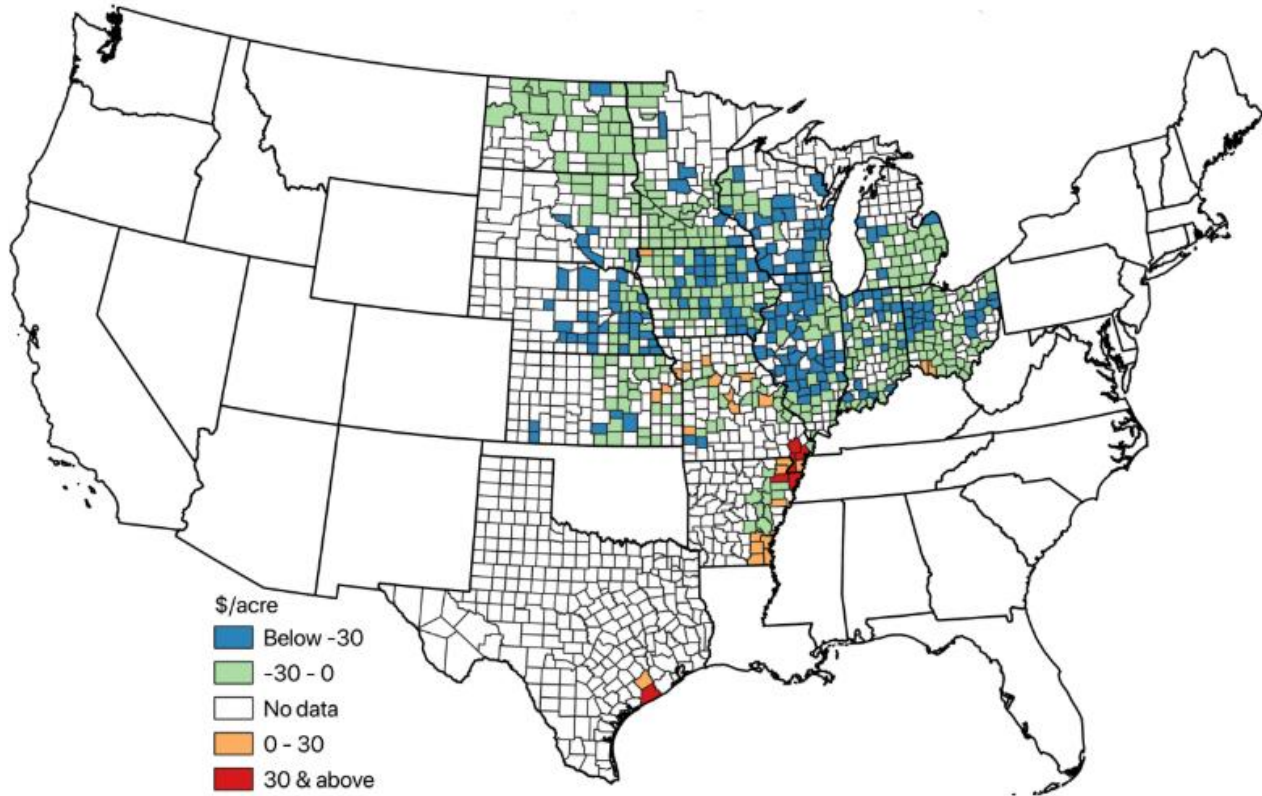


Figure 6. Change in Percentage per Acre MFP Payments for Soybean Planted Acres, 2018-2019

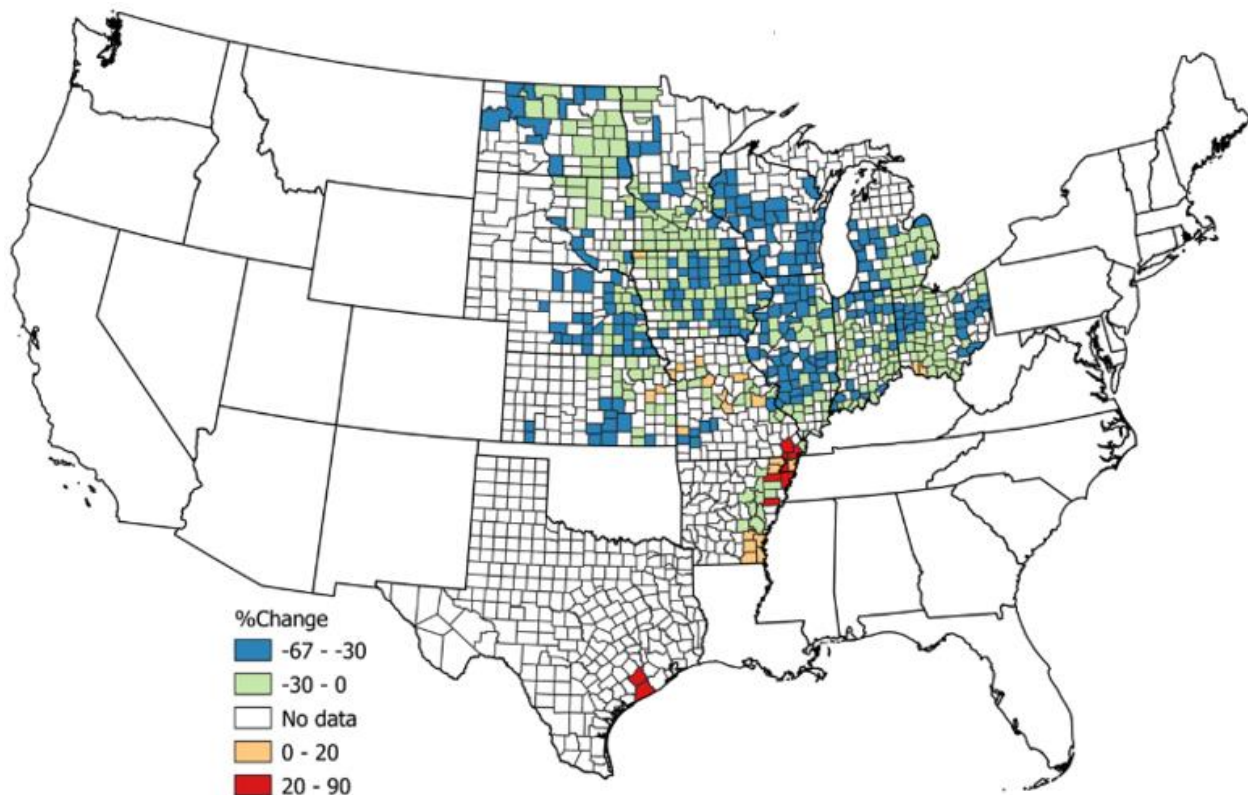


Table 2. Change in MFP Payments for Soybean Planted Acres Ranked by Highest Decrease and Increase

State	County	Per Acre MFP Payment (\$)		Change per Acre, 2018–2019		Soybean Planted Acres		2019 Soybean Yield (bushels per acre)
		2019	Calculated 2018	(\$)	(%)	2018	2019	
Ten counties with highest decrease in MFP payment								
Wisconsin	Grant	44.00	104.45	-60.45	-58	80,100	61,600	55
Illinois	Carroll	55.00	113.69	-58.69	-52	44,000	39,000	65
Illinois	Morgan	73.00	131.67	-58.67	-45	126,000	120,000	64
Nebraska	Pawnee	51.00	108.90	-57.90	-53	68,900	67,000	49
Illinois	Sangamon	76.00	132.66	-56.66	-43	192,000	166,000	66
Kansas	Seward	53.00	108.57	-55.57	-51	13,800	8,300	64
Iowa	Clayton	50.00	105.11	-55.11	-52	59,200	50,300	56
Wisconsin	Kewaunee	29.00	83.82	-54.82	-65	15,700	11,500	42
Indiana	Lagrange	55.00	109.73	-54.73	-50	36,000	32,800	48
Wisconsin	Lafayette	49.00	103.46	-54.46	-53	63,100	55,900	59
Ten counties with lowest decrease or increase in MFP payments								
Missouri	Pemiscot	99.00	82.17	16.83	20	161,000	142,500	46
Arkansas	Ashley Saint	109.00	90.59	18.42	20	57,500	39,400	51
Arkansas	Francis	100.00	73.10	26.91	37	150,400	133,000	50
Texas	Wharton	95.00	66.33	28.67	43	16,500	9,200	30
Missouri	Stoddard	100.00	67.49	32.52	48	186,000	164,000	54
Arkansas	Craighead	118.00	82.50	35.50	43	96,900	74,100	46
Arkansas	Mississippi	122.00	83.33	38.68	46	269,600	235,000	48
Missouri	New Madrid	121.00	79.70	41.31	52	205,000	156,000	40
Texas	Matagorda	113.00	59.40	53.60	90	3,300	1,400	32
Missouri	Dunklin	125.00	70.46	54.55	77	99,300	84,400	46

decrease in payments for soybeans. Producers in Grant County, Wisconsin, saw the largest decrease (\$60.45) in MFP payments per acre. Put in bushel-equivalent terms, at \$9 per bushel for soybeans the difference in payments would be equivalent to a decrease in yield of almost seven bushels per acre. Conversely, in Dunklin County, Missouri, producers received \$54.44 more per acre in MFP payments compared to 2018. It is important to note that these states are not the major soybean producing states. Total planted soybean acres in the United States decreased in 2019 (76.10 million acres) compared to 2018 (89.17 million acres).

Examination of the soybean planted acres for the 14 states, we find that acreage fell in all prominent soybean producing states, with Texas registering a 54% decline and South Dakota a 28% decline. Audrain County, Missouri registered the largest increase (10,000 acres; 6%) and Brown County, South Dakota saw the largest decline (133,500 acres; 36%) compared to 2018. Figures 7 and 8 shows the percentage and acres decrease in planted soybean acres for the 14 states. Based on data

from the U.S. Department of Agriculture (2020c), the nominal price received per bushel of soybeans was \$ 9.33 in 2017, \$8.48 in 2018, and \$8.75 in 2019. The prices in 2018 and 2019 were still lower than 2017 price which could have led to producers planting less acres.

Summary and Discussion

The 2018 MFP payment rates were relatively higher for soybean and sorghum because those commodities were particularly hard hit by the Chinese retaliatory tariffs. About half of U.S. soybean production is exported, and China accounted for 57% of U.S. soybean exports in 2017. Likewise, some 56% of U.S. sorghum production was exported in 2017 and 81% of total U.S. exports were shipped to China in that year (Zheng et al., 2018). U.S. soybean exports to China were valued at \$10.5 billion in 2016 and \$12.2 billion in 2017, falling to only \$3.1 billion in 2018 as a result of the trade war (Choe, Hammer, and Montgomery, 2019). In 2019, soybean exports to China rebounded somewhat, to \$8.0 billion although they were still well below levels reached in 2017 (U.S. Department of Agriculture, 2020a). The 2018

Figure 7. Percentage Change in Soybean Planted Acres at County Level, 2018-2019

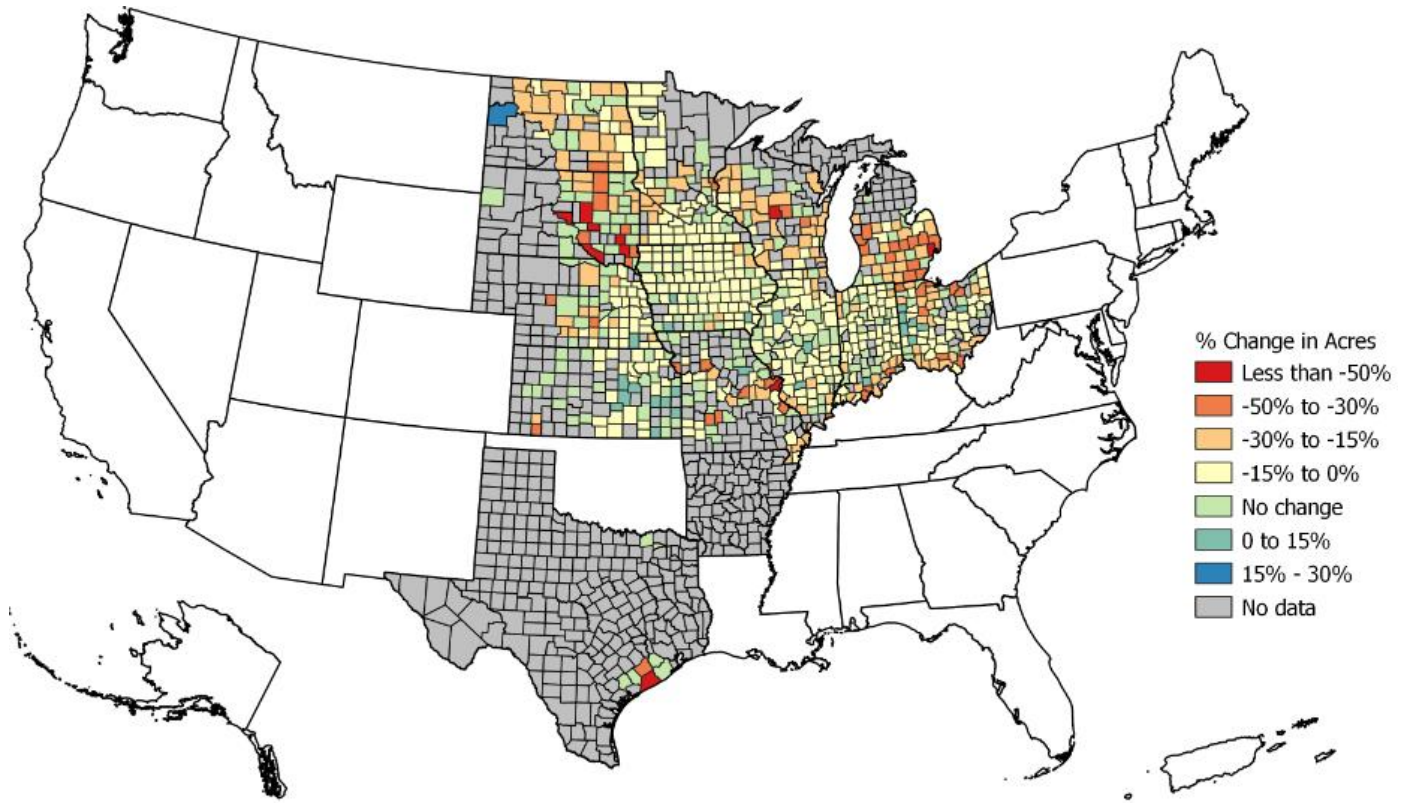
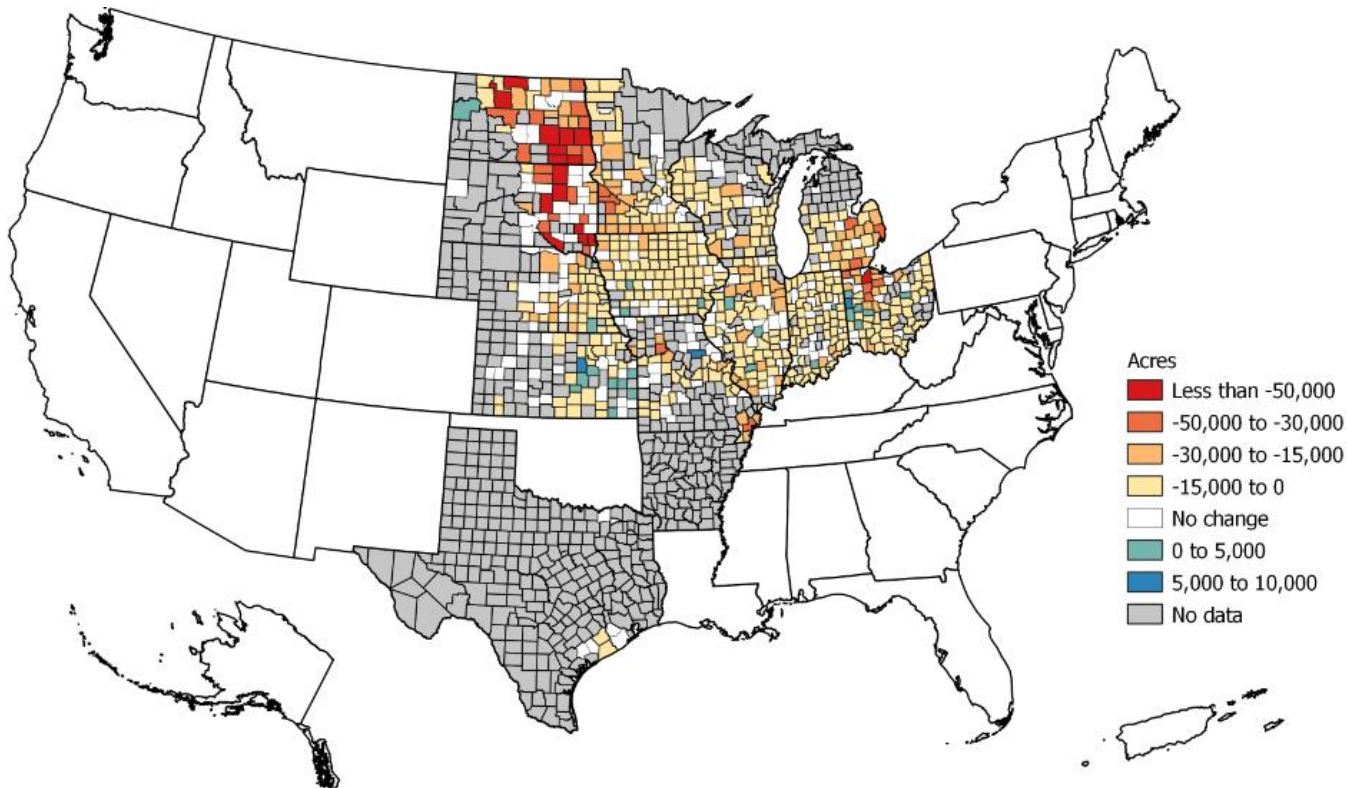


Figure 8. Change in Soybean Planted Acres at County Level, 2018-2019



MFP rate for corn was lower because U.S. corn exports faced lower retaliatory tariff exposure. These lower rates were attenuated in 2019 as the flat per acre payment rate, which resulted in a higher payment rate for some corn producers while the payment rate for some soybean producers increased by much smaller amounts or, in many cases, was lower. The higher amounts received may reflect the fact that by 2019, the list of agricultural products subject to Chinese retaliatory tariffs had expanded substantially, extending payment eligibility to producers of other crops. Virtually all U.S. agricultural exports were affected by the tariffs in 2019, although the degree to which products were affected varied greatly.

The largest increases in payments per acre were received by corn producers in Texas and Arkansas, neither of which are large corn producing states, and the higher 2019 county rate was likely the result of those counties also producing cotton or sorghum, which had higher commodity rates. Conversely, some of the counties that saw “lower” 2019 MFP rates likely had acreage of non-specialty crops like barley or oats which had not faced export exposure to the retaliatory tariffs.

For More Information

Ahmann, T., and D. Chance. 2016, August 25. “Trump Targets China Trade, Says Plans Serious Measures.” *Reuters*. Available online: <https://www.reuters.com/article/us-usa-election-trump-china/trump-targets-china-trade-says-plans-serious-measures-idUSKCN10Z2JN>.

Bown, C.P., and M. Kolb. 2020, March 13. “Trump’s Trade War Timeline: An Up-to-Date Guide.” *Peterson Institute for International Economics*. Available online: <https://www.piie.com/sites/default/files/documents/trump-trade-war-timeline.pdf>.

Burns, D., J. Ekblom, and A. Shalal. 2019, October 10. “Timeline: Key Dates in the U.S.-China Trade War.” *Reuters*. Available online: <https://www.reuters.com/article/us-usa-trade-china-timeline/timeline-key-dates-in-the-us-china-trade-war-idUSKBN1WP23B>.

Carter, C.A. and Steinbach, S., 2020. *The Impact of Retaliatory Tariffs on Agricultural and Food Trade* (No. w27147). National Bureau of Economic Research.

Choe, J., A. Hammer, and C. Montgomery. 2019. *U.S. Soybean Exports to China Crushed amid Rising Trade Tensions*. Washington, DC: U.S. International Trade Commission, Executive Briefings on Trade. Available online: https://www.usitc.gov/publications/332/executive_briefings/chinasoyebot.pdf.

CNBC. 2017, April 9. “At US-China Summit, Trump Presses Xi on Trade, N. Korea; Progress Cited.” *CNBC*. Available online: <https://www.cnbcm.com/2017/04/09/at-us-china-summit-trump-presses-xi-on-trade-n-korea-progress-cited.html>.

Corasaniti, N., A. Burns, and B. Appelbaum. 2016, June 28. “Donald Trump Vows to Rip Up Trade Deals and Confront China.” *New York Times*. Available online: <https://www.nytimes.com/2016/06/29/us/politics/donald-trump-trade-speech.html>.

Crosingham, R. 2020, April 7. “Coronavirus Could Lead to Renegotiation of US-China Trade Deal.” *Omaha World Herald*. Available online: https://www.omaha.com/news/national/coronavirus-could-lead-to-renegotiation-of-us-china-trade-deal/article_0a80187b-9042-59cf-a3ac-ac7cb7828dbf.html.

Farm Bureau. 2019. “Prevent Plantings Set Record in 2019 at 20 Million Acres,” *Market Intel*, August 28. Available online: <https://www.fb.org/market-intel/prevent-plantings-set-record-in-2019-at-20-million-acres>

- Giri, A., E.W.F. Peterson, and S. Sharma. 2018. "The Impact of the Market Facilitation Program on U.S. Soybean, Sorghum and Corn Producers." *Choices* 33(4).
- Good, K. 2020, April 20. "Trump Administration Announces Coronavirus Food Assistance Program, \$19 Billion Relief Program for Agriculture." *Farm Policy News*. Available online: <https://farmpolicynews.illinois.edu/2020/04/trump-administration-announces-coronavirus-food-assistance-program-19-billion-relief-program-for-agriculture/>.
- Grant, J., S. Arita, C. Emlinger, R. Johansson, and C. Xie. 2020. "Agricultural Exports and Retaliatory Trade Actions: An Empirical Assessment of the 2018/19 Trade Conflict."
- Heatley, J. 2017, July 21. "After 100 Days and Much Hype, U.S.-China Talks Fail." *Forbes.com*. Available online: <https://www.forbes.com/sites/insideasia/2017/07/21/after-100-days-and-much-hype-u-s-china-talks-fall-flat/#47cc2b5f2010>.
- Lawder, D., A. Shalal, and J. Mason. 2020, January 15. "What's in the U.S.-China Phase 1 Trade Deal." *Reuters*. Available online: <https://www.reuters.com/article/us-usa-trade-china-details-factbox/whats-in-the-us-china-phase-1-trade-deal-idUSKBN1ZE2IF>.
- Mason, J. 2018, January 17. "Exclusive: Trump Considers Big 'Fine' over China Intellectual Property Theft." *Reuters*. Available online: <https://www.reuters.com/article/us-usa-trump-trade-exclusive/exclusive-trump-considers-big-fine-over-china-intellectual-property-theft-idUSKBN1F62SR>.
- Paulson, N., J. Coppess, G. Schnitkey, K. Swanson, and C. Zulauf. 2019. "Mapping the Market Facilitation Program." *farmdoc daily* (9):232.
- Reuters (2019). "Timeline: Key Dates in the U.S.-China Trade War," October 10. Available at: <https://www.reuters.com/article/us-usa-trade-china-timeline/timeline-key-dates-in-the-u-s-china-trade-war-idUSKBN1ZE1AA> Accessed August 1, 2020.
- Rook, Michelle 2019. "Acreage Shift Expected for 2019. The Question is How Much?" *AGWEEK*, January 7. Available online: <https://www.agweek.com/business/agriculture/4551873-acreage-shift-expected-2019-question-how-much>
- U.S. Department of Agriculture. 2018. *Market Facilitation Program Fact Sheet*. Washington, DC: U.S. Department of Agriculture, Farm Service Agency, September. Available online: https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/FactSheets/2018/Market_Facilitation_Program_Fact_Sheet_September_2018C.pdf
- U.S. Department of Agriculture. 2019a. "China Raises Prices on US Agricultural Products." Washington, DC: U.S. Department of Agriculture, Foreign Agriculture Service, GAIN Report CH19030. Available online: https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=China_Raises_Tariffs_on_US_Agricultural_Products_Beijing_China_-_Peoples_Republic_of_5-17-2019.
- U.S. Department of Agriculture. 2019b. *Market Facilitation Program Fact Sheet*. Farm Service Agency, United States Department of Agriculture. September 2019. https://www.farmers.gov/sites/default/files/documents/Market_Facilitation_Program-Fact_Sheet-Sept.pdf
- U.S. Department of Agriculture. 2019c. *Trade Damage Estimation for the 2019 Market Facilitation Program and Food Purchase and Distribution Program*. Office of Chief Economist. August 2019. Available online: https://www.usda.gov/sites/default/files/documents/USDA_Trade_Methodology_Report_2019.pdf
- U.S. Department of Agriculture. 2020a. *Global Agricultural Trade System (GATS)*. Washington, DC: U.S. Department of Agriculture, Foreign Agriculture Service. Available online: <https://apps.fas.usda.gov/gats/ExpressQuery1.aspx>.
- U.S. Department of Agriculture. 2020b. *Market Facilitation Program*. Washington, DC: U.S. Department of Agriculture, Farm Service Agency. Available online: <https://www.fsa.usda.gov/programs-and-services/market-facilitation-program/index>
- U.S. Department of Agriculture. 2020c. *Quick Stats*. Washington, DC: U.S. Department of Agriculture, National Agricultural Statistics Service. Available online: <https://quickstats.nass.usda.gov/> [Accessed March 15, 2020].

Zheng, Y., D. Wood, H.H. Wang, and J.P.H. Jones. 2018. "Predicting Potential Impacts of China's Retaliatory Tariffs on the U.S. Farm Sector." *Choices* 33(2).

Author Information: Anil Giri (giri@ucmo.edu) is Research Agricultural Economist, Farm Economy Branch, USDA Economic Research Service. E. Wesley F. Peterson (epeterson1@unl.edu) is Professor, Department of Agricultural Economics, University of Nebraska-Lincoln, Lincoln, NE. Sankalp Sharma (ssharm31@kent.edu) is Assistant Professor, Kent State University–Tuscarawas, Tuscarawas, OH. Iuliia Tetteh (jproto1@ilstu.edu) is Assistant Professor, Illinois State University, Normal, IL.

Acknowledgments:

We thank two anonymous reviewers for their feedback. We also thank two USDA economists, Jessica Todd and Dipak Subedi, and the Chief of the Farm Economy Branch, Jeffery Hopkins, for their review and feedback. We also thank Mary Ahearn, Acting Deputy Director for Research and Communications in the Resource and Rural Economics Division, and three other USDA economists, Shawn Arita, Sharon Sydow, and Ashely Hungerford, for reviewing the paper. We thank four University of Central Missouri students, Jill Morgan, Jillian Herigon, Christina Sperry and Addison Cunningham, for their assistance with data entry.

The findings and conclusions in this paper have not been formally disseminated by the U.S. Department of Agriculture and should not be construed to represent any determination or policy.

©1999–2020 CHOICES. All rights reserved. Articles may be reproduced or electronically distributed as long as attribution to Choices and the Agricultural & Applied Economics Association is maintained. Choices subscriptions are free and can be obtained through <http://www.choicesmagazine.org>.