Explaining the Source of Racial Disparities in Market Facilitation Program (MFP) Payments

Nathan P. Hendricks
Department of Agricultural Economics, Kansas State University
nph@ksu.edu

Ashling M. Murphy
Department of Agricultural Economics, Kansas State University
ammurph5@ksu.edu

Stephen Morgan
Economic Research Service, USDA
Stephen.Morgan@usda.gov

Samantha Padilla
Economic Research Service, USDA
Samantha.Padilla@usda.gov

Nigel Key
Economic Research Service, USDA
nigel.key@usda.gov

Invited Paper prepared for presentation at the 2023 Agricultural & Applied Economics Association Annual Meeting, Washington DC; July 23-25, 2023

Explaining the Source of Racial Disparities in Market Facilitation Program (MFP) Payments

Nathan P. Hendricks,[1] Ashling M. Murphy,[1] Stephen Morgan,[2]
Samantha Padilla,[2] and Nigel Key[2]

Abstract

This paper aims to analyze the distribution of Market Facilitation Program payments and explain the sources of disparity of those payments by farm operator race. In this paper, we use farm-level data from the Census of Agriculture to estimate the payments each farm was eligible to receive from the 2018 and 2019 Market Facilitation Program. We find that farms with a White operator were eligible to receive significantly larger payments than farms with a non-White operator. Most of the disparity for farms with a Black operator is due to differences in average farm size, since there are few large farms with a Black operator. The disparities for farms with an operator of other races were roughly half due to farm size and half due to the location of these farms and the types of commodities they tend to produce.

Keywords: Race, government payments, Market Facilitation Program, Black farmers

JEL Classification: Q18, J15

Correspondence: Nathan Hendricks, Department of Agricultural Economics, Kansas State University, Manhattan, KS, USA.
Email: nph@ksu.edu
Note: [1]Kansas State University. [2]USDA Economic Research Service. The findings and conclusions in this publication are those of the authors and should not be construed to represent any official USDA or U.S. Government determination or policy. This research was funded by the U.S. Department of Agriculture, Economic Research Service (cooperative agreement 58-3000-1-0059).

Introduction

In 2018 and 2019, the Trump administration authorized a total of $23 billion of Market Facilitation Program (MFP) payments to compensate farmers for the loss in exports due to the U.S.-China trade dispute. The literature has focused on three dimensions of the payment distribution: the distribution across regions relative to estimates of the trade damages for each commodity (Government Accountability Office 2020; 2021; Janzen and Hendricks 2020), the distribution by farm size (Government Accountability Office 2020; Belasco and Smith 2022), and the distribution to socially disadvantaged farms (Government Accountability Office 2022; Giri, Subedi, and Kassel 2023).

In this paper, we provide new insights into the distribution of MFP payments by race using micro-level 2017 Census of Agriculture data. The 2017 Census data do not contain information on actual MFP payments received since MFP payments were provided in 2018 and 2019, but we use the MFP payment formulas to estimate the payments that a farm would have been eligible to receive based on their production in 2017. Farms are classified as White, Black or African American, American Indian or Alaska Native, Asian, or Native Hawaiian or Other Pacific Islander based on whether any of up to four operators identify with one of these races. In other words, a farm is classified as a farm with a White operator if at least one of the operators indicated that they are White, and that operator did not indicate another race also. We compare average payments per farm across racial categories and average payments conditional on farm size by race. We also provide two different decompositions of the difference in payments for each race compared to farms with a White operator to better understand the source of racial disparities. An advantage of working with the micro-level Census data is that it provides information on most

farms in the U.S., which is essential given the small number of farms with a non-White farm operator and the difficulty of getting a large enough sample with a survey. It is important to note that our paper only examines the distribution of payments that farms were eligible to receive based on the formulas used to calculate MFP payments. We are unable to assess whether farms with non-White operators systematically received less payments than they were eligible to receive.

We find that among farms that were eligible to receive some MFP1 (MFP2) payments, farms with a White operator were eligible to receive $18,810 ($24,046) while Black farms were only eligible to receive $7,762 ($11,552) on average. However, once we condition on farm size classification, MFP1 and MFP2 payment eligibility was similar between farms with a White operator and farms with a Black operator. The decomposition of payments indicates that 91% (118%) of the difference in MFP1 (MFP2) payments between farms with a White operator and farms with a Black operator is explained by differences in farm size. There is also a disparity in payments between farms with a White operator and farms with an American Indian, Asian, or Pacific Islander operator, but only about half of the payment disparity is attributed to farm size and a larger portion is due to these farms producing crops not eligible for MFP payments, or crops eligible for smaller payments.

Together, these results highlight that farms with a Black operator were estimated to receive significantly less MFP payments than farms with a White operator on a per farm basis and that the difference was driven primarily by differences in farm size. The differences in farm size between White and Black farmers can be attributed to more than a century of discrimination (Horst and Marion, 2019). For example, minority farmers had unequal access to the Homestead

Act and loans to acquire land. This long history of discrimination is built into the current structure of agriculture. Francis et al. (2022) estimate a total value of Black land loss of $326 billion between 1920 and 1997. Our analysis highlights that historical Black land loss creates disparities in government programs today when those payments are based on some measure of either current production or a recent history of production (e.g., Farm Bill Title 1 payments). Similarly, farms with an operator of another race tend to be smaller or produce commodities not eligible for certain program payments.

This paper makes two primary contributions. First, we contribute to the literature on race and government payments in agriculture. Unfortunately, the academic literature in economics on the issue is thin (Wilson 2023), but there is much that we know from historical accounts. The Agricultural Adjustment Act (AAA) of 1933 paid landowners—primarily White—to remove land from production which harmed the large population of Black tenant farmers and sharecroppers. While the AAA payments were supposed to be split between landowners and tenants, many Black tenants did not receive payments because landowners signed a contract on their behalf to waive their rights (G. Francis 2021). Black farmers also faced discrimination in receiving acreage allotments in the 1960s because they were underrepresented on local county ASCS (Agricultural Stabilization and Conservation Service) committees that determined the distribution of acreage allotments (Daniel 2013). Moreover, Black farmers faced discrimination in receiving federal loans, leading to a landmark ruling in *Pigford v. Glickman* (Daniel 2013). Recent literature also examines disparities in USDA loan programs (Escalante et al. 2006; 2018) and lending from the Paycheck Protection Program (Sant'Anna, Kim, and Demko Forthcoming).

Second, we contribute to the literature on the trade war and MFP. Several papers estimate how the 2018 trade dispute affected exports, crop prices, or land rental rates (Grant et al. 2021; Adjemian, Smith, and He 2021; Yu, Villoria, and Hendricks 2022; Morgan et al. 2022; Carter and Steinbach 2021) or how MFP payments affected electoral outcomes (Janzen and Hendricks 2020; Choi and Lim Forthcoming). More closely related to our paper, several papers explore the distribution of MFP payments across regions, commodities, and farm size categories (Janzen and Hendricks 2020; Paulson, Featherstone, and Hadrich 2020; Glauber 2021; Belasco and Smith 2022).

The only paper to examine the distribution of MFP payments by race is Giri, Subedi, and Kassel (2023). They use payment data from the Farm Service Agency to show that, in total, individuals from a racial minority received less than 1% of MFP payments with Black individuals receiving 0.17% (Giri, Subedi, and Kassel 2023). While it is clear that racial minorities received a small share of the total payments, it is unclear how much different factors contributed to this disparity. For example, farms with Black operators represent 1.4% of total farms and 0.27% of the market value according to the Census of Agriculture (Giri, Subedi, and Kassel 2023), but it is challenging to compare MFP payments by race from the Farm Service Agency (FSA) with Census of Agriculture data because FSA aggregates data by the race of the operator while the Census is completed at the farm level. NASS classifies a farm as "Black or African American" if any one of the operators is Black or African American. Using the Census data allows us to understand the underlying source of any disparities in payments per farm.

Background on MFP

The Market Facilitation Program (MFP) provided compensation to producers in the form of direct payments to offset the impact of retaliatory tariffs imposed by China, Canada, Mexico,

the European Union, Turkey, and India. These payments were authorized by USDA through the Commodity Credit Corporation (CCC). Non-specialty crops collected 94.5 percent of the MFP payment while specialty crops, dairy and hog producers received 1.5 and 4 percent, respectively (Government Accountability Office 2021).

MFP payments were provided in 2018 and 2019 with different payment formulas. The 2018 MFP Payment (i.e., MFP1) for non-specialty and specialty crops for farm i was calculated as

$$MFP1_i = \sum_j Production2018_{ij} \times MFP1PaymentRate_j, \quad (1)$$

where $Production2018_{ij}$ represents the actual production of crop j in 2018 and $MFP1PaymentRate_j$ denotes the crop-specific payment rate. Crops included in MFP1 included soybeans, corn, cotton, wheat, sorghum, almonds, and cherries. Dairy and hog farmers were also eligible for MFP1 payments based on production of milk and number of head of live hogs, respectively.

The 2019 MFP Payment (i.e., MFP2) included 27 non-specialty crops, 10 specialty crops, and 2 livestock animals. The payment for non-specialty crops was calculated as

$$MFP2_i = EligiblePlantedAcres_i \times PaymentRate_c, \quad (2)$$

where $EligiblePlantedAcres_i$ is the total acres planted eligible non-specialty crops in 2019 and $PaymentRate_c$ was a county-specific payment rate per planted acre. Specialty crops received a payment based on acres of fruit or nut bearing plants in 2019. Dairy and hog producers again received a payment based on milk production or number of live hogs, respectively.

USDA calculated the MFP1 commodity payment rate ($MFP1PaymentRate_j$) as the projected decline in export value of the commodity due to the tariffs divided by historical production (Janzen and Hendricks 2020). The county payment rate for MFP2 was calculated as a

weighted average of commodity-specific payment rates, where the weights corresponded to historical production within the county. Commodity-specific payment rates changed between MFP1 and MFP2 because USDA used 2017 exports as the baseline for MFP1 and the maximum of exports between 2009 and 2018 as the baseline for MFP2 (Government Accountability Office 2021).

Relative to market prices, MFP payment rates were the largest for sorghum, cotton, and soybeans (Janzen and Hendricks 2020). Soybean producers in the Corn Belt states benefitted the most from MFP1 as they received nearly 76% of total payments (Glauber 2021). The change in payment rates between MFP1 and MFP2 was especially important for cotton where the payment rate increased from about 10% of the market price for cotton to about 40% of the market price (Janzen and Hendricks 2020).

Data and Methods

We utilize the 2017 United States Census of Agriculture's raw micro-data containing approximately 1.1 million observations. The Census of Agriculture is administered every five years and measures characteristics of all farms and demographics of up to four operators. The Census of Agriculture defines a farm as an operation with agricultural sales of at least $1,000.

Race

The Census of Agriculture asked each operator to report their race and allowed the respondent to select multiple categories that applied. Each operator could select among five race categories: White, Black or African American, American Indian or Alaska Native, Asian, or Native Hawaiian or Other Pacific Islander. We used the same method to classify farms by race

that is used by the National Agricultural Statistics Service (NASS) in public Census reports. A farm is defined as a "farm with a White operator" if any one of the four operators indicated a race of "White" and that operator did not indicate any other race. This race category is labeled as "any producer reporting race as White only" in the Census of Agriculture tables. The Census also reports a category of "any producer reporting race as White alone or in combination with other races." A farm fall within this category if, for example, one of the four operators indicated a race of "White" or if the operator indicated "White" and "Black or African American." We do not report results for the race classification that includes "or in combination with other races" to keep the results more concise and because results are similar using this alternative classification.

Note that the Census race categories are not mutually exclusive. For example, consider a farm with two operators where one operator indicates "White" and the other operator indicates "Black or African American." This farm is categorized as both a farm with a White operator and a farm with a Black operator. Alternatively, we could have defined a farm as "Black or African American" when all operators indicate "Black or African American," but this would not be consistent with current Census methodology and we were encouraged by NASS to report statistics using current Census race definitions. Furthermore, it would exclude some farms with a Black operator from the classification. To keep the paper more readable, we shorten the race descriptions as White, Black, American Indian, Asian, and Native Pacific Islander.

Estimating MFP Payments Eligible to Receive

We use the Census data to calculate the amount of MFP Payments that each farm was eligible to receive. MFP1 payments were based on 2018 production, but we calculate eligible

payments based on the farm's 2017 production. MFP2 payments were based largely on planted acres, but we calculate eligible payments based on the farm's 2017 harvested acres. For livestock and specialty crops, we had to make some approximations based on limited variables reported by the Census. Dairy MFP payments were based on milk production, but the Census only report milk sales and not production. We divide milk sales by the national average price of milk in 2017 ($17.7 per cwt) to approximate milk production for each farm. MFP payments for hogs were based on the number of live hogs. We use the total hog and pig inventory from the Census. Acres of nut trees from the Census for MFP2 are the sum of the acres of bearing trees of almonds, filberts and hazelnuts, macadamia nuts, pecans, pistachios, and English walnuts. MFP1 payments for almonds and sweet cherries and MFP2 payments for sweet cherries, ginseng, cranberries, and fresh grapes were based on production. However, the Census only reports bearing acres and not production of these specialty crops. We approximate farm-level production as bearing acres times the national average yield.

Using the 2017 Census of Agriculture data, we calculate total eligible payments of $9.5 billion for MFP1 and $16.8 billion for MFP2. Actual payments received by farmers were $8.6 billion for MFP1 and $14.4 billion for MFP2 (Government Accountability Office 2021). We also compared total calculated and actual payments by commodity for 2018. Soybean estimated payments are within 3% of actual received payments. Larger percentage differences occur for hogs, dairy, almonds, and sweet cherries, but these comprise a smaller portion of total payments.

There are a few reasons why our estimated payments do not match the payments a farm actually received. First, we use 2017 farm values rather than 2018 and 2019 values used in the MFP formulas. There may be some farms where 2018 yields were significantly different than 2017, but the distribution across farms using the 2017 values especially when aggregated by race

are likely be very similar using 2017 values. Second, the Census did not always provide the exact variable that was used to calculate payments (e.g., milk sales rather than production and harvested rather than planted acres). These could lead us to systematically over or underestimate payments but again this should not significantly affect the distribution across farms. Third, farms may not have received all payments that they were eligible to receive. Large farms—especially dairy and hog farms—may have reached payment limitations or been ineligible to receive payments. We did not impose payment limitations in our calculations because there are several ways that farms can avoid payment limits and we cannot simulate all of the possibilities. It could also be that socially disadvantaged farmers did not receive information about the program and did not apply to receive all the payments they were eligible to receive. To be clear, our work only estimates differences in payments farms were eligible to receive.

Two-Way Decomposition

We calculate a two-way and three-way decomposition of the payments to better understand the source of any disparities between race categories. The decompositions are based on yield and acreage differences between farms so we calculate the decomposition using only non-specialty crops which account for 89.5% of MFP1 payments and 88.2% of MFP2 payments (Glauber 2021). MFP1 payments for a representative farm of race l are estimated from the Census as $MFP1_l = \sum_j r_j \, y_{jl} a_{jl}$, where r_j denotes the payment rate for crop j, y_{jl} is the average crop yield among all farms of race l, and a_{jl} is the average acres of crop j among all farms of race l.

The difference in MFP1 payments between white farms (i.e., $l = w$) and farms of another race (i.e., $l \neq w$), can be written as the sum of two components (Key 2019):

(3) $$MFP1_w - MFP1_l = \underbrace{\sum_j r_j \left(y_{jw} - y_{jl}\right)\bar{a}_j}_{\text{yield effect}} + \underbrace{\sum_j r_j \, \bar{y}_j \left(a_{jw} - a_{jl}\right)}_{\text{crop acres effect}},$$

where $\bar{a}_j$ is the average acres of white farms and farms of race l and $\bar{y}_j$ is the average yield across races (i.e., $\bar{a}_j = \frac{1}{2}\left(a_{jw} + a_{jl}\right)$). The first term on the right-hand side is the difference in MFP1 payments due to differences in crop yields and the second term is the difference due to crop acres. The crop acres effect reflects differences in payments due to different types of crops grown and differences in total farm size. Note that the two-way decomposition is exact, but the effect of farm size and crop allocation cannot be disentangled.

MFP2 payments for a representative farm of race l are $MFP2_l = r_{cl} a_l$, where r_{cl} is the average MFP2 county payment rate among farms of race l and a_l is the average number of acres planted to eligible crops. The difference in MFP2 payments between white farms and another race are represented the following two components:

(4) $$MFP2_w - MFP2_l = \underbrace{(r_{cw} - r_{cl})\bar{a}}_{\text{payment rate effect}} + \underbrace{\bar{r}(a_w - a_l)}_{\text{crop acres effect}},$$

where $\bar{a}$ and $\bar{r}$ are the average acreage and payment rate between the two race categories. The first term represents difference in payments because farms of one race are located more in counties with higher payments rates. The second term reflects differences due to farms of one race having more eligible crops acres.

Three-Way Decomposition

To further decompose the crop acres effect into a differences in types of crops grown and total cropland acres (i.e., farm size), we consider a three-way decomposition. Now we write MFP1

payments as $MFP1_l = A_l \sum_j r_j\, y_{jl} s_{jl}$, where A_l to the total cropland acres and s_j is the share of cropland acres planted to crop j. The difference in payments is decomposed as

$$(5) \qquad MFP1_w - MFP1_l \cong \underbrace{\bar{A}\sum_j r_j \left(y_{jw} - y_{jl}\right)\bar{s}_j}_{\text{yield effect}} + \underbrace{\bar{A}\sum_j r_j\, \bar{y}_j\left(s_{jw} - s_{jl}\right)}_{\text{crop share effect}} + \underbrace{(A_w - A_l)\sum_j r_j\, \bar{y}_j s_j}_{\text{farm size effect}}.$$

Note that the three-way decomposition is approximate—the three right-hand side terms do not exactly equal the difference in payments. However, the three-way decomposition indicates how much of the difference is due to farms of a particular race growing different types of crops versus having larger farms.

MFP2 payments are written as $MFP2_l = A_l r_{cl} s_l$, where s_l denotes the share of total cropland acres that are acres of crops eligible for MFP2 payments. The three-way decomposition is written as

$$(6) \qquad MFP2_w - MFP2_l \cong \underbrace{\bar{A}(r_{cw} - r_{cl})\bar{s}}_{\text{payment rate effect}} + \underbrace{\bar{A}\bar{r}(s_w - s_l)}_{\text{eligible crop share effect}} + \underbrace{(A_w - A_l)\bar{r}\bar{s}}_{\text{farm size effect}}.$$

The second term indicates how payments differ because farms of a race have a larger share of total cropland acres planted to crops eligible for MFP2 and the third term is difference in payments due to farm size.

Results

Figure 1 shows the estimated average payments that farms were eligible to receive for each race. Panel A is the average payment across all farms, even those that received zero payments, while panel B is the average across only those farms with a positive payment. Since MFP was only paid for production of certain commodities, many farms were ineligible to receive payments because they did not produce any of these commodities. We order the race

classifications in the figures by the magnitude of total MFP payments received by farms with operators of each race.

Farms with a White operator were eligible to receive about 4.7 times larger MFP1 payments than farms with a Black operator (panel A Figure 1). Including farms with zero payments, farms with a White operator were eligible to receive $4,814 in MFP1 payments, while farms with a Black operator were eligible to receive only $1,032. This disparity is even greater for farms with an American Indian operator or a Native Pacific Islander operator as they were only eligible for $579 or $668 of payments, respectively. But farms with an Asian operator were eligible for more at $1,429. Farms with operators of all different races were eligible for larger payments in MFP2 than MFP1. The disparity in payments between farms with a White operator and farms with a Black operator was about the same in percentage terms in MFP2 as MFP1, but the disparity in absolute terms was significantly larger. Farms with a White operator were eligible to receive $8,444 in MFP2 payments, while farms with a Black operator were only eligible to receive $2,034.

Farms with a non-White operator are less likely to produce commodities that received MFP1 or MFP2 payments. Therefore, in percentage terms, the disparity in payments decreases when only considering those farms with some payments, but the absolute value of the disparity increases (panel B Figure 1). Farms with a White operator were eligible to receive an additional $11,048, $10,381, $6,667, and $13,255 in MFP1 payments than farms with a Black, American Indian, Asian, or Native Pacific Islander operator. For MFP2 payments, farms with an Asian operator were eligible for slightly larger payments than farms with a White operator. But farms with a Black, American Indian, or Native Pacific Islander operator received $12,494, $14,478, and $9,045 less payments than farms with a White operator.

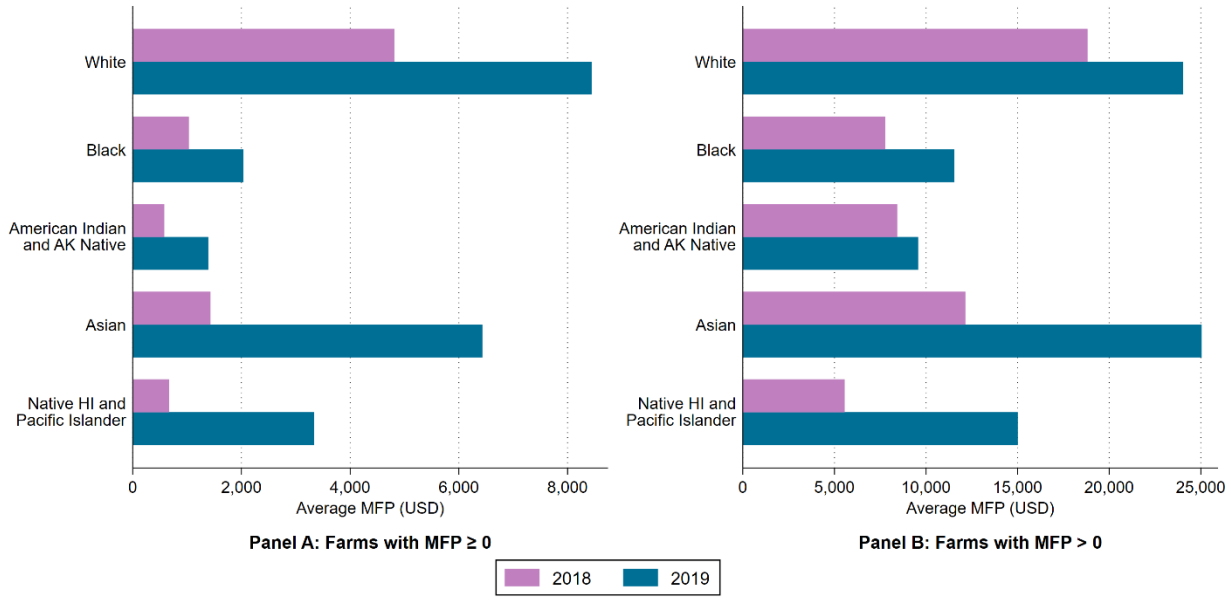

Figure 1. Estimated eligible MFP payments by race

Source: Author calculations using data from USDA NASS, 2017 Census of Agriculture.

The results in Figure 1 clearly indicate a disparity in payments received per farm, but we also know that the farm structure differs by race. According to public Census of Agriculture reports, the average farm is size is 431 acres, 125 acres, 1,231 acres, 148 acres and 220 acres for farms with White, Black, American Indian, Asian, and Native Pacific Islander operators. But it is more informative to examine the distribution of farms across the different size categories represented by gross cash farm income illustrated in Figure 2. Most farms are either in the very low sales (<$10,000) or low sales ($10,000-$149,999) categories for all races, so we omit these sales categories to make the figure clearer. Figure 2 shows that a smaller portion of farms with a Black operator are in the larger farm size categories. While 6.5%, 5.4% and 2.4% of farms with a White operator are in the moderate, midsize, and large categories, only 1.5%, 0.8% and 0.3% of farms with a Black Operator are in these categories. Put another way, farms with a Black operator

comprise 1.6% of all farms but only 0.2% of large family farms. We do not report the portion of farms in the very large family farm (>$5 million) category because there are so few farms with a Black operator in this category. Similarly, farms with an American Indian or Native Pacific Islander operator are less likely to be in the moderate, midsize, and large farm size categories than farms with a White operator. Farms with an Asian operator are actually more likely to be in these larger size categories, but they only comprise about 1.1% of total large family farms.

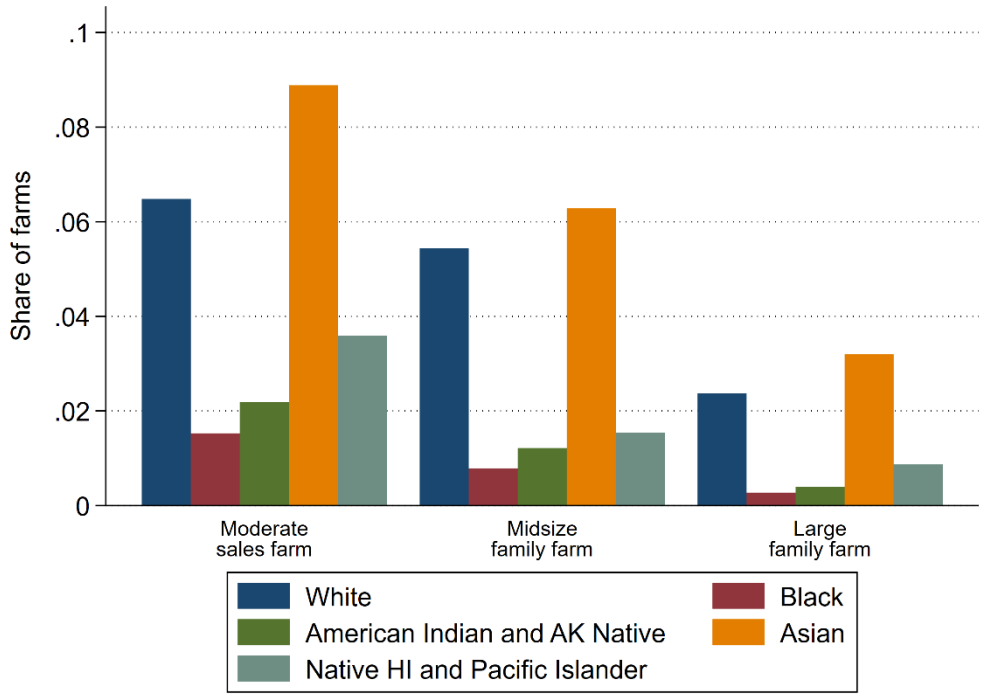

Figure 2. Share of farms with operators of each race in moderate, midsize family, and large family farm categories

Notes: Shares calculated omitting the weighted number of farms in the very large family farm category.
Source: Author calculations using data from USDA NASS, 2017 Census of Agriculture.

Once MFP payments are compared across farms with the same size category, there is not a large disparity in payments between farms with a White operator and farms with a Black operator (Figure 3). In fact, moderate, midsize, and large farms with a Black operator were eligible

to receive larger payments than farms with a White operator. Farms with a Black operator are concentrated in the South where MFP payment rates were the highest. This does not imply that there is no disparity in payments. Rather, the results in figures Figure 1, Figure 2, and Figure 3 together highlight that farms with a White operator received significantly larger payments on average because there are more large farms with a White operator than farms with a Black operator. As noted in the introduction, the cause of the disparity in farm size is rooted in a long history of discrimination faced by Black operators.

Farms with an American Indian, Asian, or Native Pacific Islander operator were eligible for significantly smaller payments conditional on farm size (Figure 3). These farms tend to be in the West and focus on producing commodities that were not eligible for MFP payments in either round. These results together indicate that farms with an American Indian operator were eligible for smaller MFP payments than farms with a White operator both because there are relative more small farms with an American Indian operator and because those farms produce commodities not eligible for MFP payments.

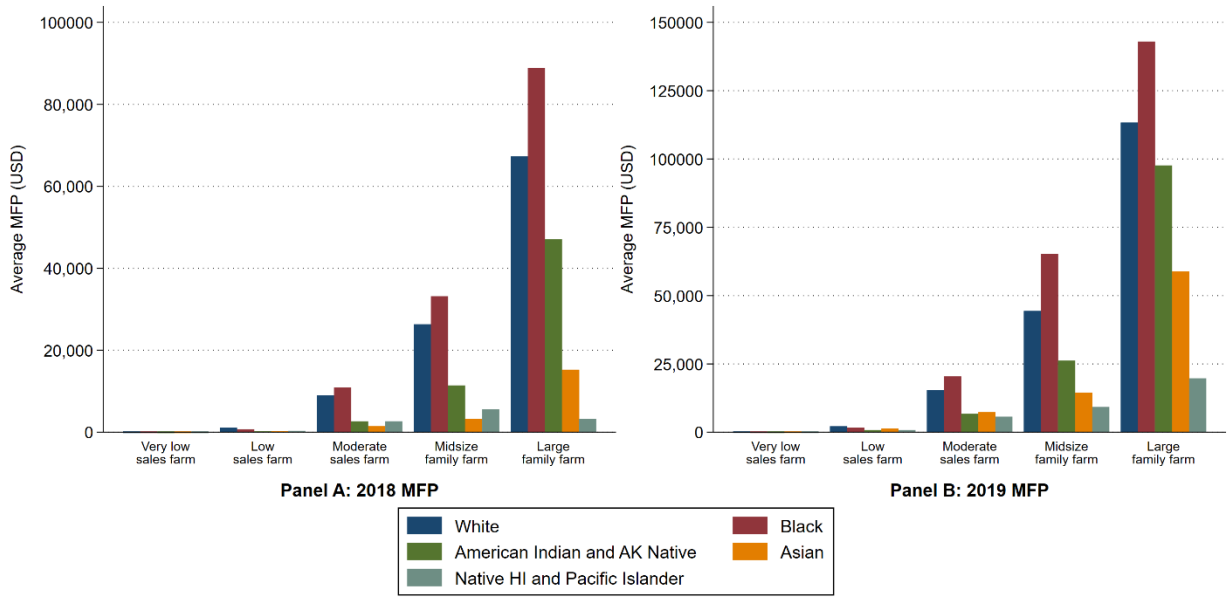

Figure 3. Estimated eligible MFP payment by race and farm size category

Source: Author calculations using data from USDA NASS, 2017 Census of Agriculture.

To formally analyze the source of the difference in payments, we calculate the two-way (Figure 4) and three-way (Figure 5) decompositions described in equations (3)-(5). We calculate the percent difference as the value of the respective effect divided by the difference in payments of the representative farms. In this case, it is possible to have a negative percent difference if an effect is negative. For the two-way decomposition, the two percent differences sum to 100%. The three-way decomposition is approximate, so the percent differences do not sum to exactly 100%. The decompositions also only focus on non-specialty crops since we need yield for the calculations. Figure A1 in the supplementary appendix shows the same comparison of average MFP by race as in Figure 1 and the general pattern is the same.

Farms with a non-White operator may have lower crop yields if they are located in regions of the U.S. with lower yields, they operate fields that are less productive within a region, or they

are generally less productive. We do not further disentangle these possible explanations. But Figure 4 shows that only a small portion of the difference in eligible MFP1 payments is due to farms with a White operator having larger yields. Instead, most of the difference in MFP1 payments was that farms with a non-White operator had fewer acres of crops eligible for MFP1 payments.

For MFP2 payments, farms with a Black operator are located in counties with higher MFP2 payment rates so that they would have received larger payments if crop acreage was the same as farms with a White operator (Figure 4). But the disparity in MFP2 payments arises because farms with a Black operator have significantly fewer acres of eligible crops. Farms with American Indian, Asian, and Native Pacific Islander operators tend to be located in counties with a smaller MFP2 payment, but again most of the difference in payments is due to differences in acres eligible for MFP2 payments.

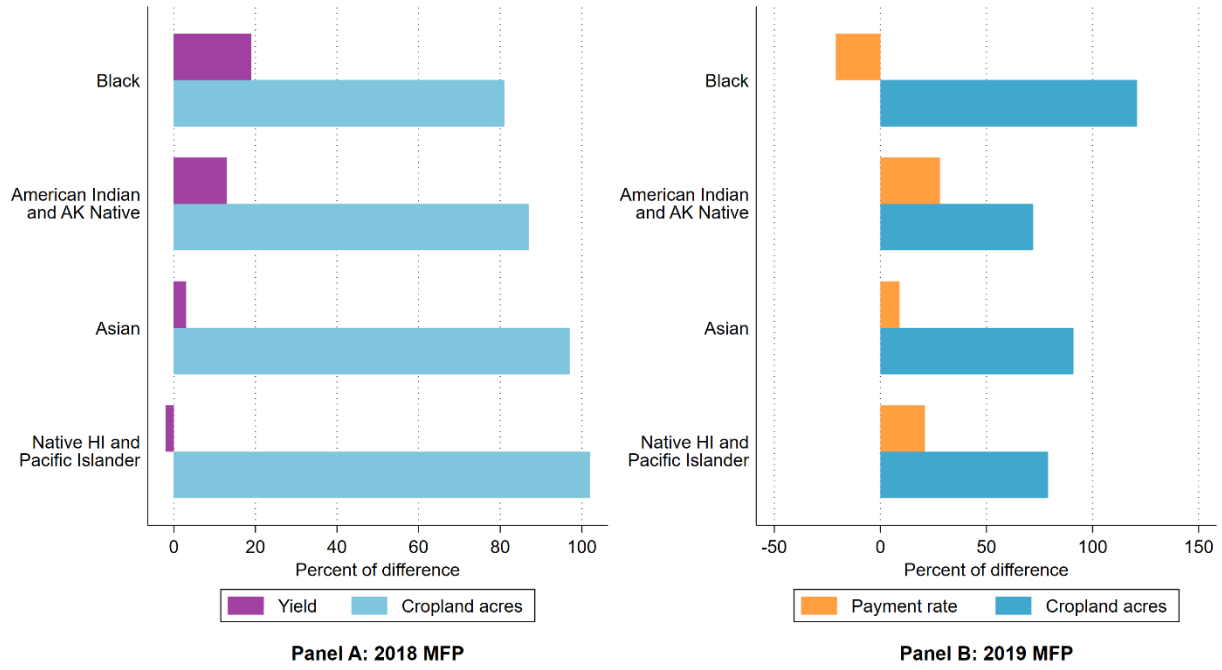

Figure 4. Two-way decomposition of the percent difference in estimated eligible payments with farms with a white operator

Source: Author calculations using data from USDA NASS, 2017 Census of Agriculture.

The three-way decomposition shown in Figure 5 gives further insight on the differences in payments due to crop acreage. For MFP1, the difference in payments between farms with a White operator and farms with a Black operator is mostly because farms with a Black operator have fewer total cropland acres. That is, farms with a Black operator grew a relatively larger share of crops eligible for MFP1 payments—or grow crops that had a larger payment rate—but farms with a Black operator have less total cropland acres. Farms with an American Indian, Asian, or Native Pacific Islander operator grow relatively fewer crops eligible for MFP1 payments—or grow crops with a smaller payment rate. About 44-54% of the disparity in payments was due to farm size (i.e., total cropland acres) for farms with operators of these other races, while farm size accounted for 91% of the disparity for farms with a Black operator.

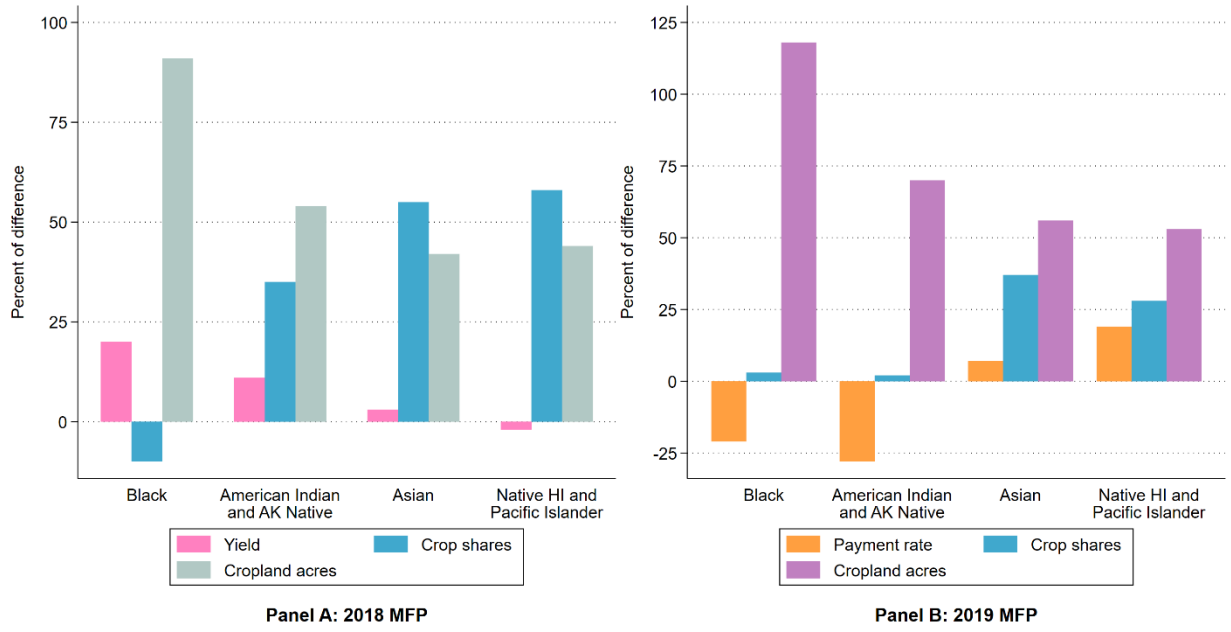

Figure 5. Three-way decomposition of the percent difference in estimated eligible payments with farms with a white operator

Source: Author calculations using data from USDA NASS, 2017 Census of Agriculture.

The three-way decomposition shows that even more of the disparity in payments was due to farm size for MFP 2 (Figure 5). Farms with a Black operator are located in counties with relatively higher MFP2 payment rates and about the same share of their acres are planted to eligible crops. Therefore, all of the disparity (118%) is due to farm size for farms with a Black operator. For farms with an American Indian, Asian, or Native Pacific Islander operators, 70%, 56%, and 53% of the disparity was due to differences in farm size. Farms with an Asian operator also received smaller payments because a smaller portion of their cropland area was planted to eligible crops since they tend to produce more specialty crops.[1] Part of the disparity for farms

[1] Only 9% of farms with a White operator are classified as either vegetable and melon farming, fruit and tree nut farming, or greenhouse, nursery, and floriculture production compared to 55% and 35% of farms with an Asian or Native Pacific Islander operator.

with an American Indian operator was because they tend to be located in the West where county payment rates were smaller.

Conclusion

We provide new insights on the source of payment disparities across racial groups in the context of the Market Facilitation Program (MFP). In particular the source of disparities in payments per farm and race are highlighted across commodities and farm size. Studying the distribution of MFP is important because this ad hoc program affected a majority of the farmers in the country and also because the program operated through a formula to calculate payments. We use these payment formulas to estimate MFP payments that each farm in the 2017 Census of Agriculture was eligible to receive.

We show that the disparity in payments that farms were eligible to receive was large. Farms with a white operator were eligible to receive 4.7 (4.2) times larger payments than farms with a black operator and 8.3 (6.1) times larger payments than farms with an American Indian operator for MFP1 (MFP2). The source of the disparity between farms with a White operator and farms with a Black operator can be explained almost completely by differences in farm size—only about 2.6% of family farms with a Black operator have a gross cash farm income above $150,000, compared to 14.6% for family farms with a White operator. For farms with operators of other race categories, about half of the discrepancy in payments is due to differences in farm size and the rest is due to the location and type of commodities produced by these farms.

There are some important points to note about our results. We estimate the amount of MFP payments a farm was eligible to receive in 2018 and 2019 based on their production reported in the 2017 Census of Agriculture. We do not observe the actual amount of MFP payments

received, so we cannot test whether there was any discrimination or discrepancy in the administration of the program payments. However, the estimated total MFP payments are correlated to total actual payments received. Instead, our results show how the formulas used to calculate the payments led to disparities. The results highlight that program payments based on production create a disparity in payments between farms with operators of different races which are explained by farm size.

References

Adjemian, Michael K., Aaron Smith, and Wendi He. 2021. "Estimating the Market Effect of a Trade War: The Case of Soybean Tariffs." *Food Policy* 105: 102152. https://doi.org/10.1016/j.foodpol.2021.102152.

Belasco, Eric J., and Vincent Smith. 2022. "The Impact of Policy Design on Payment Concentration in Ad-Hoc Disaster Relief: Lessons from the Market Facilitation and Coronavirus Food Assistance Programs." *Food Policy* 106: 102189. https://doi.org/10.1016/j.foodpol.2021.102189.

Carter, Colin A., and Sandro Steinbach. 2021. *The Impact of Retaliatory Tariffs on Agricultural and Food Trade*. National Bureau of Economic Research, Working Paper 27147. https://doi.org/10.2139/ssrn.3603777.

Choi, Jaerim, and Sunghun Lim. Forthcoming. "Tariffs, Agricultural Subsidies, and the 2020 US Presidential Election." *American Journal of Agricultural Economics*, in press. https://doi.org/10.1111/ajae.12351.

Daniel, Pete. 2013. *Dispossession: Discrimination Against African American Farmers in the Age of Civil Rights*. Chapel Hill: The University of North Carolina Press.

Escalante, Cesar L., Rodney L. Brooks, James E. Epperson, and Forrest E. Stegelin. 2006. "Credit Risk Assessment and Racial Minority Lending at the Farm Service Agency." *Journal of Agricultural and Applied Economics* 38 (1): 61–75. https://doi.org/10.1017/S1074070800022070.

Escalante, Cesar L., Adenola Osinubi, Charles Dodson, and Carmina E. Taylor. 2018. "Looking Beyond Farm Loan Approval Decisions: Loan Pricing and Nonpricing Terms for Socially Disadvantaged Farm Borrowers." *Journal of Agricultural and Applied Economics* 50 (1): 129–48. https://doi.org/10.1017/aae.2017.25.

Francis, Dania V, Darrick Hamilton, Thomas W Mitchell, Nathan A Rosenberg, and Bryce Wilson Stucki. 2022. "Black Land Loss: 1920–1997." *AEA Papers and Proceedings* 112: 38–42.

Francis, Greg. 2021. *Just Harvest: The Story of How Black Farmers Won the Largest Civil Rights Case against the U.S. Government*. Forefront Books.

Giri, Anil K., Dipak Subedi, and Kathleen Kassel. 2023. "Analysis of the Payments from the Coronavirus Food Assistance Program and the Market Facilitation Program to Minority Producers." *Applied Economic Perspectives and Policy*, in press. https://doi.org/10.1002/aepp.13325.

Glauber, Joseph W. 2021. "US Trade Aid Payments and the WTO." *Applied Economic Perspectives and Policy* 43 (2): 586–603. https://doi.org/10.1002/aepp.13109.

Government Accountability Office. 2020. "USDA Market Facilitation Program: Information on Payments in 2019." https://www.gao.gov/assets/gao-20-700r.pdf.

———. 2021. "USDA Market Facilitation Program: Stronger Adherence to Quality Guidelines Would Improve Future Economic Analysis." https://www.gao.gov/assets/gao-22-468.pdf.

———. 2022. "USDA Market Facilitation Program: Oversight of Future Supplmental Assistance to Farmers Could Be Improved." https://www.gao.gov/assets/gao-22-104259.pdf.

Grant, Jason H, Shawn Arita, Charlotte Emlinger, Robert Johansson, and Chaoping Xie. 2021. "Agricultural Exports and Retaliatory Trade Actions: An Empirical Assessment of the

2018/2019 Trade Conflict." *Applied Economic Perspectives and Policy* 43 (2): 619–40. https://doi.org/10.1002/aepp.13138.

Horst, Megan, and Amy Marion. 2019. "Racial, ethnic and gender inequities in farmland ownership and farming in the U.S." *Agriculture and Human Values* 36: 1-16.

Janzen, Joseph P, and Nathan P Hendricks. 2020. "Are Farmers Made Whole by Trade Aid?" *Applied Economic Perspectives and Policy* 42 (2): 205–26. https://doi.org/10.1002/aepp.13045.

Key, Nigel. 2019. "Farm Size and Productivity Growth in the United States Corn Belt." *Food Policy* 84 (2018): 186–95. https://doi.org/10.1016/j.foodpol.2018.03.017.

Morgan, Stephen, Shawn Arita, Jayson Beckman, Saquib Ahsan, Dylan Russel, Philip Jarrell, and Bart Kenner. 2022. "The Economic Impacts of Retaliatory Tariffs on U.S. Agriculture." Economic Research Service, USDA. Economic Research Report No. 304.

Paulson, Nicholas D., Allen M. Featherstone, and Joleen C. Hadrich. 2020. "Distribution of Market Facilitation Program Payments and Their Financial Impact for Illinois, Kansas, and Minnesota Farms." *Applied Economic Perspectives and Policy* 42 (2): 227–44. https://doi.org/10.1002/aepp.13055.

Sant'Anna, Ana Claudia, Kevin N. Kim, and Iryna Demko. Forthcoming. "Limits to Capital: Assessing the Role of Race on the Paycheck Protection Program for African American Farmers in America." *Applied Economic Perspectives and Policy*, in press. https://doi.org/10.1002/aepp.13338.

Wilson, Norbert Lance Weston. 2023. "A Call for Justice Work in Agricultural and Applied Economics." *American Journal of Agricultural Economics* 105 (2): 393–408. https://doi.org/10.1111/ajae.12386.

Yu, Jisang, Nelson B. Villoria, and Nathan P. Hendricks. 2022. "The Incidence of Foreign Market Tariffs on Farmland Rental Rates." *Food Policy* 112: 102343. https://doi.org/10.1016/j.foodpol.2022.102343.

Supplementary Appendix

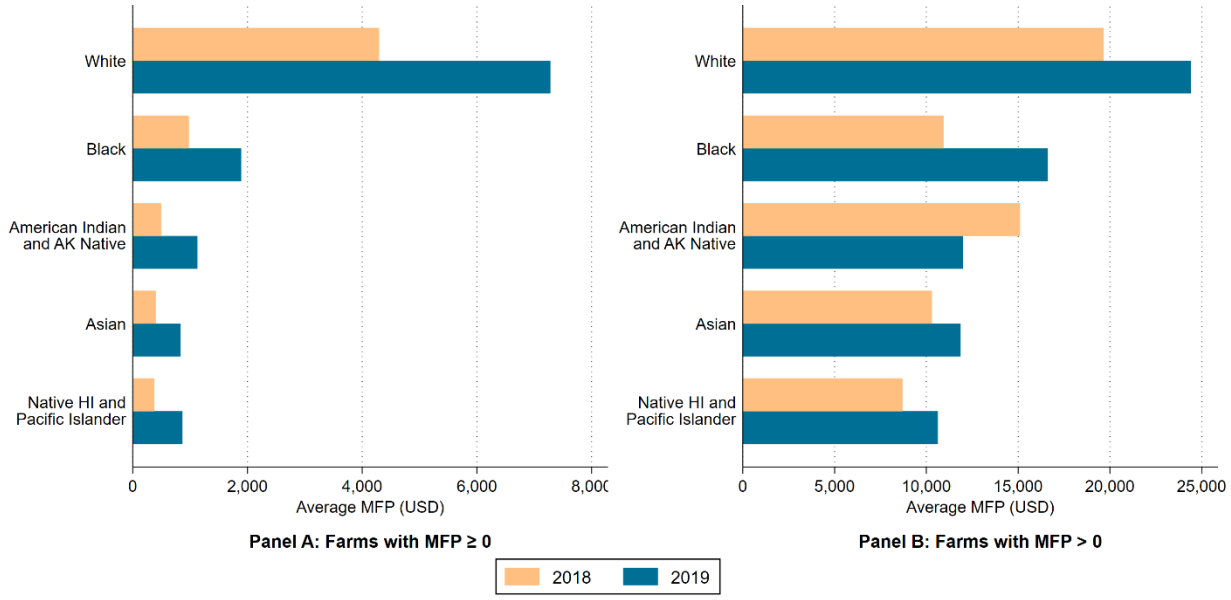

Figure A1. Estimated eligible MFP payments by race

Source: Author calculations using data from USDA NASS, 2017 Census of Agriculture.