



The State-level Burden of the Trade War: Interactions between the Market Facilitation Program and Tariffs

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THE COSTS and benefits of the trade war are unevenly distributed across the United States. Looking at the raw impact on commodity prices, such as soybeans, we know that it disproportionately affects farmers in the Midwest. The Phase One Trade agreement between the United States and China promises substantial relief; however, we question if the Phase One targets are realistic (See “[The Phase One Trade Deal: Projections and Implications](#)” by Chad Hart and Lee Schulz in this issue). Thus, it is important to consider just how much is at stake for different states and the nation as a whole.

Measuring the impacts of the tariffs on any particular group is challenging



because there are a lot of moving parts. While the tariffs depress the price of US pork, the outbreak of African Swine Fever in China supports meat demand and prices on US markets.¹

Our job is to isolate the specific impacts of independent policy choices. We have, for example, already measured the impact of the tariffs on Iowa independent of other policies and unexpected events (like the outbreak of African Swine Fever in China).² However, there are some policies that, while they are independent choices, directly compensate particular groups adversely impacted by the tariffs. The Market Facilitation Program (MFP) is one such policy that compensates

farmers across the United States for the adverse impacts of the tariffs on farm income.

Ongoing research measuring the state-level impacts of the tariffs in combination with cash transfers under the MFP find a dramatic alteration of the geographic distribution of the costs of the trade war. This is not particularly surprising, as the intent of the policy is to compensate farmers. What might be surprising is that many Midwest states, including Iowa, actually experience net welfare gains as MFP payments totally offset the impact of the tariffs. We carefully consider the full effects of the tariffs in terms of both commodity price impacts and tariff revenues ➡

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¹ See, for example, “[Impact of African Swine Fever on US and World Commodity Markets](#)” in the fall 2019 *Agricultural Policy Review*.

² In [Balistreri et al. \(2018\)](#) we consider the impact of the tariff increases on Iowa as of August 2018.

collected, and we are careful to consider that MFP payments have to (at least implicitly) be funded through foregone budget opportunities, which indicates an escalation of the costs of the tariffs on states that receive little or no MFP payments, like California.

The Trump Administration implemented the Market Facilitation Program (MFP) in 2018 and 2019 to assist farmers impacted by the trade war. In total, the administration authorized \$28 billion of aid to farmers hurt by the tariffs, and is expected to distribute about \$23 billion of these \$28 billion. This aid shifts the state-level burden of the trade war because the MFP payments have a real cost in terms of budget opportunities. Considering the state-level burden requires a consideration of the trade equilibrium, the distribution of tariff revenues, and the net distribution of assistance proceeds.

The administration has disbursed the 2018 payments, about \$8.5 billion, and two tranches of 2019 payments.³ The total estimated payments for 2019 (three tranches) is around \$14.3 billion based on Glauber's (2019) estimates. While the 2018 payments were commodity based (and notoriously failed to compensate corn growers by offering \$1.65/bushel for soybean growers and \$.01/bushel for corn growers), the 2019 payments are based on acres, vary across counties, and, in general, offer higher per-acre payments than the 2018 MFP payments. Criteria used to compute losses from the trade retaliations were also more lax. Both the 2018 and 2019 MFP payments concentrate heavily on Midwest states, reflecting the political influence of these states' rural communities. Glauber (2019) provides a breakdown of MFP payments by state, which we use as the

base of our analysis.

We use a general-equilibrium modeling system for the US economy that provides computationally efficient state-level resolution with consistent (funded) interstate transfers that allows us to explore the distribution of state-level burdens under plausible alternative assumptions. We construct a set of detailed social accounts for all 50 states and the District of Columbia using the open-source WiNDC system.⁴ These data are dynamically aggregated to seven regions plus a focus state for calibrating the multi-region US model for analysis, which gives us 50 different models with small regional dimensionality (eight). We test for, and find, negligible approximation

errors related to this computational strategy. Our scenarios include the introduction of international price impacts and consistent tariff revenues from a GTAPinGAMS global model and the introduction of the MFP interstate transfer payments.⁵

We make the most transparent assumption about the funding and distribution of MFP payments and the distribution of tariff payments. Specifically, we assume that tariff revenues are distributed lump-sum according to benchmark income shares across states; and, we assume that the MFP is funded lump-sum according to benchmark income shares. The transfers do not act through distortionary policy instruments. Our

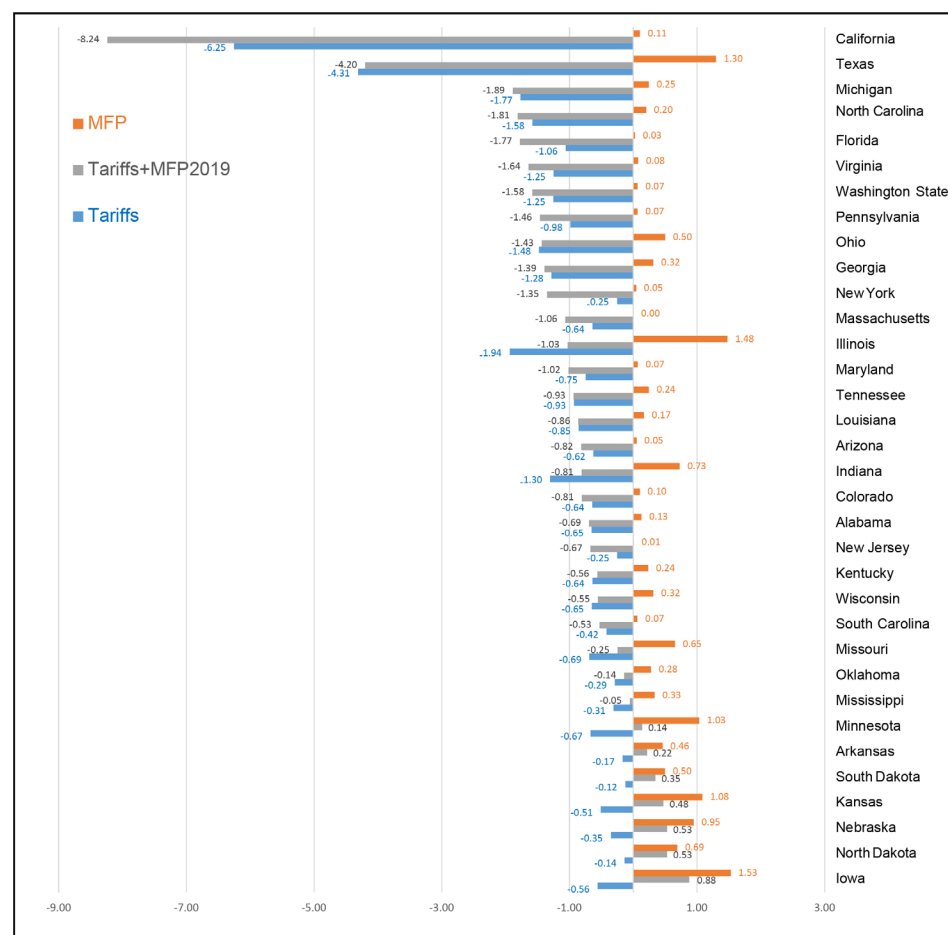


Figure 1. State-level trade war burden with and without 2019 MFP compensation (\$B EV) and 2019 MFP payments (\$B).

³ A third tranche is supposed to take place in early 2020.

⁴ The Wisconsin National Data Consortium (WiNDC) is led by Thomas F. Rutherford at the University of Wisconsin: <https://windc.wisc.edu/>.

⁵ The GTAPinGAMS model used to establish international prices and tariff revenues is from Li, Balistreri, and Zhang (2019).

transparent cash transfer approach avoids the issue of how the MFP is actually funded (potentially through increases in distortionary taxes and government debt), which could substantially alter the distribution and overall cost of the MFP. Our approach gives us a first-pass consideration of the state-level burden-shifting aspects of the MFP independent of the other distributional consequences of government finance.

Table 1 and figure 1 show that many Midwest states experience net welfare gains, as MFP payments totally offset the incidence of tariff retaliation on the state economy. Specifically, Iowa gains \$878 million, North Dakota \$532 million, Nebraska \$532 million, Kansas \$475 million, South Dakota \$347 million, Arkansas \$216 million, and Minnesota gains \$140 million. These “winner” states, in general, disproportionately rely on their agricultural sector for income, and received substantial MFP payments.

Other states, like Illinois, do not quite experience a full offsetting of the incidence of tariffs, but still greatly benefit from the MFP payments. Notably, Illinois has a net welfare loss of \$1.029 billion, despite receiving the second-largest MFP payments (\$1.476 billion) due to its large loss from the tariff war (\$1.936 billion); however, the MFP payments still abate the loss by \$900 million.

At the opposite end, Texas and California experience large welfare losses regardless of MFP payments. California’s welfare losses are substantially exacerbated by the MFP—a -\$8.239 billion welfare impact under the 2019 MFP payments compared to -\$6.255 billion under the trade dispute alone. California’s MFP payments are small (\$106 million) compared to the size of its agriculture sector, and California’s large income share makes it bear a large burden in

Table 1. Trade War Burden and MFP Impacts by State (\$B)

State	Benchmark Private Consumption	Welfare Impacts: Tariff Scenario	Welfare Impacts: Tariff+MFP Scenario	MFP Payments	Net MFP Payments	Allocated Tariff Revenue
Alaska	34.1	-0.028	-0.076		-0.047	0.096
Alabama	149.7	-0.653	-0.691	0.127	-0.038	0.337
Arkansas	93.2	-0.166	0.216	0.459	0.372	0.178
Arizona	232.8	-0.625	-0.817	0.053	-0.186	0.489
California	1690.3	-6.255	-8.239	0.106	-1.931	4.160
Colorado	229.3	-0.643	-0.806	0.103	-0.158	0.533
Connecticut	175.0	-0.292	-0.499		-0.202	0.412
District of Columbia	44.7	-0.141	-0.261		-0.117	0.238
Delaware	41.4	-0.076	-0.109	0.022	-0.032	0.110
Florida	801.0	-1.058	-1.773	0.027	-0.695	1.474
Georgia	359.5	-1.280	-1.391	0.316	-0.107	0.865
Hawaii	62.3	-0.370	-0.469		-0.096	0.196
Iowa	110.3	-0.558	0.878	1.528	1.397	0.268
Idaho	57.4	-0.104	-0.093	0.063	0.011	0.106
Illinois	535.1	-1.936	-1.029	1.476	0.883	1.211
Indiana	226.4	-1.299	-0.810	0.726	0.474	0.514
Kansas	102.1	-0.508	0.475	1.082	0.958	0.254
Kentucky	141.9	-0.639	-0.563	0.235	0.073	0.331
Louisiana	152.7	-0.854	-0.862	0.169	-0.009	0.364
Massachusetts	358.3	-0.638	-1.064		-0.415	0.847
Maryland	262.9	-0.746	-1.015	0.070	-0.261	0.676
Maine	54.0	-0.012	-0.057	0.001	-0.044	0.093
Michigan	375.4	-1.765	-1.886	0.245	-0.119	0.744
Minnesota	252.4	-0.667	0.140	1.033	0.785	0.507
Missouri	218.9	-0.686	-0.246	0.653	0.428	0.459
Mississippi	85.6	-0.307	-0.052	0.333	0.248	0.174
Montana	40.8	-0.050	0.046	0.129	0.093	0.073
North Carolina	333.2	-1.576	-1.810	0.202	-0.227	0.877
North Dakota	33.5	-0.136	0.532	0.691	0.650	0.083
Nebraska	72.7	-0.351	0.532	0.946	0.859	0.177
New Hampshire	66.1	-0.148	-0.212		-0.062	0.126
New Jersey	437.6	-0.250	-0.672	0.009	-0.413	0.861
New Mexico	71.9	-0.201	-0.255	0.031	-0.052	0.170
Nevada	117.6	-0.377	-0.513	0.002	-0.131	0.271
New York	931.9	-0.254	-1.351	0.046	-1.069	2.278
Ohio	435.9	-1.476	-1.434	0.501	0.039	0.943
Oklahoma	124.6	-0.287	-0.142	0.277	0.140	0.279
Oregon	159.0	-0.361	-0.495	0.023	-0.131	0.315
Pennsylvania	517.0	-0.982	-1.460	0.067	-0.467	1.090
Rhode Island	43.8	-0.046	-0.094		-0.047	0.096
South Carolina	161.7	-0.420	-0.529	0.066	-0.106	0.352
South Dakota	35.7	-0.124	0.347	0.497	0.459	0.078
Tennessee	218.7	-0.929	-0.934	0.244	-0.005	0.508
Texas	1003.7	-4.312	-4.200	1.297	0.108	2.428
Utah	105.0	-0.352	-0.468	0.007	-0.113	0.245
Virginia	363.2	-1.246	-1.641	0.077	-0.382	0.937
Vermont	27.3	0.003	-0.019	0.002	-0.022	0.048
Washington	310.2	-1.251	-1.582	0.069	-0.321	0.796
Wisconsin	217.3	-0.647	-0.552	0.316	0.092	0.458
West Virginia	58.5	-0.021	-0.069	0.004	-0.047	0.105
Wyoming	22.6	-0.037	-0.057	0.008	-0.019	0.056
USA	12756.4	-38.137	-38.129	14.338	0.000	29.280

terms of funding the MFP. Thus, net MFP payments for California are -\$1.931 billion, which substantially contributes to exacerbated welfare losses. The story in Texas is more nuanced—MFP payments are large (\$1.297 billion), but as the second-largest state, Texas has a large burden in terms of funding the MFP. On net, Texas receives a relatively small transfer of \$108 million. The MFP thus slightly mitigates the cost of the trade dispute for Texas—a -\$4.200 billion welfare impact under the 2019 MFP payments compared to -\$4.312 under the trade dispute alone. In percent terms, the District of

Columbia, Hawaii, and Virginia face a similar situation as California—limited agriculture and MFP payments, but bearing their share of funding the MFP.

Our results also reveal important political economy insights, both across and within states. Because the MFP payments are strongly tied to agricultural production, farmers, ranchers, landowners, and rural communities receive the bulk of the benefits. At the same time, the burden of tax revenues falls on all citizens, and thus more populous urban states and urban constituents with more residents

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