

IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF ILLINOIS

---

MATTHEW A. MORTON and  
JOSHUA A. MORTON,

Case No. 3:21-cv-00540-NJR

Plaintiffs,

v.

THOMAS J. VILSACK, in his official  
capacity as Secretary of Agriculture; ZACH  
DUCHENEAUX, in his official capacity as  
Administrator, Farm Service Agency,

Defendants.

---

**DECLARATION OF STEPHEN G. BRONARS IN SUPPORT OF PLAINTIFFS’  
MOTION FOR SUMMARY JUDGMENT**

I, Dr. Stephen G. Bronars, declare as follows:

1. I am a Partner with Edgeworth Economics, a consulting firm specializing in economic and statistics research. I worked previously at Welch Consulting for more than eight years and prior to that I was the Leroy Denman Jr. Regents Professor of Economics at the University of Texas at Austin.

2. I hold a Ph. D. in Economics from the University of Chicago and have published numerous peer reviewed papers on labor economics, econometrics, and applied statistics in academic journals. A copy of my curriculum vitae is attached to this declaration as Appendix A to Exhibit 1.

3. Plaintiffs’ counsel retained my services as a rebuttal expert witness in this case. I was instructed to evaluate the expert report by Dr. Alicia Robb disclosed on January

7, 2022. Edgeworth Economics is being compensated \$390 per hour for my work on this matter. My fee is not contingent on the outcome of the case.

4. Under the terms of my retainer agreement, I produced a rebuttal report in this case. That report contains a summary of my qualifications. It also contains all of my expert opinions that I would testify to at a trial in this matter. My rebuttal report—along with exhibits and appendices—is attached as Exhibit 1 to this declaration.

Signed under penalty of perjury this 31st day of January,  
2022, at Austin, TX.



---

Dr. Stephen G. Bronars

# Exhibit 1

Decl. of Bronar/P. Rebuttal Report

Court: S.D. Ill. Case No. 3:21cv540-NJR

Pacific Legal Foundation  
555 Capitol Mall, Suite 1290  
Sacramento CA 95814 – 916.419.7111

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF ILLINOIS**

**CASE No. 3:21-cv-540-NJR**

MATTHEW MORTON, et. al.,

*Plaintiffs,*

v.

THOMAS J. VILSACK, in his official capacity  
as SECRETARY OF AGRICULTURE, et. al,

*Defendants.*

**REBUTTAL EXPERT REPORT OF DR. STEPHEN G. BRONARS**

**TABLE OF CONTENTS**

I. QUALIFICATIONS AND ASSIGNMENT .....3

II. SUMMARY OF CONCLUSIONS .....4

III. DR. ROBB’S METHODOLOGY IS FLAWED .....9

IV. GROWTH IN FARMS OPERATED BY MINORITY FARMERS .....12

V. A HIGHER PROPORTION OF MINORITY FARMERS ARE NEW AND BEGINNING  
FARMERS COMPARED TO WHITE FARMERS .....15

VI. THE IMPORTANCE OF EARNINGS FROM WORK OFF THE FARM.....17

VII. THOUSANDS OF MINORITY FARMERS OPERATE FARMS THAT GENERATE MORE  
MARKET VALUE THAN THE MAJORITY OF FARMS OPERATED BY WHITE FARMERS.....19

VIII. GEOGRAPHIC MISMATCH OF LARGE FARMS AND THE MINORITY POPULATION .....21

IX. PARTICIPATION IN AID PROGRAMS .....24

X. FARM LOANS .....26

## **I. QUALIFICATIONS AND ASSIGNMENT**

1. I am a Partner with Edgeworth Economics, a consulting firm specializing in economic and statistics research. I worked previously at Welch Consulting for more than eight years and prior to that I was the Leroy Denman Jr. Regents Professor of Economics at the University of Texas at Austin. I have submitted expert reports and testified on statistics and analysis of class certification and collective action topics in labor and employment matters, on damages and liability in discrimination cases, and on sampling and statistical analysis in other labor and employment matters. I also work extensively on a consulting basis to analyze data relating to employment discrimination and other labor and employment issues.

2. I earned a PhD in Economics from the University of Chicago. I have published numerous peer reviewed papers on labor economics, econometrics, and applied statistics in academic journals. I have also written articles for trade publications on topics related to the statistical analysis of human resource data. Edgeworth Economics is being compensated at \$390 per hour for my time for this matter. My compensation is not contingent on my opinions or the outcome of the case. A copy of my curriculum vitae, which includes a list of my previous expert testimony within the past four years and my publications, is attached as Appendix A.

3. I have been asked by plaintiffs' counsel to evaluate the expert report submitted by Dr. Alicia Robb on January 7, 2022, in this matter. My opinions are based on my analysis of the data tabulations in Dr. Robb's report, her empirical methods, and my knowledge as a labor economist and applied econometrician. In preparing this report I reviewed Dr. Robb's report, the data she used and the reports she cited, as well as other data sources and documents. A list of the materials relied upon to reach my conclusions are attached as Appendix B.

4. The remainder of this report is organized as follows. Section II presents a summary of my conclusions. Section III explains why Dr. Robb's empirical methodology for identifying the impact of racial and ethnic discrimination by the U.S. Department of Agriculture (USDA) against minority farmers is flawed. Section IV shows that between 2007 and 2017 the number of farms operated by minority farmers, especially farms with at least 50 acres of land, has grown substantially faster than farms operated by white farmers. Section V shows that new and beginning farmers represent a higher share of minority than white farmers. Section VI presents data showing that substantial racial and ethnic differences in opportunities to earn income away

from the farm may be an important factor explaining why minority farmers (other than Asian Americans) tend to operate smaller farms, on average, than white farmers. Section VII explains that many white farmers operate farms that generate less annual market value than the typical farm operated by a minority farmer and many minority farmers operate farms that generate more annual market value than the typical farm operated by a white farmer.<sup>1</sup> Section VIII explains that an important explanation for the relatively small number of minority farmers operating large farms is the disproportionate number of large farms in rural areas where relatively few minorities live. Section IX and X conclude the report with a discussion and criticism of the farm aid and farm loan data tabulations presented by Dr. Robb.

## II. SUMMARY OF CONCLUSIONS

5. Dr. Alicia Robb's report purports to show that past discrimination by the USDA against minority farmers in loan programs has resulted in "large and adverse disparities between minority and non-minority farmers" that "cannot be explained solely by differences between minority and non-minority farmers or other factors untainted by discrimination."<sup>2</sup> However, her empirical methodology is flawed because the aggregate data tabulations she presents do not account for the impact of economic factors and farmer characteristics (other than race and ethnicity) on racial and ethnic differences in farm outcomes. Economic factors that she does not account for include where farms are located, what commodities are produced, the size and cost of farm operations, and off the farm earnings opportunities. Farmer characteristics that she does not account for include the amount of previous farming experience and the number of days per year engaged in off the farm work. While her report documents important differences in some of these factors and farmer characteristics within and between racial and ethnic minority groups, the aggregate data she relies upon cannot account for the effects of these economic factors or farmer characteristics when comparing differences in farm size, farm revenue, and farm market value between minority and white farmers.

---

<sup>1</sup> The Agricultural Census defines a farm's annual market value as the sum of sales revenue plus government payments.

<sup>2</sup> Robb Report page 5.

6. Census of Agriculture data reports information about the locations of farms, the commodities produced by farms, whether farmers began operating a farm within the past ten years, and the number of days each year farmers work on jobs off the farm. The available Census data tabulations relied upon by Dr. Robb cannot be used to determine the extent to which these factors explain some of the less favorable outcomes of farms operated by minority farmers. Her empirical methods largely rely on simple comparisons, at the national or state level, of overall average outcomes among farms operated by minority and white farmers. These overall average differences, unconditional on other economic factors or farmer characteristics, cannot show the extent to which these other factors (described above) explain some of the less favorable outcomes of minority farmers. Comparisons of overall average differences between minority and white farmers that do not account for the impact of these factors cannot reliably determine the economic harm attributable to past discrimination in USDA loan programs. The overall average differences she presents also do not identify which minority farmers may still be suffering economic losses from past USDA discrimination and which minority farmers are now able to achieve outcomes comparable to (or even better than) similarly situated white farmers.<sup>3</sup>

7. Dr. Robb combines farmers with different amounts of experience, who spend different numbers of days per year working on and off the farm, who produce different commodities, and operate farms of different sizes in different counties and states to generate overall average measures of farm outcomes. Her overall average tabulations of racial and ethnic differences in farm outcomes therefore conflate the potential effects of past USDA discrimination and economic factors. Moreover, she provides no benchmarks for minority farm outcomes in the absence of past discriminatory behavior of the USDA or recognition that benchmarks should depend on the farmer's relevant farming experience, the number of days per year working off the farm, as well as the commodities produced and the farm's location. Without such benchmarks, Dr. Robb cannot reliably measure the disparity between minority farm outcomes and what would have been expected absent USDA discrimination or determine whether these disparities are statistically significant. As a result, her assertions that the overall average

---

<sup>3</sup> By similarly situated farmers, I mean farmers with similar experience who spend the same amount of time working on and off the farm, and who operated farms producing the same commodities in the same geographic area.

differences between minority and non-minority farm outcomes can be attributed to past USDA discrimination are unreliable and unscientific.

8. Dr. Robb presents comparisons between white and minority farmers of several different racial and ethnic minorities. There is considerable variation among farms operated by farmers of different racial and ethnic minority groups in the commodities produced, farm sizes and locations, prior farming experience, and the number of days per year working off the farm. Despite being unable to account for the wide variation in these farmer and farm characteristics within and between minority groups, Dr. Robb assumes that past USDA discrimination continues to impact all farms operated by a minority farmer, whether the farmer is American Indian or Alaska Native, Asian, Black or African American, Pacific Islander or Native Hawaiian, Hispanic or Latino, or members of other races.

9. Despite Dr. Robb's assertions about the overall impact of USDA discrimination, the data show that more than half of farms operated by white farmers generate less market value than the typical (median) farm operated by an Asian farmer, and about one-third of farms operated by white farmers generate less market value than the typical (median) farm operated by African American or Latino farmers. Similarly, there are thousands of minority farmers, including a majority of Asian farmers, who operate farms that generate more market value than the typical (median) farm operated by a white farmer.

10. The outcomes that Dr. Robb studies include: the relatively low representation rate of minority farmers relative to the U.S. population in rural areas, the smaller acreage and lower revenue of farms operated by minority farmers, the apparently lower participation of minority farmers in Federal aid programs, and the higher rate at which minority farmers are not current on their debt relative to non-minority farmers. I examine these outcomes and show data tabulations indicating that factors such as farm location, commodities produced, differing amounts of farmer experience, differing amounts of time worked off the farm, and differing non-farm earnings opportunities may account for a substantial portion of the aggregate differences in outcomes between minority and non-minority farmers.

11. My examination of the same Census of Agriculture data relied upon by Dr. Robb indicates that:

- Some of the differences in the acreage and market value of farms operated by minority and non-minority farmers are due to geographic differences between where members of minority groups live and where large farms are located rather than past USDA discrimination.
- Some of the differences in the acreage and market value of farms operated by minority and non-minority farmers are due to a higher share of new and beginning farmers (farmers with less than ten years of farm experience) among minority farmers.
  - New and beginning farmers tend to operate smaller farms with lower market value, on average, and Dr. Robb fails to account for these differences.
- The number of farms operated by minority farmers, especially the number of medium (50 to 499 acres) and large (500 acres or more) farms, increased between 2007 and 2017, while the number of farms operated by white farmers declined.
  - Despite these trends, Dr. Robb asserts that the growth in farms operated by minority farmers would have been even greater but for USDA's discrimination without providing a specific benchmark against which to evaluate this claim.

12. Dr. Robb fails to address or study the possible impact of differences in off the farm earnings opportunities for minority workers on the size and market value of minority-operated farms. Most of the farms identified in the Census of Agriculture, regardless of the race or ethnicity of the farmer, generate less than \$10,000 per year in market value.<sup>4</sup> Off the farm earnings are therefore the primary source of household income for many small farmers and an important factor in determining the financial viability of many farms. My examination of 2019 Census data shows substantially lower off the farm earnings opportunities in rural areas for minority workers (other than Asian Americans) relative to white workers. Dr. Robb completely ignores the possible impact of lower off the farm earnings opportunities for minority farmers on the size and financial success of farms and only considers the continued effects of past USDA

---

<sup>4</sup> Market value is defined as the revenue from farm operations plus government payments received. The net income from farm operations is market value minus the costs of labor, equipment, fertilizer, energy, water, and other inputs used in farm operations.

discrimination as a possible explanation for the observation that minority farmers (other than Asian Americans) operate smaller farms that generate less market value, on average, than farms operated by white farmers.

13. Dr. Robb presents data on participation in two federally funded aid programs, the Market Facilitation Program (MFP) and the Coronavirus Food Assistance Program (CFAP). Although she claims to find under-participation of minority farmers in these programs, her comparisons are inaccurate because:

- Many participants in the MFP and CFAP programs did not provide information about their race or ethnicity, so the estimated percentage of minority recipients is subject to potential non-response bias.
- The MFP and CFAP provided financial assistance for specific commodities impacted by foreign tariffs and market disruptions caused by the coronavirus pandemic, but Dr. Robb's comparisons do not control for the impact on participation of differences in the commodities produced by minority and non-minority farmers.
- The non-minority share of program participation is similar to the non-minority share of farms with at least \$5,000 in market value. Dr. Robb concludes that program participation is disproportionately low for minorities because her implicit benchmark is based on the unsupported hypothesis that farms with only a few thousand dollars per year in market value are just as likely to participate in these programs as considerably larger farms.

14. Dr. Robb presents data showing that minority farmers are more likely to receive Direct Loans and Guaranteed Loans but are also less likely to be current on their farm debt. However, Dr. Robb's analysis is based on aggregate data and is unable to account for the acreage and value of the farmland, the amount of non-farm work and non-farm earnings of the farmer, and other relevant economic factors that could impact the financial success of non-minority and minority farmers. Moreover, most farmers who are behind on their debt payments in her data tabulations are not members of a minority group, suggesting that the financial difficulties faced in the agricultural sector are shared by both minority and non-minority farmers.

15. Dr. Robb presents a summary of individual loan application data suggesting that minority farmers apply less for USDA loans than what might be expected given their economic circumstances and that minority farmers are more likely than white farmers to withdraw their USDA loan applications. However, she presents no analysis to show that these patterns of loan applications and withdrawn applications were the result of USDA discriminatory behavior or that they caused these farmers to experience poorer economic outcomes than they would have otherwise.

16. Dr. Robb presents no economic analysis of how and why prior USDA discrimination resulted in disproportionately more minority farmers receiving USDA farm loans and falling behind in their debt payments. She did not establish whether the USDA's discrimination resulted in higher interest rates or credit rationing adverse to the minority farmers in her loan data tabulations. The tabulations she presents are also consistent with a recent history of less restrictive loan qualifications for minority farmers that could have the unintended consequence of a higher share of minority farmers falling behind on their loan payments.

### **III. DR. ROBB'S METHODOLOGY IS FLAWED**

17. Throughout her report, Dr. Robb compares average farm market value, farm revenue, farm size and other characteristics between farms operated by minority and white farmers.<sup>5</sup> Because of the limitations of the Agricultural Census data tables upon which she relies, she is unable to account for other factors (described below) that might explain some of the differences in average outcomes between farms operated by white and minority farmers. For example, these data do not allow a comparison of farm market values between minority and white farmers with similar farming experience, who spent similar days working off the farm in the past year, and who produced the same commodities (operated in the same agricultural industry) in the same geographic area. To accurately assess the impact of past discrimination by the USDA on the outcomes of minority farmers, an economist should begin by comparing outcomes among minority and non-minority farmers with similar observed characteristics of

---

<sup>5</sup> The Agricultural Census data upon which much of Dr. Robb's empirical analyses are based refer to the individuals who operate farms as the "principal producers" on farms. Throughout this report I will refer to principal producers as farmers.

operating farms producing the same commodities in the same area.<sup>6</sup> Her analysis, because of data limitations, is unable to measure racial and ethnic disparities in farm outcomes after accounting for differences in farmer experience, the amount of work conducted off the farm, commodities produced, or the location of the farm. Dr. Robb conjectures that much of the overall racial and ethnic differences in average outcomes she presents are due to past racial discrimination in USDA loan policies, instead of these factors, even though she cannot measure disparities in farm outcomes that simultaneously account for the factors described above. Her tabulations cannot determine whether there are statistically significant racial and ethnic disparities in farm outcomes, after accounting for these factors, for the wide variety of farmers and farms that are included in her data tabulations.

18. Dr. Robb presumes that past discrimination by the USDA has adversely impacted nearly all minority farmers. While past USDA discrimination may have a continued adverse effect for some minority farmers, her methods cannot assess whether settlements from previous lawsuits or changes in USDA policies have enabled some minority farmers to achieve outcomes comparable to those of otherwise similar white farmers. An important question that Dr. Robb did not investigate and cannot study, given the limitations of her data, is whether new and beginning minority farmers have been harmed by the USDA's discriminatory practices that occurred before they became farmers. Dr. Robb cannot assess how the history of discriminatory USDA policies adversely affected the outcomes of beginning minority farmers because, for example, her data do not allow comparisons of outcome differences between minority and white beginning farmers that account for the impact of spending different numbers of days per year working off the farm or producing different commodities in different areas.

19. Dr. Robb's opinion is that while there are substantial average differences in the characteristics of minority and white farmers, and the farms they operate, these differences are tainted by the legacy of USDA discrimination and are therefore not legitimate factors for a

---

<sup>6</sup> Dr. Robb's study suffers from what econometricians call omitted variable bias. See Wooldridge, J.M., *Introductory Econometrics: A Modern Approach*, 5th Edition, 2012, Pages 88-93. Differences in outcomes among minority and white farmers with similar observed characteristics may not be the result of discrimination but could instead be due to differences in omitted and unmeasured characteristics such as the farmer's productivity as well as the productivity of the land and other resources used to operate the farm.

statistical model.<sup>7</sup> While some differences in the characteristics of minority and white farmers may have been impacted by past USDA discrimination, a farm's location, the types of commodities being produced, a farmer's agricultural experience, and the amount of time the farmer spends working off the farm are legitimate factors that are expected to impact farm outcomes and should be accounted for when assessing the potential impact of the USDA's prior discriminatory behavior.

20. The Agricultural Census data upon which Dr. Robb relies for many of her tabulations do not compare farm revenue, farm market value, or farm size for farms operated by minority and white farmers that produce the same commodity in the same geographic area (state and county). These data tabulations also do not compare farm revenue, farm market value, or farm size for minority and white farmers with similar amounts of farming experience who spent similar amounts of time working off the farm in the past year. Because the tabulations in Dr. Robb's report do not compare outcomes between otherwise similar minority and white farmers, she does not reliably assess the magnitude or extent of the continued adverse effects of past discrimination by the USDA. The failure to account for these factors makes it impossible to determine whether the differences reported by Dr. Robb are representative of the experiences of many minority farmers.

21. The inability to account for legitimate economic factors when comparing farm outcomes between minority and non-minority farmers is the fundamental flaw in Dr. Robb's methodology. Her own report documents differences in the characteristics of minority and white farmers by showing that minority farmers tend to live in different states and produce a different distribution of commodities than farms operated by white farmers, depending on their minority group affiliation. Her report indicates that a relatively high share of minority farmers entered farming within the past ten years. She documents substantial variation in the number of days farmers worked off the farm in the previous year and shows that some minority farmers spend significantly more days working off the farm than the typical white farmer.

---

<sup>7</sup> Dr. Robb also seems to argue that the differences in farm or farmer characteristics between minority and non-minority farmers would not be substantial enough to account for all the observed aggregate differences in farm outcomes between minorities and non-minorities.

22. Dr. Robb is unable to determine whether minority farmers generate farm revenue and farm market value that is significantly different than the outcomes of white farmers with similar experience in the same state and county, who work similar days off the farm, and grow the same crops. She also made no attempt to show that disparities in farm outcomes between minority and white farmers are common across various subgroups of farmers or that an overall average differential is representative of the experiences of any particular subgroup of minority farmers. She merely asserts that all minority farmers have suffered losses from the past discriminatory behavior of the USDA, even the thousands of minority farmers who became farmers in the past decade.

23. Dr. Robb's empirical analysis in her report is analogous to a study of non-farm earnings differentials between whites and minorities that only compares overall average annual earnings. These overall average comparisons would not allow an economist to conclude that racial and ethnic discrimination was responsible for the observed differences between racial and ethnic groups. This is because some of the overall earnings differences may be due to differences in workers' occupations, educational attainment, or whether workers are full-time or part-time. Reliable labor market discrimination studies account for the impact of differences in worker characteristics and investigate the possibility that some groups of workers, such as more highly educated workers or workers who entered the workforce more recently, face different racial and ethnic earnings disparities than other groups of workers. Reliable studies of economic discrimination require less aggregated data that allows the economist to control for multiple worker characteristics when making comparisons between groups. The aggregate data tabulations presented by Dr. Robb do not allow her to make comparisons among farmers that account for the impact of farmer or farm characteristics on farm outcomes, nor do the tabulations allow her to determine whether some groups of minority farmers had larger or smaller disparities in farm outcomes relative to the white farmers to whom they should be compared.

#### **IV. GROWTH IN FARMS OPERATED BY MINORITY FARMERS**

24. Dr. Robb presents data tabulations throughout her report showing that minorities are underrepresented in farming relative to their representation in the U.S. population. For example, in her Table 3B she shows that farmers who are either Hispanic or non-white

accounted for about 10% of farmers in 2017 compared to about 20% of the 2010 population in rural areas. Dr. Robb does not explain why the share of minority farmers would match the share of the minority population in rural areas absent discrimination by the USDA. Given her unexplained benchmark, for Dr. Robb to conclude that USDA's history of discrimination had no continuing effects on minority farmers, the number of farms operated by minority farmers would need to have doubled between 2007 and 2017.<sup>8</sup>

25. This benchmark for determining that USDA's history of discrimination no longer impacts minorities makes little economic sense. In the absence of discrimination, rational workers and entrepreneurs might be wary of entering an agricultural sector that is diminishing in size; the number of farms in the U.S. declined between 2007 and 2017. The share of farms operated by minority farmers increased between 2007 and 2017 suggesting that some barriers faced by minority farmers in previous years have diminished. However, it is unreasonable to expect that an end to discrimination by the USDA would have caused minority workers and entrepreneurs to enter farming in sufficient numbers to double the number of farms operated by minority farmers between 2007 and 2017.

26. Exhibit 1 shows that between 2007 and 2017, the number of farms in the U.S. declined by about 7.4%. Exhibit 1 also shows that there were reductions in the number of medium (50 to 500 acre) and large (500 or more acres) farms of 14.5% and 5.2% respectively between 2007 and 2017. The declining number of farms in the aggregate makes it more difficult for any demographic group to see large increases in the number of farmers regardless of USDA policies.

27. Exhibit 2 shows the growth in farms under 50 acres in size, farms of 50 to 500 acres, and farms of 500 acres or more, with farmers (principal producers/operators) of different races.<sup>9</sup> The Exhibit shows the growth in the number of farms that operate with at least one

---

<sup>8</sup> I compare 2007 and 2017 because the Agricultural Census was conducted in each of those years and the Census considers a farmer who entered the farming sector in the past 10 years to be a new and beginning farmer. An approximate doubling of minority farmers in the past 10 years is what would be required for the share of minority farmers to match the minority share of the rural population.

<sup>9</sup> See 2017 Census of Agriculture Report: "The term 'operators' has been replaced with the term 'producers.' The term producer designates a person who is involved in making decisions for

minority farmer from 2007 to 2017 by farm size. The Exhibit also shows the growth in the number of farms with at least one white farmer over the same period by farm size.<sup>10</sup>

28. The number of large farms with at least one Black/African American farmer grew by 45.9% between 2007 and 2017. The number of small farms with at least one Black farmer grew by 6.5% between 2007 and 2017. For medium farms, the growth rate for farms with at least one Black farmer was 0.6% and between 2007 and 2017, respectively.

29. Exhibit 2 makes similar comparisons in the growth rates of small, medium, and large farms with farmers who are: American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, More than one Race, Hispanic or Latino, and white. Over the period 2007 to 2017, the number of medium and large farms grew for all categories with at least one minority farmer while the number of medium and large farms with at least one white farmer declined. The number of medium and large farms operated by white farmers declined by 14.7% and 6.2% respectively.

30. Although the growth in minority farmers has not caused the racial/ethnic distribution of farmers to match the distribution of the population in rural areas, that would be an unrealistic goal given the decline in the number of farms in the U.S between 2007 and 2017. The number of farms operated by Hispanic farmers (of any race) increased by 39.3% and the number of farms operated by non-white farmers (regardless of Hispanic ethnicity) increased by 18.8%

---

the farm operation. Decisions may include decisions about such things as planting, harvesting, livestock management, and marketing. The producer may be the owner, a member of the owner's household, a hired manager, a tenant, a renter, or a sharecropper. Each producer was asked if they were a principal operator or senior partner. A principal producer is a producer who indicated they were a principal operator."

<sup>10</sup> Because each farm can have multiple primary producers/operators, and because each producer/operator can report that they are members of more than one racial group, it is untenable to attempt to allocate farms into mutually exclusive groups based on the different racial groups to which primary producers/operators belong. There are more farmers (principal producers) than farms in 2017 while the number of farmers (primary operators) in 2007 was equal to the number of farms. In 2007 the principal decision maker on a farm was a principal operator with a slightly different set of responsibilities than a principal producer. The number of minority farmers (principal producers in 2017 and primary operators in 2007) increased more in percentage terms between 2007 and 2017 than the number of white farmers, but Dr. Robb considers these trends to be consistent with past USDA discrimination continuing to have an impact on minority farmers.

between 2007 and 2017. Over the same period the number of farms operated by white farmers (regardless of Hispanic ethnicity) decreased by 7.5%. The different trends in the number of farms operated by minority and non-minority farmers between 2007 and 2017 raises questions about whether nearly all minority farmers, including new farmers who entered the sector in the past decade, continue to be adversely impacted by past USDA discrimination.

31. Without a benchmark for the expected growth in farms operated by minority farmers, absent USDA discrimination, one cannot assess the impact of past discrimination on minority farmers. It is more difficult to increase minority representation in a sector if the number of businesses in that sector are declining. This has made it more difficult for minorities to increase their representation as principal producers in farms of 50 acres or more. The growth in medium to large farms operated by minority farmers compared to the decline in medium to large farms operated by white farmers suggests that some minority farmers may have experienced better outcomes from 2007 to 2017 than many white farmers. This also suggests that not all minority farmers were still suffering economic harm in the past decade due to past discrimination by the USDA.

32. Dr. Robb did not investigate how many farms operated by minority farmers grew more rapidly than similar farms operated by white farmers. Without an understanding of the relative growth rates in farms operated by minority and white farmers facing similar market conditions, it is impossible to ascertain whether nearly all minority farmers were still suffering consequences of prior discrimination by the USDA as Dr. Robb concludes.

#### **V. A HIGHER PROPORTION OF MINORITY FARMERS ARE NEW AND BEGINNING FARMERS COMPARED TO WHITE FARMERS**

33. According to the 2017 Agricultural Census, new and beginning farmers are principal producers on a farm who were not in a principal producer position on a farm 10 years ago. Many new and beginning minority farmers were not present for many of the previous discriminatory policies and actions of the USDA. This group should be of considerable interest to an investigation of whether past discrimination has impacted all minority farmers.

34. The Census data indicate that a higher proportion of minority farmers are new and beginning farmers relative to non-minority farmers, especially for certain racial and ethnic groups. The increased entry rate of minority farmers into the agricultural sector suggests that

some minority farmers in the past decade may not have been harmed by prior USDA discrimination. Dr. Robb provided no benchmark for the expected number of new and beginning minority farmers in the absence of discrimination by the USDA. Consequently, she is unable to determine whether the increased entry of new and beginning farmers is significantly less than would be expected if there was no discrimination by the USDA.

35. Dr. Robb also presented no empirical analysis of the outcomes of new and beginning minority and white farmers. For this analysis to be informative, it would need to compare the outcomes of new farmers accounting for differences in geography, farm size, commodities produced, days working off the farm, and other factors influencing farm outcomes. The purpose of this more focused investigation would be to determine whether beginning minority farmers had poorer farm outcomes than similarly situated beginning white farmers, all else equal, even though they were not directly impacted by prior discriminatory USDA behavior.

36. The aggregate data tabulations presented by Dr. Robb are unable to account for differences in the farming experience of minority and white farmers and therefore conflate minority group membership with less farming experience. If experienced farmers tend to operate larger farms that generate more revenue and market value than less experienced farmers, then it would be misleading to compare aggregate outcomes of farms operated by minority and white farmers without accounting for differences in farming experience among the two groups.

37. The data in Exhibit 3 show that 34.2% of Hispanic or Latino farmers and 37.0% of Asian farmers are new or beginning farmers compared to 24.5% of white farmers. Significantly more minority farmers (especially Asian and Hispanic or Latino farmers) are less experienced (on average) than the white farmers to which they are being compared in Dr. Robb's aggregate analyses. Dr. Robb's comparisons conflate the impact of less farming experience and the possible impact of prior USDA discrimination on minority farmers. Given the data tabulations available from the Agricultural Census, it is not possible to compare the outcomes of farms operated by minority and white farmers with comparable amounts of farming experience.

38. To illustrate how comparisons of farm outcomes without accounting for differences in farming experience can be misleading, consider the tabulations presented in Exhibit 4. Only 8.0% of farms operated by at least one new and beginning farmer are at least 500 acres in size

while 55.5% are less than 50 acres in size. In contrast, among farms operating with no new farmers, 17.3% are at least 500 acres and 37.3% are less than 50 acres in size. In addition, only 15.5% of farms operated by at least one new and beginning farmer generate \$50,000 or more in market value compared to 27.5% of farms operating with no new farmers.<sup>11</sup> Further, 66.6% of farms operated by at least one new and beginning farmer generated less than \$10,000 in market value compared to 51.8% of farms operating with no new farmers. Therefore, aggregate comparisons of the outcomes of minority and white farmers will tend to overstate the impact of minority group membership on both farm size and market value because a significantly higher proportion of minority farmers are new and beginning farmers. Throughout Dr. Robb's report, her comparisons conflate the impact of minority group membership with less farming experience (a higher share of new and beginning farmers).

## **VI. THE IMPORTANCE OF EARNINGS FROM WORK OFF THE FARM**

39. Dr. Robb presented tabulations in Table 13 of her report showing that 69.3% of Hispanic farmers, 60.3% of Black farmers, 68.3% of Asian farmers, and 71.7% of Native Hawaiian and Pacific Islander farmers spent some time working off the farm in the past year. In addition, new farmers spend significantly more time working off the farm, on average, than more experienced farmers. About 53.4% of new and beginning farmers worked off the farm for 200 or more days in a year compared to 35.2% of more experienced farmers. Overall, about 77.0% of new and beginning farmers spent some time working off the farm in the past year.

40. Earnings from work off the farm is an important consideration for the financial viability of most farms because most of the farms in the data tabulations used by Dr. Robb are quite small. About 44.1% of farms have a market value of less than \$5,000, 55.5% have a market value of less than \$10,000, and less than a quarter have a market value of \$50,000 or more. As noted in the previous section, farms operated by a new and beginning farmer have even smaller market values, on average.

41. Exhibit 5 shows that market values are low for farms operated by minority producers. About 57.5% of farms with at least one Black farmer and 58.9% of farms with at least one

---

<sup>11</sup> The distribution of farms by economic class tabulations in the Agricultural Census data groups farms with different annual market values into different categories.

Hispanic farmer have a market value of less than \$5,000. About 72.3% of farms with at least one Black farmer and 70.4% of farms with at least one Hispanic farmer have a market value of less than \$10,000. Although these figures may seem to indicate that farms operated by minority farmers tend to be struggling, many smaller farms reported in the data may be a hobby, requiring few operating costs and generating revenue lower than the farmer's earnings from off the farm work. The aggregate Agricultural Census data tabulations do not allow one to separate farms that are a hobby and farms that are the primary source of income for the principal producers operating the farms.

42. Given the relatively low market value of most farms, especially farms operated by new and beginning farmers, the financial viability of many farms and the ability to repay farm debt will likely depend on the earnings of farmers in their jobs off the farm. If minority farmers earn significantly less in their jobs off the farm than white farmers, minority farmers may have less access to capital and have a more difficult time repaying their farm debt than white farmers for reasons unrelated to discrimination by the USDA.

43. Dr. Robb did not investigate the possibility that minority farmers face more difficult financial circumstances and may have a more difficult time repaying their farm debt because they have significantly lower off the farm earnings, on average, than white farmers. She instead attributed all differences in farm outcomes adverse to minority farmers to the effects of prior USDA discrimination. Because a substantial share of minority farmers are new farmers who spend many days each year working off the farm, an understanding of the financial challenges faced by minority farmers should include an examination of differences in off the farm earnings opportunities between minority and white farmers. Dr. Robb did not investigate these differences in earnings opportunities.

44. Exhibit 6 shows the average annual full-time full-year earnings of workers in the Census Bureau's 2019 American Community Survey in outside of metropolitan areas and in primarily rural Census areas.<sup>12</sup> The Exhibit focuses on primarily rural Census areas and areas outside of metropolitan areas, because that is where most farmers are located. The Exhibit

---

<sup>12</sup> Data source: <https://www.census.gov/programs-surveys/acs/microdata.html>. The data are limited to workers who reported at least 50 weeks of work during the year and who worked at least 35 hours per week and reported some positive labor earnings.

focuses on earnings of workers employed outside of the agricultural sector to proxy for the earnings opportunities faced by farmers in their off the farm jobs.

45. Exhibit 6 shows that the average earnings of minority workers, other than Asian Americans, are significantly lower than the average earnings of white non-Hispanic workers. Outside of metropolitan areas, the average Hispanic worker (of any race) earns about 22.0% less than the average white non-Hispanic worker while in primarily rural areas the disparity is about 23.4%. The average Black Non-Hispanic worker earns 29.5% less than the average white non-Hispanic worker outside of metropolitan areas, while the earnings disparity is about 28.6% in primarily rural areas. The average Asian American earns about 4.8% more than the average white non-Hispanic worker outside of metropolitan areas while the earnings difference is 8.4% in favor of Asian Americans in primarily rural areas.

46. Exhibit 6 suggests that significantly lower average off the farm earnings opportunities in rural and non-metropolitan areas for many minority workers, relative to white and Asian workers, is a potentially important reason why some minority farmers tend to operate smaller farms. Differences in off the farm earnings opportunities relative to white and Asian workers is a possible reason why farms operated by Blacks, Hispanics, and Native Americans face greater difficulty repaying their farm debt, all else equal. If white and Asian farmers have the potential to earn significantly more off the farm than other minority farmers, their farms will likely be better able to survive declines in farm revenue during economic downturns. Dr. Robb did not examine or analyze this explanation for racial and ethnic differences in the financial success of farms.

## **VII. THOUSANDS OF MINORITY FARMERS OPERATE FARMS THAT GENERATE MORE MARKET VALUE THAN THE MAJORITY OF FARMS OPERATED BY WHITE FARMERS**

47. If most minority farmers faced continued harm from prior USDA discriminatory behavior, it would be surprising to find thousands of minority-operated farms that generated more market value than similar farms operated by white farmers. Unfortunately, as noted throughout this report, the Census data tabulations presented by Dr. Robb do not allow for market value comparisons among similarly situated farmers. However, even the aggregate data show that thousands of farms operated by minority farmers generate more market value than the farm operated by the median white farmer. This result holds even though no controls for

farmer experience, commodity produced, farmer experience, or location can be included in these comparisons and disproportionately many minority farmers operate in counties where farms tend to be smaller, on average.

48. The Census data tabulations that Dr. Robb relied on indicate that 54.9% of farms operated by white producers have annual market values *less* than \$10,000. This means that any farm operated by a minority farmer that generates at least \$10,000 in market value generates more market value than at least 54.9% of farms operated by white farmers. The Agricultural Census tabulations in Exhibit 7 show that 7,767 (55.9%) of the farms operated by Asian farmers generated at least \$10,000 in market value. While this comparison fails to control for the farm's location, acreage, commodities produced, or characteristics of the farmers, it shows that at least 55.9% of Asian farmers operate farms with higher market values than the typical (median) farm operated by a white farmer.

49. Exhibit 7 also shows that there are thousands of farms operated by Black or African American, American Indian or Alaska Native, Hispanic or Latino, and other minority farmers that generate more market value than farms operated by the median white farmer. A more careful and informative analysis, that Dr. Robb did not conduct, would compare the market value generated by similarly situated farmers, operating similar size farms, to assess whether the race or ethnicity of the farmer was associated with lower market value and less financial success, all else equal.

50. It is also true that over half of the farms operated by white farmers generate less market value than the farms operated by the median Asian farmer. In addition, about one third of the farms operated by white farmers generate less market value than the farm operated by the median Black or African American or Hispanic or Latino farmers. There is a substantial overlap in the market value distribution of farms by race and ethnicity. Not all farms operated by white farmers generate more market value than the farms operated by minority farmers and not all farms operated by minority farmers generate less market value than farms operated by white farmers.

51. It is worth noting that the racial and ethnic differences in the distribution of farms by market value in Exhibit 7 mirror the racial and ethnic differences in off the farm earnings opportunities in Exhibit 6. For example, Asian Americans are the only racial group with higher

off the farm earnings opportunities than whites and they are the only racial group that tend to operate farms with higher market values than white-operated farms. This suggests that, at least for farms with market values of less than \$10,000, which represent most farms in the U.S., individuals with greater off the farm earnings opportunities invest in larger farms and individuals with lower off the farm earnings opportunities invest in smaller farms. These patterns may have nothing to do with discriminatory behavior by the USDA.

52. As noted earlier, one of the problems of relying on Census of Agriculture data tables is that low market values may or may not indicate that a farm is struggling financially. A farm with a low market value may simply indicate that principal producers at these farms earn most of their household income from non-farm work and their farm costs of production may be quite low. The aggregate Census data tabulations relied upon by Dr. Robb make it difficult to distinguish between farms that are struggling financially and farms that provide a small supplemental income to principal producers with low operating costs.

53. Because of the difficulty in assessing the financial performance of farms based on Census of Agriculture data tabulations, it would be inappropriate to conclude that the legacy of USDA discrimination continues to harm minority farmers based on the tabulations that are the basis for much of Dr. Robb's report. Many farms with low market value may also have low operating costs, require little work from the principal producer and require little farm debt. A farm with a low market value need not indicate that the farm is struggling financially or would have expanded in size with a USDA loan.

#### **VIII. GEOGRAPHIC MISMATCH OF LARGE FARMS AND THE MINORITY POPULATION**

54. Many of the Tables presented by Dr. Robb show that minority farmers are underrepresented relative to their share of the rural population in the U.S. overall and in several larger states. Her report also shows that farms operated by minority farmers tend to be smaller than farms operated by white farmers, on average, in most states and for most minority groups. This section demonstrates that an important reason for the difference in the typical size of farms operated by white and minority farmers is that large farms are disproportionately found in rural areas in states where the minority population represents a small share of the total population.

55. The Census data tabulations that Dr. Robb relies upon only allow for aggregated comparisons of non-minority and white farmers and are unable to simultaneously account for the commodities being produced and detailed location of farms. This section shows that Dr. Robb's analysis fails to account for some of the important geographic differences in both the farm sector and the counties where most minority group members live.

56. Although the 2017 Census of Agriculture data tabulations show that farms operated by white farmers generate more market value and have more acreage, on average, than farms operated by minority farmers, these comparisons are not among farmers in the same county producing the same commodities. Because farms in different counties are of different sizes, produce different commodities, and generate different amounts of market value, and because members of different minority groups live in different counties in different proportions, many of Dr. Robb's comparisons conflate the impact of race/ethnicity and geography. Some of the observed differences in both participation in farming and the average size and market value of farms operated by minority and non-minority farmers may be attributed to geographical differences. To reliably assess the extent to which discrimination has impacted the success or failure of farms operated by minority farmers, economists should compare the outcomes of farms producing the same products in the same geographic areas among farmers with similar farming experience and days per year worked off the farm.

57. To demonstrate the geographic differences between the counties where large farms (with 500 or more acres) are located and counties where most of the minority population lives, Exhibit 8 places counties into five groups, ranging from the counties with the highest concentration of large farms per square mile to the counties with the lowest concentration of large farms per square mile. Because there are about 306,000 large farms in the U.S., each group includes about 61,200 large farms. Note that at one end of the distribution, there are about 61,200 large farms in 300 counties with a total population age 20 and above of just under five million and a land area of about 185,000 square miles. Note further that in these counties, 93.5% of the population is white, 2.9% is Black, and 1.6% is Asian. At the other end of the distribution, another 20% of the large farms are spread across 1,446 counties with a total population age 20 and above of about 190 million and a land area of about 2.39 million square

miles. Note further that in these counties, 75.2% of the population is white, 14.2% is Black, and 7.2% is Asian.

58. Exhibit 8 demonstrates that there is a high concentration of large farms in rural areas with a predominantly white population, and a low concentration of large farms in more urban areas with a much more racially and ethnically diverse population. As a result, Dr. Robb should have expected that minorities are substantially underrepresented as operators of larger farms because the minority share of the national population substantially overstates the minority share of the rural population. These patterns would be true even with no lasting impact of prior USDA discrimination.

59. Moreover, to establish a reasonable benchmark against which to compare the outcomes of farms operated by minority farmers, it would be important to control for the impact of the substantial differences in the geographic location of larger and higher revenue farms and the states and counties where much of the minority population lives. The aggregated data tabulations from the Agricultural Census do not allow such disaggregated comparisons.

60. Exhibit 9 presents a slightly different version of the geographic differences that impact minority representation in farming by focusing on the 13 states with the highest concentration of large farms. These 13 states account for more than half of all large farms in the U.S. Iowa is the state with the highest concentration of large farms and Exhibit 9 shows that 62.3% of these farms are in rural counties (counties not a part of either a metropolitan or micropolitan area), 15.2% are in counties within a micropolitan area, and 22.5% are in counties within a metropolitan area. The figures also show that, in all 13 states, most large farms are in rural areas (counties that are not part of a metropolitan or micropolitan area).

61. Exhibit 10 displays the minority population across all 13 states in Exhibit 9. Exhibit 10 shows that minority residents within these states live disproportionately within the metropolitan areas.<sup>13</sup> For example, 94.1% of blacks and 95.7% of Asians live in metropolitan areas in these states, compared to 79.0% of whites, while only 23.3% of the large farms are in counties within

---

<sup>13</sup> Overall, whites comprise 81.9% of the population age 20 or older in these 13 states, Blacks comprise 11.0%, and Asians comprise 4.2%, while nationwide the shares of the population age 20 and older are 77.6%, 12.9%, and 6.1% for whites, Blacks, and Asians, respectively.

metropolitan areas in these states. In contrast, while 8.8% of white residents of these states live in rural areas, only 2.1% of Blacks and 1.2% of Asians in these states live in rural areas. The patterns that Dr. Robb presents in her report, showing that minorities live disproportionately in urban areas and whites are relatively more likely to live in rural areas helps explain the lower representation of minority farmers on large farms.

## **IX. PARTICIPATION IN AID PROGRAMS**

62. Dr. Robb's Tables 20 and 21 purport to show that participation in the MFP and CFAP aid programs in 2018 and 2019 disfavored minority farmers. There are several important reasons why this assertion is unreliable and requires further investigation. First, according to an audit conducted by the GAO, the USDA used an unreliable method to determine a farmer's minority status so that most observations for participants in these programs have an unverified race and ethnicity data field. Although some of the race and ethnicity information was reported by program participants, most participants did not self-report their race or ethnicity. If the propensity to self-report race/ethnicity is related to an individual's race/ethnicity, there can be a substantial non-response bias.<sup>14</sup> If, for example, minority farmers were relatively more reluctant to self-report their race/ethnicity than were non-minority farmers, the reported shares of farmers by race would be biased in favor of finding too few minority farmers. The relatively large number of non-responses and unverified responses makes it difficult to reliably estimate the minority share of program participants in these data.

63. The second reason why the tabulations presented by Dr. Robb in her Tables 20 and 21 are unreliable is that these aid programs were directed for certain commodities. Unless minority and non-minority farmers produce similar commodities in similar proportions, which they do not, one would expect differences in program participation rates by minority status. The data reported by the USDA indicates that a relatively higher share of aid was received by farmers in

---

<sup>14</sup> The textbook example of non-response bias, and the problems associated with making inferences from a large but non-representative sample, is the Literary Digest survey of 1936 that predicted that Landon would defeat Franklin Delano Roosevelt in the presidential election even though FDR eventually won in a landslide. *See, for example*, Peverill Squire "Why the 1936 Literary Digest Poll Failed," *Public Opinion Quarterly*, Volume 52, Issue 1, Spring 1988, Pages 125–133.

the upper Midwest in the MFP program.<sup>15</sup> Because the racial and ethnic composition of farmers in these states is substantially less diverse than in other states, a comparison of participation in these aid programs would need to control for the types of commodities produced by minority and non-minority farmers. Dr. Robb failed to account for differences in the types of crops grown in different states, as well as differences in the geographic location of minority farmers, to determine what a reasonable benchmark would have been for minority participation in these aid programs.

64. Finally, Dr. Robb compares the participation in aid programs to the distribution of minority and non-minority farmers operating farms of all sizes to conclude that minority participation in the aid programs was lower than what would have been expected absent discrimination. However, this presumes that farms of all sizes would find it worthwhile to participate in these aid programs. The MFP program specified a certain benefit rate per acre that varied by crop and county. The CFAP aid program was scaled to a farm's production in previous years, so that smaller farms would receive less in aid. For either program, farms with a market value of less than a few thousand dollars per year would benefit very little from the program and may have been less likely to participate, regardless of the race and ethnicity of the farmers.

65. Exhibit 11 presents the share of program participants who are non-minority and minority as well as the share of farms operated by at least one white principal producer for various market value thresholds (at least \$2,500, at least \$5,000, or at least \$10,000). About 97% of farms that generate at least \$5,000 or more in revenue are operated by at least one white principal producer. The low minority share of program participants, as self-reported by program participants, is consistent with the hypothesis that farmers who operate farms with very low market values choose not to participate in the programs. Given the high share of minority farmers operating farms that generate less than \$5,000 in market value, and the possible non-response bias among program participants who did not disclose their race or ethnicity, minority farmers do not appear to be underrepresented in these aid programs.

---

<sup>15</sup> United States Government Accountability Office (“GAO”), *Agricultural Lending, Information on Credit and Outreach to Socially Disadvantaged Farmers and Ranchers is Limited* (2019), <https://www.gao.gov/assets/gao-19-539.pdf>.

Moreover, given that the MFP program was targeting crops that were the most impacted by foreign tariffs, which disproportionately impacted the upper Midwest, it does not appear that minority farmers are underrepresented in the MFP program.

#### **X. FARM LOANS**

66. Dr. Robb presents data in her Tables 18 and 19 that show that disproportionately many minority farmers have obtained either Direct Loans or Guaranteed Loans. Her discussion, however, focuses on the higher rate at which minority farmers are not current on their debt, rather than the rate at which these loans were awarded to minority and non-minority farmers.

67. Exhibit 11 repeats the information in Dr. Robb's Tables 18 and 19 but focuses on the minority and non-minority shares of each of these loans and whether the borrower is current on his/her debt repayments. For both Direct and Guaranteed Loans, the share of loan recipients who are members of a minority group is higher than the share of farms not operated by at least one white farmer. This means that the Direct and Guaranteed Loans studied by Dr. Robb are disproportionately received by minority farmers. For Direct Loans over 15% of borrowers and for Guaranteed Loans over 6% of borrowers current on their debt payments are minority farmers.

68. A higher percentage of borrowers not current on their debt payments are minority farmers. However, Dr. Robb did not provide an economic explanation for why discrimination by the USDA caused the financial difficulties faced by these farmers. Moreover, a substantial majority of farmers who are facing financial difficulties and are not current on their debt payments are not members of any minority group. About two of three borrowers with Direct Loans who are not current on their debt payments and over five of six borrowers with Guaranteed Loans who are not current on their debt payments are not members of a minority group. This suggests that many of the financial difficulties faced by U.S. farmers may be similar, regardless of the race or ethnicity of the borrower. However, Dr. Robb did not investigate which financial problems are shared by farmers, regardless of their minority status, and which problems are significantly worse for minority farmers who were Direct or Guaranteed Loan recipients.

69. Although Dr. Robb views the higher rate at which minority farmers and loan recipients fell behind on their debt payments as evidence of discrimination by the USDA, there are many reasons for differences in borrowers' ability to repay their debt obligations other than discrimination. Differences in a farmer's ability to repay loans will depend on the size of the loan, the location of the farm, the value of the farmland, the commodity being produced and the farmer's income from non-farm work. Dr. Robb controlled for none of these factors when comparing patterns of debt repayment statuses across farmers. As noted earlier in this report, there is ample statistical evidence that minority farmers (other than Asian Americans) have substantially lower earnings opportunities for off the farm work than white farmers. She also presented no evidence of differences in the terms of the loans received by minority and non-minority farmers, all else equal. Nonetheless she concluded that the reason for the observed differences in loan repayments was USDA discrimination. Dr. Robb also did not investigate the possibility that increases in the generosity of loan programs for minority farmers, or the use of less stringent requirements for minority farmers to qualify for loans may have contributed to higher rates of falling behind on debt payments for minority farmers.

70. Dr. Robb also makes the claim that minority farmers are likely to be discouraged from participating in USDA loan programs. She finds that "data provided by the USDA, together with the documented history of discrimination against minority groups, strongly suggests that at least some minority farmers are discouraged borrowers."<sup>16</sup> Her Figure 9 shows that white farmers have consistently accounted for about 90% of loan applications between 2000 and 2020, which is consistent with her Table 3B that shows that about 90% of farmers are white non-Hispanic. Dr. Robb did not prove a causal link between past discrimination and loan application rates but states that she expects a higher application rate for minority farmers for USDA loans "given their historical disadvantage in credit markets and USDA's position as a lender of last resort."<sup>17</sup> She did not show that the difference between the actual and expected loan application rates are statistically significant.

71. She presents data in her Figure 10 showing that minority farmers tend to withdraw applications for USDA loans at a higher rate than white farmers. Dr. Robb's explanation for

---

<sup>16</sup> Page 103, Robb Report.

<sup>17</sup> Page 103, Robb Report.

this pattern is that “at least some minority borrowers’ applications were likely withdrawn because they expected their applications to be denied due to distrust fostered by historic discrimination at USDA.”<sup>18</sup> Again, Dr. Robb did not prove a causal link between past discrimination and minority farmers choosing to withdraw their own loan applications. Her proposed explanation is simply speculation. She did not test whether the differences she observes are statistically significant.

72. Dr. Robb argues that prior USDA discrimination has impacted current minority farmers by causing at least some of the minority farmers to be discouraged from applying for USDA loans. This is quite different than alleging that minority loan applicants were rejected by the USDA or given less favorable terms. While Dr. Robb suggests that minority farmers who did not apply or withdrew their loan applications would have benefited from USDA loans, she has provided no economic analysis of how this would have occurred. She has not analyzed how the borrowed funds would have generated economic returns for the minority farmers who withdrew their loan applications, or who Dr. Robb believes should have applied for a USDA loan but didn’t.

Dated: January 28, 2022



---

Stephen G. Bronars, PhD

---

<sup>18</sup> Page 106, Robb Report.

## Appendix A. Curriculum Vitae of Dr. Stephen G. Bronars



**Stephen G. Bronars**  
**Partner**

t: +1 202-580-7777

sbronars@edgewortheconomics.com

January 2022

### **Stephen G. Bronars, Ph.D.** **Partner**

Dr. Bronars is an economics and statistical expert with extensive experience in economics consulting. His work as both a testifying expert and a consultant includes the rigorous statistical analysis of hiring, pay, promotion, and reduction in force decisions while assisting clients facing allegations of discrimination in these employment decisions. In both consulting work and expert testimony, he assists clients by evaluating the accuracy and reliability of prevailing wage rate determinations including analyses of the impact of labor market competition on market wage rates including the effect of visa programs and the employment of foreign-born workers on the wages and employment of domestic workers.

As an expert witness, Dr. Bronars analyzes data and testifies on both economic damages and class action topics involving commonality, typicality, and whether sampling methods can be used to extrapolate estimated economic damages to an entire class. He has consulted on cases involving allegations of wage suppression, alleged price fixing, the valuation of capital equipment, and alleged violations of the Fair Credit Reporting Act and the False Claims Act. In both consulting work and expert testimony, he has analyzed issues relating to class certification, sampling, statistical testing, and the estimation of economic damages and has provided guidance to clients on statistical issues in a variety of contexts.

Dr. Bronars consults with Fortune 500 clients and universities on a variety of labor and employment issues including diversity initiatives, monitoring pay equity, as well as equity in hiring decisions, promotion decisions and retention rates. In addition, he has worked as a consultant on issues related to immigration policy and temporary work visas and in 2016 testified before a Senate Subcommittee on the economic impact of the H-2B Visa Program.

His academic research focuses on the statistical analysis of a variety of labor topics including bargaining, labor market competition, discrimination, the impact of immigration, and statistical models of pay determination. He has published in many peer-reviewed journals including: *the American Economic Review*, *the Journal of Political Economy*, *the Quarterly Journal of Economics*, *Econometrica*, *the Journal of Econometrics*, *the Review of Economics and Statistics*, and *the Journal of Labor Economics*. He frequently writes and speaks on topics relating to competition in the labor market, the rigorous statistical analysis of economic data, and class certification issues.

Dr. Bronars received his PhD and MA degrees in Economics from the University of Chicago and his BA in Economics from the University of Illinois, Urbana-Champaign. Prior to his employment at Edgeworth, Dr. Bronars was the Leroy G. Denman Jr. Professor of Economics at the University of Texas at Austin and has held academic positions at the University of California-Santa Barbara, Yale University, and the Wharton School of the University of Pennsylvania. He has served on the Economics Advisory Board of the National Science Foundation and was an American Statistical Association-National Science Foundation Visiting Research Fellow at the Bureau of Labor Statistics.

E D U C A T I O N

University of Chicago  
Ph.D., Economics, 1983  
M.A., Economics, 1980  
University of Illinois, Urbana-Champaign  
B.A., Economics, 1978

C U R R E N T E M P L O Y M E N T

Edgeworth Economics, Washington, DC  
May 2015-present, Partner

E M P L O Y M E N T H I S T O R Y

Welch Consulting, Washington, DC  
2010 - 2015 Senior Economist, Washington D.C.  
2006 - 2010 Senior Economist, Bryan TX

Georgetown University, Washington, D.C.  
2010-2013 Adjunct Professor

University of Texas at Austin  
2003-2009 Leroy G. Denman Jr. Regents Professor of Economics  
2000-2003 Chairman, Department of Economics  
1996-2000 Professor, Department of Economics  
1992-1996 Associate Professor, Department of Economics

The Wharton School, University of Pennsylvania  
1992 Visiting Associate Professor of Economics and Public Policy

University of California – Santa Barbara  
1990-1992 Associate Professor  
1986-1990 Assistant Professor

Yale University  
1985-1986 Visiting Assistant Professor

Texas A&M University, College Station TX  
1982-1985 Assistant Professor

HONORS AND PROFESSIONAL ACTIVITIES

American Statistical Association/National Science Foundation/Bureau of Labor Statistics  
1990 Senior Research Fellow

National Science Foundation Economics Advisory Panel  
1999-2001 Member

American Bar Association, Member  
Labor & Employment Section  
Litigation Section: Employment & Labor Relations Committee

American Conference Institute, Continuing Legal Education, Speaker

Bridgeport, Continuing Legal Education, Speaker

Research Grant from the U.S. Department of Health and Human Services, "Job Selection and the Incidence of Unemployment Risk in the U.S. Labor Market", 1983.

Research Grant from the U.S. Department of Health and Human Services, "Demand Variability, Structural Changes in the Labor Market, and the Growth of Part-Time Employment", 1984, with D.R. Deere.

Research Grant from the U.S. Department of Commerce, "Self-Employment in the Labor Market: An Analysis of Racial and Ethnic Differences", 1986, with G.J. Borjas.

Research Grant from the Sloan Foundation, "Immigration and the Family", 1987, with G.J. Borjas.

Research Grant from the U.S. Department of Labor, "Self-Selection and Internal Migration", 1987, with G.J. Borjas and S.J. Trejo.

Principal Investigator, American Statistical Association/National Science Foundation/Bureau of Labor Statistics Fellowship Program, "Employment, Hours, and Weekly Wage Variation at the Establishment Level", 1990.

Research Grant from the National Institutes of Health, "Early Childbearing, Poverty, and Welfare Incentives", 1992, with J. Grogger.

Research Grant from the U.S. Department of Labor, "Incentive Pay, Earnings, and Information: Evidence from the National Longitudinal Survey of Youth", 1993, with C. Moore.

TRADE PUBLICATIONS

"Old Overtime Rules Would Burden Companies in Low Wage States," *Law360*, July 8, 2021.

"Federal Minimum Wage Should be Indexed for Local Markets," *Law360*, May 11, 2021.

"Companies Considering Layoffs Must Weight Diversity Factors," *Law360*, May 1, 2020 (with D. Foster and N. Woods).

"DOL's Overtime Rules: What to Expect for Highly Paid Workers," *Law360*, April 15, 2019 (with D. Foster).

"A Wage-Analysis Primer for Antitrust Attorneys: Part 2," *Law360*, May 23, 2018 (with D. Foster).

"A Wage-Analysis Primer for Antitrust Attorneys: Part 1," *Law360*, May 22, 2018 (with D. Foster).

"DOL Salary Projections May Rest on Inaccurate Assumptions," *Law360*, June 16, 2016 (with D. Foster).

"EEO-1 Pay Reports: Rulemaking in the Absence of Evidence," *Law360*, May 11, 2016 (with A. King and E. Blom).

"How Estimates Can Miss the Mark on Age Discrimination," *Law360*, October 8, 2015 (with N. Woods).

TRADE PUBLICATIONS  
(CONTINUED)

- "Flawed Logic of DOL's Proposed White Collar Salary Test," *Law360*, August 25, 2015 (with D. Foster and N. Woods).
- "Approaches to Hourly Rates Under DOL White Collar Rules," *Law360*, August 14, 2015 (with D. Foster and N. Woods).
- "The Problems in CFPB Process for Identifying Race," *Law360*, July 7, 2015 (with C. Fields and C. Craig).
- "Gender Pay Gap: A Problem for Contractors and Feds," *Law360*, April 23, 2014 (with A. King).
- "Legal Industry Trends: Lawyers Salaries and Job Growth," *Law360*, October 22, 2012
- "Credit Checks and Hiring," *Law360*, February 8, 2011

ACADEMIC PUBLICATIONS

- "Passing Up Uncertainty for Attendance: The NCAA Basketball Tournament Organizers Change Direction" (with T. McFall), *Eastern Economic Journal*, Vol. 40, 2014.
- "Estimates of the Return to Schooling and Ability: Evidence from Sibling Data", (with G. Oettinger), *Labour Economics*, February 2006.
- "The Effect of Welfare Payments on the Marriage and Fertility Behavior of Unwed Mothers: Results from a Twins Experiment", (with J. Grogger), *Journal of Political Economy*, June 2001.
- "Shareholder Wealth and Wages: Evidence for White Collar Workers", (with M. Famulari, *Journal of Political Economy*, April 2001.
- "Employer Wage Differentials in the United States and Denmark", (with P. Bingley, M. Famulari, and N. Westergaard-Nielsen), in *The Creation and Analysis of Matched Employer-Employee Data*, North Holland, 1999.
- "Employer-Provided Training, Wages, and Capital Investment", (with M. Famulari), in *Labor Statistics Measurement Issues*, Haltiwanger, J., Manser, M. and Topel, R., eds., University of Chicago Press, 1998.
- "Criminal Deterrence, Geographic Spillovers, and Right-to-Carry Concealed Handguns", (with J. Lott), *American Economic Review*, May 1998.
- "Do Campaign Contributions Alter How a Politician Votes?", (with J.R. Lott), *Journal of Law and Economics*, October 1997.
- "Wage, Tenure and Wage Growth Variation Within and Across Establishments", (with M. Famulari), *Journal of Labor Economics*, April 1997.
- "Unionization and Profitability: Evidence of Spillover Effects", (with D.R. Deere), *Journal of Political Economy*, December 1994.
- "The Effects of Unions on Firm Behavior: An Empirical Analysis Using Firm-Level Data", (with D.R. Deere and J.S. Tracy), *Industrial Relations*, December 1994.

ACADEMIC PUBLICATIONS  
(CONTINUED)

"The Economic Consequences of Unwed Motherhood: Using Twin Births as a Natural Experiment" (with J. Grogger), American Economic Review, December 1994.

"The Socioeconomic Consequences of Teenage Childbearing: Results from a Natural Experiment", (with J. Grogger), Family Planning Perspectives, July-August 1993.

"Union Organizing Activity, Firm Growth, and the Business Cycle", (with D.R. Deere), American Economic Review, March 1993.

"Unionization, Incomplete Contracting, and Capital Investment", (with D.R. Deere), Journal of Business, January 1993.

"Time-Series Evidence on Shirking in the House of Representatives", (with J.R. Lott), Public Choice, 1993, Vol. 76.

"Self-Selection and Internal Migration in the United States", (with G.J. Borjas and S.J. Trejo), Journal of Urban Economics, 1992, Vol. 32.

"Assimilation and the Earnings of Young Internal Migrants", (with G.J. Borjas and S.J. Trejo), Review of Economics and Statistics, February 1992. "Immigration and the Family", (with G.J. Borjas), Journal of Labor Economics, April 1991.

"The Threat of Unionization, the Use of Debt, and the Preservation of Shareholder Wealth", (with D.R. Deere) Quarterly Journal of Economics, February, 1991.

"Union Representation Elections and Firm Profitability", (with D.R. Deere), Industrial Relations, Winter 1990.

"Consumer Discrimination and Self-Selection into Self-Employment", (with G.J. Borjas), Journal of Political Economy, June 1989.

"Why Do Workers Join Unions?: The Importance of Rent-Seeking", (with J.R. Lott), Economic Inquiry, April 1989.

"The Geographic Distribution of Unemployment Rates in the U.S.: A Time-Series Spatial Analysis" (with D.W. Jansen), Journal of Econometrics, 1987.

"The Power of Nonparametric Tests of Preference Maximization", Econometrica, May 1987.

"The Fair Pricing of Unemployment Insurance Premiums", Journal of Business, January 1985.

"Estimating the Intertemporal Elasticity of Labor Supply in a Contractual Market", Economics Letters, 1983.

**TESTIMONY BY STEPHEN G. BRONARS LAST FOUR YEARS**

***U.S. Equal Opportunity Commission v. Performance Food Group, Inc.***, 13-CV-1712(MJG), United States District Court, District of Maryland, Baltimore Division, December 2017. (Supplemental Report, April 2018).

***Faith Forestry Services Inc. v. United States Department of Labor, et. al.***, Cause No. 1:17-CV-SA-DAS, United States District Court, Northern District of Mississippi, Aberdeen Division, January 2018.

***Scott Magee, individually and on behalf of all others similarly situated v. McDonald's Corporation and McDonalds USA, LLC***, Civil Action No. 16-CV-5652, United States District Court, Northern District of Illinois, May 2018.

***U.S. Equal Opportunity Commission v. Dolgencorp LLC***, Case No. 13-CV-4307, United States District Court, Northern District of Illinois, November 2018. (Three Rebuttal Declarations in March and April 2019).

***Heather Williams v. Heinrich Chevrolet Corp.***, Civil Action No. 1:17-CV-00970-WMS, United States District Court, Western District of New York, November, 2018.

***Mark A. Hairston v. Royal Building Products, Inc.***, Civil Action No. 1:18-CV-00003, United States District Court, Western District of Virginia, Abingdon Division, January, 2019.

***Adriane R. Anderson-Strange v. National Railroad Passenger Corp.***, Case No. 17-CV-1859-RGA, United States District Court, District of Delaware, January, 2019.

***Evans Fruit Company, Inc., WGE Holdings LLC, McDougall Family Farming Inc., McDougall & Sons, Inc., Double S. Orchards, LLC, Columbia Fruit Packers, Inc., Columbia Orchard Management, Inc., and Wade & Wade, LLC v. Patrick Pizzella, John P. Pallasch, and Cheryl M. Stanton***, Case No. 1:19-cv-03202-SMJ, United States District Court, Eastern District of Washington, September, 2019.

***Karen Morey v. McDonald's Corporation et. al.***, Case No. 18 cv 1137, United States District Court, Northern District of Illinois, October 2019.

***Zirkle Fruit Company v. Patrick Pizzella, John P. Pallasch, and Cheryl M. Stanton***, Case No. 1:19-cv-03180-SMJ, United States District Court, Eastern District of Washington, January 2020. (Two Supplemental Declarations in February 2020).

***Farm Labor Organizing Committee, Victor Toledo Vences, and Valentin Alvarado Hernandez v. Joshua Stein, in his official capacity as the Attorney General of the State of North Carolina***, Case No. 1:17-cv-01037, United States District Court, Middle District of North Carolina, May, 2020.

***Mark Podaras, Claimant v. Micro Focus Government Solutions, et. al. Respondents***, Case No. 01 20 0003 997, Before the American Arbitration Association, Employment Arbitration, November 2020.

***Kenneth Harriott, Tony Ojoh, Pradeep Chumble, Lenthe Barber Jr., Berhe Weldemichael, Sharon F. Lee Cannon, Louis Rugemintzawa, Ulysses Johnson, Anthony Ufoh, and Tonia Burrell on behalf of themselves and all those similarly situated v. Washington Metropolitan Area Transit Authority***, Case No. 01:19-cv-01656 TJK, 0003 997, United States District Court, Middle District of Columbia, January 2021.

**TESTIMONY BY STEPHEN G. BRONARS LAST FOUR YEARS**

**(CONTINUED)**

**Familias Unidas Por La Educacion, Plaintiff v. El Paso Independent School District, Defendant**, Case No. 3:20-cv-170-DB, United States District Court, Western District of Texas, El Paso Division, March 2021.

**Tiara Smith, Plaintiff v. BHS Hospital Services, Inc., et. al. Defendants**, Case No. 01:20-CV-01062-CCB, United States District Court, District of Maryland, March 2021.

**Barbara Stone, Plaintiff v. Nationwide Mutual Insurance Company, Defendant**, Case No. 01:20-CV-03681-JKB, United States District Court, District of Maryland, September 2021.

**James Phillips and Robert Saemian, on behalf of themselves and a class of similarly situated individuals, Plaintiffs v. Wipro Limited**, Case No. 4:18-CV-00821, United States District Court, Southern District of Texas, Houston Division, September 2021.

**Justin Muniz, on behalf of himself and all others similarly situated v. XPO LM Last Mile, Inc.**, Civil Action No. 4:18-cv-11905-TSH, United States District Court, District of Massachusetts, Central Division, November 2021.

**Scott Wynn v. Thomas J. Vilsack, in his official capacity as U.S. Secretary of Agriculture and Zach Ducheneaux, in his official capacity as Administrator, Farm Service Agency.**, Case No. 3:21-cv-514-MMH-LLL, United States District Court, Middle District of Florida, Jacksonville Division, November 2021.

**Leon Green and Waldo Tejada, on behalf of himself and all others similarly situated v. XPO LM Last Mile, Inc.**, Civil Action No. 3:19-cv-01896-Jam, United States District Court, District of Connecticut, Central Division, December 2021.

## Appendix B. Materials Relied Upon

- Expert Report of Alicia M. Robb, Ph.D. In the matter of Morton v. Vilsack, 3:21-cv-00540-NJR (S.D.I11.), January 7, 2022.
- Defendants' Disclosure of Expert Testimony, January 7, 2022.
- USDA Economic Research Service, ERS Staff Analysis, May 21, 2021.
- Report to Congress, A Comparison of Transfers and Subsidies to Minority and Non-Minority Producers Associated with Key Farm and Conservation Programs, August 5, 2021.
- 2017 Census of Agriculture United States Summary and State Data Report, [https://www.nass.usda.gov/Publications/AgCensus/2017/Full\\_Report/Volume\\_1,\\_Chapter\\_1\\_US/usv1.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_US/usv1.pdf).
- 2007 Census of Agriculture United States Summary and State Data Report, [https://www.nass.usda.gov/Publications/AgCensus/2007/Full\\_Report/Volume\\_1,\\_Chapter\\_1\\_US/usv1.pdf](https://www.nass.usda.gov/Publications/AgCensus/2007/Full_Report/Volume_1,_Chapter_1_US/usv1.pdf).
- 1997 Census of Agriculture United States Data, [https://agcensus.mannlib.cornell.edu/AgCensus/getVolumeOnePart.do?year=1997&part\\_id=949&number=51&title=United%20States](https://agcensus.mannlib.cornell.edu/AgCensus/getVolumeOnePart.do?year=1997&part_id=949&number=51&title=United%20States).
- Census Bureau, Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin: April 1, 2010 to July 1, 2019, <https://www2.census.gov/programs-surveys/popest/datasets/2010-2019/counties/asrh/>.
- Census Bureau, Delineation Files, Core based statistical areas (CBSAs), metropolitan divisions, and combined statistical areas (CSAs), Mar. 2020, <https://www.census.gov/geographies/reference-files/time-series/demo/metro-micro/delineation-files.html>.
- RAND State Statistics, Land & Water Area, <https://randstatestats.org/us/stats/land---water-area.html>.
- Peverill Squire, Why the 1936 Literary Digest Poll Failed, *Public Opinion Quarterly*, Volume 52, Issue 1, Spring 1988, Pages 125–133, <https://doi.org/10.1086/269085>.

- USDA Market Facilitation Program – Interim Report, Audit Report 03601-0003-31 (1), September 2020, [https://www.usda.gov/sites/default/files/audit-reports/03601-0003-31%281%29\\_FR\\_508\\_FOIA\\_signed.pdf](https://www.usda.gov/sites/default/files/audit-reports/03601-0003-31%281%29_FR_508_FOIA_signed.pdf).
- USDA ERS “Racial and ethnic minorities made up 22 percent of the rural population in 2017 compared to 42 percent in urban areas”, <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=93058>.
- United States Government Accountability Office (“GAO”), Agricultural Lending, Information on Credit and Outreach to Socially Disadvantaged Farmers and Ranchers is Limited (2019), <https://www.gao.gov/assets/gao-19-539.pdf>.
- Wooldridge, J.M., Introductory Econometrics: A Modern Approach, 5<sup>th</sup> Edition, 2012, Pages 88-93.
- 2012 PUMA and 2015 MSA Crosswalk, Geocorr, <https://mcdc.missouri.edu/applications/geocorr2018.html>.
- 2012 PUMA Urban and Rural Areas, Geocorr, <https://mcdc.missouri.edu/applications/geocorr2018.html>.
- Census Bureau, American Community Survey (ACS) 2019 Population Data, <https://www.census.gov/programs-surveys/acs/microdata/access.2019.html>.
- ARPA - FLP all borrower debt - 2021-07-16.xlsx, received from counsel.
- Copy of tab23630\_final.xlsx, received from counsel.
- direct\_data\_v2 (PROTECTED).csv, received from counsel.
- guar\_data (PROTECTED).csv, received from counsel.
- Copy of FSFL Report as of 12-31-20 with Loan Amts and Race-Ethnicity Revised 1-11-22 (PROTECTED).xlsx, received from counsel.
- ARPA DOJ 2021\_12\_06\_updated (PROTECTED).xlsx, received from counsel.

**EXHIBIT 1**  
**CHANGES IN NUMBERS OF SMALL, MEDIUM, AND**  
**FROM 2007 TO 2017**

<b>Farm Size</b>	<b>Number of Farms</b>		<b>Percentage Change</b>
	<b>2007</b>	<b>2017</b>	<b>From 2007 to 2017</b>
Small Farms	853,132	856,326	0.4%
Medium Farms	1,028,898	879,780	-14.5%
Large Farms	322,762	306,114	-5.2%
<b>Total</b>	<b>2,204,792</b>	<b>2,042,220</b>	<b>-7.4%</b>

Sources:

Census of Agriculture 2007; Census of Agriculture 2017.

**EXHIBIT 2**  
**CHANGES IN NUMBERS OF SMALL, MEDIUM, AND LARGE FARMS**  
**FROM 2007 TO 2017 BY RACE AND ETHNICITY**

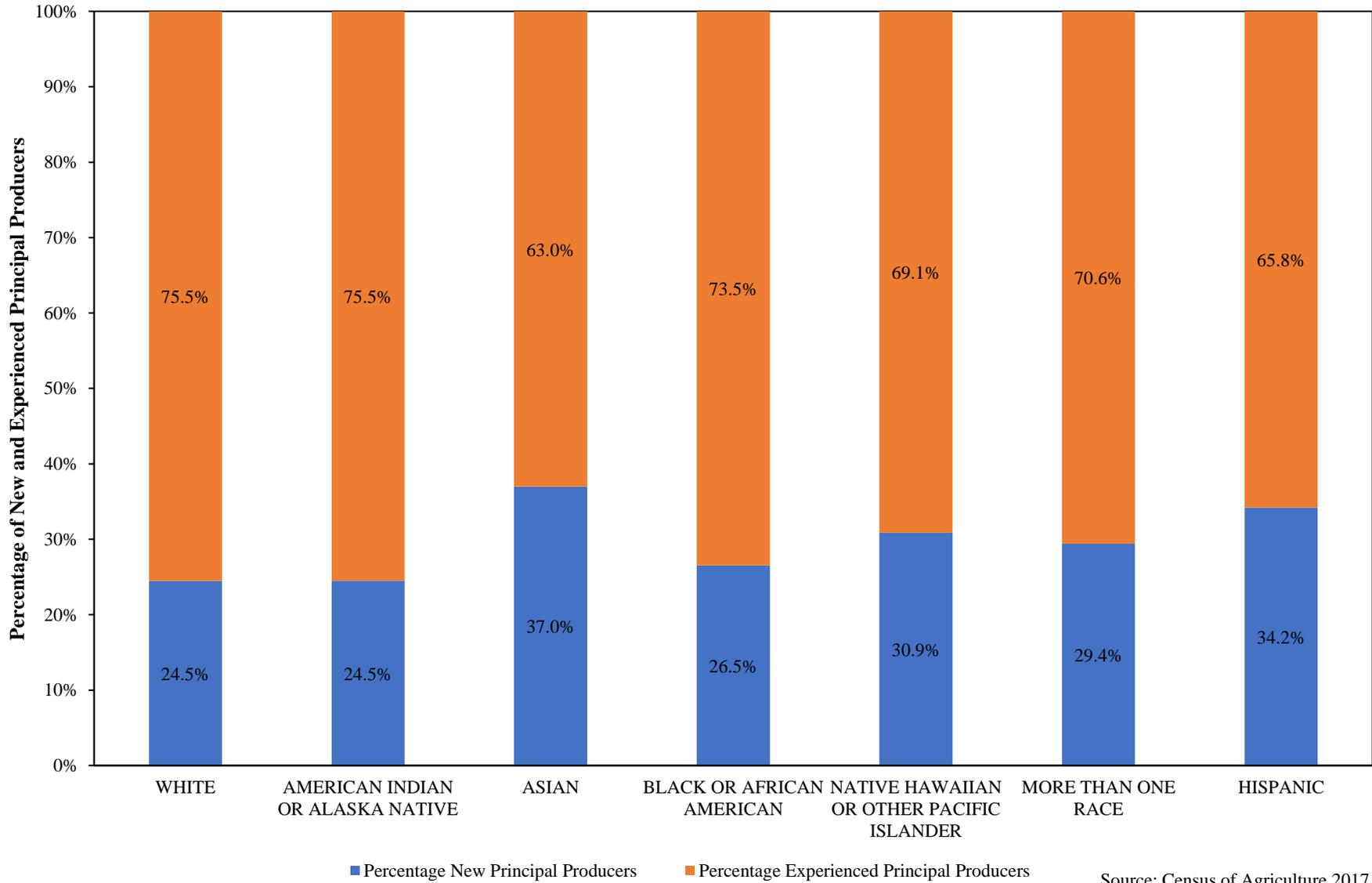
Race	2007 (Farms with Principal Operators)			2017 (Farms with Principal Producers)		
	Small Farms	Medium Farms	Large Farms	Small Farms	Medium Farms	Large Farms
AMERICAN INDIAN OR ALASKA NATIVE	21,420	10,211	3,075	21,016	11,868	6,748
ASIAN	7,850	2,843	521	9,411	3,877	616
BLACK OR AFRICAN AMERICAN	15,571	14,248	780	16,584	14,330	1,138
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	992	287	77	1,471	499	122
WHITE	801,289	995,901	317,135	809,137	849,040	297,560
MORE THAN ONE RACE	6,010	5,408	1,174	10,110	7,800	1,863
HISPANIC	31,826	18,384	5,360	48,140	22,363	6,913

Race	Percentage Change from 2007 to 2017		
	Small Farms	Medium Farms	Large Farms
AMERICAN INDIAN OR ALASKA NATIVE	-1.9%	16.2%	119.4%
ASIAN	19.9%	36.4%	18.2%
BLACK OR AFRICAN AMERICAN	6.5%	0.6%	45.9%
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	48.3%	73.9%	58.4%
WHITE	1.0%	-14.7%	-6.2%
MORE THAN ONE RACE	68.2%	44.2%	58.7%
HISPANIC	51.3%	21.6%	29.0%

Sources:

Census of Agriculture 2007; Census of Agriculture 2017.

### EXHIBIT 3 PERCENTAGE OF NEW AND EXPERIENCED PRINCIPAL PRODUCERS BY RACE AND ETHNICITY



Source: Census of Agriculture 2017.

**EXHIBIT 4**  
**COMPOSITION OF FARMS AND PRINCIPAL PRODUCERS BY LEVEL OF EXPERIENCE**

Statistics	Category	With Any New and Beginning Principal Producers		Without Any New and Beginning Principal Producers	
		Count	Percent	Count	Percent
Farms by Acres	1.0 TO 9.9 ACRES	106,659	20.7%	166,666	10.9%
Farms by Acres	10.0 TO 49.9 ACRES	179,728	34.8%	403,273	26.4%
Farms by Acres	50 TO 179 ACRES	132,286	25.6%	432,477	28.3%
Farms by Acres	180 TO 499 ACRES	56,044	10.9%	258,973	17.0%
Farms by Acres	500 OR MORE ACRES	41,518	8.0%	264,596	17.3%
Farms by Economic Class	LESS THAN 1,000 \$	150,860	29.2%	320,733	21.0%
Farms by Economic Class	1,000 TO 2,499 \$	69,962	13.6%	147,279	9.7%
Farms by Economic Class	2,500 TO 4,999 \$	60,719	11.8%	150,553	9.9%
Farms by Economic Class	5,000 TO 9,999 \$	62,477	12.1%	171,732	11.3%
Farms by Economic Class	10,000 TO 24,999 \$	59,360	11.5%	193,259	12.7%
Farms by Economic Class	25,000 TO 49,999 \$	32,916	6.4%	122,145	8.0%
Farms by Economic Class	50,000 OR MORE \$	79,941	15.5%	420,284	27.5%
Principal Producers by Days of Work Off Farm	0 DAYS	155,231	23.0%	924,653	44.8%
Principal Producers by Days of Work Off Farm	1 TO 49 DAYS	60,728	9.0%	163,550	7.9%
Principal Producers by Days of Work Off Farm	50 TO 99 DAYS	33,263	4.9%	87,927	4.3%
Principal Producers by Days of Work Off Farm	100 TO 199 DAYS	65,057	9.6%	161,917	7.8%
Principal Producers by Days of Work Off Farm	200 DAYS OR MORE	360,661	53.4%	727,466	35.2%

Source:  
Census of Agriculture 2017.

**EXHIBIT 5**  
**PERCENTAGE OF FARMS BY ECONOMIC CLASS AND BY RACE AND ETHNICITY**

Economic Class	Percentage Farms with Any Principal Producers with Race/Ethnicity						
	WHITE	AMERICAN INDIAN OR ALASKA NATIVE	ASIAN	BLACK OR AFRICAN AMERICAN	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	MORE THAN ONE RACE	HISPANIC
LESS THAN 1,000 \$	22.5%	47.2%	18.1%	29.9%	29.0%	28.7%	34.2%
1,000 TO 2,499 \$	10.6%	10.7%	8.0%	14.1%	9.4%	12.6%	13.4%
2,500 TO 4,999 \$	10.3%	9.6%	7.8%	13.5%	10.8%	11.6%	11.3%
5,000 TO 9,999 \$	11.5%	10.1%	10.3%	14.9%	13.4%	12.7%	11.1%
10,000 TO 24,999 \$	12.4%	9.3%	12.8%	14.7%	13.1%	13.8%	10.0%
25,000 TO 49,999 \$	7.7%	4.7%	8.2%	6.1%	8.9%	7.1%	5.4%
50,000 OR MORE \$	25.0%	8.4%	34.9%	6.9%	15.4%	13.6%	14.6%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source:  
Census of Agriculture 2017.

**EXHIBIT 6**  
**COMPARISON OF AVERAGE WAGE FOR FULL-TIME FULL-HOUR NON-AGRICULTURAL WORKERS BY RACE AND ETHNICITY**

Race and Ethnicity		Average Wage	Percentage Difference Compared to White, Non-Hispanic
<b>Limited to PUMAs with no Metropolitan Areas</b>			
Non- Hispanic	White	\$52,966.86	
	Black or African American Alone	\$37,351.52	-29.5%
	American Indian Alone	\$42,237.25	-20.3%
	Alaska Native Alone	\$51,659.34	-2.5%
	American Indian and Alaska Native Tribes Specified; or American Indian or Alaska Native, Not Specified and No Other Races	\$40,243.71	-24.0%
	Asian Alone	\$55,489.14	4.8%
	Native Hawaiian and Other Pacific Islander Alone	\$48,890.59	-7.7%
	Some Other Race Alone	\$50,665.51	-4.3%
	Two or More Races	\$48,913.52	-7.7%
	Hispanic of Any Race	\$41,310.61	-22.0%
<b>Limited to PUMAs with Majority of Population in Rural Areas</b>			
Non- Hispanic	White	\$54,562.98	
	Black or African American Alone	\$38,976.43	-28.6%
	American Indian Alone	\$41,820.56	-23.4%
	Alaska Native Alone	\$48,673.28	-10.8%
	American Indian and Alaska Native Tribes Specified; or American Indian or Alaska Native, Not Specified and No Other Races	\$43,512.85	-20.3%
	Asian Alone	\$59,128.55	8.4%
	Native Hawaiian and Other Pacific Islander Alone	\$48,255.45	-11.6%
	Some Other Race Alone	\$41,274.09	-24.4%
	Two or More Races	\$48,956.24	-10.3%
	Hispanic of Any Race	\$41,783.16	-23.4%

## Sources:

ACS 2019 Population data,  
2012 PUMA and 2015 MSA Crosswalk,  
2012 PUMA Urban and Rural Areas.

**EXHIBIT 7**  
**COMPARISON OF FARMS IN ECONOMIC CLASS RELATIVE TO**  
**MEDIAN LEVEL BETWEEN RACES AND ETHNICITIES**

<b>Share of Farms with White Principal Producers in Economic Classes lower than Median Level of Other Races and Ethnicities</b>		
<b>Race</b>	<b>Count</b>	<b>Percentage</b>
AMERICAN INDIAN OR ALASKA NATIVE	440,376	22.5%
ASIAN	1,073,650	54.9%
BLACK OR AFRICAN AMERICAN	647,756	33.1%
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	849,661	43.4%
MORE THAN ONE RACE	647,756	33.1%
HISPANIC	647,756	33.1%

<b>Share of Farms with Non-White Principal Producers in Economic Classes higher than Median Level of Farms with White Principal Producers</b>		
<b>Race</b>	<b>Count</b>	<b>Percentage</b>
AMERICAN INDIAN OR ALASKA NATIVE	8,882	22.4%
ASIAN	7,767	55.9%
BLACK OR AFRICAN AMERICAN	8,849	27.6%
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	785	37.5%
MORE THAN ONE RACE	6,827	34.5%
HISPANIC	23,242	30.0%

Source:

Census of Agriculture 2017.

**EXHIBIT 8**  
**RACE COMPOSITION OF GROUPS OF COUNTIES BY CONCENTRATION OF LARGE FARMS**

Group	Number of Counties	Number of Large Farms (by Acre)	Total Population (Age 20 or Above)	Total Square Miles	Statistics	Race					More than One Race
						White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	
1	300	61,234	4,939,137	185,316	Population	4,616,371	141,722	44,920	76,923	4,580	54,621
					Percent	93.5%	2.9%	0.9%	1.6%	0.1%	1.1%
2	354	61,367	9,044,815	256,357	Population	8,178,844	454,559	103,740	166,604	10,467	130,601
					Percent	90.4%	5.0%	1.1%	1.8%	0.1%	1.4%
3	422	61,264	13,467,451	337,471	Population	11,526,793	1,046,813	225,143	415,172	21,786	231,744
					Percent	85.6%	7.8%	1.7%	3.1%	0.2%	1.7%
4	620	61,164	29,155,529	518,053	Population	24,293,465	3,074,486	445,966	821,004	46,459	474,149
					Percent	83.3%	10.5%	1.5%	2.8%	0.2%	1.6%
5	1,446	61,072	190,007,175	2,388,475	Population	142,867,698	27,058,862	2,070,903	13,665,580	486,617	3,857,515
					Percent	75.2%	14.2%	1.1%	7.2%	0.3%	2.0%

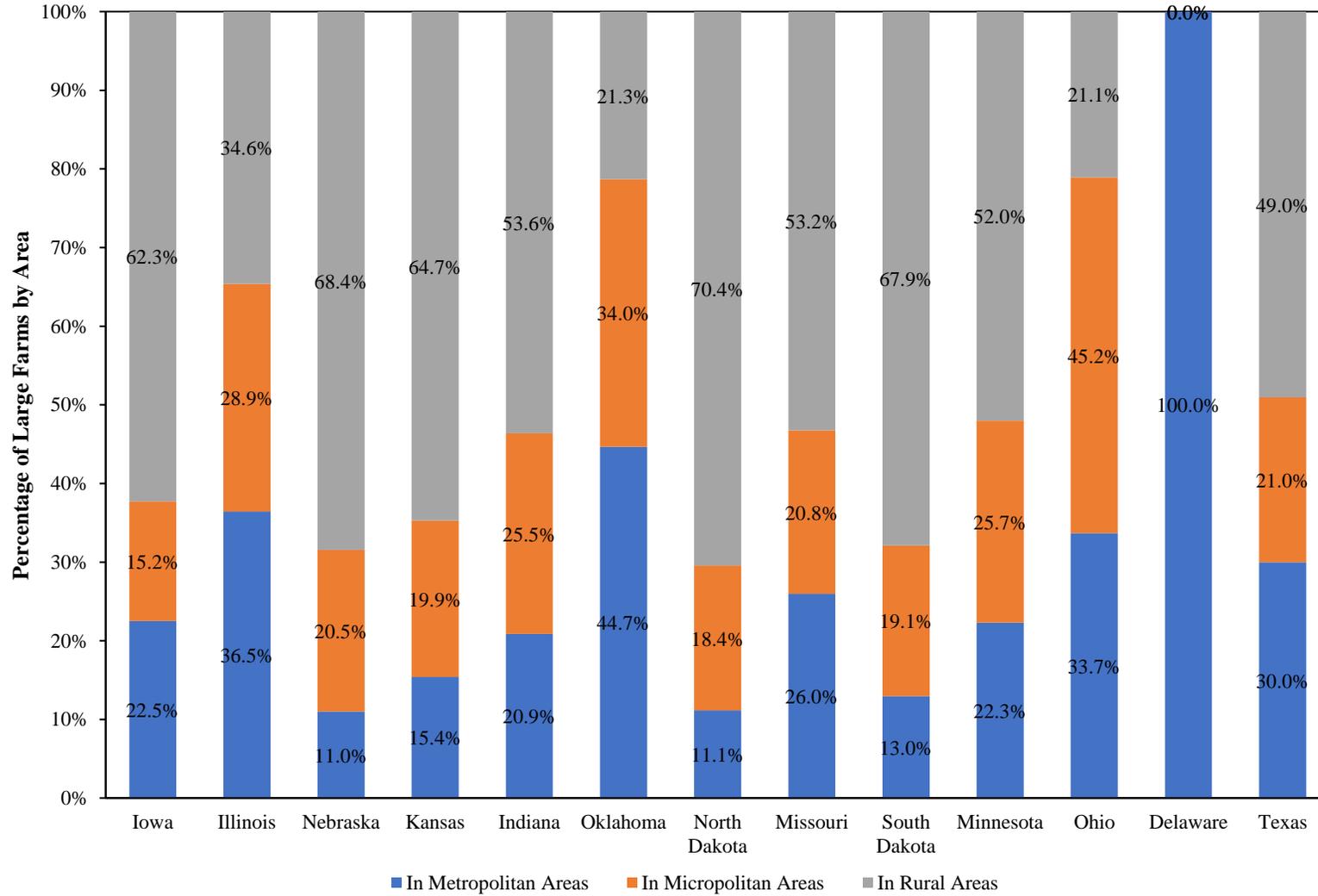
## Notes:

Total large farms in U.S. are divided into 5 similar-sized groups shown in the table. Counties are ordered by the large farms-to-land ratios. Population of age 20 or above is used for the analysis.

## Sources:

Census Bureau, Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin: April 1, 2010 to July 1, 2019;  
 RAND State Statistics, County Land Area;  
 Census of Agriculture 2017.

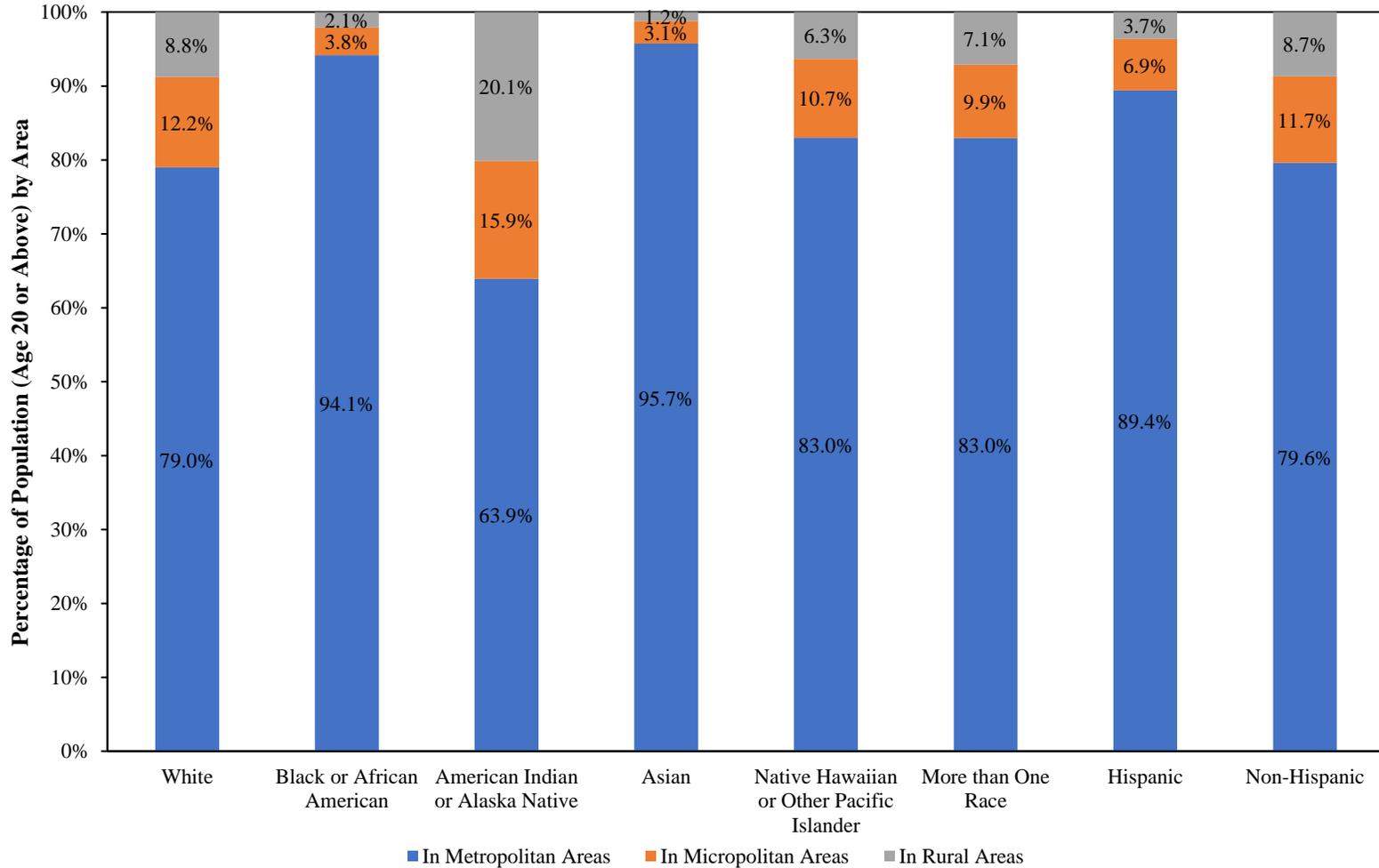
### EXHIBIT 9 DISTRIBUTION OF LARGE FARMS IN METROPOLITAN, MICROPOLITAN AND RURAL AREAS OF STATES WITH LARGEST FARM TO LAND RATIO



Note: Thirteen states that account for over 50% of total large farms in US are shown.

Sources: Census of Agriculture 2017; RAND State Statistics, County Land Area; Census Bureau, Delineation Files, CBSAs, Metropolitan Divisions, and CSAs.

**EXHIBIT 10**  
**PERCENTAGE OF POPULATION BY RACE AND ETHNICITY IN METROPOLITAN,**  
**MICROPOLITAN, AND RURAL AREAS**  
**IN TOP 13 STATES WITH LARGEST FARM TO LAND RATIOS**



Sources: Census of Agriculture 2017; RAND State Statistics, County Land Area; Census Bureau, Delineation Files, CBSAs, Metropolitan Divisions, and CSAs; Census Bureau, Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin: April 1, 2010 to July 1, 2019.

Note: Analysis is based on population with age 20 or above.

**EXHIBIT 11****PERCENTAGE OF FARMS BY ECONOMIC CLASS AND PARTICIPANTS IN LOAN AND AID PROGRAMS BY WHITE AND NON-WHITE FARMERS**

<b>Category</b>	<b>Statistics</b>	<b>Percentage of Non-Minority (White)</b>	<b>Percentage of Minority (Non-White)</b>	<b>Percentage of Unknown</b>
Direct Loans	Percentage of Borrowers (Current on All Debt)	84.5%	15.5%	
	Percentage of Borrowers (Not Current on All Debt)	67.4%	32.6%	
	Percentage of Loans (Current on All Debt)	83.1%	16.9%	
	Percentage of Loans (Not Current on All Debt)	65.0%	35.0%	
Guaranteed Loans	Percentage of Borrowers (Current on All Debt)	93.9%	6.1%	
	Percentage of Borrowers (Not Current on All Debt)	87.9%	12.1%	
	Percentage of Loans (Current on All Debt)	93.8%	6.2%	
	Percentage of Loans (Not Current on All Debt)	88.5%	11.5%	
Market Facilitation Program (MFP)	Percentage of Payees	93.3%	1.4%	5.3%
	Percentage of Payments	91.2%	1.0%	7.8%
Coronavirus Food Assistance Program (CFAP)	Percentage of Payees	91.4%	3.9%	4.6%
	Percentage of Payments	85.6%	3.0%	11.3%
Farms with Any Principal Producers	Economic Class: 2,500 or more \$	96.6%	3.4%	
	Economic Class: 5,000 or more \$	96.8%	3.2%	
	Economic Class: 10,000 or more \$	97.2%	2.8%	

## Note:

For farms by economic class, percentage of non-minority (white) counts the farms with any white principal producers. Percentage of minority (non-white) counts the farms without any white principal producers.

## Sources:

Robb Report; Census of Agriculture 2017.