Trade Damage Estimation for the 2019 Market Facilitation Program and Food Purchase and Distribution Program

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Executive Summary

This paper outlines the methodology USDA employed to estimate the level of gross trade damage caused by retaliatory tariffs to U.S. agricultural exports by commodity. Those estimates were used to determine the 2019 Market Facilitation Program (MFP) payment rates and the value of commodities to be targeted for purchase under the 2019 Food Purchase and Distribution Program (FPDP). The paper also outlines the formulas employed to calculate MFP county rates for non-specialty crops, as well as national MFP rates for specialty crops, hogs, and milk. USDA announced details on those programs on July 25, 2019. For more details about the trade mitigation programs, visit https://www.farmers.gov/manage/mfp. Rulemaking and related documents, including the Cost Benefit Analysis (CBA), for trade mitigation programs can be found at https://www.regulations.gov/docket?D=CCC-2019-0003.

Trade Damage Estimation for the 2019 Market Facilitation Program (MFP) and Purchase Targets for the Food Purchase and Distribution Program (FPDP)

On May 23, 2019, the Secretary of Agriculture announced that USDA would take several actions to assist farmers in response to continued retaliation and trade disruption. President Trump authorized USDA to provide up to $16 billion in programs, in line with the estimated impacts of retaliatory tariffs on U.S. agricultural producers and other trade disruptions. Further details of the 2019 trade mitigation program were announced on July 25, 2019.

In 2018, USDA developed an estimate of gross trade damages for U.S. commodities affected by retaliatory tariffs to establish commodity payment rates for the Market Facilitation Program (MFP) and purchase targets for the Food Purchase and Distribution Program (FPDP). On September 13, 2018, USDA provided a detailed accounting of how those gross damage estimates were calculated.[1]

For the 2018 and the 2019 trade mitigation programs, USDA defined economic losses due to the trade actions in terms of gross trade damages. Gross trade damages were defined as the total amount of expected export sales lost to the retaliatory partner due to the additional tariffs. This metric provides one assessment of economic loss, and there are other forms of economic injury that could be measured. Gross trade damage contributes to the economic cost to the producer to adjust to the disrupted markets, manage surplus commodities, and expand and develop new markets, consistent with the design of the MFP. Further, export sale losses provide the most direct link to the retaliatory action(s) and is the single estimate that most comprehensively accounts for the full scale of trade impacts. In part due to these reasons, it is often employed in World Trade Organization (WTO) arbitrations assessing the level of nullification or impairment resulting from a measure found to be WTO-inconsistent and is the approach applied here.

For the 2019 program, USDA employed the same methodology to estimate gross trade damages, using the same trade model (Global Simulation Analysis of Industry-Level Trade Policy) documented in 2018. That model simulates the expected reduction in U.S. exports to the retaliatory partner market. Gross trade damages are calculated as the difference in bilateral trade with the tariff and the baseline (without the tariff).

As with the 2018 trade mitigation programs, the gross trade damage estimate is the basis for developing the 2019 MFP payment rates, which are detailed in this paper, as well as FPDP purchase targets. The 2019 programs are designed to aid producers in the disposition of surplus commodities; to aid in the expansion of domestic markets; or to aid in the development of new and additional markets and uses. Those programs are intended for crops or commodities that are negatively impacted by trade actions of foreign governments. Specifically, the 2019 MFP payments may provide producers with an opportunity to adjust to delays in the marketing of their crops and to costs associated with reorienting their sales to new and additional markets.

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[1] For details see: https://www.usda.gov/oce/trade/USDA_Trade_Methodology_Report.pdf.

<u>**Changes in Retaliatory Tariffs**</u>

The gross trade damage estimate for 2019 takes into account changes in retaliatory tariffs since the original damage estimate used for the 2018 trade mitigation programs. There have been five changes to the retaliatory tariffs applied to U.S. agricultural products since the 2018 damages were calculated:

a) On September 24, 2018, China imposed additional tariffs ranging from 5 to 10 percent on U.S. goods, which were applied to $3 billion of agricultural products not previously impacted by China's retaliatory tariffs. Given the timing of China's action, these tariffs were not included in the trade damage analysis for the 2018 trade mitigation programs.

b) On May 17, 2019, Mexico and Canada agreed to lift all retaliatory tariffs related to the U.S.-imposed Section 232 steel and aluminum tariffs. These tariffs covered a broad range of agricultural and food products, including U.S. pork and dairy.

c) On May 21, 2019, Turkey reduced retaliatory tariffs assessed on U.S. products by half in response to changes in U.S.-imposed Section 232 tariffs on steel and aluminum from Turkey. Turkey's retaliatory tariffs include some U.S. tree nuts and rice.

d) On June 1, 2019, China increased retaliatory tariffs assessed on the U.S. on almost $2 billion of agricultural goods by an additional 5 to 15 percent. This new list includes many U.S. horticultural and specialty products.

e) On June 16, 2019, India imposed retaliatory tariffs ranging from 2 to 25 percent on U.S. apples, rice, almonds, chickpeas, and other commodities. India had announced retaliatory tariffs on U.S. goods in July 2018 but delayed implementation until June 2019.

The model commodity coverage was expanded to include the broader range of U.S. agricultural products affected by retaliation, as well as the increase in (China) or implementation of (India) retaliatory tariffs. The model scenarios were also revised to remove the retaliatory tariffs that Canada and Mexico lifted, as well as the reduction in Turkey's tariffs.

<u>**Base Year Changes Account for Long-Standing Distortionary Policies and Longer-Term Impacts**</u>

For the 2018 trade mitigation programs, USDA employed 2017 trade data as the base year for projecting trade damages. 2017 was used as the 2018 programs' base year because it was the most recent full year of trade data available and reflected trade levels prior to the imposition of retaliatory tariffs starting in April 2018 for some agricultural products.[2]

For the 2019 trade mitigation programs, USDA employed a longer time-series to estimate gross trade damages, by surveying trends in U.S. bilateral trade over a 10-year period (2009-2018). For some of the commodities affected by tariffs, 2017 was not the most representative base year on which to conduct the trade damage analysis. The 10-year period for determining a basis for the evaluating the tariff allows estimates to account for other contributing variables, such as longstanding trade barriers imposed by

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[2] In April 2018, China was the first trading partner to impose retaliatory tariffs on U.S. agriculture in response to Section 232 tariffs on aluminum and steel. Nearly all retaliatory tariffs – including those imposed by China in response to actions under Section 301 and Section 232, as well as those imposed by the EU, Canada, Mexico, and Turkey in response to actions under Section 232, were in place by July 2018. India was the only country that announced but did not immediately apply retaliatory tariffs on U.S. agricultural products in 2018.

China and other countries that have affected U.S. exports, as well as the longer-term impact of prolonged retaliatory tariffs.[3]

We included 2018 in this time-series, given that for some commodities, new market access had only just begun prior to the implementation of retaliatory tariffs. For example, in mid-2017, China and the United States agreed to improve market access for U.S. beef exports to China.[4] U.S. beef exports began to increase in late 2017 through the first half of 2018 before declining and leveling-off. U.S. beef had been banned from China since 2003, and prior to that ban, the United States was the country's largest beef supplier. Therefore, it is reasonable to expect that, but for the retaliatory tariffs that China imposed on U.S. beef in July 2018, U.S. beef exports to China would have continued to increase at a similar (if not higher) level as observed in the first half of 2018. Using 2017 as a base year does not fully capture the new market access opportunities for U.S. beef.

Other commodities have faced multi-year market access barriers into China and other countries that have implemented retaliatory tariffs. In recent years, unwarranted regulatory and trade-distorting measures have hindered U.S. corn exports to some of these markets, making the 2017 base year less representative of U.S. export levels.[5] Moreover, products made from corn, such as distillers dried grains and solubles (DDGS) and ethanol have been adversely impacted by China's earlier decisions to unilaterally increase tariffs (ethanol) and impose anti-dumping and countervailing duties (DDGS).[6] Other products facing multi-year market access barriers include poultry, rice, and wheat.

2019 MFP Payments and Payment Rates for Non-Specialty Crops

Given the timing of the 2019 Market Facilitation Program (MFP) during the crop year, USDA developed a single rate per acre in each county for MFP-eligible non-specialty crops, which include select non-specialty commodities both directly and indirectly affected by the trade dispute, in order to minimize potential distortions.

Payments to each producer are limited to:
- 2018 Farm Service Agency-certified planted acres;
- 2018 Farm Service Agency-certified prevented from planting acres (of non-specialty crops); and
- 2018 expiring Conservation Reserve Program acreage.

The specific commodity rates that form the basis of the county rate are derived from the gross trade damage estimates. Commodity rates are set as the estimated trade damages divided by the average volume of production for 2015-17 reported by NASS.

The county payment rates[7] were based on historical fixed average area and yields as discussed below. The total potential payment amount for non-specialty crops is the eligible area multiplied by the non-specialty county rate per acre. This total payment amount is subject to limitations further discussed under the "Total MFP Payments" heading, beginning on page 7 of the report.

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[3] To be clear, the model estimates the impact of the retaliatory tariff(s) on a given commodity.

[4] On June 12, 2017, USDA announced that it had reached an agreement with Chinese officials on the final details of a protocol to allow the United States to begin exporting beef to China. See https://www.usda.gov/media/press-releases/2017/06/12/us-china-finalize-details-send-us-beef-china

[5] See the USTR Foreign Trade Barriers Reports and the USTR Trade Policy Agenda and Annual Reports for more details. The most recent reports can be accessed at https://ustr.gov/about-us/policy-offices/press-office/reports-and-publications/2019.

[6] Ibid.

[7] See https://www.farmers.gov/manage/mfp for rates by county.

Non-specialty crops commodity rates

Non-specialty crops	Commodity Rate	Units
Soybeans	$2.05	BU
Cotton	$0.26	LB
Sorghum	$1.69	BU
Corn	$0.14	BU
Wheat	$0.41	BU
Rice	$0.63	CWT
Peanuts	$0.01	LB
Lentils	$3.99	CWT
Peas	$0.85	CWT
Alfalfa Hay	$2.81	TONS
Dried Beans	$8.22	CWT
Chickpeas	$1.48	CWT

Example of non-specialty crop county rate calculation

County A has planted an average of 20,000 acres of corn, 10,000 acres of soybeans, and 1,000 acres of barley. The historical average county yield is 180 bu/acre for corn, 60 bu/acre for soybeans, and 50 bu/acre for barley. The commodity rates under the 2019 MFP for corn and soybeans are $0.14/bu and $2.05/bu, respectively. Since there are no retaliatory tariffs on U.S. barley, the payment rate for barley is $0.00/bu.

County A's payment rate is calculated as follows:

Step 1: For each crop in a county, multiply fixed historical acres, fixed historical yields, and the payment rate per unit for each eligible non-specialty MFP crop
- County A Corn Damage: 20,000 acres × 180 bu/acre × $0.14/bu = $504,000
- County A Soybeans Damage: 10,000 acres × 60 bu/acre × $2.05/bu = $1,230,000
- County A Barley Damage: 1,000 acres × 50 bu/acre × $0.00/bu = $0

Step 2: Sum all calculated values from Step 1
- $504,000 + $1,230,000 + $0 = $1,734,000 in total non-specialty crop damage

Step 3: Sum the acres across all eligible non-specialty MFP crops
- 20,000 + 10,000 + 1,000 = 31,000 acres

Step 4: Calculate the county payment rate per acre by dividing the result of Step 2 by the result of Step 3
- $1,734,000/31,000 = $56/acre non-specialty crop county payment

Acres reported to the Farm Service Agency between 2015-2018 are used to calculate the historical fixed acres for each crop within a county. The 2015-2017 historical fixed county yield is calculated using the following cascade:

1. RMA county yield,
2. NASS county yield, if the RMA county yield is unavailable,
3. RMA T-yield, if the both the RMA county yield and NASS county yield are unavailable,
4. NASS state yield, if (1)-(3) are unavailable, and
5. NASS national yield, if (1)-(4) are unavailable.

Prevent Plant

2019 planting was characterized by substantial rainfall and cool weather that delayed planting of crops across the United States. Producers prevented from planting a 2019 non-specialty crop, but who planted a CCC-approved cover crop, with the potential to be harvested, qualify for a $15 per acre payment.[8]

Cups and Caps

The county payment rates per acre are cupped and capped at $15 per acre and $150 per acre, respectively.

2019 MFP Payments and Payment Rates for Hogs and Milk

Hogs: 2019 MFP payments for hog producers are based on live hog inventory on a day selected by the applicant between April 1, 2019 and May 15, 2019. Eligibility for 2019 MFP payments is again based upon independent ownership of the hogs; persons/legal entities that are contracted to grow hogs are not eligible for 2019 MFP.

Calculate the per unit payment rate for hogs:
>   Step 1: Calculate the gross trade damage estimate
>   Step 2: Subtract the FPDP purchase amount from the gross trade damage estimate to calculate the portion not covered by FPDP
>   Step 3: Divide the value from Step 2 by the number of hogs reported in the 2019 March inventory report to calculate the MFP payment rate per hog

Milk: 2019 MFP payments for dairy producers are based on historical production, the same as what was reported for participation in the USDA Dairy Margin Coverage Program or its predecessor, the Margin Protection Program for Dairy. The ownership share for milk will be as reported to FSA for the aforementioned programs for dairy operations that were in business as of June 1, 2019. Dairy operations that were not in business as of June 1, 2019, are ineligible for MFP.

Calculate the per unit payment rate for milk:
>   Step 1: Calculate the gross trade damage estimate
>   Step 2: Subtract the FPDP purchase amount from the gross trade damage estimate to calculate the portion not covered by FPDP
>   Step 3: Divide the value from Step 2 by 2017 MPP production to get the MFP payment rate per cwt of milk

Hog and Milk MFP Rates

Product	Trade Damage estimate minus FPDP2 targeted purchase amount	Units	Production	MFP rate
	(in million $)	*units*	*(in million units)*	*$/units*
Hogs	$831	head	74	$11
Dairy	$354	cwt	1,761	$0.20

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[8] https://www.usda.gov/media/press-releases/2019/07/25/usda-announces-details-support-package-farmers. USDA is not legally authorized to make Market Facilitation Program payments to producers for acreage that is not planted. However, cover crops planed with the purpose of providing animal feed or other marketing purpose are eligible for a minimum payment of $15 per acre.

2019 MFP Payments and Payment Rates for Specialty Crops

Similar to the 2018 MFP, producers of an expanded list of specialty crops will be eligible for program payments. 2019 MFP payments for specialty crops are based on 2019 acres of fruit or nut bearing plants. For specialty fruits and ginseng, the payment rate is multiplied by the average yields listed on https://www.farmers.gov/manage/mfp.

*Calculate the payment rate for **specialty tree nuts**:*
> Step 1: Calculate and sum all gross trade damage estimates for all specialty tree nuts
> Step 2: Sum bearing acres for all eligible tree nuts using NASS Census data for 2017
> Step 3: Divide total gross trade damages from Step 1 by total acres from Step 2 to get the national tree nut rate ($/acre)

*Calculate the payment rate for **specialty fruits**:*
> Step 1: For each specialty fruit, calculate the gross trade damage estimate
> Step 2: Calculate total production of the fruit crop using 2017 Census acreage and RMA yields
> Step 3: Divide the trade damage estimate from Step 1 by average production from Step 2 to get the per unit payment rate ($/lb)

*Calculate the payment rate for **ginseng**:*
> Step 1: Calculate the gross trade damage estimate
> Step 2: Calculate estimated ginseng production using 2017 Census data on ginseng acreage and USDA estimate of average yields using industry and academic sources
> Step 3: Divide the trade damage estimate from Step 1 by estimated production from Step 2 to get the per unit payment rate ($/lb)

Specialty Crop MFP Rates

Specialty Products	Trade Damage Estimate	MFP Rates
	(in million $)	
Tree Nuts*	$318	$146/acre
Sweet Cherries (fresh)	$111	$0.17/lb
Grapes (fresh)	$70	$0.03/lb
Cranberries	$28	$0.03/lb
Ginseng	$6	$2.85/lb

*Pistachios, almonds, walnuts, pecans, hazelnuts, and macadamia nuts

Total MFP Payments

The total payments to producers are subject to payment limitations, AGI eligibility criteria, and adjustments to the payment structure.

2019 MFP payments will be provided in up to 3 installments. The first payment will be guaranteed, and is the higher of 50 percent of the total calculated payment or $15 per acre. If CCC determines that a second payment is warranted, it will be up to 75 percent of the total calculated payment less the amount received in the first payment and the second payment period will begin in November 2019. If CCC determines

that a final payment is warranted, it will be for the remaining amount of the total calculated payment, unless otherwise adjusted by CCC, and the last payment period will begin in January 2020.

For 2019 MFP payments, there will be 3 separate payment limitations for each person or legal entity[9]:
1. $250,000 for eligible non-specialty crops;
2. $250,000 for eligible specialty crops; and
3. $250,000 for hogs and milk.
4. No person or legal entity can receive more than $500,000 under 2019 MFP.

Lastly, if the average adjusted gross income of a person or legal entity is greater than $900,000, the person or entity is not eligible to receive a MFP payment unless at least 75 percent of the adjusted gross income of the person or entity is derived from farming, ranching, or forestry related activities. The relevant years used to calculate average AGI are the 3 consecutive tax years immediately preceding the year before the payment year, which will be the crop year, or the marketing year for livestock or dairy. For example, for 2019 the relevant years to calculate AGI are the 2015, 2016 and 2017 tax years.

For more information on the MFP program, please go to https://www.farmers.gov/manage/mfp. Rulemaking and related documents, including the Cost Benefit Analysis (CBA), for trade mitigation programs can be found at https://www.regulations.gov/docket?D=CCC-2019-0003.

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[9] This excludes a joint venture or general partnership, as defined and determined under 7 CFR part 1400.