



U.S. Department of Transportation
Federal Railroad Administration

**Report to Congress Concerning Minority- and Women-Owned
Small Businesses in Industries Related to the Rail Transportation
Sector**

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Executive Summary

This report, concerning small businesses owned and controlled by racial minorities and women, is presented to Congress by the Secretary of Transportation through the Federal Railroad Administration (FRA).

The Secretary of Transportation, through FRA, is providing information to Congress on the availability and use of small business concerns owned and controlled by socially and economically disadvantaged individuals in the general market, with a focus on industries relevant to FRA grant funding. The purpose of this report is to provide Congress with factual data available at the time of publication along with additional evidence for Congressional consideration.

This report is not a disparity study such as those prepared by individual recipients of Federal funds, but rather presents factual information about FRA's grant activity; a review of the current state of the law for race-conscious disadvantaged business programs; personal stories from minority business owners with the potential to participate in publicly funded rail projects; and a narrative detailing FRA's past, current, and planned small business participation and promotion efforts.

The two appendices to the Report include: 1) a paper that FRA commissioned that offers insights that might be drawn regarding availability, utilization, and disparity from existing disparity studies and analysis of both the Census Bureau's Annual Business Survey Program and the American Community Survey 5-year Public Use Microdata Sample to examine disparities in aggregate data across the U.S. economy and specific industry categories relevant to the rail sector; and 2) the Congressional hearing transcript for the November 9, 2021, committee hearing entitled "Does Discrimination Exist in Federal Passenger Rail Contracting."¹

¹ 117-33. Does Discrimination Exist in Federal Passenger Rail Contracting? Hearing before the Subcommittee on Railroads, Pipelines, and Hazardous Materials, of the House Committee on Transportation and Infrastructure, 117th Cong.

1 Introduction

The purpose of this Report and its accompanying appendices is to provide information that could be useful to Congress as it considers FRA’s small business utilization efforts. This Report includes chapters discussing relevant markets based on FRA grant activity; legal standards for government race-conscious contracting programs; FRA’s historical, current, and planned small business utilization efforts; and anecdotal comments discussing experiences with discrimination by minority and women small business owners in industry groups in FRA contracting market. The appendices include an independent report by Dr. Jon Wainwright² (Appendix A) and the transcript of a November 9, 2021, Congressional committee hearing entitled “Does Discrimination Exist in Federal Passenger Rail Contracting?” (Appendix B).

This Report was conducted based on a 2015 instruction from Congress for the Secretary of Transportation to “conduct a nationwide disparity and availability study on the availability and use of small business concerns owned and controlled by socially and economically disadvantaged individuals and veteran-owned small businesses in publicly funded intercity rail passenger transportation projects,”³ and to submit a report containing the results of the study to the Senate Commerce, Science, and Transportation Committee and the House Transportation and Infrastructure Committee.

FRA attempted to conduct a statistical analysis based on data collected directly from both FRA recipients and small businesses in the rail contracting market, however, the data was insufficient to conduct a statistically robust analysis because of the low response rate. In 2022, following this unsuccessful effort, FRA contracted with Dr. Wainwright, a noted expert in the DBE field, to share his independent assessment of what can be surmised about industry contracting disparities in general from publicly available information, including from existing disparity studies and Census Bureau data sources. See Appendix A. Specifically, Dr. Wainwright’s report includes:

- Consideration of Census data showing differences in public contracting and procurement dollars in a particular market (i.e., utilization) that is spent with minority-owned and women-owned businesses and their availability in the U.S. small business market across all major industry sectors, including industries related to the rail transportation sector.
- Consideration of how 205 disparity studies conducted between 2010 and 2021, spanning 32 states and the District of Columbia that collectively include examples from practically every industry segment of the United States economy, can provide insight into how minority- and women-owned enterprises fare in public contracting across industry sectors in the U.S., including those sectors relevant to the rail transportation industry.

FRA is not drawing any conclusions regarding the availability or utilization of minority- and women-owned businesses in the rail transportation sector. Further, Dr. Wainwright’s independent analyses do not allow determination of the causes of industry-wide or industry-specific disparities described. In the absence of sufficiently robust data specific to publicly funded passenger rail projects, this appendix is intended to provide general insight into potential disparities associated with businesses related to the rail industry.

² Dr. Jon Wainwright is an economist specializing in MWBE/DBE policy, disparity studies, discrimination, and labor economics. See Appendix A for more about his experience, and to view his analysis.

³ FAST Act of 2015, Pub. L. 114-94, § 11310 (2015).

FRA continues to encourage all recipients of Federal financial assistance to hire small businesses owned and controlled by socially and economically disadvantaged individuals when it comes to projects FRA funds. That includes minority- and women-owned businesses, veteran-owned small businesses, and service-disabled veteran-owned small businesses.

However, FRA does not have statutory authority to administer a DBE program like those in place at the Federal Transit Administration (FTA), Federal Highway Administration (FHWA), or Federal Aviation Administration (FAA). Of course, FRA recipients are not allowed to discriminate in contracting based on race, color, or national origin, as part of their Title VI obligations. FRA is currently developing a race-neutral small business utilization program to create opportunities and encourage participation by these firms. That program may include outreach and supportive services tailored for the kinds of work available through FRA's grant recipients. FRA also plans to capture and analyze data to better understand the subcontracting market opportunities and participation.

At the FTA, FHWA, and FAA, however, Federal law and regulations require State and local transportation agencies that receive financial assistance from USDOT to establish explicit goals for the participation of DBEs in contracting opportunities.

FRA's grant programs, notably, are different in some ways from programs at other USDOT agencies. Unlike FTA, FHWA, and FAA, for instance, FRA awards grants to public agencies, government-owned enterprises (Amtrak), associations, private firms, and others. These awards are issued to recipients across the country—and those recipients work with prime contractors to execute the work. The prime contractors, in turn, may offer subcontract opportunities to minority- and women-owned firms.

1.1 Defining the Relevant Markets

Chapter 2 discusses FRA from its inception in the Department of Transportation Act of 1966, through the creation of Amtrak in 1971, after which FRA became responsible for providing appropriated funds to Amtrak. Prior to 2009, FRA provided very limited grants beyond Amtrak. In 2022, FRA is the primary Federal agency responsible for issuing and enforcing railroad safety regulations and for distributing Federal funds for intercity passenger rail service. Chapter 2 draws from FRA's records for 1,003 grants funded with appropriations for fiscal years 2009 to 2021. FRA grant programs provided almost \$30 billion in grant funds and loans during this time. Grants were awarded mostly to Amtrak and public organizations, but some non-profit and private organizations also received funding. Grants were intended primarily to improve passenger and freight rail infrastructure and equipment and to support Amtrak operations. Grant funds were expended in most states.

1.2 Legal Standards for Government Race-Conscious Contracting Programs

Chapter 3 describes the legal standards governing race-conscious contracting programs in the U.S. Two seminal Supreme Court cases articulate the strict scrutiny standard by which Federal courts must review race-conscious measures in Federal, State, and local programs. The Supreme Court held that governments may adopt race-conscious programs only if they serve a compelling governmental interest and are narrowly tailored to further that interest. The Federal government has a compelling interest in ensuring that public funds are not distributed in a manner that perpetuates discrimination. The Federal government must establish a strong basis in evidence for race-conscious efforts to remediate the effects of past discrimination.

Chapter 3 examines what *Croson*⁴, *Adarand*⁵, and their progeny require to implement a constitutional race and gender-conscious public contracting program. This chapter additionally highlights circuit court decisions in which USDOT was a party and where the USDOT DBE program was challenged—notably, in every instance courts upheld USDOT’s DBE program regulations and authorizing statutes.

1.3 Anecdotal Evidence of Disparities in FRA Recipient Market Area

Chapter 4 presents anecdotal evidence, which are personal accounts of incidents, in this case examples of discrimination, told from the witness’s perspective. The personal accounts provided in this chapter discuss the lived experiences of business owners identified as minority-owned small businesses in industries that currently participate in FRA-funded rail projects, typically either as prime contractors or subcontractors.

1.4 FRA Small Business Utilization Overview and USDOT DBE Program Overview

Chapter 5 provides an overview of FRA’s history with race-conscious and small business utilization programs. In 1976, Congress enacted the Railroad Revitalization and Regulatory Reform Act (the “4R Act”), authorizing FRA to administer a minority business enterprise (MBE) program. The program applied to contracts awarded to implement the Northeast Corridor Project and to financial assistance programs administered by the United States Railway Association. From this early program through today, FRA has been engaged in a number of efforts to further small business utilization.

Chapter 5 also discusses FRA’s current plans to develop race-neutral methods to increase small business participation, which are a requirement in current DBE programs. Should a DBE program for FRA become a reality, a portion of the chapter is devoted to explaining how FRA would implement a DBE program. This chapter also includes an overview of USDOT’s existing DBE programs, which FRA would likely be subject to if a DBE program were created.

⁴ *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469 (1989).

⁵ *Adarand Constructors, Inc. v. Peña*, 515 U.S. 200 (1995).

2 Defining the Relevant Markets

2.1 FRA's History of Funding Railroad Improvements

The Department of Transportation Act of 1966 created FRA by merging the railroad safety functions of the Interstate Commerce Commission and the high-speed ground transportation program of the Department of Commerce. With the creation of Amtrak in 1971, FRA became responsible for providing appropriated funds to Amtrak. The Regional Rail Reorganization Act of 1973 (3R Act) and the Railroad Revitalization and Regulatory Reform Act of 1976 (the 4R Act) resulted in Amtrak's acquisition of extensive railroad assets. To address the poor condition of those assets and in the spirit of implementing high-speed ground transportation, FRA was charged with implementing the Northeast Corridor Improvement Project (NECIP) to upgrade railroad intercity passenger rail service between Boston, Massachusetts, and Washington, D.C. FRA implemented the multi-billion-dollar NECIP program through direct contracting for infrastructure projects. After the NECIP program concluded, FRA provided funds for infrastructure improvements exclusively through grants and cooperative agreements. In the early 2000s, FRA also shifted to using grants to provide funds to Amtrak. Today, FRA is the primary Federal agency responsible for issuing and enforcing railroad safety regulations and for distributing Federal funds for intercity passenger rail service.⁶

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) expanded FRA's grant programs, directing FRA to plan, award, and oversee the use of Federal funds for intercity passenger rail. The American Recovery and Reinvestment Act of 2009 (Recovery Act) provided substantial funding for high-speed and intercity passenger rail projects. Prior to 2009, FRA had a very limited grant portfolio beyond Amtrak. For example, FRA received appropriations for approximately \$30 million in grant funding in fiscal year 2008, primarily for intercity-passenger rail grants to states. With the Recovery Act's expanded responsibilities, the agency quickly awarded approximately \$8 billion in Recovery Act funds through the High-Speed Intercity Passenger Rail Grant Program (HSIPR) to 25 unique grantees, while simultaneously developing policies and procedures for grants management. In 2015, FRA managed a portfolio of approximately 200 obligated grants to 74 unique grantees.

In December 2015, Congress passed the Passenger Rail Reform and Investment Act of 2015 as a title in the Fixing America's Surface Transportation Act (FAST Act), which authorized three new grant programs including the Consolidated Rail Infrastructure and Safety Improvements grant program, the Federal-State Partnership for State of Good Repair grant program, and the Restoration and Enhancements grant program. The new programs assist grantees in funding the cost of improving passenger and freight rail transportation systems.⁷

In 2010, when FRA was in the early stages of developing its grant oversight program, the Government Accountability Office (GAO) identified principles that would become important as

⁶ FRA's fiscal year 2016 appropriation—not including funding designated for Amtrak—was approximately \$309 million, and the agency had approximately 930 FTEs, including approximately 60 staff within the Office of Railroad Policy and Development, which oversees FRA's entire portfolio of grants and loan investments, including the grants funding the section 305 equipment procurements.

⁷ Pub. L. 114-94, div. B, title XI, § 11301 (2015).

FRA stood up an expanded grants oversight program.⁸ For example, a well-designed and implemented grant oversight program is critical to ensuring effective use of Federal grant funds. FRA issued an internal Grants Manual to communicate the agency's overall approach to grants management in September 2010 when it was in the process of building up its grants management program.⁹ This Grants Manual is updated on an ongoing basis.

In November 2021, Congress passed the Infrastructure Investment and Jobs Act (IIJA), which further expanded rail infrastructure and safety-improvements grant programs to assist grantees in financing the cost of improving passenger and freight rail transportation systems.

2.2 Data Sources

FRA has relevant data to understand the geographic market distribution of grant funds. FRA also has information from Amtrak to understand the distribution and type of assets they maintain and some information about their operational expenditures. FRA grant funding data is held in USDOT's Delphi accounting system and in FRA's Project Management Tracker (PMT) database. Amtrak asset and expenditure data was assembled from information collected by FRA as part of its oversight program for Amtrak. For this analysis, FRA used records for 1,003 grants funded with appropriations for fiscal years 2009 to 2021.

FRA's grant programs award the most funds to Amtrak (approximately 75%), and (approximately 25%) grants to state departments of transportation (DOT), commuter rail agencies, transit agencies, counties, cities, joint program authorities, and other public agencies.¹⁰ FRA also awards grants to university research centers, associations, and some private companies such as private freight railroads. Recipients use a portion of the funds to plan, manage, and implement the projects supported by the grants.¹¹

Some FRA funding is used to pay railroad companies to make improvements using their labor forces and following their procurement procedures. Most of the funds are awarded by the recipients to private contractors who provide management, labor, and materials to design, plan, construct, and implement these projects. These contracts are often entered into with large private firms. These firms may subcontract portions of the work to other firms that may be large or small, publicly or privately held, minority or women owned. Grantees are not required to submit information concerning the company ownership characteristics (i.e., women or minority owned) of entities they contract with or about the sub-recipients to whom they direct grant funds. As a result, the data in sections 2.3 gives a snapshot of the overall value and distribution of FRA grants and loans to Amtrak and entities other than Amtrak. Efforts by FRA to collect more information about grantee contracting activity in the future (including data on relative participation of minority-, women-, and veteran-owned businesses) are explained in section 5.2.

⁸ GAO, High Speed Rail: Learning from Service Start-ups, Prospects for Increased Industry Investment, and Federal Oversight Plans, GAO-10-625 (Washington, D.C.: June 17, 2010). While this report did not include recommendations, GAO concluded that FRA's definition of a Federal role, goals, and objectives, in conjunction with a robust grant oversight program, would be critical to making sound Federal investments going forward.

⁹ Prior to 2010, FRA had guidance such as USDOT Order 4600.17A, Financial Assistance Management Requirements, and the USDOT Financial Assistance Guidance Manual to manage its grant and loan portfolio.

¹⁰ The FTA also funds commuter rail and transit agencies and many of those grants are subject to the USDOT's longstanding DBE program.

¹¹ Grantees may use planning and management funds for activities such as internal costs, that do not have subcontract opportunities. This amount is unknown given FRA's current data collection limitations.

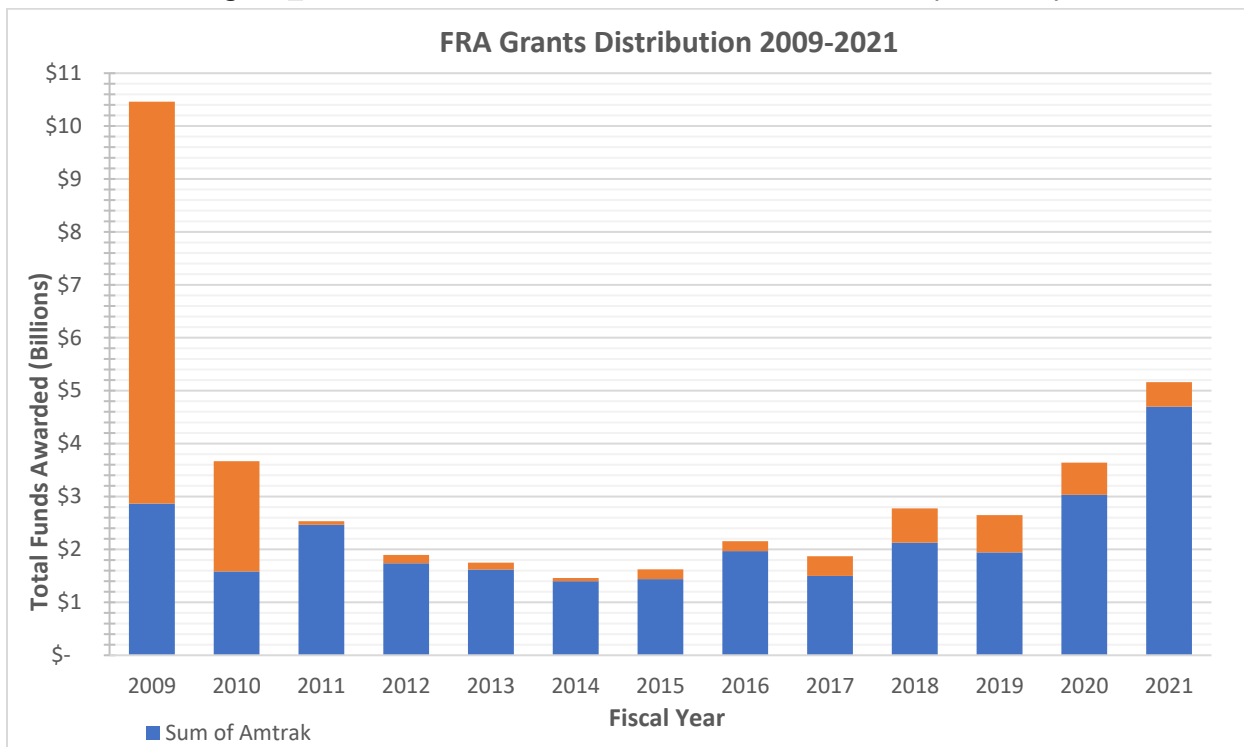
2.3 FRA Grants

Figure 2.1 provides the value of FRA grants for fiscal years 2009 – 2021. Recipients use these funds, and any required matching funds, to support internal costs, transfer funds to sub-recipients, or to award prime contracts to private firms. Recipients transferred funds to both sub-recipients and prime contractors through grants or contract vehicles. Sub-recipients may use these funds for internal costs or to issue prime contracts to private firms.

FRA grants and loans in 2009 – 2021 were awarded to public, private, and government owned corporations. Amtrak received over \$17.2 billion and non-Amtrak entities received over \$13.2 billion. The large grant totals for 2009 and 2010 reflect substantial funding provided under the Recovery Act. COVID relief funding can be seen in the higher Amtrak values for 2020 and 2021. Supplemental appropriations provided under the 2021 Bipartisan Infrastructure Law (BIL) do not appear in this grant data.

Table 2.1 shows the full distribution of 817 non-Amtrak FRA grants by state. Discretionary funding to states during the past decade reflects the dominant influence of the distribution of HSIPR program funds.

Figure 2.1: Dollar Value of FRA Grants/Loans 2009 – 2021 (\$ Billions)



Sources: USDOT Delphi System and FRA PMT database.

Table 2.1: State Distribution of Grant Funds to Recipients other than Amtrak 2009-2021

State	2009-2021 Award Amount	% of Total 2009-2021 Award Amount
CA	\$4,517,142,611	34.09%
IL	\$2,011,336,949	15.18%
NC	\$1,000,959,388	7.55%
NY	\$886,406,611	6.69%
WA	\$877,217,660	6.62%
MI	\$521,364,129	3.93%
CT	\$344,532,597	2.60%
MD	\$283,817,317	2.14%
VA	\$222,009,161	1.68%
MA	\$214,471,522	1.62%
PA	\$157,363,204	1.19%
ME	\$153,998,944	1.16%
MO	\$153,821,693	1.16%
IN	\$149,086,398	1.13%
WI	\$143,942,532	1.09%
TX	\$128,344,681	0.97%
NJ	\$127,037,210	0.96%
FL	\$126,508,576	0.95%
VT	\$101,315,869	0.76%
AK	\$92,975,326	0.70%
IA	\$79,268,313	0.60%
MN	\$78,850,706	0.60%
KS	\$69,225,652	0.52%
OH	\$68,826,764	0.52%
MS	\$60,906,407	0.46%
SD	\$54,574,455	0.41%
CO	\$52,119,014	0.39%
RI	\$47,454,811	0.36%
DC	\$45,690,193	0.34%
AR	\$44,212,339	0.33%
SC	\$44,054,709	0.33%
LA	\$42,073,793	0.32%
OK	\$40,506,941	0.31%
DE	\$37,004,811	0.28%
AZ	\$36,162,489	0.27%
OR	\$33,706,958	0.25%
NE	\$27,339,809	0.21%
GA	\$25,751,189	0.19%
MT	\$25,488,472	0.19%
NM	\$23,981,899	0.18%
UT	\$21,998,694	0.17%

State	2009-2021 Award Amount	% of Total 2009-2021 Award Amount
ND	\$18,888,161	0.14%
KY	\$17,343,250	0.13%
AL	\$15,789,082	0.12%
NH	\$8,590,453	0.06%
ID	\$7,691,103	0.06%
TN	\$4,430,507	0.03%
WV	\$2,326,307	0.02%
Multi	\$1,563,360	0.01%
WY	\$985,500	0.01%
NV	\$545,272	0.004%
Grand Total	\$13,251,003,791	100.00%

FRA analyzed grant data for the time period to understand how funds have historically been allocated to specific funding programs (e.g., Amtrak, high-speed rail, etc.). Funding programs have statutory purposes and therefore have relatively consistent distributions of project types.

Table 2.2 contains the funding program identifier codes used in this analysis.

Table 2.2 Grant Program Identifier Codes

Grant Program	Program Code
Better Utilizing Investments to Leverage Development (BUILD) Transportation	BLD
Consolidated Rail Infrastructure and Safety Improvements	CRS
Federal-State Partnership for State of Good Repair	FSP
High-Speed Ground Transportation Next Generation	HST
High-Speed Rail	HSR
Hurricane Sandy Disaster Relief Grants	SND
Hurricane Sandy Disaster Relief Grants to the National Railroad Passenger Corp.	SAN
Infrastructure for Rebuilding America (INFRA) Grants	INF
Intercity Passenger Rail Investment	IPR
Law Enforcement Liaison Program to Prevent Grade Crossing and Trespass Incidents	LEL
Maglev Project Selection	MPS
National Infrastructure Investments	TII
National Railroad Passenger Corporation Grants	AMT
Operation Lifesaver	OLS
Rail Line Relocation and Improvement	LRI
Railroad Development	RLD
Railroad Rehabilitation and Repair	RRR
Railroad Research and Development	RRD
Railroad Safety Grants for the Safe Transportation of Energy Products by Rail	STE
Railroad Safety Infrastructure Improvement Program	SIP
Railroad Safety Technology Grant	TEC
Railroad Trespassing Enforcement	RTE
Railroad Trespassing Suicide Prevention	TSP
Restoration and Enhancement	RAE
Risk Reduction	RSR
Security Grant	SEC
State Participation Program	SPP
Surface Transportation Infrastructure Grants (TIGER I)	TGR
Surface Transportation Program	STP

Beyond the consistent dominance of funding for Amtrak, the funding program analysis for the 2009 – 2021 time period shown in **Table 2.3** demonstrates the influence of HSIPR program funds provided in 2009 and 2010, even when accounting for other program funding provided in the time period. A detailed view of grant program funding is shown in **Table 2.4** for 2009 – 2014 and **Table 2.5** for 2015 – 2021.

Table 2.3 Summary View of Grant Program Funding 2009-2021

Program	2009-2014 Funding	2015-2021 Funding	Total Funding
AMT	\$1,418,561,837	\$15,808,759,389	\$17,227,321,226
HSR	\$9,589,164,924	-	\$9,589,164,924
CRS	-	\$666,388,191	\$666,388,191
TII	\$353,599,379	\$214,106,097	\$567,705,476
INF	-	\$278,490,236	\$278,490,236
SAN	\$278,480,688	-	\$278,480,688
FSP	-	\$196,623,927	\$196,623,927
RLD	\$127,072,176	\$45,914,552	\$172,986,729
BLD	-	\$113,065,087	\$113,065,087
TGR	\$102,790,567	-	\$102,790,567
IPR	\$83,887,456	-	\$83,887,456
TEC	\$58,324,609	\$24,481,493	\$82,806,102
LRI	\$53,786,639	-	\$53,786,639
RRD	\$26,328,243	\$20,310,276	\$46,638,519
SND	\$40,200,000	-	\$40,200,000
MPS	-	\$27,800,000	\$27,800,000
SIP	-	\$21,265,411	\$21,265,411
RRR	\$19,899,999	-	\$19,899,999
OLS	\$1,915,428	\$7,030,000	\$8,945,428
STE	-	\$8,628,476	\$8,628,476
RAE	-	\$4,395,616	\$4,395,616
STP	-	\$3,600,000	\$3,600,000
SPP	-	\$1,484,654	\$1,484,654
SEC	\$125,000	\$549,104	\$674,104
RTE	-	\$506,456	\$506,456
RSR	\$390,071	-	\$390,071
TSP	-	\$293,000	\$293,000
LEL	\$30,773	\$214,615	\$245,388
Total	\$12,154,557,791	\$17,443,906,580	\$29,598,464,371

Table 2.4 Detailed View of Grant Program Funding by Year 2009-2014

Program	2009	2010	2011	2012	2013	2014
AMT	-	\$31,061,837	-	-	-	\$1,387,500,000
HSR	\$7,694,700,283	\$1,891,482,591	-	-	-	\$2,982,050
CRS	-	-	-	-	-	-
TII	-	\$79,408,919	\$54,545,581	\$90,440,656	\$87,773,479	\$41,430,744
INF	-	-	-	-	-	-
SAN	-	-	-	-	\$278,480,688	-
FSP	-	-	-	-	-	-
RLD	\$60,639,915	\$1,322,376	-	\$64,210,000	\$899,886	-
BLD	-	-	-	-	-	-
TGR	\$102,790,567	-	-	-	-	-
IPR	\$83,887,456	-	-	-	-	-
TEC	-	\$49,386,748	-	-	-	\$8,937,862
LRI	\$25,145,389	\$18,729,390	\$9,911,861	-	-	-
RRD	\$4,648,914	\$14,881,184	\$2,529,429	\$2,086,094	\$1,154,978	\$1,027,645
SND	-	-	-	-	\$40,200,000	-
MPS	-	-	-	-	-	-
SIP	-	-	-	-	-	-
RRR	\$18,029,391	-	-	-	-	\$1,870,608
OLS	-	-	-	-	\$952,364	\$963,064
STE	-	-	-	-	-	-
RAE	-	-	-	-	-	-
STP	-	-	-	-	-	-
SPP	-	-	-	-	-	-
SEC	-	-	-	-	-	\$125,000
RTE	-	-	-	-	-	-
RSR	-	\$390,071	-	-	-	-
TSP	-	-	-	-	-	-
LEL	-	-	-	-	\$15,513	\$15,260
Total	\$7,989,841,915	\$2,086,663,115	\$66,986,870	\$156,736,750	\$409,476,907	\$1,444,852,233

Table 2.5 Detailed View of Grant Program Funding by Year 2015-2021

Program	2015	2016	2017	2018	2019	2020	2021
AMT	\$1,387,700,000	\$1,400,529,537	\$1,480,775,852	\$1,924,892,000	\$1,924,892,000	\$3,011,000,000	\$4,678,970,000
HSR	-	-	-	-	-	-	-
CRS	-	-	\$41,306,987	\$301,878,706	\$138,289,204	\$184,913,294	-
TII	\$110,910,791	\$48,765,620	\$54,429,686	-	-	-	-
INF	-	\$81,575,236	\$41,001,514	\$13,647,228	\$135,516,259	\$6,750,000	-
SAN	-	-	-	-	-	-	-
FSP	-	-	\$97,240,745	\$23,335,165	\$34,907,750	\$41,140,267	-
RLD	\$30,765,404	\$13,900,000	\$1,249,148	-	-	-	-
BLD	-	-	-	\$99,765,087	\$11,300,000	\$2,000,000	-
TGR	-	-	-	-	-	-	-
IPR	-	-	-	-	-	-	-
TEC	-	\$24,481,493	-	-	-	-	-
LRI	-	-	-	-	-	-	-
RRD	\$2,997,582	\$2,356,080	\$2,597,898	\$2,899,157	\$3,291,560	\$3,173,000	\$2,995,000
SND	-	-	-	-	-	-	-
MPS	\$27,800,000	-	-	-	-	-	-
SIP	-	\$21,265,411	-	-	-	-	-
RRR	-	-	-	-	-	-	-
OLS	\$1,015,000	\$1,015,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
STE	\$8,628,476	-	-	-	-	-	-
RAE	-	-	-	\$4,395,616	-	-	-
STP	-	\$3,600,000	-	-	-	-	-
SPP	-	-	\$240,919	\$243,673	\$577,195	\$422,867	-
SEC	-	\$74,104	\$75,000	\$100,000	\$100,000	\$100,000	\$100,000
RTE	-	-	-	-	\$150,000	\$356,456	-
RSR	-	-	-	-	-	-	-
TSP	-	-	-	-	\$213,000	\$80,000	-
LEL	\$11,381	\$203,234	-	-	-	-	-
Total	\$1,569,828,635	\$1,597,765,714	\$1,719,917,748	\$2,372,156,632	\$2,250,236,967	\$3,250,935,884	\$4,683,065,000

To understand the geographic distribution of Amtrak grant railroad improvement spending, FRA evaluated the distribution of Amtrak railroad infrastructure assets. The location of infrastructure assets is correlated to the distribution of Amtrak capital spending. This is because Amtrak spends most of its capital funding to maintain and improve owned assets.

Table 2.6 shows the 15 states with the highest concentration of Amtrak assets. FRA created an asset value by weighting asset classes. The states with the majority of Amtrak track, stations, and maintenance facility assets are along the Northeast Corridor,¹² in Michigan where Amtrak owns a rail corridor for service between Chicago and Detroit, and in California, Illinois, Indiana, Florida, and Virginia where Amtrak passenger rail services, service terminals, and maintenance facilities are concentrated.

¹² Northeast Corridor states include Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia.

Table 2.6: Top 15 States with Amtrak Assets

State	Track and Right of Way Route Miles ¹³	Track Multiplier	Stations Served	Station Structures Owned	Station Platforms Owned	Heavy Maintenance Facilities	Turnaround/ Light Maintenance Facilities	Asset Value ¹⁴	Asset Weight
PA	155	3	24	17	14	1	2	642	18.4%
NY	140	2	26	9	2	3	1	406	11.7%
MD	90	3	6	3	4	0	1	306	8.8%
CT	122	2	12	2	4	1	1	289	8.3%
MI	214	1	22	5	2	0	2	283	8.1%
NJ	61	4	6	0	0	0	0	250	7.2%
CA	0	1	73	2	1	2	5	133	3.8%
IL	3	2	30	9	3	2	2	132	3.8%
MA	43	2	13	1	1	2	1	132	3.8%
RI	50	2	3	1	3	0	0	113	3.2%
DE	23	3	2	1	1	2	0	99	2.8%
IN	18	1	11	5	3	1	1	82	2.4%
FL	0	1	18	5	3	2	0	76	2.2%
VA	0	1	21	4	2	0	4	71	2.0%
DC	5	4	1	0	0	2	0	41	1.2%

FRA also used public data about the distribution of Amtrak spending for the year 2019.¹⁵ The 2019 spending data shown in **Table 2.7** indicates a similar geographic distribution as the Amtrak asset data, although it includes both costs for capital improvements and operations. The Northeast Corridor states, California, Illinois, and other states with state-supported intercity passenger rail services dominate the total spending. Other states include those with state-supported corridors that operate frequently, and those with end points or major facilities where crew and train service functions are located.

¹³ Track and right-of-way route miles includes Amtrak owned or third-party owned but Amtrak-maintained ROW.

¹⁴ Assets have been weighted to better represent their magnitude and impact on capital spending. Owned track right-of-way is weighted by the “track multiplier” to represent average numbers of tracks per route mile. Amtrak owned structures are multiplied: x7 for owned stations, x10 for heavy maintenance facilities, and x5 for light maintenance facilities.

¹⁵ From 2019 Amtrak State Fact Sheets.

Table 2.7: State Distribution of Amtrak 2019 Expenditures

State	Procurement & Labor <i>(\$ in millions, from 2019 Amtrak State Fact Sheets)</i>		
	Goods & Services	Employee Wages	Amtrak Spending Total
Pennsylvania	252.3	251.9	504.2
California	277.3	181.3	458.6
New York	213.6	134.9	348.5
Maryland	53.5	211.6	265.1
Illinois	150.8	101.9	252.7
New Jersey	65.7	161.3	227.0
Virginia	125.0	87.0	212.0
Massachusetts	46.4	61.8	108.2
Connecticut	30.1	70.5	100.6
Delaware	6.0	92.6	98.6
Florida	44.8	52.8	97.6
Minnesota	71.8	3.5	75.3
Indiana	18.0	55.9	73.9
North Carolina	56.2	14.0	70.2
Washington	31.9	37.4	69.3
District of Columbia	26.2	32.7	58.9
Georgia	48.0	8.4	56.4
Ohio	40.0	5.4	45.4
Texas	27.0	15.5	42.5
Missouri	28.9	7.5	36.4
Rhode Island	1.4	29.1	30.5
Michigan	10.2	18.3	28.5
South Carolina	20.7	4.9	25.6
Wisconsin	17.3	5.0	22.3
Colorado	15.3	6.2	21.5
Louisiana	4.2	16.4	20.6
New Hampshire	12.7	3.7	16.4
Utah	11.4	4.3	15.7
Kansas	9.3	1.4	10.7
Iowa	4.3	6.0	10.3
Oregon	2.3	7.0	9.3
Alabama	7.6	1.1	8.7
Kentucky	8.0	0.2	8.2
Tennessee	6.7	1.3	8.0
Nevada	5.0	2.8	7.8
West Virginia	4.2	3.3	7.5

State	Procurement & Labor <i>(\$ in millions, from 2019 Amtrak State Fact Sheets)</i>		
	Goods & Services	Employee Wages	Amtrak Spending Total
Nebraska	4.3	2.2	6.5
Arizona	4.5	1.9	6.4
Mississippi	0.0	5.6	5.6
New Mexico	0.0	4.8	4.8
North Dakota	3.5	0.6	4.1
Montana	0.0	4.1	4.1
Maine	0.0	4.0	4.0
Arkansas	0.0	2.9	2.9
Vermont	2.2	0.1	2.3
Idaho	0.0	0.3	0.3

2.4 Chapter Summary

FRA grant programs provided over \$30 billion in grant funds and loans from 2009 through 2021. Grants were awarded mostly to Amtrak and public organizations, but some non-profit and private organizations also received funding. Funded work was primarily to improve passenger and freight rail infrastructure and equipment and to support Amtrak operations. Grant funds were expended in most states, and the Amtrak and the HSIPR grant programs have been dominant.

3 Legal Standards for Government Race-Conscious Contracting Programs

This chapter reviews the legal standards governing the use of race-conscious measures in a DBE program that may apply to Federally funded contracting programs.¹⁶ It examines Supreme Court and lower Federal court opinions that define this legal landscape, particularly in the context of transportation contracting, and the evidentiary basis required to support the establishment of race-conscious contracting programs.

3.1 Overview of Strict Scrutiny

The legal standards governing race-conscious contracting programs were articulated in two seminal Supreme Court cases. In *City of Richmond v. J.A. Croson Company* and *Adarand Constructors, Inc. v. Peña*,¹⁷ the Supreme Court held that race-conscious measures in government contracting programs must meet a strict scrutiny standard. Strict scrutiny requires that a program must serve a compelling governmental interest and be narrowly tailored to further that interest.¹⁸ Governments have a compelling interest in ensuring that public funds are not distributed in a manner that perpetuates discrimination and its effects.¹⁹ However, they must do more than rely on generalized allegations of discrimination to justify race-conscious measures intended to remedy the effects of past discrimination — they must establish a strong basis in evidence that such remedial measures are necessary.²⁰

3.1.1 Strict Scrutiny and *City of Richmond v. J.A. Croson Company*

The landmark case establishing that race-conscious state and local government programs must pass strict scrutiny is *City of Richmond v. J.A. Croson Company (Croson)*.⁹ The strict scrutiny standard of judicial review for government race-based initiatives has two required components: (i) public entities must show a compelling state interest in establishing race- or ethnicity-specific programs, and (ii) such programs must be narrowly tailored to achieve that state interest.²¹ The strict scrutiny test calls for a “searching judicial inquiry into the justification” to determine whether the classifications are truly remedial or rather “motivated by illegitimate notions of racial inferiority or simple racial politics.”²²

In *Croson*, the Supreme Court found the City of Richmond’s (City) Minority Business Enterprise Plan unconstitutional because it violated the Fourteenth Amendment’s Equal Protection Clause. The City’s plan required prime contractors awarded city construction contracts to subcontract at least 30 percent of the project to MBEs.²³ The Supreme Court affirmed the Fourth Circuit’s

¹⁶ Gender-conscious provisions are subject to intermediate scrutiny. *United States v. Virginia*, 518 U.S. 515, 532–533 (1996). If a Federal program satisfies the more exacting strict scrutiny standard, a court need not analyze the race- and gender-conscious provisions of the program separately because “intermediate scrutiny would not yield a different result than that obtained under strict scrutiny’s more stringent standard.” *Western States Paving Co., Inc. v. Washington State Dep’t of Transp.*, 407 F.3d 983, 990 n.6 (9th Cir. 2005), cert. denied, 546 U.S. 1170 (2006).

¹⁷ *Adarand Constructors, Inc. v. Peña*, 515 U.S. 200 (1995) (*Adarand*).

¹⁸ *Croson*, 488 U.S. at 490–491.

¹⁹ *Id.* at 492.

²⁰ This legal analysis is not an exhaustive discussion of all the case law or issues related to *Croson* and its progeny but rather highlights, with particular emphasis on the case law discussing the use of race-conscious measures related to the existing USDOT DBE program, statute, and regulations.

²¹ *Croson*, at 507.

²² *Id.* at 493.

²³ *Id.* at 477.

ruling that the plan was unconstitutional, finding that the City had not presented sufficient evidence to support its compelling interest in remedying discrimination.²⁴

With respect to the first prong of the strict scrutiny standard, the Court emphasized that in order to establish a compelling interest, there must be “a strong basis in evidence” for the use of race-conscious measures.²⁵ The Court also stated that “findings of societal discrimination will not suffice” to meet this requirement.²⁶ The Court opined that “there was no direct evidence of race discrimination on the part of the City” or “any evidence that the City’s prime contractors had discriminated against minority-owned subcontractors.”²⁷

Specifically, the Supreme Court reasoned that the facts the City offered to support the quota—a declaration that the ordinance was remedial, generalized assertions of past discrimination in the construction industry, the paucity of minority contractors in state and local trade associations, and Congress’s findings of the effects of past discrimination—did not singly or together provide a strong basis in evidence to justify race-conscious measures.²⁸ Finally, the City’s statistical evidence showed a disparity between the general population in Richmond (which was 50 percent Black American) and the awards of prime contracts to Black American firms (0.67 percent of the awards).²⁹ The Court held that this was an irrelevant statistical comparison and insufficient to raise an inference of discrimination; therefore, the City had failed to establish that it had a strong basis in evidence to support a compelling interest for its use of race-conscious measures.³⁰

To prevent its holding from being construed to categorically eliminate all race-conscious efforts, the Court expressly stated that:

Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the city of Richmond had evidence before it that nonminority contractors were systematically excluding minority businesses from subcontracting opportunities, it could take action to end the discriminatory exclusion. Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality’s prime contractors, an inference of discriminatory exclusion could arise... Moreover, evidence of a pattern of individual discriminatory acts can, if supported by appropriate statistical proof, lend support to a local government’s determination that broader remedial relief is justified.³¹

In *Croson*, the Court stated that a relevant statistical test would compare the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors engaged by the locality or the locality’s prime contractors. This, they said, would support an inference of discrimination in this legal context and thus satisfy the compelling interest requirement of the strict scrutiny test.³²

²⁴ *Id.* at 505.

²⁵ *Id.* at 500 (citing *Wygant v. Jackson Bd. of Educ.*, 476 U.S. 267 (1986)).

²⁶ *Id.* at 494.

²⁷ *Id.* at 480.

²⁸ *Id.*

²⁹ *Id.* at 499.

³⁰ *Id.* at 499–500.

³¹ *Id.* at 509.

³² *Id.* at 503.

With respect to the second prong, the Court ruled that the Minority Business Enterprise (MBE) program was not narrowly tailored to remedy discrimination, as the 30 percent quota could not be “tied to any injury suffered by anyone.”³³ For example, the Court pointed to the fact that the program was extended to a long list of minorities other than Black Americans, such as Hispanic Americans, Asian Americans, Native Americans, and Alaska Natives, for which the City had not established any inference of discrimination.³⁴ Finally, the Court pointed to Richmond’s failure to consider race-neutral means to increase MBE participation.³⁵ In analyzing whether a race-conscious program is narrowly tailored, the Court identified several factors:

- Consideration of alternative, race-neutral means to increase MBE participation;³⁶
- The flexibility of the program requirements, including the availability of waiver provisions;³⁷
- The duration of the proposed relief;³⁸
- The relationship of numerical participation goals to the availability of minority- and women-owned enterprises (MWBEs) in the relevant market;³⁹
- The impact of the relief on third parties;⁴⁰ and
- The over inclusiveness or under inclusiveness of the racial classifications.⁴¹

All the above factors should be considered when developing a race-based program to ensure that the program is narrowly tailored under the strict scrutiny standard.

3.1.2 Strict Scrutiny and *Adarand Constructors, Inc. v. Peña (Adarand)*

While *Croson*’s holding applies to challenges to race-conscious State and local government programs, *Adarand* extended *Croson*’s reach by holding that the strict scrutiny standard applies to Federal programs using race-based classifications as well. Like State and local governments, the Federal government must also show a compelling interest for the use of race-conscious measures and the remedies used must be narrowly tailored.

In *Adarand*, a nonminority subcontractor that did not receive an award for the guardrail portion of a Federal highway project brought an action against the USDOT (through the Secretary of Transportation at the time, Federico Peña), alleging that the SBA 8(a) and 8(d) programs’ preference for minorities violated the Fifth Amendment’s Equal Protection clause.⁴² The prime contractor’s contract with the government provided a monetary incentive for hiring firms controlled by “socially and economically disadvantaged individuals” for its subcontracting

³³ *Id.* at 508.

³⁴ *Id.*

³⁵ *Id.* at 506–507 (criticizing the City’s motive in establishing a 30 percent quota as a remedy for past discrimination and concluded that the goal of the program was racial balancing).

³⁶ *Croson*, 488 U.S. at 507 (citing *United States v. Paradise*, 480 U.S. 149, 171 (1987)); *see also Adarand*, 515 U.S. at 237-238.

³⁷ *Paradise*, 480 U.S. at 171.

³⁸ *Croson*, 488 U.S. at 498, 509; *see also Paradise*, 480 U.S. at 171.

³⁹ *Paradise*, 480 U.S. at 171.

⁴⁰ *Id.*

⁴¹ *Croson*, 488 U.S. at 506.

⁴² *Adarand*, 515 U.S. at 209.

work.⁴³ While the District Court ruled in favor of the Federal government, and the Tenth Circuit Court of Appeals affirmed, the Supreme Court remanded the case to determine whether the challenged program met the strict scrutiny standard.⁴⁴

The Court noted that while *Croson* set strict scrutiny as the standard by which all race-based action by State and local governments would be analyzed, no such clear guidance was available in terms of what standard of review was required when such action is taken by the Federal government.⁴⁵ The Court ultimately concluded that strict scrutiny should also be applied to Federal programs using race-conscious measures.⁴⁶

The Court sought to dispel the notion that the standard would be “strict in theory, but fatal in fact.” The Court wrote:

The unhappy persistence of both the practice and lingering effects of racial discrimination against minority groups in this country is an unfortunate reality, and government is not disqualified from acting in response to it... When race-based action is necessary to further a compelling interest, such action is within constitutional constraints if it satisfies the “narrowly tailoring” test this Court has set out in previous cases.⁴⁷

Because of the change in the standard of review, the Court remanded the case to the lower courts for review considering the guidance in the *Adarand* decision.

3.1.3 Strict Scrutiny as Applied to the USDOT DBE Program

In response to *Adarand*, in 1999 the USDOT revised its DBE program regulation (49 C.F.R. Part 26) to comply with the narrow tailoring requirement of strict scrutiny.⁴⁸ These revisions included the implementation of a personal net worth standard for DBE certification eligibility and the requirement for setting race-neutral goals in conjunction with race-conscious goals. The USDOT initially created the set of DBE regulations in 1980, which outlined the affirmative action requirements for DBEs. First promulgated in conjunction with the Surface Transportation Assistance Act (the “Act”), the regulation helped facilitate the Act’s requirement of an aspirational goal of 10 percent of funds to be expended with small businesses owned and controlled by socially and economically disadvantaged individuals. This 10 percent DBE provision was continued in various surface transportation reauthorizations that followed.⁴⁹

⁴³ *Id.*

⁴⁴ *Id.* at 237.

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.* at 237.

⁴⁸ “Participation by Disadvantaged Business Enterprises in Department of Transportation Programs,” 64 Fed. Reg. 5096 (Feb. 2, 1999) (codified at 49 C.F.R. parts 23, 26).

⁴⁹ Congress reauthorized the DBE program in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Pub. L. 102-240, 105 Stat. 1914 (1991) (codified at 23 U.S.C. § 101), the Transportation Equity Act for the 21st Century (TEA-21), Pub. L. 105-178, 112 Stat. 107 (1998) (codified in scattered sections of Titles 16, 23, and 49 U.S.C.); Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59, 119 Stat. 1144 (2005) (codified in scattered sections of Titles 2, 5, 6, 15, 16, 19, 21, 23, 26, 31, 33, 42, 45, and 49 U.S.C.); Divisions A and B of the Moving Ahead for Progress in the 21st Century Act (MAP-21), Pub. L. 112-141, 126 Stat. 405; Titles I, II, III, and VI of the Fixing America’s Surface Transportation Act (FAST Act) Pub. L. 114-94, 23 U.S.C. § 204; 23 U.S.C. § 403; and Division C of the Infrastructure Investment and Jobs Act, Pub. L. 117-58.

Since the 1999 revision to the DBE regulation in response to *Adarand*, challenges to the revised regulation have arisen in the Seventh, Eighth, Ninth, and Tenth Circuits. In *Adarand Constructors, Inc. v. Slater*,⁵⁰ a case that followed the remand of the *Adarand* Supreme Court case, the Tenth Circuit Court of Appeals noted that the compelling interest prong of strict scrutiny was already established by Congress. The Tenth Circuit reviewed Congress's evidence of "past and present discrimination in the publicly funded highway construction subcontracting market."⁵¹ The Tenth Circuit found that Congress had held more than 30 hearings on minority businesses and reviewed 39 statistical studies documenting statistical disparities in the utilization of minority-owned businesses.⁵² Acknowledging Congress's power to address racial discrimination in the States and the evidence in the record, the Tenth Circuit held that "we readily conclude that the Federal government has a compelling interest in not perpetuating the effects of racial discrimination in its own distribution of Federal funds and in remediation of the effects of past discrimination in the government contracting markets created by its disbursements."⁵³

The Tenth Circuit based this conclusion on the Court's opinion in *Croson*, which stated that "it is beyond dispute that any public entity, state or Federal, has a compelling interest in assuring those public dollars, drawn from the tax contributions of all citizens, do not serve to finance the evil of private prejudice."⁵⁴

The Eighth Circuit in *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation* (in which USDOT was a named defendant) held that Congress had a "compelling interest" in enacting the legislation authorizing USDOT's DBE programs, as it had a sufficient evidentiary basis to conclude that persistent racism and discrimination in highway subcontracting warranted a race-conscious procurement program.⁵⁵ Looking first to the USDOT DBE regulations, the Eighth Circuit held that there were five factors which demonstrated that the DBE program was narrowly tailored: (i) there was flexibility within the regulations, (ii) the goals were tied to each local market, (iii) there was an emphasis on using race-neutral measures, (iv) all small businesses that could show they were socially and economically disadvantaged could participate, and (v) the personal net worth standard of \$750,000 for disadvantaged business owners limited the presumption of the minority business qualification.⁵⁶ The Eighth Circuit then turned its analysis to whether the DBE program was narrowly tailored as applied in Nebraska and Minnesota, with respect to their local labor markets. The Eighth Circuit concluded that the program was narrowly tailored on its face because the revised DBE program affords grantee states substantial discretion in setting DBE goals.⁵⁷ Thus, the Eighth Circuit rejected plaintiff's claim that the revised

⁵⁰ *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147 (10th Cir. 2000), cert. granted, 532 U.S. 941, dismissed as improvidently granted, 534 U.S. 103 (2001) ("Adarand VII").

⁵¹ *Adarand*, 228 F.3d at 1166.

⁵² *Id.* at 1173.

⁵³ *Id.* at 1165.

⁵⁴ *Croson*, 488 U.S. at 492.

⁵⁵ *Sherbrooke Turf v. Minn. Dep't of Transp.*, 345 F.3d 964 (8th Cir. 2003), cert. denied, 541 U.S. 1041 (2004).

⁵⁶ *Id.* at 972. The Personal Net Worth threshold was raised from \$750,000 to \$1.32 million in 2011, to account for the effects of inflation since 1989. Disadvantaged Business Enterprise: Program Improvements, 76 Fed. Reg. 5083 (January 28, 2011).

⁵⁷ *Id.* at 973.

USDOT regulations did not satisfy strict scrutiny.⁵⁸

In *Western States Paving Co. v. Washington State Department of Transportation*,⁵⁹ the Ninth Circuit applied strict scrutiny in a two-prong analysis, first considering whether the Federal DBE legislation and its implementing regulations were facially constitutional, and second examining whether the State of Washington's application of the Federal DBE regulations was valid. The plaintiff, a nonminority asphalt and paving contractor, lost two contracting bids even though its bid was lower than the bid of the DBE awarded the contract. The plaintiff sued the Washington State Department of Transportation (DOT) alleging that the use of race- and gender-based preferences in Federally funded transportation contracts violates equal protection. The plaintiff requested declaratory judgment that the USDOT's DBE statute and regulations were unconstitutional on their face and as applied by the State of Washington's DOT.⁶⁰

With respect to the facial constitutionality of the Federal statute and regulations, the Ninth Circuit, looking at the evidence weighed by Congress, stated that the Federal government, and therefore, Washington DOT, had a compelling interest for concluding that "discrimination within the transportation contracting industry hinders minorities' ability to compete for Federally funded contracts."⁶¹ The Ninth Circuit then analyzed whether the USDOT's regulations were narrowly tailored. The Court held that the regulatory requirements for setting DBE utilization goals were narrowly tailored in that they construed the 10 percent DBE goal in the Federal statute as aspirational and required each state to establish its own utilization goal based upon the proportion of DBEs in its transportation contracting market.⁶² Because the DBE goals were customized by each state, the Ninth Circuit held that the DOT DBE regulations were narrowly tailored to address the effects of race-based discrimination within this industry.

With respect to the as-applied challenge to the DBE regulations, the Ninth Circuit looked to the utilization goal set by the State of Washington to determine whether this stated goal was unconstitutional. The Ninth Circuit interpreted the narrow-tailoring prong of *Croson* to require that the State of Washington have independent evidence of discrimination in the state's contracting industry and that the program be limited to those minority groups that have suffered discrimination.⁶³ Although the state offered a statistic comparing the percentage of DBEs in the state (11.7 percent) to the percentage of funds awarded to them on race-neutral contracts (9 percent), the Ninth Circuit found this evidence unpersuasive, holding that the statistic was oversimplified and that it did not capture factors such as the capacity of the DBEs to undertake the contracted work.⁶⁴ The Ninth Circuit in *Western States Paving* held that Congressional evidence standing alone was not enough to support the strong basis in evidence requirement at the recipient level. Rather, the recipients of the Federal funds must show a finding of discrimination separate and apart from the Federal government's showing.⁶⁵ Thus, as the State of Washington failed to provide sufficient evidence of discrimination within its

⁵⁸ The constitutionality of the USDOT DBE regulations on their face and as applied in Minnesota DOT's DBE Program was upheld in *Geyer Signal, et al., v. Minnesota Department of Transportation et al.*, CA 11-321, 2014 U.S. Dist. LEXIS 43945 (D. Minn. 2014).

⁵⁹ *W. States Paving Co., Inc., v. Wash. Dep't of Transp.*, 407 F.3d 983 (9th Cir. 2005), cert. denied, 6 U.S. 1170 (2006).

⁶⁰ *Id.* at 987.

⁶¹ *Id.* at 992-993.

⁶² *Id.* at 994-995.

⁶³ *Id.* at 998.

⁶⁴ *Id.* at 1000.

⁶⁵ *Id.* at 1002-1003.

own contracting market, the Court held that the state failed to meet its burden of showing that its program was narrowly tailored to further Congress's compelling interest.⁶⁶

In *Northern Contracting, Inc. v. State of Illinois Department of Transportation*⁶⁷ (in which USDOT was a named defendant), the Seventh Circuit was asked to determine whether the Illinois Department of Transportation (IDOT) violated the U.S. Constitution in administering a DBE program designed to increase the participation of socially and economically disadvantaged individuals in Illinois highway construction subcontracts. IDOT, as a USDOT funding recipient, was required to comply with Federal law pertaining to its DBE program. Northern Contracting, Inc. ("NCI"), a nonminority male-owned construction company, filed suit against IDOT alleging that IDOT's program for compliance with the DBE goal-setting requirements of the Transportation Equity Act for the 21st Century (TEA-21) was in violation of the Equal Protection Clause. The Seventh Circuit Court concluded, even though not at issue, that the Federal government had a compelling interest in remedying discrimination in highway construction.⁶⁸ The Seventh Circuit Court noted that NCI forfeited any challenge to the compelling interest prong of strict scrutiny, having instead chosen to focus on the narrow tailoring prong of the strict scrutiny test.⁶⁹

NCI argued that IDOT must show its DBE program was narrowly tailored to remedy specific past discrimination by the state. The Seventh Circuit disagreed and stated that the program was narrowly tailored to the compelling interest identified in remediating racial discrimination in the Federal highway construction market.⁷⁰ Further, the Seventh Circuit reasoned that IDOT was insulated from a constitutional challenge unless the state exceeded its authority under the Federal DBE statute and regulations.⁷¹ Although NCI relied on a previous case, *Builders Association of Greater Chicago v. County of Cook*,⁷² for its argument that IDOT had to demonstrate that its program was narrowly tailored to remedy specific past discrimination perpetrated by the state, the Seventh Circuit held that NCI's reliance on *Builders Association of Greater Chicago* was misplaced, as IDOT was acting as an "instrument" of Federal policy, and NCI could not collaterally attack the Federal regulations through its challenge to IDOT's program.⁷³

In 2016, the Seventh Circuit Court of Appeals considered a challenge to the USDOT DBE program in *Midwest Fence Corporation v. United States Department of Transportation*.⁷⁴ The

⁶⁶ *Id.* Considering *Western States Paving*, the USDOT published a memorandum titled "FY 2006 DBE Goal Setting Approval Process and DBE Program Plans" (December 21, 2005) to provide guidance to recipients. A subsequent Ninth Circuit opinion followed the ruling in *Western States* that states and their agencies must have evidence of discrimination in the entity's jurisdiction to meet the "narrowly tailored" prong. See *Associated General Contractors of America, San Diego Chapter, Inc. v. California Department of Transportation, et al.*, 713 F.3d 1187, 2013 WL 1607239 (9th Cir. April 16, 2013) (upholding Caltrans' DBE program under the *Western States* analysis).

⁶⁷ *Northern Contracting, Inc. v. Ill. Dep't of Transp.*, 473 F.3d 715 (7th Cir. 2007).

⁶⁸ *Id.* at 720.

⁶⁹ *Id.*

⁷⁰ *Id.* at 721.

⁷¹ *Id.* (citing *Milwaukee County Pavers Ass'n v. Fiedler*, 922 F.2d 419 (7th Cir.), cert. denied, 500 U.S. 954, 111 S. Ct. 2261 714 (1991)); see also, *GEOD Corp., et al., v. New Jersey Transit Corp.*, 746 F. Supp.2d 642, 655 (2010) (the New Jersey Transit DBE program was found constitutional because the transit authority did not exceed its Federal authority.)

⁷² *Id.* at 722 (citing *Builders Ass'n of Greater Chi. v. Cnty. of Cook*, 265 F.3d 642 (7th Cir. 2001)).

⁷³ *Id.* at 722.

⁷⁴ *Midwest Fence Corporation v. United States Department of Transportation*, 840 F.3d 932 (7th Cir. 2016).

plaintiff Midwest Fence Corporation challenged the constitutionality of the Federal DBE program and its implementation by two Illinois agencies, naming IDOT, Illinois State Tollway Authority (“Tollway”), and USDOT as defendants. The Seventh Circuit affirmed the District Court’s holding that the Federal program administered by IDOT was facially constitutional and served a compelling government interest in remedying discrimination in public highway contracting.⁷⁵ In addressing the merits of Midwest Fence’s arguments, the Court acknowledged that the 2004 IDOT availability study found “pervasive and systemic discrimination against minorities and women.”⁷⁶ Additionally, the Court recognized that the 2011 IDOT disparity study found that DBEs were “significantly under-utilized as prime contractors” and that in the realm of construction subcontracting, the “statistically significant disparity ratio” was “low enough to signal systemic under-utilization.”⁷⁷

The Seventh Circuit focused its analysis on whether the Federal USDOT DBE program was narrowly tailored to meet a compelling governmental interest. The Seventh Circuit reviewed the USDOT DBE program and found several factors supporting the conclusion that the program was narrowly tailored. First, the USDOT DBE program requires that its grantees’ DBE program goals are achievable through race- and gender-neutral means to the maximum extent possible.⁷⁸ Second, the Seventh Circuit concluded that the USDOT DBE program is limited in duration and flexible.⁷⁹ Finally, the Court reviewed Midwest Fence’s assertion that the USDOT program is over-inclusive and rejected the assertion based upon the flexibility in the regulations that extended benefits only to those presumptively disadvantaged individuals who are actually disadvantaged.⁸⁰

3.2 Compelling Interest

3.2.1 Burden of Proof

The party challenging the use of race-conscious measures bears the ultimate burden of proof throughout the course of the litigation—despite the government’s obligation to produce a strong factual predicate to support its program.⁸¹ The plaintiff must persuade the court that a program is constitutionally flawed by challenging the government’s factual predicate for the program or by demonstrating that the program lacks a proper factual predicate.⁸² The plaintiff must also show that the program is not narrowly tailored.⁸³

Justice O’Connor explained the nature of the plaintiff’s burden of proof in her concurring opinion in *Wygant v. Jackson Board of Education*.⁸⁴ Following the production of the factual predicate supporting the program:

⁷⁵ *Id.* at 935.

⁷⁶ *Id.* at 950.

⁷⁷ *Id.* at 949-950.

⁷⁸ *Id.* at 942.

⁷⁹ *Id.* at 943.

⁸⁰ *Id.* at 945.

⁸¹ *Concrete Works of Colo., Inc. v. City & Cnty. of Denver*, 321 F.3d 950, 959 (10th Cir. 2003), cert denied, 540 U.S. 1027 (2003); *Coral Constr.*, 941 F.2d at 921.

⁸² *GEOD Corp. v. New Jersey Transit Corp.*, 678 F. Supp. 276, 282 (D. N.J. 2009) (holding that the compelling interest prong for the DBE program is established by the Federal government in enacting TEA-21.)

⁸³ *Sherbrooke*, 345 F.3d at 971.

⁸⁴ *Wygant v. Jackson Board of Education*, 476 U.S. 267, 293 (1986).

[I]t is incumbent upon the non-minority [plaintiffs] to prove their case; they continue to bear the ultimate burden of persuading the court that the [government's] evidence did not support an inference of prior discrimination and thus a remedial purpose, or that the plan instituted on the basis of this evidence was not sufficiently 'narrowly tailored.'⁸⁵

In *Rothe Development Corp. v. Department of Defense*, the Federal Circuit wrote that “the party challenging a statute bears the ultimate burden of persuading the court that it is unconstitutional.”⁸⁶ In *Sherbrooke*, the plaintiff failed to meet its burden of proof to show that the DBE program was unconstitutional, because in arguing that there was not a strong basis in evidence for the DBE program, the plaintiff “failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts.”⁸⁷ Further, the plaintiff failed to provide evidence to support that the DBE program was not narrowly tailored, either facially with regards to the USDOT DBE requirements or as-applied on the state level.⁸⁸

The standard for appellate review in making the determination if the plaintiff has met this burden is a question of law, subject to *de novo* review.⁸⁹

3.2.2 Strong Basis in Evidence

In *Croson*, the Court stated that “[i]t is beyond dispute that any public entity, state or Federal, has a compelling interest in assuring that public dollars, drawn from tax contributions of all citizens, do not serve to finance the evil of private prejudice.”⁹⁰ The procedural protocol established in contracting by *Croson* imposes an initial burden of production upon the governmental entity to demonstrate that there is a compelling governmental interest, and that challenged MBE program is supported by a “strong basis in evidence,” i.e., documented evidence of past discrimination.⁹¹

The case law is clear that the jurisdiction adopting an affirmative action program must have considered evidence of discrimination to meet the threshold requirement of a strong evidentiary basis. When enacting legislation creating a DBE program, Congress is not required to possess evidence that minorities suffer discrimination in every state of the public contracting market.⁹² As stated in *Rothe*, “whereas municipalities must necessarily identify discrimination in the immediate locality to justify a race-based program, we do not think that Congress needs to have had evidence before it of discrimination in all fifty states...”⁹³

It is important to note that *Croson* and its progeny do not require a governmental entity to

⁸⁵ *Id.* at 293; see also *Eng'g Ass'n of South Florida, Inc. v. Metro. Dade Cnty*, 122 F.3d 895, 916 (11th Cir. 1997) (Plaintiff has the burden of rebutting the inference of discrimination, if sufficient evidence is produced to establish a factual predicate of discrimination).

⁸⁶ *Rothe Dev. Corp. v. Dep't of Def.*, 545 F.3d 1023, 1036 (Fed. Cir. 2008).

⁸⁷ *Sherbrooke*, 345 F.3d at 971-973.

⁸⁸ *Id.* at 971-974.

⁸⁹ *Id.* at 240; (“[W]e will review the legal conclusions de novo and the factual findings for clear error.”); see *Concrete Works*, 321 F.3d at 958; *Rothe Dev. Corp. v. U.S. Dep't of Def.*, 262 F.3d 1306, 1323 (Fed. Cir. 2001); *Majeske v. City of Chi.*, 218 F.3d 816, 820 (7th Cir. 2000); *Contractors Ass'n of E. Pa., Inc. v. City of Phila.*, 91 F.3d 586, 596 (3d Cir. 1996) (Contractors Ass'n II). *But see Eng'g Contractors Ass'n of S. Fla. Inc. v. Metro. Dade Cnty.*, 122 F.3d 895, 903-04 (11th Cir. 1997) (reviewing the determination for clear error).

⁹⁰ *Croson*, 488 U.S. at 503.

⁹¹ *Id.* at 498-500.

⁹² *Western States*, 407 F.3d at 992-993.

⁹³ *Rothe Dev. Corp.*, 262 F.3d at 1329.

conclusively prove past or present discrimination.⁹⁴ As the Tenth Circuit noted in *Concrete Works*:

Denver's only burden was to introduce evidence which raised the inference of discriminatory exclusion in the local construction industry and link its spending to that discrimination... Denver was under no burden to identify any specific practice or policy that resulted in discrimination. Neither was Denver required to demonstrate that the purpose of any such practice or policy was to disadvantage women or minorities. To impose such a burden on a municipality would be tantamount to requiring proof of discrimination and would eviscerate any reliance the municipality could place on statistical evidence and anecdotal evidence.⁹⁵

Circuit Courts have repeatedly upheld the existing USDOT DBE program based on Congress's compelling interest in enacting the program and the supporting strong basis in evidence.⁹⁶

While *Croson* does not establish a bright-line rule about which types of evidence support the strong basis of evidence requirement, subsequent courts have upheld DBE programs based on the following types of evidence: direct statistical evidence, anecdotal evidence, and indirect statistical evidence of "passive participation." Each of these types of evidence is briefly discussed in turn, along with additional guidance that courts have given with respect to each type of evidence.

3.2.3 Statistical Evidence

The primary evidentiary requirement to show a compelling interest and allow an inference of discrimination is through statistics illustrating a disparity between the utilization of majority firms by the governmental entity compared to the utilization of minority firms. The disparity analysis results in a disparity index, or disparity ratio, which is then tested for its validity using a standard deviation analysis. However, for such statistics to be relevant, the state or local government must consider a range of factors, as discussed below.

The Supreme Court in *Croson* highlighted the importance of statistical evidence, specifically noting the value of "a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors."⁹⁷

During the Congressional reauthorization of USDOT's DBE program, the statistical evidence considered included minority and women business utilization in Federal contracting dollars, as well as the disparity in business ownership rates for racial minorities and the low gross receipts by minority-owned businesses.⁹⁸ Moreover, state DBE programs have been upheld in as-applied

⁹⁴ *O'Donnell Const. Co. v. District of Columbia*, 963 F.2d 420, 424 (D.C. Cir. 1992) (race conscious affirmative action legislation must rest on evidence approaching a prima facie case of discrimination).

⁹⁵ *Concrete Works*, 321 F.3d at 973.

⁹⁶ *Sherbrooke*, 345 F.3d at 970-971; *Western States*, 407 F.3d at 993; *Midwest Fence*, 840 F.3d at 946; see also *H.B. Rowe, Inc. v. Tippett*, 615 F.3d 233, 241 (4th Cir. 2010) ("A state need not conclusively prove the existence of past or present racial discrimination to establish a strong basis in evidence for concluding that remedial action is necessary.").

⁹⁷ *Croson*, 488 U.S. at 509.

⁹⁸ *Western States*, 407 F.3d at 991-992.

challenges through statistical analyses of availability in their local markets.⁹⁹ Courts have upheld programs supported by statistical evidence in the form of availability¹⁰⁰ and capacity¹⁰¹ analyses over specific time periods and covering the applicable geographic markets, as well as non-goal contract data.¹⁰²

3.2.4 Passive Participation

A significant form of evidence that the government may present is passive participation in a discriminatory marketplace. In requiring that a state or local government show that it perpetuated the discrimination to be remedied by the MWBE program, the *Croson* court noted that the government need not be an active participant in the discrimination. Rather, the Court stated that passive participation would suffice in satisfying the Court's strict scrutiny standard.¹⁰³

The difference between active and passive participation can be illustrated by this example: evidence of active participation would be if the governmental entity actively created barriers to exclude MWBEs from contracting opportunities. Evidence of passive participation would be the government's infusion of tax dollars into a discriminatory industry. For example, the governmental entity would be a passive participant in discrimination if it financed construction projects in which the prime contractors were engaging in discriminatory conduct. The *Croson* Court highlighted that a government could passively participate in private sector discrimination simply through its monetary involvement, stating "it is beyond dispute that any public entity, state or Federal, has a compelling interest in assuring those public dollars, drawn from the tax contributions of all citizens, do not serve to finance the evil of private prejudice."¹⁰⁴

3.2.5 Anecdotal Evidence

Anecdotal evidence that reflects the personal experiences of individuals with discrimination in contracting opportunities is relevant to the question of whether observed statistical disparities are due to discrimination and not to some other nondiscriminatory cause or causes.¹⁰⁵ As observed by the Supreme Court, anecdotal evidence that is presented in a "pattern or practice" discrimination case may be persuasive because it "brought the cold [statistics] convincingly to life."¹⁰⁶ Testimony about discrimination by prime contractors, unions, bonding companies, suppliers and lenders has been found relevant regarding barriers both to minority firms' business formation and to their success on governmental projects.¹⁰⁷ While anecdotal evidence is insufficient standing alone, "[p]ersonal accounts of actual discrimination or the effects of

⁹⁹ *Sherbrooke*, 345 F.3d at 973-974.

¹⁰⁰ *Midwest Fence*, 840 F.3d at 949.

¹⁰¹ *Northern Contracting, Inc. v. State of Ill.*, No. 00-C-4515, 2005 WL 2230195 at *20 (N.D. Ill. Sept. 8, 2005 (later upheld in *Northern Contracting, Inc. v. Ill. Dep't of Transp.*, 473 F.3d 715 (7th Cir. 2007)); *Rothe Dev. Corp. v. Dep't of Def.*, 545 F.3d 1023, 1042-1043 (Fed. Cir. 2008).

¹⁰² *Northern Contracting*, 2005 WL 2230195 at *8 - 9.

¹⁰³ *Croson*, 488 U.S. at 509.

¹⁰⁴ *Id.* at 492; *See, e.g. Concrete Works*, 321 F.3d at 973-976 (holding that an exact linkage between Denver's award of public contracts and discrimination is not necessary, and that evidence linking its spending practices to evidence of marketplace discrimination illustrated it indirectly contributed to private discrimination as a passive participant); *Builders Ass'n of Greater Chi. v. City of Chi.*, 298 F.Supp.2d 725 (N.D. Ill. 2003) (finding that the lack of MWBE participation on private construction and the presence of marketplace discrimination probative).

¹⁰⁵ *Webster v. Fulton Cnty.*, 51 F.Supp.2d 1354, 1363 (N.D. Ga. 1999).

¹⁰⁶ *Int'l Bhd. of Teamsters v. United States*, 431 U.S. 324, 399 (1977).

¹⁰⁷ *Adarand VII*, 228 F.3d at 1168-1172.

discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a [government’s] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative.”¹⁰⁸ Examples of methods used to collect anecdotal evidence include Congressional testimony, surveys, interviews, and focus groups.¹⁰⁹

Anecdotal evidence is not required to be verified or corroborated, as anecdotal evidence is “nothing more than a witness’ narrative of an incident told from the witness’ perspective and including the witness’ perceptions.”¹¹⁰

3.3 The Narrow Tailoring Analysis

Croson requires that an MBE program be “narrowly tailored” to remedy current evidence of discrimination.¹¹¹ In *United States v. Paradise*, the Supreme Court identified five factors to consider whether an affirmative action program is narrowly tailored. This was later used in *Sherbrooke* (8th Circuit), *Western States* (9th Circuit), and *Midwest Fence* (7th Circuit). The Tenth Circuit in *Adarand VII* added the factor of over- or under-inclusiveness of the program based on the analysis in *Croson*. The factors are:

1. The efficacy of alternative race-neutral policies.
2. The flexibility of the policy, including waivers if the goal cannot be met.
3. Over- or under-inclusiveness of the program.
4. The planned duration of the remedy.
5. The relationship between the numerical goal and the percentage of minority group members in the relevant labor market; and
6. The burden of the policy on innocent third parties.¹¹²

First, in *Midwest Fence*, the Seventh Circuit determined there was ample evidence that the USDOT DBE program requires states to “meet as much as possible of their overall DBE participation goals through race- and gender-neutral means” and if a state can meet its entire DBE goal through neutral means it “must implement [its] program without setting contract goals during that year.”¹¹³

Second, the USDOT DBE program is flexible, and it requires states to be flexible as they administer their programs, requiring that they continually reassess DBE participation goals and whether race-conscious goals are necessary to meet those goals.¹¹⁴ In fact, the USDOT DBE regulations require that if a state is on track to exceed participation, the state must reduce or eliminate its reliance on race-conscious measures.¹¹⁵

In *Sherbrooke*, the court pointed to the DBE program’s “substantial flexibility” and the fact that a state could obtain waivers and exemptions from any requirement and not be penalized for a

¹⁰⁸ *Concrete Works II*, 36 F.3d at 1520, 1530.

¹⁰⁹ *Rowe*, 615 F.3d at 251; *Adarand VII* at 1168-1172; *Concrete Works II*, 36 F.3d at 1520, 1530.

¹¹⁰ *Rowe*, 615 F.3d at 249; see also *Concrete Works*, 321 F.3d at 989 (stating that each party could present its own witnesses to describe their own perceptions on discrimination).

¹¹¹ See *Croson*, 488 U.S. at 509-10.

¹¹² *United States v. Paradise*, 480 U.S. 149, 187 (1987); *Sherbrooke*, 345 F.3d at 971; *Western States*, 407 F.3d at 997; *Midwest Fence*, 840 F.3d at 942; *Adarand VII*, 228 F.3d at 1177 (citing *Croson*, 488 U.S. at 508).

¹¹³ *Midwest Fence*, 840 F.3d at 942.

¹¹⁴ *Midwest Fence*, 840 F.3d at 943; see 49 C.F.R. § 26.51(f).

¹¹⁵ *Midwest Fence*, 840 F.3d at 943; 49 C.F.R. § 26.51(f)(2).

good faith failure to meet its overall goals.¹¹⁶ The flexibility to waive contract specific goals supports the court’s findings that such race-conscious programs are narrowly tailored and thus constitutional.

The Tenth Circuit in *Western States Paving* noted that the regulations place a preference on the use of race-neutral methods to achieve the aspirational goals.¹¹⁷ Further, the Court found the Federal regulations prohibit the use of racial quotas and imposing durational limits.¹¹⁸ Finally, the Court considered that the implementing regulations tied the DBE utilization goal to the state’s labor market and the regulations provisions were designed to minimize the impact upon nonminority firms.¹¹⁹ The Tenth Circuit held that in considering the factor outlined above, *Western States’* facial challenge to the constitutionality of DBE program fails.¹²⁰

Third, regarding over- and under-inclusiveness, in *Midwest Fence*, the Seventh Circuit determined that the program was not over-inclusive because the USDOT regulations include mechanisms for grantees to adjust goals if the burdens on non-DBE third parties are too great in specific sectors, if the goals can be achieved from race-neutral means, or if the goal has overachieved and must be tailored down to a more reasonable goal.¹²¹

Fourth, regarding duration of the remedy, the Seventh Circuit in *Midwest Fence* found that the USDOT DBE program was narrowly tailored on the basis of duration, in part, because Congress has repeatedly reauthorized the program.¹²² Additionally, the USDOT DBE regulations require that states monitor progress toward goals on a regular basis, alter goals as necessary, and stop using race- and gender-conscious measures if they are no longer needed.¹²³

Fifth, regarding numerical proportionality, the Court in *Midwest Fence* found that the 10 percent aspirational goal of contract funds going to DBEs is only aspirational and not required.¹²⁴ The USDOT DBE regulations include a process for grantees to set a DBE participation goal based on information about their specific market that is intended to reflect “the level of DBE participation you would expect absent the effects of discrimination.”¹²⁵ Therefore, numerical proportionality between the goal and the percentage of minorities in the labor market is achieved by the regulations which instruct states to set their DBE participation goals to reflect the actual DBE availability in their market area.

Finally, the Seventh Circuit in *Midwest Fence* found that the USDOT DBE regulations included mechanisms to minimize the burdens on non-DBE third parties by relaxing standards if enforcement would yield negative consequences for third parties.¹²⁶ This is accomplished by requiring states to take tangible steps to address overconcentration of DBEs in certain sectors if the overconcentration unduly burdens non-DBEs to the point that they can no longer participate

¹¹⁶ *Sherbrooke*, 345 F.3d at 972.

¹¹⁷ *Western States*, 407 F.3d at 993.

¹¹⁸ *Id.* at 994.

¹¹⁹ *Id.* at 995.

¹²⁰ *Id.*

¹²¹ *Midwest Fence*, 840 F.3d at 943-944.

¹²² *Id.* at 943.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Midwest Fence*, 840 F.3d at 943; 49 C.F.R. § 26.45(b).

¹²⁶ *Midwest Fence*, 840 F.3d at 943.

in the market.¹²⁷

In summary, the *Midwest Fence* court found the USDOT DBE program was narrowly tailored after reviewing the factors outlined above.¹²⁸ This was consistent with the prior holdings in the Eighth, Ninth, and Tenth Circuits that found the USDOT DBE program was narrowly tailored.¹²⁹

3.4 Chapter Summary

The decisions of the Supreme Court in the *Croson* and *Adarand* cases changed the legal landscape for affirmative action in public contracting programs. The Supreme Court altered the authority of state and local governments and the Federal government to institute remedial race-conscious measures in public contracting programs. This chapter has examined what *Croson*, *Adarand*, and their progeny require, and the legal requirements for creating and implementing a constitutional race-conscious public contracting program. Significantly, every Federal Circuit court that has considered the constitutionality of the USDOT DBE program has affirmed the program.¹³⁰ Should Congress authorize an FRA DBE program based on findings satisfying these requirements, FRA may consider the use of remedial race- and gender-based measures in implementing a DBE program for its Federally funded contracting programs.

¹²⁷ *Id.* at 943-944.

¹²⁸ *Id.* at 946.

¹²⁹ *Sherbrooke*, 345 F.3d at 967-68; *Western States*, 407 F.3d at 995; *Adarand VII*, 228 F.3d at 1187.

¹³⁰ *Sherbrooke*, 345 F.3d at 973; *Western States*, 407 F.3d at 995; *Midwest Fence*, 840 F.3d at 946; *Adarand VII*, 228 F.3d at 1187.

4 Anecdotal Comments Collected in the National Opinion Research Center (NORC) Survey

4.1 Introduction

Anecdotal evidence includes personal accounts of incidents, including discrimination, told from the witnesses' perspectives. While anecdotal evidence of discrimination, standing alone, is generally insufficient to show a systematic pattern of discrimination to the courts, it can be an important element of such a showing. Personal accounts of perceived discrimination can complement other evidence. In cases challenging the DBE program, courts have accepted and recognized that anecdotal evidence is the witness's narrative of incidents told from his or her perspective, including the witness's thoughts, feelings, and perceptions, and thus anecdotal evidence need not be verified.¹³¹

The U.S. House of Representatives Committee on Transportation and Infrastructure held a hearing on November 9, 2021, entitled, "Does Discrimination Exist in Federal Passenger Rail Contracting?"¹³² Six witnesses testified and three submissions for the record were provided during the hearing. The hearing transcript is provided in Appendix B. During the hearing, some of the witnesses discussed their experience working on projects funded through FTA and/or FHWA alongside their attempts to work on FRA funded projects. Witnesses with considerable experience in their fields who regularly worked as subcontractors on projects subject to a DBE requirement described difficulty obtaining subcontracts for publicly funded rail and/or transit projects.

4.2 FRA NORC Survey

NORC at the University of Chicago,¹³³ under contract to FRA, collected new data to inform this Report to Congress. From February through November 2021, NORC attempted to contact a randomly select businesses from strata defined by 33 industry sectors specified by four-digit NAICS codes and census divisions (geographic areas) where potential FRA-funded projects could be located. In total, 193,932 invitations were sent to businesses via a letter or an email introducing the study and inviting the businesses to complete a short online survey with close-ended questions about whether they have experienced discrimination. For some questions, the respondent was provided an opportunity to provide open-ended responses. Even after intensive follow up, only 5,508 responded to the survey. A 2.8% response rate is concerning because there is the possibility on non-response bias, and consequently much of the information collected in the surveys is not usable.

Firms in the construction or construction-related industry accounted for 28 percent of the responses. IT firms accounted for 12.5 percent, the commodities and equipment industry accounted for eight percent, and 33 percent were in other services. About 18 percent were in other sectors. About 98 percent of the responding firms were not publicly traded companies. Most firms, about 77 percent of the 5,508 respondents, stated that they did not work on or seek business opportunities with the Federal government, thus may not be representative of all of

¹³¹ See Chapter 3.2.5, *supra*.

¹³² 117-33. Does Discrimination Exist in Federal Passenger Rail Contracting? Hearings before the Subcommittee on Railroads, Pipelines, and Hazardous Materials, of the House Committee on Transportation and Infrastructure, 117th Cong.

¹³³ NORC at the University of Chicago is a nonpartisan and objective research organization.

those in which we are most interested.

Of the 5,508 responses, 3,998 (72.6 percent) were from self-identified majority male owned firms. Of the 3,142 total comments received in response to the questions soliciting lived experiences of discrimination in business, only 1,510 comments were from minority- and women-owned businesses, meaning that there was not a sufficient sample power to conduct statistically valid analyses. As such, no quantitative analysis is presented in this report.¹³⁴

FRA/NORC effort received open-ended responses from businesses that self-reported as minority- or woman-owned firms as self-reported in the survey.¹³⁵ This effort provided an opportunity for respondents to comment on their own experience with discrimination. Those verbatim responses are provided below.¹³⁶

4.3 Anecdotal Comments Provided by Survey Responses

Question 5. In general, how have large project sizes affected your ability to obtain either public sector or private sector rail transportation contracts?

- [Firm name redacted] is able to bid and perform on small and large projects. However, [firm] is unaware of how the procurement process reviews, scores, and awards proposed vendors. As we have been able to procure larger projects our reputation has increased and we have been contacted by more potential partners for projects.
- We are somewhat limited in the projects we can do because of this being a captive rail system within the [redacted]. I would say it is harder to secure contracts for larger projects. I have experience with large projects but limited in government contracts. The biggest obstacle is the requirement or preference going to companies that have been awarded contracts in the past. Since I am a small business, I look for opportunities to be a sub-contractor to a primary contractor. We've only been involved with/ attempted to be involved with one project, which was an \$11mil project w/ \$5mil Federal Grant, so I couldn't say. Our definition of large projects would be 1-5 million dollars. We are a 100% self-funded contractor.
- The requisite requirements for large projects generally exclude a small business. The government takes a very long time to respond, even when they have deadlines for submitting said bids, they still take a while to respond. It is also common to have named resources for said contracts, which is hard to assign until the contract is awarded. In other words, although 80% of the government contracts are done by small business, and even those that report to SBA, it's a complex and difficult process to navigate through, regardless of skills, qualifications or standing. The only rail contracts we have done are the light rail in [redacted].

¹³⁴ While all other comments and the raw data have been omitted from this report, they are available and will be provided on request.

¹³⁵ This number subtracts those omitted for the following reasons: direct solicitations for work, responses unrelated to the survey question, cursory responses such as "NA" and "see last response," and comments not responsive to the question. The responses are corrected for spelling, but otherwise unedited. Additionally, multiple responses with duplicate language from the same respondent are reported only once.

¹³⁶ The responses are corrected for spelling, but otherwise unedited. Identifiable information was redacted. All responses, in their unedited form, are available and will be provided on request.

- Large contract sizes certainly incentivize partnering with other larger firms, so it's logical to assume that it would be helpful, but I can't be certain. Larger projects require teaming with a larger number of consultants or teaming with the biggest firms. Firms tend to stick with the teams they are used to, so it can be hard to break in.
- The bond requirement has limited participation and also hard to get into the industry when large contractors have their own rail divisions where they keep that work.
- So much red tape and bureaucracy that you need more office staff than workers to make them happen.
- Large projects are led by large engineering firms with limited use for small business enterprises like ours. Because of this, we have limited experience which is a detriment for our ability to join a team to pursue projects in rail.
- As a small DBE, the resume requirement of the majority of larger scale projects, rail and otherwise are far out of our reach. We do not even make it through the door.
- Large projects tend to have better disadvantaged/small business programs that distribute the work. The smaller the contract, the less likely DBE/SBE are to get their share. Even when a contract is designated for DBE/SBE, those firms do not share with other DBE/SBE to the degree that a large project would have.
- Large project sizes make it difficult to obtain contracts because while we are technically capable in all disciplines of the large project procurements, we do not necessarily have the resources to provide a "perceived credible" proposal for services without teaming with larger firms. This in turn becomes an unsurpassable hurdle to pursue contracts as primes and we are therefore relegated to 2nd and 3rd tier subs to multinational primes who in many instances do not have the expertise for Rail projects yet get selected on the perception that a large firm can perform. Otherwise very qualified small firms are left behind on the opposite and incorrect perception that because of our DBE or small firm status we are somehow perceived as a performance risk. We are left with no choice but to attempt to be added as 2nd and 3rd tier subs if the large firm opens the door for you at all.
- This would seem like a perfect opportunity to create DBE/Small business project set asides that turns the table on the typical large firm lead and require a small firm qualified lead using the large firms as subs. You can even require the large firm to mentor the smaller firm. I have never been awarded a rail contract directly by any RR company.
- We have been trying hard for many utility company's proposals in the last couple of years. None was successful. We failed to prove that as a small firm, that we can manage the multi-million-dollar project. It is almost mandatory that we have to be a sub. to win those large sizes of projects.
- Large size projects will require large company to participate bonding ability for the project.
- It's hard to navigate through the large contracts. Most of the time, you need someone who is familiar with the red tape. As a small business, large project size usually means I need to partner with a larger organization to provide my expertise. These partners often limit my access to ensure more billable hours for themselves. It is not easy for a small

company to have a seat at the table.

- If the contract requires a supply bond, it is difficult for a small business to acquire. Bond companies want to offer bonds for the first contracts at low amounts in the 40-80K dollar amount, we run into most contracts that are over 1.5Mil have them.
- Very large sized contractors usually get the large projects. We are a mid-sized company. Much more paperwork to pre-qualify and special insurance requirements that are not required to do business in the private sector make a barrier to getting into the project. Large projects go to larger firms, and they typically only use DBE and similar certified firms as subconsultants to meet agency requirements.
- As a small consultancy I can never compete on bids for large projects with larger consultancies. Larger projects are frequently easier than small jobs as they both take the same amount of ramp up and project management time.
- If a project involves areas of our specialty, we typically end up subcontracted under a large prime contractor which is typically not great since our expertise is better suited to provide oversight services of a contractor for the owner. Our piece is generally smaller financially. Large projects in my experience typically require specific data reporting via QMS (Quality management systems) and IT infrastructure that we currently cannot afford to purchase and implement.
- Project managers are risk averse and do not award large project sizes to smaller companies despite top U.S. made tier products.
- While we have the capacity, the barriers to obtaining this work lie in cronyism, embedded incumbent contractors and firms, and the actual financial cost of creating the types of relationships that see these contracts awarded. Additionally, ancillary staff has to be hired to manage the reporting and billing particular to Federal contracts. We are typically a subcontractor on transportation projects. Sometimes a project is so large that it exceeds the capacity for a small firm to take on the work. Large projects definitely exclude smaller firms from being prime due to challenges in competing with huge international companies and internal capacity. The larger projects are too broad in scope for a smaller specialize company like us.
- For our size of business, we simply cannot compete on large size projects compared to national or international firms. The heavy burden of administrative paperwork and the large upfront funding requirements keep us from participating.
- The larger the project, the less contractors with the resources to complete the work. This leads to only the largest contractors bidding the work which reduces competition. We take the work as comes to us from the clients, the scope of any project may or may not be known relative to the work that is bid organization does not have the staff size large projects require. Also, the process of landing work in large projects is prohibitively resource intensive and time consuming. We are a small veteran owned business and large projects are above our bonding capacity large amount of paperwork and it takes up a lot of time for a small business. We can't always do the whole large contract and must sub out some of the work which then can make us not competitive in price.
- Bonding capacity is our limiter.

- Bonding power is the problem, I can't bond a 20-million-dollar job.
- Big firms prefer certain groups of people to subcontract.
- We have never been hired by the public or private Rail Transportation System. Built-in biases, poorly designed SOW's and unofficial "last looks" given to legacy contractors' primary culprits for a process that presently doesn't serve any stakeholder well.
- With road and bridge work, the subcontractors are required to adhere to the total project liquidated damage clause in the general contractor's contract. Because these liquidated damages are so excessive, surety companies for specialty trades like demolition are hesitant to provide bonding. The liquidated damages should represent your contribution to the contract, not the overall contract.
- Large-size projects hardly look quality of products they care only money whatever is less expensive that's the winner! Larger projects normally require higher detail with the proposal process and as such is a bit harder for small companies prepare them while still maintaining their workload. Therefore, many times smaller companies will partner with larger ones.
- The process is too cumbersome for small companies like ours to get through the bureaucracy.
- Limited bonding capacity and not enough opportunities for certified small businesses.
- Large projects tend to use multiple design firms include minority subconsultants such as ourselves. However, larger sized projects and the associated DBE mandatory goals for sub-consultants make it easier for us to get on teams and perform the work.
- There is absolutely no way to get such a project as a prime. We have to be a consultant to a large A/E firm in order to get a small piece of the project. First of all, the RFP or RFQ's are always written in favor of the bigger firms, and I do understand there are issue with liability and similar items. I had suggested that they should have some set aside smaller projects... \$20M, \$10M, etc. Then the answer was that the larger firm may sue since they are able to do larger project and yet are excluded on the smaller ones. Then, I stated that is not an issue. Just open up the larger project to smaller firm and re-write the RFP/RFQ's to reflect the qualification of the lead A/E in their experience and ability to handle such a project (not the firm size). I believe this will help the smaller firm in either going after smaller (good size projects as mentioned) or be on a larger firm's team as one of the leaders and not just a member for minority points.
- Our bonding capacity is limited to projects up to \$20,000,000. Most rail projects we have looked at are much larger than \$20,000,000.
- The crave out model has proven to be a sustainable way for diversity and inclusion without adding cost.
- Most large contractors have their hand-picked small businesses, and it is very hard to penetrate that click so we do not try on larger contracts. The larger the project, the more likely the need for preconstruction estimating and scheduling support and the same during construction no interest in government projects or rail.

- The problem is the large firms do not give small companies opportunities unless they know you and they are not open to new/companies they have not worked with before. It is the biggest issue in the industry. Larger projects require a consortium, the larger the project the more members in the consortium. It gets harder to manage, harder to schedule, harder to do the accounting for.
- Solicitation we are familiar with require past performance citations that are similar in size, scope, and complexity. Larger projects make it harder to meet that standard when you are a small business. We have never been made aware of, nor attempted to pursue, any rail transportation projects, regardless of size.
- At a time where there are many first-generation black owned firms, we do not possess the capital or previous work history needed to win large projects. The way the RFP or RFQ's are structured makes it nearly impossible to obtain large projects.
- The larger the project the more likely it will go to one of the approved big vendors and then they will subcontract the minimum amount to minority vendors.
- We believe we can offer solid clinical insight into the workers compensation issues addressing the Federal railroad agency. Issues relative to extent of injury, appropriate care, determination of maximum medical improvement and application of the impairment rating guidelines so that all appropriate and accurate clinical interventions are provided to the injured employee are met. We find this to be exceedingly beneficial for all parties concerned.
- Large contracts attract the large players. Large players have deeper pockets and can afford to sacrifice margin in order to win the project. Medium sized companies like ours usually bid unsuccessfully and then the larger players subcontract to us. This is NOT unique to our company. It's the way things roll on large projects.
- We have tried to team with large contractors, but in the end, they have typically used us for our small business designation and then after they won the contract, they have hired another small business they were familiar with. They did not give us the opportunity to show our expertise and thoroughness on a project.
- Funding is the problem for smaller companies.
- DBE/MBE companies can participate in contracts because the bidding documents assign a portion of contract to DBE/MBE companies. Project sizes do not matter. Often the paperwork necessary to qualify for these projects is too onerous for a small company like ours.
- As a DBE/WBE subs the large engineering firms use as a sub to fulfill quota's but not necessarily provide meaningful work. We are a very small company and working for large institutions or agencies will require too much time to fill forms and paperwork - we are a design-oriented firm and like to get right into the core of the project at hand, rather than wasting time with bureaucracy.
- The projects are too large for my firm to bid on. The larger firms seem to get all these projects; but they have not reached out to my SBE firm to provide electrical, mechanical, and plumbing engineering services. Large contract helps us obtain a subconsultant role

but eliminate pursuing them as prime for most MWBE firms.

- Large projects requiring 100% performance bonding sometimes can be problematic. Large projects are awarded more often than not to larger organizations thinking that the project would be carried out easier. This has been proven time and again to not be true. It seems as if small business are locked out of the best opportunities due to lack of documented experience, which does not mean we don't have the needed experience, it just means that the Agency is not willing to allow a newcomer to enter this market. It is my opinion that smaller suppliers get screened out of the process because of their size. That said, if the program has clear definition, the size of the project should not impact our ability to execute.
- Larger projects make it easier to get work as a DBE sub because the overall dollar value is larger allowing the subcontracted dollar value to be large and used for more meaningful work. The tougher part is getting DBE certified in all the states to chase the projects and the large investment in time and money to follow the certification process in each state.
- Small business can't bond or float the capital for large projects. Even if they can perform you just can't bid the project. I believe proposal reviewers count our size against us based on an assumption of our ability to execute. So, we feel the burden is then placed upon us to find partners or primes who will use as a subcontractor, as a small business this is challenging as we have limited resources. As such we will often no-bid on projects in which we are confident based on our skills, experience and delivery record we would have a very positive impact on.
- We could be a subcontractor to a Prime, but the field is very competitive, and difficult to navigate. We can rarely determine what criteria the prime will use in its selection of subs.
- Auditor responses indicate that if one has not had a track record established for working on Federal (or state) projects, one will not ever be considered for one. It was suggested we team up with a company that has somehow managed to secure one of these projects and have established a track record. [REDACTED] has been unable to team up with such a company. I hope the situation has become more welcoming to smaller companies who are looking to get their foot in the door, as this has been so far an impossible Catch 22 situation.
- Hard to find bonding to support large projects.
- Often projects that have railroad property require RR protective insurance. Nearly impossible for small contractor to obtain, either due to size or cost. I know - I have tried.

Question 6. In your opinion, at any time during the last five years, has your firm been discriminated against while applying for commercial loans? In other words, has your firm been treated less favorably than otherwise similar firms because of the race, ethnicity, or sex of its owners to an extent that you believe caused economic or financial harm or loss to your firm?

- I do know that as an SBE and minority firm, we are trying to be as hard as we can. It is a struggle.

- We don't apply for loans because we think we won't get accepted. This is the basic premise that keeps us even from trying.
- I am a woman in construction. There have been times that the competence of my firm has been in question. Without basis, because we are very good at what we do. After giving us an opportunity, they see the value we bring to the team.
- I'm not sure if we have discrimination. If it happens, it is always subtle. And ascertaining the root cause of any discrimination, legal or illegal, is as tough as predicting history. I am sure people look at others and make determination about them. Most of these happen subconsciously. Some might happen consciously.
- As a women and minority-owned small business, we pursue a variety of projects throughout the year. We're often not privy to the decision-making process, and don't know how our leadership makeup positively or negatively impacts that process. Processing times and interests were sometimes questionable.
- Systemic barriers may exist that impede qualifying for loans in terms, having collateral for loans or support network to assist with business development or funds.
- We have attempted in the past as a minority company to apply but have never been successful. So, for over the 34 years this company existed, and we quit applying.
- As soon as you tell a lender or investor that you are a minority vendor, they walk away in fear of low margin work and risk of failing.
- Being a woman owned small business there is bias even if we are a veteran owned business. We are small, but lack any 8(a), SDVOSB, etc. favors. We have not applied for any loans with banks.
- My firm was denied access to capital and credit to provide me with cashflow while working on specific contracts that paid quarterly. I also was part of a research team that mystery shopped PPP loans and found significant discrimination against women and in particular Black women entrepreneurs.
- We have never been able to secure loans despite a good book of business with recurring revenue. We don't know if the race, ethnicity or sex of the owner was a factor, but reason provided were as follows: "Cannot advance a loan because your business doesn't have assets such as building etc. to secure a loan."
- Reviewers tend to believe that Black-owned firms are less qualified regardless of the experience and staff presented. We need to always keep proving that we are worth it. And others including white women are not subjected to such standards. That's why disaggregated goals are important. It's definitely part of the systemic racism in this country. We have never applied for a loan.
- It appears that decision makers at financial institutions harbor unspoken or implicit bias against professional engineering consulting firms owned by minority members of the U.S. population. Professional engineering consulting firms owned by ethnically minority individuals are expected to work as subcontractors to prime contractors, rather than as the lead contractors on large projects. Serving as the Lead Contractor requires access to financial reserves - which in most cases, financial institutions refuse to provide to

minority-owned professional engineering consulting firms.

- Company has not applied for any commercial loans in the last five years. We've been denied lending by major banking institutions and have taken on predatory loans multiple times in order to keep the business alive - paying as much as 40% APR as well as large six figure "breakage fees" from a factoring company once we secured better terms. It's difficult to say if it was discrimination that caused us to be turned down - but my first name clearly is ethnic. I have been surprised by the times even clients who made racial comments, including one VP of Sales who, after being angry that we made it known on a project owner's social media page that our field crew was installing the work for them (we'd received no credit and asked for simply acknowledgement since they were using photos of our crew) told me, "I've always counted on [REDACTED] for our project with diversity (MBE) projects. I'm going to have to think long and hard on whether I want to put the effort into pursuing work with diversity goals anymore." It's amazing how these attitudes truly lie beneath the surface.

Question 7. In your opinion, at any time during the last five years, has your firm been discriminated against while working or attempting to work on public or private sector prime or sub-contracts? In other words, has your firm been treated less favorably than otherwise similar firms because of the race, ethnicity, or sex of its owners to an extent that you believe caused economic or financial harm or loss to your firm?

- I believe the largest contributing factor is the perceived lack in the ability to produce at the same level as other non-Hispanic contractors.
- I would rather not disclose names, but yes even being a certified minority owned business we have been pushed to the side in favor of other non-minority owned company a few times. There are many contracts that we have pursued that we did not get awarded. We don't know the reason or assumed it was because we were not the lowest bidder.
- It is hard to differentiate; I do know that as an SBE and minority firm, we are trying as hard as we can. It is a struggle. To me, maybe a lack of connections/networks is a major shortcoming.
- The problem is that large projects are sought after by large, white male dominated engineering firms who will only partner with MBE or WBE firms to get the "brownie points" during the procurement phase. Once the contract is awarded, if you're still on the team, you rarely see any work come of it, particularly with on-call contracts. I've been on a few of those, and never saw any work. As I result, I started to refuse to join teams headed by large engineering firms, unless I knew someone at the firm who was directly involved in the procurement. Otherwise, these firms will just get your contact info from a list maintained by the state DOT, and you'll get spam calls or emails asking you to join their team, even if you don't do the kind of work the procurement is about.
- In one instance, my repeated requests for a debrief after losing a bid were completely ignored, even though I followed the instructions provided for asking for a debrief. On two separate occasions, the feedback was that although I had twenty-five years of experience, my company was shy of five years of service. This seemed arbitrary as the five years of services was not listed as a requirement in the RFP. These are just two examples which

feel discriminatory, but I am unable to say for sure that they are discriminatory as they don't seem to have any direct applicability to my ability to meet the requirements of the projects.

- A solar solicitation RFP normally reserved for inside friends of the largest PPO hospital suddenly goes silent when I write to the CEO to challenge him to seek minority goals. They awarded to someone else.
- We were the sub on a large traffic improvement project put forth using Federal money via the university. The deciders went out of their way, including knowingly violating Hawaii contracting law, to ensure the project was awarded on a sole source basis to a California based company. We are a certified woman- and minority-owned business. We are also a small business, but when applying for small business certification, process was too arduous (sam.gov).
- In several opportunities we submitted bids, we were selected because of the DBE status, yet when the Prime Designer/Contractor got the job, we were dropped from the team. Hard to explain how people can qualify for credits at bid time, and then drop the firms selected to perform the job later. I don't know if this was related to a discrimination, or Prime Designer/Contractor obtaining a lower quote after award.
- Despite a signed teaming agreement on a [REDACTED] Design Build Project we were replaced by other non-DBE larger firms. Intent of the DE&I goals on the project were ignored by the Design Build Contractor, [REDACTED]. This action by the Design Builder, generally went unchallenged by [REDACTED].
- As a Native American owned firm, we are only considered for contract work that might affect Indian communities and never/rarely given opportunities to do contract work that is related to general population (larger contracts).
- In the construction projects we are faced with the Good Ole Boy network where suppliers do not provide minority companies the opportunity to compete. If contractors do use minority companies, then they play the pass-through game limiting minority companies' small margins and limiting their ability to grow. For suppliers it also begins with manufactures not supporting minority suppliers through distributorships and also unlawfully providing better pricing to their favored majority owned suppliers.
- I must say that some large engineering firms put us on their team - to win a project and then don't use us - and pocket the fee they were supposed to pay us! Out of the past 20 years this has only happened with 2 firms, who really have never bothered to understand what we actually do - and thought they could do it better.
- As a women and minority-owned small business, we pursue a variety of projects throughout the year. I can't say definitively how many times we might have been discriminated against. However, it is difficult to obtain contracts if there is no 'MWBE goal' associated with the RFP. Most prime contractors will not speak to us if there are no goals added to the solicitation.
- I really do not know exactly. However, I do suspect several times. These things still are happening, and it seems to be improving. The minority things are mostly crumbs to keep a small firm busy and rarely advancing a firm's success.

- I believe that being black and female in this male dominated industry generally causes pause when I walk in a room. I add to the confusion when I refuse to be a joint venture partner. I need to be in a decision-making capacity on the team, so I can place other small and diverse businesses on the team. That is how you increase inclusion on a \$100M project.
- Ethnicity has a big role in determin[ing] the award weather prime or subprime.
- There are many times solicitations are written that appears to limit small business participation although there are many small businesses who have the capability to perform and save government costs because they don't have the overhead. Our approach is to serve as a subcontractor DBE on large projects therefore when presenting our capabilities to a new prime, the POC for the prime decision-making process is objective therefore we would not know if the POC is discriminating.
- Yes. As a subcontractor in support of [REDACTED] we were discriminated against by our Prime as it is a male dominant industry not receiving a fair share of the work being a WOSB (Woman Owned Small Business).
- Numerous projects have not contracted with my business because it is black owned. Contracts were typically given to white owned businesses or most often white women owned businesses.
- You ask if there has been discrimination as if I would know or be aware of the discrimination; this is seldom the case. Have I, as a minority woman been allowed or invited or made aware of these large contracts in the same manner the larger companies were? Would I be given an opportunity as a woman-owned business, or was I overlooked, assuming I could not do the work? I do not know these answers, I just know I have never been given an opportunity. Thank you for your commitment to independent business.
- We get hang ups on the telephone nearly monthly when someone asks for the person in charge or the person who can make decisions. When an African American voice comes on or say that I'm authorized to make any decision for the company, they hang up or they ask for my supervisor.
- In selection consideration, it has been apparent that cloaked discrimination exists among decision makers. On one long ago occasion after being rated most qualified, inside comments of "we are not awarding this to no Mexican firm" were shared. We are American of Mexican descent but are referred to as "Mexican" when decisions will be made on such basis. We were once registered as a State of Texas HUB Firm but decided to not seek further certification after hearing disparaging remarks about HUB's (Historically Underutilized Firms) being referred to as "Historically Underperforming Firms." As a Prime, (our usual role) we get no credit for being a HUB firm, but only get credit for hiring HUB firms. We are City of Austin MBE and Federal DBE certified. The most advantageous and culture/color blind and most appreciated certification for us is the Federal DBE certification. This is simply what we have to deal with and have dealt with over the decades. Its better now though than in times past.
- There's been racial, national origin, and gender discrimination. There have been projects

where we provided the lowest bid, but somehow, we “did not do a good job explaining our solution.” For these circumstances, when we ask for feedback, or if we could answer their questions, the answer is always “no.”

- Our company is registered with various New York and New Jersey agencies as a minority owned MBE, therefore I am not certain how that is perceived in the market. We have to work with prime vendors to bid on Federal projects. More often than not the prime vendors as well as the Federal agency will ask for prior experience on Federal projects which we cannot get unless we work on one. It’s a Catch-22 situation. It may not directly have a correlation to race, ethnicity, or sex of the owner but it’s a huge limiting factor for minority, women owned, economically disadvantaged businesses because we cannot get the experience needed to work on Federal projects.
- There was a large CM firm that lied and stated that MWDBEs were not responsive and did not submit quotes to perform on a big civil project. Four firms submitted proposals, and none were considered/selected, they went with another organization that did not participate in any of the informational or training sessions.
- Due to being half female owned by ethnic young officers we have definitely been disliked and treated harsher than other contractors by the same group of people.
- Primes tend to team up within their network of white-owned (male and female) firms. So as a sub-consultant, even when we are better qualified (which happens a lot), we are rejected. Sometimes, we have to take less interesting tasks in order to be on teams.
- It’s extremely difficult to be considered for projects when you don’t have connections in the industry. My firm has the same or better knowledge and experience in the rail and transportation industry, yet we aren’t able to compete with larger firms because our level of expertise isn’t validated.
- It’s hard to say or prove why we don’t get financing. So, we don’t apply based on past rejection and the huge investment of time required to apply for a loan.
- Large general contractors think DBE firms cannot perform the work, so they never give us a real chance. When our number is low bid, the general contractor will shop our number to our competitors. The discrimination typically comes in the manner of not believing we can do the work because we are a minority firm, instead of looking at our long track record of success. Main contractors were thrilled to find business that was qualified to do the work. Some organizations profess to want to work with diverse businesses but fail to make that clear to middle management. Often that middle management does not want to work with diverse firms.

Question 16. In your opinion, at any time during the last five years, have government entities or prime contractors discriminated against your firm while your firm was participating or attempting to participate in any of the business dealings listed below? In other words, have government entities or prime contractors treated your firm less favorably than otherwise similar firms because of the race, ethnicity, or sex of its owners to an extent that you believe caused economic or financial harm or loss to your firm?

1. Applying for surety bonds

- Standards are more difficult for minorities to receive a bond than white counterparts. I was not able to acquire my first bond until I came in contact with two women in Florida. This, however, has been longer than five years. However, it is my opinion today that minorities must have stronger financials than whites to acquire the same size bond.
- I am a 1st generation American where the wealth disparity is great. We are often compared with those owners who have had generations of wealth building that has provided them a greater surety line than those like me that can perform the work equally or better.
- I know of male owned and white companies with less years of experience and dollar amounts that were able to get more bonding than my company.
- Without the financial strength you cannot get them.
- This can be a hinderance depending on the size of the contract sought.
- Requested the information that is very repetitive and took much longer process than our partners who applied with the same company.
- Liquidity is always an issue.
- Extremely above market premiums.
- Because of the size of our business and cashflow applying for surety bonds on large projects is almost impossible to get.
- Access is surely an issue with companies similar to us.

2. Applying for commercial or professional insurance

- It was hard to increase liability insurance to the levels required in order to bid on certain projects.
- Requirement to have the license when the likelihood of winning the bid is less than 1%. Also, the quote to obtain is on high end for at least three months commitment.
- We were asked for a bigger insurance than other companies.
- Size of business limits cost-effectiveness.
- Same with our insurance, where we had a great local provider, we struggled with the underwriters.
- Rates tend to be different from comparative companies. New risk factors are regularly evaluated unfairly.
- Often the price and terms are onerous unless you are larger well-connected firm.
- Insurance seems high when compared to annual income or type of work done.
- Insurance requirements quite high for rail.
- Extremely above market premiums.
- As an engineering firm that's now doing construction, no carrier will insure me.
- Access again is an issue.

3. NOTE: The original data collection omitted this question number. Topic numbers are used to correspond to the source data.

4. Hiring workers from union hiring halls

- Of the multiple Union contractors in our location, we are continually not having our requests for employees filled, limiting our ability to bid work. While other contractors can bid and man the projects, even out of town contractors have come into our area and had their jobs manned while we have had to sub work to other union contractors because our request for help do not get filled.
- Just weren't cooperative with us or others from "Indian Country."
- It adds to hiring ability as we are in staff augmentation business.
- I love unions - I try seeking any in the area of site location.

5. Obtaining price quotes from suppliers or subcontractors

- [W]e have experienced large companies attempting to "bully" us into taking their rates/quotes as we were told that we wouldn't win without them when our "majority" counterpart companies didn't have the same experience.
- I've been told they won't do business with us because Indians are lazy. I still got the quote, but we are always slower to receive our quotes than other veteran firms that I have a personal relationship with.
- I attempted to obtain price quotes from suppliers to help with my business operation. I was constantly quoted twice as much as my Caucasian friends. The supplier was short with me and did not express any interest in working with me. However, when I got my Caucasian friend to call and make that same request, she was quoted way less and the supplier make extreme efforts to do business with her. This happens often and sometimes it gets extremely discouraging knowing I am not being treated equally.
- Always rising price for Minority particularly in the area of credit terms.
- Some do not want to provide quotes due to the business size of my company. And may be because this is a woman-owned small business.
- Out of region vendors specified worry about ability of minority firms' ability to pay.
- We have been given pricing that is substantially higher than pricing given to our competitors on several bid projects.
- There's been times when some vendors/subs demanded to go direct and cut us out.
- Sometimes, when an opportunity is posted on a government website and it's designated a small business set-aside and the manufacturer is a major prime or OEM (original equipment manufacturer), they don't quote the small business, instead they wait for the government (DLA) to reclassify the opportunity, and then the prime bids and wins the contract, denying the small business the opportunity. Large OEM's or Primes should not be able to do this, by doing this the Prime or OEM is not playing fair.
- It is difficult as a small minority business to deal with large contractors for supplies. They do not make it easy.

- I sense issues with fair pricing.
- Extremely above market pricing.
- Due to lack of volume, you can't compete against primes or larger organizations.
- As a one-owner business, it's been a challenge to find a great deal of time to submit the excessive amount of paperwork required (in many instances) to even seek a quote for a project.
- A few times we got high pricing from suppliers and subcontractors that it will make uncompetitive in bidding for some jobs.

6. Working or attempting to obtain work on public-sector prime contracts

- We've been in business ten years with about \$5 million in annual revenue. It is 1,000% easier to obtain private sector work than public sector. As a minority owned professional services company, I feel like public sector buyers don't trust us. Perhaps they are used to seeing minority owned firms do manual labor like construction, janitorial or landscaping and not accustomed to hiring minority owned professional services. Also, rolling all services into one large RFP puts us at a disadvantage because of our size.
- When we submit statements of qualifications, it seems some public entities hold us to a higher standard than other majority owned firms, making it more difficult to obtain prime contracts with those entities, even for small projects that we are more than capable of servicing.
- Well, it's easy to see. When we go to these meetings the same fat cats get the contracts and the same small brown losers keep chasing our tails. We all know it happens and talk about it, but who are you going to complain to, so they never talk to you again?
- We have been ignored or overlooked because of being a minority firm.
- We are always invited to the table to participate with the majority company, so they are able meet their minority qualification. However, once the bid is won somehow our business is not a part of the winning team.
- These contracts are inside baseball. Small and Diverse firms do not have a seat at the table.
- You are often looked at as baggage that they have to carry. Often, the primes offer to work with you to get the contract and then never fulfill requirements and nothing is done about it.
- In an effort to "support companies like ours" we were only offered less than ideal tasks (administrative, help desk, etc.). In fact, we had one potential client tell me directly that my company should only focus on "non-intellectual types of work to be more credible." I've also been told by a potential, Federal client who told me she'd prefer to have an "Indian company but called us only because she heard we were the best at helping establish new processes."
- Our firm regularly applies for jobs at county and state levels and to date we have been unsuccessful obtaining opportunities. At one point, an officer with [REDACTED] joked that for

██████ it was easier to get jobs in Brazil and Saudi Arabia than in ██████.

- Looked upon less favorably because of small business status and minority owned.
- I get the impression that some public contracts lower the budget for a project and then mark it as an MBE Set Aside where they would have allocated a larger budget for an Open Bid.
- For 30 years, its common practice to have me bid work, use my pricing, and then share it with others (white owned) where I lose the bid.
- Entry into markets that are male dominated present continuous challenges for minority-woman owned businesses. Many services procured by Federal agencies appear to fall in line with a “rinse and repeat” strategy, justified by assigning high risk to change, allowing incumbents (predominantly white male owned) to maintain Prime and Subcontracts for multiple years. Unfortunately, this practice is restrictive and limits support to the Customer’s mission, to include access to more innovation and exceptional services.
- As an MBE firm, assumptions are made about our lack of capacity, size, and quality. All are false.
- It is harder for my race to obtain public sector as prime contractor if the price of contract gets into a Million Dollar and up.
- We have not any prime contracts except one that we teamed with a large prime as our sub. The prime contract was basically then not really worked out, so we saw hardly any funding - from the \$3M award, we got only \$300K.
- We have approached some contractors and we get ignored.
- Was told that English was not good enough during interview.
- Very little small business opportunities for small businesses in the IT-related requirements.
- There have been projects where we provided the lowest bid, but somehow, we “did not do a good job explaining our solution.” For these circumstances, when we ask for feedback, or if we could answer their questions, the answer is always “no.”
- Since discrimination, being overlooked, or not preferred, is not an official policy, the qualifications-based selection process is simply alive with subjective interpretation that favors the known, preferred, and feeling of comfort with those most known to evaluators. This is commonly interpreted as objective data. Most proof is in the evidence of the same small group of A/E service (architecture and engineering) providers taking the bulk of the awards at multiple government levels. It is easier for the selected to have success to foster measurable success for continued evaluation of being best qualified. This is the bubble that is extremely difficult to break into for any entity. Difficult for the evaluator seeking to make the right decision and difficult for the applicant seeking an opportunity. It is today, very difficult to claim overt discrimination, as it tends to not be overt, but subtle and cloaked in persons who may not even consider themselves as such. It is only when disparaging comments such as how HUBs (Historically Underutilized Business) are

perceived by some are made or other off the cuff things are said that one can begin to realize what the challenge truly demonstrates itself to be.

- Read my response to an earlier question. the bureaucratic requirements are a nightmare. We attempted to get on a Federal schedule, after receiving an outstanding CPARS (Contractor Performance Assessment Reporting System) rating multiple times, but the forms, process and reviewer were simply obtuse, and we gave up. We have held numerous awards after working as a sub-contractor from GSA but try becoming a Prime. The SBA is completely useless and didn't even know how to help us. Frustration is the least of our problems.
- Primes have team already established before they publish good faith documents.
- Our company was rejected multiple times from participating in commercial bids due to can't compete with other companies as well as companies certified as minority owned business. We tried to apply for 8a certification, but we were rejected. I'm hoping this survey will help us in some kind of way. Our company has the capability and the capacity to perform any size of jobs.
- Finally, I found out the contractor select another company and they told me I wasn't on the system, I contacted back the agency and they never give me a specific reason of this miscommunication.
- My experience in government contracting on large projects has been poor. It appears that favoritism was shown to larger, preferred vendors. The comparable service offerings from a small, minority-owned business were not taken seriously. Furthermore, very little attempt was made to allay concerns by giving our business a try with a small purchase order to see how we perform. I would have understood if we failed to meet standards then, but it seemed as though underlying assumptions and stereotypes prevailed.
- My credentials were used to qualify the prime; we were eliminated from the team after the contract was awarded [REDACTED]. They would have been disqualified from bidding without our credentials.
- My business was previously certified through [REDACTED]. I tried to attend their conference so I could network and apply with one of their Corporate Members' contract opportunities. The office refused to update my NAICS codes when I added new products to my company. They were supposed to update my NAICS codes so I could meet with Corporate Members at the conference and my profile reflect the products and services my company was offering. Weeks & months went by and the [REDACTED] office would not update my NAICS codes even though I was paying for this service. When my Caucasian friend went through changes in her business and requested an update with NAICS codes, they processed her request within a week. When I finally inquired about my application without saying anything about my friend and just asked for the timeframe for updating my NAICS codes, the staff member got irate with me. She then shouted at me that my application involving the NAICS update would not be processed because she said that the office thinks I am scamming them. I had to reassure her that I was indeed selling Auto Parts as an African American women and I have no reason to lie about me selling this product. I then had to drive down to the office and prove to them I was selling Auto Parts with my company's logo on it. [REDACTED] did not believe that an African

American woman like myself could sell Auto Parts, they immediately thought I was lying on my application and by the time they finally updated my NAICS codes, the conference to network and get opportunities with contracts was over.

- Many of the public sector projects notices are hard to find, and or you need to pay money for the prints on a project you might not even bid on. Also, in my state locally the use of consultants is used to exclude firms such as mine from the work.
- Limited experience, and ability to gain relevant experience is difficult. Companies tend to select vendors that already have a relationship with the agency.
- [REDACTED] is in business for 35 years and still having difficulty to securing public-sector prime contracts. Public agencies tend to add requirements that have no relevance to successful completion of projects or the scope of project.
- It is frustratingly impossible to break through to get a prime contract - regardless of the quality of personnel, price, or overall quality of services we propose.
- It appears that it's extremely difficult for new businesses to enter this space and compete, so the same contractors have a monopoly on the bids.
- [REDACTED] has purposely gone around us. Documents provided show their "market research" did not show two native firms in this market when two firms had won contracts from their office that month.
- In the past, my firm has experienced discrimination working as a Prime contractor.
- In most cases discrimination is well hidden. Everyone is aware of the repercussions if you are caught discriminating against a company or person. However, it's done every day.
- Why is it that most Government departments and prime contractors never meet their sub-contracting or minority goals? That in and of itself is discrimination.
- There are no accountabilities in place. If a contracting officer doesn't meet their goals what happens to that person, nothing, they keep their jobs and go about their daily duties.
- In small business if we don't meet our goals we don't get called back. We lose the work. Shouldn't these people responsible for finding and contracting with minority owned and operated companies be held to the same standards?
- The same applies to banks; in small business we have one thought about bank loan discrimination.
- If you need a loan, you won't get it. Most small businesses are self-funded. Once you no longer need money the banks are ready and willing to help.
- We are small business well qualified; it seems we are blacked ball by Prime contractors the major 15 who control most of [REDACTED] as we are originally from [REDACTED], even we have been here over 45 years. it seems primes and even agencies do lip service but at the end they use their own friends and intentionally leave us out of contracts.
- Despite having over a decade of experience with [REDACTED], we were not selected to be on an on-call bench for urban planning services at [REDACTED] on the primary explanation

that we did not have adequate and related experience for the very services that were being solicited. Most recently, our work was submitted by [REDACTED] [REDACTED] to the Federal Transit Administration.

- Without prior experience we cannot work on existing projects, but we cannot gain the experience in the first place because we don't get a chance.

7. Working or attempting to obtain work on public-sector subcontracts

- Public contracts required minority subs. I reached out to all the plan holders, as an MBE/WBE and received no responses.
- As mentioned previously, it's difficult to engage with prime contractors if there are no minority/female goals associated with the solicitation.
- Primes tend to have preferred subs in place. We are certified vendors to many large primes and rarely are called upon. Diversity reps within companies seem to be playing a "cheerleading" role rather than advocate (this really disappoints me).
- Prime contractors discriminated by using only large business and where there is an SBE or DBE goal, they have their own small businesses they take from project to project. We have been listed as the DBE on bids, yet never used on the contract.
- Turned down specifically because we are Native owned.
- We have experienced large companies and Federal agencies trying to convince (sometimes even "bully") us into taking lower rates/fees for our work and/or being assigned lower-level tasks when our "majority" counterpart companies didn't have the same experience.
- Our firm was discriminated against while pursuing a public sector healthcare project in the [REDACTED]. We were teamed with a prime architect while pursuing the project and we utilized our MBE certification to help the architect win the project. After the architect won the project, they removed us from a large portion of the scope of the project and selected a non-MBE firm instead. It was extremely unfair and, in our opinion, discriminatory!
- My white counterparts have zero issues getting the same work.
- My Spanish accent has been an issue multiple times.
- Looked upon less favorably because of small business status and minority owned.
- It has been mentioned that since I am a woman owned business, I could not compete in a man's world in the railroad industry.
- Entry into markets that are male dominated present continuous challenges for minority-woman owned businesses. Many services procured by Federal agencies appear to fall in line with a "rinse and repeat" strategy, justified by assigning risk to change, allowing incumbents (predominantly white male owned) to maintain prime and subcontracts for multiple years. Unfortunately, this practice is restrictive and limits support to the customer's mission, to include access to more innovation and exceptional services.
- Just look at the number of black businesses doing business with government. You already

have the answer. If you are white, you get all types of help, if you are black, well, tough luck.

- As an MBE firm, assumptions are made about our lack of capacity, size, and quality. All are false.
- You are often looked at as baggage that they have to carry. Often, they primes offer to work with you to get the contract and then never fulfill requirements and nothing is done about it.
- While ██████████ has a HUBZONE¹³⁷ socioeconomic designation, very difficult to gain access to key points of contact within many Federal agencies.
- When we go to these meetings the same fat cats get the contracts and the same small brown losers keep chasing our tails.
- We have won work with primes as a sub and have not been given this work, as they basically ate our lunch. They took the work and never shared it. And they were never penalized for it.
- We have spent a lot of money on putting bids for contracts. We always get outbid by larger firms or firms that the utilities have a relationship with. We have also been disqualified for silly reasons.
- Usually, the agency does not respond or it puts small companies through different channels. They are just following by the book, but small companies have to go a long route.
- They already have their favorite partners.
- The prime contractors only work with their select few insiders. They do not spread work or act in good faith to have us team.
- You have to have a contract to be in the circle of relationships so it's a Catch 22.
- Subcontractors are used to meet qualifications as needed. Not much else in the form of project success.
- Resistance of large primes to work with new subcontractors. Anti-competitive pricing/logistics tactics to prevent new companies access to market.
- Quite often it seems that prime contractors have already selected who they want as subcontractors, but put out requests only to validate a "good faith effort" which is a waste of time and effort for a small business.
- Previously we tracked rail projects, specifically the high-speed railroad project in California. We were told to reach out to prime contractors. Unfortunately, the prime contractor companies were not responsive to our inquiries. There was at least one case where the prime was a foreign company!
- Other same-size companies doing same work at same or higher price with much less experience receive subcontracts in our local region. The owners know the contract

¹³⁷ The HUBZone program fuels small business growth in historically underutilized business zones with a goal of awarding at least 3% of Federal contract dollars.

negotiators or prime company decision makers.

- My firm is always held to higher standard with work performance, and safety. We are always under watch.
- Many agencies do not enforce the DBE or other goals on the project by having the contractors submit a subjective DBE good faith efforts. How is a disadvantage business able to get on the job if they are circumvented by these efforts? Many look at the lowest priced subcontractor who normally is a non-DBE or DVBE where they have better resources than a DBE or DVBE or other.
- Limited experience, and ability to gain relevant experience is difficult. Companies tend to select vendors that already have a relationship with the agency.
- In the past we began a project and were replaced by a firm who knew the prime.
- In my past experience I have found it to be very challenging to pierce through this invisible barrier. With me being a woman owned small business and a lack of finances I pray that I'm the solution to this issue.
- If you do not have experience working with the prime or subcontractor, you will not be invited to participate. Will use your name and certification then decide to change the scope and perform work in-house.
- I have been successful at signing on as a subcontractor to larger firms on contracts, however, I have not earned a single dollar from any of those wins. Essentially, my company has helped several large firms earn extra points on bids for subcontracting with a small business, but because I did not get any work, I cannot list any past work experience.
- Companies want to use other companies that they know and that fit a certain criterion that does not necessarily have to do with the job experience. They also want to give a bare minimum or part time opportunities or difficult to fill positions that is worthless.
- Private sector experience is not taken into account.
- We have had several instances in which we were the low-bidder (not so low that there was an indication that we did not have the entire scope included) on private-sector jobs that were still awarded to majority-owned firms.
- We find that private sector, prime contracts are still mostly let on a relationship basis. Very difficult to form relationships when we do not belong to the same country clubs and socialize in the same circles. Open competition, government contracts are let in a more fair method.
- We don't see as much connection and side deals when we deal with private sector, it seems they are more likely to give contracts to the best value not historical fat cats that continue to get the contracts over and over.
- Other same-size companies doing same work at same or higher price with much less experience receive subcontracts in our local region. The owners know the contract negotiators or prime company decision makers.

- Limited experience, and ability to gain relevant experience is difficult. Companies tend to select vendors that already have a relationship with the agency.
- I have had much better penetration in the private sector, but discrimination does exist.
- I have been in business for 30 years and never had an injury, lawsuit, insurance claim, no violations and yet I am passed over by firms that have blatant violations and numerous lawsuits.
- I don't attempt to work as a Subcontractor under larger prime contractor, because my first experience was horrible. The major prime contractor makes it very difficult to work for them, because they in my experience I encountered slow payments, rigid demands that others didn't encounter, squeezing your contract so low, that in most case you normally broke even.
- Always criticized that we do not have the financial strength to support a prime contract.
- A good old boys club is the way they award projects even though we have the lowest and best price.

8. Working or attempting to obtain work on private-sector prime contracts

No responses.

9. Working or attempting to obtain work on private-sector subcontracts

- We have definitely lost business due to my skin color.
- My white counterparts have zero issues getting the same work.
- Many Prime firms deem us as “too big” and as such we are not allowed to participate as a sub. At the same time, we are deemed “too small” for prime work (even though we are a 100% Black owned firm currently overseeing over \$17 Billion (yes BILLION) in construction across the country.
- Being minority-owned certified you're viewed by some primes as a lower capacity firm who relies on certifications rather than the quality of your work. We have received many bid notices that came in 3rd, 4th, 6th place.
- As mentioned previously, it's difficult to engage with Prime contractors if there are no minority/female goals associated with the solicitation.
- You are often looked at as baggage that they have to carry. Often, they primes offer to work with you to get the contract and then never fulfill requirements and nothing is done about it.
- We have pursued countless opportunities with a large [REDACTED] based project management firm, and despite being very well qualified for these opportunities, we have never once been selected.
- We don't see as much connection and side deals when we deal with private sector, it seems they are more likely to give contracts to the best value not historical fat cats that continue to get the contracts over and over.
- We attempted to be part of multiple Hospital construction inspection projects. In twenty

years, we failed to be invited for one project. Even if we are the largest construction inspection company for highways in Wisconsin.

- Never get a response from Prime's to inquiries regarding scopes of work or process for bidding.
- Due to the size of our business, we were denied work even though our bid was very competitive, because GC wanted more financial capability and a higher bond capacity.
- Dedicate hours of research and putting together proposal without having any chance of being among the considered pool of applicants. It is frustrating. On top of that, we are working on almost no or less cash flow.
- A good old boys club is the way they award projects even though we have the lowest and best price.

10. Receiving timely payment for work performed

- Would love timely payments from work done.
- Many accounts payable bosses look down on black vendors, hold the payment just to strangle the vendor's ability to pay the employees.
- When completing the work for a government entity, I had to wait 90 days after service was complete to be paid
- We often have a difficult time receiving timely payment for our services. One recent problem was on a project for the [REDACTED]. We have not been paid in over 180 days for our services and the total accounts receivables that are past due are close to \$100,000.
- We have experienced slow payment more than 90 days and non-payments for additional work
- We had performed work for the [REDACTED] and we still waiting for payment on retention for work performed more than 4 years ago.
- We finished a service contract over two years ago with the Federal government and they still have not funded the contract fully and therefore are owed a small fortune.
- We did work for some city offices, and we had to submit invoices a few times in order to get paid. Also had several emails and phone calls.
- We are always last paid. And it sucks.
- Was a sub-contractor on an account [REDACTED]. Had incredibly difficult time in getting paid and found out later that on another round of funding, they used my contacts and cut me out of the project.
- Timely payment tends to be getting slower and slower from prime contractors and there is very little to no oversight from the owner or client.
- The receiving date in our aging report is usually always much longer than the contract specified. It does not seem that we have a good solution for the big clients to pay us on time.

- The prime didn't pay us for 3 months and had to get a lawyer involved to terminate the contract. This happened in different occasions.
- The [REDACTED] delays payments even on Federally funded projects from 9 months up to a year after invoicing. This makes it almost impossible for small minority businesses to survive.
- The bug prime contractors do not pay the subs in a timely fashion. You can go out of business waiting to get paid.
- Terms on larger contracts usually require 30 to 60 days to carry expenses and COS. The ability to secure timely payments or ramp up payments for a small minority business is very tough.
- Sometimes the projects have change directives, we must do them. The issue is that we can't finance the work and if the directive takes a long time to become an executed change order, the small company is out the money. It can put companies out of business if they don't understand the timing of the payment cycle.
- Sometimes, some GCs like to frustrate subcontractor by holding their money.
- Small one person LLC's Contractors are generally disrespected and taken for granted. We are already struggling and now we have to fight and spend money to get paid. We need a task force to monitor and compile data to be analyzed for real solutions.
- Slow pay always affects cash flow. Banks have tightened up and if you do not know how to save money you will not make it in business.
- Seem to always have delays in payment to Native Americans.
- Regarding discrimination I cannot specifically attest to the listed items happening. It is challenging to keep a small business going; it is typical for us to wait a year to get paid on work completed, which is a typical public funding practice to hire Arch/Eng consultants and receive documents well in advance of payment. This is a primary reason why is hard for small and MWBE businesses to stay viable, on top of difficulties getting sizable contracts.
- Receiving payments for completed work has taken months rather than weeks which has caused financial harm to our company.
- Public work is rarely paid timely. If we are a 2nd tier sub, we must also wait additional time for prime to pay us.
- Primes basically do not follow prime agreement. They force subs to accept terms that are beyond the prime agreement. There need to be clauses in the prime agreement prohibiting primes to change the prime contract requirements in the sub-agreement. [REDACTED] does not have such a clause.
- Cash flow is after getting work the most significant issue faced by black-owned firm due to systemic racism. Why should I wait to get paid when I deliver my product at the same time as the prime?
- Payment was slow and inconsistent. We were put in a bad position, because our large

subs were expecting payment in a timely fashion, which is OUR standard, but as a small corporation, slow payment made cash flow difficult to impossible.

- Payment often delayed by over 90 days and many times reaching and/or exceeding 365 days both on private and public works.
- Payment is late as owners/agencies seem to pay later and later and the contractor pays only when paid. This is especially felt more in approved extra work or claims work. Since the subcontractor is the lowest on the priority list, we are dealt with at a slow pace which can starve a business like ours and perpetuates the cycle of finance with bank and sureties. Retention is also an area where that should be an area where it can alleviate the cash flow.
- One train maintenance facility it took over 90 days for payment.
- Larger companies may not submit payment requests for months which then affects when we get paid. In addition, after receiving their payment, it may take them a while to pay the smaller company.
- Lack of payments for work performed was the catalyst to [REDACTED] filing for Chapter 11 debt restructuring.
- It's common for me to have to complain to get paid within 60 days - especially in the private sector.
- It takes too from requisition approval to receive payment, most times 90 or more days.
- Initial payments take forever - sometimes 90 days or more.
- [REDACTED] is not paying us right now because we are successful and have the resources along with a few other Native owned businesses to press the implementation of the BUY INDIAN Act, so they don't pay us hoping we go under.
- In the Public Sector there is no money upfront, so the Contractor has to finance a portion of the work. If later the department holds the payment for an extensive time, the Company suffers an incredible loss.
- My firm has not been paid timely on two projects in less than two years.
- In many cases, receiving on-time consistent payments has been an extreme challenge and has cost residual consequences for my business (such as being late on bills & recurring payments for the business, stagnating opportunities to acquire new business because the cash flow was so limited).
- I have been waiting to be paid on change orders from [REDACTED] for almost a year for work we completed at the [REDACTED] airport. My firm is always paid late from general contractors. Sometimes it's just a week, sometimes its months.
- Hardly ever get paid according to the NET pay on time.
- Even with a payment bond, always a reason to pay late - owners also pay late.
- Delays in receiving funds for properly submitted invoices.
- Delaying payment due to additional reporting requirements, that were not requested in

contract or from other contractors.

- Constant delay in receiving payments which has resulted in loss of employees and almost closing down the business.
- At times serving as a sub-contractor delays payments to us because Prime contractors “hold” funds after receiving them before payment.
- As a small business, we have to adhere to the prime’s schedule (large business) which involves payment being 90 days beyond invoice submittal.
- Always late or under invoice total. Funds remain outstanding and invoices unpaid.

11. Functioning without hindrance or harassment on the work site

- We have a Federal job currently that we feel we are being harassed.
- Sometimes our employees get harassed for being a WBE necessary team member.
- We have had two experiences where our Federal client made an engagement impossible to be successful in ways that even the Contracting Officer apologized but could not resolve. In one case, we learned the client was being difficult because their “majority” company choice didn’t win the contract and was giving us a hard time because they didn’t like working with “8as” (which we were not). In the other case, the Contracting Officer reported that we “could not have possibly done this great work” because companies “like ours” just don’t put out work like this.”
- I was DBE on an airport project with a company out of [REDACTED]. The trick is to run you off make it so difficult/uncomfortable for you to operate you throw up your hands and walk off the job. They in turn say well we tried to accommodate the DBE requirement, but they just didn’t work out. Well, we did not quit and made the project a success despite a horrible experience.
- We are constantly being stopped from doing our job where our employees that worked for other contractors say that this would never happen.
- Too often the focus is on my gender and ethnicity instead of our team’s excellent skills and credentials.
- This occurs on a daily basis, racial rhetoric, constant questioning of experience level, changing of process in attempt to make things harder.
- Some clients have refused to interact with the female principals of our company, requiring male middle managers to interact with them.
- Often times, our employees are given less meaningful work which limits the ability to obtain a fair opportunity to compete in the future.
- Because of the limits on banking, surety restrictions and payment delays, it often leads to older pieces of equipment. That image typically sparks concern that we cut corners and more apt to be scrutinized by many inspectors or contractors.
- After 30+ years of technical expertise, still have to “prove” the knowledge when starting work. Recently competed and was successful on a large government contract, but originally it was described as being for the “big boys” by a government representative!!!

12. Joining or dealing with construction trade associations

- Used to belong to the local “good ole boy” organization that had no problem taking dues generated by a minority member and yet bashing any programs that assisted minorities! “Used to” is the operative term here.
- The [REDACTED] works for a few big companies, and they represent their needs not the smaller guys and the minority.
- Simply am not invited to join.
- Most trade associations listen to the larger companies as they are the big gorillas in the room. Unfortunately, us smaller subs or DBE’s have very little say in the process as our issues do not align with the larger companies who have much greater resources or connections to the industry.
- Although a member still not genuinely being included only to meet the required quota.

13. Having to do inappropriate or extra work that was not required of comparable firms

- Doing out of scope work that would not otherwise be requested from similar businesses that are larger and Caucasian owned.
- [REDACTED] will add changes after the contract is awarded, ask the subs to do additional work and the subs bill us but [REDACTED] denies the work the subs did and will not adjust.
- I feel like I was taken advantage of as a woman and had to do more to prove my abilities.
- Many times, on Federal related work, we are required to produce reports, forms, and other materials unrelated to the actual services due to being DBE.
- Yes, forced to do more work-like after you complete your task the next guys comes and messes it up, but you have to fix it.
- Work had to be much better than their associates.
- We often face that on similar projects have different ways of treatment. In the jobs where there is a smaller sub or a DBE sub, often it is seen that disputed extra work is common, compiled up so that the sub takes less in payment than a larger company who have the resources to wait this out. It has gotten better but it is still experienced. The general contractor adds an element of difficulty as well.
- We have often been required to perform additional work without additional fee.
- We have a Federal contract that we feel this is happening, by the general and their 3rd party inspectors.
- We are sometime asked to do more work than is in the SOW, when told that it is not part of the SOW the harassments begin in ways that are obvious.
- We are required to provide services at no cost.
- This occurs on a daily basis, constant questioning of experience level, changing of process in attempt to make things harder.
- They make us do above and beyond what the contract requires. For example, if a

specification calls for cleaning drainage structure to run the hose until clean water is seen, they make us do it 3 more times.

- There's been times when my employees are asked to do additional work out of our scope that is not revealed, or a quote requested.
- The larger or majority firms would flex their muscles to get us to do extra work. If and when you refuse, we then suffer the wrath of not getting additional opportunities.
- Tasks assigned are sometimes based on "Who you are."
- Taking advantage of a smaller firm who wants to do a good job, they just keep asking for more and more. I feel pressured to say yes to keep a good reputation.
- Required to attend political meetings and offer a non-complete narrative. Having to resubmit work requests and repair requests.
- Requested to work outside the scope.
- On our largest prime contract, we were required to meet safety requirements that were more intensive than any other contractor doing the same work. We were "miscategorized" as a construction crew rather than a consultant, and no matter how often we requested the prime correct this mistake, it was never corrected. Meeting these excessive safety demands, including training and certification for work we never have and never will perform, cost tens of thousands of dollars.
- My firm has had to clean up after other trades more than once. My firm has been made to provide its own safety rails on roofing projects when other companies have not had to.
- Large contractors are not audited at the same rate that a small contractor is audited. We are also required to fill out a lot more info to justify project approval.
- My firm has been requested to perform work not listed in our contract.
- I am constantly asked to throw in extras.
- Doing things above and beyond common practice in the construction industry compared to others performing similar scope.
- Both government and private companies often times go outside the scope of work and expects the small businesses to comply. Most small businesses do not have the legal means to protect themselves like large businesses.

14. Having to meet quality, inspection, or performance standards that were not required of comparable firms

- We always have to exceed and outperform our white counterpart's quality expectation to ensure we get paid.
- Third party inspectors hired by government agency worry minority firms will not be able to perform.
- Some individuals in the government and private companies expect performance standards from my company that is above the required standards they have for larger companies. It may be that we are a small business and also woman-owned small business. My race has

often time been a factor of how people in my industry perceived Asian women as “meek”.

- Inspection, and supervision of our work is more stringent than the next white company.
- The inspection of black contractor performance standards takes a different turn, things that are overlooked for white contractors are not overlooked black counterpart.
- Yes, because of this I will not work as a Subcontractor under a prime contractor (majority contractor).
- We feel that priority of inspection is at times allocated to the larger works where us smaller contractors have to be put on hold given the priorities set by others. Yet we are held to the same standards of performance, and it affects our project responsibilities or schedules.
- This occurs on a daily basis, constant questioning of experience level, changing of process in attempt to make things harder.
- This is very difficult because you are not in control, but the standards are clear.
- This happened with my story that I mentioned with [REDACTED]. I had to go through several inspections with my auto parts to prove that I sell this product. They did not believe that an African American woman could sell auto parts. I had to physically meet them in their office and show my company's logo and this wasn't required from comparable firms. It got so bad that I did not renew my membership with [REDACTED], and I completely left the auto industry. Even though I put in a complaint about this, I never got a return call from the office. [REDACTED] is supposed to help women & minorities grow their businesses and obtain contracts but they are gatekeepers that keep African American companies out of this industry. They are very selective and hinder other African American companies from getting any contracts through their corporate members by refusing to update information on your application, and/or asking you to physically show them that you possess auto parts.
- My firm has had to meet inspection standards that were beyond industry standards. On the [REDACTED] airport project, we were the only company on a two hundred fifty million dollar plus project that had a full-time inspector watching over the crew while we worked.
- Large contractors are not audited at the rate that a small contractor is audited.
- Inspectors request an engineer letter after the first inspection for no reason since we have a building permit issued. Inspector wants no letter no pass inspection, even if all looks good. We have to hire and pay an engineer to close this project at our own expense.
- In the past, my firm has been held to an unreasonable expectation outside of contractual performance.
- I have seen bigger firms paid more and do less than I have.
- I am often amazed how the work of small firms is overlooked. We have high standards and safety is job one for us. We simply need more breaks/opportunities to showcase the level of work we can perform.
- Constantly from [REDACTED] and I believe this comes from poor performance of

previous native owned vendors. We are stereotyped and stereotypes exist for a reason. In this case, the reason is previous native owned medical suppliers were not true successful commercial medical sales organizations.

- Being asked to provide a bond or a footprint in a remote location or a minimum headcount to qualify.

15. None of these

No responses.

Question 55. If you would like to provide more information about your company's experience while working with or attempting to work with the railroad industry, please do so in the space below.

- We currently have a few projects in the region and abroad that support the rail industry.
- Having the financial backing has been a challenge as well as suppliers giving us higher prices for materials than other firms in the same field of different race.
- Federal agencies in general have to prevent large firms from imposing unreasonable insurance and liability terms on small subcontractors. I took us nearly 20 years and significant investment to secure a few prime contracts in the (commuter) railroad industry.
- Disaggregate goals because there is disparity within disparity. White women get 80-90% of M/W/DBE contracts. Which means that the white community tend to get 90% of all contracts Create opportunities for small firms to prime by unbundling contracts. Large firms are not smarter; they get 90% of opportunities which allow them to have more resources and staff. That's how they build "capacity." Mentoring programs are not the answer. Giving firms jobs is the answer. Punish firms who don't pay subs on time. That's the only way they will stop to breach the contract.

5 FRA Small Business Utilization Overview and USDOT DBE Program Overview

5.1 Past FRA Small Business Efforts

In 1976, Congress enacted the Railroad Revitalization and Regulatory Reform Act (the “4R Act”),¹³⁸ authorizing FRA to administer a minority business enterprise (MBE) program, establish a Minority Business Resource Center (MBRC) as part of the agency,¹³⁹ and include non-discrimination and affirmative action language in grant clauses to ensure MBEs receive a fair portion of contracts and employment opportunities. The MBRC would facilitate minority business enterprise participation in FRA funded improvement projects. The program applied to contracts awarded to implement the Northeast Corridor Project and to financial assistance programs administered by the United States Railway Association.¹⁴⁰ The implementing regulations, 49 C.F.R. part 265, required equitable opportunity for MBEs to participate in contracting and, where appropriate because of prior underutilization, establish specific goals and timetables to utilize MBEs.

In 1978, a group of minority businesses filed a formal complaint with the Secretary of Transportation concerning the railroads’ noncompliance with the non-discrimination requirement and their affirmative action programs under the 4R Act. The MBRC undertook a prompt investigation of the railroads’ practices, and found that the investigation supported most of the allegations that the railroad defendants were not in compliance with the affirmative action requirements of the 4R Act. The MBRC report, submitted to FRA in September 1978, made findings in five areas:

- Majority-owned traditional suppliers to railroads were transferring stock in an attempt to be accorded preferential treatment as [MBEs]. This was accomplished by white male owners transferring stock to their wives or by stock transfers in the subsidiaries of majority owned companies.
- The recipient railroads committed to development of MBEs as suppliers, but their activities toward implementation were almost nonexistent.
- Railroad management failed to implement policies that would ensure an effective MBE program.
- The railroads failed to develop procedures to monitor and evaluate the achievement of their suppliers toward established the program’s goals.
- The railroads failed to develop and implement formal procurement procedures to adequately improve communication between buyers and MBEs, or to support the achievement of established MBE participation goals.

On February 1, 1979, the FRA Administrator adopted the findings of the MBRC report in their

¹³⁸ Pub. L. 94–210, Sec. 905-906, 90 Stat. 31, (Feb. 5, 1976).

¹³⁹Section 906 of the Act required the MBRC to take certain actions including, “design and conduct programs to encourage, promote, and assist minority entrepreneurs and businesses to secure contracts, subcontracts, and projects related to the maintenance, rehabilitation, restructuring, improvement, and revitalization of the Nation's railroads.” 49 U.S.C. § 11(c)(4).

¹⁴⁰ The United States Railway Association (USRA) was a government-owned corporation created by United States Federal law that oversaw the creation of Conrail, a railroad corporation that would acquire and operate bankrupt and other failing freight railroads. USRA operated from 1974 to 1986.

entirety but concluded that no specific instance of discrimination had been found. The Administrator ordered the railroads to implement changes in their policies in order to increase the participation of legitimate MBEs in 4R Act-funded programs. The railroads did not appeal the Administrator's decision and FRA did not take steps to cut off 4R funds as it was permitted to do under the law.

In 1980, the Department established a uniform program for participation by minority- and women-owned firms in contracts let by recipients of USDOT funds, including rail.¹⁴¹ In 1983, Congress repealed the sections of the 4R Act that authorized the program.¹⁴² In 2009, since Congress had not acted to renew or extend the MBE program at FRA, the operating administration removed the implementing regulations.¹⁴³

Following passage of the American Recovery and Reinvestment Act (ARRA)¹⁴⁴ in February 2009, there was interest from members of Congress in having FRA award ARRA funds subject to disadvantaged business program requirements. In 2010, H.R. 5010, was introduced which would have created such a program for high-speed rail corridor planning and development projects, and other purposes.¹⁴⁵ In 2011, the same bill was introduced again (as H.R. 2874) but also did not pass.¹⁴⁶ Although these bills were not passed, FRA explored race-neutral methods to increase small business participation. To that end, FRA inserted the following grant clause into FRA's Master Grant Agreement in January 2011:

Participation by Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals.

The Grantee agrees to: (1) provide maximum practicable opportunities for small businesses, including veteran-owned small businesses and service-disabled veteran-owned small businesses, and (2) implement best practices, consistent with our nation's civil rights and equal opportunity laws, for ensuring that all individuals – regardless of race, gender, age, disability, and national origin – benefit from activities funded through this Agreement.

An example of a best practice under (2) above would be to incorporate key elements of the Department's DBE program (see 49 C.F.R. Part 26) in contracts

¹⁴¹ 45 Fed. Reg. 21172 (Mar. 31, 1980).

¹⁴² Pub. L. 97-449, Sec. 7(b), 96 Stat. 2443 (January 12, 1983).

¹⁴³ 74 Fed. Reg. 33,923 (2009). This final rule emphasized that USDOT's current nondiscrimination provisions that recipients of FRA funding are still subject to are at 49 C.F.R. parts 21 and 27 and 49 U.S.C. 306, which prohibit discrimination in several railroad financial and Federal contracting and procurement.

¹⁴⁴ Pub. L. 111-5, 123 Stat. 115 (Feb. 17, 2009).

¹⁴⁵ The bill included a sense of Congress that the Federal government should also encourage the participation by veteran-owned small businesses in Federally funded projects and Federal contracting and procurement. In 2014, H.R. 4439 was introduced which would have established a DBE program for FRA. This bill also did not pass. This bill proposed a congressional finding that obstacles for DBEs in highways and mass transit (including commuter rail) continue to pose difficulties for minority and women owned businesses in Federally assisted surface related markets, including intercity passenger rail markets in throughout the United States.

¹⁴⁶ In 2013 FRA Administrator Szabo expressed the agency's desire to conduct a nationwide disparity and availability study to study to establish the availability and utilization of DBEs in publicly funded railroad projects. Written statement of Joseph Szabo before the Subcommittee on Railroads, Pipelines, and Hazardous Materials, Committee on Transportation and Infrastructure, Apr. 11, 2013, p. 11. (See <https://publicans-transportation.house.gov/uploadedfiles/documents/2013-04-11--szabo.pdf>)

under this Agreement. This practice would involve setting a DBE contract goal on contracts funded under this Agreement that have subcontracting possibilities. The goal would reflect the amount of DBE participation on the contract that the Grantee would expect to obtain absent the effects of discrimination and consistent with the availability of certified DBE firms to perform work under the contract. When a DBE contract goal has been established by a Grantee, the contract would be awarded only to a bidder/offer that has met or made (or in the case of a design/build project, is committed to meeting or making) documented, good faith efforts to reach the goal. Good faith efforts are defined as efforts to achieve a DBE goal or other requirement of this Agreement which, by their scope, intensity, and appropriateness to the objective can reasonably be expected to achieve the goal or other requirement.

The Grantee must provide FRA a plan for incorporating the above best practice into its implementation of the Project within 30 days following execution of this Agreement. If the Grantee is not able to substantially incorporate Part 26 elements in accordance with the above-described best practice, the Grantee agrees to provide FRA with a written explanation and an alternative program for ensuring the use of contractors owned and controlled by socially and economically disadvantaged individuals.

While FRA's grant clause was in effect, the FRA Office of Civil Rights reviewed over 400 small business utilization plans and provided technical assistance as needed. During this time, most small business utilization plans loosely incorporated language from the existing DBE regulations or state DBE plans. The information that recipients provided was insufficient for FRA to ascertain what efforts recipients were actually taking to work with small businesses, and FRA did not obtain sufficient data through these plans regarding the extent to which recipients' efforts were successful.

The grant clause was superseded in December 2020 when the agency modified its small business assurances; it took out the 2011 grant language above but kept the requirements to comply with 2 C.F.R. part 200 and to use the existing USDOT DBE programs' race- and gender-neutral provision. The December 2020 assurances state:

Small and Disadvantaged Business Requirements. The Grantee shall expend all funds under this award in compliance with the requirements at 2 C.F.R. § 200.321 21 ("Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms"), and to the extent applicable, 49 C.F.R. Part 26 ("Participation by disadvantaged business enterprises in Department of Transportation financial assistance programs").¹⁴⁷

5.2 Current and Planned FRA Small Business Efforts

5.2.1 Small Business Utilization Grant Clause

Beginning in 2021, FRA focused on efforts to expand opportunities for small, minority, and

¹⁴⁷ FRA Grant Agreement, Attachment 1, Standard Terms and Conditions, December 2020. *See* https://railroads.dot.gov/sites/fra.dot.gov/files/2021-03/General%20Grants%20-%20Attach%201%20-%20Standard%20Terms%20and%20Conditions%2012.8.2020_pdfa_0.pdf, accessed August 31, 2022.

woman-owned businesses to participate in its Federally assisted projects. A new grant clause, currently in the proposal stage and building on the lessons learned from the former grant clause in use from 2011 until 2020, would require recipients to submit plans explaining how they would implement the grant clause and periodically submit data, which FRA would then review. Under the terms of the now defunct clause, recipients were required to submit plans and FRA provided technical assistance as needed. The 2011 to 2020 clause required grantees to provide “maximum practicable opportunities for small businesses, including veteran-owned small businesses and service-disabled veteran-owned small businesses, and (2) implement best practices, consistent with our nation’s civil rights and equal opportunity laws. The plans varied in complexity somewhat correlated with the size of the grant, with the more complex plans associated with the largest grant requests. No post-award data was collected, and only limited reviews were conducted because of lack of funds and staff to devote to these efforts. Under these conditions it is impossible to draw any conclusions on the achievements under this grant clause.

Under the new clause, FRA would collect and analyze data on small business utilization and provide more technical assistance. While the details are still under development, the proposed grant clause would require twice per year reporting of small business commitments, awards, and payments by all grantees and bidding lists. Data collection would include race and gender information requested from recipients using an expanded form of the DBE Program’s existing Uniform Report.¹⁴⁸ Each FRA recipient would report awards and commitments by total dollars and number, total dollars and number to the defined small businesses, and percentage of total dollars of the overall contract to the defined small businesses. The report would also capture geographic information, and information regarding the race, ethnicity, and gender of the defined small business owners. Recipients would also report on ongoing and completed projects for each reporting period.

Consistent with the collection requirements of this new clause, the FRA Office of Civil Rights is in the process of implementing a new data collection form for recipients to report the utilization of minority and women-owned businesses. This data collection would be mandatory. This process must follow Paperwork Reduction Act (PRA) procedures which includes updating FRA’s current Grant Management Information Collection to add this new data collection form. The updated Information Collection request is anticipated to be submitted to OMB for approval after both the required 60- and 30-day Federal Register notices are published. FRA plans to begin using this new data collection form is early 2023 contingent on completing the PRA process. The requested data collection would include race and gender information from recipients using an expanded form of the DBE Program’s existing Uniform Report.

As part of an organizational realignment,¹⁴⁹ FRA established an Office of Industry Data & Economic Analysis. This office is responsible for managing assessments of the rail industry’s financial performance, investments, policy issues, and other critical data analytic functions. The information collected from recipients through the new grant clause and data collection form would be analyzed by professionals in this office. The data collected would be used to provide a better understanding of the contracting and subcontracting markets in FRA funded projects, and

¹⁴⁸ The Department is proposing many revisions to its data collection instruments in the July 21, 2022, Notice of Proposed Rulemaking for the DBE and ACDBE programs. The Department is also proposing collection of information on bidders and firms participating in projects. 87 Fed. Reg. 43620.

¹⁴⁹ The FRA organizational realignment is effective October 9, 2022.

help FRA understand its contracting markets, detect possible discrimination, and ascertain how to potentially tailor efforts to assist minority- and women-owned firms or implement a future DBE Program.

5.2.2 Outreach and Technical Assistance to Small Businesses

FRA is exploring the best avenue to implement a rail-centric small business outreach and development program. FRA will work with the Office of Small and Disadvantaged Business Utilization (OSDBU) in collaboration with its network of Small Business Transportation Resource Centers (SBTRCs) to develop an outreach plan to provide technical assistance and capacity building activities to rail-centric small businesses. FRA is collaborating with USDOT's OSDBU and other Federal interagency partners who provide small business outreach, technical assistance, and capacity-building initiatives.

The FRA Rail Ready Program, supported by OSDBU, would be a technical capacity-building program for socially and economically disadvantaged firms in rail construction, engineering, maintenance, goods, and services. In addition to the existing technical assistance and business development services provided by SBTRCs, the Rail Ready Program would include a six- to twelve-month rail-focused capacity building program and may consist of the following areas:

Bonding Education Program (BEP)

Through OSDBU and the SBTRC network, FRA would partner to support rail-focused Bonding Education programming. The BEP is a multi-component program, designed to address what businesses need to become bond-ready when competing for transportation-related contracts. Each BEP includes workshops with industry professionals for business development and one-on-one sessions with local SBA-approved surety bonding representatives to help small and disadvantaged business owners compile necessary components to complete a bond application. The BEP also provides business development training in preparation to compete for transportation-related contract opportunities. FRA would provide experts on the specifications required for small business rail contracting opportunities. Applicants for the FRA-focused BEP must be the primary owner(s), key manager(s), or administrator(s) of a small business that meet the following criteria:

- Existing in business for at least (2) consecutive years.
- Revenue of at least \$250,000 annually.
- Have a minimum of (2) full time employees (including owner).
- Past performance in rail-related construction industry.
- Pursuing rail transportation-related contracts.
- Interested in satisfying credit, capacity, and character evaluations in consultation with a surety representative.
- Possess one of the following certifications/designations:
 - Small Businesses
 - Disadvantaged Business Enterprise (DBE)
 - Historically Underutilized Business Zone (HUBZone)
 - Small Disadvantaged Business (SDB)
 - Service-Disabled Veteran-Owned Business (SDVOSB)

- Veteran-Owned Small Business (VOSB)
- Women-Owned Small Business (WOSB)
- 8(a) Business Development Program Participant

To produce an FRA BEP, FRA and the Regional SBTRC would host a stakeholders meeting, gather rail-related services industry and small business resource providers together to review the parameters of a rail-focused BEP implementation in the local market, determine resource requirements, and ascertain the role in which each stakeholder will play in carrying out the educational component, ensuring the program's success.

The Educational Workshop Component would include a set of comprehensive workshops to include a minimum of 10 hours of instruction:

- FRA project specific workshops; in collaboration with SBA, MBDA, state DOTs, Primes currently on FRA projects, and State DOT Supportive Services.
- A variety of topics covered by industry experts such as Contracting Law, Accounting, (Rail) Operations Safety Plan, Proposal Writing, etc.
- Including a closing workshop focused on networking, BEP Certificate ceremony, and next steps.

The Bond Readiness Component would offer one-on-one interactions with local surety bond producers which volunteer to help small businesses. The surety bond professionals would work with the small businesses, on a case-by-case basis, to assemble the materials necessary for a complete bond application and address any deficiencies that might impede the successful underwriting of a bond. To deliver this component, the SBTRC would use the network of SBA-approved surety associations to identify surety professionals in the local area, preparing the client, and assisting with meeting arrangements.

The Follow-up and Assistance Component would offer coordination and monitoring of technical assistance provided to participants in the program. The SBTRC would help small businesses identify and secure bonding for subsequent rail-related projects. An element of the follow-up assistance may include matchmaking of program participants to rail-related contracting opportunities made available in coordination with FRA representatives.

The Data Capture Component would be covered within OSDBU's Client Management System, accessed by each SBTRC and managed by the OSDBU Regional Assistance Division. Data collected with each BEP would cover details of: companies attended (i.e., business type, certification status, location, Congressional District); bonding level acquired or increased; local, state, and/or Federal contracts secured – with follow up reporting on a quarterly basis.

Access to Capital

Contractors participating in rail projects would be able to secure access to capital through OSBDU resources. To better ensure success with securing firm financing, program participants would receive a comprehensive walk-through of business financials, especially credit, with a community-based lending institution, Community Development Financial Institution (CDFI), or Minority Depository Institution (MDI) and be provided a development plan for financial stability and process improvement accompanied by specific monitoring to increase a firm's chance of securing loans in 6-12 months. Small businesses would also be introduced to small business investment companies (SBIC) and State small business credit initiative (SSBIC) entities to learn about debt and equity financing opportunities. Access to capital resources would be available

through Interagency Federal partner programs including, but not limited to, Small Business Administration (SBA) (i.e., SBIC), US Treasury (i.e., CDFI), and Federal Deposit Insurance Corporation (FDIC) (i.e., MDI).

Rail Training Institute

The Rail Training Institute would include professional development in an array of topics and areas and vary by need and region. This effort would help decrease or eliminate professional development costs for small business owners. These courses may include Fundamentals of Railway Train Control and Signaling, Fundamentals of Railways Bridge Engineering and Management, Introduction to Railroad Engineering and Operations, Emergency Railroad Bridges Inspections, Introduction to Traction Power and OCS systems, Propulsion for Heavy Rail Vehicles, as well as other asynchronous courses. The program would also include technical management courses such as capital budgeting, business process improvement, and talent development. These courses would be taught both in-person and virtually. This training would also consist of learning via case studies in large and small group settings with other technical leaders who have overcome or are facing similar challenges. These courses would be taught during a time that is convenient for small business owners. The course selection will be driven by the need of small businesses in a set region or on a national level.

Procurement Readiness

OSDBU would support FRA procurement readiness training efforts to enable firms to better understand procurement requirements and processes. Firms would be able to understand more fully what it takes to be successful in Federal, State, and local procurement by successfully learning how to navigate the procurement landscape for FRA-funded projects. These initiatives would include Connections MarketPlace, procurement forecasting, and available resources through Federal interagency partners inclusive of, but not limited to, Procurement Assistance Technical Centers (PTACs).

Mentor Protégé Program (MPP)

FRA would encourage the utilization of MPPs by FRA funding recipients to build capacity in local marketplaces. The program participants would have the opportunity to connect with business mentors to gain valuable insights and knowledge regarding how to conduct and operate a business; and how to establish, retain, and cultivate business relationships and partnerships. Existing models which would be examined include both the USDOT and SBA MPPs, as well as other Federal Agency programs. Additionally, best practices from the state and local levels would be incorporated with feedback obtained from SBTRCs.

Prime Partnering Roundtables

The objectives of the roundtables are to explore and match small businesses with both prime and subcontracting opportunities. The program participants would work directly with FRA, grant recipients, and primes to gain an increased understanding regarding their concerns, needs, and requirements to partner with small businesses. The program would also create an opportunity for learning and networking. This information would be incorporated into the Rail Ready curriculum.

Teaming Agreements and Matchmaking

This initiative would be geared toward architectural and engineering firms, as well as new entrants, seeking project experience with an industry partner. The program would provide a dedicated and intentional space to foster and encourage partnership formation, technical

assistance, and capacity building.

Stakeholder Engagement

OSDBU would support FRA in establishing partnerships with national associations supporting socially and economically disadvantaged businesses and help facilitate engagement with architectural and engineering associations to aid in sourcing and recruitment. OSDBU would also assist in identifying subject matter experts for the design and development of program curriculum and implementation.

Pathways to Entrepreneurship Program (PEP)

The Pathways to Entrepreneurship Program (PEP) objective is to educate and expose college students to entrepreneurship as a career option upon graduation, including the different paths to entrepreneurship. To prepare the next generation of entrepreneurs in the rail industry, students would receive training curriculums that would provide insight into how entrepreneurs can fuel their careers, regardless of their educational degree. Students would also learn about opportunities and resources available for start-ups. SBTRCs would provide local support for this effort by providing technical expertise about the knowledge and disciplines needed for becoming a successful entrepreneur. Other Federal, state, and local government resources would also be identified and integrated into the program.

Courses and workshops would include Introduction to Rail, How to Become a Rail Engineer, and Skills and Requirements to Success.

Through Rail Connect, in addition to learning about entrepreneurship, students would be exposed to the rapidly growing trends and technology in rail, such as:

- Autonomous Trains
- The Internet of Trains
- Artificial Intelligence
- Decarbonization
- Rail Connectivity
- Passenger Experience
- High-Speed Rail
- Rail System Automation
- Big Data & Analytics
- Augmented & Virtual Reality
- Rail construction and Maintenance

The program would target college students who are juniors and seniors interested in becoming entrepreneurs, as well as technology or STEM-related subject matter experts. Program participants would have demonstrated a keen interest in learning about entrepreneurship and the transportation sector. The benefit to students would include:

- Exposure to rail industry entrepreneurs and gaining insight into their playbook for success by hearing real-life examples and lessons learned;
- Learning about technical assistance programs available for socially and economically disadvantaged firms, inclusive of SBTRCs and other Federal resources;

- Gaining valuable insight into FRA through presentations and work sessions facilitated by Department officials and technical experts in the industry; and
- Gaining hands-on experience as an intern and/or by competing with a team project that will garner a better understanding of select technologies in rail.

Connections MarketPlace Platform (CMP)

Historically, socially, and economically disadvantaged firms have had difficulty building relationships with Federal, state, and local representatives, prime contractors, and decision makers. FRA would collaborate with OSDBU to maximize the use of the Connections MarketPlace Platform (CMP) to build connections and bridge existing gaps. Constructing meaningful connections will create more contracting opportunities for socially and economically disadvantaged firms and also help to fuel the rail industry.

The CMP would consist of the following components:

- Virtual Roundtables
- Meet the Mentors
- Team Talks
- Buyer Side Chat
- Business Matchmaking

FRA Industry Days

Industry days are traditionally conducted by agencies to increase small business awareness of potential contracting opportunities. FRA, in collaboration with OSDBU, rail industry, and grant recipients, would build out industry days throughout the year to increase contract awards to socially and economically disadvantaged firms. These events would help FRA to increase the participation of socially and economically disadvantaged firms and serve as an excellent form of market research for program and acquisition officials.

5.2.3 Enforcement of 2 C.F.R. part 200

Most FRA grantees are required per 2 C.F.R. part 200 to take the affirmative steps to assure they use MBEs and WBEs when possible.¹⁵⁰ These steps, in the current rule, include:

1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
5. Using the services and assistance, as appropriate, of such organizations as the Small

¹⁵⁰ These entities include States, local governments, Indian tribes, institutions of higher education (IHE), and nonprofit organizations.

Business Administration and the Minority Business Development Agency of the Department of Commerce; and

6. Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed above.¹⁵¹

FRA's Office of Civil Rights will design and implement a program to collect information on these race-neutral efforts and track compliance.

5.3 Implementing a Directed FRA Disadvantaged Business Enterprise Program

If FRA is directed by Congress to commence a DBE program, the agency is ready to proceed with staffing and program implementation. While FRA will move forward expeditiously, establishing such a program will follow established rulemaking procedures, including Executive Branch review and public notice and comment periods. FRA will work with Congress to ensure the program is adequately resourced. An FRA DBE program would be structured like the DBE programs administered by the FAA, FHWA, and FTA under USDOT's existing DBE program regulations, 49 C.F.R. part 26. This will ease the burden of compliance for recipients, since many recipients of FRA funds also receive grants from the USDOT operating administrations that currently impose DBE program requirements and many of the firms providing contract services to FRA recipients also contract with the recipients of the other OAs. The following sections review USDOT's existing DBE program regulations and operating structure.

5.3.1 Existing USDOT DBE Program Regulatory Requirements

Federal regulations found at 49 C.F.R. part 26 prescribe the USDOT's DBE program requirements. All primary FHWA recipients, and those recipients that receive a minimum of \$250,000 from FTA or FAA in a Federal fiscal year, must implement a DBE program under the appropriate supervision of the respective OA.¹⁵² The DBE regulations set forth eight program objectives:

1. To ensure non-discrimination in the award and administration of USDOT-assisted contracts in the Department's highway, transit, and airport financial assistance programs.
2. To create a level playing field on which DBEs can compete fairly for USDOT-assisted contracts.
3. To ensure USDOT's DBE program is narrowly tailored in accordance with applicable law.
4. To ensure that only firms that fully meet this part's eligibility standards are permitted to participate as DBEs.
5. To help remove barriers to the participation of DBEs in USDOT-assisted contracts.

¹⁵¹ 2 C.F.R. § 200.321.

¹⁵² 49 C.F.R. § 26.21("If you are in one of these categories and let DOT-assisted contracts, you must have a DBE program meeting the requirements of this part: (1) All FHWA primary recipients receiving funds authorized by a statute to which this part applies; (2) FTA recipients receiving planning, capital and/or operating assistance who will award prime contracts (excluding transit vehicle purchases) the cumulative total value of which exceeds \$250,000 in FTA funds in a Federal fiscal year; (3) FAA recipients receiving grants for airport planning or development who will award prime contracts the cumulative total value of which exceeds \$250,000 in FAA funds in a Federal fiscal year.").

6. To promote the use of DBEs in all types of Federally assisted contracts and procurement activities conducted by recipients.
7. To assist the development of firms that can compete successfully in the marketplace outside the DBE program; and
8. To provide appropriate flexibility to recipients of Federal financial assistance in establishing and providing opportunities for DBEs.¹⁵³

Per 49 C.F.R. part 26, each recipient subject to the USDOT DBE requirements is required to establish DBE goals, review the scope of anticipated large prime contracts, account for maximizing race/gender neutral DBE participation, and establish contract-specific DBE subcontracting goals where appropriate. The recipients are also required to submit overall goals to the Operating Administrations (OAs) every three years.

i. Small Business Status

To be considered small, a firm must meet the definition of a small business as defined by SBA standards for specific subindustries.¹⁵⁴ In addition, the business must have an average annual revenue over the previous three fiscal years that is below the statutory gross receipts set by Congress in the Federal DBE program, which was \$28.48 million as of March 1, 2022.¹⁵⁵

ii. Economic Disadvantage of the Firm's Majority Owner(s)

To be considered economically disadvantaged, the firm owner must:

- Be socially and economically disadvantaged. Citizens of the U.S. (or lawfully admitted permanent residents) who are members of the following protected classes are rebuttably presumed to be socially and economically disadvantaged: women, Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, or other racial minorities found to be disadvantaged by the SBA.¹⁵⁶
- Have a personal net worth that does not exceed \$1.32 million.¹⁵⁷
- Submit a signed and notarized statement attesting to their social and economic disadvantage status.¹⁵⁸

iii. Ownership and Control

In determining whether the socially and economically disadvantaged participants in a firm own the firm, all the facts must be considered in the record viewed as a whole, including the origin of all assets and how and when they were used in obtaining the firm. All transactions for the establishment and ownership (or transfer of ownership) must be in the normal course of business, reflecting commercial and arms-length practices.¹⁵⁹ To be an eligible DBE as it applies to

¹⁵³ 49 C.F.R. § 26.1.

¹⁵⁴ 49 C.F.R. § 26.65(a).

¹⁵⁵ 49 C.F.R. § 26.65(b); USDOT, DBE Program Size Standards, March 1, 2022, <https://www.transportation.gov/DBEsizestandards>.

¹⁵⁶ 49 C.F.R. § 26.67(a)(1).

¹⁵⁷ 49 C.F.R. § 26.67(a)(2)(i).

¹⁵⁸ 49 C.F.R. § 26.67(a)(2)(ii). An average adjusted gross income of the business owner that exceeds \$350,000 during the most recent three years is one factor that might indicate whether a business owner is no longer economically disadvantaged. 49 C.F.R. § 26.67(b)(1)(ii)(A).

¹⁵⁹ 49 C.F.R. § 26.69(a).

ownership of the company:

- A firm must be at least 51 percent owned by socially and economically disadvantaged individuals.¹⁶⁰
- The firm's ownership by socially and economically disadvantaged individuals, including their contribution of capital or expertise to acquire their ownership interests, must be real, substantial, and continuing, going beyond pro forma ownership of the firm as reflected in ownership documents.¹⁶¹
- All securities that constitute ownership of a firm must be held directly by disadvantaged persons.¹⁶²
- The contributions of capital or expertise by the socially and economically disadvantaged owners to acquire their ownership interests must be real and substantial.¹⁶³

The firm must also show that socially and economically disadvantaged persons control the firm, which in general, includes these core requirements:

- A firm must be an independent business.¹⁶⁴
- The firm must not be subject to any restrictions that limit the discretion of the socially and economically disadvantaged owners or prevent the socially and economically disadvantaged owners from making business decisions without the cooperation or vote of any non-disadvantaged individual.¹⁶⁵
- The socially and economically disadvantaged owner(s) must have the power to direct the management or policies of the firm and make day-to-day and long-term decisions on management, policy, and operations. This owner must also hold the highest officer position in the company, control the board of directors (in a corporation), and/or serve as a general partner with control over all partnership decisions (in a partnership).¹⁶⁶ The socially and economically disadvantaged owners must have an overall understanding of, and managerial and technical competence and experience directly related to the type of business, and be able to intelligently and critically evaluate information and make independent decisions concerning the firm.¹⁶⁷

5.3.2 USDOT DBE Program Operational Structure

Recipients of Federal financial assistance from FAA, FHWA, and FTA are required, as a condition of receipt of those funds, to administer a DBE program that complies with 49 C.F.R. part 26.¹⁶⁸ The OAs are the first points of contact with recipients regarding the DBE program.¹⁶⁹

¹⁶⁰ 49 C.F.R. § 26.69(b).

¹⁶¹ 49 C.F.R. § 26.69(c)(1).

¹⁶² 49 C.F.R. § 26.69(d).

¹⁶³ 49 C.F.R. § 26.69(e).

¹⁶⁴ 49 C.F.R. § 26.71(b).

¹⁶⁵ 49 C.F.R. § 26.71(c).

¹⁶⁶ 49 C.F.R. § 26.71(d).

¹⁶⁷ 49 C.F.R. § 26.71(g).

¹⁶⁸ 49 C.F.R. Part 23 sets requirements for an Airport Concession DBE (ACDBE) program, which is only applicable to FAA sponsors; this program is not a covered subject in this report.

¹⁶⁹ *Id.* at 2.

The OAs are primarily responsible for overseeing the day-to-day administration of the program by recipients, providing training and technical assistance, maintaining current and up-to-date DBE websites on OA web pages, and taking appropriate action to ensure program compliance.¹⁷⁰

The Office of the Secretary (OST) plays a critical role in the establishment and development of the DBE program. The Secretary is the head of the Department and, with the Deputy Secretary, is accountable for the Department's oversight of the DBE program. The Secretary and Deputy Secretary retain ultimate decision-making responsibility for all aspects of the DBE program, although many of the day-to-day responsibilities are delegated. The OST components and the OAs responsible for some aspect of the DBE program must carry out their responsibilities as required by law and consistent with Departmental policy and guidance.¹⁷¹

The Departmental Office of Civil Rights (DOCR) within OST serves as the principal advisor to the Secretary and Deputy Secretary on civil rights statutes and regulations applicable to the Department. The DOCR is responsible for ensuring Departmental compliance with external civil rights programs, including reviewing, and evaluating the OAs' enforcement of civil rights laws and regulations. The DOCR acts as the lead office for the DBE program and coordinates the Department's oversight of the DBE program, which includes overseeing and providing guidance to the OAs and responding to policy questions on behalf of the Secretary.

USDOT created the DBE Working Group consisting of staff from DOCR, Office of General Counsel, and each OA's DBE program and legal counsel offices to coordinate the development of formal and informal guidance and interpretations to ensure consistent and clear Departmental communications regarding the application and interpretation of DBE program requirements.¹⁷² The working group typically meets every two weeks.

The OAs and DOCR offer in-person and virtual DBE program training for recipient employees who implement the programs and other stakeholders. Additionally, the National Transit Institute and the National Highway Institute provide a platform for developing and providing educational opportunities in those industries, including DBE trainings.

Recipients that are required to implement DBE programs must provide certain documentation to the DOT OAs, at the intervals required by the OA.¹⁷³ These recipients must submit:

- A Uniform Report of DBE Awards or Commitments and Payments (Uniform Report) at the intervals stated on the form.¹⁷⁴
- Data about its DBE program as directed by the OA.¹⁷⁵
- Goals for DBE participation in its DOT-assisted contracts.¹⁷⁶

¹⁷⁰ *Id.* at 4.

¹⁷¹ USDOT Order 4220.1, *Disadvantaged Business Enterprise Program Coordination and Oversight*.

¹⁷² USDOT Order 4220.1.

¹⁷³ Recipients also collect other information that is not reported to the OAs, such as bidders list, DBE application materials, evidence of good faith efforts to secure DBE participation, and evidence of proactive monitoring of prompt payment and release of retainage. *See* 49 C.F.R. part 26.

¹⁷⁴ 49 C.F.R. § 26.11(a).

¹⁷⁵ 49 C.F.R. § 26.11(b).

¹⁷⁶ 49 C.F.R. § 26.45. The goals submission includes: description of the methodology used to establish the goal and a projection of the portions of the overall goal that they expect to meet through race-neutral and race-conscious means. The goal represents the DBE participation that would be expected in the relevant market area given the availability of DBEs as compared to actual participation.

- An element to facilitate competition by small businesses and eliminate obstacles to their participation.¹⁷⁷

5.3.3 Establishing Overall and Race Conscious DBE Goals

In successive surface transportation re-authorization bills, Congress has directed that amounts expended through DBEs in specific surface transportation programs be subject to a nationwide aspirational goal of not less than 10 percent.¹⁷⁸ The 10 percent goal is an aspirational goal at the national level that the Department uses as a tool to evaluate and monitor opportunities for DBEs to participate in DOT-assisted contracts.¹⁷⁹

The national 10 percent goal does not authorize or require recipients to set overall or contract goals at 10 percent or at any other particular level, or to take any special administrative steps if their goals are above or below 10 percent.¹⁸⁰ Recipients are not permitted to use quotas for DBEs on DOT-assisted contracts. Recipients may not set aside contracts for DBEs, except in limited and extreme circumstances when no other method reasonably could be expected to redress egregious instances of discrimination.¹⁸¹

To meet the constitutionally required strict scrutiny standard, the goal-setting process established by regulation¹⁸² ensures that each recipient sets an overall goal that is narrowly tailored to its relevant market area, considering such factors as the number of firms expected to participate in that market, and the level of funds to be expended each fiscal year.

The current DOT DBE regulations allow recipients to use race-neutral, race conscious, or a combination of both measures.¹⁸³ A recipient's overall goal must be based on demonstrable evidence of the availability of ready, willing and able DBEs relative to all businesses ready, willing and able to participate on its DOT-assisted contracts. The goal must reflect a recipient's determination of the level of DBE participation it would expect absent the effects of discrimination. Recipients cannot simply rely on either the 10 percent national goal, its previous overall goal or past DBE participation rates without reference to the relative availability of DBEs in their respective market.¹⁸⁴ DBE goals on a Federally-assisted contract are based on multiple factors such as the scope of work and availability of DBEs. Many factors contribute to fluctuations in goals from year to year. These factors include a recipient's choice and scale of projects to undertake, the location of work involved; the availability of DBEs to bid and work on the contract; the number of firms that bid on contracts; the general economic conditions within the state, and the Federal share of funds allocated.

The DBE program regulation at 49 C.F.R. Part 26 requires a recipient to meet the "maximum feasible" portion of its overall DBE goal through race-neutral means. Race-neutral DBE participation includes any time a DBE wins a prime contract through customary competitive

¹⁷⁷ 49 C.F.R. § 26.39.

¹⁷⁸ 49 C.F.R. § 26.41. While FAA's 10 percent goal is set in statute, 49 U.S.C. § 47113(b), FTA and FHWA's 10 percent goal is re-authorized with each new surface transportation authorization, most recently in the IIJA, at 49 U.S.C. § 11101(e)(3).

¹⁷⁹ 49 C.F.R. § 26.47(a), (b).

¹⁸⁰ *Id.* at § 26.47(c).

¹⁸¹ *Id.* at § 26.43. Use of set-asides requires prior approval from the relevant Operating Administration.

¹⁸² *Id.* at § 26.45.

¹⁸³ 49 C.F.R. § 26.45(f).

¹⁸⁴ 49 C.F.R. § 26.45(b).

procurement procedures or is awarded a subcontract on a prime contract that does not have a DBE contract goal.¹⁸⁵ Most recipients meet a portion of their overall goal by setting DBE subcontracting goals on contracts, which may be higher or lower than the recipient's overall goal. Race-conscious goals, which can only be used on assisting DBEs and not all small businesses, must be implemented if the entire contract goal cannot be met through race-neutral means.¹⁸⁶

Race-conscious programs set a DBE goal on a Federally assisted contract based on multiple factors such as the scope of work and availability of DBEs. In race-conscious contract goals, prime contractor bidders must use good faith efforts to meet contract goals, either by subcontracting to a sufficient number of DBEs to meet the goal, or, if they fall short, by submitting sufficient documentation of their good faith efforts to meet the goal.¹⁸⁷

Recipients then monitor and enforce the contract compliance to ensure the awarded contractor provides opportunities for DBEs and uses DBEs as subcontractors. Race-neutral programs aim to assist all small businesses regardless of race or gender differences and do not set a DBE goal on a Federally assisted contract. Although the race-neutral program does not set DBE goals on individual contracts, DBE programs still promote the use of DBEs in Federally assisted contracts.

Recipients must set an overall DBE goal every three years by the date set by the OA.¹⁸⁸ The USDOT does not sanction or punish any recipient for not meeting its goals, unless it failed to administer its program in good faith.¹⁸⁹ However, a recipient that fails to meet the overall DBE goal may be subject to conditions or corrective actions by the DOT OA.¹⁹⁰

5.4 Chapter Summary

FRA and DOT have a history of supporting the participation of small, disadvantaged, minority and woman-owned businesses in transportation contracting dating from the 1970s to the present. Planned efforts to expand FRA's race- and gender-neutral programs are ongoing.

¹⁸⁵ 49 C.F.R. § 26.51(a).

¹⁸⁶ 49 C.F.R. §§ 26.51, 26.5.

¹⁸⁷ 49 C.F.R. §§ 26.47, 26.53.

¹⁸⁸ 49 C.F.R. § 26.45(f).

¹⁸⁹ 49 C.F.R. § 26.47(a).

¹⁹⁰ 49 C.F.R. § 26.47(c)(4).

REPORT SUMMARY

The Report and its appendices provide information that could be useful to Congress as it considers FRA's small business utilization efforts, in response to an instruction from the 2015 FAST Act. This Report includes chapters discussing relevant markets based on FRA grant activity; legal standards for government race-conscious contracting programs; FRA's historical, current, and planned small business utilization efforts; and anecdotal comments discussing experiences with discrimination by minority and women small business owners in industry groups in the rail transportation industry. With this information, Congress can consider next steps or additional information needed to support small business participation in Federally funded intercity passenger rail projects.

**Appendix A – Report of Dr. Jon Wainwright: Evidence of Disparities and
Discrimination Impacting Minority-Owned and Women-Owned Business Enterprises
in the United States and in Industries Related to the Rail Transportation Sector**

Evidence of Disparities and Discrimination Impacting Minority-Owned and Women-Owned Business Enterprises in the United States and in Industries Related to the Rail Transportation Sector

Jon Wainwright, Ph.D.
Consulting Economist
Austin, Texas, USA

September 3, 2022

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Executive Summary

- This report analyzes recent evidence to document the extent to which minority-owned and women-owned business enterprises (MWBE) in the United States face disparities in public and private contracting markets and to determine the likelihood that such disparities result from discrimination. A particular focus is placed on those contracting markets where the U.S. Department of Transportation (USDOT) Federal Railroad Administration (FRA) grant funds are disbursed.
- The expert analysis in this report seeks to establish whether minority and female business owners continue to face discrimination and the lingering effects thereof by analyzing three major sources of statistical evidence: (1) evidence from disparity studies commissioned by state and local governments and other public contracting entities since 2010; (2) business market evidence from the U.S. Census Bureau's (Census Bureau) only major data collection effort dedicated to MWBEs—the *Annual Business Survey* Program; and (3) labor market and business market evidence for minorities and women from the Census Bureau's *American Community Survey* Program.
- Since the U.S. Supreme Court's decision in *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469 (1989) (*Croson*), courts have consistently held that disparity studies—which examine the utilization of MWBEs in public contracting relative to their availability in a particular geographic and contracting market—provide powerful evidence of business discrimination and its continuing effects supporting the use of remedial measures in public contracting.
- In Section II, I summarize and analyze the findings from 205 different disparity studies completed between 2010 and 2021, which collectively span 32 states and the District of Columbia and represent practically every industry segment in the U.S. economy. I found that 75 percent of the disparity indexes for MWBEs across all procurement categories were large and adverse, and that MWBEs facing large adverse disparities were utilized on average at just 32 percent of their availability, while median utilization was even lower at just 30 percent of availability. I found similarly large adverse disparities across all major industry sectors and for every MWBE group. This indicates that in the overwhelming number of public procurement markets, MWBEs are underutilized based on their availability.
- The Census Bureau's *Annual Business Survey* Program provides recent macroeconomic evidence regarding how MWBEs fare in the overall economy. In Section III, I examine this data to determine whether consistent disparities are observed in aggregate data across the U.S. economy. Regardless of whether all firms are considered, or only firms with paid employees, I found a consistent pattern of large, adverse, and statistically significant disparities in the performance of MWBEs across all major industry sectors and for every race and ethnicity group.

- Finally, in Section IV, using microeconomic data from the Census Bureau's *American Community Survey 5-year Public Use Microdata Sample*, I directly test the likelihood that race-neutral or gender-neutral factors can account for the large adverse disparities documented in the previous sections. Using econometric techniques to control for independent variables less likely or unlikely to be tainted by discrimination, I found that the disparities facing minority and women business owners remain large, adverse, and statistically significant in the vast majority of cases.
- Throughout my report, informed by a unique database of grantees, subgrantees, prime contractors, subcontractors, and vendors created during a prior examination of FRA grant activity, I also analyzed disparities and discrimination in the industries where most FRA grant funds have ultimately been spent. I found that the disparities facing MWBEs in these instances as well remain large, adverse, and statistically significant in the vast majority of cases.
- Based on the data and findings presented in this report, I conclude that there is strong evidence of large, adverse, and statistically significant disparities facing minority-owned and women-owned businesses in the United States in general, including in the industry segments relevant to FRA grant disbursement, and that these disparities cannot be adequately explained by differences between the relevant groups in measures of qualifications or productivity. These disparities are therefore strongly consistent with the presence of discrimination.

I. Introduction

A. Expert Qualifications

I am Jon Wainwright. From 2004 through 2018, I directed the national business discrimination practice for NERA Economic Consulting, Inc. In that capacity, I served as the project director and principal investigator for more than 40 studies of business discrimination, and prior to that time as principal or co-principal investigator on approximately a dozen additional business discrimination studies. I have authored two peer-reviewed monographs and several articles and white papers on this and related subjects, including *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*, published in 2010 by the *Transportation Research Board* of the *National Academy of Sciences*.¹

I hold a Ph.D. in economics from the University of Texas at Austin. My graduate curriculum included advanced courses in statistics, econometrics, and labor economics, among others. Prior to joining NERA in 1995, I served as a Research Associate Professor at the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin and also headed my own economic consulting firm. While at NERA, I conducted economic and statistical studies of discrimination for attorneys, corporations, governments, and non-profit organizations. I also conducted research and advised clients on statistical liability and economic damages issues arising from contracting activities, hiring, termination, performance assessment, compensation, and promotion. I have extensive experience producing, processing, and analyzing large and complex statistical databases, particularly public sector contracting and purchasing data, as well as with myriad socioeconomic and demographic datasets produced by the U.S. Census Bureau and other official statistical agencies.

I have been repeatedly qualified as an expert economic and statistical witness in both federal and state courts and have testified in these and related matters on 21 occasions. I have also testified before the United States Congress on these matters on five previous occasions.

From 2010 to 2013, I served as an economic and statistical expert on behalf of the U.S. Department of Justice (USDOJ), testifying in four cases challenging federal policies to promote participation by disadvantaged groups in public sector contracting activities. Specifically:

- *Kevcon, Inc. v. The United States* (United States Court of Federal Claims), concerning the Small Business Administration (SBA) 8(a) Business Development Program.²

¹ Wainwright and Holt (2010).

² Wainwright, Jon S. (2010).

- *Geyer Signal, Inc., and Kevin Kissell v. Minnesota Department of Transportation, et al.* (United States District Court for the District of Minnesota), concerning the U.S. Department of Transportation’s Disadvantaged Business Enterprise Program.³
- *Midwest Fence Corporation v. United States Department of Transportation, et al.* (United States District Court for the Northern District of Illinois, Eastern Division), concerning the U.S. Department of Transportation’s Disadvantaged Business Enterprise Program.⁴
- *Rothe Development, Inc. v. Department of Defense and Small Business Administration* (United States District Court for the District of Columbia), concerning the SBA 8(a) Business Development Program.⁵

Since 2021, I am also currently serving as an economic and statistical expert for USDOJ in an ongoing matter.⁶

My current curriculum vitae is attached to this report. The data sources and other material relied on in reaching my findings and conclusions are noted below in the body of my report and in the “References” section at the conclusion.

B. Report Overview

I was asked to analyze recent evidence to determine the extent to which minority-owned and women-owned business Enterprises (MWBE) in the United States face disparities relative to non-MWBEs in public and private contracting markets, and to determine the likelihood that documented disparities result from business discrimination. I consider in particular those contracting markets where U.S. Department of Transportation (USDOT) Federal Railroad Administration (FRA) grant funds were disbursed.

My conclusions are based on findings drawn from several sources of statistical evidence. First are numerous studies of MWBE participation in public sector contracting activity that have been performed in the wake of the U.S. Supreme Court’s ruling in *Croson*.⁷ These disparity studies examine statistical evidence of MWBE participation in public sector and private sector business activity compared to MWBE representation in the relevant business population.⁸ They also include qualitative, or anecdotal, accounts from both MWBEs and non-MWBEs regarding these disparities. Since *Croson*, courts have consistently held that

³ Wainwright, Jon S. (2012).

⁴ Wainwright, Jon S. (2013b), (2013c).

⁵ Wainwright, Jon S. (2013a).

⁶ *Ultima Services Corporation v. U.S. Department of Agriculture, U.S. Small Business Administration, Secretary of Agriculture, and Administrator of the Small Business Administration*, Case 2:20-cv-00041-DCLC-CRW, (E.D. Tenn., March 3, 2020).

⁷ 488 U.S. 469 (1989).

⁸ I conducted several of these studies personally in conjunction with NERA Economic Consulting.

such public sector disparity studies provide powerful evidence of business discrimination and its continuing effects, justifying the use of remedial measures in public contracting.

Without such remedial measures, observed disparities would be even more severe. I arrived at this conclusion by examining not only public sector contracting markets where affirmative measures such as the existing USDOT's Disadvantaged Business Enterprise (DBE) Program are found but also private sector contracting markets where such programs remain rare. My investigation therefore not only includes data from hundreds of public sector disparity studies, but also includes a great deal of information from U.S. Census Bureau (Census Bureau) data sources that examine markets largely un-remediated by such programs.

Specifically, I have also drawn findings from the primary sources of official statistical evidence that exist regarding MWBEs and their owners, namely the Census Bureau's new *Annual Business Survey* (ABS) Program and the *Public Use Microdata Samples* from its ongoing *American Community Survey* (ACS PUMS) Program. The ABS combines survey results and administrative records to identify the total number of MWBEs in the country and their gross sales and receipts, both in absolute terms as well as relative to non-MWBEs. For firms with paid employees, the ABS also counts employment levels and payroll. The ACS PUMS is an annual version of the former decennial census long form and provides evidence regarding patterns of business formation by minority and female entrepreneurs and their associated business earnings relative to their non-minority, male-owned counterparts. Coupled with the public sector disparity studies, the Census Bureau data provides the best available evidence as to how MWBEs fare in United States. For this report, the ACS PUMS data allowed me to directly test whether differences in qualifications and capacity can adequately explain the disparities observed across the 205 disparity studies and in the ABS, or whether the differences are more consistent with business discrimination.

Informed by a unique database of FRA grant activity including grantees, subgrantees, prime contractors, subcontractors, and vendors, I have also analyzed disparities within the industries that are most important to FRA grant activity. These analyses account for \$16.8 billion in grant awards and \$7.7 billion in associated payments made primarily between 2008 and 2016.⁹

Based on my findings, presented in detail below, I conclude that there is strong contemporary evidence of large, adverse, and statistically significant disparities facing MWBEs throughout the United States, in the economy as a whole, in the market segments that are relevant to public sector contracting and purchasing in general, including in those contracting markets where FRA grant funds are disbursed. Moreover, I find that these disparities result from business discrimination and its lingering effects since they cannot be adequately explained by differences between the relevant groups in factors less likely or unlikely to be tainted by the effects of business discrimination.

⁹ See Section I.C. Calculations by the Author from NERA Economic Consulting (2016).

C. FRA Grant Activity Database

During 2014-2016, I served as a subconsultant on a study examining contemporary FRA grant activity. Although the study was not completed, my own tenure on the project was primarily devoted to creating a large, comprehensive, database identifying the distribution of FRA grant funds among grantees, subgrantees, prime contractors, prime consultants, subcontractors, subconsultants, suppliers, and vendors. This grant activity database, which is not publicly available, includes \$16.8 billion in FRA grant awards and accounts for \$7.7 billion in associated payments made primarily between 2008 and 2016.¹⁰

1. Original Data Collection

The study was initiated in mid-2014 with a list of the entire universe of 405 open grants recorded in FRA's Grant Solutions system. Over 95 percent of these grants were awarded between 2010 and 2014. Together, they accounted for \$17.9 billion in public funding, of which \$11.6 billion, or 65 percent, was federal funding.

My team's primary research goal during the time of my service on the study was to identify the vast collection of subgrantees, prime contractors, prime consultants, subcontractors, subconsultants, suppliers, and other vendors who were ultimately paid by FRA grantees or their public sector partners to carry out FRA's grant mission. For each of these entities, we endeavored to identify their business name, their business location, their primary industry, and the total dollars that they were awarded and/or paid.

For each of the 405 individual grants we undertook a multi-stage process to identify the businesses and other entities that received funds, starting with the grantees themselves. In the first stage, we directly contacted each grantee and identified a total of 188 subgrantees and 3,543 prime contractors or consultants connected with the 405 grants. In the second stage, we directly contacted the subgrantees, prime contractors, and prime consultants, identified by the grantees in stage one, in order to identify their subcontractors, subconsultants, suppliers, and vendors. We focused this research effort on those subgrantees, prime contractors, and prime consultants who collectively accounted for the vast majority of grant award dollars.¹¹

Ultimately, starting from our list of 405 FRA grants with a combined value (including cost-sharing from other public partners) of \$17.9 billion, we successfully collected award and payment information for 344 of the 405 grants (85 percent) and accounted for \$16.8 billion of all dollars awarded (94 percent), and \$7.7 billion in payments, spanning 8,020 prime contracts and subcontracts.

¹⁰ *Ibid.*

¹¹ Specifically, we assumed no subcontract, supplier, or vendor activity for commodities contract awards below \$1 million, and for other contracts below \$50,000. Therefore, no additional data collection was required in order to identify industry or location for these contractors.

2. Scope of FRA Grant Programs

FRA disburses funds to grant recipients for a variety of purposes related to its mission. These include competitive discretionary programs and dedicated grant programs, as well as previously FRA administered loan guarantee programs.¹² For the 2008-2016 time period included in the FRA Grant Activity Database, Table 1.1 shows that approximately 86.7 percent of award dollars and 76.9 percent of paid dollars were disbursed to grant recipients through FRA’s competitive discretionary programs; 5.8 percent of awards and 10.3 percent of payments were disbursed through FRA’s dedicated grant programs, and 7.5 percent of awards and 12.8 percent of payments were disbursed through FRA’s loan guarantee programs. The last column reflects the percentage share of each spending category relative to the total dollars paid.¹³

Table 1.1. Distribution of Federal Railroad Administration Grant Activity Database Funds by Program, 2008-2016.

Federal Railroad Administration Programs	Total Dollars Awarded	Total Dollars Paid	Percentage Paid
<i>Competitive Discretionary Programs</i>			
High Speed Rail (HSR)	12,702,195,752	4,529,901,107	58.56%
Railroad Safety Technology (TEC)	289,828,250	265,714,396	3.43%
Railroad Development (RLD)	280,200,953	255,290,638	3.30%
Rail Line Relocation and Improvement (LRI)	213,591,361	183,285,949	2.37%
Hurricane Sandy Disaster Relief (Amtrak) (SAN)	360,552,196	182,217,757	2.36%
National Infrastructure Investment (TII)	223,148,189	167,316,059	2.16%
Intercity Passenger Rail (IPR)	149,615,860	140,321,982	1.81%
Surface Transp. Infrastr. Grants (Tiger I) (TGR)	227,794,170	126,886,568	1.64%
Railroad Research & Development (RRD)	103,880,651	75,219,941	0.97%
Positive Train Control Systems (RRR)	18,352,004	18,259,193	0.24%
Railroad Safety Risk Reduction (RSR)	5,967,115	5,814,345	0.08%
Security (SEC)	1,293,646	1,222,189	0.02%
Maglev Project Selection (MPS)	322,730	125,538	0.00%
<i>Dedicated Grant Programs</i>			
Amtrak (AMT)	973,167,952	795,937,557	10.29%
Operation Lifesaver (OLS)	1,353,334	0	0.00%
<i>Loan Guarantee Programs</i>			
Railroad Rehabilitation & Improvement Financing (RRIF)	1,269,712,492	988,617,362	12.78%
TOTAL	16,820,976,656	7,736,130,580	100.00%

Source: Calculations by the Author from NERA (2016). Note: Numbers may not sum to total due to rounding.

¹² While the loan guarantee programs are no longer administered by FRA, they were a part of FRA’s funding at the time the open grant information was extracted from Grant Solutions, and are therefore included in my analysis.

¹³ For a more detailed discussion of FRA grant spending, see FRA (2022), Ch. 2.

3. Industries Benefitting the Most From FRA Grant Funding

Of the public dollars in the FRA Grant Activity Database that were ultimately spent on contracting and procurement, many different industry sectors, industry subsectors, and industry groups were involved. The FRA Grant Activity Database recorded contract and procurement spending by grant recipients in 21 of 23 NAICS Industry Sectors (91.3%), 63 of 91 NAICS Industry Subsectors (69.2%), and 166 of 303 NAICS Industry Groups (54.8%).¹⁴

- Of the 21 Industry Sectors recorded in the FRA Grant Activity Database, five (23.8%) accounted for approximately 95% of all contracting and procurement spending (See Table 1.2).
- Of the 63 Industry Subsectors recorded in the FRA Grant Activity Database, 14 (22.2%) accounted for approximately 95% of all contracting and procurement spending (See Table 1.3).
- Of the 166 Industry Groups recorded in the FRA Grant Activity Database, 33 (19.9%) accounted for approximately 95% of all contracting and procurement spending (See Table 1.4).

Table 1.2. Distribution of Recipient Contracting and Procurement Spending, FRA Grant Activity Database, by Industry Sector.

NAICS Industry Sector	NAICS Sector Description	Percentage of Award Spending	Percentage of Paid Spending
23	Construction	33.08%	36.55%
54	Professional, Scientific, and Technical Services	24.89%	25.28%
33	Manufacturing (part)	19.21%	16.86%
48	Transportation	17.04%	14.44%
42	Wholesale Trade	2.05%	2.61%
	<i>Balance of Spending</i>	3.72%	4.27%
	TOTAL	100.0%	100.0%

Source and Notes: See Table 1.1.

¹⁴ NAICS stands for North American Industry Classification System and has been the standard system of industrial classification for the United States since replacing the Standard Industrial Classification (SIC) system in 1997. NAICS divides the economy into 20 sectors. The industries within each sector are grouped according to their production processes. Each NAICS code has 6 digits at the most detailed level. The first two identify industry sectors. The first three identify industry subsectors. The first four identify industry groups, and the fifth and sixth digits identify individual industries. NAICS Industry Sectors, Subsectors, and Groups correspond to 2-digit, 3-digit, and 4-digit NAICS codes, respectively. For more information, see U.S. Office of Management and Budget (2017).

Table 1.3. Distribution of Recipient Contracting and Procurement Spending, FRA Grant Activity Database, by Industry Subsector.

NAICS Industry Sub-sector	NAICS Sector Description	Percentage of Award Spending	Percentage of Paid Spending
541	Professional, Scientific, and Technical Services	24.89%	25.28%
237	Heavy and Civil Engineering Construction	19.85%	22.63%
482	Rail Transportation	16.12%	13.30%
336	Transportation Equipment Manufacturing	12.72%	8.84%
238	Specialty Trade Contractors	9.61%	10.70%
236	Construction of Buildings	3.62%	3.22%
334	Computer and Electronic Product Manufacturing	2.56%	3.42%
423	Merchant Wholesalers, Durable Goods	2.02%	2.57%
332	Fabricated Metal Product Manufacturing	1.68%	1.99%
331	Primary Metal Manufacturing	1.28%	1.55%
562	Waste Management and Remediation Services	0.58%	0.58%
531	Real Estate	0.56%	0.59%
488	Support Activities for Transportation	0.51%	0.67%
335	Electrical Equipment, Appliance, and Component Manufacturing	0.47%	0.63%
	<i>Balance of Spending</i>	3.54%	4.03%
	TOTAL	100.0%	100.0%

Source and Notes: See Table 1.1.

Table 1.4. Distribution of Recipient Contracting and Procurement Spending, FRA Grant Activity Database, by Industry Group.

NAICS Industry Group	NAICS Sector Description	Percentage of Award Spending	Percentage of Paid Spending
5413	Architectural, Engineering, and Related Services	21.51%	22.13%
4821	Rail Transportation	16.12%	13.30%
3365	Railroad Rolling Stock Manufacturing	12.62%	8.70%
2379	Other Heavy and Civil Engineering Construction	9.63%	11.87%
2373	Highway, Street, and Bridge Construction	9.21%	9.45%
2382	Building Equipment Contractors	3.92%	3.59%
2389	Other Specialty Trade Contractors	3.91%	5.07%
2362	Nonresidential Building Construction	3.62%	3.22%
3342	Communications Equipment Manufacturing	1.94%	2.66%
5416	Management, Scientific, and Technical Consulting Services	1.91%	1.89%
2381	Foundation, Structure, and Building Exterior Contractors	1.39%	1.62%
3323	Architectural and Structural Metals Manufacturing	1.21%	1.43%
2371	Utility System Construction	0.96%	1.24%
3311	Iron and Steel Mills and Ferroalloy Manufacturing	0.79%	1.09%
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	0.62%	0.79%
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	0.55%	0.66%
5629	Remediation and Other Waste Management Services	0.45%	0.41%
4233	Lumber and Other Construction Materials Merchant Wholesalers	0.42%	0.54%
5417	Scientific Research and Development Services	0.41%	0.18%
3353	Electrical Equipment Manufacturing	0.41%	0.57%
4236	Household Appliances and Electrical and Electronic Goods Merchant Wholesalers	0.40%	0.53%
3315	Foundries	0.40%	0.36%
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	0.38%	0.49%
2383	Building Finishing Contractors	0.38%	0.42%
4882	Support Activities for Rail Transportation	0.38%	0.50%
5411	Legal Services	0.38%	0.39%
5312	Offices of Real Estate Agents and Brokers	0.35%	0.36%
3273	Cement and Concrete Product Manufacturing	0.34%	0.37%
5415	Computer Systems Design and Related Services	0.31%	0.36%
3339	Other General Purpose Machinery Manufacturing	0.31%	0.19%
2123	Nonmetallic Mineral Mining and Quarrying	0.30%	0.36%
5242	Agencies, Brokerages, and Other Insurance Related Activities	0.28%	0.39%
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	0.20%	0.25%
	<i>Balance of Spending</i>	3.97%	4.62%
	TOTAL	100.0%	100.0%

Source: See Table 1.1.

D. Minority-Owned and Women-Owned Business Enterprises in the United States Face Substantial and Significant Disparities

There is strong evidence of significant disparities facing MWBEs in the United States. As other researchers have noted, and as demonstrated in many of the studies, reports, and other testimony submitted to Congress, individuals from minority groups and women have been historically and consistently disadvantaged by the effects of discrimination in business enterprise. Despite progress in some areas, these disadvantages are still present in business and contracting markets.¹⁵

A note about terminology—the DOT DBE regulation at 49 C.F.R. §26.5 uses specific terminology for racial groups.¹⁶ Throughout my analysis I refer to these racial groups based on the more all-encompassing terms used in the Census Bureau data of Blacks, Hispanics, Native Americans, and Asians. Occasionally, my terminology may vary slightly to reflect the terminology used in the database I am analyzing.

The disparities facing minorities and women are much greater in business enterprise than they are in any most other aspects of economic activity, even though these other disparities remain considerable. For example, for the nation as a whole:¹⁷

- Blacks are 13.3 percent of the general population, 12.6 percent of the civilian labor force, and 12.2 percent of total employment. However, at the most recent complete count, Blacks owned only 10.3 percent of the nation’s businesses, and earned a mere 1.3 percent of all business sales and receipts.
- Hispanics are 18.2 percent of the general population, 17.1 percent of the civilian labor force, and 17.0 percent of total employment. However, at last count Hispanics owned only 13.5 percent of the nation’s businesses and earned just 3.9 percent of all business sales and receipts.
- Native Americans are 1.3 percent of the general population, but they are only 0.36 percent of the business population and earned just 0.24 percent of all business sales and receipts.

¹⁵ See, generally, U.S. Department of Justice (2022a); U.S. Department of Justice (2022b); U.S. Small Business Administration (2010). See also U.S. Department of Commerce (2015); Rubinovitz (2013a); Rubinovitz (2013b); Lowrey (2010a); Lowrey (2010b); Marshall (2002); Wainwright (2000).

¹⁶ Under 49 CFR § 26.5, recipients must rebuttably presume that citizens of the United States (or lawfully admitted permanent residents) who are women, Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, or other groups found to be disadvantaged by the SBA, are socially and economically disadvantaged individuals. Most disparity studies did not distinguish Asian-Pacific and Subcontinent Asian. Those two groups are therefore frequently combined together.

¹⁷ General population statistics are from the U.S. Census Bureau (2017a); civilian labor force and total employment figures are from the Bureau of Labor Statistics (2018a, 2018b, 2018c); business enterprise statistics are from the 2018 *Annual Business Survey Program*, U.S. Census Bureau (2021a).

- Asians represent 6.1 percent of the general population, 6.2 percent of the civilian labor force, and 6.2 percent of total employment. While Asians own 8.5 percent of the nation's businesses, they earned only 6.2 percent of business sales and receipts.
- Women represent 50.9 percent of the general population, 46.9 percent of the civilian labor force, and 46.9 percent of total employment. However, they are only 38.3 percent of the business population and earn only 13.4 percent of business sales and receipts.

Even those minorities and women who manage against the odds to start their own businesses must compete in a business enterprise system that has long been dominated by non-minority male-owned firms.¹⁸ The advantages enjoyed by non-minority males in this context are evident in the statistical and economic data. In a groundbreaking pair of studies of employer business closure rates, Professor Ying Lowrey documented that existing Black-owned, Hispanic-owned, Asian and Pacific Islander-owned, and women-owned businesses across a wide variety of industry groups suffered substantially higher closure rates than did their non-minority male counterparts.¹⁹ More recently, Professor Robert Fairlie has shown that Black, Hispanic, Asian, Native American, and female small businesses closed at higher rates than their non-minority male counterparts after the advent of widespread COVID-19 induced shelter-in-place restrictions in April of 2020.²⁰

Even among larger firms, such as those with one or more paid employees, the disparities between minorities and women, on the one hand, and non-minority males, on the other, are stark. In 2017, for every dollar in sales and receipts earned by non-minority male-owned employers, Black-owned employers earned 45 cents, Hispanic-owned employers earned 57 cents, Asian and Pacific Islander-owned employers earned 63 cents, American Indians and Alaska Native-owned employers earned 67 cents, and women-owned employers earned 61 cents.²¹

The overwhelming majority of businesses have less than 10 employees, and only a small fraction has more than 500 employees. MWBEs are over-represented in the former category and under-represented in the latter. For the smallest firms in 2017, 78 percent of non-minority male-owned firms had less than 10 employees, compared to 82.1 percent of Black-owned firms, 82.3 percent of Hispanic-owned firms, 81.2 percent of Asian and Pacific Islander-owned firms, 82.2 percent of American Indian and Alaska Native-owned firms, and 82.2 percent of women-owned firms.²² For the largest firms in 2017, 0.21 percent of non-minority male-owned firms had 500 or more employees, compared to 0.12

¹⁸ See, e.g., Wainwright (2000), pp. 17-22, and the studies cited therein.

¹⁹ Lowrey, Ying (2010a), pp. 20-21; Lowrey, Ying (2010b), p. 16. The comparison was between non-publicly held establishments that were in business in 2002 but had closed by 2006 versus all non-publicly held establishments in business in 2002.

²⁰ See Fairlie, Robert (2020).

²¹ U.S. Census Bureau (2020a, 2020b). For employer firms, the data are from the 2017 Annual Business Survey, released in May 2020.

²² U.S. Census Bureau (2018b, 2018c, 2018d).

percent of Blacks, 0.1 percent of Hispanics, 0.07 percent of Asians and Pacific Islanders, 0.11 percent of Native Americans, and 0.1 percent of women.²³

In the remaining sections of this report, I review contemporary quantitative evidence of disparities facing MWBEs in the United States in detail. I also specifically examine those industries and regions that account for the vast majority of recent FRA grant activity. Using a unique database consisting of 205 studies of public sector contracting activity published between 2010 and 2021, recent official statistics regarding MWBEs and their owners, and a detailed database of FRA grant activity, I document the breadth and depth of such disparities and also test whether they can be adequately explained by factors other than business discrimination.²⁴

²³ *Ibid.*

²⁴ Note that these public sector contracting studies are not limited to the rail transportation sector. Because rail transportation is not currently subject to DBE requirements, disparity studies directly for rail transportation do not exist. However, public sector contracts are relevant nonetheless because similar industries are reflected in studies across public sector contracting that are also informative in the rail transportation contracting context.

II. Studies Conducted Since 2010 Document Large Adverse Disparities Facing Minority-Owned and Women-Owned Businesses

A. Introduction

Since the U.S. Supreme Court decision in *City of Richmond v. J.A. Croson Co.*,²⁵ the disparities facing minority and women business owners in the United States have been documented in more than 500 studies and related research reports.²⁶ This is because, since *Croson*, courts have consistently held that disparity studies provide powerful evidence of business discrimination and the continuing effects of business discrimination justifying the use of remedial measures in public contracting.

Much of this material is already before Congress,²⁷ including “Congressional hearings and reports that address the barriers faced by minority- and women-owned businesses; government-produced and government-sponsored reports on the characteristics and dynamics of minority- and women-owned small businesses; academic literature by social scientists, economists, and other academic researchers that focuses on the manner in which various forms of discrimination act together to restrict business opportunities for minorities and women; and disparity studies commissioned by state and local governments to determine whether there is evidence of race and sex discrimination in their contracting markets.”²⁸

Table 2.1 below identifies 205 different disparity studies of minority business enterprise completed between 2010 and 2021, which collectively span 32 states and the District of Columbia and represent nearly every industry segment in the U.S. economy.²⁹ In order to summarize and analyze the disparity findings across the 205 studies, I assembled all the availability and utilization statistics from these studies into a database, as well as all the disparity indexes derived from them.

B. Overview of Disparity Study Methods

Before proceeding to a summary and analysis of the evidence of MWBE disparities in the United States, it is helpful to provide a short overview of what disparity studies are and the types of evidence they typically contain. Below, I primarily describe the key elements

²⁵ 488 U.S. 469 (1989).

²⁶ Wainwright and Holt (2010, 12, n. 41) noted 300 studies published between 1989 and 2008. I have catalogued an additional 250 studies published between 2009 through 2021.

²⁷ See, e.g., U.S. Department of Justice (2022); U.S. Small Business Administration (2010).

²⁸ U.S. Small Business Administration (2010, p. 2). Most recently, see U.S. Congress (2021, p. 3) (noting 40 recent disparity studies placed into the *Congressional Record*).

²⁹ Some disparity studies were published in multiple volumes, typically because multiple government entities were included, various appendices were included, or both. The 205 studies examined here therefore include 214 total volumes with relevant material.

included in my own past disparity studies. Many of these elements are found in other consultants' studies as well.³⁰ The key elements of a disparity study include:

- Determining the appropriate product market and geographic market area;
- Developing availability and utilization statistics;
- Determining public entity contracting disparities;
- Calculating economy-wide disparities; and
- Collecting anecdotal evidence in order to check for consistency with statistical findings.

1. Determination of Relevant Geographic Market Area

The relevant geographic market area identifies those vendor locations that account for approximately 75 percent or more of contract and subcontract³¹ dollar expenditures in the project database for the study period. Firms in these locations are included for analysis in each study. Each study contains a section describing how the government entity's contract and subcontract data were collected and used to make this determination and showing the results.

Location is determined by linking the zip code of the contractor or subcontractor to the associated state and county. For multi-establishment firms, location does not have to be defined as the headquarters of the firm. If the firm has established a local presence, it is appropriate to use that address for purposes of market area determination.

The major contracting and procurement categories typically examined include construction; architecture, engineering, and other construction-related professional services (AECRS); other professional services; general services; and commodities, supplies, and equipment (CSE). In some disparity studies, separate geographic market determinations are made for each major procurement category, as well as for a combined category.³²

2. Determination of Relevant Product Market

The relevant product market identifies the detailed industries that account for approximately 75 percent or more of contract and subcontract dollar expenditures in the project database for the study period. Firms in these industries are included for analysis in each study. The amounts accounted for by each industry are given in dollars and also as a percentage of overall spending. The percentage distribution by industry is used elsewhere

³⁰ These are discussed in more detail in Wainwright and Holt (2010, 29–53).

³¹ By “subcontract” I intend to include subcontractors, subconsultants, suppliers, and in general, any firm that is paid by the prime contractor or vendor to provide goods or services.

³² See, e.g., Wainwright and Holt (2010, 29).

in the study to calculate overall MWBE availability as a dollar-weighted average of detailed industry level MWBE availability. Detailed industry affiliation is determined by assigning a NAICS code, as appropriate, to each establishment in the project database.

3. Determination of MWBE Availability

MWBE availability is a statistic expressing the percentage of businesses in a relevant geographic and product market that are owned by minorities and women.

To estimate availability, my own studies used a “custom census” designed to provide an accurate calculation of the current availability of MWBEs in the relevant market. Other consultants have employed different methods for measuring availability, including the use of vendor lists, bidder lists, and other types of Census Bureau data, as well as variations of the custom census. A variety of approaches to measuring availability are reflected in the disparity studies identified in Table 2.1.

The custom census approach employs a seven-step analysis that: (1) creates a database of representative public contracts, (2) identifies the appropriate geographic market for the entity’s contracting activity, (3) identifies the appropriate product market for the entity’s contracting activity, (4) counts all businesses in those relevant markets, (5) identifies listed minority-owned and women-owned businesses in the relevant markets, (6) verifies the ownership status of listed minority-owned and women-owned businesses, and (7) verifies the ownership status of all other businesses. This method results in an overall MWBE availability number that is a dollar-weighted average of all the underlying industry availability numbers, with larger weights applied to industries with relatively more spending and lower weights applied to industries with relatively less spending. The availability figure can also be sub-divided by race, ethnicity, and gender group, where required.³³

In addition to the custom census, another relatively common approach is to use internal agency lists of contractors and subcontractors, such as certified MBE/WBE directories, bidders lists, prequalified contractor lists, licensed contractor lists, plan holder lists, or lists of winning bidders. Internal lists are sometimes supplemented with lists gathered from other sources. I refer to this as the “bidders list approach.”

Still other methods of estimating availability employ variations on the custom census approach or the bidders list approach that attempt to control for factors that are themselves likely to be directly and adversely impacted by business discrimination if it exists in the relevant markets.³⁴

³³ See Wainwright and Holt (2010, 33-44) for an extended discussion of the custom census approach.

³⁴ Firm revenues, employment size, bonding limits, and similar “capacity” measures are all likely to be influenced by the presence of discrimination if it exists in the relevant markets. Consequently, building such metrics into the measure of availability will cause any resulting disparity statistic to be understated. That is, the built-in downward bias in the availability measure may lead to a conclusion of no significant disparity when, in fact, a disparity exists.

4. Determination of Agency MWBE Utilization

MWBE utilization is a statistic showing the fraction of public contracting and procurement dollars in a particular market that is spent with MWBEs.

Project databases assembled for disparity studies typically detail several years of recent contract and subcontract activity for both MWBEs and non-MWBEs. Utilization statistics—that is, the percentage of contract and subcontract dollars spent with MWBEs—can be calculated along a variety of dimensions, including by race and ethnicity, by sex, by time period, and by major procurement category.

Some disparity studies conduct separate utilization analyses for prime contracts versus subcontracts. Others conduct utilization analyses for both prime contracting and subcontracting combined, which often provides the fullest picture of MWBE participation relative to an agency’s spending. If the project database has been coded by NAICS, utilization statistics can also be produced for detailed industry categories. In a typical study, utilization statistics are then combined with availability measures to determine disparity indexes or disparity ratios.

5. Determination of Agency MWBE Disparity

A disparity index or disparity ratio is simply a comparison of MWBE utilization to MWBE availability for a given group in a given geographic and product market for a given public agency. The only difference between a disparity index and a disparity ratio is that the former benchmarks parity at a level of 100 while the latter benchmarks it at a level of 1. Testing a disparity index or disparity ratio for substantive and statistical significance allows us to identify, respectively, whether a disparity is large and whether it could have arisen due to random chance alone.³⁵

It is important to note that many of the studies in Table 2.1 tested for disparities on contracts and subcontracts that were already subject to race- and/or gender-conscious contracting aspirations or requirements of some type. This includes those subject to USDOT DBE requirements via receiving federal funding from the DOT operating administrations who currently have DBE programs in place, or state or local race- or gender- conscious requirements. If such studies find “overutilization” in certain categories, policy makers or courts may be inclined to conclude that there is an absence of business discrimination. This would be premature, however, because the results of MWBE utilization on projects with MWBE contracting goals likely include the positive impact of remedial efforts by the public sector. Of course, if adverse disparities are observed even in cases where race- or gender-conscious efforts are present, then the case for an inference of business discrimination is stronger.³⁶

³⁵ Typically, for a given disparity statistic to be considered “statistically significant” there must be a substantial probability that the value of that statistic is unlikely to be due to chance alone.

³⁶ For example, as documented in NERA’s disparity studies, MWBEs who are used by prime contractors on projects with MWBE goals nevertheless frequently report that they are rarely used, *or even solicited*, for projects without MWBE goals in the same jurisdiction. *See, e.g.,* Memphis-Shelby County Airport

6. Determination of Economy-Wide Disparity Analyses for the Relevant Markets

Disparity studies often include a variety of additional statistical analyses that assess how minorities and women fare in several key aspects of business enterprise activity. This type of analysis helps to determine whether an agency is passively participating in an industry segment tainted by business discrimination. Evidence of economy-wide business discrimination in disparity studies can take several forms, including but not limited to:

- Regression analyses comparing business formation rates between minorities, women, and similarly situated non-minority males in the relevant markets, using the ACS PUMS.³⁷
- Regression analyses comparing the earnings of minority and female business owners to those of similarly situated non-minority male business owners in the relevant markets, using the ACS PUMS.
- Regression analyses comparing denial rates on commercial loans between minority, female, and similarly situated non-minority male business owners, using data from the *Survey of Small Business Finances* produced by the Federal Reserve Board and the Small Business Administration.
- Disparity indexes comparing market share of revenues to market share of business population between minority, female, and non-minority businesses, using data from the Census Bureau's *Survey of Business Owners* or its successor *Annual Business Survey Program*.
- Disparity indexes comparing minority and female utilization to availability, using participation data on private sector construction projects from sources such as *Reed Construction Data* or *F. W. Dodge* or public agency contracting permit databases.

7. Collection of Anecdotal Evidence

Anecdotal evidence consists of personal accounts from business owners, MWBE and non-MWBE alike, concerning the barriers, challenges, and successes they experience in the marketplace.

Authority 2013, pp. 220-221; Massachusetts Division of Capital Asset Management and Maintenance 2017, pp. 209-211; State of Maryland 2017, pp. 265-266; City of Austin 2017, pp. 305-307.

³⁷ Regression analysis is a type of statistical analysis that examines the correlation between two variables ("regression") or three or more variables ("multiple regression" or "multivariate regression") in a mathematical model by determining the line of best fit through a series of data points. In simpler terms, regression analysis is a statistical technique allowing the comparison between certain outcomes, such as the level of wages, the extent of business formation, the level of business earnings, or the extent of loan denials, and MWBE status, while holding other, potentially non-discriminatory factors, such as geographic location, industry affiliation, education, age, or balance sheets, constant.

Anecdotal evidence is an important part of a disparity study because it can confirm or conflict with the trends shown in the statistical analyses. Anecdotal evidence can be collected in a variety of formats including mail or telephone surveys, individual interviews, group interviews or focus groups, and public hearings or meetings. All of these approaches can produce qualitative evidence of barriers to full and fair participation by MWBEs in public contracting processes. Some disparity studies often employ multiple approaches to gathering this type of evidence, *e.g.*, surveys and focus groups and individual interviews.

Studies typically gather evidence from MWBEs as well as non-MWBEs and try to document the extent to which barriers reported by anecdotal sources are the result of business discrimination beyond the usual challenges facing all businesses related to obtaining capital, navigating business networks, finding suppliers, managing cash flow, etc.³⁸ As a measure of continuing barriers to full participation in the market, special emphasis is often placed on the experiences of MWBEs that desire to obtain prime contracts and subcontracts. Studies typically strive to have a wide variety of interviewees, survey participants, etc., to ensure representation of all MWBE and non-MWBE types and all major procurement categories.

C. Data and Methods

1. Key Parameters

Table 2.1 below identifies 205 different studies of how MWBEs fare in public contracting completed by 12 different authors between 2010 and 2021. The study authors are:

- BBC Research & Consulting ("BBC") (45 studies);
- Colette Holt & Associates ("CHA") (28 studies);
- Econsult Solutions, Inc. ("ECONSULT") (9 studies);
- Griffin & Strong, PC ("GSPC") (17 studies);
- Keen Independent Research, LLC ("KEEN") (25 studies);
- Mason Tillman Associates, Ltd ("MTA") (23 studies);
- MGT of America ("MGT") (32 studies);
- Miller3 Consulting Inc. ("MILLER3") (2 studies);
- NERA Economic Consulting ("NERA") (21 studies);
- Rosales Business Partners, LLC ("ROSALES") (1 study);

³⁸ Indeed, my own work on NERA's disparity studies has shown that although *all* small businesses tend to face such problems, MWBEs encounter them with greater frequency and intensity than do non-MWBEs in the same jurisdiction. *See, e.g.*, City of Minneapolis 2010, p. 251; Jackson Municipal Airport Authority 2012, p. 272; City of San Antonio 2015, p. 265-266; State of Maryland 2017, p. 265.

- Texas A&M University, Corpus Christi - South Texas Economic Development Center ("TXAMCC") (1 study); and
- The Roy Wilkins Center for Human Relations and Social Justice ("RWC") (1 study).

To summarize and analyze the disparity findings across the 205 studies, I assembled all the availability and utilization statistics from these studies into a database, as well as all the disparity indexes derived from them. The resulting file contains almost 34,000 records.³⁹ Each record includes an availability statistic, a public sector utilization statistic, and the resulting disparity index.

In addition to study author, each record in the database is categorized along several key dimensions. These are provided for every record and include:

- Public contracting agency name and geographic location;
- Race and sex group (minorities, non-minority females, non-minority males);
- Detailed race/sex group (Black, Hispanic, Asian, Native American, minorities as a group, non-minority females, minorities and women as a group, non-minority males);
- Major procurement category (construction, AECS, professional services, general services, CSE, and overall);⁴⁰
- Contractor level (prime contractors and subcontractors combined, prime contractors alone, subcontractors alone);
- Public funding source (*e.g.*, federal, state, or local, mixed sources, combined sources);
- Other key parameters including study publication year, contracting period start and end year, accounting year type (calendar, state fiscal, federal fiscal), and total dollars of spending accounted for by the study.

³⁹ The database also includes approximately 101K records classified by detailed procurement category (varying from the 2- or 3-digit NAICS level down to 6-digit NAICS level). Approximately 98 percent of those records originate from one study author (NERA).

⁴⁰ Different authors used somewhat varying major procurement categories to present their results. I created indicator variables for Construction; AECS; Professional Services (other than AECS); General Services; Goods; and All Industries Combined in order to group results as consistently as possible across all studies in the database.

2. Breadth and Depth of Coverage

Collectively, the 205 studies identified in Table 2.1 examined MWBE participation in public contracting and procurement for hundreds of different public entities and public funding sources.⁴¹ Combined, the 2010-2021 studies account for more than \$700 billion in public spending across 32 states and the District of Columbia.⁴² If only the 2017-2021 studies are considered, there are 87 studies spanning 28 states accounting for approximately \$400 billion in public spending.⁴³ A substantial number of the studies were commissioned by, or included, agencies that were recipients or subrecipients of FRA grants.⁴⁴

a. By government type

A wide variety of state and local government types are represented, including:

- Cities (*e.g.*, Arlington, Asheville, Atlanta, Austin, Boston, Charlotte, Chattanooga, Chicago, Cincinnati, Cleveland, Columbus, Dallas, Dayton, Fort Worth, Frederick, Greensboro, Houston, Indianapolis, Jacksonville, Jersey City, Kansas City, Madison, Memphis, Minneapolis, New Orleans, New York, Oakland, Pensacola, Philadelphia, Portland, Portsmouth, St. Paul, San Antonio, San Diego, Savannah, Tacoma, Tulsa, Virginia Beach, and Winston-Salem);
- Entire states (*e.g.*, Colorado, Indiana, Maryland, New York, Rhode Island, Virginia, and Washington);
- State transportation departments, (*e.g.*, Alaska, Arizona, California, Georgia, Hawaii, Idaho, Illinois, Maryland, Minnesota, Missouri, Montana, Nevada, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, and Washington);
- Airports (*e.g.*, airports in California, Florida, Minnesota, Mississippi, New Jersey; New York; Tennessee; Texas, and Washington);
- Transit Agencies (*e.g.*, transit agencies in California, Illinois, Missouri, New Jersey, Nevada, Texas, Washington)
- State general administration and purchasing departments (*e.g.*, Illinois, Indiana, Massachusetts, Minnesota, Missouri, North Carolina, and Pennsylvania);
- Counties (*e.g.*, Baltimore, MD; Bexar, TX; Broward, FL; Cook, IL; Cuyahoga, OH; Dallas, TX; Harris, TX; Hennepin, MN; Jackson, MO; Mecklenburg, NC; Miami-

⁴¹ Twenty-one of these studies were conducted under my direction at NERA. Over the course of those studies, I personally analyzed roughly \$68 billion worth of public sector spending across more than 100,000 prime contracts or purchases and 154,000 subcontracts.

⁴² Author's calculations from the disparity study database.

⁴³ *Ibid.*

⁴⁴ See Section II.C.2.d., below.

Dade, FL; Montgomery, MD; Palm Beach, FL; Shelby, TN; St. Louis, MO; and Travis, TX); and

- Other special districts including schools, community colleges, universities, public utilities, housing authorities, and others.

b. By industry

Collectively, the 205 studies identified examined contracts and procurements representing practically every industry segment in the U.S. economy. These are grouped generally into major procurement categories of construction, AECRS, professional services (other than AECRS), general services, and CSE. This comprehensive group of procurement categories reflects the fact that public agency contractors, and their prime contractors, subcontractors, and vendors, purchase goods and services from businesses in practically every major industry sector in the economy. For example, NERA's most recent study for the State of Maryland recorded spending with 695 distinct industries across the five-year study period.⁴⁵

c. By geography

In addition to covering almost all major industry sectors, the studies in Table 2.1 span the country geographically, representing all four Census Regions (Northeast, South, Midwest, and West) and all nine Census Divisions (New England, Middle Atlantic, South Atlantic, East South Central, West South Central, Midwest, West North Central, Mountain, and Pacific). In all, 32 states plus the District of Columbia are represented. Together, these states hold over 85 percent of the general population of the United States.⁴⁶

d. FRA grantees and subgrantees

Finally, a substantial share of the 205 studies (47, or 23%) were commissioned by and/or included state and local governments that were themselves active FRA grantees and/or subgrantees during the time period covered in the FRA Grant Activity Database.⁴⁷ Together, these 47 studies accounted for between \$397.8 billion and \$418.1 billion in public spending, or slightly more than half of the total studied.

FRA Grantees represented in the Disparity Study Database include:

- Alaska DOT & Public Facilities
- Arizona DOT
- California DOT
- California High-Speed Rail Authority

⁴⁵ NERA Economic Consulting (2017, p. 45). Public sector spending is not typically distributed evenly among industries, however. In the State of Maryland's case, 261 industries (38 percent) accounted for 99 percent of all spending over the study period.

⁴⁶ U.S. Census Bureau (2019a, 2019b).

⁴⁷ See above, Section I.C, for a detailed description of the FRA Grant Activity Database.

- Georgia DOT
- Idaho Transportation Department
- Illinois DOT
- City of Indianapolis
- State of Indiana (including Indiana DOT)
- State of Maryland (including Maryland DOT)
- Maryland DOT
- Minnesota DOT
- Missouri DOT
- North Carolina DOT
- NJ Transit
- Nevada DOT
- City of New York
- State of New York (including New York State DOT)
- Ohio DOT
- Oklahoma DOT
- Oregon DOT
- Pennsylvania DOT
- State of Rhode Island (including Rhode Island DOT)
- State of Texas (including Texas DOT)
- Texas DOT
- Commonwealth of Virginia (including Virginia DOT)
- Washington State DOT

FRA Subgrantees represented in the Disparity Study Database include:

- Orange County Transportation Authority (California)
- San Diego Association of Governments (California)
- Chicago Metra (Illinois)
- City of Portland (Oregon)
- Portland Development Commission (Oregon)
- City of Houston (Texas)

Table 2.1. Disparity Studies Published in the United States Between 2010-2021.

State	Subdivision	Authors	Publication Year	Study Period
AK	Alaska Dept. of Transportation & Public Facilities*	MGT	2014	2007-2011 FF
AK	Alaska Dept. of Transportation & Public Facilities*	MGT	2021	2015-2019 SF
AZ	Arizona Department of Transportation*	KEEN	2015	2008-2013 SF
AZ	Arizona Department of Transportation*	KEEN	2020	2014-2018 FF
CA	Burbank-Glendale-Pasadena Airport Authority	BBC	2012	2005-2009 CY
CA	California Department of Transportation*	BBC	2012	2007-2010 CY
CA	California Department of Transportation*	BBC	2014	2008-2013 FF
CA	California Department of Transportation*	BBC	2021	2015-2019 CY
CA	California Department of Transportation (Caltrans)*	BBC	2017	2011-2014 CY
CA	City of San Diego	BBC	2021	2015-2019 SF
CA	Imperial County	BBC	2014	2008-2012 CY
CA	L. A. County Metro. Transp. Auth. (LA Metro)	BBC	2018	2011-2015 CY
CA	L. A. County Metro. Transp. Auth. (LA Metro)	BBC	2010	2003-2007 CY
CA	Orange County Transportation Authority*	BBC	2010	2003-2007 CY
CA	San Diego Association of Governments*	BBC	2014	2008-2012 CY
CA	San Diego Association of Governments*	BBC	2010	2003-2007 CY
CA	San Diego County Regional Airport Authority	BBC	2010	2003-2006 CY
CA	San Diego Metropolitan Transit System	BBC	2010	2003-2006 CY
CA	John Wayne Airport County of Orange California	MGT	2016	2010-2015 SF
CA	California High-Speed Rail Authority*	MTA	2014	2007-2013 SF
CA	City of Oakland	MTA	2020	2012-2016 SF
CA	L. A. County Metro. Transp. Auth. (LA Metro)	MTA	2013	2008-2010 CY
CA	San Francisco Bay Area Rapid Transit District	MILLER3	2017	2011-2014 SF
CA	San Francisco Municipal Transp. Agency (Muni)	ROSALES	2015	2009-2015 FF
CO	City and County of Denver	BBC	2018	2012-2016 CY
CO	State of Colorado	KEEN	2020	2015-2018 SF
CO	City and County of Denver	MGT	2013	2005-2010 CY
CO	Denver Public Schools	MGT	2015	2009-2013 CY
DC	Washington Suburban Sanitary Commission	MGT	2016	2010-2014 SF
DC	Washington Suburban Sanitary Commission	MTA	2011	2004-2009 SF
FL	City of Pensacola	MGT	2012	2007-2011 SF
FL	City of Tallahassee, Leon County, and Blueprint	MGT	2019	2013-2017 SF
FL	Hillsborough County Aviation Authority	MGT	2015	2008-2012 SF
FL	Miami-Dade County Public Schools	MGT	2014	2007-2007 SF
FL	Broward County Public Schools	MTA	2015	2009-2013 SF
FL	City of Jacksonville	MTA	2013	2006-2010 SF
FL	Miami Dade County	MTA	2015	2007-2011 CY
FL	Palm Beach County	MTA	2017	2009-2013 CY

State	Subdivision	Authors	Publication Year	Study Period
FL	Solid Waste Authority of Palm Beach County	MTA	2017	2009-2013 SF
FL	Broward County	NERA	2010	2005-2009 SF
GA	Georgia Department of Transportation*	BBC	2012	2009-2011 CY
GA	City of Savannah	GSPC	2016	2010-2014 CY
GA	Georgia Department of Transportation*	GSPC	2016	2012-2015 SF
GA	Atlanta Housing Authority	KEEN	2017	2013-2015 SF
GA	Atlanta Public Schools	KEEN	2017	2012-2016 SF
GA	City of Atlanta	KEEN	2015	2009-2012 CY
HI	Hawaii Department of Transportation	KEEN	2020	2012-2016 SF
HI	Hawai'i Department of Transportation	NERA	2010	2003-2008 FF
ID	Idaho Transportation Department*	BBC	2017	2012-2015 SF
IL	Illinois Department of Transportation*	BBC	2018	2013-2016 SF
IL	Chicago Metra*	CHA	2016	2009-2013 CY
IL	Chicago Regional Transportation Authority	CHA	2017	2009-2013 CY
IL	Chicago Transit Authority	CHA	2019	2012-2016 FF
IL	City of Chicago	CHA	2021	2015-2019 CY
IL	Cook County	CHA	2015	2010-2014 SF
IL	Illinois State Toll Highway Authority	CHA	2015	2010-2012 CY
IL	Metro. Water Reclamation Dist. of Greater Chicago	CHA	2014	2008-2014 CY
IL	Pace Suburban Bus	CHA	2015	2008-2012 CY
IL	State of Illinois Dept. of Central Mgmt. Services	CHA	2015	2010-2011 SF
IL	Il. State Toll Highway Auth. & Il. Dept. of Transp.	MTA	2011	2006-2008 CY
IN	Ball State University	BBC	2016	2010-2013 SF
IN	City of Indianapolis and Marion County*	BBC	2019	2014-2018 CY
IN	Indiana Department of Administration	BBC	2010	2007-2010 SF
IN	Indiana Department of Administration	BBC	2016	2010-2013 SF
IN	Indiana State University	BBC	2016	2010-2013 SF
IN	Indiana University	BBC	2016	2010-2013 SF
IN	Ivy Tech Community College	BBC	2016	2010-2013 SF
IN	Purdue University	BBC	2016	2010-2013 SF
IN	State of Indiana*	BBC	2020	2014-2018 SF
IN	University of Southern Indiana	BBC	2016	2010-2013 SF
IN	Vincennes University	BBC	2016	2010-2013 SF
KY	Louisville & Jefferson County Metro. Sewer Dist.	MTA	2018	2011-2015 SF
LA	City of Baton Rouge, Parish of East Baton Rouge	KEEN	2019	2013-2017 CY
LA	City of New Orleans	KEEN	2018	2012-2016 CY
LA	Rec. & Park Comm., Parish of E. Baton Rouge	KEEN	2019	2014-2018 CY
MD	City of Frederick	GSPC	2021	2014-2018 SF
MD	Montgomery County	GSPC	2014	2008-2012 SF
MD	Baltimore County	MTA	2021	2013-2017 SF

State	Subdivision	Authors	Publication Year	Study Period
MD	Baltimore County Public Schools	NERA	2014	2007-2013 CY
MD	City of Baltimore	NERA	2014	2007-2012 CY
MD	Maryland Department of Transportation*	NERA	2013	2005-2009 SF
MD	Maryland Department of Transportation*	NERA	2018	2010-2014 SF
MD	State of Maryland*	NERA	2011	2005-2009 SF
MD	State of Maryland*	NERA	2017	2010-2014 SF
MA	City of Boston	BBC	2021	2015-2019 SF
MA	Div. of Capital Asset Mgmt. & Maint. (DCAMM)	NERA	2017	2010-2015 CY
MN	City of Minneapolis	KEEN	2018	2012-2016 SF
MN	City of Saint Paul	KEEN	2018	2012-2016 SF
MN	Hennepin County	KEEN	2018	2012-2016 SF
MN	Metropolitan Airports Commission	KEEN	2018	2012-2016 SF
MN	Metropolitan Council	KEEN	2018	2012-2016 SF
MN	Metropolitan Mosquito Control District	KEEN	2018	2012-2016 SF
MN	Minnesota Department of Administration	KEEN	2018	2012-2016 SF
MN	Minnesota Department of Transportation*	KEEN	2018	2012-2016 SF
MN	Minnesota State Colleges and Universities	KEEN	2018	2012-2016 SF
MN	Metropolitan Airports Commission	MGT	2010	2005-2007 CY
MN	Metropolitan Council	MGT	2010	2003-2007 CY
MN	Minnesota Department of Administration	MGT	2010	2002-2007 CY
MN	Minnesota Department of Transportation	MGT	2010	2002-2007 CY
MN	City of Minneapolis	NERA	2010	2003-2007 CY
MS	Jackson Municipal Airport	NERA	2012	2005-2010 FF
MO	City of Kansas City, MO Public School System	CHA	2017	2008-2013 CY
MO	City of Kansas City, Missouri	CHA	2017	2008-2013 CY
MO	Jackson County, Missouri	CHA	2016	2008-2013 CY
MO	Kansas City Area Transportation Authority	CHA	2017	2008-2013 CY
MO	State of Missouri Office of Administration	CHA	2014	2008-2013 SF
MO	St. Louis County	GSPC	2017	2012-2015 SF
MO	Missouri Department of Transportation*	KEEN	2019	2014-2018 FF
MO	City of St. Louis	MTA	2015	2008-2012 SF
MO	St Louis Metropolitan Sewer District	MTA	2012	2008-2012 SF
MO	Missouri Department of Transportation*	NERA	2012	2005-2009 SF
MT	State of Montana Department of Transportation	KEEN	2016	2010-2014 FF
NJ; NY	Port Authority of New York and New Jersey	MTA	2018	2010-2014 CY
NV	Regional Transp. Commission of Southern Nevada	BBC	2017	2010-2014 FF
NV	Nevada Department of Transportation*	KEEN	2013	2007-2012 CY
NJ	Newark Public Schools	CHA	2017	2007-2014 CY
NJ	City of Jersey City	MGT	2011	2002-2008 SF
NJ	NJ Transit*	RWC	2016	2010-2013 FF

State	Subdivision	Authors	Publication Year	Study Period
NY	City of New York*	MGT	2018	2007-2015 SF
NY	State of New York*	MTA	2017	2011-2015 SF
NY	State of New York*	NERA	2010	2004-2008 SF
NC	City of Asheville	BBC	2019	2013-2017 SF
NC	City of Charlotte	BBC	2017	2015-2016 SF
NC	North Carolina Department of Transportation*	CHA	2014	2010-2012 SF
NC	City of Greensboro	GSPC	2018	2012-2016 SF
NC	Durham County/City of Durham	GSPC	2015	2008-2012 SF
NC	Mecklenburg County, North Carolina	GSPC	2020	2016-2019 SF
NC	State of North Carolina	GSPC	2020	2014-2018 SF
NC	City of Charlotte	MGT	2011	2006-2010 SF
NC	City of Greensboro North Carolina	MGT	2012	2006-2010 SF
NC	City of Winston-Salem	MGT	2019	2014-2018 SF
NC	Guilford County Schools	MGT	2016	2010-2014 SF
OH	Ohio Department of Transportation*	BBC	2016	2010-2014 CY
OH	Cuyahoga County	GSPC	2014	2009-2012 SF
OH	Cuyahoga County	GSPC	2020	2014-2018 SF
OH	City of Dayton	MGT	2019	2013-2017 CY
OH	City of Cincinnati	MTA	2015	2009-2013 CY
OH	City of Columbus	MTA	2019	2012-2015 CY
OH	City of Cleveland	NERA	2012	2006-2010 SF
OH	Northeast Ohio Regional Sewer District	NERA	2010	2004-2008 CY
OK	Oklahoma Department of Transportation*	BBC	2010	2005-2009 SF
OK	City of Tulsa	MGT	2010	2003-2008 SF
OR	City of Portland*	BBC	2011	2005-2009 SF
OR	Portland Development Commission*	BBC	2011	2005-2009 SF
OR	The Port of Portland	CHA	2018	2012-2016 SF
OR	Oregon Department of Aviation	KEEN	2021	2015-2019 FF
OR	Oregon Department of Transportation*	KEEN	2016	2011-2014 FF
OR	Oregon Department of Transportation*	MGT	2011	2008-2010 SF
PA	Pennsylvania Department of General Services	BBC	2018	2012-2016 SF
PA	Pennsylvania Department of Transportation*	BBC	2018	2012-2016 SF
PA	City of Philadelphia	ECONSULT	2010	2009-2009 SF
PA	City of Philadelphia	ECONSULT	2011	2010-2010 SF
PA	City of Philadelphia	ECONSULT	2012	2011-2011 SF
PA	City of Philadelphia	ECONSULT	2013	2012-2012 SF
PA	City of Philadelphia	ECONSULT	2014	2013-2013 SF
PA	City of Philadelphia	ECONSULT	2015	2014-2014 SF
PA	City of Philadelphia	ECONSULT	2016	2015-2015 SF
PA	City of Philadelphia	ECONSULT	2017	2016-2016 SF

State	Subdivision	Authors	Publication Year	Study Period
PA	City of Philadelphia	ECONSULT	2019	2018-2018 SF
PA	City of Philadelphia	MILLER3	2020	2019-2019 SF
RI	State of Rhode Island*	MTA	2021	2014-2017 SF
TN	Metropolitan Nashville Airport Authority	CHA	2015	2008-2012 CY
TN	City of Chattanooga	GSPC	2020	2014-2018 SF
TN	City of Memphis	GSPC	2010	2003-2007 SF
TN	City of Memphis	GSPC	2016	2010-2014 SF
TN	Metro Nashville Government	GSPC	2018	2013-2017 SF
TN	Metro Nashville Government	GSPC	2017	2014-2016 SF
TN	Memphis Light, Gas, and Water Division	MGT	2012	2006-2010 CY
TN	Shelby County Schools Board of Education	MGT	2017	2012-2016 SF
TN	Shelby County	MTA	2016	2012-2014 CY
TN	Memphis-Shelby County Airport Authority	NERA	2013	2006-2011 CY
TX	City of Fort Worth	CHA	2020	2013-2018 SF
TX	Dallas County	CHA	2015	2010-2013 CY
TX	Dallas Fort Worth International Airport	CHA	2019	2012-2017 CY
TX	Harris County	CHA	2020	2016-2018 SF
TX	Parkland Health and Hospital System	CHA	2016	2011-2013 CY
TX	Texas Department of Transportation*	CHA	2019	2012-2016 CY
TX	City of Dallas	MGT	2020	2014-2018 SF
TX	San Antonio Water System	MGT	2015	2011-2013 CY
TX	State of Texas*	MGT	2010	2006-2008 SF
TX	Bexar County	MTA	2011	2007-2009 SF
TX	City of Arlington & Dallas-Fort Worth Intl. Airport	MTA	2010	2003-2007 SF
TX	Metro. Transit Auth. of Harris County (Metro)	MTA	2021	2014-2018 SF
TX	Austin Independent School District	NERA	2015	2009-2013 SF
TX	City of Austin	NERA	2017	2008-2013 SF
TX	City of Houston*	NERA	2012	2005-2010 SF
TX	City of San Antonio	NERA	2015	2011-2013 CY
TX	Travis County	NERA	2016	2009-2013 SF
TX	Corpus Christi Regional Transportation Authority	TXAMCC	2016	2015-2015 CY
VA	City of Virginia Beach	BBC	2019	2013-2017 SF
VA	Commonwealth of Virginia*	BBC	2021	2015-2019 SF
VA	City of Hampton and Hampton City Schools	MGT	2014	2008-2012 SF
VA	City of Portsmouth	MGT	2015	2009-2013 SF
VA	Commonwealth of Virginia*	MGT	2011	2006-2009 SF
VA	Portsmouth Public Schools	MGT	2011	2006-2010 SF
WA	Port of Seattle	BBC	2014	2010-2013 CY
WA	Sound Transit	BBC	2013	2008-2011 CY
WA	Sound Transit	BBC	2020	2016-2019 CY

State	Subdivision	Authors	Publication Year	Study Period
WA	Washington State Department of Transportation*	BBC	2013	2009-2011 SF
WA	Port of Seattle	CHA	2019	2012-2016 SF
WA	State of Washington Department of Transportation*	CHA	2017	2012-2015 FF
WA	Washington State	CHA	2019	2012-2016 SF
WA	Washington State Department of Transportation*	CHA	2019	2012-2016 SF
WA	City of Tacoma	GSPC	2018	2012-2016 SF
WI	City of Madison	KEEN	2015	2008-2013 CY

Notes: (1) Study author abbreviations are as follows: BBC-BBC Research & Consulting; CHA-Colette Holt & Associates; Econsult-Econsult Corporation; GSPC-Griffin & Strong, P.C.; KEEN-Keen Independent Research, LLC; MGT-MGT of America; MTA-Mason Tillman Associates, Ltd.; NERA-NERA Economic Consulting; ROSALES-Rosales Business Partners, LLC; RWC-The Roy Wilkins Center for Human Relations and Social Justice at the University of Minnesota; TXAMCC-South Texas Economic Development Center, Texas A&M Corpus Christi; (2) Study Period abbreviations are CY-Calendar Year, SF-State Fiscal Year, FF, Federal Fiscal Year; (3) An asterisk (*) indicates that the study was commissioned by, or includes coverage of, a grantee or subgrantee from the FRA Grant Activity Database.

D. Findings

In reviewing the disparity index evidence from the studies identified in Table 2.1, I sought to establish whether disparities continue to exist in the utilization of MWBEs in public contracting relative to their availability in U.S. markets, and the evidence overwhelmingly indicates that they do.

A note about terminology—An adverse disparity is indicated whenever the associated disparity index is less than 100. A large and adverse disparity is indicated whenever the associated disparity index is 80 or less (four-fifths). Large adverse disparities are consistent with the presence of business discrimination.⁴⁸

Each study from Table 2.1 is different. They were prepared by different authors, for different government entities, in different parts of the country, with differing levels of resources. They employed a variety of methodologies for estimating availability and utilization, as well as for gathering anecdotal information.⁴⁹ These studies examined MWBE disparities across different procurement categories and industry segments (*e.g.*, construction, architecture and engineering, professional services, general services, and commodities), across different contracting tiers (*e.g.* prime contractor alone, subcontractor alone, or both combined), across different time periods, across different levels of government (*e.g.*, states, state agencies, cities, counties, airports, transit agencies, schools), and across different funding sources (*e.g.*, federally funded vs. state- or locally funded).

Despite the substantial differences among the studies, there are striking similarities. Foremost is that large adverse disparities are found to exist for minority-owned and women-owned businesses in the great majority of cases throughout the United States, in the economy as a whole, and in each major procurement category and industry sector.

Table 2.2 shows this result clearly. For example, the first five rows in column (6) document that for minorities and women as a group across all procurement categories combined, 82 percent of the disparity indexes from the studies were adverse, and 75 percent were large and adverse. Of the 75 percent of disparity indexes that were considered large and adverse, the mean (average) disparity index value was just 32, and the median value was just 30.⁵⁰ In other words, 4 out of 5 disparities for MWBEs across all procurement categories are adverse, 3 out of 4 are large and adverse, and MWBEs facing large adverse disparities tended to be utilized at less than one-third of their availability. These findings are derived from 4,378 distinct disparity indexes.

The first five rows of Table 2.2 in columns (1) through (5) document similar results for MWBEs when the data are disaggregated into major public contracting procurement

⁴⁸ A selection rate of less than 80 percent (or four-fifths) is generally regarded by the federal government as evidence of adverse impact. This is known as the “four-fifths rule.” *See* 29 C.F.R. § 1607.4 (D).

⁴⁹ A detailed discussion of the differences in methods employed by different study authors is provided in Wainwright and Holt (2010), pp. 29-53.

⁵⁰ The median is the middle value of a distribution, where half the values are smaller, and half the values are larger.

categories. The fraction of disparities that are adverse varies from 78 percent to 88 percent. The fraction of disparities that are large and adverse varies from 71 percent to 82 percent. The mean disparity index value for large adverse disparities varies from 26 percent to 33 percent, and the median ranges from 21 to 31.

The succeeding six sections in column (6) of Table 2.2 document similar results across all procurement categories combined when MWBEs are disaggregated into more detailed race, ethnicity, and gender categories. Specifically:

- For Blacks, 84 percent of the disparity indexes were adverse, and 80 percent were large and adverse. Of the 80 percent that were large and adverse, the mean disparity index value was just 18, and the median was just 8.
- For Hispanics, 82 percent of the disparity indexes were adverse, and 78 percent were large and adverse. Of the 78 percent that were large and adverse, the mean disparity index value was just 15, and the median was just 1.
- For Asians, 78 percent of the disparity indexes were adverse, and 74 percent were large and adverse. Of the 74 percent of disparity indexes that were large and adverse, the mean disparity index value was just 15, and the median was just 1.
- For Native Americans, 85 percent of the disparity indexes were adverse, and 83 percent were large and adverse. Of the 83 percent of disparity indexes that were large and adverse, the mean disparity index value was just 9, and the median was zero.
- For minorities as a group, 80 percent of the disparity indexes were adverse, and 74 percent were large and adverse. Of the 74 percent of disparity indexes that were large and adverse, the mean disparity index value was just 25, and the median was 18.
- For non-minority females, 81 percent of the disparity indexes were adverse, and 75 percent were large and adverse. Of the 75 percent of disparity indexes that were large and adverse, the mean disparity index value was just 26, and the median was 20.

In stark contrast, the corresponding figures for non-minority males, in the last 5 rows of Table 2.2, show just 19 percent of disparity indexes below 100, and only 7 percent of these would be considered large and adverse. Of the 7 percent of disparity indexes that were large and adverse, the mean disparity index value was 41, and the median was 48.

Similar results are observed when major public contracting and procurement categories are considered individually, as in columns (1) through (5) of Table 2.2. The vast majority of disparity indexes for all types of MWBEs are large and adverse (66% - 93%), and both the average and median values for those large and adverse disparities are extremely low (0 - 33). At the same time, only a very small fraction of disparity indexes for non-minority males are large and adverse (6% - 9%), and their average and median values are less severe in every single case (36 - 51).

Tables 2.3, 2.4 and 2.5 provide corresponding findings for those disparity indexes calculated for different levels of prime contracting or subcontracting.⁵¹ Compared to Table 2.2, overall levels of disparity are somewhat more severe when only prime contracting is examined (Table 2.3); somewhat less severe when subcontracting alone is examined (Table 2.4), and similar when both levels are included (Table 2.5). Regardless of which contracting level is examined, however, the general conclusions of large, widespread, and adverse disparities for MWBEs are the same as for Table 2.2.

Tables 2.6 and 2.7 provide corresponding findings for those disparity indexes calculated for contracting and procurement that was federally funded versus locally funded. Overall, the pattern of large, widespread, and adverse disparities for MWBEs is observed in both tables. For example, across all industries combined, 84 percent of disparities for MWBEs in locally funded contracting were adverse and 78 percent were large and adverse.⁵² For federally funded contracting, the figures were 74 percent and 61 percent, respectively.⁵³ Regardless of funding source, however, the general conclusions of large, widespread, and adverse disparities for MWBEs are the same as for Tables 2.2 through 2.5.

Outcomes are very similar whether we use the most recent disparity studies or the entire file of studies published between 2010-2021. Adverse findings persist when the analysis is restricted to just the newest studies in the database. Table 2.8 shows the same information as in Table 2.2 but only for those studies published between 2017 and 2021. Once again in column (6) we see adverse disparities in 87 percent of overall cases, large and adverse disparities in 79 percent of overall cases, a mean level of disparity for those indexes that are large and adverse of 35, and a median level of 34. For non-minority males, on the other hand, only 14 percent of disparities are adverse, and only 4 percent are large and adverse. The mean value is 41 and the median is 51. Although there is variation, these general findings of widespread large and adverse disparities are documented in all procurement categories and for all MWBE groups.

When the analysis is restricted to those studies for which statistical significance testing was conducted on the disparity indexes, we find there are still far more MWBEs than non-MWBEs facing large adverse and statistically significant disparities. Table 2.9 shows, for example, that 59 percent of statistically significant disparities for MWBEs were adverse, compared to just 5 percent for non-minority males, and that large, adverse, and statistically significant disparities were observed for 57 percent of MWBEs but only 3 percent of non-minority males.

⁵¹ Different disparity studies calculate utilization statistics, availability statistics, and disparity indexes at different contracting levels. In some cases, prime contracts and prime contractors are examined separately from subcontracts and subcontractors. In other cases, prime contracts and subcontracts are examined together. *See also*, Section II.B.4, *supra*.

⁵² *See* Table 2.7, column (6), rows 1-2.

⁵³ *See* Table 2.6, column (6), rows 1-2.

Finally, we also observe similar patterns of disparities in those industry subsectors and industry groups that account for the vast majority of spending in the FRA Grant Activity Database. Tables 2.10 and 2.11 show results for the 14 industry subsectors and 33 industry groups, respectively, that collectively account for 95 percent of spending in the FRA Grant Activity Database. Although drawn from a more limited pool of 21 disparity studies,⁵⁴ in both tables the general pattern of large, widespread, and adverse disparities for MWBEs seen above in Tables 2.2 through 2.9 persists. Another interesting aspect of both tables is that the disparities in those NAICS codes most closely associated with subcontracting appear somewhat less severe than in the other NAICS codes. This could reflect the positive impact of the DOT DBE Program and similar remedial contracting and procurement programs, which have traditionally been concentrated in the area of public works construction.

⁵⁴ Only the NERA studies contained disparity results for these exact NAICS categories.

Table 2.2. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021

	Construction	AECRS	Professional Services	General Services	CSE	Overall
	(1)	(2)	(3)	(4)	(5)	(6)
MWBE						
Percent LT 100	81%	78%	88%	85%	86%	82%
Percent LTE 80	71%	71%	82%	77%	81%	75%
Mean Disparity LTE 80	33	32	26	28	26	32
Median Disparity LTE 80	31	30	22	25	21	30
No. Observations	1,475	1,156	431	785	771	4,378
Black						
Percent LT 100	87%	82%	88%	82%	85%	84%
Percent LTE 80	83%	79%	86%	79%	82%	80%
Mean Disparity LTE 80	16	16	16	19	15	18
Median Disparity LTE 80	6	6	8	9	3	8
No. Observations	1,439	1,138	427	775	760	4,264
Hispanic						
Percent LT 100	80%	81%	86%	85%	87%	82%
Percent LTE 80	76%	76%	83%	84%	85%	78%
Mean Disparity LTE 80	18	17	11	11	10	15
Median Disparity LTE 80	2	0	0	0	0	1
No. Observations	1,430	1,097	421	776	740	4,185
Asian						
Percent LT 100	82%	76%	81%	82%	82%	78%
Percent LTE 80	78%	72%	77%	78%	79%	74%
Mean Disparity LTE 80	13	16	13	12	13	15
Median Disparity LTE 80	0	1	1	1	0	1
No. Observations	1,348	1,121	414	742	736	4,102
Native American						
Percent LT 100	82%	86%	92%	90%	95%	85%
Percent LTE 80	80%	84%	92%	89%	93%	83%
Mean Disparity LTE 80	11	11	7	5	3	9
Median Disparity LTE 80	0	0	0	0	0	0
No. Observations	1,354	940	353	706	629	3,752
Minority						
Percent LT 100	81%	78%	85%	82%	85%	80%
Percent LTE 80	75%	72%	81%	76%	81%	74%
Mean Disparity LTE 80	26	26	21	24	21	25
Median Disparity LTE 80	17	21	14	16	14	18
No. Observations	1,468	1,143	432	786	771	4,327
Non-minority female						
Percent LT 100	73%	78%	88%	87%	86%	81%
Percent LTE 80	66%	72%	86%	81%	81%	75%
Mean Disparity LTE 80	27	28	23	21	20	26
Median Disparity LTE 80	22	23	16	13	10	20
No. Observations	1,473	1,156	425	786	775	4,342
Non-minority male						
Percent LT 100	21%	23%	13%	16%	16%	19%
Percent LTE 80	7%	8%	6%	6%	9%	7%
Mean Disparity LTE 80	36	43	41	45	39	41
Median Disparity LTE 80	45	51	39	46	46	48
No. Observations	1,487	1,156	431	787	773	4,392

Source: Author’s calculations from the studies in Table 2.1. Notes: “AECRS” stands for Architecture, engineering, and construction-related professional services. “CSE” stands for “Commodities, supplies, and equipment. “LT” stands for “Less than.” “LTE” stands for “Less than or equal to.” “No. Observations” is the total number of disparity indexes used as inputs in any given category.

Table 2.3. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021, Prime Contractors Only

	Construction	AECRS	Professional Services	General Services	CSE	Overall
	(1)	(2)	(3)	(4)	(5)	(6)
MWBE						
Percent LT 100	90%	87%	96%	89%	85%	89%
Percent LTE 80	85%	85%	92%	86%	82%	85%
Mean Disparity LTE 80	23	22	21	27	26	25
Median Disparity LTE 80	16	16	16	21	21	19
No. Observations	459	430	238	292	301	1,599
Black						
Percent LT 100	98%	88%	95%	83%	78%	88%
Percent LTE 80	97%	87%	94%	80%	74%	86%
Mean Disparity LTE 80	10	12	14	21	20	15
Median Disparity LTE 80	2	2	8	11	9	5
No. Observations	434	415	233	287	293	1,528
Hispanic						
Percent LT 100	87%	91%	94%	92%	89%	89%
Percent LTE 80	85%	88%	92%	92%	87%	88%
Mean Disparity LTE 80	11	10	8	10	12	11
Median Disparity LTE 80	0	0	0	1	1	0
No. Observations	426	394	231	288	271	1,474
Asian						
Percent LT 100	89%	90%	93%	83%	79%	85%
Percent LTE 80	88%	87%	90%	79%	76%	83%
Mean Disparity LTE 80	9	12	12	15	17	13
Median Disparity LTE 80	0	0	0	3	6	0
No. Observations	374	403	220	262	279	1,411
Native American						
Percent LT 100	90%	89%	93%	82%	89%	88%
Percent LTE 80	89%	88%	93%	79%	86%	86%
Mean Disparity LTE 80	9	8	6	10	7	8
Median Disparity LTE 80	0	0	0	0	0	0
No. Observations	395	303	183	250	201	1,230
Minority						
Percent LT 100	91%	88%	95%	88%	82%	88%
Percent LTE 80	87%	84%	92%	83%	79%	84%
Mean Disparity LTE 80	16	18	17	25	24	20
Median Disparity LTE 80	6	7	10	16	21	11
No. Observations	452	422	237	291	297	1,569
Non-minority female						
Percent LT 100	83%	88%	91%	87%	87%	86%
Percent LTE 80	78%	84%	89%	84%	82%	82%
Mean Disparity LTE 80	19	20	20	21	21	21
Median Disparity LTE 80	8	11	11	12	14	12
No. Observations	457	429	230	291	301	1,578
Non-minority male						
Percent LT 100	12%	13%	5%	11%	16%	13%
Percent LTE 80	4%	5%	2%	1%	5%	4%
Mean Disparity LTE 80	45	47	43	36	41	44
Median Disparity LTE 80	58	55	53	44	57	56
No. Observations	471	430	238	293	302	1,612

Source and Notes: See Table 2.2.

Table 2.4. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021, Subcontractors Only

	Construction	AECRS	Professional Services	General Services	CSE	Overall
	(1)	(2)	(3)	(4)	(5)	(6)
MWBE						
Percent LT 100	71%	62%	56%	56%	67%	66%
Percent LTE 80	62%	52%	52%	47%	67%	58%
Mean Disparity LTE 80	28	27	21	13	14	26
Median Disparity LTE 80	23	17	3	0	0	18
No. Observations	399	188	63	32	36	680
Black						
Percent LT 100	83%	78%	67%	64%	81%	78%
Percent LTE 80	80%	74%	64%	64%	81%	75%
Mean Disparity LTE 80	15	13	11	8	8	14
Median Disparity LTE 80	2	0	0	0	0	0
No. Observations	392	188	64	33	37	674
Hispanic						
Percent LT 100	81%	73%	83%	94%	97%	80%
Percent LTE 80	77%	67%	81%	88%	92%	76%
Mean Disparity LTE 80	10	14	6	2	4	10
Median Disparity LTE 80	0	0	0	0	0	0
No. Observations	393	170	64	33	38	658
Asian						
Percent LT 100	82%	69%	68%	91%	92%	77%
Percent LTE 80	77%	67%	66%	91%	92%	74%
Mean Disparity LTE 80	9	17	6	2	6	10
Median Disparity LTE 80	0	0	0	0	0	0
No. Observations	368	186	65	33	36	649
Native American						
Percent LT 100	82%	82%	95%	97%	94%	84%
Percent LTE 80	81%	80%	95%	97%	94%	83%
Mean Disparity LTE 80	7	5	3	2	0	6
Median Disparity LTE 80	0	0	0	0	0	0
No. Observations	380	146	62	32	36	612
Minority						
Percent LT 100	74%	70%	58%	64%	82%	71%
Percent LTE 80	67%	62%	55%	64%	82%	65%
Mean Disparity LTE 80	23	24	16	7	10	21
Median Disparity LTE 80	11	10	0	0	0	7
No. Observations	399	182	64	33	38	677
Non-minority female						
Percent LT 100	68%	65%	75%	67%	71%	69%
Percent LTE 80	62%	58%	72%	64%	58%	62%
Mean Disparity LTE 80	21	20	18	7	13	20
Median Disparity LTE 80	5	4	0	0	0	4
No. Observations	399	188	64	33	38	683
Non-minority male						
Percent LT 100	35%	43%	49%	44%	58%	40%
Percent LTE 80	15%	23%	32%	31%	53%	21%
Mean Disparity LTE 80	29	38	37	38	16	32
Median Disparity LTE 80	16	41	35	38	0	23
No. Observations	399	188	63	32	36	680

Source and Notes: See Table 2.2.

Table 2.5. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021, Prime Contractors and Subcontractors

	Construction	AECRS	Professional Services	General Services	CSE	Overall
	(1)	(2)	(3)	(4)	(5)	(6)
MWBE						
Percent LT 100	80%	76%	89%	84%	88%	83%
Percent LTE 80	67%	66%	79%	74%	82%	72%
Mean Disparity LTE 80	46	44	37	30	26	40
Median Disparity LTE 80	50	47	41	28	25	40
No. Observations	617	538	130	461	434	2,099
Black						
Percent LT 100	82%	79%	84%	82%	90%	82%
Percent LTE 80	76%	75%	82%	79%	87%	78%
Mean Disparity LTE 80	23	21	22	19	13	22
Median Disparity LTE 80	19	16	14	9	0	15
No. Observations	613	535	130	455	430	2,062
Hispanic						
Percent LT 100	75%	76%	72%	80%	85%	78%
Percent LTE 80	69%	71%	68%	78%	83%	73%
Mean Disparity LTE 80	31	25	22	12	9	21
Median Disparity LTE 80	26	13	7	0	0	9
No. Observations	611	533	126	455	431	2,053
Asian						
Percent LT 100	78%	68%	67%	80%	82%	73%
Percent LTE 80	74%	62%	61%	77%	80%	68%
Mean Disparity LTE 80	19	21	21	11	10	18
Median Disparity LTE 80	6	10	14	1	0	8
No. Observations	606	532	129	447	421	2,042
Native American						
Percent LT 100	76%	86%	89%	95%	98%	83%
Percent LTE 80	72%	82%	88%	94%	97%	81%
Mean Disparity LTE 80	17	14	12	4	2	10
Median Disparity LTE 80	1	0	0	0	0	0
No. Observations	579	491	108	424	392	1,910
Minority						
Percent LT 100	79%	72%	80%	79%	86%	78%
Percent LTE 80	71%	65%	72%	72%	81%	70%
Mean Disparity LTE 80	36	36	32	24	20	31
Median Disparity LTE 80	34	35	29	17	12	28
No. Observations	617	539	131	462	436	2,081
Non-minority female						
Percent LT 100	69%	74%	88%	88%	87%	81%
Percent LTE 80	60%	68%	87%	81%	83%	74%
Mean Disparity LTE 80	40	37	32	22	19	32
Median Disparity LTE 80	46	38	34	14	9	32
No. Observations	617	539	131	462	436	2,081
Non-minority male						
Percent LT 100	20%	25%	10%	17%	12%	17%
Percent LTE 80	3%	5%	2%	7%	8%	5%
Mean Disparity LTE 80	47	50	74	47	50	51
Median Disparity LTE 80	58	65	74	48	52	59
No. Observations	617	538	130	462	435	2,100

Source and Notes: See Table 2.2.

Table 2.6. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021, Federally Funded Contracts and Purchases Only

	Construction	AECRS	Professional Services	General Services	CSE	Overall
	(1)	(2)	(3)	(4)	(5)	(6)
MWBE						
Percent LT 100	71%	75%	86%	71%	74%	74%
Percent LTE 80	57%	61%	79%	56%	67%	61%
Mean Disparity LTE 80	39	39	38	31	23	39
Median Disparity LTE 80	40	36	36	26	16	39
No. Observations	229	163	14	66	82	542
Black						
Percent LT 100	88%	85%	93%	79%	90%	85%
Percent LTE 80	82%	82%	93%	76%	88%	80%
Mean Disparity LTE 80	19	19	18	23	14	19
Median Disparity LTE 80	13	11	10	10	1	11
No. Observations	217	151	14	63	77	507
Hispanic						
Percent LT 100	71%	76%	71%	67%	76%	73%
Percent LTE 80	65%	69%	64%	64%	75%	67%
Mean Disparity LTE 80	27	22	14	13	11	22
Median Disparity LTE 80	20	9	0	0	0	11
No. Observations	223	160	14	66	80	525
Asian						
Percent LT 100	79%	66%	64%	78%	81%	69%
Percent LTE 80	76%	63%	64%	78%	79%	65%
Mean Disparity LTE 80	14	13	1	8	9	14
Median Disparity LTE 80	0	0	0	1	0	0
No. Observations	217	159	14	59	75	513
Native American						
Percent LT 100	67%	85%	100%	100%	100%	78%
Percent LTE 80	61%	79%	90%	96%	97%	74%
Mean Disparity LTE 80	14	12	17	3	3	11
Median Disparity LTE 80	0	0	0	0	0	0
No. Observations	219	151	10	55	71	506
Minority						
Percent LT 100	69%	69%	79%	67%	78%	69%
Percent LTE 80	61%	61%	71%	58%	73%	59%
Mean Disparity LTE 80	32	30	17	22	17	30
Median Disparity LTE 80	27	25	8	19	12	26
No. Observations	229	163	14	66	82	542
Non-minority female						
Percent LT 100	64%	74%	79%	83%	80%	75%
Percent LTE 80	57%	68%	79%	73%	74%	69%
Mean Disparity LTE 80	30	32	38	17	15	29
Median Disparity LTE 80	28	29	34	10	1	27
No. Observations	229	163	14	66	82	542
Non-minority male						
Percent LT 100	32%	28%	14%	28%	25%	28%
Percent LTE 80	8%	9%	0%	13%	17%	9%
Mean Disparity LTE 80	40	41	n/a	36	39	41
Median Disparity LTE 80	51	49	n/a	44	45	48
No. Observations	229	163	14	68	84	544

Source and Notes: See Table 2.2.

Table 2.7. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021, Locally Funded Contracts and Purchases Only

	Construction	AECRS	Professional Services	General Services	CSE	Overall
	(1)	(2)	(3)	(4)	(5)	(6)
MWBE						
Percent LT 100	82%	82%	91%	85%	86%	84%
Percent LTE 80	76%	77%	86%	80%	83%	78%
Mean Disparity LTE 80	27	24	21	25	24	25
Median Disparity LTE 80	23	16	14	19	20	20
No. Observations	720	639	327	392	386	2,284
Black						
Percent LT 100	89%	85%	91%	79%	79%	84%
Percent LTE 80	87%	83%	89%	77%	75%	81%
Mean Disparity LTE 80	13	12	13	18	16	15
Median Disparity LTE 80	4	2	5	7	5	5
No. Observations	717	640	326	392	383	2,275
Hispanic						
Percent LT 100	87%	89%	93%	91%	89%	88%
Percent LTE 80	84%	86%	91%	91%	88%	86%
Mean Disparity LTE 80	12	11	9	10	9	11
Median Disparity LTE 80	0	0	0	0	0	0
No. Observations	702	592	325	391	360	2,186
Asian						
Percent LT 100	84%	84%	87%	87%	81%	84%
Percent LTE 80	81%	80%	85%	83%	79%	80%
Mean Disparity LTE 80	9	12	12	14	13	12
Median Disparity LTE 80	0	0	0	2	0	0
No. Observations	646	618	313	367	366	2,135
Native American						
Percent LT 100	87%	89%	93%	84%	91%	87%
Percent LTE 80	86%	88%	92%	82%	89%	86%
Mean Disparity LTE 80	9	6	4	8	4	8
Median Disparity LTE 80	0	0	0	0	0	0
No. Observations	672	469	268	345	292	1,905
Minority						
Percent LT 100	84%	83%	88%	84%	84%	83%
Percent LTE 80	79%	78%	86%	79%	80%	79%
Mean Disparity LTE 80	21	20	18	21	20	20
Median Disparity LTE 80	11	9	10	13	13	12
No. Observations	722	629	330	395	388	2,281
Non-minority female						
Percent LT 100	80%	85%	90%	86%	87%	85%
Percent LTE 80	74%	81%	88%	83%	83%	80%
Mean Disparity LTE 80	23	21	19	20	21	22
Median Disparity LTE 80	16	12	9	11	13	14
No. Observations	721	642	323	395	392	2,290
Non-minority male						
Percent LT 100	21%	20%	10%	15%	18%	18%
Percent LTE 80	9%	9%	7%	3%	10%	8%
Mean Disparity LTE 80	30	38	34	36	31	33
Median Disparity LTE 80	19	45	32	37	35	33
No. Observations	720	639	327	392	386	2,284

Source and Notes: See Table 2.2.

Table 2.8. Extent of Large, Adverse Disparities in Studies Published Between 2017-2021

	Construction	AECRS	Professional Services	General Services	CSE	Overall
	(1)	(2)	(3)	(4)	(5)	(6)
MWBE						
Percent LT 100	92%	85%	94%	89%	93%	87%
Percent LTE 80	81%	77%	89%	79%	87%	79%
Mean Disparity LTE 80	40	30	24	31	29	35
Median Disparity LTE 80	41	28	14	29	26	34
No. Observations	349	368	176	207	195	1,224
Black						
Percent LT 100	92%	88%	94%	91%	96%	90%
Percent LTE 80	87%	86%	94%	88%	92%	86%
Mean Disparity LTE 80	19	15	13	21	16	19
Median Disparity LTE 80	10	4	4	14	6	10
No. Observations	342	362	173	203	191	1,198
Hispanic						
Percent LT 100	77%	85%	92%	80%	82%	81%
Percent LTE 80	72%	83%	91%	78%	81%	77%
Mean Disparity LTE 80	25	19	12	12	12	19
Median Disparity LTE 80	15	2	0	1	2	5
No. Observations	341	354	169	201	188	1,179
Asian						
Percent LT 100	77%	72%	76%	83%	79%	73%
Percent LTE 80	73%	68%	72%	79%	78%	69%
Mean Disparity LTE 80	18	17	13	15	14	17
Median Disparity LTE 80	2	2	2	6	6	5
No. Observations	333	348	172	197	183	1,165
Native American						
Percent LT 100	88%	89%	95%	92%	97%	88%
Percent LTE 80	85%	86%	95%	92%	97%	86%
Mean Disparity LTE 80	17	11	7	8	4	11
Median Disparity LTE 80	5	0	0	0	0	0
No. Observations	313	308	151	178	171	1,073
Minority						
Percent LT 100	87%	81%	90%	88%	89%	84%
Percent LTE 80	81%	76%	86%	83%	85%	77%
Mean Disparity LTE 80	29	24	19	25	22	26
Median Disparity LTE 80	23	15	9	21	15	20
No. Observations	346	366	174	205	193	1,211
Non-minority female						
Percent LT 100	80%	86%	94%	84%	88%	83%
Percent LTE 80	68%	80%	93%	78%	83%	76%
Mean Disparity LTE 80	38	29	23	27	25	32
Median Disparity LTE 80	39	25	14	19	21	30
No. Observations	346	366	174	205	193	1,211
Non-minority male						
Percent LT 100	9%	16%	5%	12%	10%	14%
Percent LTE 80	3%	5%	2%	3%	6%	4%
Mean Disparity LTE 80	39	44	58	35	23	41
Median Disparity LTE 80	45	55	67	33	2	51
No. Observations	349	368	176	207	195	1,224

Source and Notes: See Table 2.2.

Table 2.9. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021, Results with Statistical Significance of 10 Percent or Better, Overall Procurement

	MWBE	Black	Hispanic	Asian	Native American	Minority	Non-minority female	Non-minority male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Percent LT 100	59%	53%	46%	48%	44%	56%	60%	5%
Percent LTE 80	57%	53%	46%	47%	44%	55%	59%	3%
Mean Disparity LTE 80	34	19	13	13	6	25	26	43
Median Disparity LTE 80	33	15	2	6	0	21	20	47
No. Observations	1,006	1,007	925	911	912	940	1,031	881

Source and Notes: See Table 2.2.

Table 2.10. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021, Top FRA Industry Subsectors (3-digit NAICS)

	MWBE	Black	Hispanic	Asian	Native American	Minority	Non-minority female	Non-minority male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NAICS 236								
Percent LT 100	78%	81%	89%	90%	92%	73%	92%	22%
Percent LTE 80	74%	79%	88%	90%	92%	72%	90%	17%
Mean Disparity LTE 80	19	13	9	3	1	16	9	21
Median Disparity LTE 80	12	0	0	0	0	2	0	6
No. Observations	264	262	262	253	257	264	262	264
NAICS 237								
Percent LT 100	71%	83%	86%	89%	97%	75%	77%	29%
Percent LTE 80	66%	82%	85%	89%	95%	74%	73%	22%
Mean Disparity LTE 80	21	2	6	3	2	9	11	29
Median Disparity LTE 80	7	0	0	0	0	0	0	20
No. Observations	471	445	419	364	398	471	471	472
NAICS 238								
Percent LT 100	53%	67%	71%	85%	90%	59%	74%	47%
Percent LTE 80	48%	64%	70%	84%	89%	55%	70%	36%
Mean Disparity LTE 80	25	11	10	5	1	17	17	40
Median Disparity LTE 80	18	0	0	0	0	1	2	43
No. Observations	746	742	743	669	715	746	746	748
NAICS 331								
Percent LT 100	98%	98%	91%	97%	100%	98%	98%	2%
Percent LTE 80	98%	98%	91%	97%	100%	97%	98%	2%
Mean Disparity LTE 80	2	0	0	0	0	2	1	52
Median Disparity LTE 80	0	0	0	0	0	0	0	52
No. Observations	99	92	66	78	44	99	96	109
NAICS 332								
Percent LT 100	73%	99%	90%	87%	99%	85%	80%	27%
Percent LTE 80	70%	99%	90%	86%	98%	83%	76%	19%
Mean Disparity LTE 80	8	1	1	1	1	2	5	29
Median Disparity LTE 80	0	0	0	0	0	0	0	15
No. Observations	352	317	250	311	267	344	350	358
NAICS 334								
Percent LT 100	87%	98%	97%	97%	98%	93%	91%	13%
Percent LTE 80	87%	98%	97%	97%	98%	93%	90%	10%
Mean Disparity LTE 80	3	1	1	0	0	1	2	13
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	415	362	326	320	283	412	405	420

	MWBE	Black	Hispanic	Asian	Native American	Minority	Non-minority female	Non-minority male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NAICS 335								
Percent LT 100	72%	100%	99%	99%	100%	98%	70%	28%
Percent LTE 80	70%	99%	98%	98%	100%	98%	69%	24%
Mean Disparity LTE 80	5	0	0	3	0	1	2	22
Median Disparity LTE 80	0	0	0	0	0	0	0	14
No. Observations	271	246	172	231	203	261	259	272
NAICS 336								
Percent LT 100	98%	99%	100%	99%	100%	99%	99%	7%
Percent LTE 80	98%	99%	100%	99%	100%	99%	99%	3%
Mean Disparity LTE 80	0	0	0	0	0	0	0	51
Median Disparity LTE 80	0	0	0	0	0	0	0	58
No. Observations	194	161	79	147	137	179	186	244
NAICS 423								
Percent LT 100	70%	90%	93%	89%	99%	82%	76%	30%
Percent LTE 80	67%	88%	92%	89%	99%	81%	73%	24%
Mean Disparity LTE 80	12	3	2	1	0	5	9	34
Median Disparity LTE 80	0	0	0	0	0	0	0	36
No. Observations	1,215	1,130	931	1,161	944	1,215	1,215	1,216
NAICS 482								
Percent LT 100	86%	100%	86%	100%	100%	86%	100%	14%
Percent LTE 80	86%	100%	86%	100%	100%	86%	100%	14%
Mean Disparity LTE 80	0	0	0	0	0	0	0	24
Median Disparity LTE 80	0	0	0	0	0	0	0	24
No. Observations	73	69	69	69	25	69	73	73
NAICS 488								
Percent LT 100	59%	90%	95%	100%	100%	88%	67%	41%
Percent LTE 80	58%	90%	95%	100%	100%	87%	67%	41%
Mean Disparity LTE 80	5	1	0	0	0	1	1	10
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	203	203	175	179	131	203	203	205
NAICS 531								
Percent LT 100	78%	87%	98%	97%	100%	86%	88%	22%
Percent LTE 80	78%	87%	98%	97%	100%	86%	88%	21%
Mean Disparity LTE 80	4	2	0	0	0	4	1	0
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	139	138	121	125	91	139	138	139
NAICS 541								
Percent LT 100	60%	79%	85%	81%	96%	67%	75%	40%
Percent LTE 80	55%	76%	84%	79%	96%	63%	72%	30%
Mean Disparity LTE 80	21	9	5	7	1	14	14	25
Median Disparity LTE 80	10	0	0	0	0	0	0	20
No. Observations	1,261	1,246	1,257	1,177	1,098	1,261	1,261	1,262
NAICS 562								
Percent LT 100	77%	84%	96%	90%	95%	81%	89%	22%
Percent LTE 80	76%	83%	96%	90%	95%	80%	88%	19%
Mean Disparity LTE 80	10	5	3	2	0	7	8	23
Median Disparity LTE 80	0	0	0	0	0	0	0	9
No. Observations	248	226	188	145	120	246	244	254

Source: Author's calculations from the NERA studies in Table 2.1. Note: See Table 1.3 for titles of individual NAICS codes.

Table 2.11. Extent of Large, Adverse Disparities in Studies Published Between 2010-2021, Top FRA Industry Groups (4-digit NAICS)

	MWBE	Black	Hispanic	Asian	Native American	Minority	Non-minority female	Non-minority male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NAICS 2123								
Percent LT 100	100%	100%	100%	100%	100%	100%	100%	0%
Percent LTE 80	100%	100%	100%	100%	100%	100%	100%	0%
Mean Disparity LTE 80	1	0	0	0	0	0	2	
Median Disparity LTE 80	0	0	0	0	0	0	0	
No. Observations	78	52	40	11	9	54	78	84
NAICS 2362								
Percent LT 100	81%	83%	92%	91%	95%	78%	95%	19%
Percent LTE 80	79%	81%	91%	90%	95%	76%	94%	16%
Mean Disparity LTE 80	19	15	8	3	0	17	8	12
Median Disparity LTE 80	14	0	0	0	0	7	0	0
No. Observations	170	168	168	168	166	170	170	170
NAICS 2371								
Percent LT 100	61%	75%	85%	78%	93%	59%	81%	39%
Percent LTE 80	58%	72%	84%	78%	92%	58%	79%	31%
Mean Disparity LTE 80	22	3	5	5	3	10	9	28
Median Disparity LTE 80	13	0	0	0	0	0	0	19
No. Observations	144	126	123	104	113	144	144	145
NAICS 2373								
Percent LT 100	82%	94%	79%	95%	98%	89%	79%	18%
Percent LTE 80	78%	92%	77%	95%	94%	86%	72%	11%
Mean Disparity LTE 80	22	2	10	3	3	13	17	33
Median Disparity LTE 80	17	0	0	0	0	1	4	19
No. Observations	167	167	155	135	155	167	167	167
NAICS 2379								
Percent LT 100	58%	82%	93%	95%	100%	76%	65%	42%
Percent LTE 80	55%	82%	93%	95%	100%	76%	61%	35%
Mean Disparity LTE 80	21	0	2	3	0	4	6	24
Median Disparity LTE 80	3	0	0	0	0	0	0	22
No. Observations	106	98	89	95	94	106	106	106
NAICS 2381								
Percent LT 100	41%	65%	46%	65%	79%	35%	83%	59%
Percent LTE 80	37%	63%	44%	60%	79%	31%	78%	49%
Mean Disparity LTE 80	16	15	7	6	1	5	16	36
Median Disparity LTE 80	0	0	0	0	0	0	3	37
No. Observations	163	162	160	134	154	163	163	163
NAICS 2382								
Percent LT 100	49%	60%	70%	86%	96%	52%	75%	51%
Percent LTE 80	43%	58%	68%	86%	95%	48%	73%	43%
Mean Disparity LTE 80	32	9	13	3	3	21	18	40
Median Disparity LTE 80	30	0	0	0	0	8	3	42
No. Observations	232	232	232	231	221	232	232	232
NAICS 2383								
Percent LT 100	54%	84%	82%	92%	86%	81%	52%	46%
Percent LTE 80	48%	82%	81%	91%	85%	80%	47%	26%
Mean Disparity LTE 80	18	7	11	8	1	15	14	42
Median Disparity LTE 80	9	0	0	0	0	4	0	49
No. Observations	127	125	127	106	124	127	127	129
NAICS 2389								
Percent LT 100	68%	72%	90%	94%	93%	76%	78%	32%
Percent LTE 80	66%	67%	89%	94%	93%	72%	74%	24%
Mean Disparity LTE 80	27	13	7	2	0	20	15	42
Median Disparity LTE 80	21	0	0	0	0	4	1	54
No. Observations	188	187	188	162	180	188	188	188

	MWBE	Black	Hispanic	Asian	Native American	Minority	Non-minority female	Non-minority male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NAICS 3273								
Percent LT 100	61%	84%	65%	100%	100%	62%	78%	38%
Percent LTE 80	60%	83%	64%	100%	100%	61%	74%	22%
Mean Disparity LTE 80	8	2	9	0	0	3	9	41
Median Disparity LTE 80	0	0	0	0	0	0	0	40
No. Observations	119	103	85	89	77	119	109	120
NAICS 3311								
Percent LT 100	100%	100%	100%	94%	100%	100%	100%	0%
Percent LTE 80	100%	100%	100%	94%	100%	100%	100%	0%
Mean Disparity LTE 80	2	0	0	0	0	2	0	0
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	43	38	41	36	16	43	40	43
NAICS 3315								
Percent LT 100	100%	100%	100%	100%	100%	100%	100%	0%
Percent LTE 80	100%	100%	100%	100%	100%	100%	100%	0%
Mean Disparity LTE 80	0	0	0	0	0	0	0	0
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	27	27	3	19	17	27	27	31
NAICS 3323								
Percent LT 100	53%	97%	86%	70%	96%	69%	70%	47%
Percent LTE 80	49%	97%	86%	68%	96%	66%	66%	31%
Mean Disparity LTE 80	11	1	1	2	0	3	10	39
Median Disparity LTE 80	0	0	0	0	0	0	0	50
No. Observations	133	116	115	122	102	133	131	133
NAICS 3327								
Percent LT 100	62%	100%	92%	100%	100%	94%	58%	38%
Percent LTE 80	62%	100%	92%	100%	100%	92%	54%	35%
Mean Disparity LTE 80	14	0	0	0	0	0	0	0
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	52	50	52	52	38	52	52	52
NAICS 3339								
Percent LT 100	97%	100%	100%	100%	100%	100%	97%	3%
Percent LTE 80	97%	100%	100%	100%	100%	100%	97%	3%
Mean Disparity LTE 80	2	0	0	0	0	0	1	13
Median Disparity LTE 80	0	0	0	0	0	0	0	12
No. Observations	120	94	26	66	56	102	120	118
NAICS 3342								
Percent LT 100	87%	100%	93%	100%	96%	94%	89%	13%
Percent LTE 80	86%	100%	93%	100%	96%	94%	87%	10%
Mean Disparity LTE 80	1	0	2	0	0	2	0	37
Median Disparity LTE 80	0	0	0	0	0	0	0	30
No. Observations	140	109	119	92	92	140	140	140
NAICS 3345								
Percent LT 100	80%	100%	100%	90%	96%	91%	84%	20%
Percent LTE 80	80%	100%	100%	90%	96%	91%	84%	15%
Mean Disparity LTE 80	6	0	0	0	0	1	4	0
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	118	104	73	97	83	115	118	122
NAICS 3353								
Percent LT 100	70%	100%	96%	100%	100%	97%	79%	30%
Percent LTE 80	70%	100%	96%	100%	100%	97%	79%	22%
Mean Disparity LTE 80	2	0	0	7	0	4	0	28
Median Disparity LTE 80	0	0	0	0	0	0	0	16
No. Observations	73	65	51	57	49	65	67	74

	MWBE	Black	Hispanic	Asian	Native American	Minority	Non-minority female	Non-minority male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NAICS 3365								
Percent LT 100	100%	100%	0%	100%	100%	100%	100%	19%
Percent LTE 80	100%	100%	0%	100%	100%	100%	100%	5%
Mean Disparity LTE 80	1	0	0	0	0	0	1	58
Median Disparity LTE 80	0	0	0	0	0	0	0	58
No. Observations	32	32	-	32	32	32	32	58
NAICS 4233								
Percent LT 100	53%	94%	94%	73%	100%	73%	59%	47%
Percent LTE 80	53%	91%	90%	73%	100%	72%	51%	43%
Mean Disparity LTE 80	20	3	4	4	0	6	16	43
Median Disparity LTE 80	6	0	0	0	0	0	1	50
No. Observations	150	131	124	139	111	150	150	150
NAICS 4235								
Percent LT 100	63%	92%	93%	92%	100%	87%	63%	37%
Percent LTE 80	61%	90%	93%	92%	100%	85%	63%	34%
Mean Disparity LTE 80	14	5	3	1	0	7	3	43
Median Disparity LTE 80	0	0	0	0	0	0	0	44
No. Observations	100	79	57	96	75	100	100	100
NAICS 4236								
Percent LT 100	59%	86%	96%	94%	100%	77%	66%	40%
Percent LTE 80	56%	85%	96%	94%	100%	77%	63%	31%
Mean Disparity LTE 80	12	3	3	0	0	3	5	28
Median Disparity LTE 80	0	0	0	0	0	0	0	18
No. Observations	197	187	159	191	165	197	197	198
NAICS 4238								
Percent LT 100	75%	83%	94%	96%	100%	85%	81%	25%
Percent LTE 80	72%	81%	94%	96%	99%	84%	79%	18%
Mean Disparity LTE 80	9	3	1	0	1	4	12	27
Median Disparity LTE 80	1	0	0	0	0	0	0	11
No. Observations	193	187	160	191	173	193	193	193
NAICS 4821								
Percent LT 100	86%	100%	85%	100%	100%	85%	100%	14%
Percent LTE 80	86%	100%	85%	100%	100%	85%	100%	14%
Mean Disparity LTE 80	0	0	0	0	0	0	0	24
Median Disparity LTE 80	0	0	0	0	0	0	0	24
No. Observations	59	55	55	55	23	55	59	59
NAICS 4882								
Percent LT 100	100%	100%	100%	100%	100%	100%	100%	0%
Percent LTE 80	100%	100%	100%	100%	100%	100%	100%	0%
Mean Disparity LTE 80	0	0	0	0	0	0	1	0
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	15	15	13	13	15	15	15	15
NAICS 5242								
Percent LT 100	75%	75%	100%	97%	93%	77%	82%	25%
Percent LTE 80	74%	75%	100%	97%	93%	73%	82%	19%
Mean Disparity LTE 80	17	11	1	0	0	8	6	42
Median Disparity LTE 80	7	0	0	0	0	0	0	47
No. Observations	73	71	61	66	29	73	72	73
NAICS 5411								
Percent LT 100	76%	88%	100%	100%	100%	88%	76%	24%
Percent LTE 80	76%	88%	100%	100%	100%	88%	76%	24%
Mean Disparity LTE 80	4	0	0	0	0	0	0	0
Median Disparity LTE 80	0	0	0	0	0	0	0	0
No. Observations	33	33	33	33	33	33	33	33

	MWBE	Black	Hispanic	Asian	Native American	Minority	Non-minority female	Non-minority male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NAICS 5312								
Percent LT 100	78%	76%	100%	100%	100%	78%	84%	22%
Percent LTE 80	76%	71%	100%	100%	100%	76%	82%	16%
Mean Disparity LTE 80	11	6	0	0	0	6	5	11
Median Disparity LTE 80	0	0	0	0	0	0	0	10
No. Observations	49	49	49	36	38	49	49	49
NAICS 5413								
Percent LT 100	54%	72%	82%	57%	93%	52%	76%	46%
Percent LTE 80	46%	68%	81%	54%	93%	47%	74%	24%
Mean Disparity LTE 80	36	15	13	14	3	30	23	35
Median Disparity LTE 80	35	1	0	0	0	29	20	32
No. Observations	279	279	279	277	275	279	279	279
NAICS 5415								
Percent LT 100	67%	89%	80%	75%	96%	68%	86%	33%
Percent LTE 80	61%	89%	79%	73%	96%	63%	82%	27%
Mean Disparity LTE 80	22	7	4	7	0	14	13	29
Median Disparity LTE 80	13	0	0	0	0	0	3	23
No. Observations	210	210	210	210	206	210	210	210
NAICS 5416								
Percent LT 100	53%	73%	79%	88%	97%	66%	64%	47%
Percent LTE 80	47%	69%	77%	87%	97%	61%	60%	37%
Mean Disparity LTE 80	23	13	6	13	0	17	16	31
Median Disparity LTE 80	15	0	0	0	0	5	7	32
No. Observations	229	227	229	221	207	229	229	229
NAICS 5417								
Percent LT 100	55%	75%	100%	99%	100%	77%	73%	44%
Percent LTE 80	55%	75%	100%	99%	100%	75%	72%	36%
Mean Disparity LTE 80	10	2	0	1	0	1	4	19
Median Disparity LTE 80	0	0	0	0	0	0	0	14
No. Observations	83	81	83	78	65	83	83	84
NAICS 5629								
Percent LT 100	66%	77%	91%	82%	91%	69%	86%	33%
Percent LTE 80	63%	75%	91%	82%	91%	67%	85%	29%
Mean Disparity LTE 80	18	7	5	0	0	10	12	14
Median Disparity LTE 80	1	0	0	0	0	0	0	1
No. Observations	99	95	78	55	44	99	99	102

Source: Author's calculations from the NERA studies in Table 2.1. Note: See Table 1.4 for titles of individual NAICS codes.

E. Conclusions

In my recent testimony before the U.S. House Committee on Transportation and Infrastructure, I noted that:

According to my records, there are at least another 150 disparity studies that have been completed since I finished my work for USDOJ in 2013. There is no doubt in my mind that were I to conduct a comparable analysis on these latest studies, I would find similar results—large and adverse disparities that continue to face M/WBEs throughout the country.⁵⁵

Having now had the opportunity to conduct such an analysis, I am disappointed, but not surprised, to learn that I was correct. Judging from the 205 studies produced since 2010, I observed large, adverse, and often statistically significant disparities facing minority-owned and women-owned business enterprises throughout the United States, across all government contracting and procurement categories, including those where spending associated with FRA grant activity is concentrated, and across race, ethnicity, and gender groups. This indicates that in the overwhelming number of public procurement markets, minority-owned and women-owned businesses are substantially underutilized based on their availability.

In the final two sections of my report, as a check on these findings, I first test whether consistent findings of disparity are observed in official government statistics concerning minority-owned and women-owned businesses. Secondly, I use statistical regression analysis with official statistics to test whether numerous potentially race- and gender-neutral variables can account for the disparities observed above.

⁵⁵ U.S. Congress (2021, p. 46).

III. There is Strong Macroeconomic Evidence of Disparities Between Utilization and Availability in U.S. Business Enterprise Activity

A. Introduction

A key rationale for public sector policies such as the USDOT DBE Program is to mitigate government entities' passive participation in private sector business enterprise business discrimination.⁵⁶ For this reason, the subject of this next section is understanding the extent of adverse disparities facing MWBEs across the broader U.S. economy.

The previous section has already documented the depth and breadth of adverse disparities facing MWBEs in public sector contracting throughout the United States at all levels of state and local government and throughout all industry segments. These adverse public contracting disparities are observed at the federal level as well:

Using federal contracting data from April 2019 to August 2020, economist Daniel Chow utilized statistical analyses to determine whether small, disadvantaged businesses (SDBs) were more or less likely to win federal contracts relative to other small businesses. Modeled after a similar study conducted by Dr. Robert Rubinovitz in 2012, Mr. Chow's analysis shows that SDBs not participating in the 8(a) program had 37 percent lower odds of winning a contract with the federal government compared to firms not identified as SDBs, a difference that is statistically significant. Mr. Chow also found that MBEs had roughly 15 percent lower odds of winning a federal prime contract than other small firms. These disparities persist despite controlling for all other factors that might increase a firm's odds for success, including firm size, level of security clearance of the firm, and the firm's age. In fact, the study concludes that SDBs had a statistically significant lower chance of winning a contract in over 93% of contract actions all else being equal. As a result, Mr. Chow concluded that the disparities in his study were consistent with the presence of discrimination.⁵⁷

In this Section, I present evidence from the Census Bureau's data collection efforts dedicated to MWBEs across the entire U.S. economy. From 1972 through 2012, the only source of such evidence was the Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO), which collected data on the number, sales, employment, and payrolls of businesses according to the race, ethnicity, and sex of their owner(s). The SBO covered both employer firms (*i.e.*, firms with paid employees) and nonemployer firms (*i.e.*, firms with no paid employees, typically sole proprietorships, partnerships, and smaller

⁵⁶ *Croson*, 488 U.S. at 492 (“Thus, if the city could show that it had essentially become a ‘passive participant’ in a system of racial exclusion practiced by elements of the local construction industry, we think it clear that the city could take affirmative steps to dismantle such a system.”).

⁵⁷ U.S. Department of Justice (2022b, pp. 20-21) [citations omitted].

corporations).⁵⁸ Data from the 2012 SBO, which is the final data available, were released in December 2015.⁵⁹ I have testified to Congress previously on race, ethnicity, and sex disparities calculated from the 2012 SBO data.⁶⁰

B. Data and Methods

In June 2018, the Census Bureau announced that the SBO had been discontinued and would be partially replaced with a new data product called the *Annual Business Survey* (ABS).⁶¹ Unlike the SBO, however, the ABS would only include employer firms. No accompanying announcement was made of any intent to replace the nonemployer portion of the SBO.⁶² In 2012, according to the SBO, the U.S. had about 5.1 million employer firms and about 22.0 million nonemployer firms across the entire macroeconomy.⁶³ The Census Bureau also announced that the ABS would be produced annually, whereas the SBO was only produced every five years, on the same cycle as the *Economic Census*.⁶⁴

The ABS remains tied to the *Economic Census*, however, and therefore its survey sample sizes are much larger for those years that coincide with the *Economic Census*. For example, the 2017 ABS for employer firms, released in May 2020, was based on a sample size of approximately 850,000 businesses.⁶⁵ The corresponding 2018, 2019, 2020, and 2021 ABS data, in contrast, were based on survey samples of approximately 300,000 employer firms.⁶⁶ The smaller sample sizes restrict the usefulness of the ABS data for calculating disparity indexes, since sales and receipts data are not published below the national, economy-wide level in off-cycle years.

In December 2020, recognizing the gap created in nonemployer firm coverage from the loss of the SBO, the Census Bureau announced the release of *Nonemployer Statistics by Demographics* (NES-D), another new data product for 2017 that “replaces the nonemployer component of the Census Bureau’s Survey of Business Owners (SBO).”⁶⁷ According to the Census Bureau:

⁵⁸ Employer firms have one or more paid employees. Nonemployer firms have no paid employees other than the owner. Most nonemployers are self-employed individuals operating unincorporated businesses, which may or may not be the owner’s principal source of income.

⁵⁹ U.S. Census Bureau (2018a, 2018b, 2018c, 2018d).

⁶⁰ U.S. Congress (2021, pp. 59-68).

⁶¹ U.S. Census Bureau (2018e).

⁶² U.S. Census Bureau (2021c). In 2012, according to the SBO, there were about 5.1 million employer firms and more than 22 million nonemployer firms.

⁶³ U.S. Congress (2021, p. 62).

⁶⁴ U.S. Census Bureau (2021c); U.S. Census Bureau (2021d).

⁶⁵ U.S. Census Bureau (2020c); U.S. Census Bureau (2021c).

⁶⁶ *Ibid.*

⁶⁷ U.S. Census Bureau (2020k).

NES-D is not a survey, rather it is an annual statistical series that uses existing administrative records (AR) and census data to link demographic characteristics to the universe of nonemployers. NES-D provides economic information by owner demographics such as sex, race, ethnicity and veteran status, geography, industry, receipt size class, and legal form of organization. Coupled with the new Annual Business Survey (ABS), which supplies demographic characteristics for employer businesses, the Census Bureau now provides annual business owner demographics for all businesses through a blended-data approach that combines AR-derived estimates for nonemployer businesses (NES-D) and survey-derived estimates for employer businesses (ABS).⁶⁸

The NES-D is provided in substantially the same format as the ABS.⁶⁹ Since it is derived from administrative records, the NES-D is not subject to survey sampling error.⁷⁰ ABS and NES-D coverage includes women and five major groups of racial or ethnic minorities: (1) Blacks, (2) Hispanics, (3) Asians, (4) Native Hawaiians and Other Pacific Islanders, (5) American Indians and Alaskan Natives. Comparative information for non-minority male-owned firms is also included.

In the remainder of this section, I present national evidence from the combined ABS and NES-D. I present economy-wide results for the United States for 2018, and more detailed national results by major procurement category, industry sector, and industry sub-sector for 2017. I also highlight those industry sectors and sub-sectors that are most important to the types of work funded and performed under FRA's various grant programs, as identified in the FRA Grant Activity Database.⁷¹

The 2018 combined ABS and NES-D data provide important insight into the character of minority and female business enterprise in the U.S for the economy as a whole. The 2017 combined ABS and NES-D data provide important insight into the character of minority and female business enterprise at the national level for major procurement categories, industry sectors, and industry sub-sectors.

As detailed below, I find a consistent pattern of large, adverse, and statistically significant disparities for MWBEs across all industry and geographic categories in 2018 and 2017.

C. Findings

1. Economy-Wide Results for the United States

I begin with the 2018 Combined ABS and NES-D data. Table 3.1 contains data for the U.S. as a whole and economy-wide (*i.e.*, all industries combined). Panel A in this table summarizes the results for each race grouping and for non-minority females. For example,

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ See U.S. Census Bureau (2021e).

⁷¹ NERA Economic Consulting (2016).

Panel A shows a total of 31.3 million firms in the U.S. in 2018 (column 1) with overall sales and receipts of \$15.547 trillion (column 2). Of these 31.3 million firms, 5.5 million had one or more employees (column 3) and accounted for sales and receipts of \$14.357 trillion (column 4). Column (5) shows a total of 63.5 million employees on the payroll of these 5.5 million firms and a total annual payroll expense of \$2.808 trillion (column 6).

The remaining rows in Panel A of Table 3.1 provide comparable statistics for non-minority male-owned firms as well as MWBEs. For example, Table 3.1 shows that there were 17.4 million MWBEs that registered \$3.47 trillion in sales and receipts. It also shows that 1.9 million of these firms had paid employees and registered sales and receipts of \$2.955 trillion. These 1.9 million firms employed a workforce of 17.26 million with an annual payroll of \$63.37 billion.

Panel B in Table 3.1 converts the figures in Panel A to percentage distributions within each column. For example, column (1) shows that Black-owned firms were 10.35 percent of all firms in the U.S. Additionally, 13.51 percent of firms were Hispanic-owned, 8.47 percent were Asian-owned, 0.15 percent were Native Hawaiian- and other Pacific Islander-owned, and 0.36 percent were American Indian- and Alaska Native-owned. Minorities as a group accounted for 31.01 percent, non-minority females accounted for 24.68 percent, and MWBEs collectively accounted for 55.69 percent.

Column (2) in Panel B provides the same percentage distribution by race and sex for overall sales and receipts. The data in column (1) and column (2) together, shows:

- Non-minority males owned 40.08 percent of all firms, but earned 69.27 percent of all sales and receipts.

In contrast, for the U.S. in 2018:

- Blacks owned 10.35 percent of all firms, but earned just 1.29 percent of all sales and receipts.
- Hispanics owned 13.51 percent of all firms, but earned only 3.86 percent of all sales and receipts.
- Asians owned 8.47 percent of all firms, but earned only 6.21 percent of all sales and receipts.
- Native Hawaiians and other Pacific Islanders owned 0.15 percent of all firms, but earned only 0.08 percent of all sales and receipts.
- American Indians and Alaska Natives owned 0.36 percent of all firms, but earned only 0.24 percent of all sales and receipts.
- Minorities as a group owned 31.01 percent of all firms, but earned only 11.5 percent of all sales and receipts.
- Non-minority females owned 24.68 percent of all firms, but earned only 10.82 percent of all sales and receipts.

- MWBEs as a group owned 55.69 percent of all firms, but earned only 22.32 percent of all sales and receipts.

These disparities between availability and utilization for MWBEs can be viewed directly from the disparity indexes in Panel C of Table 3.1. For example, Panel C shows that Black-owned firms in 2018 received just 12.47 percent of what would be expected based on their availability in the market.⁷² For Hispanics the figure is 28.55. For Asians the figure is 73.27. For Native Hawaiians and other Pacific Islanders, the figure is 53.97. For American Indians and Alaska Natives the figure is 65.16. For minorities as a group the figure is 37.08. For non-minority females the figure is 43.85. For MWBEs as a group the figure is 40.08. These disparities are all adverse, large (four-fifths or less for an unadjusted disparity), and statistically significant.⁷³

We can also compare sales and receipts per firm among all firms in 2018. In Table 3.1, for example, average per firm sales and receipts for non-minority male-owned firms was \$858.3 thousand.⁷⁴ In contrast:

- For Black-owned firms, average per firm sales and receipts was \$61.9 thousand. In other words, for every dollar of sales and receipts earned by non-minority male-owned firms, Black-owned firms received just 7 cents.
- For Hispanic-owned firms, average per firm sales and receipts was \$141.8 thousand. For every dollar of sales and receipts earned by non-minority male-owned firms, Hispanic-owned firms received just 17 cents.
- For Asian-owned firms, average per firm sales and receipts was \$363.9 thousand. For every dollar of sales and receipts earned by non-minority male-owned firms, Asian-owned firms received just 42 cents.
- For Native Hawaiian- and other Pacific Islander-owned firms, average per firm sales and receipts was \$268.0 thousand. For every dollar of sales and receipts earned by non-minority male-owned firms, Native Hawaiian- and other Pacific Islander-owned firms received just 31 cents.
- For American Indian- and Alaska Native-owned firms, average per firm sales and receipts was \$323.6 thousand. For every dollar of sales and receipts earned by non-minority male-owned firms, American Indian- and Alaska Native-owned firms received just 38 cents.

⁷² The disparity index is derived by dividing the share of sales and receipts from Panel B column (2) by the share of firms in Panel B column (1) and multiplying the result by 100.

⁷³ By “unadjusted” I mean disparity measures that are not already “adjusted” for differences among businesses or business owners in other demographic or capacity factors. Section IV, *infra*, discusses the impact of such adjustments on measures of disparity.

⁷⁴ Average per firm sales and receipts is derived by dividing the value for non-minority males in Panel A, column (2) by the corresponding value in Panel A, column (1).

- For minority-owned firms as a group, average per firm sales and receipts was \$184.1 thousand. For every dollar of sales and receipts earned by non-minority male-owned firms, minority-owned firms received just 21 cents.
- For non-minority female-owned firms, average per firm sales and receipts was \$217.8 thousand. For every dollar of sales and receipts earned by non-minority male-owned firms, non-minority female-owned firms received just 25 cents.
- For MWBEs as a group, average per firm sales and receipts was \$199.0 thousand. For every dollar of sales and receipts earned by non-minority male-owned firms, MWBEs received just 23 cents.

These disparities are all large, adverse, and statistically significant.

Turning to employer firms (*i.e.*, firms with one or more paid employees), we see from column (3) in Table 3.1, that although non-minority male-owned firms were 51.87 percent of all employer firms, they accounted for 70.73 percent of all employer firm sales and receipts. In contrast:

- Although Blacks owned 2.26 percent of all employer firms in the U.S., they earned only 0.89 percent of all sales and receipts.
- Although Hispanics owned 6.03 percent of all employer firms, they earned only 3.17 percent of all sales and receipts.
- Although Asians owned 10.51 percent of all employer firms, they earned only 6.01 percent of all sales and receipts.
- Although Native Hawaiians and other Pacific Islanders owned 0.12 percent of all employer firms, they earned only 0.08 percent of all sales and receipts.
- Although American Indians and Alaska Natives owned 0.44 percent of all employer firms, they earned only 0.23 percent of all sales and receipts.
- Although minorities as a group owned 19.06 percent of all employer firms, they earned only 10.32 percent of all sales and receipts.
- Although non-minority females owned 15.49 percent of all employer firms, they earned only 10.26 percent of all sales and receipts.
- Although MWBEs as a group owned 34.55 percent of all employer firms, they earned only 20.58 percent of all sales and receipts.

The economy-wide employer firm disparity indexes for 2018 appear in Panel C of Table 3.1. Panel C shows that Black-owned employer firms received just 39.37 percent of what would be expected based on their availability in the market. For Hispanics, the figure was 52.63. For Asians, the figure was 57.22. For Native Hawaiians and other Pacific Islanders, the figure was 64.35, for American Indians and Alaska Natives, the figure was 52.82, for minorities as a group the figure was 54.13, for non-minority females the figure was 66.29

percent, and for MWBEs as a group the figure was 59.58. These disparities are all large, adverse, and statistically significant.

Considering average sales and receipts per firm among employer firms in 2018, Table 3.1 shows a figure of \$3.56 million for non-minority male-owned employer firms. In contrast:

- For Black-owned employer firms, average per firm sales and receipts was \$1.03 million. In other words, for every dollar of sales and receipts earned by non-minority male-owned firms, Black-owned firms received just 29 cents.
- For Hispanic-owned employer firms, average per firm sales and receipts was \$1.37 million. For every dollar of sales and receipts earned by non-minority male-owned firms, Hispanic-owned firms received just 39 cents.
- For Asian-owned employer firms, average per firm sales and receipts was \$1.49 million. For every dollar of sales and receipts earned by non-minority male-owned firms, Asian-owned firms received just 42 cents.
- For Native Hawaiian- and other Pacific Islander-owned employer firms, average per firm sales and receipts was \$1.68 million. For every dollar of sales and receipts earned by non-minority male-owned firms, Native Hawaiian- and other Pacific Islander-owned firms received just 47 cents.
- For American Indian- and Alaska Native-owned employer firms, average per firm sales and receipts was \$1.38 million. For every dollar of sales and receipts earned by non-minority male-owned firms, American Indian- and Alaska Native-owned firms received just 39 cents.
- For minority-owned employer firms as a group, average per firm sales and receipts was \$1.41 million. For every dollar of sales and receipts earned by non-minority male-owned firms, minority-owned firms received just 40 cents.
- For non-minority female-owned employer firms, average per firm sales and receipts was \$1.73 million. For every dollar of sales and receipts earned by non-minority male-owned firms, non-minority female-owned firms received just 49 cents.
- For MWBE employer firms as a group, average per firm sales and receipts was \$1.38 million. For every dollar of sales and receipts earned by non-minority male-owned firms, MWBEs received just 44 cents.

These disparities are all large, adverse, and statistically significant.

The problem of MWBEs selling and earning less has important consequences that ripple throughout the economy. Because these firms make less, they may have to pay their employees less. This compounds race and sex disparities to the extent that MWBEs hire proportionately more minority or female employees. In addition, it reduces the wealth accruing to minorities and women (both business owners and employees alike) and thus

hinders would-be MWBEs in their efforts to create and grow their own firms, reinforcing the negative consequences of social and economic disadvantage.

Table 3.1 shows that average payroll per employee at non-minority male-owned employer firms in 2018 was \$48,819.⁷⁵ In contrast:

- For Black-owned employer firms, average payroll per employee was just \$31,072. In other words, for every \$1 in wages earned by employees at non-minority male-owned firms, employees at Black-owned firms earned only 64 cents.
- For Hispanic-owned employer firms, average payroll per employee was just \$34,017. For every \$1 in wages earned by employees at non-minority male-owned firms, employees at Hispanic-owned firms earned only 70 cents.
- For Asian-owned employer firms, average payroll per employee was just \$34,538. For every \$1 in wages earned by employees at non-minority male-owned firms, employees at Asian-owned firms earned only 71 cents.
- For Native Hawaiian- and other Pacific Islander-owned employer firms, average payroll per employee was just \$39,076. For every \$1 in wages earned by employees at non-minority male-owned firms, employees at Native Hawaiian- and other Pacific Islander-owned firms earned just 80 cents.
- For American Indian- and Alaska Native-owned employer firms, average payroll per employee was just \$41,154. For every \$1 in wages earned by employees at non-minority male-owned firms, employees at American Indian- and Alaska Native-owned firms earned just 84 cents.
- For minority-owned employer firms as a group, average payroll per employee was just \$34,248. For every \$1 in wages earned by employees at non-minority male-owned firms, employees at minority-owned firms earned only 70 cents.
- For non-minority female-owned employer firms, average payroll per employee was just \$40,032. For every \$1 in wages earned by employees at non-minority male-owned firms, employees at non-minority female-owned firms earned only 82 cents.
- For MWBE employer firms as a group, average payroll per employee was just \$36,871. For every \$1 in wages earned by employees at non-minority male-owned firms, employees at MWBE firms earned only 76 cents.

These disparities are all adverse and statistically significant. For Blacks, Hispanics, Asians, Native Hawaiians and Pacific Islanders, minorities as a group, and MWBEs as a group, they are large as well.

⁷⁵ Average payroll per employee is derived by dividing the value in Panel A, column (6) by the corresponding value in Panel A, column (5).

Table 3.1. Disparity Indexes from the Annual Business Survey Program, United States, All Industries, 2018

	Number of Firms	Sales and Receipts (\$1000s)	Employer Firms	Sales and Receipts (\$1000s)	Employees	Payroll (\$1000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Level						
All Firms	31,309,124	15,547,253,760	5,499,123	14,357,479,424	63,465,784	2,808,439,808
Non-minority male	12,547,663	10,769,255,550	2,852,663	10,155,308,598	39,131,972	1,910,402,434
MWBE	17,435,917	3,470,197,679	1,899,917	2,955,413,469	17,259,264	636,365,469
Minority	9,709,323	1,787,710,036	1,048,323	1,481,618,918	9,432,081	323,027,545
Black	3,239,551	200,557,159	124,551	128,012,399	1,188,819	36,939,229
Hispanic	4,228,625	599,527,934	331,625	455,644,682	2,972,140	101,103,299
Asian	2,651,835	964,883,671	577,835	863,324,218	5,090,065	175,800,264
Native Hawaiian & Pac. Islander	46,653	12,504,148	6,653	11,177,012	54,446	2,127,545
Amer. Indian & Alaska Native	113,433	36,703,901	24,433	33,697,503	200,256	8,241,262
Non-minority female	7,726,594	1,682,487,643	851,594	1,473,794,551	7,827,183	313,337,924
Panel B. Column Percentage						
Non-minority male	40.08%	69.27%	51.87%	70.73%	61.66%	68.02%
MWBE	55.69%	22.32%	34.55%	20.58%	27.19%	22.66%
Minority	31.01%	11.50%	19.06%	10.32%	14.86%	11.50%
Black	10.35%	1.29%	2.26%	0.89%	1.87%	1.32%
Hispanic	13.51%	3.86%	6.03%	3.17%	4.68%	3.60%
Asian	8.47%	6.21%	10.51%	6.01%	8.02%	6.26%
Native Hawaiian & Pac. Islander	0.15%	0.08%	0.12%	0.08%	0.09%	0.08%
Amer. Indian & Alaska Native	0.36%	0.24%	0.44%	0.23%	0.32%	0.29%
Non-minority female	24.68%	10.82%	15.49%	10.26%	12.33%	11.16%
Panel C. Disparity Index		Column (2) ÷ (1)		Column (4) ÷ (3)	Column (5) ÷ ((3)	Column (6) ÷ (3)
Non-minority male		172.84		136.35	118.86	131.13
MWBE		40.08***		59.58***	78.71***	65.58***
Minority		37.08***		54.13***	77.96***	60.34***
Black		12.47***		39.37***	82.70***	58.07***
Hispanic		28.55***		52.63***	77.66***	59.70***
Asian		73.27***		57.22***	76.33***	59.57***
Native Hawaiian & Pac. Islander		53.97***		64.35**	70.91**	62.62***
Amer. Indian & Alaska Native		65.16***		52.82***	71.02***	66.05***
Non-minority female		43.85***		66.29***	79.64***	72.05***

Source: Author's calculations using 2018 ABS Program data. Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations; (2) Excludes firms not classifiable by race and sex, including publicly owned, foreign-owned, and not-for-profit firms; (3) Totals for All Firms and Employer Firms include firms that were equally non-minority/minority owned and equally male/female owned; (4) "***" indicates an adverse disparity that is statistically significant within a 90% confidence interval or better. "****" indicates an adverse disparity that is statistically significant within a 95% confidence interval or better. "*****" indicates the disparity is significant within a 99% confidence interval or better.

2. Procurement Category and Industry-Specific Results for the United States

Table 3.2 shows disparity ratios and their underlying firm and sales percentages for both all firms and employer firms calculated from the 2017 combined ABS and NES-D data.⁷⁶ The top panel of the table, for the economy as a whole (“All Industries”), shows results comparable to the 2018 data seen in Panels B and C in Table 3.1.

The remaining panels in Table 3.2 present results for all industry sectors, grouped according to four major procurement categories. These are:

- Construction (NAICS 23);
- Professional Services (NAICS 54, 55 & 56);
- General Services (NAICS 48-49, 51, 52, 53, 61, 62, 71, 72 & 81); and
- CSE (NAICS 11, 21, 22, 31-33, 42 & 44-45).

a. By major procurement category and industry sector

When the 2017 results are disaggregated into these four major procurement categories and 19 industry sectors, similar patterns of large, adverse, and statistically significant disparities are observed for minorities and women in the vast majority of cases. Specifically:

i. Economy as a whole

- In the All Industries panel of Table 3.2, 100.0 percent of the disparity indexes are adverse (16 out of 16). Of those that are adverse, 93.8 percent are large (15 out of 16). Of those that are adverse and large, 100.0 percent are statistically significant (15 out of 15).

ii. Construction

- In the Construction panel, 87.5 percent are adverse. Of those that are adverse, 92.9 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

iii. Professional services

- In the Professional Services (NAICS 54) panel, 75.0 percent are adverse. Of those that are adverse, 75.0 percent are large. Of those that are adverse and large, 88.9 percent are statistically significant.

⁷⁶ The percentages in columns (1)-(4) of Table 3.2 are comparable to the figures in Panel B, columns (1)-(4), respectively, of Table 3.1. The disparity ratios in columns (5) and (6) of Table 3.2 are comparable to the figures in Panel C, columns (2) and (4), respectively, of Table 3.1.

- In the Professional Services (NAICS 55) panel, 50.0 percent are adverse. Of those that are adverse, 50.0 percent are large. Of those that are adverse and large, 50.0 percent are statistically significant.
- In the Professional Services (NAICS 56) panel, 87.5 percent are adverse. Of those that are adverse, 85.7 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

iv. General services

- In the General Services (NAICS 48-49) panel, 87.5 percent are adverse. Of those that are adverse, 85.7 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.
- In the General Services (NAICS 51) panel, 100.0 percent are adverse. Of those that are adverse, 93.8 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.
- In the General Services (NAICS 52) panel, 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.
- In the General Services (NAICS 53) panel, 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.
- In the General Services (NAICS 61) panel, 85.7 percent are adverse. Of those that are adverse, 91.7 percent are large. Of those that are adverse and large, 91.0 percent are statistically significant.
- In the General Services (NAICS 62) panel, 93.8 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.
- In the General Services (NAICS 71) panel, 81.3 percent are adverse. Of those that are adverse, 92.3 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.
- In the General Services (NAICS 72) panel, 93.8 percent are adverse. Of those that are adverse, 86.7 percent are large. Of those that are adverse and large, 69.2 percent are statistically significant.
- In the General Services (NAICS 81) panel, 100.0 percent are adverse. Of those that are adverse, 87.5 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

v. CSE

- In the Commodities (NAICS 11) panel, 81.3 percent are adverse. Of those that are adverse, 92.3 percent are large. Of those that are adverse and large, 75.0 percent are statistically significant.
- In the Commodities (NAICS 21) panel, 100.0 percent are adverse. Of those that are adverse, 92.9 percent are large. Of those that are adverse and large, 92.3 percent are statistically significant.
- In the Commodities (NAICS 22) panel, 93.8 percent are adverse. Of those that are adverse, 93.3 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.
- In the Commodities (NAICS 31-33) panel, 93.8 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 93.3 percent are statistically significant.
- In the Commodities (NAICS 42) panel, 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 87.5 percent are statistically significant.
- In the Commodities (NAICS 44-45) panel, 100.0 percent are adverse. Of those that are adverse, 93.8 percent are large. Of those that are adverse and large, 86.7 percent are statistically significant.

b. By race, ethnicity, and sex

These results are evident within each individual MWBE group as well. Specifically:

- For Blacks, 94.9 percent are adverse (37 out of 39). Of those that are adverse, 100.0 percent are large (37 out of 37). Of those that are adverse and large, 89.2 percent are statistically significant (33 out of 37).
- For Hispanics, 92.3 percent are adverse. Of those that are adverse, 97.2 percent are large. Of those that are adverse and large, 97.1 percent are statistically significant.
- For Asians, 79.5 percent are adverse. Of those that are adverse, 90.3 percent are large. Of those that are adverse and large, 96.4 percent are statistically significant.
- For Native Hawaiians and Pacific Islanders, 97.0 percent are adverse. Of those that are adverse, 90.6 percent are large. Of those that are adverse and large, 86.2 percent are statistically significant.
- For American Indians and Alaska Natives, 82.1 percent are adverse. Of those that are adverse, 78.1 percent are large. Of those that are adverse and large, 88.0 percent are statistically significant.

- For minorities as a group, 94.9 percent are adverse. Of those that are adverse, 94.6 percent are large. Of those that are adverse and large, 94.3 percent are statistically significant.
- For non-minority females, 92.3 percent are adverse. Of those that are adverse, 88.9 percent are large. Of those that are adverse and large, 96.9 percent are statistically significant.
- For MWBEs as a group, 100.0 percent are adverse. Of those that are adverse, 94.9 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

Table 3.2. Percentage of Firms and Sales and Corresponding Disparity Ratios, All Firms and Employer Firms, United States, by Industry Sector, 2017

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
All Industries						
NONM	40.72	69.21	52.08	70.71	1.70***	1.36***
MWBE	55.01	22.43	34.16	20.64	0.41***	0.60***
Minority	30.07	12.16	18.54	11.05	0.40***	0.60***
Black	10.07	1.40	2.27	1.01	0.14***	0.44***
Hispanic	12.96	3.99	5.88	3.33	0.31***	0.57***
Asian	8.24	6.57	10.15	6.42	0.80***	0.63***
NHPI	0.15	0.07	0.13	0.07	0.47***	0.53***
AIAN	0.36	0.29	0.45	0.30	0.82***	0.67***
NONF	24.95	10.27	15.62	9.60	0.41***	0.61***
	30,544,720	13,824,025,600	5,474,721	12,689,937,408		
Construction						
NONM	63.52	77.12	68.52	77.92	1.21***	1.14***
MWBE	32.71	15.27	18.05	13.97	0.47***	0.77***
Minority	26.27	8.25	10.90	6.71	0.31***	0.62***
Black	4.99	0.93	1.17	0.72	0.19***	0.61***
Hispanic	19.13	5.46	7.16	4.10	0.29***	0.57***
Asian	3.03	1.46	2.02	1.37	0.48***	0.68***
NHPI	0.16	0.10	0.16	0.10	0.62***	0.63***
AIAN	0.52	0.51	0.69	0.52	0.99***	0.76***
NONF	6.44	7.01	7.15	7.26	1.09	1.02
	3,153,453	1,697,394,304	700,453	1,544,490,496		
Professional Services (NAICS 54)						
NONM	47.59	64.97	56.31	66.39	1.37***	1.18***
MWBE	49.60	28.70	33.49	26.65	0.58***	0.80***
Minority	20.69	14.71	14.39	14.25	0.71	0.99
Black	5.54	1.92	2.06	1.60	0.35***	0.78***
Hispanic	7.79	3.68	4.32	3.20	0.47***	0.74***
Asian	7.66	8.63	7.67	8.84	1.13***	1.15***
NHPI	0.11	0.10	0.12	0.10	0.91*	0.85*
AIAN	0.28	0.47	0.52	0.52	1.69	1.00
NONF	28.90	13.99	19.10	12.40	0.48***	0.65***
	4,268,235	1,080,928,000	794,235	922,698,048		

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
Professional Services (NAICS 55)						
NONM	n/a	n/a	69.87	73.53	n/a	1.05
MWBE	n/a	n/a	19.40	19.05	n/a	0.98
Minority	n/a	n/a	7.01	8.14	n/a	1.16
Black	n/a	n/a	1.05	0.62	n/a	0.60***
Hispanic	n/a	n/a	2.08	2.80	n/a	1.34
Asian	n/a	n/a	3.67	4.15	n/a	1.13
NHPI	n/a	n/a	0.13	0.05	n/a	0.38
AIAN	n/a	n/a	0.28	0.72	n/a	2.58***
NONF	n/a	n/a	12.39	10.91	n/a	0.88***
			17,799	63,794,560		
Professional Services (NAICS 56)						
NONM	30.88	61.21	53.71	63.25	1.98***	1.18***
MWBE	66.74	29.65	32.18	26.97	0.44***	0.84***
Minority	38.91	14.38	15.78	12.38	0.37***	0.78***
Black	13.12	2.75	3.00	2.14	0.21***	0.71***
Hispanic	23.57	7.01	9.02	5.46	0.30***	0.61***
Asian	4.49	4.54	3.59	4.49	1.01***	1.25***
NHPI	0.21	0.10	0.18	0.09	0.49***	0.51***
AIAN	0.50	0.35	0.52	0.34	0.70***	0.66***
NONF	27.83	15.27	16.40	14.59	0.55***	0.89***
	2,463,083	561,277,824	338,083	513,696,288		
General Services (NAICS 48-49)						
NONM	36.78	66.65	55.38	72.22	1.81***	1.30***
MWBE	61.62	26.26	29.90	19.43	0.43**	0.65**
Minority	53.29	17.82	19.84	10.17	0.33***	0.51***
Black	22.58	4.31	3.95	1.18	0.19***	0.30***
Hispanic	22.05	8.37	10.33	4.79	0.38***	0.46***
Asian	12.76	5.59	5.36	3.85	0.44***	0.72***
NHPI	0.24	0.11	0.19	0.09	0.45***	0.46***
AIAN	0.43	0.42	0.45	0.44	1.00	0.97
NONF	8.33	8.44	10.07	9.26	1.01*	0.92*
	2,357,196	509,112,352	182,196	413,997,728		
General Services (NAICS 51)						
NONM	52.01	77.69	60.28	78.49	1.49***	1.30***
MWBE	44.41	16.27	26.65	15.40	0.37***	0.58***
Minority	21.84	9.26	13.70	8.85	0.42***	0.65***
Black	7.29	1.03	1.78	0.87	0.14***	0.49***
Hispanic	8.48	2.38	3.70	2.15	0.28***	0.58***
Asian	6.38	5.71	7.91	5.67	0.89***	0.72***
NHPI	0.13	0.03	0.11	0.02	0.20***	0.20***
AIAN	0.27	0.16	0.38	0.16	0.60***	0.43***
NONF	22.57	7.02	12.95	6.55	0.31***	0.51***
	407,855	295,197,088	69,855	283,206,016		
General Services (NAICS 52)						
NONM	58.90	80.79	65.04	81.91	1.37***	1.26***
MWBE	36.97	14.79	25.24	13.46	0.40***	0.53***
Minority	18.70	6.20	11.22	5.26	0.33***	0.47***
Black	5.46	0.83	2.10	0.63	0.15***	0.30***
Hispanic	7.22	2.38	4.79	2.08	0.33***	0.43***
Asian	6.35	2.84	4.17	2.37	0.45***	0.57***
NHPI	0.10	0.04	0.09	0.04	0.37***	0.39***
AIAN	0.25	0.10	0.39	0.10	0.40***	0.25***
NONF	18.28	8.60	14.02	8.20	0.47***	0.59***
	908,696	515,479,360	221,696	462,341,984		

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
General Services (NAICS 53)						
NONM	44.57	61.82	50.51	67.04	1.39***	1.33***
MWBE	41.66	25.30	31.39	20.88	0.61***	0.67***
Minority	16.60	8.96	10.57	6.20	0.54***	0.59***
Black	3.50	1.01	1.20	0.66	0.29***	0.55***
Hispanic	6.22	2.94	4.00	2.07	0.47***	0.52***
Asian	6.98	4.90	5.18	3.31	0.70***	0.64***
NHPI	n/a	n/a	n/a	n/a	n/a	n/a
AIAN	0.15	0.11	0.28	0.14	0.77***	0.50***
NONF	25.06	16.33	20.82	14.68	0.65***	0.71***
	2,826,449	581,098,368	294,449	346,607,360		
General Services (NAICS 61)						
NONM	29.08	43.33	31.62	45.73	1.49***	1.45***
MWBE	69.35	44.95	51.56	40.11	0.65***	0.78***
Minority	24.30	16.92	18.53	15.44	0.70***	0.83***
Black	9.53	2.98	2.90	1.76	0.31***	0.61***
Hispanic	8.25	5.06	4.12	4.43	0.61	1.08
Asian	6.91	8.54	10.90	8.73	1.24***	0.80***
NHPI	n/a	n/a	n/a	n/a	n/a	n/a
AIAN	0.30	0.22	0.52	0.22	0.74***	0.43***
NONF	45.04	28.03	33.03	24.67	0.62***	0.75***
	801,171	50,929,832	63,171	40,481,264		
General Services (NAICS 62)						
NONM	22.24	55.18	42.86	57.42	2.48***	1.34***
MWBE	75.22	35.19	47.45	32.18	0.47***	0.68***
Minority	39.52	18.97	25.16	17.61	0.48***	0.70***
Black	18.74	4.37	6.76	3.60	0.23***	0.53***
Hispanic	12.99	4.05	5.32	3.47	0.31***	0.65***
Asian	9.49	10.30	12.83	10.17	1.09***	0.79***
NHPI	0.18	0.06	0.11	0.05	0.30***	0.43***
AIAN	0.39	0.24	0.44	0.24	0.61***	0.53***
NONF	35.70	16.22	22.29	14.57	0.45***	0.65***
	2,512,170	744,943,936	587,170	680,014,848		
General Services (NAICS 71)						
NONM	47.15	65.21	53.54	68.52	1.38***	1.28***
MWBE	50.87	25.06	28.34	19.70	0.49***	0.70***
Minority	20.43	9.09	8.95	6.34	0.45***	0.71***
Black	8.97	3.21	2.53	2.01	0.36***	0.79***
Hispanic	7.82	2.97	3.02	1.69	0.38***	0.56***
Asian	3.98	2.57	3.04	2.13	0.65***	0.70***
NHPI	0.16	0.14	0.13	0.13	0.88	1.03
AIAN	0.31	0.47	0.47	0.56	1.54	1.17
NONF	30.44	15.96	19.39	13.37	0.52***	0.69***
	1,522,472	153,028,976	100,472	117,212,128		
General Services (NAICS 72)						
NONM	31.95	51.12	36.73	51.51	1.60***	1.40***
MWBE	58.32	35.76	47.92	35.17	0.61***	0.73***
Minority	40.06	26.25	35.04	25.87	0.66***	0.74***
Black	8.74	1.62	1.44	1.47	0.19	1.02
Hispanic	12.60	6.26	8.02	6.04	0.50***	0.75***
Asian	19.85	18.23	25.46	18.17	0.92***	0.71***
NHPI	0.15	0.10	0.11	0.09	0.63	0.80
AIAN	0.38	0.29	0.35	0.29	0.77	0.85
NONF	18.26	9.51	12.88	9.30	0.52***	0.72***
	915,135	645,906,304	521,135	628,834,304		

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
General Services (NAICS 81)						
NONM	27.83	51.80	42.70	58.74	1.86***	1.38***
MWBE	70.13	36.96	41.95	26.16	0.53***	0.62***
Minority	41.55	21.07	23.55	13.87	0.51***	0.59***
Black	16.16	3.89	2.14	1.28	0.24***	0.60***
Hispanic	14.96	7.57	6.49	4.46	0.51***	0.69***
Asian	12.60	10.00	14.88	7.86	0.79***	0.53***
NHPI	0.14	0.09	0.11	0.07	0.64***	0.67**
AIAN	0.36	0.30	0.34	0.30	0.82	0.86
NONF	28.58	15.89	18.40	12.29	0.56***	0.67***
	4,092,652	332,200,544	388,652	231,288,864		
Commodities, Supplies & Equipment (NAICS 11)						
NONM	70.28	70.79	57.84	68.79	1.01	1.19
MWBE	26.04	15.48	18.14	14.33	0.59***	0.79***
Minority	12.54	10.07	6.96	9.83	0.80	1.41
Black	2.03	0.65	0.60	0.42	0.32	0.71
Hispanic	7.42	7.08	4.95	7.53	0.95*	1.52*
Asian	2.29	1.81	0.70	1.41	0.79	2.01
NHPI	0.15	0.02	0.02	0.00	0.15***	0.18***
AIAN	1.10	0.66	0.84	0.58	0.60*	0.69*
NONF	13.51	5.41	11.17	4.50	0.40***	0.40***
	274,504	46,342,048	27,504	35,129,208		
Commodities, Supplies & Equipment (NAICS 21)						
NONM	69.14	79.92	67.60	80.26	1.16**	1.19**
MWBE	24.22	10.96	14.73	10.49	0.45***	0.71***
Minority	6.62	2.15	4.52	1.89	0.33***	0.42***
Black	0.91	0.06	0.12	0.02	0.07***	0.20***
Hispanic	4.49	1.38	3.09	1.17	0.31***	0.38***
Asian	0.81	0.39	0.66	0.37	0.48**	0.56**
NHPI	n/a	n/a	n/a	n/a	n/a	n/a
AIAN	0.46	0.33	0.66	0.33	0.71***	0.49***
NONF	17.60	8.81	10.22	8.60	0.50	0.84
	101,193	82,577,504	17,693	77,676,128		
Commodities, Supplies & Equipment (NAICS 22)						
NONM	61.77	96.37	69.91	96.67	1.56	1.38
MWBE	32.69	2.65	18.24	2.42	0.08***	0.13***
Minority	21.10	1.25	7.01	1.10	0.06***	0.16***
Black	6.63	0.21	0.69	0.17	0.03***	0.24***
Hispanic	11.64	0.34	3.87	0.26	0.03***	0.07***
Asian	3.12	0.18	2.15	0.15	0.06***	0.07***
NHPI	0.17	0.00	0.19	0.00	0.01***	0.00***
AIAN	0.51	0.53	0.57	0.53	1.03	0.93
NONF	11.59	1.40	11.23	1.32	0.12***	0.12***
	14,609	50,769,472	2,609	50,199,808		
Commodities, Supplies & Equipment (NAICS 31-33)						
NONM	55.09	76.26	62.26	76.45	1.38***	1.23***
MWBE	37.22	16.32	22.97	16.09	0.44***	0.70***
Minority	18.53	6.59	10.25	6.42	0.36***	0.63***
Black	4.29	0.73	0.68	0.70	0.17	1.04
Hispanic	9.58	2.00	4.41	1.87	0.21***	0.42***
Asian	4.99	3.62	4.88	3.59	0.73***	0.74***
NHPI	0.13	0.08	0.11	0.08	0.61*	0.75*
AIAN	0.41	0.22	0.41	0.22	0.54***	0.54***
NONF	18.69	9.72	12.72	9.67	0.52***	0.76***
	574,204	1,362,996,736	238,204	1,346,629,888		

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
Commodities, Supplies & Equipment (NAICS 42)						
NONM	52.04	73.54	57.64	73.71	1.41***	1.28***
MWBE	41.07	18.89	29.72	18.67	0.46***	0.63***
Minority	23.05	11.01	18.87	10.85	0.48***	0.57***
Black	3.64	0.46	0.69	0.44	0.13***	0.64***
Hispanic	9.31	3.16	5.49	3.07	0.34***	0.56***
Asian	10.49	7.23	12.54	7.17	0.69***	0.57***
NHPI	0.09	0.01	0.05	0.01	0.12***	0.20***
AIAN	0.32	0.21	0.27	0.21	0.65	0.76
NONF	18.02	7.88	10.84	7.82	0.44***	0.72***
	658,476	2,724,469,248	287,476	2,691,602,432		
Commodities, Supplies & Equipment (NAICS 44-45)						
NONM	33.47	68.62	44.81	69.39	2.05***	1.55***
MWBE	61.51	22.18	38.67	21.20	0.36***	0.55***
Minority	24.55	12.62	22.80	12.17	0.51***	0.53***
Black	6.19	0.89	1.38	0.75	0.14***	0.55***
Hispanic	9.81	3.38	4.88	3.12	0.34***	0.64***
Asian	9.14	8.21	16.49	8.13	0.90***	0.49***
NHPI	0.15	0.09	0.13	0.09	0.57	0.67
AIAN	0.32	0.25	0.37	0.25	0.77**	0.67**
NONF	36.96	9.56	15.87	9.03	0.26***	0.57***
	2,692,455	2,325,562,880	636,455	2,240,019,712		

Source: Author's calculations from combined 2017 ABS and NES-D data. Notes: (1) "NONM" stands for non-minority males, "NHPI" stands for Native Hawaiian and Pacific Islanders, "AIAN" stands for American Indians and Alaska Native, "NONF" stands for non-minority females; (2) Statistical significance is indicated by asterisks (* p-value<0.1, ** p-value<0.05, *** p-value<0.01); (3) "n/a" is presented when underlying data was withheld by the Census Bureau due to confidentiality restrictions; (4) Last row in each section contains firm totals and sales and receipts totals (in \$1,000s); (5) Totals include firms that were equally non-minority/minority owned and equally male/female owned.

3. Results for Industry Subsectors Most Important to FRA Grant Activity

Table 3.3 shows findings for those Industry Subsectors (3-digit NAICS) that account for the most spending according to the FRA Grant Activity Database. As with the results above, the vast majority of these outcomes show large, adverse, and statistically significant disparities impacting MWBEs.

a. By major procurement category and industry subsector

i. Construction

For Construction of Buildings (NAICS 236), 100.0 percent are adverse. Of those that are adverse, 87.5 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Heavy and Civil Engineering Construction (NAICS 237), 93.8 percent are adverse. Of those that are adverse, 62.5 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Specialty Trade Contractors (NAICS 238), 87.5 percent are adverse. Of those that are adverse, 85.7 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

ii. Professional services

For Professional, Scientific, and Technical Services (NAICS 541), 75.0 percent are adverse. Of those that are adverse, 75.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Waste Management and Remediation Services (NAICS 562), 93.8 percent are adverse. Of those that are adverse, 80.0 percent are large. Of those that are adverse and large, 83.3 percent are statistically significant.

iii. General services

For Support Activities for Transportation (NAICS 488), 92.9 percent are adverse. Of those that are adverse, 84.6 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Real Estate (NAICS 531), 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

iv. CSE

For Primary Metal Manufacturing (NAICS 331), 93.3 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

Fabricated Metal Product Manufacturing (NAICS 332), 92.9 percent are adverse. Of those that are adverse, 84.6 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Computer and Electronic Product Manufacturing (NAICS 334), 75.0 percent are adverse. Of those that are adverse, 83.3 percent are large. Of those that are adverse and large, 80.0 percent are statistically significant.

For Electrical Equipment, Appliance, and Component Manufacturing (NAICS 335), 93.3 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 85.7 percent are statistically significant.

For Transportation Equipment Manufacturing (NAICS 336), 68.8 percent are adverse. Of those that are adverse, 72.7 percent are large. Of those that are adverse and large, 37.5 percent are statistically significant.

For Merchant Wholesalers, Durable Goods (NAICS 423), 100.0 percent are adverse. Of those that are adverse, 87.5 percent are large. Of those that are adverse and large, 85.7 percent are statistically significant.

b. By race, ethnicity, and sex across important industry subsectors

For Blacks, 96.2 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 84.0 percent are statistically significant.

For Hispanics, 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Asians, 76.9 percent are adverse. Of those that are adverse, 80.0 percent are large. Of those that are adverse and large, 93.8 percent are statistically significant.

For Native Hawaiians and Pacific Islanders, 90.5 percent are adverse. Of those that are adverse, 78.9 percent are large. Of those that are adverse and large, 80.0 percent are statistically significant.

For American Indians and Alaska Natives, 78.3 percent are adverse. Of those that are adverse, 72.2 percent are large. Of those that are adverse and large, 92.3 percent are statistically significant.

For minorities as a group, 92.3 percent are adverse. Of those that are adverse, 91.7 percent are large. Of those that are adverse and large, 95.5 percent are statistically significant.

For women, 88.5 percent are adverse. Of those that are adverse, 60.9 percent are large. Of those that are adverse and large, 92.9 percent are statistically significant.

For MWBEs as a group, 92.3 percent are adverse. Of those that are adverse, 91.7 percent are large. Of those that are adverse and large, 95.5 percent are statistically significant.

Table 3.3. Percentage of Firms and Sales and Corresponding Disparity Ratios, All Firms and Employer Firms, United States, by Most Important Industry Subsectors for FRA, 2017

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
Construction (NAICS 236) Construction of Buildings						
Non-minority	73.94	92.07	88.64	93.18	1.25**	1.05**
MWBE	33.50	12.75	17.08	11.54	0.38***	0.68***
Minority	25.67	7.08	10.19	5.94	0.28***	0.58***
Black	4.53	0.87	1.17	0.71	0.19***	0.60***
Hispanic	18.55	4.19	5.63	3.20	0.23***	0.57***
Asian	3.55	1.70	2.95	1.62	0.48***	0.55***
NHPI	0.16	0.10	0.15	0.10	0.63**	0.67**
AIAN	0.47	0.41	0.59	0.42	0.86**	0.72**
Female	7.83	5.66	6.88	5.59	0.72***	0.81***
	894,087	633,476,928	211,087	578,224,704		
Construction (NAICS 237) Heavy and Civil Engineering Construction						
Non-minority	83.82	94.16	91.19	94.29	1.12	1.03
MWBE	26.48	15.24	20.32	15.16	0.58**	0.75**
Minority	15.83	5.36	8.08	5.23	0.34***	0.65***
Black	3.53	0.54	0.90	0.51	0.15***	0.56***
Hispanic	10.48	3.13	4.84	3.02	0.30***	0.63***
Asian	1.87	0.88	1.56	0.88	0.47***	0.56***
NHPI	0.11	0.10	0.11	0.10	0.93	0.92
AIAN	0.61	0.74	0.84	0.75	1.20*	0.89*
Female	10.65	9.88	12.24	9.92	0.93**	0.81**
	71,117	190,925,968	34,117	187,577,248		
Construction (NAICS 238) Specialty Trade Contractors						
Non-minority	72.74	89.28	87.36	91.31	1.23***	1.05***
MWBE	37.69	19.04	20.40	17.16	0.51***	0.84***
Minority	26.87	9.73	11.42	7.64	0.36***	0.67***
Black	5.23	1.06	1.19	0.77	0.20***	0.65***
Hispanic	19.63	6.89	8.04	5.03	0.35***	0.63***
Asian	2.85	1.41	1.63	1.30	0.50**	0.80**
NHPI	0.17	0.10	0.16	0.10	0.61***	0.59***
AIAN	0.53	0.54	0.72	0.55	1.00**	0.76**
Female	10.82	9.31	8.97	9.52	0.86	1.06
	2,188,297	872,936,768	455,297	778,634,112		
Professional Services (NAICS 541) Professional, Scientific, and Technical Services						
Non-minority	78.84	84.09	84.10	84.45	1.07	1.00
MWBE	58.50	32.46	37.77	30.04	0.55***	0.80***
Minority	20.69	14.71	14.39	14.25	0.71*	0.90*
Black	5.54	1.92	2.06	1.60	0.35***	0.78***
Hispanic	7.79	3.68	4.32	3.20	0.47***	0.74***
Asian	7.66	8.63	7.67	8.84	1.13***	1.15***
NHPI	0.11	0.10	0.12	0.10	0.91*	0.85*
AIAN	0.28	0.47	0.52	0.52	1.69	1.00
Female	37.81	17.75	23.37	15.78	0.47***	0.68***
	4,268,223	1,080,927,872	794,223	922,697,920		

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
Professional Services (NAICS 562) Waste Management and Remediation Services						
Non-minority	81.73	93.22	90.35	93.51	1.14	1.03
MWBE	33.60	18.12	23.93	17.83	0.54**	0.75**
Minority	16.89	6.04	8.49	5.76	0.36***	0.68***
Black	5.94	1.31	1.60	1.21	0.22***	0.76***
Hispanic	9.51	2.99	5.04	2.82	0.31***	0.56***
Asian	1.93	1.47	1.46	1.44	0.76	0.99
NHPI	0.16	0.11	0.11	0.11	0.68	1.01
AIAN	0.45	0.42	0.42	0.41	0.93	0.98
Female	16.71	12.08	15.43	12.07	0.72**	0.78**
	36,752	60,688,012	17,752	59,224,352		
General Services (NAICS 488) Support Activities for Transportation						
Non-minority	51.30	81.81	77.59	84.16	1.59**	1.08**
MWBE	67.71	29.64	35.48	27.03	0.44**	0.76**
Minority	48.49	17.55	21.12	15.19	0.36***	0.72***
Black	16.40	1.73	1.89	0.70	0.11***	0.37***
Hispanic	28.67	7.57	10.75	5.80	0.26***	0.54***
Asian	8.64	8.39	8.19	8.44	0.97	1.03
NHPI	0.21	0.13	0.19	0.12	0.62*	0.64*
AIAN	n/a	n/a	n/a	n/a	n/a	n/a
Female	19.22	12.09	14.36	11.84	0.63**	0.82**
	198,918	81,460,984	32,918	74,889,584		
General Services (NAICS 531) Real Estate						
Non-minority	81.92	89.13	87.51	92.18	1.09**	1.05**
MWBE	48.82	29.01	35.47	23.37	0.59***	0.66***
Minority	16.62	9.53	10.73	6.65	0.57***	0.62***
Black	3.51	1.08	1.20	0.71	0.31***	0.59***
Hispanic	6.15	3.01	3.98	2.05	0.49***	0.52***
Asian	7.03	5.36	5.39	3.77	0.76***	0.70***
NHPI	n/a	n/a	n/a	n/a	n/a	n/a
AIAN	0.14	0.10	0.27	0.12	0.70***	0.46***
Female	32.20	19.48	24.75	16.72	0.60***	0.68***
	2,725,649	508,110,304	269,649	280,159,904		
CSE (NAICS 331) Primary Metal Manufacturing						
Non-minority	85.16	98.11	94.09	98.22	1.15	1.04
MWBE	27.20	8.24	17.12	8.12	0.30***	0.47***
Minority	15.45	1.64	5.49	1.54	0.11***	0.28***
Black	2.48	0.10	0.38	0.09	0.04***	0.23***
Hispanic	10.59	0.89	3.11	0.81	0.08***	0.26***
Asian	2.36	0.67	1.97	0.65	0.28***	0.33***
NHPI	n/a	n/a	100.00	100.00	n/a	1.00
AIAN	0.42	0.14	0.27	0.14	0.33***	0.52***
Female	11.75	6.60	11.63	6.58	0.56***	0.57***
	6,440	49,755,300	2,640	49,503,360		

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
CSE (NAICS 332) Fabricated Metal Product Manufacturing						
Non-minority	88.74	94.87	91.61	95.00	1.07	1.04
MWBE	21.84	15.76	18.68	15.65	0.72***	0.84***
Minority	10.84	4.40	7.23	4.27	0.41***	0.59***
Black	1.23	0.18	0.41	0.17	0.15***	0.41***
Hispanic	6.91	1.90	3.85	1.79	0.28***	0.46***
Asian	2.53	2.01	2.58	2.00	0.79***	0.78***
NHPI	n/a	n/a	n/a	n/a	n/a	n/a
AIAN	0.46	0.24	0.39	0.24	0.53**	0.61**
Female	11.00	11.35	11.45	11.38	1.03	0.99
	84,870	178,511,968	48,370	176,346,432		
CSE (NAICS 334) Computer and Electronic Product Manufacturing						
Non-minority	77.65	82.33	84.55	82.37	1.06	0.97
MWBE	35.39	26.37	25.08	26.30	0.74	1.05
Minority	20.98	16.93	13.96	16.88	0.81	1.21
Black	4.41	0.14	0.40	0.11	0.03***	0.28***
Hispanic	6.68	1.68	3.04	1.64	0.25*	0.54*
Asian	10.32	14.97	10.29	14.99	1.45***	1.46***
NHPI	0.13	0.02	0.10	0.02	0.14***	0.18***
AIAN	0.18	0.07	0.19	0.06	0.36***	0.35***
Female	14.41	9.44	11.12	9.42	0.65	0.85
	17,873	66,150,816	9,673	65,722,112		
CSE (NAICS 335) Electrical Eqpmt., Appliance, and Component Mfg.						
Non-minority	78.24	94.42	90.69	94.61	1.21	1.04
MWBE	37.81	17.02	23.28	16.82	0.45**	0.72**
Minority	21.45	5.44	8.56	5.26	0.25***	0.61***
Black	4.46	0.37	0.49	0.34	0.08	0.69
Hispanic	10.50	0.91	2.54	0.80	0.09***	0.31***
Asian	6.93	3.48	5.43	3.42	0.50***	0.63***
NHPI	0.16	0.03	0.07	0.03	0.21***	0.47***
AIAN	n/a	n/a	0.09	0.80	n/a	8.53***
Female	16.36	11.58	14.72	11.56	0.71**	0.79**
	10,553	38,313,816	4,253	37,932,936		
CSE (NAICS 336) Transportation Equipment Manufacturing						
Non-minority	66.65	89.30	91.77	89.58	1.34	0.98
MWBE	45.21	20.86	18.24	20.58	0.46	1.13
Minority	32.46	9.73	7.40	9.44	0.30	1.28
Black	10.98	4.17	0.84	4.10	0.38**	4.89**
Hispanic	19.03	1.63	3.44	1.39	0.09***	0.41***
Asian	3.70	3.61	2.96	3.61	0.98	1.22
NHPI	0.18	0.12	0.16	0.12	0.70	0.77
AIAN	0.35	0.27	0.31	0.27	0.78	0.88
Female	12.76	11.13	10.84	11.14	0.87	1.03
	18,850	94,532,136	8,350	93,826,608		

	Percentage of All Firms	Percentage of All Sales	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio-All Firms	Disparity Ratio Employers
	(1)	(2)	(3)	(4)	(5)	(6)
CSE (NAICS 423) Merchant Wholesalers, Durable Goods						
Non-minority	77.53	87.40	80.81	87.55	1.13***	1.08***
MWBE	43.56	23.32	32.00	23.09	0.54***	0.72***
Minority	21.35	11.41	17.76	11.26	0.53***	0.63***
Black	3.14	0.51	0.65	0.49	0.16	0.75
Hispanic	9.05	2.72	5.60	2.61	0.30***	0.47***
Asian	9.38	8.04	11.32	8.01	0.86***	0.71***
NHPI	0.08	0.01	0.05	0.01	0.17***	0.27***
AIAN	0.36	0.21	0.31	0.21	0.60*	0.68*
Female	22.21	11.91	14.23	11.83	0.54***	0.83***
	335,980	1,144,333,440	158,980	1,127,682,304		

Source: Author’s calculations from combined 2017 ABS and NES-D data. Notes: (1) “Non-minority” includes both sexes, “NHPI” stands for Native Hawaiian and Pacific Islanders, “AIAN” stands for American Indians and Alaska Native, “Female” includes all races and ethnicities; (2) Statistical significance is indicated by asterisks (* p-value<0.1, ** p-value<0.05, *** p-value<0.01); (3) “n/a” is presented when underlying data was withheld by the Census Bureau due to confidentiality restrictions; (4) Last row in each section contains firms totals and sales and receipts totals (in \$1,000s); (5) Totals include firms that were equally non-minority/minority owned and equally male/female owned.

c. By major procurement category and industry group

Table 3.4 shows findings for those Industry Groups (4-Digit NAICS), respectively, that account for the most spending according to the FRA Grant Activity Database. As with the results above, the vast majority of these outcomes show large, adverse, and statistically significant disparities impacting MWBEs.

i. Construction

For Nonresidential Building Construction (NAICS 2362), 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 87.5 percent are statistically significant.

For Utility System Construction (NAICS 2371), 100.0 percent are adverse. Of those that are adverse, 75.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Highway, Street, and Bridge Construction (NAICS 2373), 100.0 percent are adverse. Of those that are adverse, 87.5 percent are large. Of those that are adverse and large, 85.7 percent are statistically significant.

For Other Heavy and Civil Engineering Construction (NAICS 2379), 28.6 percent are adverse. Of those that are adverse, 50.0 percent are large. Of those that are adverse and large, 0.0 percent are statistically significant.

For Foundation, Structure, and Building Exterior Contractors (NAICS 2381), 100.0 percent are adverse. Of those that are adverse, 37.5 percent are large. Of those that are adverse and large, 66.7 percent are statistically significant.

For Building Equipment Contractors (NAICS 2382), 87.5 percent are adverse. Of those that are adverse, 85.7 percent are large. Of those that are adverse and large, 66.7 percent are statistically significant.

For Building Finishing Contractors (NAICS 2383), 87.5 percent are adverse. Of those that are adverse, 71.4 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Other Specialty Trade Contractors (NAICS 2389), 83.3 percent are adverse. Of those that are adverse, 40.0 percent are large. Of those that are adverse and large, 50.0 percent are statistically significant.

ii. Professional services

For Legal Services (NAICS 5411), 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Architectural, Engineering, and Related Services (NAICS 5413), 28.6 percent are adverse. Of those that are adverse, 0.0 percent are large. Of those that are adverse and large, 0.0 percent are statistically significant.

For Computer Systems Design and Related Services (NAICS 5415), 75.0 percent are adverse. Of those that are adverse, 16.7 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Management, Scientific, and Technical Consulting Services (NAICS 5416), 87.5 percent are adverse. Of those that are adverse, 28.6 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Scientific Research and Development Services (NAICS 5417), 75.0 percent are adverse. Of those that are adverse, 50.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Remediation and Other Waste Management Services (NAICS 5629), 0.0 percent are adverse. Of those that are adverse, 0.0 percent are large. Of those that are adverse and large, 0.0 percent are statistically significant.

iii. General services

For Support Activities for Rail Transportation (NAICS 4882), 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242), 100.0 percent are adverse. Of those that are adverse, 87.5 percent are large. Of those that are adverse and large, 85.7 percent are statistically significant.

For Offices of Real Estate Agents and Brokers (NAICS 5312), 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

iv. CSE

For Nonmetallic Mineral Mining and Quarrying (NAICS 2123), 80.0 percent are adverse. Of those that are adverse, 75.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Cement and Concrete Product Manufacturing (NAICS 3273), 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 71.4 percent are statistically significant.

For Iron and Steel Mills and Ferroalloy Manufacturing (NAICS 3311), 80.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Foundries (NAICS 3315), 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Architectural and Structural Metals Manufacturing (NAICS 3323), 100.0 percent are adverse. Of those that are adverse, 57.1 percent are large. Of those that are adverse and large, 75.0 percent are statistically significant.

For Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing (NAICS 3327), 100.0 percent are adverse. Of those that are adverse, 57.1 percent are large. Of those that are adverse and large, 75.0 percent are statistically significant.

For Other General Purpose Machinery Manufacturing (NAICS 3339), 75.0 percent are adverse. Of those that are adverse, 83.3 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Communications Equipment Manufacturing (NAICS 3342), 71.4 percent are adverse. Of those that are adverse, 80.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345), 66.7 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 50.0 percent are statistically significant.

For Electrical Equipment Manufacturing (NAICS 3353), 42.9 percent are adverse. Of those that are adverse, 33.3 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Railroad Rolling Stock Manufacturing (NAICS 3365), 0.0 percent are adverse. Of those that are adverse, 0.0 percent are large. Of those that are adverse and large, 0.0 percent are statistically significant.

For Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233), 100.0 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 83.3 percent are statistically significant.

For Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235), 85.7 percent are adverse. Of those that are adverse, 33.3 percent are large. Of those that are adverse and large, 50.0 percent are statistically significant.

For Household Appliances and Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236), 100.0 percent are adverse. Of those that are adverse, 85.7 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

For Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238), 100.0 percent are adverse. Of those that are adverse, 87.5 percent are large. Of those that are adverse and large, 85.7 percent are statistically significant.

d. By race, ethnicity, and sex across important industry groups

For Blacks, 85.2 percent are adverse. Of those that are adverse, 87.0 percent are large. Of those that are adverse and large, 85.0 percent are statistically significant.

For Hispanics, 92.9 percent are adverse. Of those that are adverse, 84.6 percent are large. Of those that are adverse and large, 86.4 percent are statistically significant.

For Asians, 78.6 percent are adverse. Of those that are adverse, 59.1 percent are large. Of those that are adverse and large, 84.6 percent are statistically significant.

For Native Hawaiians and Pacific Islanders, 63.2 percent are adverse. Of those that are adverse, 100.0 percent are large. Of those that are adverse and large, 58.3 percent are statistically significant.

For American Indians and Alaska Natives, 80.8 percent are adverse. Of those that are adverse, 85.7 percent are large. Of those that are adverse and large, 88.9 percent are statistically significant.

For minorities as a group, 87.1 percent are adverse. Of those that are adverse, 66.7 percent are large. Of those that are adverse and large, 94.4 percent are statistically significant.

For women, 76.7 percent are adverse. Of those that are adverse, 60.9 percent are large. Of those that are adverse and large, 92.9 percent are statistically significant.

For MWBEs as a group, 83.3 percent are adverse. Of those that are adverse, 56.0 percent are large. Of those that are adverse and large, 100.0 percent are statistically significant.

Table 3.4. Percentage of Firms and Sales and Corresponding Disparity Ratios, Employer Firms, United States, by Most Important Industry Groups for FRA, 2017

	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio Employers
	(1)	(2)	(3)
Construction—Nonresidential Building Construction (NAICS 2362)			
Non-minority	88.74	93.86	1.06
MWBE	19.38	11.59	0.60***
Minority	10.12	5.48	0.54***
Black	1.44	0.83	0.58***
Hispanic	5.34	2.85	0.53***
Asian	2.16	1.20	0.55***
NHPI	0.18	0.13	0.70
AIAN	1.19	0.55	0.47***
Female	9.26	6.11	0.66***
	40,156	326,139,168	
Construction—Utility System Construction (NAICS 2371)			
Non-minority	92.10	94.61	1.03
MWBE	18.13	14.14	0.78***
Minority	7.35	5.00	0.68***
Black	0.85	0.47	0.55***
Hispanic	4.86	3.29	0.68*
Asian	1.06	0.54	0.51***
NHPI	0.04	0.01	0.26***
AIAN	0.76	0.73	0.96
Female	10.78	9.13	0.85
	17,053	84,740,328	
Construction—Highway, Street, and Bridge Construction (NAICS 2373)			
Non-minority	88.59	94.03	1.06
MWBE	28.14	16.73	0.59***
Minority	10.56	5.54	0.52***
Black	1.28	0.54	0.42***
Hispanic	6.32	2.93	0.46***
Asian	1.24	1.02	0.82
NHPI	0.25	0.20	0.79
AIAN	1.56	0.85	0.54***
Female	17.58	11.19	0.64***
	8,446	84,018,088	
Construction—Other Heavy and Civil Engineering Construction (NAICS 2379)			
Non-minority	93.48	93.75	1.00
MWBE	12.87	13.57	1.05
Minority	4.81	4.55	0.95
Black	0.58	0.72	1.24
Hispanic	2.34	1.49	0.64
Asian	n/a	n/a	n/a
NHPI	0.10	0.12	1.17
AIAN	0.40	0.55	1.36
Female	8.06	9.02	1.12
	3,971	12,157,576	

	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio Employers
	(1)	(2)	(3)
Construction—Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
Non-minority	85.17	87.74	1.03
MWBE	22.43	19.83	0.88
Minority	13.64	11.29	0.83
Black	1.13	0.88	0.78
Hispanic	10.63	8.76	0.82
Asian	1.22	1.18	0.97
NHPI	0.18	0.08	0.45**
AIAN	0.96	0.56	0.58***
Female	8.79	8.54	0.97
	92,070	167,957,472	
Construction—Building Equipment Contractors (NAICS 2382)			
Non-minority	89.45	93.59	1.05**
MWBE	18.07	15.26	0.84**
Minority	9.46	5.57	0.59***
Black	1.44	0.77	0.54***
Hispanic	5.73	2.92	0.51***
Asian	1.76	1.36	0.77
NHPI	0.16	0.12	0.75
AIAN	0.67	0.53	0.79*
Female	8.62	9.68	1.12*
	179,325	342,732,160	
Construction—Building Finishing Contractors (NAICS 2383)			
Non-minority	83.30	87.85	1.05
MWBE	23.68	19.87	0.84***
Minority	15.09	10.23	0.68***
Black	1.11	0.83	0.75*
Hispanic	11.27	7.13	0.63***
Asian	2.19	1.78	0.81*
NHPI	0.17	0.09	0.54*
AIAN	0.72	0.45	0.63**
Female	8.59	9.64	1.12
	114,311	124,596,760	
Construction—Other Specialty Trade Contractors (NAICS 2389)			
Non-minority	91.56	93.04	1.02
MWBE	18.30	16.22	0.89
Minority	7.48	6.04	0.81
Black	0.80	0.61	0.77
Hispanic	5.19	3.89	0.75**
Asian	0.89	0.90	1.01
NHPI	n/a	n/a	n/a
AIAN	n/a	n/a	n/a
Female	10.81	10.18	0.94
	69,488	143,327,088	
Professional Services—Legal Services (NAICS 5411)			
Non-minority	89.52	92.72	1.04
MWBE	28.04	16.21	0.58***
Minority	9.28	6.04	0.65***
Black	2.01	0.94	0.47***
Hispanic	4.34	2.89	0.67***
Asian	2.59	1.94	0.75***
NHPI	0.10	0.04	0.38***
AIAN	0.47	0.23	0.48***
Female	18.77	10.17	0.54***
	171,902	166,533,568	

	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio Employers
	(1)	(2)	(3)
Professional Services—Architectural, Engineering, and Related Services (NAICS 5413)			
Non-minority	86.57	86.22	1.00
MWBE	24.02	24.36	1.01
Minority	11.86	12.79	1.08
Black	1.38	1.46	1.06
Hispanic	4.26	3.64	0.85**
Asian	5.74	6.29	1.10
NHPI	0.13	0.25	1.94*
AIAN	n/a	n/a	n/a
Female	12.17	11.57	0.95
	91,681	162,106,592	
Professional Services—Computer Systems Design and Related Services (NAICS 5415)			
Non-minority	69.13	68.68	0.99
MWBE	44.48	43.89	0.99
Minority	28.89	29.33	1.02
Black	2.49	2.32	0.93
Hispanic	3.40	2.77	0.82***
Asian	22.60	23.77	1.05
NHPI	0.12	0.04	0.33***
AIAN	0.60	0.53	0.89
Female	15.59	14.56	0.93
	117,763	196,008,800	
Professional Services—Management, Scientific, and Technical Consulting Services (NAICS 5416)			
Non-minority	84.60	86.15	1.02
MWBE	39.31	31.67	0.81**
Minority	13.83	12.91	0.93**
Black	2.53	2.35	0.93
Hispanic	4.32	4.04	0.93
Asian	6.55	5.84	0.89**
NHPI	0.15	0.11	0.74**
AIAN	0.61	0.61	1.01
Female	25.48	18.76	0.74***
	160,156	151,868,656	
Professional Services—Scientific Research and Development Services (NAICS 5417)			
Non-minority	75.88	78.77	1.04
MWBE	42.97	36.41	0.85***
Minority	22.14	19.84	0.90***
Black	1.63	1.12	0.69***
Hispanic	3.04	1.68	0.55***
Asian	17.11	16.18	0.95
NHPI	0.09	0.11	1.31***
AIAN	0.27	0.37	1.36*
Female	20.83	16.57	0.80***
	11,366	32,596,496	
Professional Services—Remediation and Other Waste Management Services (NAICS 5629)			
Non-minority	90.75	89.88	0.99
MWBE	25.36	27.51	1.08
Minority	8.53	9.51	1.12
Black	1.39	1.46	1.06
Hispanic	4.86	5.10	1.05
Asian	1.66	2.42	1.46
NHPI	0.13	0.31	2.36
AIAN	0.53	0.80	1.51*
Female	16.80	17.41	1.04
	9,239	19,814,176	

	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio Employers
	(1)	(2)	(3)
General Services—Support Activities for Rail Transportation (NAICS 4882)			
Non-minority	92.02	95.15	1.03
MWBE	n/a	n/a	n/a
Minority	n/a	n/a	n/a
Black	5.24	1.75	0.33***
Hispanic	n/a	n/a	n/a
Asian	n/a	n/a	n/a
NHPI	n/a	n/a	n/a
AIAN	n/a	n/a	n/a
Female	n/a	n/a	n/a
	401	2,086,817	
General Services—Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)			
Non-minority	87.34	91.43	1.05
MWBE	31.10	20.53	0.66***
Minority	11.67	7.61	0.65***
Black	2.75	1.39	0.50***
Hispanic	5.27	3.00	0.57***
Asian	3.50	3.15	0.90
NHPI	0.11	0.08	0.75
AIAN	0.47	0.21	0.44***
Female	19.43	12.92	0.66***
	130,276	104,624,272	
General Services—Offices of Real Estate Agents and Brokers (NAICS 5312)			
Non-minority	88.34	92.75	1.05
MWBE	43.68	26.80	0.61***
Minority	9.81	5.64	0.57***
Black	1.29	0.53	0.41***
Hispanic	4.26	2.17	0.51***
Asian	4.01	2.73	0.68***
NHPI	0.16	0.08	0.46***
AIAN	0.29	0.15	0.53*
Female	33.87	21.16	0.62***
	105,549	86,293,880	
CSE—Nonmetallic Mineral Mining and Quarrying (NAICS 2123)			
Non-minority	97.27	97.81	1.01
MWBE	14.81	9.68	0.65***
Minority	2.03	1.76	0.87
Black	n/a	n/a	n/a
Hispanic	0.83	1.04	1.26
Asian	n/a	n/a	n/a
NHPI	n/a	n/a	n/a
AIAN	0.58	0.25	0.43***
Female	12.78	7.92	0.62***
	2,418	10,512,012	
CSE—Cement and Concrete Product Manufacturing (NAICS 3273)			
Non-minority	94.96	96.86	1.02
MWBE	15.48	10.52	0.68**
Minority	4.71	3.02	0.64***
Black	0.72	0.48	0.67
Hispanic	2.87	2.09	0.73
Asian	0.95	0.36	0.38***
NHPI	n/a	n/a	n/a
AIAN	0.26	0.12	0.45**
Female	10.77	7.49	0.70**
	3,909	33,324,632	

	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio Employers
	(1)	(2)	(3)
CSE—Iron and Steel Mills and Ferroalloy Manufacturing (NAICS 3311)			
Non-minority	89.04	98.57	1.11
MWBE	21.23	3.20	0.15***
Minority	9.59	1.31	0.14***
Black	n/a	n/a	n/a
Hispanic	n/a	n/a	n/a
Asian	4.79	0.89	0.19***
NHPI	100.00	100.00	1.00
AIAN	n/a	n/a	n/a
Female	11.64	1.89	0.16***
	146	4,993,130	
CSE—Foundries (NAICS 3315)			
Non-minority	94.57	97.95	1.04
MWBE	15.66	9.48	0.61**
Minority	5.19	2.01	0.39***
Black	n/a	n/a	n/a
Hispanic	2.83	0.72	0.26***
Asian	2.20	1.35	0.61*
NHPI	n/a	n/a	n/a
AIAN	0.39	0.14	0.35***
Female	10.46	7.47	0.71*
	1,271	11,416,297	
CSE—Architectural and Structural Metals Manufacturing (NAICS 3323)			
Non-minority	92.35	95.48	1.03
MWBE	21.03	17.50	0.83***
Minority	6.73	4.27	0.64***
Black	0.52	0.25	0.48***
Hispanic	4.45	2.62	0.59***
Asian	1.39	1.17	0.84
NHPI	n/a	n/a	n/a
AIAN	0.25	0.18	0.73
Female	14.30	13.23	0.93
	11,800	55,345,424	
CSE—Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing (NAICS 3327)			
Non-minority	91.24	93.90	1.03
MWBE	18.54	15.05	0.81***
Minority	7.66	5.11	0.67***
Black	0.20	0.09	0.46***
Hispanic	3.60	1.61	0.45***
Asian	3.15	2.72	0.86
NHPI	n/a	n/a	n/a
AIAN	0.63	0.49	0.78
Female	10.89	9.94	0.91
	21,383	48,919,300	
CSE—Other General Purpose Machinery Manufacturing (NAICS 3339)			
Non-minority	93.87	96.65	1.03
MWBE	15.73	13.24	0.84***
Minority	5.38	2.79	0.52***
Black	0.13	0.04	0.33***
Hispanic	2.07	1.02	0.49**
Asian	2.74	1.50	0.55**
NHPI	100.00	100.00	1.00
AIAN	0.48	0.22	0.46***
Female	10.35	10.46	1.01
	4,781	38,176,248	

	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio Employers
	(1)	(2)	(3)
CSE—Communications Equipment Manufacturing (NAICS 3342)			
Non-minority	88.16	85.27	0.97
MWBE	20.80	16.05	0.77***
Minority	11.24	10.59	0.94
Black	0.30	0.11	0.38**
Hispanic	2.29	0.39	0.17***
Asian	8.26	10.02	1.21
NHPI	n/a	n/a	n/a
AIAN	100.00	100.00	1.00
Female	9.55	5.45	0.57***
	1,005	6,163,497	
CSE—Navigational, Measuring, Electromedical, and Control Instruments Mfg. (NAICS 3345)			
Non-minority	89.13	92.56	1.04
MWBE	18.78	20.05	1.07**
Minority	9.35	7.06	0.75
Black	0.28	0.07	0.24***
Hispanic	n/a	n/a	n/a
Asian	6.47	4.97	0.77
NHPI	n/a	n/a	n/a
AIAN	0.21	0.07	0.35***
Female	9.43	13.00	1.38**
	3,893	27,760,542	
CSE—Electrical Equipment Manufacturing (NAICS 3353)			
Non-minority	93.36	93.67	1.00
MWBE	17.39	21.54	1.24
Minority	6.38	6.19	0.97
Black	0.39	0.34	0.87*
Hispanic	3.26	1.15	0.35***
Asian	2.67	4.69	1.76
NHPI	100.00	100.00	1.00
AIAN	n/a	n/a	n/a
Female	11.01	15.35	1.39
	1,535	10,849,167	
CSE—Railroad Rolling Stock Manufacturing (NAICS 3365)			
Non-minority	95.45	88.91	0.93
MWBE	n/a	n/a	n/a
Minority	4.55	11.09	2.44
Black	n/a	n/a	n/a
Hispanic	n/a	n/a	n/a
Asian	n/a	n/a	n/a
NHPI	n/a	n/a	n/a
AIAN	n/a	n/a	n/a
Female	n/a	n/a	n/a
	88	1,188,306	
CSE—Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
Non-minority	85.51	92.38	1.08
MWBE	26.20	17.65	0.67**
Minority	12.73	7.13	0.56**
Black	n/a	n/a	n/a
Hispanic	4.97	1.94	0.39***
Asian	7.08	3.44	0.49***
NHPI	n/a	n/a	n/a
AIAN	0.16	0.06	0.36***
Female	13.46	10.52	0.78
	9,872	82,893,344	

	Percentage of All Employers	Percentage of All Employer Sales	Disparity Ratio Employers
	(1)	(2)	(3)
CSE—Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
Non-minority	86.34	88.93	1.03
MWBE	27.01	22.59	0.84
Minority	12.48	10.49	0.84
Black	0.39	0.46	1.17
Hispanic	3.11	2.14	0.69
Asian	8.81	7.85	0.89
NHPI	n/a	n/a	n/a
AIAN	0.13	0.03	0.24***
Female	14.53	12.10	0.83
	7,137	86,369,728	
CSE—Household Appliances and Electrical and Electronic Goods Merchant Whlse. (NAICS 4236)			
Non-minority	75.08	82.01	1.09
MWBE	38.77	29.57	0.76***
Minority	23.75	16.30	0.69***
Black	1.14	0.46	0.41***
Hispanic	6.09	4.11	0.67**
Asian	15.80	11.05	0.70***
NHPI	n/a	n/a	n/a
AIAN	0.98	0.58	0.60*
Female	15.02	13.27	0.88
	17,704	138,149,376	
CSE—Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
Non-minority	85.90	93.90	1.09
MWBE	25.50	14.88	0.58***
Minority	12.74	5.85	0.46***
Black	0.48	0.22	0.45**
Hispanic	6.29	2.24	0.36***
Asian	5.66	3.12	0.55***
NHPI	0.05	0.02	0.44
AIAN	0.25	0.25	0.99
Female	12.76	9.03	0.71***
	39,861	266,161,232	

Source: Author’s calculations from combined 2017 ABS and NES-D data. Notes: (1) “Non-minority” includes both sexes, “NHPI” stands for Native Hawaiian and Pacific Islanders, “AIAN” stands for American Indians and Alaska Native, “Female” includes all races and ethnicities; (2) Statistical significance is indicated by asterisks (* p-value<0.1, ** p-value<0.05, *** p-value<0.01); (3) “n/a” is presented when underlying data was withheld by the Census Bureau due to confidentiality restrictions; (4) Last row in each section contains firms totals and sales and receipts totals (in \$1,000s); (5) Totals include firms that were equally non-minority/minority owned and equally male/female owned.

D. Conclusions

While the exact proportions vary, in the combined ABS and NES-D data for 2017 and 2018, strong evidence of large, adverse, and statistically significant disparities is consistently observed. This is evident in the economy as a whole, as well as in each major procurement category and industry sector. Moreover, this pattern is observed for non-minority females and for every minority group in the data—Blacks, Hispanics, Asians, Native Hawaiians and other Pacific Islanders, and American Indians and Alaska Natives. Furthermore, this finding holds as well for those NAICS Industry Subsectors and Industry

Groups that are most important to FRA grant activity, as identified in the FRA Grant Activity Database.

IV. There is Strong Microeconomic Evidence of Disparities and Discrimination in Salaries and Wages, Business Formation Rates, and Business Earnings

As a check on my findings so far, in this final section I test the likelihood that factors other than business discrimination might account for the large adverse disparities observed for minorities and women throughout the previous sections. It is important to know whether the large race and sex disparities documented throughout the disparity studies discussed in Section II, as well as throughout the most recent ABS and NES-D data examined in Section III, can be adequately explained by phenomena other than discrimination.

In other words, this section asks if the disparities observed for minorities and women disappear after accounting for other, possibly race-neutral or gender-neutral, factors that differ between advantaged and disadvantaged groups? Using data from the Census Bureau's *American Community Survey 5-year Public Use Microdata Sample* (ACS PUMS) and the statistical technique of regression analysis, I tested this question directly and found that, after controlling for independent variables possibly untainted by business discrimination, the disparities facing minority and female business owners remain large, adverse, and statistically significant in the vast majority of cases.

A. Methods

The first step in testing whether race-neutral or gender-neutral factors can account for the large adverse racial disparities shown in Sections II and III is to document the extent of these disparities as observed in the ACS PUMS before any other variables are considered. To carry out this step, which we will refer to as the "Baseline Model", we use the technique of regression analysis⁷⁷ to explain three key economic outcomes: annual wages and salaries, the rate of business formation, and annual business owner earnings.

After establishing the baseline model, the next two steps will add several independent variables to the regression that are indicators of qualifications and capacity. First, we will include educational attainment, age,⁷⁸ and geographic location by state. We'll refer to this regression analysis as the "Qualifications Model." This model compares individuals who are similarly situated in terms of their educational attainment, their labor market experience, and their geographic location to see how much, if any, the disparities observed in the baseline model are reduced when these additional factors are accounted for.⁷⁹

The last step incorporates a large number of additional independent variables into the Qualifications Model that are materially related to the propensity to become a business owner. These include measures of individual financial assets (interest and dividend

⁷⁷ See fn. 37.

⁷⁸ A person's age is a widely used measure of their labor market experience and enters the regression equation quadratically.

⁷⁹ See, e.g., Aronson (1991), Blanchflower (2000), Wainwright (2000) for discussions of the influence of these various factors on business ownership or self-employment.

income⁸⁰, home ownership status, and home property value), family structure (spouse present in the household, number of children in the household, number of workers in the family), mobility (lived in the same house last year), immigration status (foreign born, English proficiency), military status (veteran), and local macroeconomic conditions by state (general population level, unemployment rate, number of full-time government employees, per capita personal income).⁸¹ We will refer to this as the “Qualifications Plus Capacities model” to see how and if the disparities observed in the Baseline Model and in the Qualifications Model are reduced when these numerous additional variables are accounted for.

B. Data

The data used for these regression analyses are the multi-year estimates combining the 2015 through 2019 *American Community Survey Public Use Microdata Sample* (ACS PUMS) records. The *American Community Survey* is an ongoing annual survey covering the same type of information that was formerly collected in the decennial census “long form.” The ACS is sent to approximately 3.5 million addresses annually, including housing units in all counties in the 50 states and the District of Columbia.⁸² The PUMS file from the ACS contains records for a subsample of the full ACS.⁸³ The ACS PUMS provides the full range of population and housing information collected in the annual ACS and in the decennial census, and therefore allows us to examine economic outcomes for different race and ethnic groups in great detail while holding individual differences in a wide variety of other relevant demographic and economic variables constant.⁸⁴

The universe for all of the analyses presented in this section includes all prime age (16-64) private sector labor force participants. Business ownership status is identified in the ACS PUMS through the “class of worker” variable, which distinguishes the unincorporated and incorporated self-employed from others in the labor force. The presence of the class of worker variable allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings. The combined 2015-2019 file contains almost 6.1 million person-level records.

⁸⁰ Interest and dividend income and per capita personal income are included in the model in their (natural) logarithmic forms.

⁸¹ Local macroeconomic data taken from U.S. Bureau of Economic Analysis (2022) (state-level per capital personal income level); U.S. Bureau of Labor Statistics (2022, 2020a, 2020b, 2020c, 2020d, 2020e) (state-level unemployment rate); U.S. Census Bureau (2021g) (state-level general population); and U.S. Census Bureau (2022a, 2020e, 2020f, 2020g, 2020h) (state-level public sector employment level).

⁸² See U.S. Census Bureau (2020j).

⁸³ See U.S. Census Bureau (2021b).

⁸⁴ These ACS data were released in January 2021. See U.S. Census Bureau (2022b).

C. Baseline Model Findings

1. Unadjusted Disparities in Salaries and Wages are Adverse, Large, and Statistically Significant

A key source of new entrepreneurs in any given industry is the pool of experienced wage and salary workers in similar or related industries.⁸⁵ Other things equal, however, minorities and women who face discrimination in the labor market will be constrained in their availability to populate the pool of potential MWBEs.⁸⁶

The ACS PUMS shows that, on average across all industries during 2015-2019, annual wages and salaries for minorities and women as a group were 38.2 percent lower than for non-Hispanic white (“non-minority”) men (*see* Table 4.1).⁸⁷ In other words, for every dollar earned by non-minority males during this time, minorities only earned 62 cents on average. This finding is statistically significant.⁸⁸

If we consider each group presumptively disadvantaged under the current DOT DBE Program,⁸⁹ a similar phenomenon is observed in all but one case:⁹⁰

- For Blacks, average annual wages and salaries were 47.9 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, Blacks only earned 52 cents on average. This finding is statistically significant.
- For Hispanics, average annual wages and salaries were 44.2 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, Hispanics only earned 55 cents on average. This finding is statistically significant.
- For Asian-Pacifics, average annual wages and salaries were 17.4 percent lower than for non-minority males. For every dollar earned by non-minority males during this

⁸⁵ *See, e.g.*, Blanchflower (2000).

⁸⁶ There is a substantial body of evidence that discriminatory constraints in the capital market prevent MWBEs from obtaining business loans. Furthermore, even when they are able to do so, there is evidence that the loans are not obtained on equal terms: MWBEs pay higher interest rates, other things being equal. This is another form of discrimination with an obvious and direct impact on the ability of racial minorities to form businesses and to expand or grow previously formed businesses. *See, e.g.*, NERA Economic Consulting (2017, pp. 177-236) for an extensive overview and analysis of disparities and discrimination in capital markets.

⁸⁷ The coefficients from the wage and salary regressions reported in Tables 4.1 and 4.2 are presented as percentage differences relative to non-minority males.

⁸⁸ *See* Table 4.1.

⁸⁹ *See* fn. 16..

⁹⁰ *See* Table 4.1.

time, Asian-Pacific only earned 83 cents on average. This finding is statistically significant.

- For Subcontinent Asians, average annual wages and salaries were 19.5 percent higher than for non-minority males. For every dollar earned by non-minority males during this time, Subcontinent Asians earned \$1.20 on average. This finding is statistically significant.⁹¹
- For Native Americans, average annual wages and salaries were 48.6 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, Native Americans only earned 51 cents on average. This finding is statistically significant.
- For minorities as a group, average annual wages and salaries were 39.9 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, minorities only earned 60 cents on average. This finding is statistically significant.
- For non-minority females, average annual wages and salaries were 36.5 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, non-minority females only earned 64 cents on average. This finding is statistically significant.

Similar findings result if we examine the data by major procurement categories such as construction, AECRS, professional services, general services, and CSE. A statistically significant adverse disparity in wage and salary earnings is observed in 48 out of 54 cases, or 89 percent (*See* Table 4.1).⁹²

Table 4.1. Annual Wage Earnings Disparities by Disadvantaged Group, Major Procurement Categories

Race/Ethnicity	Construction	AECRS	Professional Services	General Services	CSE	All Industries
MWBE	-0.284****	-0.272****	-0.381****	-0.337****	-0.414****	-0.382****
Minority	-0.299****	-0.225****	-0.422****	-0.371****	-0.409****	-0.399****
Black	-0.374****	-0.282****	-0.586****	-0.416****	-0.497****	-0.479****
Hispanic	-0.300****	-0.300****	-0.538****	-0.420****	-0.443****	-0.442****
Asian-Pacific	-0.101****	-0.114****	-0.043****	-0.181****	-0.148****	-0.174****
Asian Subcontinent	-0.037	-0.038	0.375****	0.155****	0.023	0.195****
Native American	-0.359****	-0.401****	-0.587****	-0.478****	-0.447****	-0.486****
Two or more races	-0.229****	-0.201****	-0.365****	-0.458****	-0.444****	-0.446****
Non-minority female	-0.225****	-0.318****	-0.332****	-0.307****	-0.421****	-0.365****

Source: Author’s calculations from the 2015-2019 ACS PUMS.

⁹¹ This result for Subcontinent Asians might appear to indicate that they are not disadvantaged relative to non-minority males in this analysis. However, this is because Subcontinent Asians as a group actually possess *more*, on average, of certain productivity qualifications, *e.g.*, educational attainment, that are positively correlated with wage and salary earnings than non-minority males possess. Once these productivity differences are held constant across groups, as demonstrated below in Section IV.D.1.a, the advantage disappears, and significant disparities emerge. *See also* fn. 94.

⁹² Complete regression results appear below in Appendix A, Tables 4.1A-4.1F.

i. Findings for wage and salary earnings, FRA-specific

If we consider just those industry segments⁹³ most relevant to spending in the FRA Grant Activity Database, we observe similar results as well.⁹⁴ Statistically significant adverse disparities are observed in 48 out of 54 cases, or 89 percent (*See* Table 4.2).⁹⁵

Table 4.2. Annual Wage Earnings Disparities by Disadvantaged Group, FRA-specific NAICS Codes by Major Procurement Category

Race/Ethnicity	Construction	AECRS	Professional Services	General Services	CSE	All Industries
MWBE	-0.284****	-0.272****	-0.315****	-0.360****	-0.263****	-0.252****
Minority	-0.299****	-0.225****	-0.281****	-0.393****	-0.278****	-0.283****
Black	-0.374****	-0.282****	-0.440****	-0.442****	-0.389****	-0.376****
Hispanic	-0.300****	-0.300****	-0.443****	-0.420****	-0.324****	-0.390****
Asian-Pacific	-0.101****	-0.114****	-0.139****	-0.241****	-0.096****	0.030****
Asian Subcontinent	-0.037	-0.038	0.048****	-0.148****	0.261****	0.419****
Native American	-0.359****	-0.401****	-0.487****	-0.426****	-0.298****	-0.434****
Two or more races	-0.229****	-0.201****	-0.300****	-0.330****	-0.223****	-0.207****
Non-minority female	-0.225****	-0.318****	-0.349****	-0.326****	-0.240****	-0.203****

Source: *See* Table 4.1.

2. Unadjusted Disparities in Business Formation are Adverse, Large, and Statistically Significant

If discrimination constrains the available pool of business owners this should be evident in the rate of business formation within a given group (*See* Table 4.3).⁹⁶ The ACS PUMS shows that, on average across all industries during 2015-2019, the odds of a becoming self-employed for minorities and women as a group are only 63.3 percent of the odds of non-minority males becoming self-employed.⁹⁷ This finding is statistically significant.⁹⁸

If we consider each group presumptively disadvantaged under the current DOT DBE Program, a similar phenomenon is observed in all cases.⁹⁹

- For Blacks, the odds of becoming self-employed are only 40.6 percent of the odds for non-minority males. This finding is statistically significant.

⁹³ The ACS PUMS NAICS code variable does not always correspond precisely to the 2017 NAICS system. See U.S. Census Bureau (2021f, pp. 79-85) for details of the correspondence for any given NAICS code.

⁹⁴ *See* Section I.C.3.

⁹⁵ Complete results appear below in Appendix Tables 4.2A-4.2H.

⁹⁶ Complete results appear below in Appendix Tables 4.3A-4.3F.

⁹⁷ The coefficients from the business formation regressions reported in Tables 4.3 and 4.4 are presented as odds ratios. That is, they represent a given group's odds of being self-employed relative to (*i.e.*, divided by) the odds of the non-minority males being self-employed. For example, the top row of Table 4.3 shows that, across all industries, the odds of minorities and women as a group (row 1) being business owners are only 63.3 percent as high as the odds of non-minority males being business owners.

⁹⁸ *See* "All Industries" column, Table 4.3.

⁹⁹ *Ibid.*

- For Hispanics, the odds of becoming self-employed are only 66.8 percent of the odds for non-minority males. This finding is statistically significant.
- For Asian-Pacifics, the odds of becoming self-employed are only 74.3 percent of the odds for non-minority males. This finding is statistically significant.
- For Subcontinent Asians, the odds of becoming self-employed are only 66.8 percent of the odds for non-minority males. This finding is statistically significant.
- For Native Americans, the odds of becoming self-employed are only 65.4 percent of the odds for non-minority males. This finding is statistically significant.
- For minorities as a group, the odds of becoming self-employed are only 60.6 percent of the odds for non-minority males. This finding is statistically significant.
- For non-minority females, the odds of becoming self-employed are only 66 percent of the odds for non-minority males. This finding is statistically significant.

Similar findings result when we subdivide the ACS PUMS data by major procurement categories. A statistically significant adverse disparity in business formation is observed in 52 of 54 cases, or 96 percent (*See* Table 4.3).

Table 4.3. Annual Business Formation Disparities by Disadvantaged Group, Major Procurement Categories

Race/Ethnicity	Construction	AECRS	Professional Services	General Services	CSE	All Industries
MWBE	0.626****	0.638****	0.703****	0.674****	0.613****	0.633****
Minority	0.635****	0.611****	0.584****	0.676****	0.488****	0.606****
Black	0.577****	0.517****	0.432****	0.481****	0.233****	0.406****
Hispanic	0.626****	0.698****	0.761****	0.716****	0.452****	0.668****
Asian-Pacific	0.889****	0.573****	0.504****	0.924****	0.806****	0.743****
Asian Subcontinent	0.764****	0.494****	0.298****	0.875****	1.028	0.668****
Native American	0.580****	0.618****	0.794****	0.528****	0.995	0.654****
Two or more races	0.687****	0.639****	0.651****	0.658****	0.611****	0.628****
Non-minority female	0.587****	0.666****	0.843****	0.672****	0.771****	0.660****

Source: Author's calculations from the 2015-2019 ACS PUMS.

i. Findings for business formation, FRA-specific

Furthermore, similar findings occur when we consider just those industry segments most important to FRA grant activity. Statistically significant adverse disparities are observed in 50 of 54 cases, or 93 percent (*See* Table 4.4).¹⁰⁰

¹⁰⁰ Complete results appear below in Appendix Tables 4.4A-4.4H.

Table 4.4. Annual Business Formation Disparities by Disadvantaged Group, FRA-specific NAICS Codes by Major Procurement Category

Race/Ethnicity	Construction	AECRS	Professional Services	General Services	CSE	All Industries
MWBE	0.626****	0.638****	0.605****	0.845****	0.659****	0.675****
Minority	0.635****	0.611****	0.584****	0.641****	0.569****	0.639****
Black	0.577****	0.517****	0.572****	0.434****	0.229****	0.536****
Hispanic	0.626****	0.698****	0.566****	0.624****	0.604****	0.726****
Asian-Pacific	0.889****	0.573****	0.433****	1.019	0.846**	0.567****
Asian Subcontinent	0.764****	0.494****	0.299****	1.006	0.766*	0.357****
Native American	0.580****	0.618*	0.905	0.479****	0.615**	0.711****
Two or more races	0.687***	0.639****	0.644****	0.824****	0.590****	0.704****
Non-minority female	0.587****	0.666****	0.733****	1.054****	0.787****	0.732****

Source: See Table 4.3.

3. Unadjusted Disparities in Business Owner Earnings are Adverse, Large, and Statistically Significant

For those minorities and women who manage to overcome the odds observed in Tables 4.3 and 4.4 and actually form their own businesses, how do their earnings from those businesses fare relative to non-minority male business owners? The ACS PUMS shows that, on average across all industries during 2015-2019, annual business earnings were 38.9 percent lower for minorities and women as a group than for non-minority males.¹⁰¹ This finding is statistically significant (*see* Table 4.5).

If we consider each group presumptively disadvantaged under the current DOT DBE Program, a similar phenomenon is observed in all but one case (*see* Table 4.5).¹⁰²

- For Blacks, average annual business earnings were 46.3 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, Blacks only earned 54 cents on average. This finding is statistically significant.
- For Hispanics, average annual business earnings were 26 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, Hispanics only earned 74 cents on average. This finding is statistically significant.
- For Asian-Pacifics, average annual business earnings were 13.1 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, Asian-Pacifics only earned 87 cents on average. This finding is statistically significant.
- For Subcontinent Asians, average annual business earnings were 6.6 percent higher than for non-minority males. For every dollar earned by non-minority males during

¹⁰¹ The coefficients from the business owner earnings regressions reported in Tables 4.5 and 4.6 are presented as percentage differences relative to non-minority males.

¹⁰² Complete results appear below in Appendix Tables 4.5A-4.5L.

this time, Subcontinent Asians earned \$1.07 on average. This finding is statistically significant.¹⁰³

- For Native Americans, average annual business earnings were 43 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, Native Americans only earned 57 cents on average. This finding is statistically significant.
- For minorities as a group, average annual business earnings were 29.2 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, minorities only earned 71 cents on average. This finding is statistically significant.
- For non-minority females, average annual business earnings were 46.3 percent lower than for non-minority males. For every dollar earned by non-minority males during this time, non-minority females only earned 54 cents on average. This finding is statistically significant.

Similar findings result when we subdivide the ACS PUMS data by major procurement categories. A statistically significant adverse disparity in business owner earnings is observed in 46 out of 54 cases, or 85 percent.

Table 4.5. Annual Business Owner Earnings Disparities by Disadvantaged Group, Major Procurement Categories

Race/Ethnicity	Construction	AECRS	Professional Services	General Services	CSE	All Industries
MWBE	-0.217****	-0.378****	-0.358****	-0.376****	-0.453****	-0.389****
Minority	-0.162****	-0.256****	-0.356****	-0.270****	-0.345****	-0.292****
Black	-0.412****	-0.583****	-0.536****	-0.386****	-0.622****	-0.463****
Hispanic	-0.109****	-0.105	-0.333****	-0.285****	-0.314****	-0.260****
Asian-Pacific	-0.043	-0.106	-0.202****	-0.052****	-0.154****	-0.131****
Asian Subcontinent	0.001	-0.341**	0.010	0.184****	0.048	0.066****
Native American	-0.283****	-0.753***	-0.533****	-0.467****	-0.360****	-0.430****
Two or more races	-0.306****	-0.308**	-0.405****	-0.459****	-0.506****	-0.453****
Non-minority female	-0.463****	-0.469****	-0.361****	-0.445****	-0.525****	-0.463****

Source: Author's calculations from the 2015-2019 ACS PUMS.

i. Findings for business owner earnings, FRA-specific

Furthermore, similar findings occur when we consider just those industry segments that are most important to FRA grant activity. A statistically significant adverse disparity in business owner earnings is observed in 44 out of 54 cases, or 81 percent.¹⁰⁴

¹⁰³ This result for Subcontinent Asians might appear to indicate that they are not disadvantaged relative to non-minority males in this analysis. However, this is because Subcontinent Asians as a group actually possess *more* of certain productivity qualifications, *e.g.*, educational attainment, that are positively correlated with business owner earnings than non-minority males possess. Once these productivity differences are held constant across groups, as demonstrated below in Section IV.D.1.c, the advantage disappears, and significant disparities emerge. *See also* fn.16.

¹⁰⁴ Complete results appear below in Appendix Tables 4.6A-4.6F.

Table 4.6. Annual Business Owner Earnings Disparities by Disadvantaged Group, FRA-specific NAICS Codes by Major Procurement Category

Race/Ethnicity	Construction	AECRS	Professional Services	General Services	CSE	All Industries
MWBE	-0.217****	-0.378****	-0.357****	-0.251****	-0.324****	-0.226****
Minority	-0.162****	-0.256****	-0.354****	-0.292****	-0.198****	-0.211****
Black	-0.412****	-0.583****	-0.478****	-0.495****	-0.668****	-0.431****
Hispanic	-0.109****	-0.105	-0.356****	-0.242****	-0.072	-0.164****
Asian-Pacific	-0.043	-0.106	-0.309****	-0.174****	0.094	-0.110****
Asian Subcontinent	0.001	-0.341**	-0.159****	-0.032	0.010	-0.003
Native American	-0.283****	-0.753****	-0.381****	-0.492****	-0.131	-0.338****
Two or more races	-0.306****	-0.308**	-0.403****	-0.291****	-0.359*	-0.298****
Non-minority female	-0.463****	-0.469****	-0.359****	-0.225****	-0.445****	-0.246****

Source: See Table 4.5.

4. Summary

Tables 4.1 to 4.6 document the adverse race and gender disparities that exist in salaries and wages, business formation rates, and business owner earnings—for minorities and women as a group, and among each presumptively disadvantaged group in the current DOT DBE Program. These disparities exist in the economy as a whole, and in each of five major procurement categories. Moreover, these disparities exist within the industry segments most relevant to typical FRA grant activity. In the vast majority of cases, these adverse disparities are large and statistically significant.

D. Findings from Qualification and Capacities Models

1. Disparities Remain Adverse, Large, and Statistically Significant after Adjusting for Qualifications and Capacities

To see if the disparities documented in Tables 4.1 to 4.6 can be explained by qualifications-related factors, we add educational attainment, age, and geographic location to each regression analysis. The Qualifications Model allows us to compare individuals who are similarly situated in terms of their educational attainment, their labor market experience, and their geographic location. We are interested to learn how much of the disparity from the Baseline Model is accounted for by including these qualifications-related factors.

To see if the disparities can be explained by capacity-related factors, we add indicators of individual financial assets, family structure, mobility, immigration status, military status (veteran), and local macroeconomic conditions by state to each regression analysis. The Qualifications plus Capacities Model allows us to compare individuals who not only are similarly situated in terms of educational attainment, labor market experience, and geographic location, but are also similarly situated across a wide range of other attributes material to business ownership. We are interested to learn how much of the disparity from the baseline model and from the Qualifications Model is accounted for by controlling for capacity-related factors.

a. Findings for wage and salary earnings

Table 4.7 shows the results of these analyses for annual wage and salary earnings. The coefficients from the annual wage and salary earnings regressions presented in Table 4.7 show the percentage difference of given group's earnings compared to the reference group (non-minority males). For example, the top row of Table 4.7 shows that in the Baseline Model (column A), minorities and women as a group across all industries earned 38.2 percent less than non-minority males. When qualifications-related factors are accounted for (column B), this difference falls to 27.4 percent less than non-minority male earnings. When capacity-related factors are also accounted for (column C), the amount falls to 26.7 percent less than non-minority male earnings. Thus, of the 38.2 percent race and sex deficit observed, qualifications and capacities account for just 30.1 percent, leaving 69.9 percent unexplained.¹⁰⁵ All of these differences are statistically significant.

If we consider each presumptively disadvantaged group separately within the economy as a whole, we see that large, adverse, and statistically significant disparities remain for every group even after accounting for qualifications- and capacities-related factors. For Blacks (row 3), the combined Qualifications plus Capacities Model explains just 44.3 percent of the underlying disparity in annual wages and salaries, leaving 55.7 percent unexplained. For Hispanics (row 4) the explained amount is 62.4 percent, leaving 37.6 percent unexplained. For Native Americans (row 7) the explained amount is 51.2 percent, leaving 48.8 percent unexplained. For minorities as a group (row 2) the explained amount is 45.4 percent, leaving 54.6 percent unexplained. For non-minority females (row 9) the explained amount is 18.1 percent, leaving 81.9 percent unexplained.

For Asian-Pacific (row 5), the disparity found in the Qualifications plus Capacities Model is actually larger than that found in the Baseline Model. This indicates that Asian-Pacifics actually possess more of the human and financial capital attributes that positively influence wages and salaries than do non-minority males. Despite this advantage, disparities for Asian Pacifics remain large, adverse, and statistically significant.

For Subcontinent Asians as well (row 6), the disparity found in the Qualifications plus Capacities Model is actually larger than that found in the Baseline Model. In the Baseline Model, in fact, Subcontinent Asians are observed to have a 19.5 percent advantage compared to non-minority males. However, once Qualifications and Capacities are accounted for, this advantage becomes a 13.4 percent deficit. As with Asian-Pacifics, this indicates that Subcontinent Asians actually possess more of the human and financial capital attributes that positively influence wages and salaries than do non-minority males. Despite this advantage, disparities for Subcontinent Asians remain large, adverse, and statistically significant.

Within major procurement categories, whether we consider minorities and women as a group or each group separately, we again see that large, adverse, and statistically significant disparities still remain after controlling for qualifications- or qualifications plus capacities-

¹⁰⁵ That is $(38.2 - 26.7) \div 38.2 = 30.1$.

related factors. This is true in construction, AE-CRS, professional services, general services, and CSE. All of these results are statistically significant.

i. Findings for wage and salary earnings, FRA-specific

Turning to just those industry segments most important to FRA grant activity, shown in the bottom half of Table 4.7, we see that in all cases adverse disparities still remain after controlling for qualifications- and capacities-related factors. This is true when considering all FRA-specific NAICS codes together, as well as when considering them grouped separately by procurement category. It is true when considering minorities and women as a group, and for each presumptively disadvantaged group separately. All of these results are statistically significant.

b. Findings for business formation

Table 4.8 shows the results for the rate of business formation logit regressions.¹⁰⁶ The coefficients from the business formation regressions in Table 4.8 are presented as odds ratios. That is, they represent a given group's odds of being self-employed relative to (*i.e.*, divided by) the odds of the non-minority males being self-employed. For example, the top row of Table 4.8 shows that in the Baseline Model (column A), across all industries, the odds of minorities and women as a group (row 1) being self-employed are only 63.3 percent as high as the odds of non-minority males being self-employed. When qualifications-related factors are accounted for (column B), the odds ratio increases to 74.8 percent. When capacity-related factors are also accounted for (column C), the amount falls back to 73.3 percent. Thus, the Qualifications Model accounts for just 31.3 percent of the disparity in business formation while the Qualifications plus Capacities Model accounts for just 27.2 percent of the disparity.¹⁰⁷

If we consider each presumptively disadvantaged minority group separately within the economy as a whole, we see that large, adverse, and statistically significant disparities remain for every group even after accounting for qualifications- and capacities-related factors. For Blacks (row 3), the Qualifications Model explains just 16.7 percent of the disparity in the Baseline Model, and the combined Qualifications plus Capacities Model explains only 25.8 percent of the disparity in the Baseline Model. For Hispanics (row 4),

¹⁰⁶ Logit regression is used to determine the relationship between a categorical variable—one that can be characterized in terms of a “yes” or a “no” response as opposed to a continuous number—and a set of characteristics that are related to the outcome of the categorical variable. Logit regression produces estimates of the extent to which each characteristic is positively or negatively related to the likelihood that the categorical variable will be a yes or no. In this case, the categorical variable is whether or not an individual is self-employed. Logit regression is one of several techniques that can be used to examine qualitative outcomes. Generally, other techniques such as Probit regression yield similar results. For a detailed discussion, see G.S. Maddala (1983). Logit analysis is performed here using the “logit” command in the statistical program STATA.

¹⁰⁷ To see this, first note the odds ratio of 0.633 for MWBEs in the first row of Table 4.8 is 36.7 percentage points below than parity ($1.00 - 0.633 = 0.367$). In column B of the first row, the odds ratio increases by 11.5 percentage points ($0.748 - 0.633 = 0.115$). Finally, 11.5 percentage points is just 31.3 percent of the baseline disparity of 36.7 percentage points ($11.5 \div 36.7 = 31.3$).

the Qualifications Model explains just 16.3 percent of the disparity in the Baseline Model. Accounting for all the variables in the Qualifications plus Capacities Model for Hispanics actually worsens their level of disparity relative to the Baseline Model, indicating that this group possesses, on average, more of the factors that are positively related to business formation than non-minority males possess. For Asian-Pacific (row 5) and Subcontinent Asians (row 6), there is a similar pattern. The Qualifications Model explains 46.7 percent and 47.6 percent of the disparity in the Baseline Model, respectively, but in the Qualifications plus Capacities Model the disparities actually worsen compared to the Baseline Model. Again, this indicates that Asian-Pacific and Subcontinent Asians possess, on average, more of the factors that are positively related to business formation than non-minority males possess.

For Native Americans (row 7), the Qualifications Model explains just 19.1 percent of the disparity in the Baseline Model, and the combined Qualifications plus Capacities Model explains only 26.3 percent of the disparity in the baseline model.

For minorities as a group (row 2), the Qualifications Model explains just 23.6 percent of the disparity in the Baseline Model, and the combined Qualifications plus Capacities Model explains only 4.3 percent of the disparity in the Baseline Model.

For non-minority females (row 9), the Qualifications Model explains just 40.9 percent of the disparity in the Baseline Model, and the combined Qualifications plus Capacities Model explains only 43.2 percent of the disparity in the Baseline Model.

Turning to major procurement categories, and considering just the results from the combined Qualifications and Capacities Model in column (c), whether we consider minorities and women as a group or each presumptively disadvantaged group separately, we again see that large, adverse, and statistically significant disparities are the rule rather than the exception. In construction, 100 percent of the disparities are adverse, 89 percent are large and adverse, and 89 percent are adverse, large, and statistically significant. In AECS, 100 percent of the disparities are adverse, 78 percent are large and adverse, and 75 percent are adverse, large, and statistically significant. The disparity for Native Americans is large and adverse but not statistically significant. In professional services, 100 percent of the disparities are adverse, 67 percent are large and adverse, and 67 percent are adverse, large, and statistically significant. The disparity for Native Americans is adverse but not large nor statistically significant. In general services, 100 percent of the disparities are adverse, 56 percent are large and adverse, and 56 percent are adverse, large, and statistically significant. The disparities for Subcontinent Asians, non-minority females, and minorities and women as a group are adverse and statistically significant but not large. In CSE, 89 percent of the disparities are adverse, 67 percent are large and adverse, and 67 percent are adverse, large, and statistically significant. The disparity for Native Americans is not adverse but also not statistically significant. The disparities for Subcontinent Asians are adverse and statistically significant but not large.

i. Findings for business formation, FRA-specific

Turning to those industry segments most important to FRA grant activity, shown in the bottom half of Table 4.8, we again see a similar pattern, whether we consider minorities and women as a group or each presumptively disadvantaged group separately. Considering all FRA-specific industry segments combined, 100 percent of the disparities are adverse, 89 percent are large and adverse, and 89 percent are adverse, large, and statistically significant. In construction, 100 percent of the disparities are adverse, 89 percent are large and adverse, and 89 percent are adverse, large, and statistically significant. In AECRS, 100 percent of the disparities are adverse, 78 percent are large and adverse, and 67 percent are adverse, large, and statistically significant. In professional services, 89 percent of the disparities are adverse, 67 percent are large and adverse, and 67 percent are adverse, large, and statistically significant. The disparity for Hispanics is adverse and statistically significant but not large. The disparity for Native Americans is not adverse and is statistically significant. In general services, 100 percent of the disparities are adverse, 89 percent are large and adverse, and 89 percent are adverse, large, and statistically significant. In CSE, 100 percent of the disparities are adverse, 100 percent are large and adverse, and 100 percent are adverse, large, and statistically significant.

c. Findings for business owner earnings

Table 4.9 shows the results for annual business owner earnings. The coefficients from the annual business owner earnings regressions presented in Table 4.9 can be interpreted just as in Table 4.7 for wage and salary earnings. That is, the coefficient shows the percentage difference in annual business owner earnings compared to the reference group (non-minority males). For example, the top row of Table 4.9 shows that in the Baseline Model (column A), minorities and women as a group across all industries earned 38.9 percent less than non-minority males. When qualifications-related factors are accounted for (column B), this difference falls to 29.1 percent less than non-minority male business owner earnings. When capacity-related factors are also accounted for (column C), the amount falls to 32.9 percent less than non-minority male business owner earnings. Thus, of the 38.9 percent race and sex deficit observed, qualifications and capacities account for just 15.4 percent, leaving 84.6 percent unexplained. All of these differences are statistically significant.

Considering each presumptively disadvantaged group separately, Table 4.9 shows that for the economy as a whole, large, adverse, and statistically significant disparities remain for every group even after accounting for qualifications- and capacities-related factors. For Blacks (row 3), the combined Qualifications plus Capacities Model explains just 32.8 percent of the underlying disparity in annual business owner earnings, leaving 67.2 percent unexplained. For Hispanics (row 4), the combined Qualifications plus Capacities Model explains just 15.4 percent of the underlying disparity in annual business owner earnings, leaving 84.6 percent unexplained. For Native Americans (row 7), the combined Qualifications plus Capacities Model explains just 33.3 percent of the underlying disparity in annual business owner earnings, leaving 66.7 percent unexplained. For minorities as a group (row 2), the combined Qualifications plus Capacities Model explains just 12 percent of the underlying disparity in annual business owner earnings, leaving 88 percent unexplained. For non-minority females (row 9), the combined Qualifications plus

Capacities Model explains just 20.7 percent of the underlying disparity in annual business owner earnings, leaving 79.3 percent unexplained.

For Asian-Pacific (row 5), the disparity found in the Qualifications plus Capacities Model is actually larger than that found in the Baseline Model. This indicates that Asian-Pacific actually possess, on average, more of the human and financial capital attributes that positively influence wages and salaries than do non-minority males. Despite this advantage, disparities for Asian Pacifics remain large, adverse, and statistically significant.

For Subcontinent Asians as well (row 6), the disparity found in the Qualifications plus Capacities Model is actually larger than that found in the Baseline Model. In the Baseline Model, in fact, Subcontinent Asians are observed to have a 6.6 percent advantage compared to non-minority males. However, once Qualifications and Capacities are accounted for, this advantage becomes a 13.8 percent deficit. As with Asian-Pacifics, this indicates that Subcontinent Asians actually possess, on average, more of the human and financial capital attributes that positively influence wages and salaries than do non-minority males. Despite this advantage, disparities for Subcontinent Asians remain large, adverse, and statistically significant.

Within major procurement categories, we again observe large, adverse, and statistically significant disparities in almost every case. In construction, 100 percent of the disparities are adverse and statistically significant. MWBEs on average earn 28.5 percent less than non-minority males, or just 72 cents on the dollar. In AECRS, 78 percent of the disparities are adverse and statistically significant. MWBEs on average earn 38.6 percent less than non-minority males, or just 61 cents on the dollar. The disparity for Hispanics is adverse but not statistically significant. In professional services, 100 percent of the disparities are adverse and statistically significant. MWBEs on average earn 32.7 percent less than non-minority males, or just 67 cents on the dollar. In general services, 100 percent of the disparities are adverse and statistically significant. MWBEs on average earn 30.4 percent less than non-minority males, or just 70 cents on the dollar. In CSE, 100 percent of the disparities are adverse and statistically significant. MWBEs on average earn 41.3 percent less than non-minority males, or just 57 cents on the dollar.

i. Findings for business owner earnings, FRA-specific

Turning to those industry segments most important to FRA grant activity, shown in the bottom half of Table 4.9, we again see a similar pattern, whether we consider minorities and women as a group or each presumptively disadvantaged group separately. Considering all FRA-specific industry segments combined, 100 percent of the disparities are adverse and statistically significant. MWBEs on average earn 28.9 percent less than non-minority males, or just 71 cents on the dollar. In construction, 100 percent of the disparities are adverse and statistically significant. MWBEs on average earn 28.5 percent less than non-minority males, or just 72 cents on the dollar. In AECRS, 78 percent of the disparities are adverse and statistically significant. MWBEs on average earn 38.6 percent less than non-minority males, or just 61 cents on the dollar. The disparity for Hispanics is adverse but not statistically significant. In professional services, 89 percent of the disparities are adverse and statistically significant. MWBEs on average earn 30.6 percent less than non-

minority males, or just 69 cents on the dollar. The disparity for Native Americans is adverse but not statistically significant. In general services, 89 percent of the disparities are adverse and statistically significant. MWBEs on average earn 27.4 percent less than non-minority males, or just 73 cents on the dollar. The disparity for Subcontinent Asians is adverse but not statistically significant. In CSE, 78 percent of the disparities are adverse and statistically significant. MWBEs on average earn 39 percent less than non-minority males, or just 61 cents on the dollar. The disparities for Hispanics and Native Americans are adverse but not statistically significant.

Table 4.7. Annual Wage Earnings Disparities, 2015-2019

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
All Industries			
MWBE	-0.382****	-0.274****	-0.267****
Minority	-0.399****	-0.243****	-0.218****
Black	-0.479****	-0.334****	-0.267****
Hispanic	-0.442****	-0.194****	-0.166****
Asian-Pacific	-0.174****	-0.234****	-0.222****
Asian Subcontinent	0.195****	-0.159****	-0.134****
Native American	-0.486****	-0.283****	-0.237****
Two or more races	-0.446****	-0.239****	-0.216****
Non-minority female	-0.365****	-0.309****	-0.299****
Construction			
MWBE	-0.284****	-0.247****	-0.234****
Minority	-0.299****	-0.216****	-0.174****
Black	-0.374****	-0.365****	-0.267****
Hispanic	-0.300****	-0.179****	-0.124****
Asian-Pacific	-0.101****	-0.195****	-0.185****
Asian Subcontinent	-0.037	-0.179****	-0.162****
Native American	-0.359****	-0.303****	-0.235****
Two or more races	-0.229****	-0.169****	-0.142****
Non-minority female	-0.225****	-0.332****	-0.324****
AECRS			
MWBE	-0.272****	-0.237****	-0.225****
Minority	-0.225****	-0.171****	-0.128****
Black	-0.282****	-0.227****	-0.164****
Hispanic	-0.300****	-0.172****	-0.116****
Asian-Pacific	-0.114****	-0.163****	-0.125****
Asian Subcontinent	-0.038	-0.114****	-0.052**
Native American	-0.401****	-0.280****	-0.236****
Two or more races	-0.201****	-0.116****	-0.109****
Non-minority female	-0.318****	-0.298****	-0.282****
Professional Services			
MWBE	-0.381****	-0.305****	-0.291****
Minority	-0.422****	-0.267****	-0.248****
Black	-0.586****	-0.397****	-0.318****
Hispanic	-0.538****	-0.254****	-0.216****
Asian-Pacific	-0.043****	-0.198****	-0.211****
Asian Subcontinent	0.375****	-0.072****	-0.055****
Native American	-0.587****	-0.366****	-0.294****
Two or more races	-0.365****	-0.254****	-0.232****
Non-minority female	-0.332****	-0.341****	-0.318****
General Services			
MWBE	-0.337****	-0.263****	-0.260****
Minority	-0.371****	-0.235****	-0.215****
Black	-0.416****	-0.312****	-0.257****
Hispanic	-0.420****	-0.175****	-0.155****
Asian-Pacific	-0.181****	-0.235****	-0.221****
Asian Subcontinent	0.155****	-0.194****	-0.171****
Native American	-0.478****	-0.263****	-0.225****
Two or more races	-0.458****	-0.248****	-0.229****
Non-minority female	-0.307****	-0.289****	-0.286****
CSE			
MWBE	-0.414****	-0.282****	-0.269****
Minority	-0.409****	-0.249****	-0.216****

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
Black	-0.497****	-0.337****	-0.263****
Hispanic	-0.443****	-0.201****	-0.168****
Asian-Pacific	-0.148****	-0.247****	-0.228****
Asian Subcontinent	0.023***	-0.202****	-0.167****
Native American	-0.447****	-0.280****	-0.234****
Two or more races	-0.444****	-0.217****	-0.191****
Non-minority female	-0.421****	-0.320****	-0.305****
FRA-specific, All NAICS codes			
MWBE	-0.251****	-0.262****	-0.249****
Minority	-0.282****	-0.224****	-0.194****
Black	-0.379****	-0.349****	-0.263****
Hispanic	-0.390****	-0.205****	-0.162****
Asian-Pacific	0.033****	-0.190****	-0.192****
Asian Subcontinent	0.423****	-0.078****	-0.048****
Native American	-0.439****	-0.294****	-0.229****
Two or more races	-0.205****	-0.183****	-0.158****
Non-minority female	-0.201****	-0.315****	-0.293****
FRA-specific, Construction NAICS codes			
MWBE	-0.284****	-0.247****	-0.234****
Minority	-0.299****	-0.216****	-0.174****
Black	-0.374****	-0.365****	-0.267****
Hispanic	-0.300****	-0.179****	-0.124****
Asian-Pacific	-0.101****	-0.195****	-0.185****
Asian Subcontinent	-0.037	-0.179****	-0.162****
Native American	-0.359****	-0.303****	-0.235****
Two or more races	-0.229****	-0.169****	-0.142****
Non-minority female	-0.225****	-0.332****	-0.324****
FRA-specific, AECRS NAICS codes			
MWBE	-0.272****	-0.237****	-0.225****
Minority	-0.225****	-0.171****	-0.128****
Black	-0.282****	-0.227****	-0.164****
Hispanic	-0.300****	-0.172****	-0.116****
Asian-Pacific	-0.114****	-0.163****	-0.125****
Asian Subcontinent	-0.038	-0.114****	-0.052**
Native American	-0.401****	-0.280****	-0.236****
Two or more races	-0.201****	-0.116****	-0.109****
Non-minority female	-0.318****	-0.298****	-0.282****
FRA-specific, Professional Services ex AECRS NAICS codes			
MWBE	-0.315****	-0.274****	-0.261****
Minority	-0.281****	-0.219****	-0.205****
Black	-0.440****	-0.349****	-0.267****
Hispanic	-0.443****	-0.263****	-0.216****
Asian-Pacific	-0.139****	-0.164****	-0.177****
Asian Subcontinent	0.048****	-0.079****	-0.062****
Native American	-0.487****	-0.333****	-0.256****
Two or more races	-0.300****	-0.203****	-0.184****
Non-minority female	-0.349****	-0.325****	-0.296****
FRA-specific, General Services NAICS codes			
MWBE	-0.346****	-0.308****	-0.269****
Minority	-0.387****	-0.298****	-0.233****
Black	-0.448****	-0.376****	-0.285****
Hispanic	-0.414****	-0.266****	-0.185****
Asian-Pacific	-0.217****	-0.276****	-0.236****

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
Asian Subcontinent	-0.13****	-0.247****	-0.173****
Native American	-0.475****	-0.352****	-0.294****
Two or more races	-0.320****	-0.227****	-0.188****
Non-minority female	-0.306****	-0.316****	-0.290****
FRA-specific, CSE NAICS codes			
MWBE	-0.263****	-0.254****	-0.238****
Minority	-0.278****	-0.226****	-0.195****
Black	-0.389****	-0.335****	-0.253****
Hispanic	-0.324****	-0.187****	-0.154****
Asian-Pacific	-0.096****	-0.225****	-0.216****
Asian Subcontinent	0.261****	-0.114****	-0.104****
Native American	-0.298****	-0.198****	-0.160****
Two or more races	-0.223****	-0.153****	-0.133****
Non-minority female	-0.240****	-0.290****	-0.271****

Source: Author's calculations from the 2015-1019 ACS PUMS. Notes: Statistical significance is indicated by asterisks (* p-value<0.1, ** p-value<0.05, *** p-value<0.01, **** p-value<0.001).

Table 4.8. Business Formation Disparities, 2015-2019

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
All Industries			
MWBE	0.633****	0.748****	0.733****
Minority	0.606****	0.699****	0.623****
Black	0.406****	0.505****	0.559****
Hispanic	0.668****	0.722****	0.606****
Asian-Pacific	0.743****	0.863****	0.664****
Asian Subcontinent	0.668****	0.826****	0.614****
Native American	0.654****	0.720****	0.745****
Two or more races	0.628****	0.873****	0.875****
Non-minority female	0.660****	0.799****	0.807****
Construction			
MWBE	0.626****	0.657****	0.579****
Minority	0.635****	0.702****	0.610****
Black	0.577****	0.567****	0.623****
Hispanic	0.626****	0.717****	0.570****
Asian-Pacific	0.889****	0.843****	0.666****
Asian Subcontinent	0.764****	0.811****	0.623****
Native American	0.580****	0.613****	0.590****
Two or more races	0.687****	0.814****	0.814****
Non-minority female	0.587****	0.535****	0.529****
AECRS			
MWBE	0.638****	0.722****	0.683****
Minority	0.611****	0.735****	0.689****
Black	0.517****	0.562****	0.616****
Hispanic	0.698****	0.912****	0.833****
Asian-Pacific	0.573****	0.623****	0.517****
Asian Subcontinent	0.494****	0.621****	0.538****
Native American	0.618****	0.694****	0.733****
Two or more races	0.639****	0.870****	0.836****
Non-minority female	0.666****	0.710****	0.680****
Professional Services			
MWBE	0.703****	0.758****	0.772****
Minority	0.584****	0.649****	0.619****
Black	0.432****	0.473****	0.519****
Hispanic	0.761****	0.860****	0.771****
Asian-Pacific	0.504****	0.569****	0.487****
Asian Subcontinent	0.298****	0.373****	0.321****
Native American	0.794****	0.897****	0.924****
Two or more races	0.651****	0.850****	0.867****
Non-minority female	0.843****	0.862****	0.867****
General Services			
MWBE	0.674****	0.838****	0.810****
Minority	0.676****	0.811****	0.708****
Black	0.481****	0.605****	0.652****
Hispanic	0.716****	0.842****	0.696****
Asian-Pacific	0.924****	0.993****	0.736****
Asian Subcontinent	0.875****	1.115****	0.819****
Native American	0.528****	0.631****	0.665****
Two or more races	0.658****	0.953****	0.941****
Non-minority female	0.672****	0.861****	0.870****
CSE			
MWBE	0.613****	0.641****	0.658****
Minority	0.488****	0.538****	0.478****

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
Black	0.233****	0.297****	0.363****
Hispanic	0.452****	0.419****	0.367****
Asian-Pacific	0.806****	0.983	0.704****
Asian Subcontinent	1.028	1.306****	0.875****
Native American	0.995	0.973	1.046
Two or more races	0.611****	0.818****	0.843****
Non-minority female	0.771****	0.747****	0.773****
FRA-specific, All NAICS codes			
MWBE	0.668****	0.685****	0.674****
Minority	0.633****	0.677****	0.638****
Black	0.537****	0.562****	0.624****
Hispanic	0.718****	0.733****	0.642****
Asian-Pacific	0.560****	0.656****	0.559****
Asian Subcontinent	0.352****	0.500****	0.419****
Native American	0.717****	0.674****	0.668****
Two or more races	0.698****	0.834****	0.845****
Non-minority female	0.723****	0.693****	0.701****
FRA-specific, Construction NAICS codes			
MWBE	0.626****	0.657****	0.579****
Minority	0.635****	0.702****	0.610****
Black	0.577****	0.567****	0.623****
Hispanic	0.626****	0.717****	0.570****
Asian-Pacific	0.889****	0.843****	0.666****
Asian Subcontinent	0.764****	0.811****	0.623****
Native American	0.580****	0.613****	0.590****
Two or more races	0.687****	0.814****	0.814****
Non-minority female	0.587****	0.535****	0.529****
FRA-specific, AECRS NAICS codes			
MWBE	0.638****	0.722****	0.683****
Minority	0.611****	0.735****	0.689****
Black	0.517****	0.562****	0.616****
Hispanic	0.698****	0.912*	0.833**
Asian-Pacific	0.573****	0.623****	0.517****
Asian Subcontinent	0.494****	0.621****	0.538****
Native American	0.618*	0.694	0.733
Two or more races	0.639****	0.870	0.836*
Non-minority female	0.666****	0.710****	0.680****
FRA-specific, Professional Services ex AECRS NAICS codes			
MWBE	0.605****	0.707****	0.734****
Minority	0.485****	0.647****	0.698****
Black	0.572****	0.704****	0.737****
Hispanic	0.566****	0.827****	0.812****
Asian-Pacific	0.433****	0.521****	0.523****
Asian Subcontinent	0.299****	0.415****	0.437****
Native American	0.905	1.179*	1.169*
Two or more races	0.644****	0.898**	0.908**
Non-minority female	0.733****	0.758****	0.758****
FRA-specific, General Services NAICS codes			
MWBE	0.725****	0.705****	0.728****
Minority	0.561****	0.649****	0.634****
Black	0.390****	0.460****	0.568****
Hispanic	0.540****	0.672****	0.615****
Asian-Pacific	0.861****	0.792****	0.676****

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
Asian Subcontinent	0.862**	0.908	0.754****
Native American	0.504****	0.551****	0.606****
Two or more races	0.728****	0.840***	0.892**
Non-minority female	0.886****	0.749****	0.775****
FRA-specific, CSE NAICS codes			
MWBE	0.659****	0.664****	0.613****
Minority	0.569****	0.619****	0.461****
Black	0.229****	0.258****	0.311****
Hispanic	0.604****	0.670****	0.488****
Asian-Pacific	0.846**	0.831**	0.488****
Asian Subcontinent	0.766*	0.911	0.511****
Native American	0.615**	0.700	0.665*
Two or more races	0.590****	0.700**	0.637****
Non-minority female	0.787****	0.713****	0.735****

Source and Notes: See Table 4.7.

Table 4.9. Business Owner Earnings Disparities, 2015-2019

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
All Industries			
MWBE	-0.389****	-0.291****	-0.329****
Minority	-0.292****	-0.191****	-0.257****
Black	-0.463****	-0.374****	-0.311****
Hispanic	-0.260****	-0.141****	-0.220****
Asian-Pacific	-0.131****	-0.059****	-0.218****
Asian Subcontinent	0.066***	0.056***	-0.138****
Native American	-0.430****	-0.337****	-0.287****
Two or more races	-0.453****	-0.309****	-0.308****
Non-minority female	-0.463****	-0.372****	-0.367****
Construction			
MWBE	-0.217****	-0.214****	-0.285****
Minority	-0.162****	-0.143****	-0.195****
Black	-0.412****	-0.412****	-0.320****
Hispanic	-0.109****	-0.065****	-0.125****
Asian-Pacific	-0.043	-0.091**	-0.228****
Asian Subcontinent	0.001	-0.024	-0.171*
Native American	-0.283****	-0.263****	-0.177****
Two or more races	-0.306****	-0.274****	-0.260****
Non-minority female	-0.463****	-0.477****	-0.471****
AECRS			
MWBE	-0.378****	-0.331****	-0.386****
Minority	-0.256****	-0.179****	-0.248****
Black	-0.583****	-0.536****	-0.484****
Hispanic	-0.105	0.056	-0.020
Asian-Pacific	-0.106	-0.116	-0.249**
Asian Subcontinent	-0.341**	-0.346**	-0.426**
Native American	-0.753***	-0.733***	-0.737***
Two or more races	-0.308**	-0.181	-0.148
Non-minority female	-0.469****	-0.439****	-0.457****
Professional Services			
MWBE	-0.358****	-0.310****	-0.327****
Minority	-0.356****	-0.227****	-0.263****
Black	-0.536****	-0.448****	-0.377****
Hispanic	-0.333****	-0.106****	-0.152****
Asian-Pacific	-0.202****	-0.239****	-0.327****
Asian Subcontinent	0.010	-0.098**	-0.209****
Native American	-0.533****	-0.391****	-0.312****
Two or more races	-0.405****	-0.286****	-0.277****
Non-minority female	-0.361****	-0.362****	-0.354****
General Services			
MWBE	-0.376****	-0.268****	-0.304****
Minority	-0.270****	-0.171****	-0.240****
Black	-0.386****	-0.305****	-0.259****
Hispanic	-0.285****	-0.158****	-0.236****
Asian-Pacific	-0.052****	0.002	-0.165****
Asian Subcontinent	0.184****	0.075***	-0.112****
Native American	-0.467****	-0.364****	-0.326****
Two or more races	-0.459****	-0.300****	-0.310****
Non-minority female	-0.445****	-0.337****	-0.334****
CSE			
MWBE	-0.453****	-0.365****	-0.413****
Minority	-0.345****	-0.217****	-0.321****

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
Black	-0.622****	-0.495****	-0.424****
Hispanic	-0.314****	-0.189****	-0.296****
Asian-Pacific	-0.154****	-0.027	-0.263****
Asian Subcontinent	0.048	0.213****	-0.111**
Native American	-0.360****	-0.313****	-0.271****
Two or more races	-0.506****	-0.354****	-0.347****
Non-minority female	-0.525****	-0.458****	-0.452****
FRA-specific, All NAICS codes			
MWBE	-0.228****	-0.258****	-0.289****
Minority	-0.213****	-0.186****	-0.232****
Black	-0.431****	-0.437****	-0.360****
Hispanic	-0.166****	-0.081****	-0.133****
Asian-Pacific	-0.112****	-0.202****	-0.315****
Asian Subcontinent	-0.006	-0.090*	-0.235****
Native American	-0.339****	-0.282****	-0.217****
Two or more races	-0.299****	-0.274****	-0.262****
Non-minority female	-0.248****	-0.356****	-0.342****
FRA-specific, Construction NAICS codes			
MWBE	-0.217****	-0.214****	-0.285****
Minority	-0.162****	-0.143****	-0.195****
Black	-0.412****	-0.412****	-0.320****
Hispanic	-0.109****	-0.065****	-0.125****
Asian-Pacific	-0.043	-0.091****	-0.228****
Asian Subcontinent	0.001	-0.024****	-0.171****
Native American	-0.283****	-0.263****	-0.177****
Two or more races	-0.306****	-0.274****	-0.260****
Non-minority female	-0.463****	-0.477****	-0.471****
FRA-specific, AECRS NAICS codes			
MWBE	-0.378****	-0.331****	-0.386****
Minority	-0.256****	-0.179****	-0.248****
Black	-0.583****	-0.536****	-0.484****
Hispanic	-0.105	0.056	-0.020
Asian-Pacific	-0.106	-0.116	-0.249*
Asian Subcontinent	-0.341**	-0.346**	-0.426**
Native American	-0.753***	-0.733***	-0.737***
Two or more races	-0.308**	-0.181	-0.148
Non-minority female	-0.469****	-0.439****	-0.457****
FRA-specific, Professional Services ex AECRS NAICS codes			
MWBE	-0.357****	-0.305****	-0.306****
Minority	-0.354****	-0.244****	-0.260****
Black	-0.478****	-0.412****	-0.347****
Hispanic	-0.356****	-0.189****	-0.187****
Asian-Pacific	-0.309****	-0.246****	-0.322****
Asian Subcontinent	-0.159**	-0.070	-0.161**
Native American	-0.381***	-0.256*	-0.192
Two or more races	-0.403****	-0.236****	-0.232****
Non-minority female	-0.359****	-0.342****	-0.328****
FRA-specific, General Services NAICS codes			
MWBE	-0.271****	-0.281****	-0.274****
Minority	-0.310****	-0.262****	-0.284****
Black	-0.505****	-0.454****	-0.382****
Hispanic	-0.263****	-0.176****	-0.195****
Asian-Pacific	-0.198****	-0.229****	-0.308****

Independent Variables	Specification		
	Baseline model	Qualifications model	Qualifications + Capacities model
	(A)	(B)	(C)
Asian Subcontinent	-0.062	-0.045	-0.155
Native American	-0.501****	-0.471****	-0.448***
Two or more races	-0.307****	-0.273****	-0.267****
Non-minority female	-0.247****	-0.292****	-0.269****
FRA-specific, CSE NAICS codes			
MWBE	-0.324****	-0.315****	-0.390****
Minority	-0.198****	-0.167***	-0.342****
Black	-0.668****	-0.626****	-0.593****
Hispanic	-0.072	-0.006	-0.155
Asian-Pacific	0.094	0.028	-0.342***
Asian Subcontinent	0.010	0.019	-0.386*
Native American	-0.131	-0.128	-0.221
Two or more races	-0.359*	-0.318*	-0.352*
Non-minority female	-0.445****	-0.447****	-0.422****

Source and Notes: See Table 4.7.

This section has shown that when we examine the status of minorities and women compared to non-minority males across the entire spectrum of industry sectors in the U.S. economy, as well as when we focus on those industry segments most relevant to FRA grant activity, the results show adverse, large, and statistically significant disparities in the vast majority of cases.

That is, even when other non-discriminatory factors are held constant using the statistical technique of regression analysis, the disparities in salaries and wages, business formation rates, and business owner earnings, between Blacks, Hispanics, Asian-Pacifics, Subcontinent Asians, Native Americans, and non-minority females, on the one hand, and their non-minority male counterparts, on the other, remain large, adverse, and statistically significant in the vast majority of cases.

I have documented such disparities in this report for the nation as a whole, in the economy as a whole, as well as in all major procurement categories and industry sectors, including those most important to the contracting and procurement spending that flows from FRA grant activity.

These results are fully consistent with the conclusion that business discrimination continues to harm minorities and women operating in United States business markets, including in those markets that are relevant to the FRA's federal grant spending.

V. Overall Conclusions

In preparing this report, I conducted extensive original research using over 200 previously produced disparity studies, as well as Census Bureau data from the *Annual Business Survey* Program, and the *American Community Survey*. After reviewing this material, and based on the findings presented in this report, I conclude that, taken as a whole, they provide strong evidence of large, adverse, and statistically significant disparities facing minority-owned and women-owned business enterprises in the United States. Moreover, these disparities cannot be adequately explained by differences between the relevant populations in factors untainted by the effects of discrimination and are therefore consistent with the presence of discrimination in the business market. This is the case in all major markets for government contracting and procurement including construction, AECRS, professional services, general services, and CSE, including those industries most important to the Federal Railroad Administration's grant spending activity.



Jon Wainwright, Ph.D.

September 5, 2022

This report is subject to revision upon access to additional data or testimony. My rate for work done on this matter is \$600 per hour. My qualifications are documented above in Section I and in my curriculum vitae, which is attached as Exhibit A.

VI. References

- Aronson, Robert L. 1991. *Self-Employment: A Labor Market Perspective*, Ithaca: ILR Press.
- Blanchflower, D. G., 2000. "Self-employment in OECD countries," *Labour Economics*, 7, September, 471-505.
- Fairlie, Robert, 2020. "The Impact of COVID-19 on Small Business Owners: Evidence from the First Three Months After Widespread Social-distancing Restrictions." *Journal of Economics & Management Strategy* 29(4), pp. 727-740.
- Lowrey, Ying. 2010a. "Race/Ethnicity and Establishment Dynamics, 2002-2006," *SBA Office of Advocacy*. November.
- Lowrey, Ying. 2010b. "Gender and Establishment Dynamics, 2002-2006," *SBA Office of Advocacy*. November.
- Maddala, G.S. 1983. *Limited Dependent and Qualitative Variables in Econometrics*, Cambridge: Cambridge University Press.
- Marshall, Ray. 2002. "The economics of discrimination as applied to business development," in Horowitz, Irving Louis, ed., *Eli Ginzberg: The Economist as a Public Intellectual*. New Brunswick, NJ: Transaction Publishers, 67-106.
- NERA Economic Consulting. 2017. *Business Disparities in the Maryland Market Area*, prepared for the Maryland Department of Transportation. February.
- NERA Economic Consulting. 2016. "FRA Grant and Loan Activity Database (2008-2016)," prepared under subcontract to Contract No. GS-10F-0145K for the U.S. Department of Transportation, Federal Railroad Administration. Unpublished.
- Rubinovitz, Robert. 2013a. Report of Defendant's Expert in *Rothe Development, Inc. v. Department of Defense and Small Business Administration*, United States District Court for the District of Columbia, Case No. 12-CV-744, August 8.
- Rubinovitz, Robert. 2013b. Supplemental Report of Defendant's Expert in *Rothe Development, Inc. v. Department of Defense and Small Business Administration*, United States District Court for the District of Columbia, Case No. 12-CV-744, [October 25].
- U.S. Bureau of Economic Analysis. 2022. "SAINC1: Personal Income Summary: Personal Income, Population, Per Capita Personal Income," 2014-2019. <<https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1&acrdn=2>>. Accessed 7 July 2022.
- U.S. Bureau of Labor Statistics. 2022. "Local Area Unemployment Statistics: Unemployment Rates for States, 2018 Annual Averages." <<https://www.bls.gov/lau/lastrk19.htm>>. Accessed 7 July 2022.

U.S. Bureau of Labor Statistics. 2020a. “Local Area Unemployment Statistics: Unemployment Rates for States, 2018 Annual Averages.” <<https://www.bls.gov/lau/lastrk18.htm>>. Accessed 31 August 2020.

U.S. Bureau of Labor Statistics. 2020b. “Local Area Unemployment Statistics: Unemployment Rates for States, 2017 Annual Averages.” <<https://www.bls.gov/lau/lastrk17.htm>>. Accessed 31 August 2020.

U.S. Bureau of Labor Statistics. 2020c. “Local Area Unemployment Statistics: Unemployment Rates for States, 2016 Annual Averages.” <<https://www.bls.gov/lau/lastrk16.htm>>. Accessed 31 August 2020.

U.S. Bureau of Labor Statistics. 2020d. “Local Area Unemployment Statistics: Unemployment Rates for States, 2015 Annual Averages.” <<https://www.bls.gov/lau/lastrk15.htm>>. Accessed 31 August 2020.

U.S. Bureau of Labor Statistics. 2020e. “Local Area Unemployment Statistics: Over-the-Year Change in Unemployment Rates for States, 2014-2015 Annual Averages.” <<https://www.bls.gov/lau/lastch15.htm>>. Accessed 31 August 2020.

U.S. Bureau of Labor Statistics. 2018a. “Employment status of the civilian population by sex and age.” <<http://www.bls.gov/news.release/empsit.t01.htm>>. Viewed 30 October 2018.

U.S. Bureau of Labor Statistics. 2018b. “Employment status of the civilian population by race, sex, and age.” <<http://www.bls.gov/news.release/empsit.t02.htm>>. Viewed 30 October 2018.

U.S. Bureau of Labor Statistics. 2018c. “Employment status of the Hispanic population by sex and age.” <<http://www.bls.gov/news.release/empsit.t03.htm>>. Viewed 30 October 2018.

U.S. Census Bureau. 2022a. “2019 Annual Survey of Public Employment & Payroll: State Government Employment & Payroll Data.” <https://www2.census.gov/programs-surveys/apes/datasets/2019/2019_state.xls>. Accessed 7 July 2022.

U.S. Census Bureau. 2022b. “2019 Data Release New and Notable.” <<https://www.census.gov/programs-surveys/acs/news/data-releases/2019/release.html>>. Viewed 24 August 2022.

U.S. Census Bureau. 2021a. Nonemployer Statistics by Demographics and Annual Business Survey (ABS), Annual Business Survey Program (AB1800NESD05). <<https://www2.census.gov/programs-surveys/abs/data/2018/AB1800NESD05.zip>>. Accessed 3 July 2022.

U.S. Census Bureau. 2021b. *Understanding and Using American Community Survey Public Use Microdata Sample Files: What All Data Users Need to Know*. Washington, DC: U.S. Government Publishing Office.

U.S. Census Bureau. 2021c. “About the Annual Business Survey.” <<https://www.census.gov/programs-surveys/abs/about.html>>. Accessed 13 June 2022.

U.S. Census Bureau. 2021d. “About the Economic Census.” <<https://www.census.gov/programs-surveys/economic-census/about.html>>. Viewed 13 June 2022.

U.S. Census Bureau. 2021e. “Nonemployer Statistics by Demographics Methodology.” <<https://www.census.gov/programs-surveys/abs/technical-documentation/NESDmethodology.2017.html>>. Viewed 19 June 2022.

U.S. Census Bureau, 2021f. “2015-2019 ACS PUMS Data Dictionary,” <https://www2.census.gov/programs-surveys/acs/tech_docs/pums/data_dict/PUMS_Data_Dictionary_2015-2019.pdf>. Accessed 5 July 2022.

U.S. Census Bureau. 2021g. Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2019; April 1, 2020; and July 1, 202 (NST-EST2020). <<https://www2.census.gov/programs-surveys/popest/tables/2010-2020/national/totals/NST-EST2020.xlsx>>. Accessed 7 July 2022.

U.S. Census Bureau. 2020a. Annual Business Survey: Statistics for Employer Firms by Industry, Sex, Ethnicity, Race, and Veteran Status for the U.S., States, Metro Areas, Counties, and Places: 2017 (AB1700CSA01). <<https://www2.census.gov/programs-surveys/abs/data/2017/AB1700CSA01.zip>>. Accessed 13 August 2020.

U.S. Census Bureau. 2020b. Annual Business Survey: Statistics for Employer Firms by Industry, Sex, Ethnicity, Race, Veteran Status, and Employment Size of Firm for the U.S., States, Metro Areas, Counties, and Places: 2017 (AB1700CSA04). <<https://www2.census.gov/programs-surveys/abs/data/2017/AB1700CSA04.zip>>. Accessed 13 August 2020.

U.S. Census Bureau. 2020c. “Annual Business Survey Release Provides Data on Minority- and Women-Owned Businesses,” Release number CB20-TPS.24. <<https://www.census.gov/newsroom/press-releases/2020/annual-business-survey-data.html>>. 19 May 2020.

U.S. Census Bureau. 2020e. 2018 Annual Survey of Public Employment & Payroll: State Government Employment & Payroll Data. <https://www2.census.gov/programs-surveys/apes/datasets/2018/annual-apes/2018_state.xls>. Accessed 31 August 2020.

U.S. Census Bureau. 2020f. 2017 Annual Survey of Public Employment & Payroll: State Government Employment & Payroll Data. <https://www2.census.gov/programs-surveys/apes/datasets/2017/annual-apes/2017_state.xls>. Accessed 31 August 2020.

U.S. Census Bureau. 2020g. 2016 Annual Survey of Public Employment & Payroll: State Government Employment & Payroll Data. <https://www2.census.gov/programs-surveys/apes/datasets/2016/annual-apes/2016_state.xls>. Accessed 31 August 2020.

U.S. Census Bureau. 2020h. 2015 Annual Survey of Public Employment & Payroll: State Government Employment & Payroll Data. <https://www2.census.gov/programs-surveys/apes/datasets/2015/annual-apes/2015_state.xls>. Accessed 31 August 2020.

U.S. Census Bureau. 2020j. *Understanding and Using American Community Survey Data: What All Data Users Need to Know*. Washington, DC: U.S. Government Publishing Office.

U.S. Census Bureau. 2020k. “Census Bureau Releases New Demographic Data on Nonemployer Businesses,” Release Number CB20-TPS.94. <<https://www.census.gov/newsroom/press-releases/2020/nonemployer-businesses.html>>. 17 December 2020.

U.S. Census Bureau. 2018a. 2012 Survey of Business Owners: Statistics for All U.S. Firms by Industry, Gender, Ethnicity, and Race for the U.S., States, Metro Areas, Counties, and Places (SB1200CSA01). <<https://factfinder.census.gov>>. Accessed 30 October 2018.

U.S. Census Bureau. 2018b. 2012 Survey of Business Owners: Statistics for All U.S. Firms with Paid Employees by Industry, Race, and Employment Size of Firm for the U.S. and States (SB1200CSA11). <<https://factfinder.census.gov>>. Accessed 30 October 2018.

U.S. Census Bureau. 2018c. 2012 Survey of Business Owners: Statistics for All U.S. Firms with Paid Employees by Industry, Ethnicity, and Employment Size of Firm for the U.S. and States (SB1200CSA10). <<https://factfinder.census.gov>>. Accessed 30 October 2018.

U.S. Census Bureau. 2018d. 2012 Survey of Business Owners: Statistics for All U.S. Firms with Paid Employees by Industry, Gender, and Employment Size of Firm for the U.S. and States (SB1200CSA09). <<https://factfinder.census.gov>>. Accessed 30 October 2018.

U.S. Census Bureau. 2018e. “Census Bureau Announces New 2017 Annual Business Survey.” Release number CB18-TPS.32. <<https://www.census.gov/newsroom/press-releases/2018/annual-business-survey.html>>. 19 June 2018.

U.S. Census Bureau. 2018f. “About the Annual Business Survey.” <<https://www.census.gov/programs-surveys/abs/about.html>>. Accessed 29 August 2020.

U.S. Census Bureau. 2017a. “Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States: April 1, 2010 to July 1, 2017 (NC-EST2017-ALLDATA).” <<https://www2.census.gov/programs-surveys/popest/datasets/2010-2017/national/asrh/nc-est2017-alldata-c-file17.csv>>. Accessed 30 October 2018.

U.S. Congress. 2021. *Driving Equity: The U.S. Department of Transportation’s Disadvantaged Business Enterprise Program*: Remote Hearing Before the H. Comm. on Transportation and Infrastructure, 116th Cong. (September 23), Serial No. 116-64.

U.S. Department of Agriculture, Natural Resources Conservation Service, n.d. “Performance Work Statement (PWS), Natural Conservation Resources Conservation Service, Administrative Support Services IDIQ, AG-SPEC-S-16-0028, (including Appendix A).

U.S. Department of Commerce, Minority Business Development Agency. 2015. *The State of Minority Business Enterprises: An Overview of the 2007 Survey of Business Owners*. Washington, D.C.: Minority Business Development Agency.

U.S. Department of Justice. 2022a. "The Compelling Interest to Remedy the Effects of Discrimination in Federal Contracting: A Survey of Recent Evidence," 87 Fed. Reg. 4955. <<https://www.justice.gov/crt/page/file/1463921/download>>. Accessed 12 March 2022.

U.S. Department of Justice. 2022b. Memorandum of Law in Support of Defendants' Motion for summary Judgment, *Ultima Services Corporation v. U.S. Department of Agriculture, et al.*, United States District Court for the Eastern District of Tennessee), Case No. 2:20-CV-0041-DCLC-CRW, June 2022.

U.S. Office of Management and Budget. 2017. North American Industry Classification System. <<https://census.gov/naics>>. Accessed 7 January 2022.

U.S. Small Business Administration. 2010. "Compelling Interest for Race- and Gender-Conscious Federal Contracting Programs: An Update to the May 23, 1996 Review of Barriers for Minority- and Women-Owned Businesses," supplementing the testimony of David Hinson, National Director, Minority Business Development Agency, U.S. Department of Commerce, before the U.S. House Committee on Oversight and Government Reform, Subcommittee on Government Management, Organization, and Procurement, September 22, 2010.

Wainwright, Jon S. 2013a. Report of Defendant's Expert in *Rothe Development, Inc. v. Department of Defense and Small Business Administration*, United States District Court for the District of Columbia, Case No. 12-CV-744, March 8.

Wainwright, Jon S. 2013b. Report of Defendant's Expert in *Midwest Fence Corporation v. United States Department of Transportation, et al.*, United States District Court for the Northern District of Illinois, Case No. 10-CV-5627, May 20.

Wainwright, Jon S. 2013c. Reply to Report of Plaintiff's Expert in *Midwest Fence Corporation v. United States Department of Transportation, et al.*, United States District Court for the Northern District of Illinois, Case No. 10-CV-5627, July 19.

Wainwright, Jon S. 2012. Report of Defendant Intervenor's Expert in *Geyer Signal, Inc., and Kevin Kissell v. Minnesota Department of Transportation, et al.*, United States District Court for the District of Minnesota, Case No. 0:11-cv-00321-JRT, December 30.

Wainwright, Jon S. 2010. Report of Defendant's Expert in *Kevcon, Inc. v. The United States*, No. 09 625, United States Court of Federal Claims, April 29.

Wainwright, Jon S. 2000. *Racial Discrimination and Minority Business Enterprise, Evidence From the 1990 Census*, Studies in Entrepreneurship Series, S. Bruchey (ed.). New York: Garland Publishing.

Wainwright, Jon, and Colette Holt. 2010. *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*. National Cooperative Highway Research Program Report 644. Washington, D.C.: Transportation Research Board.

VII. Appendix A

Table 4.1A. Annual Wage Earnings Regressions, All Industries, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.521**** (-347.94)	0.666**** (-272.64)	0.733**** (-206.74)
Hispanic	0.558**** (-385.79)	0.806**** (-173.17)	0.834**** (-124.42)
Asian Pacific	0.826**** (-77.98)	0.766**** (-137.98)	0.778**** (-116.72)
Subcontinent Asian	1.195**** (45.63)	0.841**** (-56.02)	0.866**** (-44.15)
Native American	0.514**** (-102.49)	0.717**** (-65.52)	0.763**** (-54.51)
Other race	0.599**** (-45.30)	0.738**** (-34.50)	0.760**** (-31.85)
Two or more races	0.554**** (-158.50)	0.761**** (-93.52)	0.784**** (-84.40)
Non-minority female	0.635**** (-378.97)	0.691**** (-373.12)	0.701**** (-363.55)
Year	1.023**** (65.24)	1.018**** (64.02)	1.006**** (15.76)
Age		1.175**** (778.63)	1.138**** (560.30)
Age squared		0.998**** (-665.48)	0.999**** (-555.54)
Less than 9th grade		1.007 (1.41)	1.007 (1.56)
Grade 9		0.895**** (-20.05)	0.874**** (-25.02)
Grade 10		0.762**** (-53.64)	0.724**** (-65.28)
Grade 11		0.798**** (-47.62)	0.748**** (-62.43)
12th grade-no diploma		1.067**** (13.30)	1.005 (1.03)
Regular high school diploma		1.290**** (63.17)	1.208**** (47.64)
GED or alt. credential		1.122**** (25.87)	1.070**** (15.57)
Some college, less than 1 year		1.359**** (72.97)	1.282**** (60.08)
1 or more years college, no degree		1.420**** (86.17)	1.332**** (71.61)
Associate's degree		1.605**** (114.15)	1.450**** (91.12)
Bachelor's degree		2.265**** (201.83)	1.927**** (164.43)
Master's degree		2.866**** (250.19)	2.341**** (205.05)
Profess. degree beyond Bachelor's		4.031**** (291.55)	3.153**** (243.86)
Doctorate degree		3.790**** (254.76)	2.995**** (213.78)
Extractive Industries		2.126**** (131.07)	2.057**** (128.35)
Utilities		2.033****	1.962****

Independent Variables	Specification		
	Model A	Model B	Model C
		(131.12)	(127.67)
Construction		1.438****	1.415****
		(99.42)	(96.69)
Manufacturing-NAICS 31		1.287****	1.311****
		(58.59)	(64.18)
Manufacturing-NAICS 32		1.557****	1.558****
		(112.09)	(114.37)
Manufacturing-NAICS 33		1.560****	1.558****
		(122.66)	(124.41)
Wholesale Trade		1.472****	1.450****
		(97.04)	(95.03)
Retail Trade-NAICS 44		1.005	1.018****
		(1.51)	(4.91)
Retail Trade-NAICS 45		0.854****	0.870****
		(-41.36)	(-36.95)
Transportation		1.370****	1.365****
		(78.88)	(79.41)
Warehousing		1.158****	1.166****
		(29.97)	(32.16)
Information		1.523****	1.482****
		(100.11)	(95.21)
Finance & Insurance		1.763****	1.700****
		(151.38)	(144.22)
Real Estate		1.276****	1.239****
		(55.76)	(49.88)
Profess.,Tech. & Sci. Services		1.555****	1.506****
		(121.21)	(114.15)
Management of Companies		1.826****	1.781****
		(60.22)	(59.47)
Admin. & Supportive Services		0.969****	0.994
		(-8.17)	(-1.58)
Educational Services		0.750****	0.824****
		(-75.33)	(-50.78)
Medical Services		1.290****	1.309****
		(71.81)	(77.05)
Social Assistance Services		0.712****	0.753****
		(-79.51)	(-67.26)
Arts & Entertainment		0.791****	0.814****
		(-65.84)	(-58.65)
Other Services		0.891****	0.908****
		(-30.41)	(-25.97)
Interest and dividend income (log)			1.015****
			(130.61)
Home is owned free and clear			1.020****
			(19.61)
Property value			1.000****
			(187.51)
Married, spouse present			1.311****
			(283.22)
Number of children in family			0.969****
			(-78.50)
Number of workers in family			0.864****
			(-250.37)
Lived in same house 1 year ago			0.999
			(-1.22)
Foreign born			1.130****
			(57.46)

Independent Variables	Specification		
	Model A	Model B	Model C
Years in U.S. if immigrant			1.009**** (111.70)
Speaks English well or very well			1.019**** (14.44)
Veteran			0.990**** (-5.43)
Statewide general population			1.000**** (-7.41)
Statewide unemployment rate			1.005**** (7.71)
Statewide government FTEs			1.000**** (12.34)
Statewide per capita income (log)			1.403**** (114.37)
Constant	40569.867**** (7964.46)	589.096**** (973.00)	33.030**** (107.12)
Adj. R-squared	0.049	0.423	0.431
Number of Obs.	5641377	5641377	5536058

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.1B. Annual Wage Earnings Regressions, Construction, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.626**** (-59.68)	0.635**** (-62.77)	0.733**** (-43.67)
Hispanic	0.700**** (-95.41)	0.821**** (-51.98)	0.876**** (-26.22)
Asian Pacific	0.899**** (-8.12)	0.805**** (-17.97)	0.815**** (-16.75)
Subcontinent Asian	0.963 (-1.40)	0.821**** (-7.92)	0.838**** (-7.20)
Native American	0.641**** (-27.12)	0.697**** (-23.95)	0.765**** (-18.28)
Other race	0.743**** (-8.29)	0.798**** (-6.83)	0.831**** (-5.81)
Two or more races	0.771**** (-19.73)	0.831**** (-15.22)	0.858**** (-13.03)
Non-minority female	0.775**** (-45.70)	0.668**** (-77.34)	0.676**** (-77.58)
Year	1.028**** (25.57)	1.027**** (26.61)	1.007**** (5.53)
Age		1.128**** (149.24)	1.091**** (100.68)
Age squared		0.999**** (-126.82)	0.999**** (-101.82)
Less than 9th grade		1.022* (1.79)	1.035*** (2.96)
Grade 9		0.989 (-0.83)	0.984 (-1.19)
Grade 10		0.935**** (-4.81)	0.925**** (-5.78)
Grade 11		0.931**** (-5.24)	0.920**** (-6.35)
12th grade-no diploma		1.089**** (6.48)	1.044**** (3.40)
Regular high school diploma		1.284**** (22.93)	1.223**** (19.03)
GED or alt. credential		1.080**** (6.35)	1.055**** (4.58)
Some college, less than 1 year		1.362**** (26.19)	1.275**** (21.24)
1 or more years college, no degree		1.415**** (30.82)	1.323**** (25.63)
Associate's degree		1.503**** (34.48)	1.374**** (27.71)
Bachelor's degree		1.983**** (59.52)	1.723**** (48.65)
Master's degree		2.295**** (57.03)	1.944**** (47.03)
Profess. degree beyond Bachelor's		2.278**** (29.20)	1.905**** (23.69)
Doctorate degree		2.016**** (15.40)	1.792**** (13.22)
Interest and dividend income (log)			1.012**** (26.13)
Home is owned free and clear			1.067**** (18.12)
Property value			1.000****

Independent Variables	Specification		
	Model A	Model B	Model C
			(53.83)
Married, spouse present			1.380****
			(95.69)
Number of children in family			0.996***
			(-3.11)
Number of workers in family			0.893****
			(-55.84)
Lived in same house 1 year ago			1.015****
			(3.60)
Foreign born			1.111****
			(13.74)
Years in U.S. if immigrant			1.009****
			(32.46)
Speaks English well or very well			1.028****
			(6.13)
Veteran			0.984***
			(-2.73)
Statewide general population			1.000****
			(-8.41)
Statewide unemployment rate			0.996**
			(-2.04)
Statewide government FTEs			1.000****
			(9.53)
Statewide per capita income (log)			1.510****
			(37.94)
Constant	40190.271****	2005.129****	44.006****
	(2754.56)	(389.37)	(31.99)
Adj. R-squared	0.035	0.181	0.226
Number of Obs.	366371	366371	364365

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.1C. Annual Wage Earnings Regressions, AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.718**** (-18.52)	0.773**** (-16.67)	0.836**** (-11.68)
Hispanic	0.700**** (-29.57)	0.828**** (-17.83)	0.884**** (-10.43)
Asian Pacific	0.886**** (-8.21)	0.837**** (-13.90)	0.875**** (-9.22)
Subcontinent Asian	0.962 (-1.64)	0.886**** (-5.86)	0.948** (-2.43)
Native American	0.599**** (-8.17)	0.720**** (-6.06)	0.764**** (-5.09)
Other race	0.741**** (-3.59)	0.778**** (-3.48)	0.819*** (-2.84)
Two or more races	0.799**** (-9.16)	0.884**** (-5.79)	0.891**** (-5.55)
Non-minority female	0.682**** (-45.91)	0.702**** (-49.08)	0.718**** (-46.45)
Year	1.008**** (3.33)	1.011**** (5.30)	0.994** (-2.06)
Age		1.149**** (78.38)	1.120**** (56.05)
Age squared		0.999**** (-66.53)	0.999**** (-52.79)
Less than 9th grade		0.917 (-0.96)	0.918 (-0.98)
Grade 9		0.890 (-1.16)	0.870 (-1.42)
Grade 10		0.698**** (-4.06)	0.707**** (-4.02)
Grade 11		0.590**** (-6.28)	0.570**** (-6.83)
12th grade-no diploma		1.004 (0.05)	0.980 (-0.25)
Regular high school diploma		1.057 (0.81)	1.029 (0.43)
GED or alt. credential		1.064 (0.87)	1.045 (0.63)
Some college, less than 1 year		1.177** (2.37)	1.142** (1.98)
1 or more years college, no degree		1.171** (2.32)	1.139* (1.96)
Associate's degree		1.288**** (3.72)	1.225**** (3.05)
Bachelor's degree		1.854**** (9.14)	1.683**** (7.91)
Master's degree		2.144**** (11.28)	1.897**** (9.69)
Profess. degree beyond Bachelor's		2.019**** (10.01)	1.778**** (8.40)
Doctorate degree		2.326**** (11.92)	2.079**** (10.59)
Interest and dividend income (log)			1.009**** (15.02)
Home is owned free and clear			1.025*** (3.01)
Property value			1.000****

Independent Variables	Specification		
	Model A	Model B	Model C
			(20.37)
Married, spouse present			1.255****
			(30.50)
Number of children in family			0.983****
			(-5.29)
Number of workers in family			0.865****
			(-31.27)
Lived in same house 1 year ago			1.015*
			(1.81)
Foreign born			1.031*
			(1.82)
Years in U.S. if immigrant			1.005****
			(7.56)
Speaks English well or very well			0.968***
			(-2.96)
Veteran			1.046****
			(4.25)
Statewide general population			1.000****
			(-5.33)
Statewide unemployment rate			0.984****
			(-3.63)
Statewide government FTEs			1.000****
			(6.39)
Statewide per capita income (log)			1.269****
			(11.13)
Constant	72566.065****	1708.679****	270.690****
	(1365.77)	(96.78)	(22.95)
Adj. R-squared	0.039	0.283	0.299
Number of Obs.	67797	67797	67473

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.1D. Annual Wage Earnings Regressions, Professional Services ex AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.414**** (-158.32)	0.603**** (-106.90)	0.682**** (-81.21)
Hispanic	0.462**** (-171.81)	0.746**** (-72.92)	0.784**** (-53.66)
Asian Pacific	0.957**** (-6.52)	0.802**** (-38.38)	0.789**** (-37.97)
Subcontinent Asian	1.375**** (40.94)	0.928**** (-11.26)	0.945**** (-7.51)
Native American	0.413**** (-38.01)	0.634**** (-23.47)	0.706**** (-18.31)
Other race	0.584**** (-17.14)	0.686**** (-14.37)	0.712**** (-13.37)
Two or more races	0.635**** (-42.96)	0.746**** (-33.18)	0.768**** (-30.58)
Non-minority female	0.668**** (-114.46)	0.659**** (-140.99)	0.682**** (-131.44)
Year	1.034**** (33.40)	1.022**** (25.99)	1.001 (1.06)
Age		1.167**** (217.22)	1.130**** (157.00)
Age squared		0.998**** (-189.64)	0.999**** (-155.54)
Less than 9th grade		0.990 (-0.62)	0.996 (-0.27)
Grade 9		0.900**** (-5.40)	0.900**** (-5.59)
Grade 10		0.788**** (-12.60)	0.780**** (-13.50)
Grade 11		0.779**** (-14.20)	0.769**** (-15.27)
12th grade-no diploma		1.015 (0.84)	0.980 (-1.20)
Regular high school diploma		1.243**** (15.53)	1.198**** (13.20)
GED or alt. credential		1.053**** (3.33)	1.043**** (2.80)
Some college, less than 1 year		1.330**** (19.54)	1.283**** (17.46)
1 or more years college, no degree		1.416**** (24.69)	1.353**** (21.93)
Associate's degree		1.469**** (26.81)	1.372**** (22.57)
Bachelor's degree		2.322**** (60.32)	1.992**** (50.48)
Master's degree		2.794**** (72.01)	2.297**** (59.57)
Profess. degree beyond Bachelor's		3.423**** (83.23)	2.718**** (69.06)
Doctorate degree		3.154**** (70.85)	2.546**** (59.10)
Management of Companies		1.181**** (16.62)	1.198**** (18.61)
Admin. & Supportive Services		0.637**** (-153.58)	0.678**** (-135.23)
Interest and dividend income (log)			1.015****

Independent Variables	Specification		
	Model A	Model B	Model C
			(50.12)
Home is owned free and clear			1.027****
			(8.78)
Property value			1.000****
			(80.08)
Married, spouse present			1.353****
			(101.15)
Number of children in family			0.976****
			(-19.33)
Number of workers in family			0.841****
			(-92.16)
Lived in same house 1 year ago			1.007**
			(2.10)
Foreign born			1.108****
			(16.20)
Years in U.S. if immigrant			1.007****
			(29.90)
Speaks English well or very well			0.997
			(-0.70)
Veteran			1.018***
			(3.06)
Statewide general population			1.000****
			(-6.73)
Statewide unemployment rate			1.000
			(-0.16)
Statewide government FTEs			1.000****
			(9.60)
Statewide per capita income (log)			1.633****
			(53.71)
Constant	52576.813****	1111.656****	12.435****
	(2792.80)	(349.48)	(25.03)
Adj. R-squared	0.081	0.359	0.384
Number of Obs.	643205	643205	636669

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.1E. Annual Wage Earnings Regressions, General Services, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.584**** (-196.40)	0.688**** (-176.08)	0.743**** (-138.08)
Hispanic	0.580**** (-223.92)	0.825**** (-100.76)	0.845**** (-76.52)
Asian Pacific	0.819**** (-56.14)	0.765**** (-97.97)	0.779**** (-81.94)
Subcontinent Asian	1.155**** (23.46)	0.806**** (-45.83)	0.829**** (-38.28)
Native American	0.522**** (-67.29)	0.737**** (-41.51)	0.775**** (-35.44)
Other race	0.634**** (-28.05)	0.751**** (-23.24)	0.761**** (-22.62)
Two or more races	0.542**** (-113.24)	0.752**** (-68.95)	0.771**** (-63.23)
Non-minority female	0.693**** (-198.59)	0.711**** (-231.80)	0.714**** (-230.00)
Year	1.020**** (37.22)	1.016**** (39.26)	1.006**** (10.24)
Age		1.182**** (559.38)	1.145**** (401.71)
Age squared		0.998**** (-477.09)	0.998**** (-396.22)
Less than 9th grade		1.015* (1.85)	1.008 (0.94)
Grade 9		0.842**** (-19.27)	0.806**** (-24.67)
Grade 10		0.694**** (-46.40)	0.648**** (-55.88)
Grade 11		0.760**** (-37.13)	0.699**** (-49.12)
12th grade-no diploma		1.053**** (6.59)	0.978**** (-2.89)
Regular high school diploma		1.263**** (36.10)	1.169**** (24.43)
GED or alt. credential		1.122**** (16.10)	1.057**** (7.93)
Some college, less than 1 year		1.311**** (40.49)	1.237**** (32.14)
1 or more years college, no degree		1.372**** (48.71)	1.287**** (39.23)
Associate's degree		1.638**** (74.92)	1.463**** (58.52)
Bachelor's degree		2.188**** (121.04)	1.853**** (96.33)
Master's degree		2.789**** (154.44)	2.278**** (125.29)
Profess. degree beyond Bachelor's		4.464**** (205.57)	3.477**** (173.07)
Doctorate degree		3.862**** (173.84)	3.039**** (145.17)
Warehousing		0.846**** (-38.75)	0.853**** (-37.89)
Information		1.116**** (31.78)	1.091**** (25.71)
Finance & Insurance		1.282****	1.249****

Independent Variables	Specification		
	Model A	Model B	Model C
		(87.24)	(80.05)
Real Estate		0.930****	0.909****
		(-19.83)	(-26.84)
Educational Services		0.546****	0.602****
		(-201.63)	(-170.23)
Medical Services		0.924****	0.945****
		(-30.58)	(-22.56)
Social Assistance Services		0.516****	0.547****
		(-185.14)	(-171.05)
Arts & Entertainment		0.585****	0.600****
		(-203.92)	(-198.40)
Other Services		0.650****	0.664****
		(-148.49)	(-144.30)
Interest and dividend income (log)			1.014****
			(81.00)
Home is owned free and clear			1.008****
			(5.64)
Property value			1.000****
			(120.84)
Married, spouse present			1.269****
			(168.53)
Number of children in family			0.959****
			(-71.01)
Number of workers in family			0.868****
			(-163.15)
Lived in same house 1 year ago			0.999
			(-0.39)
Foreign born			1.144****
			(43.33)
Years in U.S. if immigrant			1.009****
			(75.83)
Speaks English well or very well			1.006****
			(2.90)
Veteran			1.005
			(1.64)
Statewide general population			1.000**
			(2.22)
Statewide unemployment rate			1.012****
			(12.80)
Statewide government FTEs			1.000
			(-0.39)
Statewide per capita income (log)			1.461****
			(87.61)
Constant	36119.444****	722.331****	26.157****
	(4919.37)	(724.46)	(68.53)
Adj. R-squared	0.030	0.442	0.442
Number of Obs.	2778331	2778331	2704760

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.1F. Annual Wage Earnings Regressions, Commodities, Supplies & Equipment, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.503**** (-212.49)	0.663**** (-159.92)	0.737**** (-118.23)
Hispanic	0.557**** (-238.61)	0.799**** (-109.42)	0.832**** (-73.98)
Asian Pacific	0.852**** (-37.72)	0.753**** (-84.22)	0.772**** (-67.92)
Subcontinent Asian	1.023*** (3.23)	0.798**** (-39.52)	0.833**** (-30.54)
Native American	0.553**** (-54.47)	0.720**** (-38.24)	0.766**** (-31.84)
Other race	0.560**** (-27.98)	0.732**** (-19.13)	0.771**** (-16.40)
Two or more races	0.556**** (-89.50)	0.783**** (-47.14)	0.809**** (-41.76)
Non-minority female	0.579**** (-263.57)	0.680**** (-231.35)	0.695**** (-221.15)
Year	1.021**** (35.27)	1.017**** (36.78)	1.008**** (12.58)
Age		1.172**** (459.52)	1.136**** (332.74)
Age squared		0.998**** (-390.81)	0.999**** (-332.06)
Less than 9th grade		0.998 (-0.23)	1.002 (0.30)
Grade 9		0.911**** (-10.70)	0.898**** (-12.67)
Grade 10		0.817**** (-25.24)	0.774**** (-32.57)
Grade 11		0.834**** (-24.30)	0.782**** (-33.60)
12th grade-no diploma		1.085**** (10.67)	1.020*** (2.72)
Regular high school diploma		1.326**** (45.09)	1.236**** (34.36)
GED or alt. credential		1.146**** (19.82)	1.086**** (12.23)
Some college, less than 1 year		1.423**** (53.87)	1.322**** (43.26)
1 or more years college, no degree		1.487**** (62.52)	1.372**** (50.51)
Associate's degree		1.587**** (70.96)	1.430**** (55.78)
Bachelor's degree		2.357**** (135.49)	1.991**** (110.30)
Master's degree		3.079**** (165.40)	2.477**** (135.12)
Profess. degree beyond Bachelor's		3.617**** (126.32)	2.873**** (106.05)
Doctorate degree		4.258**** (149.12)	3.306**** (125.71)
Extractive Industries		2.109**** (135.55)	2.016**** (129.88)
Utilities		2.016**** (135.03)	1.934**** (129.92)
Manufacturing-NAICS 31		1.284****	1.309****

Independent Variables	Specification		
	Model A	Model B	Model C
		(60.73)	(66.63)
Manufacturing-NAICS 32		1.546****	1.543****
		(114.53)	(115.93)
Manufacturing-NAICS 33		1.548****	1.543****
		(124.92)	(125.92)
Wholesale Trade		1.463****	1.439****
		(99.22)	(96.58)
Retail Trade-NAICS 44		1.001	1.017****
		(0.25)	(4.88)
Retail Trade-NAICS 45		0.850****	0.870****
		(-43.98)	(-38.11)
Interest and dividend income (log)			1.017****
			(84.93)
Home is owned free and clear			1.030****
			(17.79)
Property value			1.000****
			(106.84)
Married, spouse present			1.338****
			(181.27)
Number of children in family			0.980****
			(-30.17)
Number of workers in family			0.867****
			(-148.18)
Lived in same house 1 year ago			0.995**
			(-2.37)
Foreign born			1.109****
			(27.96)
Years in U.S. if immigrant			1.009****
			(68.51)
Speaks English well or very well			1.041****
			(17.28)
Veteran			0.968****
			(-10.85)
Statewide general population			1.000*
			(-1.92)
Statewide unemployment rate			0.998
			(-1.52)
Statewide government FTEs			1.000****
			(6.12)
Statewide per capita income (log)			1.238****
			(42.07)
Constant	40947.306****	603.210****	127.471****
	(4979.24)	(663.25)	(87.09)
Adj. R-squared	0.065	0.421	0.439
Number of Obs.	1785673	1785673	1762791

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.2A. Annual Wage Earnings Regressions, FRA-specific, All Industries, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.624**** (-107.54)	0.649**** (-113.06)	0.736**** (-81.33)
Hispanic	0.610**** (-178.80)	0.792**** (-90.60)	0.837**** (-58.00)
Asian Pacific	1.030**** (5.89)	0.806**** (-49.27)	0.807**** (-45.26)
Subcontinent Asian	1.419**** (56.92)	0.919**** (-15.29)	0.953**** (-7.99)
Native American	0.566**** (-44.36)	0.709**** (-30.87)	0.773**** (-23.80)
Other race	0.725**** (-14.39)	0.751**** (-14.76)	0.792**** (-12.41)
Two or more races	0.793**** (-30.59)	0.815**** (-31.10)	0.840**** (-27.27)
Non-minority female	0.797**** (-90.08)	0.683**** (-168.16)	0.705**** (-157.79)
Year	1.023**** (34.11)	1.020**** (34.74)	1.002** (2.47)
Age		1.143**** (272.16)	1.106**** (188.91)
Age squared		0.999**** (-234.50)	0.999**** (-186.05)
Less than 9th grade		1.012 (1.16)	1.013 (1.38)
Grade 9		0.971*** (-2.61)	0.962**** (-3.50)
Grade 10		0.895**** (-9.94)	0.882**** (-11.62)
Grade 11		0.892**** (-10.74)	0.876**** (-12.80)
12th grade-no diploma		1.061**** (5.70)	1.021** (2.04)
Regular high school diploma		1.239**** (25.14)	1.186**** (20.62)
GED or alt. credential		1.065**** (6.75)	1.043**** (4.64)
Some college, less than 1 year		1.329**** (31.71)	1.261**** (26.60)
1 or more years college, no degree		1.379**** (37.05)	1.303**** (31.40)
Associate's degree		1.436**** (40.80)	1.330**** (33.15)
Bachelor's degree		2.092**** (85.56)	1.810**** (70.80)
Master's degree		2.510**** (102.89)	2.081**** (84.21)
Profess. degree beyond Bachelor's		3.000**** (113.26)	2.370**** (91.31)
Doctorate degree		2.786**** (92.15)	2.259**** (75.46)
Construction		0.845**** (-14.50)	0.845**** (-15.03)
Manufacturing-NAICS 32		0.928**** (-4.95)	0.940**** (-4.22)
Manufacturing-NAICS 33		0.939****	0.953****

Independent Variables	Specification		
	Model A	Model B	Model C
		(-5.37)	(-4.21)
Wholesale Trade		0.961***	0.959****
		(-3.21)	(-3.54)
Transportation		0.895****	0.903****
		(-9.00)	(-8.62)
Finance & Insurance		0.992	0.987
		(-0.62)	(-1.05)
Real Estate		0.773****	0.756****
		(-21.36)	(-24.08)
Profess.,Tech. & Sci. Services		1.047****	1.028**
		(3.92)	(2.46)
Admin. & Supportive Services		0.832****	0.848****
		(-14.04)	(-12.98)
Interest and dividend income (log)			1.014****
			(65.97)
Home is owned free and clear			1.054****
			(24.51)
Property value			1.000****
			(107.64)
Married, spouse present			1.326****
			(139.74)
Number of children in family			0.995****
			(-6.02)
Number of workers in family			0.870****
			(-111.82)
Lived in same house 1 year ago			1.010****
			(4.01)
Foreign born			1.093****
			(19.52)
Years in U.S. if immigrant			1.007****
			(41.76)
Speaks English well or very well			1.000
			(-0.12)
Veteran			0.992**
			(-2.21)
Statewide general population			1.000****
			(-13.06)
Statewide unemployment rate			0.997**
			(-2.42)
Statewide government FTEs			1.000****
			(16.20)
Statewide per capita income (log)			1.472****
			(62.11)
Constant	53281.223****	1798.203****	59.526****
	(4523.76)	(427.96)	(59.08)
Adj. R-squared	0.047	0.283	0.317
Number of Obs.	1042911	1042911	1037654

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.2B. Annual Wage Earnings Regressions, FRA-specific, Construction, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.626**** (-59.68)	0.635**** (-62.77)	0.733**** (-43.67)
Hispanic	0.700**** (-95.41)	0.821**** (-51.98)	0.876**** (-26.22)
Asian Pacific	0.899**** (-8.12)	0.805**** (-17.97)	0.815**** (-16.75)
Subcontinent Asian	0.963 (-1.40)	0.821**** (-7.92)	0.838**** (-7.20)
Native American	0.641**** (-27.12)	0.697**** (-23.95)	0.765**** (-18.28)
Other race	0.743**** (-8.29)	0.798**** (-6.83)	0.831**** (-5.81)
Two or more races	0.771**** (-19.73)	0.831**** (-15.22)	0.858**** (-13.03)
Non-minority female	0.775**** (-45.70)	0.668**** (-77.34)	0.676**** (-77.58)
Year	1.028**** (25.57)	1.027**** (26.61)	1.007**** (5.53)
Age		1.128**** (149.24)	1.091**** (100.68)
Age squared		0.999**** (-126.82)	0.999**** (-101.82)
Less than 9th grade		1.022* (1.79)	1.035*** (2.96)
Grade 9		0.989 (-0.83)	0.984 (-1.19)
Grade 10		0.935**** (-4.81)	0.925**** (-5.78)
Grade 11		0.931**** (-5.24)	0.920**** (-6.35)
12th grade-no diploma		1.089**** (6.48)	1.044**** (3.40)
Regular high school diploma		1.284**** (22.93)	1.223**** (19.03)
GED or alt. credential		1.080**** (6.35)	1.055**** (4.58)
Some college, less than 1 year		1.362**** (26.19)	1.275**** (21.24)
1 or more years college, no degree		1.415**** (30.82)	1.323**** (25.63)
Associate's degree		1.503**** (34.48)	1.374**** (27.71)
Bachelor's degree		1.983**** (59.52)	1.723**** (48.65)
Master's degree		2.295**** (57.03)	1.944**** (47.03)
Profess. degree beyond Bachelor's		2.278**** (29.20)	1.905**** (23.69)
Doctorate degree		2.016**** (15.40)	1.792**** (13.22)
Interest and dividend income (log)			1.012**** (26.13)
Home is owned free and clear			1.067**** (18.12)
Property value			1.000****

Independent Variables	Specification		
	Model A	Model B	Model C
			(53.83)
Married, spouse present			1.380****
			(95.69)
Number of children in family			0.996***
			(-3.11)
Number of workers in family			0.893****
			(-55.84)
Lived in same house 1 year ago			1.015****
			(3.60)
Foreign born			1.111****
			(13.74)
Years in U.S. if immigrant			1.009****
			(32.46)
Speaks English well or very well			1.028****
			(6.13)
Veteran			0.984***
			(-2.73)
Statewide general population			1.000****
			(-8.41)
Statewide unemployment rate			0.996**
			(-2.04)
Statewide government FTEs			1.000****
			(9.53)
Statewide per capita income (log)			1.510****
			(37.94)
Constant	40190.271****	2005.129****	44.006****
	(2754.56)	(389.37)	(31.99)
Adj. R-squared	0.035	0.181	0.226
Number of Obs.	366371	366371	364365

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.2C. Annual Wage Earnings Regressions, FRA-specific, AECRS Industries, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.718**** (-18.52)	0.773**** (-16.67)	0.836**** (-11.68)
Hispanic	0.700**** (-29.57)	0.828**** (-17.83)	0.884**** (-10.43)
Asian Pacific	0.886**** (-8.21)	0.837**** (-13.90)	0.875**** (-9.22)
Subcontinent Asian	0.962 (-1.64)	0.886**** (-5.86)	0.948** (-2.43)
Native American	0.599**** (-8.17)	0.720**** (-6.06)	0.764**** (-5.09)
Other race	0.741**** (-3.59)	0.778**** (-3.48)	0.819** (-2.84)
Two or more races	0.799**** (-9.16)	0.884**** (-5.79)	0.891**** (-5.55)
Non-minority female	0.682**** (-45.91)	0.702**** (-49.08)	0.718**** (-46.45)
Year	1.008**** (3.33)	1.011**** (5.30)	0.994** (-2.06)
Age		1.149**** (78.38)	1.120**** (56.05)
Age squared		0.999**** (-66.53)	0.999**** (-52.79)
Less than 9th grade		0.917 (-0.96)	0.918 (-0.98)
Grade 9		0.890 (-1.16)	0.870 (-1.42)
Grade 10		0.698**** (-4.06)	0.707**** (-4.02)
Grade 11		0.590**** (-6.28)	0.570**** (-6.83)
12th grade-no diploma		1.004 (0.05)	0.980 (-0.25)
Regular high school diploma		1.057 (0.81)	1.029 (0.43)
GED or alt. credential		1.064 (0.87)	1.045 (0.63)
Some college, less than 1 year		1.177** (2.37)	1.142** (1.98)
1 or more years college, no degree		1.171** (2.32)	1.139* (1.96)
Associate's degree		1.288**** (3.72)	1.225**** (3.05)
Bachelor's degree		1.854**** (9.14)	1.683**** (7.91)
Master's degree		2.144**** (11.28)	1.897**** (9.69)
Profess. degree beyond Bachelor's		2.019**** (10.01)	1.778**** (8.40)
Doctorate degree		2.326**** (11.92)	2.079**** (10.59)
Interest and dividend income (log)			1.009**** (15.02)
Home is owned free and clear			1.025*** (3.01)
Property value			1.000****

Independent Variables	Specification		
	Model A	Model B	Model C
			(20.37)
Married, spouse present			1.255****
			(30.50)
Number of children in family			0.983****
			(-5.29)
Number of workers in family			0.865****
			(-31.27)
Lived in same house 1 year ago			1.015*
			(1.81)
Foreign born			1.031*
			(1.82)
Years in U.S. if immigrant			1.005****
			(7.56)
Speaks English well or very well			0.968***
			(-2.96)
Veteran			1.046****
			(4.25)
Statewide general population			1.000****
			(-5.33)
Statewide unemployment rate			0.984****
			(-3.63)
Statewide government FTEs			1.000****
			(6.39)
Statewide per capita income (log)			1.269****
			(11.13)
Constant	72566.065****	1708.679****	270.690****
	(1365.77)	(96.78)	(22.95)
Adj. R-squared	0.039	0.283	0.299
Number of Obs.	67797	67797	67473

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.2D. Annual Wage Earnings Regressions, FRA-specific, Professional Services ex AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.560**** (-69.23)	0.651**** (-58.50)	0.733**** (-43.15)
Hispanic	0.557**** (-87.21)	0.737**** (-50.89)	0.784**** (-37.86)
Asian Pacific	0.861**** (-19.78)	0.836**** (-26.69)	0.823**** (-26.41)
Subcontinent Asian	1.048**** (6.29)	0.921**** (-12.04)	0.938**** (-7.89)
Native American	0.513**** (-18.56)	0.667**** (-12.88)	0.744**** (-9.73)
Other race	0.658**** (-10.35)	0.716**** (-9.45)	0.753**** (-8.32)
Two or more races	0.700**** (-27.28)	0.797**** (-19.80)	0.816**** (-18.29)
Non-minority female	0.651**** (-98.14)	0.675**** (-102.10)	0.704**** (-92.84)
Year	1.023**** (18.21)	1.022**** (19.20)	0.999 (-0.67)
Age		1.182**** (164.07)	1.143**** (117.17)
Age squared		0.998**** (-144.42)	0.999**** (-112.60)
Less than 9th grade		0.958 (-1.07)	0.957 (-1.12)
Grade 9		0.898** (-2.29)	0.866*** (-3.18)
Grade 10		0.707**** (-8.01)	0.670**** (-9.59)
Grade 11		0.722**** (-8.18)	0.685**** (-9.80)
12th grade-no diploma		0.926** (-2.03)	0.869**** (-3.79)
Regular high school diploma		1.088*** (2.69)	1.034 (1.10)
GED or alt. credential		1.015 (0.45)	0.974 (-0.82)
Some college, less than 1 year		1.171**** (4.93)	1.118**** (3.59)
1 or more years college, no degree		1.240**** (6.86)	1.166**** (5.04)
Associate's degree		1.250**** (7.07)	1.154**** (4.67)
Bachelor's degree		1.945**** (21.38)	1.639**** (16.37)
Master's degree		2.264**** (26.15)	1.831**** (19.94)
Profess. degree beyond Bachelor's		2.744**** (32.11)	2.147**** (25.02)
Doctorate degree		2.485**** (28.35)	1.972**** (21.79)
Admin. & Supportive Services		0.806**** (-29.10)	0.841**** (-24.27)
Interest and dividend income (log)			1.015**** (43.39)
Home is owned free and clear			1.019****

Independent Variables	Specification		
	Model A	Model B	Model C
			(4.45)
Property value			1.000**** (65.44)
Married, spouse present			1.320**** (68.14)
Number of children in family			0.986**** (-8.35)
Number of workers in family			0.832**** (-70.08)
Lived in same house 1 year ago			1.010** (2.26)
Foreign born			1.077**** (8.67)
Years in U.S. if immigrant			1.004**** (12.52)
Speaks English well or very well			0.954**** (-8.40)
Veteran			1.015** (2.14)
Statewide general population			1.000**** (-6.72)
Statewide unemployment rate			0.998 (-0.96)
Statewide government FTEs			1.000**** (9.24)
Statewide per capita income (log)			1.602**** (39.77)
Constant	79130.303**** (2350.52)	1029.219**** (184.85)	16.892**** (21.12)
Adj. R-squared	0.056	0.281	0.312
Number of Obs.	300589	300589	298879

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.2E. Annual Wage Earnings Regressions, FRA-specific, General Services, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.558**** (-55.21)	0.612**** (-50.97)	0.707**** (-36.03)
Hispanic	0.580**** (-63.49)	0.712**** (-42.24)	0.806**** (-22.70)
Asian Pacific	0.760**** (-18.66)	0.699**** (-26.72)	0.757**** (-19.00)
Subcontinent Asian	0.852**** (-5.75)	0.731**** (-12.36)	0.826**** (-7.44)
Native American	0.574**** (-13.71)	0.677**** (-10.62)	0.737**** (-8.48)
Other race	0.596**** (-8.40)	0.680**** (-6.89)	0.775**** (-4.68)
Two or more races	0.670**** (-18.52)	0.756**** (-14.26)	0.800**** (-11.64)
Non-minority female	0.674**** (-59.23)	0.668**** (-64.39)	0.696**** (-58.66)
Year	1.022**** (11.31)	1.014**** (7.56)	0.996* (-1.66)
Age		1.156**** (94.89)	1.121**** (68.53)
Age squared		0.999**** (-83.76)	0.999**** (-69.41)
Less than 9th grade		0.942 (-1.49)	0.954 (-1.22)
Grade 9		0.828**** (-4.17)	0.823**** (-4.42)
Grade 10		0.747**** (-7.07)	0.726**** (-7.98)
Grade 11		0.758**** (-7.17)	0.733**** (-8.26)
12th grade-no diploma		0.983 (-0.45)	0.937* (-1.79)
Regular high school diploma		1.180**** (5.30)	1.107**** (3.35)
GED or alt. credential		1.007 (0.22)	0.972 (-0.86)
Some college, less than 1 year		1.275**** (7.59)	1.180**** (5.30)
1 or more years college, no degree		1.326**** (9.00)	1.222**** (6.57)
Associate's degree		1.336**** (9.10)	1.221**** (6.45)
Bachelor's degree		1.947**** (21.35)	1.654**** (16.54)
Master's degree		2.274**** (25.44)	1.868**** (19.87)
Profess. degree beyond Bachelor's		2.638**** (25.63)	2.027**** (19.14)
Doctorate degree		2.051**** (13.36)	1.697**** (10.13)
Finance & Insurance		1.112**** (13.43)	1.089**** (11.06)
Real Estate		0.870**** (-23.13)	0.840**** (-29.42)
Interest and dividend income (log)			1.013****

Independent Variables	Specification		
	Model A	Model B	Model C
			(20.28)
Home is owned free and clear			1.075****
			(11.15)
Property value			1.000****
			(40.59)
Married, spouse present			1.303****
			(42.69)
Number of children in family			0.991****
			(-3.40)
Number of workers in family			0.857****
			(-39.49)
Lived in same house 1 year ago			0.996
			(-0.53)
Foreign born			1.062****
			(4.44)
Years in U.S. if immigrant			1.008****
			(17.23)
Speaks English well or very well			0.971****
			(-3.30)
Veteran			0.964****
			(-3.35)
Statewide general population			1.000****
			(-3.86)
Statewide unemployment rate			1.003
			(0.76)
Statewide government FTEs			1.000****
			(4.21)
Statewide per capita income (log)			1.505****
			(21.05)
Constant	53477.809****	1442.805****	36.015****
	(1473.77)	(163.55)	(16.79)
Adj. R-squared	0.051	0.220	0.253
Number of Obs.	132715	132715	132081

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.2F. Annual Wage Earnings Regressions, FRA-specific, Commodities, Supplies & Equipment, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.611**** (-54.72)	0.665**** (-52.91)	0.747**** (-38.47)
Hispanic	0.676**** (-62.28)	0.813**** (-36.78)	0.846**** (-24.48)
Asian Pacific	0.904**** (-10.06)	0.775**** (-29.28)	0.784**** (-24.33)
Subcontinent Asian	1.261**** (12.12)	0.886**** (-7.28)	0.896**** (-6.40)
Native American	0.702**** (-12.64)	0.802**** (-9.19)	0.840**** (-7.53)
Other race	0.762**** (-4.90)	0.767**** (-5.59)	0.799**** (-4.91)
Two or more races	0.777**** (-14.26)	0.847**** (-10.92)	0.867**** (-9.71)
Non-minority female	0.760**** (-50.80)	0.710**** (-73.76)	0.729**** (-70.01)
Year	1.012**** (8.71)	1.013**** (10.94)	1.002 (1.23)
Age		1.117**** (110.76)	1.088**** (78.34)
Age squared		0.999**** (-92.54)	0.999**** (-76.13)
Less than 9th grade		0.970 (-1.43)	0.962* (-1.88)
Grade 9		0.962 (-1.60)	0.970 (-1.30)
Grade 10		0.912**** (-4.09)	0.896**** (-5.01)
Grade 11		0.925**** (-3.69)	0.898**** (-5.26)
12th grade-no diploma		1.071**** (3.31)	1.026 (1.29)
Regular high school diploma		1.235**** (12.32)	1.179**** (9.93)
GED or alt. credential		1.083**** (4.31)	1.056**** (3.05)
Some college, less than 1 year		1.368**** (17.62)	1.290**** (14.76)
1 or more years college, no degree		1.422**** (20.26)	1.333**** (17.05)
Associate's degree		1.512**** (23.45)	1.389**** (19.22)
Bachelor's degree		2.253**** (47.08)	1.941**** (39.57)
Master's degree		2.947**** (59.55)	2.409**** (49.76)
Profess. degree beyond Bachelor's		3.053**** (37.64)	2.459**** (31.40)
Doctorate degree		3.433**** (44.59)	2.660**** (36.48)
Manufacturing-NAICS 32		0.925**** (-6.23)	0.935**** (-5.62)
Manufacturing-NAICS 33		0.923**** (-8.17)	0.936**** (-6.99)

Independent Variables	Specification		
	Model A	Model B	Model C
Wholesale Trade		0.943****	0.937****
		(-5.76)	(-6.63)
Interest and dividend income (log)			1.014****
			(31.40)
Home is owned free and clear			1.064****
			(13.80)
Property value			1.000****
			(52.47)
Married, spouse present			1.280****
			(61.00)
Number of children in family			1.003
			(1.53)
Number of workers in family			0.892****
			(-46.25)
Lived in same house 1 year ago			0.996
			(-0.85)
Foreign born			1.073****
			(6.81)
Years in U.S. if immigrant			1.006****
			(17.76)
Speaks English well or very well			1.017**
			(2.57)
Veteran			0.978***
			(-3.57)
Statewide general population			1.000
			(1.45)
Statewide unemployment rate			0.995**
			(-2.12)
Statewide government FTEs			1.000
			(-0.01)
Statewide per capita income (log)			1.218****
			(15.53)
Constant	53829.562****	2760.800****	597.816****
	(2298.15)	(279.06)	(45.70)
Adj. R-squared	0.044	0.301	0.342
Number of Obs.	175439	175439	174856

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.3A. Business Formation Regressions, All Industries, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.901**** (-147.07)	-0.684**** (-105.96)	-0.582**** (-86.93)
Hispanic	-0.404**** (-100.04)	-0.326**** (-70.95)	-0.501**** (-88.40)
Asian Pacific	-0.297**** (-45.85)	-0.147**** (-21.17)	-0.410**** (-50.95)
Subcontinent Asian	-0.403**** (-36.80)	-0.191**** (-16.61)	-0.488**** (-38.96)
Native American	-0.425**** (-23.62)	-0.328**** (-17.37)	-0.294**** (-15.29)
Other race	-0.169**** (-5.94)	0.008 (0.28)	-0.050 (-1.63)
Two or more races	-0.466**** (-44.05)	-0.136**** (-12.21)	-0.134**** (-11.78)
Non-minority female	-0.415**** (-132.27)	-0.224**** (-63.78)	-0.214**** (-59.49)
Year	-0.000 (-0.09)	-0.003** (-2.61)	-0.019**** (-13.29)
Age		0.134**** (154.44)	0.105**** (108.70)
Age squared		-0.001**** (-109.42)	-0.001**** (-77.31)
Less than 9th grade		-0.000 (-0.03)	-0.040**** (-2.61)
Grade 9		0.041** (2.31)	0.019 (1.07)
Grade 10		0.039** (2.25)	0.031* (1.78)
Grade 11		-0.027 (-1.63)	-0.040** (-2.35)
12th grade-no diploma		0.069**** (4.29)	0.043** (2.67)
Regular high school diploma		-0.057**** (-4.36)	-0.057**** (-4.31)
GED or alt. credential		-0.121**** (-8.32)	-0.089**** (-6.02)
Some college, less than 1 year		0.029** (2.08)	0.009 (0.63)
1 or more years college, no degree		0.093**** (7.08)	0.067**** (4.99)
Associate's degree		-0.025* (-1.88)	-0.067**** (-4.89)
Bachelor's degree		0.154**** (11.82)	0.023* (1.74)
Master's degree		0.073**** (5.32)	-0.124**** (-8.83)
Profess. degree beyond Bachelor's		1.155**** (79.00)	0.904**** (60.32)
Doctorate degree		0.569**** (33.62)	0.315**** (18.25)
Extractive Industries		-2.743**** (-102.53)	-2.805**** (-103.79)
Utilities		-3.719**** (-102.14)	-3.752**** (-102.25)

Independent Variables	Specification		
	Model A	Model B	Model C
Construction		-0.609**** (-77.69)	-0.612**** (-76.70)
Manufacturing-NAICS 31		-2.557**** (-159.43)	-2.538**** (-156.85)
Manufacturing-NAICS 32		-3.011**** (-205.29)	-3.012**** (-203.40)
Manufacturing-NAICS 33		-3.115**** (-273.57)	-3.126**** (-271.19)
Wholesale Trade		-2.099**** (-184.76)	-2.123**** (-184.44)
Retail Trade-NAICS 44		-2.196**** (-232.30)	-2.175**** (-226.71)
Retail Trade-NAICS 45		-1.677**** (-166.71)	-1.634**** (-159.95)
Transportation		-1.295**** (-135.80)	-1.272**** (-131.33)
Warehousing		-2.312**** (-120.32)	-2.275**** (-117.32)
Information		-1.964**** (-159.51)	-2.001**** (-159.56)
Finance & Insurance		-2.444**** (-230.84)	-2.510**** (-233.36)
Real Estate		-0.593**** (-60.85)	-0.634**** (-63.74)
Profess.,Tech. & Sci. Services		-1.223**** (-148.48)	-1.253**** (-149.01)
Management of Companies		-3.561**** (-47.82)	-3.630**** (-48.43)
Admin. & Supportive Services		-0.875**** (-101.39)	-0.826**** (-94.01)
Educational Services		-2.426**** (-211.29)	-2.381**** (-203.67)
Medical Services		-2.577**** (-281.37)	-2.571**** (-275.73)
Social Assistance Services		-1.114**** (-104.05)	-1.031**** (-94.51)
Arts & Entertainment		-1.638**** (-190.07)	-1.588**** (-180.86)
Other Services		-0.476**** (-58.27)	-0.437**** (-52.52)
Interest and dividend income (log)			0.031**** (90.63)
Home is owned free and clear			0.063**** (16.51)
Property value			0.000**** (93.77)
Married, spouse present			0.196**** (54.87)
Number of children in family			0.078**** (53.56)
Number of workers in family			-0.068**** (-30.35)
Lived in same house 1 year ago			0.090**** (18.96)
Foreign born			0.259**** (32.65)
Years in U.S. if immigrant			0.004****

Independent Variables	Specification		
	Model A	Model B	Model C
			(13.11)
Speaks English well or very well			0.175****
			(35.83)
Veteran			-0.333****
			(-46.94)
Statewide general population			0.000****
			(28.57)
Statewide unemployment rate			-0.064****
			(-27.93)
Statewide government FTEs			-0.000****
			(-17.42)
Statewide per capita income (log)			-0.347****
			(-30.86)
Constant	-1.830****	-4.075****	0.446****
	(-538.85)	(-174.41)	(3.61)
Pseudo R-squared	0.009	0.142	0.152
Number of Obs.	6083244	6083244	5942749

Source and Notes: See Table 4.1. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.3B. Business Formation Regressions, Construction, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.550**** (-27.45)	-0.567**** (-27.79)	-0.474**** (-22.49)
Hispanic	-0.469**** (-51.28)	-0.333**** (-32.08)	-0.562**** (-38.73)
Asian Pacific	-0.118**** (-4.00)	-0.171**** (-5.65)	-0.406**** (-12.46)
Subcontinent Asian	-0.269**** (-4.13)	-0.210**** (-3.15)	-0.474**** (-6.83)
Native American	-0.545**** (-13.06)	-0.489**** (-11.47)	-0.527**** (-12.06)
Other race	0.037 (0.48)	0.170** (2.15)	0.072 (0.90)
Two or more races	-0.376**** (-11.58)	-0.206**** (-6.18)	-0.206**** (-6.07)
Non-minority female	-0.533**** (-36.27)	-0.625**** (-41.49)	-0.636**** (-41.61)
Year	-0.021**** (-8.51)	-0.021**** (-8.16)	-0.035**** (-9.74)
Age		0.122**** (50.23)	0.098**** (37.14)
Age squared		-0.001**** (-32.90)	-0.001**** (-23.54)
Less than 9th grade		-0.119**** (-3.88)	-0.146**** (-4.71)
Grade 9		-0.062* (-1.77)	-0.071** (-2.00)
Grade 10		-0.035 (-1.01)	-0.008 (-0.22)
Grade 11		-0.091*** (-2.66)	-0.062* (-1.78)
12th grade-no diploma		-0.037 (-1.12)	-0.036 (-1.07)
Regular high school diploma		-0.151**** (-5.56)	-0.132**** (-4.81)
GED or alt. credential		-0.131**** (-4.33)	-0.087*** (-2.84)
Some college, less than 1 year		-0.079*** (-2.67)	-0.076** (-2.53)
1 or more years college, no degree		-0.080*** (-2.86)	-0.084*** (-2.95)
Associate's degree		-0.162**** (-5.47)	-0.186**** (-6.18)
Bachelor's degree		-0.121**** (-4.21)	-0.240**** (-8.18)
Master's degree		-0.266**** (-7.09)	-0.454**** (-11.81)
Profess. degree beyond Bachelor's		-0.047 (-0.67)	-0.277**** (-3.85)
Doctorate degree		-0.102 (-0.90)	-0.274** (-2.35)
Interest and dividend income (log)			0.034**** (32.84)
Home is owned free and clear			-0.004 (-0.40)

Independent Variables	Specification		
	Model A	Model B	Model C
Property value			0.000**** (27.34)
Married, spouse present			0.139**** (15.07)
Number of children in family			0.080**** (21.77)
Number of workers in family			-0.066**** (-11.68)
Lived in same house 1 year ago			0.129**** (10.15)
Foreign born			0.258**** (11.87)
Years in U.S. if immigrant			0.004**** (4.65)
Speaks English well or very well			0.262**** (20.71)
Veteran			-0.252**** (-15.82)
Statewide general population			0.000**** (7.79)
Statewide unemployment rate			-0.072**** (-12.25)
Statewide government FTEs			-0.000**** (-6.11)
Statewide per capita income (log)			-0.488**** (-16.49)
Constant	-0.897**** (-102.62)	-4.293**** (-73.00)	1.698**** (5.24)
Pseudo R-squared	0.009	0.054	0.065
Number of Obs.	433360	433360	428623

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.3C. Business Formation Regressions, AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.660**** (-8.23)	-0.577**** (-7.07)	-0.484**** (-5.85)
Hispanic	-0.360**** (-7.63)	-0.092* (-1.88)	-0.183*** (-3.24)
Asian Pacific	-0.557**** (-8.85)	-0.474**** (-7.36)	-0.659**** (-8.88)
Subcontinent Asian	-0.705**** (-6.44)	-0.476**** (-4.25)	-0.620**** (-5.12)
Native American	-0.482* (-1.84)	-0.366 (-1.38)	-0.311 (-1.16)
Other race	-0.452 (-1.29)	-0.294 (-0.83)	-0.301 (-0.84)
Two or more races	-0.448**** (-4.41)	-0.139 (-1.33)	-0.179* (-1.69)
Non-minority female	-0.406**** (-12.45)	-0.342**** (-10.25)	-0.385**** (-11.29)
Year	-0.009 (-1.11)	-0.003 (-0.33)	0.022* (1.71)
Age		0.202**** (19.28)	0.169**** (14.70)
Age squared		-0.002**** (-13.88)	-0.001**** (-10.34)
Less than 9th grade		-0.467 (-1.08)	-0.446 (-1.02)
Grade 9		0.438 (1.03)	0.512 (1.19)
Grade 10		-0.055 (-0.13)	-0.005 (-0.01)
Grade 11		-0.186 (-0.44)	-0.131 (-0.31)
12th grade-no diploma		0.005 (0.01)	0.020 (0.05)
Regular high school diploma		-0.192 (-0.64)	-0.092 (-0.30)
GED or alt. credential		-0.125 (-0.39)	-0.015 (-0.05)
Some college, less than 1 year		-0.089 (-0.29)	-0.006 (-0.02)
1 or more years college, no degree		0.040 (0.13)	0.108 (0.36)
Associate's degree		-0.010 (-0.03)	0.062 (0.21)
Bachelor's degree		0.234 (0.78)	0.163 (0.54)
Master's degree		0.216 (0.72)	0.112 (0.37)
Profess. degree beyond Bachelor's		0.851*** (2.79)	0.689** (2.24)
Doctorate degree		0.233 (0.75)	0.058 (0.19)
Interest and dividend income (log)			0.016**** (6.47)
Home is owned free and clear			-0.248**** (-6.00)

Independent Variables	Specification		
	Model A	Model B	Model C
Property value			0.000**** (17.43)
Married, spouse present			0.055 (1.56)
Number of children in family			0.117**** (8.32)
Number of workers in family			-0.011 (-0.49)
Lived in same house 1 year ago			0.140*** (2.97)
Foreign born			0.120 (1.52)
Years in U.S. if immigrant			0.007** (2.46)
Speaks English well or very well			0.075 (1.43)
Veteran			-0.735**** (-13.53)
Statewide general population			0.000**** (4.87)
Statewide unemployment rate			0.065*** (3.19)
Statewide government FTEs			-0.000**** (-4.12)
Statewide per capita income (log)			-0.086 (-0.88)
Constant	-1.898**** (-64.09)	-7.962**** (-20.75)	-6.897**** (-6.12)
Pseudo R-squared	0.007	0.077	0.093
Number of Obs.	71230	71230	70702

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.3D. Business Formation Regressions, Professional Services ex AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.840**** (-58.61)	-0.748**** (-50.53)	-0.656**** (-42.85)
Hispanic	-0.273**** (-28.86)	-0.151**** (-14.07)	-0.260**** (-20.28)
Asian Pacific	-0.686**** (-40.09)	-0.564**** (-32.05)	-0.719**** (-36.60)
Subcontinent Asian	-1.209**** (-49.44)	-0.985**** (-39.30)	-1.136**** (-41.58)
Native American	-0.231**** (-4.72)	-0.109** (-2.16)	-0.079 (-1.54)
Other race	-0.164** (-2.52)	0.001 (0.01)	0.005 (0.07)
Two or more races	-0.430**** (-17.74)	-0.162**** (-6.50)	-0.143**** (-5.64)
Non-minority female	-0.171**** (-23.66)	-0.148**** (-19.72)	-0.143**** (-18.49)
Year	-0.024**** (-11.14)	-0.023**** (-10.31)	-0.009** (-2.74)
Age		0.116**** (53.81)	0.079**** (33.31)
Age squared		-0.001**** (-32.95)	-0.000**** (-18.47)
Less than 9th grade		0.074* (1.95)	0.052 (1.37)
Grade 9		0.191**** (4.25)	0.165**** (3.63)
Grade 10		0.200**** (4.45)	0.200**** (4.39)
Grade 11		0.148**** (3.44)	0.153**** (3.51)
12th grade-no diploma		0.012 (0.28)	0.001 (0.02)
Regular high school diploma		-0.223**** (-6.73)	-0.194**** (-5.77)
GED or alt. credential		-0.233**** (-6.20)	-0.175**** (-4.58)
Some college, less than 1 year		-0.263**** (-7.50)	-0.247**** (-6.93)
1 or more years college, no degree		-0.148**** (-4.43)	-0.137**** (-4.02)
Associate's degree		-0.295**** (-8.60)	-0.284**** (-8.12)
Bachelor's degree		-0.101*** (-3.06)	-0.149**** (-4.43)
Master's degree		-0.104*** (-3.07)	-0.189**** (-5.46)
Profess. degree beyond Bachelor's		0.726**** (21.09)	0.615**** (17.44)
Doctorate degree		0.104*** (2.69)	-0.006 (-0.14)
Management of Companies		-2.471**** (-33.28)	-2.493**** (-33.44)
Admin. & Supportive Services		0.128**** (16.35)	0.174**** (21.81)

Independent Variables	Specification		
	Model A	Model B	Model C
Interest and dividend income (log)			0.019**** (26.96)
Home is owned free and clear			0.060**** (6.79)
Property value			0.000**** (22.85)
Married, spouse present			0.114**** (13.80)
Number of children in family			0.090**** (26.04)
Number of workers in family			-0.008 (-1.48)
Lived in same house 1 year ago			0.115**** (10.90)
Foreign born			0.274**** (15.18)
Years in U.S. if immigrant			0.007**** (12.11)
Speaks English well or very well			0.076**** (6.74)
Veteran			-0.402**** (-24.82)
Statewide general population			0.000**** (13.25)
Statewide unemployment rate			-0.014*** (-2.68)
Statewide government FTEs			-0.000**** (-7.23)
Statewide per capita income (log)			-0.573**** (-22.51)
Constant	-1.217**** (-150.77)	-4.684**** (-81.53)	1.886**** (6.71)
Pseudo R-squared	0.012	0.074	0.082
Number of Obs.	721259	721259	709834

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.3E. Business Formation Regressions, General Services, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.732**** (-89.31)	-0.502**** (-58.32)	-0.428**** (-47.77)
Hispanic	-0.334**** (-53.36)	-0.172**** (-24.90)	-0.363**** (-43.47)
Asian Pacific	-0.079**** (-9.18)	-0.007 (-0.73)	-0.306**** (-28.19)
Subcontinent Asian	-0.134**** (-8.78)	0.109**** (6.75)	-0.200**** (-11.45)
Native American	-0.639**** (-21.84)	-0.460**** (-15.21)	-0.408**** (-13.27)
Other race	-0.169**** (-4.15)	0.040 (0.92)	-0.053 (-1.22)
Two or more races	-0.419**** (-28.03)	-0.048*** (-3.03)	-0.061**** (-3.80)
Non-minority female	-0.398**** (-84.94)	-0.150**** (-29.11)	-0.139**** (-26.29)
Year	0.003* (1.84)	0.005**** (3.52)	-0.012**** (-5.59)
Age		0.145**** (116.38)	0.120**** (85.79)
Age squared		-0.001**** (-88.66)	-0.001**** (-67.20)
Less than 9th grade		0.111**** (4.63)	0.061** (2.49)
Grade 9		0.044 (1.56)	0.020 (0.71)
Grade 10		0.003 (0.09)	0.009 (0.34)
Grade 11		-0.076*** (-2.96)	-0.074*** (-2.85)
12th grade-no diploma		0.037 (1.50)	0.020 (0.80)
Regular high school diploma		-0.074**** (-3.76)	-0.056*** (-2.78)
GED or alt. credential		-0.137**** (-6.10)	-0.087**** (-3.82)
Some college, less than 1 year		0.032 (1.54)	0.034 (1.62)
1 or more years college, no degree		0.073**** (3.63)	0.072**** (3.53)
Associate's degree		-0.108**** (-5.28)	-0.128**** (-6.12)
Bachelor's degree		0.093**** (4.68)	-0.003 (-0.17)
Master's degree		0.049** (2.35)	-0.093**** (-4.42)
Profess. degree beyond Bachelor's		1.369**** (62.83)	1.129**** (50.49)
Doctorate degree		0.825**** (34.26)	0.619**** (25.18)
Warehousing		-1.043**** (-54.91)	-1.026**** (-53.58)
Information		-0.680**** (-56.35)	-0.750**** (-61.06)

Independent Variables	Specification		
	Model A	Model B	Model C
Finance & Insurance		-1.167**** (-112.88)	-1.247**** (-118.76)
Real Estate		0.696**** (74.11)	0.633**** (66.21)
Educational Services		-1.197**** (-104.34)	-1.171**** (-100.47)
Medical Services		-1.358**** (-149.87)	-1.366**** (-148.67)
Social Assistance Services		0.138**** (13.13)	0.201**** (18.87)
Arts & Entertainment		-0.392**** (-46.95)	-0.367**** (-43.27)
Other Services		0.788**** (101.38)	0.806**** (102.37)
Interest and dividend income (log)			0.031**** (60.57)
Home is owned free and clear			0.053**** (9.56)
Property value			0.000**** (64.45)
Married, spouse present			0.172**** (32.58)
Number of children in family			0.064**** (29.20)
Number of workers in family			-0.097**** (-28.97)
Lived in same house 1 year ago			0.063**** (9.25)
Foreign born			0.321**** (28.63)
Years in U.S. if immigrant			0.002**** (5.22)
Speaks English well or very well			0.087**** (12.34)
Veteran			-0.257**** (-22.91)
Statewide general population			0.000**** (24.46)
Statewide unemployment rate			-0.061**** (-17.85)
Statewide government FTEs			-0.000**** (-13.94)
Statewide per capita income (log)			-0.291**** (-17.46)
Constant	-1.948**** (-362.81)	-5.483**** (-162.22)	-1.544**** (-8.43)
Pseudo R-squared	0.007	0.127	0.137
Number of Obs.	2982291	2982291	2892304

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.3F. Business Formation Regressions, Commodities, Supplies & Equipment, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-1.458**** (-76.65)	-1.215**** (-62.17)	-1.013**** (-50.01)
Hispanic	-0.793**** (-75.80)	-0.870**** (-71.39)	-1.003**** (-68.15)
Asian Pacific	-0.216**** (-14.63)	-0.017 (-1.11)	-0.351**** (-18.60)
Subcontinent Asian	0.028 (1.22)	0.267**** (11.21)	-0.134**** (-4.96)
Native American	-0.005 (-0.15)	-0.027 (-0.72)	0.045 (1.18)
Other race	-0.317**** (-4.18)	-0.094 (-1.19)	-0.129 (-1.60)
Two or more races	-0.492**** (-19.09)	-0.201**** (-7.42)	-0.171**** (-6.18)
Non-minority female	-0.260**** (-36.40)	-0.292**** (-37.63)	-0.257**** (-32.17)
Year	0.008**** (3.96)	0.012**** (5.53)	-0.022**** (-7.02)
Age		0.134**** (69.15)	0.092**** (42.17)
Age squared		-0.001**** (-47.82)	-0.001**** (-28.59)
Less than 9th grade		0.050 (1.41)	-0.041 (-1.15)
Grade 9		0.036 (0.83)	-0.012 (-0.27)
Grade 10		0.054 (1.30)	-0.025 (-0.59)
Grade 11		-0.005 (-0.14)	-0.095** (-2.33)
12th grade-no diploma		0.258**** (6.81)	0.163**** (4.26)
Regular high school diploma		0.166**** (5.34)	0.071** (2.25)
GED or alt. credential		-0.043 (-1.24)	-0.081** (-2.28)
Some college, less than 1 year		0.301**** (9.25)	0.173**** (5.22)
1 or more years college, no degree		0.421**** (13.37)	0.275**** (8.58)
Associate's degree		0.442**** (13.78)	0.273**** (8.35)
Bachelor's degree		0.641**** (20.55)	0.322**** (10.12)
Master's degree		0.446**** (13.29)	-0.024 (-0.70)
Profess. degree beyond Bachelor's		0.691**** (15.34)	0.176**** (3.83)
Doctorate degree		0.141**** (2.71)	-0.451**** (-8.50)
Extractive Industries		-2.869**** (-106.50)	-2.947**** (-107.53)
Utilities		-3.907**** (-106.81)	-3.959**** (-107.08)

Independent Variables	Specification		
	Model A	Model B	Model C
Manufacturing-NAICS 31		-2.622**** (-160.78)	-2.596**** (-156.80)
Manufacturing-NAICS 32		-3.145**** (-209.66)	-3.148**** (-206.28)
Manufacturing-NAICS 33		-3.279**** (-276.95)	-3.292**** (-271.35)
Wholesale Trade		-2.256**** (-191.10)	-2.290**** (-188.89)
Retail Trade-NAICS 44		-2.307**** (-232.49)	-2.271**** (-222.84)
Retail Trade-NAICS 45		-1.783**** (-168.19)	-1.707**** (-156.56)
Interest and dividend income (log)			0.040**** (54.82)
Home is owned free and clear			0.197**** (21.37)
Property value			0.000**** (62.91)
Married, spouse present			0.412**** (49.37)
Number of children in family			0.100**** (30.38)
Number of workers in family			-0.073**** (-14.53)
Lived in same house 1 year ago			0.097**** (8.29)
Foreign born			0.140**** (7.05)
Years in U.S. if immigrant			0.003**** (4.93)
Speaks English well or very well			0.428**** (36.36)
Veteran			-0.423**** (-25.34)
Statewide general population			0.000**** (5.10)
Statewide unemployment rate			-0.097**** (-19.06)
Statewide government FTEs			-0.000**** (-2.71)
Statewide per capita income (log)			-0.210**** (-8.05)
Constant	-2.420**** (-328.87)	-4.283**** (-82.96)	-0.874**** (-3.03)
Pseudo R-squared	0.015	0.165	0.186
Number of Obs.	1875104	1875104	1841286

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.4A. Business Formation Regressions, FRA-specific, All Industries, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.623**** (-47.06)	-0.566**** (-40.84)	-0.463**** (-32.54)
Hispanic	-0.320**** (-43.47)	-0.303**** (-36.19)	-0.440**** (-41.83)
Asian Pacific	-0.567**** (-38.14)	-0.410**** (-26.04)	-0.577**** (-32.99)
Subcontinent Asian	-1.029**** (-45.63)	-0.687**** (-29.19)	-0.873**** (-34.36)
Native American	-0.341**** (-9.81)	-0.398**** (-10.99)	-0.410**** (-11.14)
Other race	-0.064 (-1.15)	0.016 (0.27)	0.022 (0.37)
Two or more races	-0.351**** (-16.78)	-0.175**** (-7.93)	-0.164**** (-7.34)
Non-minority female	-0.312**** (-46.31)	-0.360**** (-48.35)	-0.348**** (-45.95)
Year	-0.008**** (-4.78)	-0.011**** (-5.89)	-0.014**** (-5.19)
Age		0.125**** (67.97)	0.095**** (47.81)
Age squared		-0.001**** (-43.99)	-0.001**** (-29.91)
Less than 9th grade		-0.101**** (-3.55)	-0.129**** (-4.47)
Grade 9		-0.032 (-0.98)	-0.052 (-1.58)
Grade 10		-0.028 (-0.87)	-0.021 (-0.64)
Grade 11		-0.093*** (-2.95)	-0.085*** (-2.68)
12th grade-no diploma		-0.012 (-0.39)	-0.019 (-0.61)
Regular high school diploma		-0.171**** (-6.88)	-0.159**** (-6.32)
GED or alt. credential		-0.131**** (-4.76)	-0.102**** (-3.68)
Some college, less than 1 year		-0.065** (-2.48)	-0.067** (-2.51)
1 or more years college, no degree		-0.007 (-0.27)	-0.018 (-0.69)
Associate's degree		-0.141**** (-5.41)	-0.161**** (-6.09)
Bachelor's degree		0.042* (1.66)	-0.062** (-2.44)
Master's degree		0.093**** (3.54)	-0.068** (-2.53)
Profess. degree beyond Bachelor's		1.142**** (41.66)	0.959**** (34.32)
Doctorate degree		0.442**** (13.56)	0.245**** (7.39)
Construction		2.442**** (31.68)	2.436**** (31.57)
Manufacturing-NAICS 32		-0.208** (-1.98)	-0.202* (-1.92)

Independent Variables	Specification		
	Model A	Model B	Model C
Manufacturing-NAICS 33		-0.173** (-2.19)	-0.178** (-2.25)
Wholesale Trade		0.586**** (7.33)	0.563**** (7.04)
Transportation		1.195**** (15.15)	1.193**** (15.10)
Finance & Insurance		1.504**** (18.90)	1.487**** (18.67)
Real Estate		2.704**** (34.90)	2.663**** (34.32)
Profess.,Tech. & Sci. Services		1.624**** (21.01)	1.605**** (20.74)
Admin. & Supportive Services		1.075**** (13.18)	1.093**** (13.38)
Interest and dividend income (log)			0.026**** (43.88)
Home is owned free and clear			0.035**** (4.78)
Property value			0.000**** (40.23)
Married, spouse present			0.095**** (13.97)
Number of children in family			0.082**** (30.02)
Number of workers in family			-0.037**** (-8.73)
Lived in same house 1 year ago			0.091**** (10.20)
Foreign born			0.223**** (14.44)
Years in U.S. if immigrant			0.006**** (11.13)
Speaks English well or very well			0.171**** (18.10)
Veteran			-0.307**** (-26.37)
Statewide general population			0.000**** (17.18)
Statewide unemployment rate			-0.047**** (-11.14)
Statewide government FTEs			-0.000**** (-12.97)
Statewide per capita income (log)			-0.535**** (-25.78)
Constant	-1.354**** (-220.52)	-6.966**** (-77.19)	-0.541** (-2.24)
Pseudo R-squared	0.008	0.118	0.127
Number of Obs.	1157350	1157350	1146611

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.4B. Business Formation Regressions, FRA-specific, Construction, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.550**** (-27.45)	-0.567**** (-27.79)	-0.474**** (-22.49)
Hispanic	-0.469**** (-51.28)	-0.333**** (-32.08)	-0.562**** (-38.73)
Asian Pacific	-0.118**** (-4.00)	-0.171**** (-5.65)	-0.406**** (-12.46)
Subcontinent Asian	-0.269**** (-4.13)	-0.210**** (-3.15)	-0.474**** (-6.83)
Native American	-0.545**** (-13.06)	-0.489**** (-11.47)	-0.527**** (-12.06)
Other race	0.037 (0.48)	0.170** (2.15)	0.072 (0.90)
Two or more races	-0.376**** (-11.58)	-0.206**** (-6.18)	-0.206**** (-6.07)
Non-minority female	-0.533**** (-36.27)	-0.625**** (-41.49)	-0.636**** (-41.61)
Year	-0.021**** (-8.51)	-0.021**** (-8.16)	-0.035**** (-9.74)
Age		0.122**** (50.23)	0.098**** (37.14)
Age squared		-0.001**** (-32.90)	-0.001**** (-23.54)
Less than 9th grade		-0.119**** (-3.88)	-0.146**** (-4.71)
Grade 9		-0.062* (-1.77)	-0.071** (-2.00)
Grade 10		-0.035 (-1.01)	-0.008 (-0.22)
Grade 11		-0.091*** (-2.66)	-0.062* (-1.78)
12th grade-no diploma		-0.037 (-1.12)	-0.036 (-1.07)
Regular high school diploma		-0.151**** (-5.56)	-0.132**** (-4.81)
GED or alt. credential		-0.131**** (-4.33)	-0.087*** (-2.84)
Some college, less than 1 year		-0.079*** (-2.67)	-0.076** (-2.53)
1 or more years college, no degree		-0.080*** (-2.86)	-0.084*** (-2.95)
Associate's degree		-0.162**** (-5.47)	-0.186**** (-6.18)
Bachelor's degree		-0.121**** (-4.21)	-0.240**** (-8.18)
Master's degree		-0.266**** (-7.09)	-0.454**** (-11.81)
Profess. degree beyond Bachelor's		-0.047 (-0.67)	-0.277**** (-3.85)
Doctorate degree		-0.102 (-0.90)	-0.274** (-2.35)
Interest and dividend income (log)			0.034**** (32.84)
Home is owned free and clear			-0.004 (-0.40)

Independent Variables	Specification		
	Model A	Model B	Model C
Property value			0.000**** (27.34)
Married, spouse present			0.139**** (15.07)
Number of children in family			0.080**** (21.77)
Number of workers in family			-0.066**** (-11.68)
Lived in same house 1 year ago			0.129**** (10.15)
Foreign born			0.258**** (11.87)
Years in U.S. if immigrant			0.004**** (4.65)
Speaks English well or very well			0.262**** (20.71)
Veteran			-0.252**** (-15.82)
Statewide general population			0.000**** (7.79)
Statewide unemployment rate			-0.072**** (-12.25)
Statewide government FTEs			-0.000**** (-6.11)
Statewide per capita income (log)			-0.488**** (-16.49)
Constant	-0.897**** (-102.62)	-4.293**** (-73.00)	1.698**** (5.24)
Pseudo R-squared	0.009	0.054	0.065
Number of Obs.	433360	433360	428623

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.4C. Business Formation Regressions, FRA-specific, AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.660**** (-8.23)	-0.577**** (-7.07)	-0.484**** (-5.85)
Hispanic	-0.360**** (-7.63)	-0.092* (-1.88)	-0.183*** (-3.24)
Asian Pacific	-0.557**** (-8.85)	-0.474**** (-7.36)	-0.659**** (-8.88)
Subcontinent Asian	-0.705**** (-6.44)	-0.476**** (-4.25)	-0.620**** (-5.12)
Native American	-0.482* (-1.84)	-0.366 (-1.38)	-0.311 (-1.16)
Other race	-0.452 (-1.29)	-0.294 (-0.83)	-0.301 (-0.84)
Two or more races	-0.448**** (-4.41)	-0.139 (-1.33)	-0.179* (-1.69)
Non-minority female	-0.406**** (-12.45)	-0.342**** (-10.25)	-0.385**** (-11.29)
Year	-0.009 (-1.11)	-0.003 (-0.33)	0.022* (1.71)
Age		0.202**** (19.28)	0.169**** (14.70)
Age squared		-0.002**** (-13.88)	-0.001**** (-10.34)
Less than 9th grade		-0.467 (-1.08)	-0.446 (-1.02)
Grade 9		0.438 (1.03)	0.512 (1.19)
Grade 10		-0.055 (-0.13)	-0.005 (-0.01)
Grade 11		-0.186 (-0.44)	-0.131 (-0.31)
12th grade-no diploma		0.005 (0.01)	0.020 (0.05)
Regular high school diploma		-0.192 (-0.64)	-0.092 (-0.30)
GED or alt. credential		-0.125 (-0.39)	-0.015 (-0.05)
Some college, less than 1 year		-0.089 (-0.29)	-0.006 (-0.02)
1 or more years college, no degree		0.040 (0.13)	0.108 (0.36)
Associate's degree		-0.010 (-0.03)	0.062 (0.21)
Bachelor's degree		0.234 (0.78)	0.163 (0.54)
Master's degree		0.216 (0.72)	0.112 (0.37)
Profess. degree beyond Bachelor's		0.851*** (2.79)	0.689** (2.24)
Doctorate degree		0.233 (0.75)	0.058 (0.19)
Interest and dividend income (log)			0.016**** (6.47)
Home is owned free and clear			-0.248**** (-6.00)

Independent Variables	Specification		
	Model A	Model B	Model C
Property value			0.000**** (17.43)
Married, spouse present			0.055 (1.56)
Number of children in family			0.117**** (8.32)
Number of workers in family			-0.011 (-0.49)
Lived in same house 1 year ago			0.140*** (2.97)
Foreign born			0.120 (1.52)
Years in U.S. if immigrant			0.007** (2.46)
Speaks English well or very well			0.075 (1.43)
Veteran			-0.735**** (-13.53)
Statewide general population			0.000**** (4.87)
Statewide unemployment rate			0.065*** (3.19)
Statewide government FTEs			-0.000**** (-4.12)
Statewide per capita income (log)			-0.086 (-0.88)
Constant	-1.898**** (-64.09)	-7.962**** (-20.75)	-6.897**** (-6.12)
Pseudo R-squared	0.007	0.077	0.093
Number of Obs.	71230	71230	70702

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.4D. Business Formation Regressions, FRA-specific, Professional Services ex AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.559**** (-22.77)	-0.351**** (-13.76)	-0.305**** (-11.64)
Hispanic	-0.569**** (-29.01)	-0.190**** (-9.06)	-0.208**** (-8.93)
Asian Pacific	-0.837**** (-33.76)	-0.652**** (-25.36)	-0.648**** (-22.35)
Subcontinent Asian	-1.206**** (-42.00)	-0.879**** (-29.53)	-0.828**** (-24.19)
Native American	-0.100 (-1.11)	0.165* (1.75)	0.156* (1.65)
Other race	-0.418**** (-3.61)	-0.157 (-1.30)	-0.090 (-0.74)
Two or more races	-0.440**** (-11.82)	-0.108*** (-2.77)	-0.097** (-2.46)
Non-minority female	-0.311**** (-27.15)	-0.277**** (-22.88)	-0.277**** (-22.32)
Year	-0.047**** (-13.52)	-0.045**** (-12.61)	-0.026**** (-4.82)
Age		0.133**** (32.88)	0.105**** (23.33)
Age squared		-0.001**** (-19.96)	-0.001**** (-13.45)
Less than 9th grade		-0.044 (-0.31)	-0.090 (-0.63)
Grade 9		0.240 (1.54)	0.198 (1.25)
Grade 10		0.119 (0.77)	0.042 (0.27)
Grade 11		-0.024 (-0.17)	-0.088 (-0.60)
12th grade-no diploma		0.064 (0.48)	0.035 (0.26)
Regular high school diploma		-0.358*** (-3.25)	-0.368**** (-3.29)
GED or alt. credential		-0.074 (-0.62)	-0.087 (-0.73)
Some college, less than 1 year		-0.249** (-2.23)	-0.261** (-2.30)
1 or more years college, no degree		-0.065 (-0.60)	-0.087 (-0.79)
Associate's degree		-0.376**** (-3.40)	-0.389**** (-3.47)
Bachelor's degree		-0.014 (-0.13)	-0.064 (-0.58)
Master's degree		0.162 (1.49)	0.113 (1.02)
Profess. degree beyond Bachelor's		1.180**** (10.81)	1.085**** (9.81)
Doctorate degree		0.435**** (3.92)	0.379**** (3.38)
Admin. & Supportive Services		-0.616**** (-20.35)	-0.588**** (-19.34)
Interest and dividend income (log)			0.012**** (11.98)

Independent Variables	Specification		
	Model A	Model B	Model C
Home is owned free and clear			-0.101**** (-6.51)
Property value			0.000**** (15.57)
Married, spouse present			-0.034** (-2.40)
Number of children in family			0.076**** (13.09)
Number of workers in family			0.027*** (3.04)
Lived in same house 1 year ago			0.061**** (3.56)
Foreign born			0.109**** (3.49)
Years in U.S. if immigrant			0.008**** (7.11)
Speaks English well or very well			0.001 (0.06)
Veteran			-0.316**** (-13.26)
Statewide general population			0.000**** (10.66)
Statewide unemployment rate			-0.007 (-0.75)
Statewide government FTEs			-0.000**** (-7.40)
Statewide per capita income (log)			-0.647**** (-16.12)
Constant	-1.279**** (-103.24)	-5.586**** (-39.57)	1.776**** (3.87)
Pseudo R-squared	0.015	0.107	0.112
Number of Obs.	324101	324101	321150

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.4E. Business Formation Regressions, FRA-specific, General Services, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-0.834**** (-27.51)	-0.717**** (-22.57)	-0.518**** (-15.79)
Hispanic	-0.472**** (-22.02)	-0.327**** (-14.04)	-0.445**** (-15.67)
Asian Pacific	0.019 (0.58)	-0.158**** (-4.62)	-0.364**** (-9.09)
Subcontinent Asian	0.006 (0.10)	-0.034 (-0.52)	-0.269**** (-3.82)
Native American	-0.736**** (-6.39)	-0.613**** (-5.08)	-0.542**** (-4.47)
Other race	-0.194 (-1.34)	-0.124 (-0.80)	-0.067 (-0.42)
Two or more races	-0.193**** (-3.81)	-0.125** (-2.31)	-0.072 (-1.31)
Non-minority female	0.053**** (3.62)	-0.242**** (-15.29)	-0.207**** (-12.66)
Year	0.062**** (13.81)	0.074**** (15.41)	0.066**** (9.41)
Age		0.144**** (29.05)	0.104**** (19.07)
Age squared		-0.001**** (-21.54)	-0.001**** (-14.09)
Less than 9th grade		-0.210 (-1.62)	-0.194 (-1.48)
Grade 9		0.038 (0.26)	0.055 (0.37)
Grade 10		-0.006 (-0.04)	0.050 (0.36)
Grade 11		0.029 (0.23)	0.073 (0.57)
12th grade-no diploma		0.214* (1.79)	0.206* (1.70)
Regular high school diploma		0.162 (1.62)	0.155 (1.54)
GED or alt. credential		0.183* (1.71)	0.218** (2.01)
Some college, less than 1 year		0.599**** (5.92)	0.565**** (5.51)
1 or more years college, no degree		0.726**** (7.29)	0.675**** (6.69)
Associate's degree		0.642**** (6.38)	0.579**** (5.67)
Bachelor's degree		0.884**** (8.92)	0.712**** (7.08)
Master's degree		0.744**** (7.37)	0.497**** (4.85)
Profess. degree beyond Bachelor's		0.764**** (6.89)	0.448**** (3.95)
Doctorate degree		1.224**** (8.94)	0.980**** (7.01)
Finance & Insurance		0.143**** (5.37)	0.139**** (5.15)
Real Estate		1.406**** (72.44)	1.387**** (69.84)

Independent Variables	Specification		
	Model A	Model B	Model C
Interest and dividend income (log)			0.038**** (27.12)
Home is owned free and clear			0.365**** (18.34)
Property value			0.000**** (14.19)
Married, spouse present			0.155**** (8.65)
Number of children in family			0.070**** (9.18)
Number of workers in family			-0.053**** (-4.60)
Lived in same house 1 year ago			-0.004 (-0.19)
Foreign born			0.297**** (7.64)
Years in U.S. if immigrant			0.004** (2.81)
Speaks English well or very well			0.200**** (7.74)
Veteran			-0.267**** (-7.99)
Statewide general population			0.000**** (10.25)
Statewide unemployment rate			-0.083**** (-7.26)
Statewide government FTEs			-0.000**** (-7.67)
Statewide per capita income (log)			-0.868**** (-15.67)
Constant	-1.392**** (-81.89)	-6.867**** (-46.16)	3.555**** (5.79)
Pseudo R-squared	0.011	0.118	0.138
Number of Obs.	149826	149826	148535

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.4F. Business Formation Regressions, FRA-specific, Commodities, Supplies & Equipment, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	-1.476**** (-13.25)	-1.355**** (-12.13)	-1.169**** (-10.38)
Hispanic	-0.505**** (-10.35)	-0.400**** (-7.71)	-0.718**** (-11.13)
Asian Pacific	-0.167** (-2.45)	-0.185** (-2.67)	-0.718**** (-8.38)
Subcontinent Asian	-0.266* (-1.95)	-0.093 (-0.67)	-0.672**** (-4.38)
Native American	-0.486** (-2.19)	-0.357 (-1.60)	-0.408* (-1.77)
Other race	-0.207 (-0.54)	-0.185 (-0.48)	-0.331 (-0.85)
Two or more races	-0.528**** (-3.71)	-0.357** (-2.49)	-0.451*** (-3.02)
Non-minority female	-0.239*** (-6.39)	-0.338**** (-8.96)	-0.308**** (-7.99)
Year	0.027*** (2.98)	0.030*** (3.20)	0.040*** (3.02)
Age		0.082**** (8.25)	0.053**** (4.88)
Age squared		-0.000**** (-3.96)	-0.000* (-1.71)
Less than 9th grade		0.102 (0.63)	0.051 (0.31)
Grade 9		-0.205 (-1.03)	-0.207 (-1.02)
Grade 10		-0.256 (-1.39)	-0.271 (-1.44)
Grade 11		-0.436** (-2.40)	-0.439** (-2.39)
12th grade-no diploma		0.064 (0.41)	0.023 (0.14)
Regular high school diploma		-0.350*** (-2.62)	-0.372*** (-2.74)
GED or alt. credential		-0.397*** (-2.68)	-0.363** (-2.42)
Some college, less than 1 year		-0.109 (-0.79)	-0.166 (-1.18)
1 or more years college, no degree		0.040 (0.30)	-0.055 (-0.40)
Associate's degree		-0.207 (-1.50)	-0.313** (-2.24)
Bachelor's degree		0.020 (0.15)	-0.304** (-2.23)
Master's degree		-0.179 (-1.26)	-0.693**** (-4.77)
Profess. degree beyond Bachelor's		0.119 (0.57)	-0.440** (-2.05)
Doctorate degree		0.009 (0.04)	-0.706*** (-3.27)
Manufacturing-NAICS 32		-0.209** (-1.99)	-0.221** (-2.09)
Manufacturing-NAICS 33		-0.193** (-2.43)	-0.213*** (-2.67)

Independent Variables	Specification		
	Model A	Model B	Model C
Wholesale Trade		0.548****	0.477****
		(6.80)	(5.89)
Interest and dividend income (log)			0.043****
			(15.66)
Home is owned free and clear			0.106**
			(2.37)
Property value			0.000****
			(23.87)
Married, spouse present			0.230****
			(6.34)
Number of children in family			0.080****
			(5.36)
Number of workers in family			-0.015
			(-0.70)
Lived in same house 1 year ago			0.088*
			(1.67)
Foreign born			0.122
			(1.36)
Years in U.S. if immigrant			0.003
			(0.96)
Speaks English well or very well			0.367****
			(6.58)
Veteran			-0.353***
			(-6.22)
Statewide general population			0.000***
			(2.82)
Statewide unemployment rate			0.004
			(0.18)
Statewide government FTEs			-0.000
			(-1.31)
Statewide per capita income (log)			-0.400****
			(-3.72)
Constant	-3.272****	-6.040****	-1.397
	(-102.70)	(-22.34)	(-1.17)
Pseudo R-squared	0.008	0.050	0.075
Number of Obs.	178833	178833	177601

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.5A. Annual Business Owner Earnings Regressions, All Industries, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.537**** (-59.38)	0.626**** (-46.29)	0.689**** (-36.25)
Hispanic	0.740**** (-43.33)	0.859**** (-21.32)	0.780**** (-29.43)
Asian Pacific	0.869**** (-12.39)	0.941**** (-5.52)	0.782**** (-20.04)
Subcontinent Asian	1.066*** (3.19)	1.056*** (2.80)	0.862**** (-7.33)
Native American	0.570**** (-18.53)	0.663**** (-14.25)	0.713**** (-11.81)
Other race	0.725**** (-6.45)	0.822**** (-4.14)	0.792**** (-4.95)
Two or more races	0.547**** (-34.79)	0.691**** (-22.36)	0.692**** (-22.24)
Non-minority female	0.537**** (-118.35)	0.628**** (-86.09)	0.633**** (-84.66)
Year	1.011**** (6.96)	1.014**** (9.22)	1.003 (1.37)
Age		1.167**** (118.59)	1.118**** (76.93)
Age squared		0.998**** (-102.25)	0.999**** (-72.20)
Less than 9th grade		1.119**** (4.80)	1.075*** (3.13)
Grade 9		0.987 (-0.48)	0.980 (-0.74)
Grade 10		0.843**** (-6.36)	0.841**** (-6.50)
Grade 11		0.852**** (-6.10)	0.843**** (-6.59)
12th grade-no diploma		1.080*** (3.02)	1.057** (2.19)
Regular high school diploma		1.147**** (6.68)	1.149**** (6.82)
GED or alt. credential		0.954** (-2.06)	0.987 (-0.59)
Some college, less than 1 year		1.012 (0.54)	1.034 (1.55)
1 or more years college, no degree		1.043** (2.04)	1.054** (2.55)
Associate's degree		1.016 (0.75)	0.992 (-0.39)
Bachelor's degree		1.144**** (6.50)	1.047** (2.24)
Master's degree		1.144**** (6.27)	1.006 (0.26)
Profess. degree beyond Bachelor's		2.552**** (40.37)	2.095**** (31.96)
Doctorate degree		1.630**** (18.94)	1.371**** (12.29)
Extractive Industries		0.750**** (-7.26)	0.730**** (-8.05)
Utilities		0.343**** (-26.29)	0.350**** (-25.94)
Construction		0.874****	0.882****

Independent Variables	Specification		
	Model A	Model B	Model C
		(-12.20)	(-11.39)
Manufacturing-NAICS 31		0.470***	0.468***
		(-30.17)	(-30.69)
Manufacturing-NAICS 32		0.429***	0.424***
		(-39.98)	(-40.99)
Manufacturing-NAICS 33		0.420***	0.415***
		(-53.61)	(-54.83)
Wholesale Trade		0.671***	0.649***
		(-22.22)	(-24.32)
Retail Trade-NAICS 44		0.539***	0.544***
		(-42.68)	(-42.29)
Retail Trade-NAICS 45		0.497***	0.504***
		(-45.83)	(-45.16)
Transportation		0.908***	0.917***
		(-6.74)	(-6.10)
Warehousing		0.573***	0.599***
		(-18.91)	(-17.55)
Information		0.524***	0.517***
		(-37.48)	(-38.36)
Finance & Insurance		0.806***	0.766***
		(-14.15)	(-17.67)
Real Estate		1.181***	1.108***
		(11.70)	(7.29)
Profess.,Tech. & Sci. Services		0.831***	0.805***
		(-15.89)	(-18.65)
Management of Companies		0.454***	0.434***
		(-9.05)	(-9.72)
Admin. & Supportive Services		0.610***	0.629***
		(-39.86)	(-37.51)
Educational Services		0.317***	0.336***
		(-78.26)	(-73.85)
Medical Services		0.642***	0.643***
		(-32.88)	(-32.90)
Social Assistance Services		0.565***	0.583***
		(-37.24)	(-35.42)
Arts & Entertainment		0.538***	0.556***
		(-48.98)	(-46.41)
Other Services		0.622***	0.640***
		(-41.96)	(-39.44)
Interest and dividend income (log)			1.003***
			(5.46)
Home is owned free and clear			1.029***
			(4.91)
Property value			1.000***
			(72.85)
Married, spouse present			1.274***
			(45.34)
Number of children in family			1.015***
			(7.14)
Number of workers in family			0.895***
			(-32.36)
Lived in same house 1 year ago			1.022***
			(3.18)
Foreign born			1.231***
			(16.86)
Years in U.S. if immigrant			1.006***
			(13.36)

Independent Variables	Specification		
	Model A	Model B	Model C
Speaks English well or very well			1.107**** (14.10)
Veteran			0.873**** (-12.45)
Statewide general population			1.000**** (4.09)
Statewide unemployment rate			1.004 (1.22)
Statewide government FTEs			1.000 (0.75)
Statewide per capita income (log)			1.248**** (13.21)
Constant	18217.923**** (1706.60)	549.806**** (178.43)	105.677**** (25.21)
Adj. R-squared	0.028	0.123	0.129
Number of Obs.	560319	560319	554694

Source and Notes: See Table 4.3. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.5B. Annual Business Owner Earnings Regressions, Construction, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.588**** (-18.82)	0.588**** (-18.96)	0.680**** (-13.80)
Hispanic	0.891**** (-9.26)	0.935**** (-4.94)	0.875**** (-7.23)
Asian Pacific	0.957 (-1.07)	0.909** (-2.37)	0.772**** (-6.15)
Subcontinent Asian	1.001 (0.01)	0.976 (-0.24)	0.829* (-1.91)
Native American	0.717**** (-5.78)	0.737**** (-5.35)	0.823**** (-3.49)
Other race	0.908 (-0.89)	0.917 (-0.81)	0.887 (-1.14)
Two or more races	0.694**** (-8.18)	0.726**** (-7.25)	0.740**** (-6.91)
Non-minority female	0.537**** (-26.96)	0.523**** (-28.15)	0.529**** (-28.10)
Year	1.030**** (8.60)	1.032**** (9.20)	1.006 (1.30)
Age		1.114**** (33.17)	1.079**** (22.19)
Age squared		0.999**** (-30.42)	0.999**** (-22.45)
Less than 9th grade		1.150**** (3.51)	1.111**** (2.68)
Grade 9		1.020 (0.44)	1.050 (1.10)
Grade 10		0.943 (-1.31)	0.984 (-0.35)
Grade 11		0.998 (-0.04)	1.037 (0.84)
12th grade-no diploma		1.108** (2.37)	1.095** (2.13)
Regular high school diploma		1.178**** (4.60)	1.175**** (4.59)
GED or alt. credential		0.947 (-1.39)	0.998 (-0.05)
Some college, less than 1 year		1.085** (2.11)	1.069* (1.74)
1 or more years college, no degree		1.150**** (3.78)	1.131**** (3.38)
Associate's degree		1.112*** (2.70)	1.064 (1.59)
Bachelor's degree		1.254**** (5.96)	1.129*** (3.23)
Master's degree		1.327**** (5.63)	1.135** (2.55)
Profess. degree beyond Bachelor's		1.309*** (2.99)	1.131 (1.39)
Doctorate degree		0.917 (-0.59)	0.850 (-1.12)
Interest and dividend income (log)			1.006**** (4.81)
Home is owned free and clear			1.025* (1.91)
Property value			1.000****

Independent Variables	Specification		
	Model A	Model B	Model C
			(25.51)
Married, spouse present			1.351****
			(25.42)
Number of children in family			1.043****
			(9.09)
Number of workers in family			0.926****
			(-10.47)
Lived in same house 1 year ago			1.095****
			(5.50)
Foreign born			1.185****
			(5.96)
Years in U.S. if immigrant			1.005****
			(4.85)
Speaks English well or very well			1.080****
			(4.86)
Veteran			0.897****
			(-5.27)
Statewide general population			1.000**
			(2.03)
Statewide unemployment rate			0.981**
			(-2.52)
Statewide government FTEs			1.000
			(-1.20)
Statewide per capita income (log)			1.469****
			(10.25)
Constant	20024.644****	1471.943****	39.309****
	(825.65)	(92.32)	(8.90)
Adj. R-squared	0.015	0.036	0.066
Number of Obs.	77652	77652	77343

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.5C. Annual Business Owner Earnings Regressions, AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.417**** (-6.06)	0.464**** (-5.52)	0.516**** (-4.77)
Hispanic	0.895 (-1.28)	1.056 (0.64)	0.980 (-0.21)
Asian Pacific	0.894 (-0.99)	0.884 (-1.12)	0.751** (-2.38)
Subcontinent Asian	0.659** (-1.97)	0.654** (-2.07)	0.574*** (-2.60)
Native American	0.247*** (-3.10)	0.267*** (-3.03)	0.263*** (-3.10)
Other race	0.258** (-2.06)	0.223** (-2.35)	0.232** (-2.31)
Two or more races	0.692** (-2.16)	0.819 (-1.21)	0.852 (-0.98)
Non-minority female	0.531**** (-10.99)	0.561**** (-10.36)	0.543**** (-10.95)
Year	1.010 (0.63)	1.007 (0.48)	1.007 (0.35)
Age		1.223**** (12.78)	1.174**** (9.22)
Age squared		0.998**** (-10.63)	0.999**** (-8.02)
Less than 9th grade		0.832 (-0.24)	0.814 (-0.27)
Grade 9		0.508 (-0.80)	0.592 (-0.62)
Grade 10		0.639 (-0.59)	0.576 (-0.74)
Grade 11		0.519 (-0.88)	0.480 (-1.00)
12th grade-no diploma		1.485 (0.56)	1.331 (0.41)
Regular high school diploma		0.883 (-0.22)	0.883 (-0.22)
GED or alt. credential		0.786 (-0.40)	0.820 (-0.34)
Some college, less than 1 year		0.924 (-0.14)	0.911 (-0.16)
1 or more years college, no degree		0.856 (-0.28)	0.855 (-0.28)
Associate's degree		0.803 (-0.39)	0.792 (-0.42)
Bachelor's degree		1.026 (0.05)	0.915 (-0.16)
Master's degree		1.086 (0.15)	0.919 (-0.15)
Profess. degree beyond Bachelor's		1.404 (0.59)	1.120 (0.20)
Doctorate degree		1.433 (0.62)	1.122 (0.20)
Interest and dividend income (log)			1.002 (0.44)
Home is owned free and clear			0.973 (-0.42)
Property value			1.000****

Independent Variables	Specification		
	Model A	Model B	Model C
			(7.95)
Married, spouse present			1.296****
			(4.43)
Number of children in family			1.063***
			(2.68)
Number of workers in family			0.909**
			(-2.57)
Lived in same house 1 year ago			0.921
			(-1.12)
Foreign born			1.152
			(1.05)
Years in U.S. if immigrant			1.008
			(1.61)
Speaks English well or very well			1.141
			(1.52)
Veteran			0.693****
			(-4.07)
Statewide general population			1.000
			(-0.44)
Statewide unemployment rate			1.049
			(1.43)
Statewide government FTEs			1.000
			(0.71)
Statewide per capita income (log)			1.423**
			(2.12)
Constant	21157.065****	110.254****	4.060
	(186.03)	(7.19)	(0.73)
Adj. R-squared	0.023	0.092	0.110
Number of Obs.	6397	6397	6385

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.5D. Annual Business Owner Earnings Regressions, Professional Services ex AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.464**** (-30.21)	0.552**** (-24.51)	0.623**** (-19.31)
Hispanic	0.667**** (-25.16)	0.894**** (-6.60)	0.848**** (-8.30)
Asian Pacific	0.798**** (-7.62)	0.761**** (-9.64)	0.673**** (-13.02)
Subcontinent Asian	1.010 (0.22)	0.902** (-2.33)	0.791**** (-5.12)
Native American	0.467**** (-8.97)	0.609**** (-6.15)	0.688**** (-4.65)
Other race	0.725*** (-2.80)	0.839 (-1.61)	0.889 (-1.08)
Two or more races	0.595**** (-12.91)	0.714**** (-8.81)	0.723**** (-8.53)
Non-minority female	0.639**** (-36.51)	0.638**** (-38.42)	0.646**** (-37.36)
Year	1.012*** (3.10)	1.013**** (3.56)	1.004 (0.74)
Age		1.172**** (48.98)	1.133**** (35.66)
Age squared		0.999**** (-41.10)	0.999**** (-32.62)
Less than 9th grade		0.969 (-0.56)	0.951 (-0.89)
Grade 9		0.867** (-2.12)	0.861** (-2.23)
Grade 10		0.658**** (-6.15)	0.670**** (-5.92)
Grade 11		0.710**** (-5.23)	0.718**** (-5.10)
12th grade-no diploma		0.994 (-0.09)	0.994 (-0.09)
Regular high school diploma		1.025 (0.48)	1.031 (0.60)
GED or alt. credential		0.885** (-2.10)	0.918 (-1.49)
Some college, less than 1 year		0.916 (-1.63)	0.929 (-1.37)
1 or more years college, no degree		0.977 (-0.45)	0.985 (-0.29)
Associate's degree		0.955 (-0.88)	0.945 (-1.08)
Bachelor's degree		1.196**** (3.51)	1.103* (1.93)
Master's degree		1.269**** (4.55)	1.123** (2.21)
Profess. degree beyond Bachelor's		2.489**** (17.15)	2.133**** (14.27)
Doctorate degree		1.581**** (7.61)	1.383**** (5.42)
Management of Companies		0.544**** (-6.88)	0.539**** (-7.09)
Admin. & Supportive Services		0.784**** (-19.06)	0.840**** (-13.71)
Interest and dividend income (log)			1.003****

Independent Variables	Specification		
	Model A	Model B	Model C
			(3.26)
Home is owned free and clear			1.009
			(0.67)
Property value			1.000****
			(32.11)
Married, spouse present			1.283****
			(19.64)
Number of children in family			1.019****
			(3.58)
Number of workers in family			0.891****
			(-13.86)
Lived in same house 1 year ago			1.024
			(1.49)
Foreign born			1.239****
			(7.55)
Years in U.S. if immigrant			1.008****
			(7.94)
Speaks English well or very well			1.032*
			(1.84)
Veteran			0.874****
			(-5.15)
Statewide general population			1.000
			(1.13)
Statewide unemployment rate			1.018**
			(2.12)
Statewide government FTEs			1.000
			(1.14)
Statewide per capita income (log)			1.334****
			(7.35)
Constant	20791.832****	367.363****	24.420****
	(721.65)	(68.34)	(7.39)
Adj. R-squared	0.020	0.117	0.134
Number of Obs.	103676	103676	103091

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.5E. Annual Business Owner Earnings Regressions, General Services, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.614**** (-34.90)	0.695**** (-27.31)	0.741**** (-22.05)
Hispanic	0.715**** (-31.25)	0.842**** (-15.95)	0.764**** (-21.65)
Asian Pacific	0.948**** (-3.53)	1.002 (0.14)	0.835**** (-11.03)
Subcontinent Asian	1.184**** (6.14)	1.075*** (2.76)	0.888**** (-4.32)
Native American	0.533**** (-12.85)	0.636**** (-9.80)	0.674**** (-8.58)
Other race	0.744**** (-4.18)	0.857** (-2.31)	0.792**** (-3.53)
Two or more races	0.541**** (-25.27)	0.700**** (-15.54)	0.690**** (-16.07)
Non-minority female	0.555**** (-75.82)	0.663**** (-53.21)	0.666**** (-52.38)
Year	1.013**** (5.55)	1.015**** (6.67)	1.007** (2.26)
Age		1.182**** (90.69)	1.130**** (58.28)
Age squared		0.998**** (-78.82)	0.999**** (-55.30)
Less than 9th grade		1.065* (1.68)	1.062 (1.62)
Grade 9		1.006 (0.14)	0.999 (-0.02)
Grade 10		0.911** (-2.18)	0.886*** (-2.87)
Grade 11		0.881**** (-3.10)	0.836**** (-4.41)
12th grade-no diploma		1.183**** (4.25)	1.144**** (3.45)
Regular high school diploma		1.300**** (8.25)	1.297**** (8.23)
GED or alt. credential		1.082** (2.21)	1.109*** (2.90)
Some college, less than 1 year		1.121**** (3.44)	1.156**** (4.37)
1 or more years college, no degree		1.135**** (3.94)	1.153**** (4.46)
Associate's degree		1.115**** (3.31)	1.083** (2.46)
Bachelor's degree		1.204**** (5.82)	1.105**** (3.16)
Master's degree		1.207**** (5.75)	1.076** (2.24)
Profess. degree beyond Bachelor's		3.073**** (31.97)	2.506**** (26.18)
Doctorate degree		1.871**** (16.99)	1.590**** (12.62)
Warehousing		0.630**** (-15.44)	0.647**** (-14.66)
Information		0.584**** (-29.43)	0.568**** (-31.01)
Finance & Insurance		0.898****	0.859****

Independent Variables	Specification		
	Model A	Model B	Model C
		(-6.58)	(-9.33)
Real Estate		1.304****	1.228****
		(17.36)	(13.45)
Educational Services		0.348****	0.367****
		(-65.85)	(-62.30)
Medical Services		0.684****	0.687****
		(-25.37)	(-25.11)
Social Assistance Services		0.612****	0.629****
		(-30.07)	(-28.54)
Arts & Entertainment		0.596****	0.606****
		(-37.57)	(-36.43)
Other Services		0.679****	0.690****
		(-31.12)	(-29.97)
Interest and dividend income (log)			0.998**
			(-2.16)
Home is owned free and clear			1.033****
			(3.91)
Property value			1.000****
			(48.29)
Married, spouse present			1.228****
			(26.21)
Number of children in family			0.994*
			(-1.90)
Number of workers in family			0.891****
			(-22.58)
Lived in same house 1 year ago			1.019*
			(1.92)
Foreign born			1.223****
			(11.53)
Years in U.S. if immigrant			1.005****
			(8.90)
Speaks English well or very well			1.096****
			(8.73)
Veteran			0.923****
			(-4.67)
Statewide general population			1.000**
			(2.11)
Statewide unemployment rate			1.011**
			(2.17)
Statewide government FTEs			1.000
			(1.61)
Statewide per capita income (log)			1.234****
			(8.54)
Constant	16656.773****	352.708****	81.565****
	(1080.67)	(114.11)	(16.23)
Adj. R-squared	0.025	0.135	0.133
Number of Obs.	265861	265861	261951

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.5F. Annual Business Owner Earnings Regressions, Commodities, Supplies & Equipment, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.378**** (-30.16)	0.505**** (-21.79)	0.576**** (-17.45)
Hispanic	0.686**** (-19.56)	0.811**** (-10.74)	0.704**** (-15.33)
Asian Pacific	0.846**** (-5.92)	0.973 (-0.97)	0.737**** (-9.62)
Subcontinent Asian	1.048 (1.02)	1.213**** (4.28)	0.889** (-2.42)
Native American	0.640**** (-7.51)	0.687**** (-6.56)	0.729**** (-5.57)
Other race	0.579**** (-3.90)	0.687*** (-2.80)	0.686*** (-2.82)
Two or more races	0.494**** (-15.85)	0.646**** (-10.17)	0.653**** (-9.95)
Non-minority female	0.475**** (-58.14)	0.542**** (-47.28)	0.548**** (-46.58)
Year	0.992** (-2.31)	1.000 (0.09)	0.991* (-1.90)
Age		1.157**** (46.76)	1.108**** (29.16)
Age squared		0.999**** (-39.30)	0.999**** (-26.41)
Less than 9th grade		1.202*** (3.07)	1.027 (0.44)
Grade 9		1.013 (0.17)	0.955 (-0.64)
Grade 10		0.797*** (-3.23)	0.790**** (-3.39)
Grade 11		0.805*** (-3.16)	0.820*** (-2.92)
12th grade-no diploma		0.945 (-0.85)	0.923 (-1.23)
Regular high school diploma		0.972 (-0.53)	0.977 (-0.43)
GED or alt. credential		0.834*** (-2.99)	0.864** (-2.43)
Some college, less than 1 year		0.863** (-2.61)	0.884** (-2.20)
1 or more years college, no degree		0.905* (-1.82)	0.904* (-1.86)
Associate's degree		0.870** (-2.51)	0.850*** (-2.96)
Bachelor's degree		0.996 (-0.07)	0.902* (-1.92)
Master's degree		0.885** (-2.14)	0.759**** (-4.84)
Profess. degree beyond Bachelor's		1.166** (2.04)	0.950 (-0.69)
Doctorate degree		1.026 (0.31)	0.835** (-2.21)
Extractive Industries		0.767**** (-6.37)	0.738**** (-7.38)
Utilities		0.356**** (-24.15)	0.363**** (-23.85)
Manufacturing-NAICS 31		0.496****	0.494****

Independent Variables	Specification		
	Model A	Model B	Model C
		(-26.44)	(-26.80)
Manufacturing-NAICS 32		0.442****	0.437****
		(-36.47)	(-37.32)
Manufacturing-NAICS 33		0.432****	0.426****
		(-48.81)	(-49.71)
Wholesale Trade		0.691****	0.663****
		(-19.32)	(-21.52)
Retail Trade-NAICS 44		0.565****	0.568****
		(-36.39)	(-35.89)
Retail Trade-NAICS 45		0.531****	0.542****
		(-37.99)	(-36.60)
Interest and dividend income (log)			1.006****
			(6.05)
Home is owned free and clear			1.042***
			(2.80)
Property value			1.000****
			(34.77)
Married, spouse present			1.313****
			(20.72)
Number of children in family			1.021****
			(4.25)
Number of workers in family			0.895****
			(-13.73)
Lived in same house 1 year ago			0.977
			(-1.27)
Foreign born			1.254****
			(6.65)
Years in U.S. if immigrant			1.003**
			(2.94)
Speaks English well or very well			1.187****
			(9.20)
Veteran			0.801****
			(-8.53)
Statewide general population			1.000****
			(4.14)
Statewide unemployment rate			0.992
			(-1.11)
Statewide government FTEs			1.000**
			(-2.06)
Statewide per capita income (log)			1.044
			(1.04)
Constant	17214.389****	762.907****	1132.893****
	(751.97)	(78.10)	(15.25)
Adj. R-squared	0.038	0.111	0.125
Number of Obs.	106733	106733	105924

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.6A. Annual Business Owner Earnings Regressions, FRA-specific, All Industries, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.569**** (-25.46)	0.566**** (-26.45)	0.641**** (-20.61)
Hispanic	0.836**** (-14.94)	0.922**** (-6.51)	0.867**** (-9.33)
Asian Pacific	0.890**** (-4.75)	0.800**** (-9.22)	0.685**** (-14.60)
Subcontinent Asian	0.997 (-0.08)	0.912** (-2.33)	0.766**** (-6.56)
Native American	0.662**** (-7.38)	0.720**** (-6.04)	0.785**** (-4.53)
Other race	0.853* (-1.65)	0.861 (-1.60)	0.850* (-1.76)
Two or more races	0.702**** (-10.51)	0.728**** (-9.73)	0.739**** (-9.35)
Non-minority female	0.754**** (-25.47)	0.645**** (-37.84)	0.659**** (-36.30)
Year	1.025**** (8.68)	1.026**** (9.15)	1.007* (1.88)
Age		1.127**** (43.64)	1.087**** (28.69)
Age squared		0.999**** (-37.71)	0.999**** (-26.38)
Less than 9th grade		1.186**** (4.04)	1.140**** (3.15)
Grade 9		1.053 (1.07)	1.069 (1.40)
Grade 10		0.946 (-1.15)	0.978 (-0.47)
Grade 11		0.996 (-0.08)	1.027 (0.57)
12th grade-no diploma		1.133*** (2.76)	1.124*** (2.61)
Regular high school diploma		1.164**** (4.07)	1.173**** (4.32)
GED or alt. credential		0.944 (-1.41)	0.996 (-0.10)
Some college, less than 1 year		1.062 (1.52)	1.067* (1.66)
1 or more years college, no degree		1.099** (2.48)	1.099** (2.50)
Associate's degree		1.041 (1.02)	1.020 (0.52)
Bachelor's degree		1.272**** (6.35)	1.156**** (3.85)
Master's degree		1.365**** (7.83)	1.172**** (4.03)
Profess. degree beyond Bachelor's		2.758**** (24.66)	2.273**** (20.08)
Doctorate degree		1.671**** (10.39)	1.406**** (6.97)
Construction		1.666**** (4.95)	1.681**** (5.12)
Manufacturing-NAICS 32		0.746** (-2.00)	0.718** (-2.29)
Manufacturing-NAICS 33		0.756***	0.758***

Independent Variables	Specification		
	Model A	Model B	Model C
		(-2.64)	(-2.66)
Wholesale Trade		1.106	1.065
		(0.93)	(0.59)
Transportation		1.339***	1.360***
		(2.74)	(2.93)
Finance & Insurance		2.060****	2.038****
		(6.70)	(6.71)
Real Estate		2.313****	2.164****
		(8.08)	(7.56)
Profess.,Tech. & Sci. Services		1.551****	1.506****
		(4.24)	(4.02)
Admin. & Supportive Services		1.283**	1.305**
		(2.22)	(2.41)
Interest and dividend income (log)			1.003****
			(3.90)
Home is owned free and clear			1.028**
			(2.56)
Property value			1.000****
			(43.31)
Married, spouse present			1.292****
			(25.82)
Number of children in family			1.046****
			(11.49)
Number of workers in family			0.916****
			(-14.00)
Lived in same house 1 year ago			1.052****
			(3.85)
Foreign born			1.181****
			(7.18)
Years in U.S. if immigrant			1.005****
			(5.78)
Speaks English well or very well			1.055****
			(3.95)
Veteran			0.873****
			(-7.81)
Statewide general population			1.000
			(1.12)
Statewide unemployment rate			0.994
			(-1.02)
Statewide government FTEs			1.000
			(0.87)
Statewide per capita income (log)			1.313****
			(9.01)
Constant	21579.145****	578.625****	54.519****
	(996.69)	(51.17)	(11.48)
Adj. R-squared	0.009	0.067	0.092
Number of Obs.	152300	152300	151800

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.6B. Annual Business Owner Earnings Regressions, FRA-specific, Construction, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.588**** (-18.82)	0.588**** (-18.96)	0.680**** (-13.80)
Hispanic	0.891**** (-9.26)	0.935**** (-4.94)	0.875**** (-7.23)
Asian Pacific	0.957 (-1.07)	0.909** (-2.37)	0.772**** (-6.15)
Subcontinent Asian	1.001 (0.01)	0.976 (-0.24)	0.829* (-1.91)
Native American	0.717**** (-5.78)	0.737**** (-5.35)	0.823**** (-3.49)
Other race	0.908 (-0.89)	0.917 (-0.81)	0.887 (-1.14)
Two or more races	0.694**** (-8.18)	0.726**** (-7.25)	0.740**** (-6.91)
Non-minority female	0.537**** (-26.96)	0.523**** (-28.15)	0.529**** (-28.10)
Year	1.030**** (8.60)	1.032**** (9.20)	1.006 (1.30)
Age		1.114**** (33.17)	1.079**** (22.19)
Age squared		0.999**** (-30.42)	0.999**** (-22.45)
Less than 9th grade		1.150**** (3.51)	1.111**** (2.68)
Grade 9		1.020 (0.44)	1.050 (1.10)
Grade 10		0.943 (-1.31)	0.984 (-0.35)
Grade 11		0.998 (-0.04)	1.037 (0.84)
12th grade-no diploma		1.108** (2.37)	1.095** (2.13)
Regular high school diploma		1.178**** (4.60)	1.175**** (4.59)
GED or alt. credential		0.947 (-1.39)	0.998 (-0.05)
Some college, less than 1 year		1.085** (2.11)	1.069* (1.74)
1 or more years college, no degree		1.150**** (3.78)	1.131**** (3.38)
Associate's degree		1.112*** (2.70)	1.064 (1.59)
Bachelor's degree		1.254**** (5.96)	1.129*** (3.23)
Master's degree		1.327**** (5.63)	1.135** (2.55)
Profess. degree beyond Bachelor's		1.309*** (2.99)	1.131 (1.39)
Doctorate degree		0.917 (-0.59)	0.850 (-1.12)
Interest and dividend income (log)			1.006**** (4.81)
Home is owned free and clear			1.025* (1.91)
Property value			1.000****

Independent Variables	Specification		
	Model A	Model B	Model C
			(25.51)
Married, spouse present			1.351****
			(25.42)
Number of children in family			1.043****
			(9.09)
Number of workers in family			0.926****
			(-10.47)
Lived in same house 1 year ago			1.095****
			(5.50)
Foreign born			1.185****
			(5.96)
Years in U.S. if immigrant			1.005****
			(4.85)
Speaks English well or very well			1.080****
			(4.86)
Veteran			0.897****
			(-5.27)
Statewide general population			1.000**
			(2.03)
Statewide unemployment rate			0.981**
			(-2.52)
Statewide government FTEs			1.000
			(-1.20)
Statewide per capita income (log)			1.469****
			(10.25)
Constant	20024.644****	1471.943****	39.309****
	(825.65)	(92.32)	(8.90)
Adj. R-squared	0.015	0.036	0.066
Number of Obs.	77652	77652	77343

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.6C. Annual Business Owner Earnings Regressions, FRA-specific, AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.417**** (-6.06)	0.464**** (-5.52)	0.516**** (-4.77)
Hispanic	0.895 (-1.28)	1.056 (0.64)	0.980 (-0.21)
Asian Pacific	0.894 (-0.99)	0.884 (-1.12)	0.751** (-2.38)
Subcontinent Asian	0.659** (-1.97)	0.654** (-2.07)	0.574*** (-2.60)
Native American	0.247*** (-3.10)	0.267*** (-3.03)	0.263*** (-3.10)
Other race	0.258** (-2.06)	0.223** (-2.35)	0.232** (-2.31)
Two or more races	0.692** (-2.16)	0.819 (-1.21)	0.852 (-0.98)
Non-minority female	0.531**** (-10.99)	0.561**** (-10.36)	0.543**** (-10.95)
Year	1.010 (0.63)	1.007 (0.48)	1.007 (0.35)
Age		1.223**** (12.78)	1.174**** (9.22)
Age squared		0.998**** (-10.63)	0.999**** (-8.02)
Less than 9th grade		0.832 (-0.24)	0.814 (-0.27)
Grade 9		0.508 (-0.80)	0.592 (-0.62)
Grade 10		0.639 (-0.59)	0.576 (-0.74)
Grade 11		0.519 (-0.88)	0.480 (-1.00)
12th grade-no diploma		1.485 (0.56)	1.331 (0.41)
Regular high school diploma		0.883 (-0.22)	0.883 (-0.22)
GED or alt. credential		0.786 (-0.40)	0.820 (-0.34)
Some college, less than 1 year		0.924 (-0.14)	0.911 (-0.16)
1 or more years college, no degree		0.856 (-0.28)	0.855 (-0.28)
Associate's degree		0.803 (-0.39)	0.792 (-0.42)
Bachelor's degree		1.026 (0.05)	0.915 (-0.16)
Master's degree		1.086 (0.15)	0.919 (-0.15)
Profess. degree beyond Bachelor's		1.404 (0.59)	1.120 (0.20)
Doctorate degree		1.433 (0.62)	1.122 (0.20)
Interest and dividend income (log)			1.002 (0.44)
Home is owned free and clear			0.973 (-0.42)
Property value			1.000****

Independent Variables	Specification		
	Model A	Model B	Model C
			(7.95)
Married, spouse present			1.296****
			(4.43)
Number of children in family			1.063***
			(2.68)
Number of workers in family			0.909**
			(-2.57)
Lived in same house 1 year ago			0.921
			(-1.12)
Foreign born			1.152
			(1.05)
Years in U.S. if immigrant			1.008
			(1.61)
Speaks English well or very well			1.141
			(1.52)
Veteran			0.693****
			(-4.07)
Statewide general population			1.000
			(-0.44)
Statewide unemployment rate			1.049
			(1.43)
Statewide government FTEs			1.000
			(0.71)
Statewide per capita income (log)			1.423**
			(2.12)
Constant	21157.065****	110.254****	4.060
	(186.03)	(7.19)	(0.73)
Adj. R-squared	0.023	0.092	0.110
Number of Obs.	6397	6397	6385

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.6D. Annual Business Owner Earnings Regressions, FRA-specific, Professional Services ex AECRS, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.522**** (-13.51)	0.588**** (-11.58)	0.653**** (-9.28)
Hispanic	0.644**** (-11.54)	0.811**** (-5.65)	0.813**** (-5.22)
Asian Pacific	0.691**** (-7.97)	0.754**** (-6.34)	0.678**** (-8.03)
Subcontinent Asian	0.841*** (-2.97)	0.930 (-1.29)	0.839*** (-2.87)
Native American	0.619*** (-2.78)	0.744* (-1.80)	0.808 (-1.31)
Other race	0.833 (-0.73)	0.873 (-0.57)	0.872 (-0.58)
Two or more races	0.597**** (-7.62)	0.764**** (-4.16)	0.768**** (-4.12)
Non-minority female	0.641**** (-20.86)	0.658**** (-20.56)	0.672**** (-19.51)
Year	0.997 (-0.51)	1.002 (0.35)	0.993 (-0.74)
Age		1.175**** (25.01)	1.135**** (17.71)
Age squared		0.999**** (-20.61)	0.999**** (-14.82)
Less than 9th grade		1.232 (0.80)	1.170 (0.61)
Grade 9		1.410 (1.23)	1.336 (1.05)
Grade 10		1.108 (0.37)	1.069 (0.24)
Grade 11		1.325 (1.07)	1.279 (0.95)
12th grade-no diploma		1.736** (2.28)	1.673** (2.15)
Regular high school diploma		1.529** (2.11)	1.474* (1.95)
GED or alt. credential		1.218 (0.92)	1.278 (1.15)
Some college, less than 1 year		1.164 (0.75)	1.169 (0.77)
1 or more years college, no degree		1.240 (1.08)	1.216 (0.99)
Associate's degree		1.123 (0.58)	1.088 (0.43)
Bachelor's degree		1.565** (2.26)	1.412* (1.76)
Master's degree		1.769*** (2.87)	1.537** (2.19)
Profess. degree beyond Bachelor's		3.430**** (6.21)	2.890**** (5.40)
Doctorate degree		2.050**** (3.56)	1.759**** (2.83)
Admin. & Supportive Services		0.835**** (-3.28)	0.879** (-2.36)
Interest and dividend income (log)			1.000 (-0.16)

Independent Variables	Specification		
	Model A	Model B	Model C
Home is owned free and clear			0.977 (-0.92)
Property value			1.000**** (22.99)
Married, spouse present			1.232**** (8.79)
Number of children in family			1.036**** (3.68)
Number of workers in family			0.899**** (-6.85)
Lived in same house 1 year ago			0.999 (-0.03)
Foreign born			1.117** (2.14)
Years in U.S. if immigrant			1.003 (1.45)
Speaks English well or very well			0.972 (-0.87)
Veteran			0.907** (-2.33)
Statewide general population			1.000 (0.48)
Statewide unemployment rate			1.008 (0.56)
Statewide government FTEs			1.000 (0.92)
Statewide per capita income (log)			1.182** (2.47)
Constant	28813.164**** (440.63)	227.564**** (22.33)	72.720**** (5.54)
Adj. R-squared	0.016	0.109	0.128
Number of Obs.	38496	38496	38384

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.6E. Annual Business Owner Earnings Regressions, FRA-specific, General Services, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.505**** (-13.30)	0.560**** (-11.46)	0.629**** (-9.13)
Hispanic	0.758**** (-7.54)	0.844**** (-4.59)	0.815**** (-4.84)
Asian Pacific	0.826**** (-3.67)	0.784**** (-4.74)	0.692**** (-6.34)
Subcontinent Asian	0.968 (-0.31)	0.976 (-0.24)	0.849 (-1.55)
Native American	0.508**** (-3.59)	0.553*** (-3.19)	0.578*** (-3.00)
Other race	0.616* (-1.88)	0.649* (-1.71)	0.682 (-1.53)
Two or more races	0.709**** (-4.15)	0.739**** (-3.70)	0.744**** (-3.67)
Non-minority female	0.775**** (-10.88)	0.716**** (-14.20)	0.738**** (-12.85)
Year	1.049**** (6.53)	1.050**** (6.70)	1.024** (2.34)
Age		1.130**** (15.72)	1.099**** (11.31)
Age squared		0.999**** (-14.10)	0.999**** (-10.95)
Less than 9th grade		1.212 (0.94)	1.240 (1.06)
Grade 9		1.272 (1.00)	1.244 (0.92)
Grade 10		1.199 (0.83)	1.223 (0.93)
Grade 11		1.116 (0.53)	1.159 (0.72)
12th grade-no diploma		1.553** (2.28)	1.546** (2.29)
Regular high school diploma		1.397** (2.10)	1.412** (2.19)
GED or alt. credential		1.127 (0.70)	1.169 (0.93)
Some college, less than 1 year		1.427** (2.21)	1.434** (2.27)
1 or more years college, no degree		1.407** (2.15)	1.396** (2.13)
Associate's degree		1.414** (2.16)	1.385** (2.06)
Bachelor's degree		1.771**** (3.62)	1.604**** (3.03)
Master's degree		1.455** (2.34)	1.273 (1.52)
Profess. degree beyond Bachelor's		1.977**** (3.92)	1.589*** (2.69)
Doctorate degree		1.532** (2.07)	1.361 (1.52)
Finance & Insurance		1.440**** (8.14)	1.410**** (7.73)
Real Estate		1.627**** (14.69)	1.503**** (12.32)
Interest and dividend income (log)			1.001

Independent Variables	Specification		
	Model A	Model B	Model C
			(0.77)
Home is owned free and clear			1.083**
			(2.67)
Property value			1.000****
			(18.55)
Married, spouse present			1.262****
			(8.68)
Number of children in family			1.003
			(0.25)
Number of workers in family			0.901****
			(-5.93)
Lived in same house 1 year ago			1.020
			(0.58)
Foreign born			1.077
			(1.21)
Years in U.S. if immigrant			1.003
			(1.62)
Speaks English well or very well			1.086**
			(2.10)
Veteran			0.887**
			(-2.40)
Statewide general population			1.000
			(-0.73)
Statewide unemployment rate			0.974
			(-1.58)
Statewide government FTEs			1.000*
			(1.89)
Statewide per capita income (log)			1.144*
			(1.65)
Constant	25337.729****	565.553****	249.159****
	(364.38)	(27.09)	(6.06)
Adj. R-squared	0.013	0.048	0.073
Number of Obs.	23497	23497	23460

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

Table 4.6F. Annual Business Owner Earnings Regressions, FRA-specific, Commodities, Supplies & Equipment, 2015-2019

Independent Variables	Specification		
	Model A	Model B	Model C
Black	0.332**** (-7.38)	0.374**** (-6.72)	0.407**** (-6.21)
Hispanic	0.928 (-0.83)	0.994 (-0.07)	0.845 (-1.59)
Asian Pacific	1.094 (0.67)	1.028 (0.21)	0.658** (-2.74)
Subcontinent Asian	1.010 (0.04)	1.019 (0.08)	0.614* (-1.95)
Native American	0.869 (-0.38)	0.872 (-0.38)	0.779 (-0.71)
Other race	2.494 (1.25)	2.497 (1.28)	1.708 (0.77)
Two or more races	0.641* (-1.88)	0.682* (-1.66)	0.648* (-1.92)
Non-minority female	0.555**** (-8.59)	0.553**** (-8.81)	0.578**** (-8.21)
Year	1.026 (1.62)	1.037** (2.33)	1.046** (2.19)
Age		1.107**** (6.56)	1.057**** (3.25)
Age squared		0.999**** (-4.82)	1.000** (-2.08)
Less than 9th grade		1.312 (0.77)	1.031 (0.09)
Grade 9		0.952 (-0.12)	0.871 (-0.34)
Grade 10		0.759 (-0.68)	0.695 (-0.91)
Grade 11		0.629 (-1.16)	0.559 (-1.49)
12th grade-no diploma		0.815 (-0.58)	0.713 (-0.98)
Regular high school diploma		0.935 (-0.21)	0.898 (-0.35)
GED or alt. credential		0.768 (-0.80)	0.770 (-0.80)
Some college, less than 1 year		0.814 (-0.64)	0.764 (-0.86)
1 or more years college, no degree		0.878 (-0.41)	0.821 (-0.64)
Associate's degree		0.687 (-1.19)	0.650 (-1.38)
Bachelor's degree		0.934 (-0.22)	0.747 (-0.95)
Master's degree		0.967 (-0.11)	0.669 (-1.28)
Profess. degree beyond Bachelor's		0.887 (-0.30)	0.593 (-1.34)
Doctorate degree		0.654 (-1.08)	0.489* (-1.84)
Manufacturing-NAICS 32		0.757* (-1.65)	0.707** (-2.11)
Manufacturing-NAICS 33		0.781** (-2.02)	0.761** (-2.29)

Independent Variables	Specification		
	Model A	Model B	Model C
Wholesale Trade		1.143 (1.07)	1.041 (0.33)
Interest and dividend income (log)			1.001 (0.29)
Home is owned free and clear			1.012 (0.17)
Property value			1.000**** (14.36)
Married, spouse present			1.257**** (3.89)
Number of children in family			1.041* (1.79)
Number of workers in family			0.892** (-3.21)
Lived in same house 1 year ago			0.893 (-1.39)
Foreign born			1.363** (2.00)
Years in U.S. if immigrant			1.002 (0.32)
Speaks English well or very well			1.064 (0.66)
Veteran			0.743** (-3.27)
Statewide general population			1.000 (-0.80)
Statewide unemployment rate			1.077** (2.16)
Statewide government FTEs			1.000 (1.18)
Statewide per capita income (log)			0.964 (-0.21)
Constant	11281.697**** (170.63)	791.272**** (13.99)	2243.508**** (3.98)
Adj. R-squared	0.019	0.063	0.105
Number of Obs.	6258	6258	6228

Source and Notes: See Table 4.5. * p<0.1, ** p<0.05, *** p<0.01, **** p<0.001.

JON WAINWRIGHT **MANAGING DIRECTOR (RETIRED)**

Dr. Jon Wainwright holds a Ph.D. in economics from the University of Texas at Austin. His primary areas of interest are labor economics and industrial organization. He is a specialist in analyzing the effects of discrimination on minorities, women, and persons over 40, and has testified in federal and state courts, state legislatures, and before the United States Congress on these issues. During his career at NERA, he directed and conducted economic and statistical studies of discrimination and affirmative action for attorneys, corporations, governments and non-profit organizations. He also directed and conducted research and provided clients with advice on statistical liability and economic damage matters arising from their hiring, performance assessment, compensation, promotion, termination, or contracting activities.

Dr. Wainwright joined NERA in 1995. He has extensive experience collecting, manipulating and analyzing large and complex statistical databases. He has worked extensively with socioeconomic and demographic data produced by the Census Bureau and other official statistical agencies, including the Public Use Microdata Files from the decennial census and the American Community Survey, the five-year Economic Censuses, and the Current Population Survey Merged Outgoing Rotation Group files.

Prior to joining NERA, Dr. Wainwright was an associate research professor at the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin and also headed his own economic consulting firm. In those capacities he conducted studies in labor economics and regulatory compliance for both public and private sector clients.

Education

University of Texas at Austin

Ph.D., economics

Colorado State University

B.S., economics

Professional Experience

Jon S. Wainwright, Ph.D., Economic Consultant

2019-present President

NERA Economic Consulting, Austin and Chicago

2019-2022 Managing Director (retired) and Affiliated Consultant

2011-2018 Managing Director

2004–2011 Vice President

2003–2004 Senior Consultant

1998–2003 Consultant

1995-1998 Special Consultant

Principal investigator on matters involving discrimination, economic damages, statistical liability, and class certification in employment discrimination, wrongful termination, contracting discrimination and related cases. Develops and analyzes complex databases of business, employee and other characteristics from hardcopy and computer files in order to model decision-making processes under challenge. Prepares expert reports and provides oral and written testimony on these matters.

Selected clients include ADP, City of Austin, BP Amoco, City of Baltimore, Brinks, Carrier Corp., Broward County (Fl.), Chicago Metra, City of Chicago, City of Cleveland, Commonwealth of Massachusetts, Computer Sciences Corporation, Cook County (Il.), Day Pitney LLP, Del Global Technologies, Dell Computer, City and County of Denver, Dillard's Department Stores, Equitable Insurance, Gingiss Formalwear, Hamilton Sundstrand, Hawai'i DOT, Hoffman-La Roche, Inc., Home Depot, City of Houston, Illinois Attorney General, Illinois DOT, IBM, City of Jacksonville, Landry's Restaurants, Los Angeles Metro, State of Maryland, Maryland Attorney General, Maryland DOT, State of New York, City of Memphis, Memphis International Airport, Merck, Microsoft, City of Minneapolis, State of Minnesota, Minnesota DOT, Missouri DOT, Motorola, Pennzoil, Pratt & Whitney, Prudential Insurance, Puget Sound Transit, Raytheon Corp., St. Louis Metro, Salt Lake City International Airport, City and County of San Francisco, SBC-Ameritech, Schlumberger, Sikorsky, Southeastern Pennsylvania Transportation Authority, Texas Utilities Electric Co., Transportation Research Board of the

National Academy of Sciences, Unisys, United States Department of Justice, United Technologies Corporation, Varian Associates, Visa, Washington DOT, Washington Metropolitan Area Transit Authority, Washington Suburban Sanitary Commission, Worldwide Wrestling Entertainment, Inc.

Wainwright & Co. Economic Consultants, Austin

1992–1998

President

Directed litigation projects on employment discrimination and minority and female business discrimination. Directed research on regulatory issues in the child care industry. Developed and analyzed complex databases concerning contracting, purchasing, and firm characteristics from hardcopy and computer files.

Selected clients in Texas included the Texas Attorney General, Department of Protective and Regulatory Services, University of Texas, Houston Metropolitan Transit Authority, Corpus Christi Regional Transportation Authority, and former U.S. Secretary of Labor F. Ray Marshall. Selected clients outside Texas included National Economic Research Associates, Inc., Los Angeles County Metropolitan Transit Authority, Metropolitan Dade County, Florida, Fulton County, Georgia, and State of Minnesota.

LBJ School of Public Affairs, University of Texas at Austin

1992–1998

Research Associate Professor

Directed research on contracting and employment activities in state and local government. Clients included the Texas Comptroller of Public Accounts, Texas State Legislature, Texas DOT, the Texas General Services Commission, City of Corpus Christi, and the Ford Foundation.

1990–1992

Social Science Research Associate

Staff economist for Professor Ray Marshall, Audre and Bernard Rapoport Centennial Professor of Economics and Public Affairs and former U.S. Secretary of Labor. Conducted economic and policy research on employment, contracting, education, trade, and other topics. Conducted supporting research for labor-management arbitrations in the pharmaceutical industry and the U.S. Postal Service.

Brimmer & Company, Inc., Washington, DC

1990–1993

Staff Economist

Served as staff economist for business disparity studies in Atlanta, Miami and St. Louis directed by former Federal Reserve Board Governor Andrew Brimmer. Developed and analyzed statistical evidence of minority and female business availability and disparity.

Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC

1989

Economic Analyst

Mass Layoff Statistics Program. Developed computer software to automate aspects of the program's data collection process.

Department of Economics, University of Texas at Austin
1988–1990 Assistant Instructor
Developed and taught undergraduate courses in macroeconomics and microeconomics.

Professional Activities

Past Member, American Economic Association

Past Associate Member, American Bar Association, Section of Labor and Employment Law

Past Associate Member, American Bar Association, Section of Public Contract Law

Speeches, Presentations, Reports, and Publications

Testimony Concerning the Discrimination Faced by Minority-Owned and Women-Owned Business Enterprises in the Transportation Sector, Before the Committee on Transportation and Infrastructure, United States House of Representatives, September 2020.

Report on the Applicability of the 2017 Maryland MBE Disparity Study to the Maryland Video Lottery Terminal Program, prepared for the State of Maryland, December 2019.

Estimation of Economic Losses for Jane Draycott, United States District Court for the Southern District of Texas, prepared for the U.S. Department of Justice, Damages Estimate for Plaintiff, December 2018.

Minority- and Women-Owned Business Disparities in and around the Washington Metropolitan Area Transit Authority's Service Area, prepared for the Washington Metropolitan Area Transit Authority, December 2018.

Report on the Economic Losses of Bobby L. Lindsay, United States District Court for the District of Maryland, prepared for the U.S. Department of Justice, Damages Estimate for Plaintiff, May 2018.

Disadvantaged Business Enterprise Disparity Study (in three volumes), prepared for the Maryland Department of Transportation, February 2018.

Report on the Applicability of the 2017 Maryland MBE Disparity Study to the Maryland Medical Cannabis Industry, prepared for the State of Maryland, January 2018.

Business Disparities in the DCAMM Construction and Design Market Area, prepared for the Commonwealth of Massachusetts Division of Capital Asset Management and Maintenance (DCAMM), December 2017.

Maryland Aviation Administration Concessions Activity: Report on Utilization and Availability Statistics, prepared for the Maryland Department of Transportation, July 2017.

Supplemental Estimation of Economic Losses for Ms. Amanda Dykes, United States District Court for the District of Wyoming, prepared for the U.S. Department of Justice, Damages Estimate for Plaintiff, July 2017.

Estimation of Economic Losses for Ms. Amanda Dykes, United States District Court for the District of Wyoming, prepared for the U.S. Department of Justice, Damages Estimate for Plaintiff, March 2017.

Business Disparities in the Maryland Market Area, prepared for the State of Maryland and the Maryland Department of Transportation, February 2017.

Business Disparities in the San Antonio, Texas Market Area, prepared for the City of San Antonio, Texas, October 2015.

Business Disparities in the Austin, Texas Market Area, prepared for the City of Austin, Texas, October 2015.

Business Disparities in the Travis County, Texas Market Area, prepared for Travis County, Texas, October 2015.

Business Disparities in the Austin Independent School District Market Area, prepared for the Austin Independent School District, October 2015.

MBE/WBE Disparity Study for the Baltimore City Public Schools, prepared for the Baltimore City Public Schools, November 2014.

Race and Ethnicity Data in the 2020 Census: Ensuring Useful Data for Civil Rights Purposes, Participant, Roundtable (invitation only) hosted by The Leadership Conference on Civil Rights for civil rights litigators, experts in civil rights law and demographic trends, and community leaders, to evaluate proposed changes to the collection of race and ethnicity data in the 2020 Census, Washington, DC, July 2014.

The State of Minority- and Women-Owned Business Enterprise: Evidence from the City of Baltimore, prepared for the City of Baltimore, March 2014.

Discrimination Against Businesses Owned by Middle Eastern Americans, prepared for the Maryland Department of Transportation and the Governor's Commission on Middle Eastern American Affairs, January 2014.

Maryland Minority Business Enterprise Personal Net Worth Evaluation, prepared for the Maryland Department of Transportation and the Maryland General Assembly, December 2013.

The State of Minority- and Women-Owned Business Enterprise: Evidence from Memphis, prepared for the Memphis-Shelby County Airport Authority, December 2013.

And We Are Not Saved: Empirical Evidence of Disparate Treatment Currently Impacting DBEs, prepared for the 42nd Annual National Meeting & Training Conference for the Conference of Minority Transportation Officials (COMTO), July 2013

Disadvantaged Business Enterprise Disparity Study, prepared for the Maryland Department of Transportation, July 2013.

The State of Minority- and Women-Owned Business Enterprise: Evidence from Cleveland, prepared for the City of Cleveland, December 2012.

And We Are Not Saved: Empirical Evidence of Disparate Treatment Impacting Minority- and Women-Owned Businesses, prepared for the American Contract Compliance Association (ACCA) 26th Annual National Training Institute, August 2012.

The State of Minority- and Women-Owned Business Enterprise: Evidence from Missouri, prepared for the Missouri Department of Transportation, June 2012.

The State of Minority- and Women-Owned Business Enterprise in Construction: Evidence from Houston, prepared for the City of Houston, April 2012.

Getting Your House in Order: Workforce Reviews and Statistical Audits, presentation to Vinson & Elkins LLP, Labor & Employment Practice, Houston, Texas, January 2012.

Testimony in Judicial, Legislative, and Regulatory Proceedings

United States House, Committee on Transportation and Infrastructure, Hearing on “Driving Equity: The U.S. Department of Transportation’s Disadvantaged Business Enterprise Program,” Washington, D.C [via online video conference]. On the subject of “Discrimination Faced by Minority-Owned and Women-Owned Business Enterprises in the Transportation Sector.” September 23, 2020.

United States District Court for the District of Wyoming in the matter of *United States v. Wyoming Military Department*, Case No. 16-cv-55-S for the plaintiff, concerning economic losses arising from allegations of hostile work environment, sexual harassment, and constructive discharge, July 2017.

Testimony by Deposition, Declaration, or Affidavit

Ultima Services Corporation v. U.S. Department of Agriculture, et al., United States District Court for the Eastern District of Tennessee), Case No. 2:20-CV-0041-DCLC-CRW, Report of Defendant’s Expert and Deposition Testimony, March 2022.

United States of America v. City of Houston, United States District Court for the District of Texas–Houston Division), Case No. 4:18-cv-00644, Report of Plaintiff’s Expert and Trial Testimony, July 2019.

United States of America v. Wyoming Military Department, United States District Court for the District of Wyoming, Case No. 16-CV-55-S, Report of Plaintiff's Expert and Trial Testimony, July 2017.

June 2022

Appendix B – Congressional Record of November 9, 2021, Hearing Witness Prepared Statements, and Transcript - Does Discrimination Exist in Federal Passenger Rail Contracting? Subcommittee on Railroads, Pipelines, and Hazardous Materials, Committee on Transportation and Infrastructure.

DOES DISCRIMINATION EXIST IN FEDERAL PASSENGER RAIL CONTRACTING?

(117-33)

REMOTE HEARING

BEFORE THE
SUBCOMMITTEE ON RAILROADS, PIPELINES,
AND HAZARDOUS MATERIALS
OF THE
COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES
ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

NOVEMBER 9, 2021

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Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, DC 20515

Peter A. DeFazio
Chairman

Katherine W. Dedrick, Staff Director

Sam Graves
Ranking Member

Paul J. Sass, Republican Staff Director

NOVEMBER 4, 2021

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Railroads, Pipelines, and Hazardous Materials
FROM: Staff, Subcommittee on Railroads, Pipelines, and Hazardous Materials
RE: Subcommittee Hearing on “Does Discrimination Exist in Federal Passenger Rail Contracting?”

PURPOSE

The Subcommittee on Railroads, Pipelines, and Hazardous Materials will meet on Tuesday, November 9, 2021, at 11:00 a.m. EDT in 2167 Rayburn House Office Building and via Zoom to hold a hearing titled “Does Discrimination Exist in Federal Passenger Rail Contracting?” The Subcommittee will hear testimony from witnesses from Janus Materials, G.W. Peoples Contracting Company, Envision Consultants, the PACO Group, Somat Engineering, and Dikita Engineering. The hearing will offer a chance to examine whether discrimination is present in federal passenger rail contracting.

BACKGROUND

The U.S. Department of Transportation (USDOT) Disadvantaged Business Enterprise (DBE) Program was established to address discrimination against minority and women-owned businesses.¹ The DBE program seeks to ensure those businesses are provided equal opportunities to compete for certain USDOT funded contracts administered by the Federal Highway Administration (FHWA), the Federal Aviation Administration (FAA), the Federal Transit Administration (FTA), and the National Highway Traffic Safety Administration (NHTSA).² Currently, no such program exists for funds administered by the Federal Railroad Administration (FRA).

First established by federal regulation in 1980 as a minority and women’s business enterprise program, the DBE program was later statutorily authorized for highway and transit transportation programs in 1983 by the Surface Transportation Assistance Act of 1982 (P.L. 97-424) to aid small businesses owned and operated by minorities facing historic and continuing discriminatory barriers to participation in the highways and transit programs.³

DBE programs for women-owned businesses and the FAA’s airport DBE program were primarily implemented by regulation until Congress enacted the Surface Transportation and Uniform Relocation Assistance Act of 1987 (P.L. 100-17) and the Airport and Airway Safety and Capacity Expansion Act of 1987 (P.L. 100-223). These laws expanded the statutory authorization for highway, transit, and airport construction DBE programs to include women-controlled small businesses and codified the airport DBE program, respectively. The Airport and Airway Safety and Capacity Expansion Act also established a separate Airport Concession Disadvantaged Business Enterprise (ACDBE) Program administered by the FAA for airport conces-

¹ USDOT Office of Civil Rights. *Disadvantaged Business Enterprise (DBE) Program*. U.S. Department of Transportation. Retrieved October 27, 2021, from <https://www.transportation.gov/civil-rights/disadvantaged-business-enterprise>

² 49 CFR 26.3.

³ USDOT Office of Civil Rights. *Disadvantaged Business Enterprise (DBE) Program*.

sions and related contracts.⁴ The highway and transit DBE program, the airport concession DBE program, and the airport construction DBE program are implemented pursuant to regulations established under 49 CFR part 26.

Congress has regularly reauthorized the DBE program for highways and transit in successive surface transportation reauthorization bills, most recently with the enactment of the Fixing America's Surface Transportation (FAST) Act (P.L. 114-94). H.R. 3684, the Infrastructure Investment and Jobs Act, reauthorized the surface DBE program.⁵

I. WHAT IS A DBE?

For highways and transit and airport construction DBE program eligibility purposes, a DBE is defined as a small, for-profit business where socially and economically disadvantaged individuals (1) own at least 51 percent of the economic interests of the entity, and (2) control and manage the business operations of the firm.⁶ A firm and its minority and/or women owners seeking certification as a DBE must meet: (1) an ownership and control test, (2) a personal net worth test, and (3) a size standard test, requirements for which are described in regulation.⁷

Under statute, "socially disadvantaged" refers to individuals or groups facing historic and ongoing discrimination, such as racial or ethnic prejudice or cultural bias due to membership in a particular group.⁸ Consistent with USDOT implementing regulations, minorities and women are presumed to be socially disadvantaged.⁹ Others may qualify as socially disadvantaged on a case-by-case basis.¹⁰

To be regarded as economically disadvantaged, an individual must, among other things, have a personal net worth that does not exceed \$1.32 million, excluding the equity in the individual's primary residence and the value of their ownership interest in the firm seeking certification.¹¹

To meet size standards for DBE eligibility and be regarded as a small business in the surface transportation sector, a business must meet the qualifications of a small business defined by the Small Business Administration (SBA) in accordance with the North American Industry Classification System (NAICS) codes relevant to the business and as defined by the annual gross receipts or employee number caps outlined for each industry code.¹² In addition, the small business must not have average annual gross receipts over the firm's previous three fiscal years in excess of \$23.98 million, regardless of the relevant NAICS code qualification.¹³

II. A DBE PROGRAM AT FRA

Currently, FRA does not have specific statutory authority to administer a DBE program, unlike most other USDOT agencies. To authorize an FRA-administered DBE program, Congress must determine that there is need for such policy. Section 11310 of the 2015 FAST Act required FRA to conduct a disparity and availability study which will inform Congress of this need.

This Subcommittee hearing will allow for Members to hear from six minority business leaders, each testifying to their personal experiences of discrimination on the basis of race or sex when working within the federally-funded passenger rail space.

WITNESS LIST

- Mr. Ken Canty, President and CEO, Janus Materials
- Mr. Melvin Clark, Chairman and CEO, G.W. Peoples Contracting Company
- Ms. Victoria Malaszecki, President and CEO, Envision Consultants
- Mr. Francisco Otero, President and CEO, PACO Group
- Mr. Gnanadesikan "Ram" Ramanujam, President and CEO, Somat Engineering
- Ms. Evalynn Williams, President, Dikita Engineering

⁴ Since the Airport and Airway Safety and Capacity Expansion Act P.L. 100-223 codified the airport construction DBE program and the ACBDE program, these programs do not require statutory reauthorization in the same manner as highway and transit DBE programs.

⁵ In this memo, "surface" refers to highways and transit.

⁶ 49 CFR 26.5.

⁷ 49 CFR 26; 49 CFR 23.

⁸ 13 CFR 124.103.

⁹ 49 CFR 26.67(a) and (b).

¹⁰ 49 CFR 26.67(d).

¹¹ 49 CFR 26.67(a).

¹² 49 CFR 26.65(a).

¹³ 49 CFR 26.65(b).

DOES DISCRIMINATION EXIST IN FEDERAL PASSENGER RAIL CONTRACTING?

TUESDAY, NOVEMBER 9, 2021

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON RAILROADS, PIPELINES, AND
HAZARDOUS MATERIALS,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to call, at 11 a.m., in room 2167 Rayburn House Office Building and via Zoom, Hon. Donald M. Payne, Jr. (Chair of the subcommittee) presiding.

Members present in person: Mr. Payne, Jr.

Members present remotely: Mr. Carson, Mr. García of Illinois, Ms. Strickland, Mrs. Napolitano, Mr. Johnson of Georgia, Mr. Auchincloss, Mr. Carter of Louisiana, Ms. Norton, Mr. Crawford, Mr. Weber of Texas, Mr. LaMalfa, Mr. Fitzpatrick, Mr. Johnson of South Dakota, and Mrs. Steel.

Mr. PAYNE. The subcommittee will come to order.

I ask unanimous consent that the chair be authorized to declare a recess at any time during today's hearing.

Without objection, so ordered.

I also ask unanimous consent that Members not on the subcommittee be permitted to sit with the subcommittee at today's hearing and ask questions.

Without objection, so ordered.

As a reminder, please keep your microphones muted unless speaking. Should I hear any inadvertent background noise, I will request that the Member please mute their microphone.

To insert a document into the record, please have your staff email it to DocumentsT&I@mail.house.gov.

Good morning.

When I had the honor of being selected by my colleagues to become the chairman of this subcommittee, one of my first priorities was seeing how I could bring equity to the rail sector.

Unfortunately, I have since learned that much work still needs to be done to ensure that everyone has a fair shot at obtaining work on Federal passenger rail contracts.

The first question I asked when I got the gavel was how we could strengthen the Disadvantaged Business Enterprise program at the Federal Railroad Administration. Imagine my surprise when I found out that there was no DBE program at the FRA.

To be clear, today's hearing is not to debate the merits of creating a program. The purpose of today's hearing is to allow business owners to share their experiences of working in the rail sector.

We are going to hear uncomfortable stories of very real discrimination that our witnesses have suffered. Today, our responsibility is to listen and reflect on each person's experience.

I would be remiss if I didn't share my own experience. The question is often asked: How do you know when you are being discriminated against?

I know. As a Black man, I know that feeling when people treat you differently because of the color of your skin. I know that when companies conspire against a supplier to shut out the only minority firm manufacturing a particular product, you are being discriminated against.

I was fortunate. Because of Government intervention, that particular discrimination was stopped, although others have not been so lucky.

The experiences we are going to hear today from our panel will be different than mine. The point of holding this hearing is to try to understand someone else's experience.

I do not know what it is like to experience discrimination as a member of a different minority group, or what discrimination women face in an industry dominated by men. That is why we have invited a diverse panel of witnesses to share their unique experiences.

I commend our witnesses for being courageous enough to share extremely personal and often painful experiences that should not happen in any setting, and least of all in professional settings.

It is not easy to come forward and describe when discrimination has happened to you, but it is a necessary story to tell. I encourage all Members to listen closely to these experiences.

Some Members may have gone through similar things and others may have not. We can't change what happened to our witnesses, but we have the privilege and the responsibility of being able to correct these injustices to ensure that future generations will be playing on a level field.

What I want to prevent are instances where business owners decide that it isn't even worth trying to bid for work because they know that they will be judged by what they look like rather than the quality of their work.

I commend the Biden administration for taking bold steps to ensuring diversity and inclusion. Secretary Buttigieg has committed to working with me and this committee to identify ways to create a fair shot to compete for Federal rail contracts.

Information gathered from today's hearing will help inform Congress whether actions must be taken to address discrimination in the transportation sector. It is my sincere hope that today, Members can put themselves in other people's shoes, if just for a moment, to understand the damage a well-entrenched system of discrimination can cause to business owners simply trying to provide for their families and succeed in the rail industry.

Some uncomfortable conversations need to be had to bring about a positive result. These conversations are not easy, but they are necessary.

I again thank the witnesses for being here, and I look forward to their testimony.

I now call on the ranking member of the subcommittee, Mr. Crawford, for an opening statement.

[Mr. Payne's prepared statement follows:]

Prepared Statement of Hon. Donald M. Payne, Jr., a Representative in Congress from the State of New Jersey, and Chair, Subcommittee on Railroads, Pipelines, and Hazardous Materials

Good morning. When I had the honor of being selected by my colleagues to become Chair of this subcommittee, one of my first priorities was seeing how I could help bring equity to the rail sector.

Unfortunately, I have since learned that much work still needs to be done to ensure that everyone has a fair shot at obtaining work on federal passenger rail contracts.

The first question I asked when I got this gavel was how we could strengthen the Disadvantaged Business Enterprise program at the Federal Railroad Administration. Imagine my surprise when I found out that there was no DBE program at the FRA.

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Some uncomfortable conversations need to be had to bring about a positive result. These conversations are not easy, but they are necessary.

I again thank the witnesses for being here and I look forward to their testimony.

Mr. CRAWFORD. Thank you, Chairman Payne, for holding the hearing.

Thank you to our witnesses for participating today.

Today's hearing will examine the need for a Disadvantaged Business Enterprise, or DBE, program, within the Department of Transportation for passenger rail contractors to ensure equal and fair access to Government grant money for rail infrastructure projects.

The DBE program currently applies to airport construction, airport concessions, and surface transportation construction programs, but does not to passenger rail work.

This committee has demonstrated a bipartisan commitment to DBE programs and to promoting fair and full access to transportation contracting opportunities.

While the Federal Railroad Administration doesn't currently have statutory authority to administer a DBE program for passenger rail, the FRA has demonstrated its support of the DBE program objectives.

The 2015 FAST Act directed the FRA to conduct a nationwide disparity and availability study on participation by minority-, women-, and veteran-owned small businesses in federally funded intercity passenger rail transportation projects. The study will inform Congress on whether legislation is needed to create a DBE program for passenger rail contracting.

I commend the chair for holding the hearing today. And I yield back the balance of my time.

[Mr. Crawford's prepared statement follows:]

Prepared Statement of Hon. Eric A. "Rick" Crawford, a Representative in Congress from the State of Arkansas, and Ranking Member, Subcommittee on Railroads, Pipelines, and Hazardous Materials

Thank you, Chair Payne, for holding this hearing, and thank you to our witnesses for participating.

Today's hearing will examine the need for a Disadvantaged Business Enterprise (DBE) Program within the Department of Transportation for passenger rail contractors to ensure equal and fair access to government grant money for rail infrastructure projects. The DBE program currently applies to airport construction, airport concessions, and surface transportation construction programs, but not to passenger rail work.

This Committee has demonstrated a bipartisan commitment to the DBE program and to promoting fair and full access to transportation contracting opportunities.

While the Federal Railroad Administration doesn't currently have statutory authority to administer a DBE program for passenger rail, the FRA has demonstrated its support of the DBE program objectives.

The 2015 Fixing America's Surface Transportation Act, or FAST Act, directed the FRA to conduct a nationwide disparity and availability study on participation by minority, women, and veteran-owned small businesses in federally-funded intercity passenger rail transportation projects. The study will inform Congress on whether legislation is needed to create a DBE program for passenger rail contracting.

I commend the Chair for holding this hearing today.

Mr. PAYNE. The gentleman yields back.

And so, we will now turn to our witnesses. And we will be hearing from testimony from witnesses followed by questions from Members. I would now like to welcome our witnesses.

Mr. Ken Canty, president and CEO of Janus Materials. Mr. Melvin Clark, chairman and CEO of G.W. Peoples Contracting Company. Ms. Victoria Malaszecki, president and CEO of Envision Consultants. Mr. Francisco Otero, president and CEO of the PACO Group. Mr. Gnanadesikan Ramanujam, president and CEO of Somat Engineering. And last but not least, Ms. Evalynn Williams, president of Dikita Enterprises.

Thank you for joining us today, and I look forward to your testimony.

Without objection, our witnesses' full statements will be included in the record.

Since your written testimony has been made a part of the record, the subcommittee requests that you limit your oral testimony to 5 minutes.

Mr. Canty, you may proceed.

TESTIMONY OF KENNETH B. CANTY, P.E., PRESIDENT AND CHIEF EXECUTIVE OFFICER, JANUS MATERIALS; MELVIN E. CLARK, JR., Esq., OWNER, CHAIRMAN, AND CHIEF EXECUTIVE OFFICER, G.W. PEOPLES CONTRACTING COMPANY, INC.; VICTORIA MALASZECKI, PRESIDENT AND CHIEF EXECUTIVE OFFICER, ENVISION CONSULTANTS, LTD.; FRANCISCO OTERO, FOUNDER, PRESIDENT, AND CHIEF EXECUTIVE OFFICER, PACO GROUP, INC.; GNANADESIKAN "RAM" RAMANUJAM, P.E., PRESIDENT AND CHIEF EXECUTIVE OFFICER, SOMAT ENGINEERING, INC.; AND EVALYNN A. "EVE" WILLIAMS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, DIKITA ENTERPRISES, INC.

Mr. CANTY. Good morning, Mr. Chairman and members of the subcommittee.

Whether it be the actions of Frederick Douglass in 1855, Rosa Parks a century later, or John Fitzgerald Johnson today, our country has a vigorous tradition of standing up to protest and advocate for marginalized peoples.

This morning we find ourselves at a comparative inflection point in the rail and infrastructure industry.

My name is Kenneth B. Canty. I am the president of Janus Materials. Janus, by using a process we have coined, "sustainable structural demolition and repurposing," deploys material from demolished bridges to combat climate change through net-zero carbon solutions.

I am also the president of AMC Civil Corporation and Freeland Construction. I have been involved in this business and field since 1995 when I was hired as an engineering intern from UMass Amherst by Parsons Brinckerhoff to work on the design of what became known as the Big Dig.

From a very young age, my life's dream was to work on bridges, as you can see behind me. This moved from being a dream to a reality due to the experience I had with my father, a World War II Pacific combat veteran, as he would take me with him as a 6-

year-old child on long drives from Boston to Baltimore to see his ailing mother. We would go over the George Washington Bridge down the New Jersey Turnpike to the Delaware Memorial Bridges.

It was these occurrences that inspired me to be a bridge engineer. I would beg my dad to take the routes that were out of the way, like the Bay Bridge in Annapolis, to check it off the list.

Through working on the Big Dig, I went down to Charleston to work on the Cooper River Bridges. And to make a long story short, I was able to use these experiences and qualifications to purchase my first business.

Using the SBA's 8(a) program, we grew the company from 4 people to over 50 in 4 years. We were working for the Departments of Defense, Agriculture, and Homeland Security, and the GSA, to name a few, for the express purpose of working with the railroad.

As the railroads have a very high barrier for entry, and rightfully so, due to the extremely dangerous work it is and the impact it has on the traveling public, we made sure we had enough past performance work and capital and qualified personnel to approach Amtrak.

We approached Amtrak in 2011, and after 3 years were awarded our first contract in 2014 to reconstruct railroad stations from Gainesville, Georgia; Prince, West Virginia; and throughout South Carolina and North Carolina. We also pursued work in North Dakota, Texas, Florida, and Washington, DC, as well as Connecticut.

I must point out to this committee my path was very different than others, as I was able to use an established program that provides a path for a protected class of citizens, the 8(a) program.

Furthermore, the work I was doing for Amtrak still existed in the framework of what we call "vertical work," which is a place many minority contractors can succeed.

However, my end goal remains "horizontal work," which is bridges and tunnels and larger assets of infrastructure that hardly any Black contractors get into.

I submit to this subcommittee that there is a concerted, coordinated effort of large prime contractors, and sometimes in conjunction with owners, to keep minority contractors, particularly Black contractors, out of the federally funded infrastructure industry, particularly rail.

While others testifying today have certainly documented these actions, I would like to focus on my unfortunate set of experiences in the heavy civil industry.

It is no coincidence there is a dearth of minority contractors who are in the rail industry. The majority of these minority contractors are usually taken out before they can even qualify for work for the railroads and usually under the auspices of the State DBE programs.

I fully realize and accept that prime contractors do not want this conversation to be had. I also understand that I am likely to suffer an extreme backlash from these prime contractors and maybe even owners for coming before this committee and subcommittee.

I accept this risk no matter what the cost. I stand before you knowing that this committee is the only body that can enact positive change for the minority business community and the United States as a whole. Too often these prime contractors are not pun-

ished for the behavior I will showcase below but are rewarded with hundreds of millions of dollars of more work.

My experiences range throughout South Carolina, but I am going to take my remaining time to talk to you about what happened in Florida.

We were contracted to demo a bridge in Florida by a firm many of you may be familiar with called Skanska. We started experiencing racial discrimination that went from simple acts of what might be called tomfoolery to erasing ignition codes off machines. That quickly accelerated to sinking of boats, sabotage of equipment, which we caught on video and has been submitted to this committee, and harassment by a tugboat that coincidentally was named after who was purported to be one of the high ranking members of the Ku Klux Klan and a Confederate war general, Albert Pike. We were demeaned on a regular basis, and I myself suffered this behavior.

Mr. Chairman, I am sure you are aware that Skanska—maybe inadvertently—is being rewarded for their behavior by receiving a contract from New Jersey Transit for \$1.5 billion for the construction of the North Portal Bridge. Why would anybody think that this behavior that they displayed would go away?

Finally, I would like to just take 30 seconds and tell you that the financial implications have been huge. In addition to myself, companies in Louisiana, such as TK Towing, Cashman Equipment in Massachusetts, International Power Products in Maine, companies in Florida, and Urban Advisors in North Carolina have suffered greatly through this.

I am in the midst of losing my house. I cannot provide care for my autistic children. And my wife has had to go back to work as opposed to raising the children. I have not been able to make a payroll. And I am afraid that with the infrastructure act that was just passed, I am not going to be able to participate at all, despite all of the great, hard-won experience I have.

Thank you for this opportunity, and I sincerely pray that it spurs action by this body. Thank you.

[Mr. Canty's prepared statement follows:]

**Prepared Statement of Kenneth B. Canty, P.E., President and Chief
Executive Officer, Janus Materials**

Good morning, Mr. Chairman and members of this subcommittee. My name is Kenneth B. Canty and I am President of JANUS MATERIALS. JANUS, by using a process we have coined “sustainable structural demolition and repurposing”, deploys material to combat climate change through net zero carbon solutions. I am also President of AMC CIVIL CORPORATION and FREELAND CONSTRUCTION. I have been involved with the Heavy Civil Infrastructure Field since 1995, when I was hired as an engineering intern by Parsons Brinckerhoff to work on design of what became the Central Artery / Third Harbor Tunnel Project, also known as the “Big Dig”. From a very young age, my life dream was to work on bridges. This moved from being a dream to a reality due to the experiences I had with my father, a World War 2 Veteran, as he would take me with him as a 6-year-old child on the long drives from Boston to Baltimore to see his then ailing mother. This trip would take us over the George Washington Bridge, and over the New Jersey Turnpike to the Delaware Memorial Bridges. It was these occurrences that inspired me to be a bridge engineer as I would beg my dad to take routes that were out of the way like the Bay Bridge in Annapolis, in order for me to check off my list long span bridges that I hadn't crossed yet.

I received a Civil Engineering Degree from the University of Massachusetts/Amerst in 1997 and was hired by a large General Contractor, Modern Continental Construction, in 1998 and continued to work on what would become the largest infrastructure project of the 20th century. From here I went on to Charleston, SC to assist in the construction of the United States' largest cable stayed bridge over the Cooper River in Charleston, SC, and then was hired on by the same team I worked for in Boston to dismantle the old existing truss bridges that crossed the same river.

I was able to use these unique sets of experiences and qualifications to purchase my first business, Freeland Construction. In short order, using the opening that the Small Business Administration's 8(a) Program provided, I was able to grow the company from 5 employees to over 50 employees in 4 years. We developed an acute vision and goal to utilize these Federal Contracts for facets of the Department of Defense, Agriculture, Homeland Security, and General Services Administration, to name a few, to gain experience so that we could qualify for work with the Railroads. As the railroads have very high barriers of entry, and rightfully so, due to the extremely dangerous work it is and the impact it has on the traveling public, we made sure we had more than enough past performance, working capital, and qualified personnel, to approach the National Railroad Passenger Corporation, also known as AMTRAK. We approached Amtrak in October of 2011 and were awarded our first contract in 2014 to reconstruct railroad stations in Gainesville, GA; Staunton, VA, Prince, WV; Camden, SC; and Charlotte, NC. Our success with Amtrak allowed us to travel the country pursuing work in North Dakota, Texas, Florida, Connecticut, and Washington, DC.

I must point out to the committee that my path was very different than others as I was able to use an established program that provides a path for a protected class of citizens. Furthermore, the work I was doing for Amtrak still existed in the framework of what we in the industry refer to as "vertical work", which is a place where many black contractors can succeed. However, my end goal remains "horizontal work" which consists of bridges, tunnels and other larger assets of infrastructure that hardly any black contractors can get into. These projects, while inherently more risky, provide much higher margins, less competition, and more market stability with Heavy Infrastructure being more adequately funded by Congress.

I submit to this subcommittee, that there is a concerted, coordinated effort by Large Prime Contractors, and sometimes in conjunction with Owners, to keep Minority Contractors, particularly Black Contractors, out of the Federally Funded infrastructure industry. While others testifying today have certainly documented these actions, I would like to focus on my unfortunate experiences as a Heavy Civil Contractor and examples of discrimination whose ultimate purpose is to keep us out of the infrastructure industry. It is no coincidence that there is a dearth of Minority Contractors who are players in the Rail Industry. The majority of these minority contractors are taken out before they can even qualify to work for the Railroads, and usually under the auspices of the USDOT DBE program that States and Commonwealths are responsible for overseeing and enacting. There are challenges with the current DBE program's implementation—and I will outline below my experience with a firm that touts its ability to include DBE's—but the barrier of entry without the DBE program is too great.

I fully realize, and accept, that certain Prime Contractors do not want this conversation to be had. I also understand that I am likely to suffer an extreme backlash from these Large Primes Contractors and maybe even Owners for coming before this Committee and Subcommittee. I accept this risk no matter what the cost. I stand before you knowing that this committee is the only body that can enact positive change for not only the Minority Business Community, but also for the United States as a whole. With the infrastructure issues in our country being past critical, it is going to take not just Large Businesses, but also small and minority businesses, to work together to enact these solutions that Congress and this Administration is funding through the historic Infrastructure Investment and Jobs Act Bill. The biggest issue from my viewpoint is not just passing the bill, but ensuring that there are enough companies to actually do the work. To this end, small and minority businesses are critical to achieve the needed work force.

Too often, not only are Prime Contractors not punished for the behavior I will showcase below, but they are rewarded with hundreds of Millions of dollars in more work with absolutely no regard for the Black Owned firms, and lives, that they have destroyed. I have experienced this behavior on no less than three separate contracts, ranging from working for the US Army Corps of Engineers Charleston District (Fort Jackson, SC), to PCL / South Carolina Department of Transportation (Pee Dee River Bridge, Georgetown, SC), to most recently Skanska USA and Florida Department of Transportation for the 3 Mile Bridge in Pensacola, Florida. Due to time constraints, I will present the treatment I had at the hands of Skanska, as I believe

they are one of the worst offenders in the business. Skanska is also one of the largest recipients of FRA funded work in the USA, and would correspondingly be one of the largest contractors to participate in a future Federal Railroad Disadvantaged Business Enterprise Program. In order to understand what very well would happen with this new potential program, one reasonably must look at past actions. Without accountability and corrective action, these bad actors will never change their behavior.

SKANSKA—3 MILE BRIDGE CONSTRUCTION DISCRIMINATORY ACTIONS AGAINST AMC
CIVIL, VENDORS AND SUPPLIERS

I am an African American and the principal owner and operator of AMC Corp, a small and disadvantaged business that employs predominantly minority employees conducting demolition on civil projects. My firm was subcontracted to Skanska USA Civil Southeast, Inc. on an FDOT-owned, FHWA-assisted project in Pensacola, Florida. Though I previously worked for other divisions of Skanska, this was my first subcontract with Skanska Southeast and in Florida. Beginning in early 2020, I began to suspect that I was being subjected to racial discrimination by Skanska. First, I was not provided with sufficient information to appropriately bid the work. As an African American engineer and owner of a business, I was ignored and disrespected by Skanska Management when I raised legitimate questions about site conditions affecting some of the work we were to perform and in meetings. Instead of addressing the concerns I raised, Skanska failed to timely submit the matter to FDOT and insisted that AMC expend far more time and financial resources than allocated in the contract for certain portions of work; refused to pay for the work completed; delayed, interfered with, refused to allow us to perform the more profitable work in our contract; and Skanska personnel vandalized AMC's equipment, rendering it inoperable, all of which destroyed AMC's planned cashflow under the contract. Skanska then claimed AMC was in default on the contract for the delays and financial condition that it had caused. I made a complaint of race discrimination to FDOT regarding this behavior by Skanska, but FDOT took no action to remedy Skanska's discrimination. After my complaint, Skanska refused to pursue AMC's claim regarding the site conditions and gave AMC a notice of default. The discrimination and retaliation by Skanska and FDOT culminated in and caused the termination of AMC's subcontract on or about April 27, 2020. Skanska requested FDOT's approval of the termination and FDOT failed to take any action to stop the termination.

I believe that my treatment on this project is the result of my race, black, and that my subsequent termination was due to both my race and in retaliation for having voiced complaints about Skanska. We were the only African American firm on site during the execution of our contract. As this is a federally-assisted project, these constitute violations by both Skanska and FDOT of Title VI of the Civil Rights Act of 1964.

Examples of Intimidation and Discrimination

- 1) After mobilization on November 19, 2019 our rented skid steer ignition code was erased out of the cab of the equipment. One of our tool boxes was locked without our knowledge and we had to drill the lock out of the toolbox. We originally thought these were pranks as we were the new guys on site.
- 2) Sinking of Crew Boat—We left site on 2/6/2020 due to bad weather. Our crew boat was brought in, and tied off per the report in Exhibit A. As there was forecasted to be bad weather that night, we secured the vessel properly. When we came in the next morning, we found our crew boat sunk. After further investigation it was discovered that an Underwater Mechanix vessel (contract divers to Skanska) had been tied to our boat in such a way that would cause our boat to sink. Please see Exhibit A for Photographs and Report.
- 3) Sabotage of our LaBounty UP-70 Muncher on March 17, 2020. Please see Exhibit B. We believe this was done in order to slow down our progress. As the video shows, the alleged suspect was already on the site and based on his familiarity of the site, appears to be a Skanska employee.
- 4) The Albert Pike Tugboat Interrupting our Work Flow—Please See Exhibit C. While we were working in the channel, every time a vessel would come by we would have to take our divers out of the water. There were more than a few instances that the Albert Pike would transit by with no cargo in tow, back and forth from one side of the bridge to another, so the only purpose of the move-

· Editor's note: Exhibits A–D referenced in Mr. Canty's prepared statement are retained in committee files.

ment appeared to be to interfere with our work and slow us down in completing the work. The name of this Tug Boat (named for a Confederate general reputed to be a high-ranking member of the Ku Klux Klan) was painted over after we left in order to hide its identity during the most recent racial civil unrest.

- 5) Animosity by senior Skanska Staff towards myself and other employees. Please See Exhibit D. Several times I was demeaned and treated with hostility that I felt was based on my race by Senior Skanska Staff. Numerous witnesses can attest to that behavior.
- 6) Retaliation due to Reporting the above Incidents to FDOT—After we experienced the allegations as described above, Skanska on or about March 30, 2020, took action to not use our participation for DBE Credit in order to justify terminating our contract. Please see correspondence between Skanska and FDOT. We have also included police reports from our Connex being broken into after we were terminated as well as all correspondence detailing why we believe that Skanska was operating in this way. See Exhibit D.

Mr. Chairman, I am sure you are aware that Skanska, while maybe inadvertently, is being rewarded for their behavior by receiving an award from New Jersey Transit, for 1.5 Billion Dollars for the construction of the North Portal Bridge. Why would anyone think that the behavior they have displayed on other work involving Disadvantaged Contractors would not rear its ugly head on this extremely important piece of infrastructure?

I also would finally like to point out that the cost of these discriminatory actions are not only harmful to my firm, they have also been devastating to Majority Owned Firms as well. These firms not only include TK Towing (Morgan City, LA), but Also Cashman Equipment (Braintree, MA), International Power Products (Acton, ME), Cowin Equipment (Pensacola, Florida), Urban Advisers (Charlotte, NC) and a host of other small businesses throughout the Mid Atlantic Region and Gulf Coast. Because of the discriminatory behavior that my firm experienced, these firms who worked for AMC Civil on this project suffered greatly as well.

Lastly, the financial toll to myself because of this behavior has been beyond devastating. I am fighting to not lose my residence, am struggling with providing care for my two children who are on the Autism Spectrum, and in the midst of a pandemic my wife has had to go back to work being a grocer versus raise our children in order to keep food on the table. I have lost the majority of my employees, and have not been able to make a payroll in sometime. Additionally, the ability to procure work with the passage of the infrastructure bill is greatly at risk because of not being able to be on a firm personal and professional financial footing.

Thank you.

Mr. PAYNE. Thank you, sir, for that compelling testimony.

Next, we will hear from Mr. Melvin Clark.

Mr. CLARK. Good morning. I am the chairman, CEO, and owner of G.W. Peoples Contracting Company. We are the only African-American-owned rail contractor in the United States, specializing in heavy rail construction, maintenance, repair, rehabilitation, and track demolition, and we work all over the country.

I want to thank the chairman, Mr. Payne, for having this hearing. I have been working and advocating for a minority business program at FRA for over 30 years. I have been in this industry close to 40 years.

So, following the passage of the Reagan administration's Surface Transportation Act, I started a company called Metroplex. Metroplex was the first minority-owned railroad contractor in the United States, and we grew to be a nationally known and respected leader in this field.

From the time that we started the company, I was a very strong minority business advocate. We did a number of things with SBA and DOT.

However, our most significant success was starting the mentor-protégé program at SBA. It was implemented during the Clinton

administration. And Metroplex mentored my current company now, G.W. Peoples.

I ended up selling Metroplex and coming back to G.W. Peoples in 2011, and we acquired full control there. It was a successful turnaround. We do over \$22 million in annual sales. We have been the rail contractor for the Chicago Transit Authority, for example. We did the rehabilitation of the Dan Ryan Red Line. That was a very large project, \$425 million to upgrade over 10 miles of the CTA system.

The transit people and companies there at that time did not want any kind of minority company to come in and get any of the work. However, we went through the chairman of CTA and others, who granted us this opportunity, and we completed that job with over 70 percent minorities and women. It was one of which everyone was so very proud of, and we had established a place in Chicago.

Despite the public support for our transit workforce, and the track work reflected the neighborhoods and the ridership of color, we were not successful in the heavy passenger rail market.

The private railroads usually reserve the high-profile, high-profit, and labor-intensive work for themselves.

For example, in Chicago, there was a project called the Englewood Flyover. It was a \$93 million system with bridges to carry the Rock Island rail line over the Norfolk Southern/Amtrak line, and it went through the heart of the South Side of Chicago.

When the local public found out the size of the project, \$93 million, when they found out also that the African-American firms only received \$112,000, we argued and advocated that they should have somebody of color there. We were more than qualified to do the work. But they said they had no obligation to meet any kind of minority participation goals, and they paid no more than lip service to minority businesses in the community.

It ended up really being a mess. One of the congressional supporters that we have now in Chicago, Bobby Rush, was able to help make a change there in their policies. However, there really is still nothing happening for us.

So, anyway, as I said, I have been a minority business advocate for the time period I have been in business. I have served on all of the national organizations with regard to trade organizations with regard to rail.

For example, at one of the organizations I was on the legislative committee, and one of the goals of the committee was to lobby to eliminate the DBE programs altogether at DOT and at the Defense Department.

Mr. PAYNE. Excuse me, Mr. Clark. Could you wrap up? Your time has expired. So just give us a quick summation.

Mr. CLARK. Well, I am going to give you a quick summation of what I was going to say.

There were two major high-speed rail projects that you may know about in Florida and in Las Vegas. Both were going to use G.W. Peoples to do the track work until they found out they did not have any kind of minority participation goals. Thus, and therefore, we were shut out of this. And I can't think of a better example

of discrimination and the need for a policy here for minority business than that.

[Mr. Clark's prepared statement follows:]

Prepared Statement of Melvin E. Clark, Jr., Esq., Owner, Chairman, and Chief Executive Officer, G.W. Peoples Contracting Company, Inc.

My name is Melvin E. Clark, Jr. I am the Owner, Chairman and Chief Executive Officer of G. W. Peoples Contracting Co., Inc. (GWP). We are the only national contracting company that specializes in heavy rail construction, maintenance, repair, rehabilitation, and track demolition. I am also a long-time, active member of COMTO, the Conference of Minority Transportation Officials; however, the views I express in this testimony are my own and should not be construed as representing any official position of COMTO.

I want to thank Chairman Donald Payne, Jr. Chair of the Transportation and Infrastructure Subcommittee on Railroads, Pipelines and Hazardous Materials, Ranking Member Rick Crawford, and the other Members of the Subcommittee for the opportunity to discuss key concerns and experiences of minority-owned—and more specifically, Black-owned—businesses seeking to opportunities funded by programs funneled through the Federal Railroad Administration. I believe this to be a historic event and that it sets significant precedent since this is the first hearing of its kind dedicated to identifying the pervasive racial discrimination in FRA-funded infrastructure contracting and minority business participation.

Before I begin, I do want to recognize the efforts of Deputy Administrator Amit Bose who, since his appointment, has been very aggressive in facilitating meetings between the private sector and quasi-public railroad trade associations and representatives of minority businesses groups. I understand these have been productive and hopefully will lead to further conversations and teaming opportunities. Also, the FRA has successfully negotiated state agency agreements that provide opportunities for small and minority businesses. However, I understand that, unfortunately, those agreements are facing backlash from groups who oppose the negotiated goals, most notably in California.

As you may know, I have been in the heavy rail industry for going on forty years. I first began my legal career with a prominent Pittsburgh law firm, as a corporate and labor attorney, prior to joining the Tax Division of the U.S. Department of Justice. Following the passage of the Reagan Administration's Surface Transportation Act, in 1983, with my father's support, I founded Metroplex Corporation, the nation's first minority-owned railroad construction company which I grew into a nationally-known and widely-respected leader in its field. The company won multi-million dollar contracts for prestigious transit projects across the country, including the Alameda LRT Corridor in Los Angeles (\$65 million), the Bay Area Rapid Transit Project in San Francisco (\$35 million) and the New Jersey Transit Project in Camden (\$50 million). During this time, Metroplex signed the first SBA-sanctioned mentor-protégé agreement with the fledging company, G. W. Peoples Contracting.

In 2011, I was able to acquire full control of G. W. Peoples. GWP can now boast a successful turnaround, producing over \$22 million in annual sales. GWP was the DBE rail contractor for the Chicago Transit Authority's (CTA) rehabilitation of the Dan Ryan Red Line, a \$425 million project to upgrade 10.2 miles of the CTA system where GWP was able to ensure that over *70% of its workforce on the project was minority (men and women)*. (We hire from the chronically unemployed: people who look like us.) GWP also built the Atlanta Downtown Streetcar Line and the downtown rail line through the Central Business District of Dallas. Importantly, I must point out that these were all Federal Transit Administration (FTA) funded projects.

Therefore, I do want to begin by being perfectly and adamantly clear about my position: the Federal Railroad Administration, the only major USDOT agency exempted, must implement a program to set goals for participation of disadvantaged business enterprises, i.e., a robust, efficient, and effective DBE program.

Again, while we do appreciate that the FRA is facilitating face-to-face discussions in order to give the pseudo-private railroads and large contractors a chance to engage with DBE and MBEs, I understand that the agenda for the majority-owned firms is to try to avoid goals on contracts or projects funded through FRA. However, good faith and cordial chats have not been enough in the past and they will no longer fly for companies like mine and individuals like myself who have faced—and faced down—overt racial discrimination throughout my railroad career. To put it bluntly, if they don't have to, they won't.

The role of the Federal Railroad Administration is to focus is on *maintaining current rail services and infrastructure (maintenance and repair), strategically expanding, and improving the rail network (new construction and upgrades)* to accommodate growing travel and freight demand and providing leadership in national and regional system planning and development (*transit-oriented development and workforce skills training*).

I believe it is important to define what I mean when I refer to FRA funded projects. I have learned that the Federal Railroad Administration itself has been working aggressively to be inclusive of small, minority and women owned business within its own agency, including through Buy America rules, administrative and general management consulting, supplies and services, and information technology equipment, services, and software.

But the FRA's authority and responsibility, as noted above in the above paragraph, go beyond its own agency to the entire nation and all public funds dispersed through its budget. The agency needs to be cognizant of the systemic discriminatory practices and the racial and cultural implications attached to these funds.

I am referring to high-profile, labor-intensive projects, including building and construction. According to a 2016 report published by the Minority Business Development Agency (MBDA), a federal agency established during the Nixon Administration and requiring annual reauthorization, minority business owners have historically been systemically excluded from securing often lucrative federal contracts for *infrastructure work* (emphasis added), such as building bridges and highways. I would add railroads to that list, and I must point out that it's particularly telling that, having reviewed the MBDA website and its publications, rail infrastructure is so glaringly absent from MBDA studies on minority business.

I believe the reason may be that it has been an extraordinarily unwelcome space for minority-owned businesses and that racial inequities were so institutionalized that even the only federal agency whose mission is solely dedicated to the growth and competitiveness of minority business enterprises, seemed resigned to the inherent procurement disparities in the railroad construction industry.

However, we believe that the FRA procurement minority disparity study, mandated by the FAST Act and currently close to conclusion, will result in the predictable conclusion: to reiterate, *racial discrimination is real and minority business owners have historically and systematically been excluded from securing lucrative federal contracts for rail infrastructure work*.

I have spent decades meeting with and proselytizing to half a dozen Administrations, continually making the argument that USDOT needed to address the contracting playing field at FRA, skewed towards large and majority-owned firms, by implementing DBE goals for FRA funds. Although many beneficiaries of FRA's programs will argue that they are private entities and that DBE goals should not apply, we believe this to be disingenuous rationalization. Federal rail grants, guaranteed credit and loan programs, highway-rail crossing safety projects, mean that hundreds of millions of dollars are funneled into state and local rail agency coffers. FRA does not pull this money out of the air: these funds come from minority taxpayers and fees from minority transportation users. In fact, according to data from the National Minority Suppliers Development Council (NMSDC), minority-owned businesses contribute close to \$49 billion in local, state, and federal tax revenues. It is only fair that recipients of those tax dollars should be accountable to the minority business community.

GWP has been—literally and figuratively—both breaking ground and laying the groundwork for future minority entrepreneurs to pursue transportation construction as a start-up option. But the opportunities have not been built and they have not come.

I point out again that GWP continues to be the only Black company in this particular construction niche, and we have found the position a hard row to hoe. It is an absurd set of circumstances considering the fact that the DBE program is nearly 40 years old, established during the Reagan Administration by the Surface Transportation Act of 1983, for transit and highways. Despite the revolutionary shifts in social, cultural, racial, and ethnic demographics in the U.S. between now and the last millennium, minority business has made so little progress making inroads into the railroad contracting arena. This is in the face of the impressive strides made in DBE participation percentages in the transit and highway sectors—both of which have implemented robust DBE programs. I believe this can only be attributed to the racial bias in infused in the procurement processes.

As I stated, I have been in the rail construction industry for four decades. Over that period. I have been an active member in the National Railroad Construction and Maintenance Association, Inc. (NRC) and the Association of General Contractors (AGC), the latter of which we were members of the Diversity and Inclusion

Task Force. We have attended networking events for the Railway Engineering–Maintenance Suppliers Association, Inc. (REMSA), the American Short Line and Regional Railroad Association (ASLRRRA) and the National Railroad Passenger Corporation (AMTRAK). We have been part of many conversations with the Association of American Railroads (AAR); yet the only diversity in their vocabulary on the AAR website relates to diversification of services in the context of profit.

Most railroad and contracting trade organizations basically exist to protect the interests of majority-owned firms. Each has stated for the public record that they strongly oppose goals for FRA funds. This is particularly ironic since they all insist that they do not receive any public funds. If that were truly the case and they do not receive FRA money, why would it impact them if there was an FRA DBE program? At most, they should be indifferent.

At one of the organizations, I served on its legislative committee. One of the goals of that committee was to lobby for eliminating the DBE program altogether at USDOT. Thankfully, I was present during a strategy meeting, and I was aggressive enough to successfully thwart an overt effort to try to terminate the program. However, the organization’s official position continues to be opposition to—if not termination of—minority business participation goals.

Forty years of effort and struggle against the monolithic, i.e., large, powerful, and intractable “private” railroads, for barely a mere sliver of the massive contracting pie: this has been my experience.

According to sources, Chicago is North America’s largest rail hub, and remains unsurpassed in the total number of passenger and freight trains that converge on any city on the continent. Chicago is also a major hub for Amtrak, with dozens of different lines terminating at the city’s Union Station. The city has the second largest Black population in the country. One would think this location would be ripe for heavy rail construction opportunities. Indeed, GWP established an office in the city, and achieved significant success working with the Chicago Transit Authority (CTA), the city’s light rail system, where we received kudos for our work and our employment recruitment efforts. However, the heavy rail passenger side offered a completely different scenario.

While I credit the Chicago Region Environmental and Transportation Efficiency (CREATE) agency and its member heavy railroads who have worked hard and been successful in meeting and exceeding its D/MBE goals in Chicago, there have been few to no opportunities in passenger railroad track construction.

Despite public support for GWP in Chicago where our transit workforce on track-work reflected the neighborhoods and the ridership of color, GWP has not been successful in the heavy passenger rail market. The private railroads reserve the high-profile, higher-profit and labor-intensive work for themselves. While I do not intend to disparage micro-businesses, trucking firms, materials suppliers, IT services, consulting or even Caucasian-women owned (WBE) businesses, meeting goals in this manner may not produce the job creation nor the necessary fuel for economic growth for underserved communities intended by the program’s crafters.

To be more specific, in Chicago, a project called the Englewood Flyover, a \$93 million system of bridges to carry the METRA Rock Island rail line over the Norfolk Southern/Amtrak line, went through the heart of the South Side of Chicago. Local protests over the clear racial discrimination were held when the public learned that African-American-owned firms received \$112,000 while white-owned firms received \$90.5 million, the difference made up of Hispanic and Asian-owned firms. Ultimately, I understand the amount awarded to minority firms was \$4 million, including Black, Hispanic, and Asian, a mere pittance; however, none went to minority track construction contractors. That \$93 million was FRA funds, and although GWP worked hard to get CREATE, Norfolk Southern and Amtrak to see the racial inequity in this scenario, since NS and Amtrak had no obligation to meet a minority-participation goal, they paid little more than lip-service to minority businesses and to the minority community. This is not just bad business practices; it translates into outright racially discriminatory practices.

Some, but not all, “private” rail construction contracts are bid publicly and over the years, we have worked to stay on top of the pipeline of projects: we have tried to follow the money and to stay ahead of the game on rail construction jobs. As is typical in the industry, we have attended pre-bids and site visits in advance of submitting proposals. However, we found ourselves in that very unwelcoming space: once GWP identified itself as a DBE/MBE, we were advised in no uncertain terms to leave and that if we ever mentioned the phrase (DBE/MBE) again, our representatives would be escorted out.

As GWP became known in the industry and our national reputation grew, we were viewed as competitors, not partners, and shunned for this reason, which simply added insult to injury. GWP was left off solicitation lists even when we were

registered, pre-qualified vendors. On the few occasions when we have been able to submit a bid, the only feedback we receive is who the successful bidder is. We are unable to find out where we placed in the bid results in order to conduct post-mortem benchmarking. We would learn later, usually through our Caucasian employees with long careers in the industry and access to this information through the "old boys" network, what the true bid results were. Put simply, lowest bidder, best value and diversity/inclusion components are not always priority factors in making awards.

Again, mind you, this was in the heavy rail sector. Although we managed to perform small, heavy rail industrial jobs because of contacts our employees had nurtured throughout their careers, GWP found success and truly established its reputation in the transit, light-rail industry (FTA) where opportunities (DBE goals) were made available and where we could compete more equitably on the playing field.

As background, GWP was founded and incorporated in Western Pennsylvania and owned for forty years by individuals of Caucasian descent. It had established a strong reputation in that region until its owner passed away. At that point, GWP came under African-American ownership, continuing the firm's mission as a track construction contractor, and became an 8(a) and certified DBE two years later. The industry is a small community and Mr. George Peoples and later Dr. John Verna, the two previous owners, were readily recognized and warmly welcomed by their peers. However, that all reversed after the change in ownership. When GWP's Black owner began showing up at pre-bid meetings and site visits, the entire dynamics in the meeting room changed to palpable tension and it was as if a heavy curtain had fallen: GWP was blacked-out and blacklisted, so to speak. Indeed, it almost WAS "curtains" for GWP until we became certified 8(a) when we were able to find work as a prime contractor, including on federally-funded Defense Department and Corps of Engineers projects, set aside for 8(a) firms. Although majority firms continued to respond to the term "minority-owned" as though there was a bad smell, they held their noses and did attempt to team with us on these lucrative jobs: finally, they needed us. That program leveled the playing field, at least during our nine-year tenure as an 8(a).

Over the past decade, there have been several high-speed passenger rail projects in the works, including Brightline (Miami to Orlando, FL), and Brightline West (formerly known as Xpress West, Las Vegas to Victorville, CA). At one point, the two projects were candidates for federal rail grants and loans, and USDOT, as a condition of those funds, insisted on DBE/MBE participation. In fact, the owner of Xpress West approached me to assist in developing a minority-business program. GWP was actively courted as a subcontractor on both these multi-billion dollar projects. That was until a change in Administrations led to a removal of that condition. Once the owners of these project learned that goals would no longer be applied, i.e., once those goals went away, GWP was sent away. We had devoted an extraordinary amount of time and effort into putting our proposals together, but afterward, we were simply and unceremoniously ghosted: no one responded to our proposals, and no one returned our calls.

In closing, I do want to again say, unequivocally, *minority business owners have historically and systematically been discriminated against by being excluded from opportunities to secure lucrative federal contracts for rail infrastructure work*. I know you have heard this before, but a DBE program in the Federal Railroad Administration would mean millions of dollars for the minority business community and thousands of jobs for the minority community.

As Congress grows close to passing a comprehensive infrastructure bill, we have the opportunity at this point in history to right an egregious long-term wrong. We look forward to the Subcommittee and the FRA doing the right thing.

As Chairman/CEO of G. W. Peoples, I thank you for your hard work on this important issue. I appreciate your time and attention, and for providing me and other minority business owners the opportunity to share our experiences of discrimination in federal passenger rail contracting. I will make myself available for any follow up questions or additional information, as requested.

Mr. PAYNE. Thank you.

Now we will move on to Ms. Malaszecki.

Ms. MALASZECKI. Good morning, Mr. Chairman and members of the subcommittee. My name is Victoria Malaszecki, and I am the president and CEO of Envision Consultants.

My company is certified as a small woman-owned disadvantaged business enterprise in my home State of New Jersey and nine

other States. We are headquartered in Mullica Hill, New Jersey, and have an office in Philadelphia, Pennsylvania. We are now approaching 27 years in business, with 47 employees, and anticipate closing the year at \$7.3 million in revenue.

We work in the architectural, engineering, and construction industry, providing program and construction management services. Our market sectors include aviation, bridges, general buildings, educational K through 12, higher education, highway, transit, water/wastewater, and technology.

I realize that I have become desensitized to the systemic discrimination that happens daily to me based on my gender. I thought that because I have worked hard, started from nothing, raised a family, and am running a successful business, that I am respected and equal to a man.

But I am not. Every day I must prove myself to owners, clients, and most disheartening, a few employees who have come and gone.

I was almost put out of business by a large prime and moved the operations into my home to meet payroll and cut costs. To this day, I don't know how I survived that year, but I did. I could have thrown in the towel were it not for my family supporting me.

I would not be here today if it were not for statutory requirements for women-owned businesses. Business is business, and the certifications do not guarantee work, but they level the playing field, allowing me to be in the game.

The discrimination that continues daily is so subtle that it is overlooked. The anger, hostility, and hate from men when confronted by me is, I believe, grounded in disrespect. Yet, this behavior is not all men.

What is concerning to me today is recognizing this hostility and disrespect to women on my management team and the young women entering the workforce. I must incorporate annual training in this area of discrimination that is not sexual. I would never have thought in 2021 that this is what is needed for workplace culture.

The industry continues to be male dominated at all levels. I must be well versed in all aspects of business operations when many of the men I am working with only need to be knowledgeable in one aspect.

A few of the daily experiences I encounter after all of these years are: What is your education? What is your background? What can you do for me? You are not allowed to speak to any division of the agency or owner. You are not allowed to attend the preproposal meetings.

Ninety-nine percent of the time I do not receive a copy of the submitted proposal. I hear that, "We negotiated your rates and fee. We request you to start work without an executed contract." And too many times the dollar values assigned to my firm in winning a proposal never result in any revenue.

In conclusion, my story reflected in the written testimony identifies that discrimination against women exists in this industry, and that there is a need for establishing goals in Federal passenger rail contracting.

Envision has only pursued two procurements in Federal passenger rail in 27 years of doing business. If this arena opens to include small woman- and minority-owned businesses, like other

agencies of the Government, such as the Federal Transit Administration and the Federal Highway Administration, I would pursue additional contracts.

If there is no incentive to utilize firms like mine, they will not be utilized. The large private national and global firms will continue to strengthen and dominate this market via mergers and acquisitions, performing 100 percent of the work on their own.

With only a few large players winning and performing the work, more and more conflicts of interest will arise. This is an opportunity only if the agency is ready to procure with a small woman- or minority-owned firm.

Thank you.

[Ms. Malaszecki's prepared statement follows:]

Prepared Statement of Victoria Malaszecki, President and Chief Executive Officer, Envision Consultants, Ltd.

My name is Victoria Malaszecki, and I am the President & CEO of Envision Consultants, Ltd. My company is certified as a small woman-owned disadvantaged business enterprise (DBE) in my home state of New Jersey and nine other states. We are headquartered in Mullica Hill, New Jersey and have an office in Philadelphia, Pennsylvania. On December 4, 1994, Envision was incorporated and is now approaching 27 years in business with forty-seven employees and anticipate closing the year at \$7.3 M in revenue. We work in the Architectural, Engineering and Construction (AEC) Industry providing Program and Construction Management services specializing in Project Controls, Public Outreach and Technology Services. Our market sectors include Aviation, Bridges, General Buildings, Educational K-12, Higher Education, Highway, Rail, Transit, Water/Wastewater and Technology. I am honored to be here today to share my story as it relates to "Identifying Discrimination in Federal Passenger Rail Contracting".

As a young girl my mother told me I could be anything I wanted to be when I grew up. She was my world, my best friend, my mentor, my inspiration. My world was rocked when she died—I was 15 years old. The youngest of five children and the mistake coming 10 years later after the youngest of their four children. My father did not understand me, I always asked too many questions. I was always debating both him and my brother. During high school there was no girls' soccer team and my father would not allow me to play on the boys' team. He turned to alcohol after she died and did not know what to do with a teenage girl. He told me not to go to college as "You will just grow up and get married and have children like your sister." My father died one week after my high school graduation. At his funeral friends and family told me his was proud of me going to college. I was the first one in my family to attend college and obtain degree(s).

In preparing for today I realized that I have become desensitized to the systemic discrimination that happens daily to me based on my gender. I thought that because I have worked hard, started from nothing, raised a family and am running a successful business that I am respected. That was the message to young girls in the 1980's: you can have it all—marriage, motherhood and a career. But I am wrong. It is 2021 and I thought I was respected and equal to a man, but the cold hard reality is that I am not. I have to prove myself everyday to owners, clients and most disheartening a few employees who have come and gone. "Disadvantaged" is not the best term since I put myself through college, with no healthcare, no parents, \$25,000 dollars to my name and a mortgage to pay on my parents' home after they died. I made it. Not really. I am constantly proving myself. So many times, when in a conversation with a few people and introductions are made I am asked what my background is, my education but a man is not.

Additionally, I have come a long way from the beginning to the firm's present success. Almost put out of business by a large prime (outstanding invoices for over one year) and moved the operations in my home to meet payroll and cut costs. To this day I don't know how I survived that year, but I did. I could have thrown in the towel were it not for my family supporting me.

Similarly, there is the analogy in the medical profession that the doctor needs to role play and be the patient for empathy and understanding. I would suggest that the same role playing should be incorporated into the orientation for all employees

in the AEC industry. Empathy and understanding at all levels that the women and minority firms being utilized on projects are real and are responsible for the livelihoods of their employees (payroll, medical benefits, PTO). "Just because you have to use them" doesn't mean that the business is not as real as yours.

For instance, a project manager for a Prime (firm who has the contractual relationship with the owner) should understand that the invoice sitting in his bin should be processed efficiently, the accounting department should understand why they are calling for payment. Since I am not allowed to call the Owner (at times that language is written in the contract) we are making collection calls to the Prime. Recently, I contacted the Owner since my CFO, also a woman, was getting nowhere with the collection calls. I was sent a high priority email from the male VP citing the contract terms. In a follow up conversation with the male VP, I highlighted that there was no such clause in his contract and that I simply inquired if payment was made since we were out 8 months. In the end and two months after my inquiry both firms were in fact paid for the outstanding invoices. This email was sent to my team and his team putting my firm in its place. You see I am not supposed to be a Prime. I am to stay in my lane as a subcontractor. As he was about to renew his contract for the fourth and final year, I suggested that the remaining budget in my contract be utilized for his other subcontractor and Envision will no longer be his subcontractor.

Most importantly, I have encountered countless lessons and obstacles that required me to have the patience, strength, and persistence to learn and grow. I would not be here today if it was not for the statutory requirements for woman owned businesses. Business is business and the certifications do not guarantee work, but they level the playing field allowing me to be in the game. Unfortunately, my 27 years of experience in the rail business has taught me that I am not welcomed or respected without proving myself in each and every opportunity.

Before I get into my examples, I would like to share with you the typical experiences I have experienced as a woman business owner. The discrimination that continues daily is systemic, ingrained and so subtle that it is overlooked. The anger, hostility and hate from men when confronted by me is, I believe, grounded in disrespect. Open hostility to me privately and in front of other women but not in front of other men. What is most concerning to me today is recognizing this hostility and disrespect to women on my management team. As I continue to grow, I am blending the skill sets amongst generations but have noticed that I must incorporate annual training in this area of discrimination that is not sexual. I never would have thought that this is what is needed for workplace culture and necessary for young women just entering the workforce.

Specifically, a man will question me on a decision but will not question another man even if it is the same decision. The AEC industry continues to be male dominated at all levels. I am constantly having to prove myself in all aspects of business operations, when many of the men I'm working with only need to be knowledgeable in one aspect. If I question a man or challenge a man, I've been told I'm confrontational, I don't know what I'm talking about, or flat out I'm wrong. When in fact most of the time I'm right and it is very hard for a man to come back and admit that he was incorrect, and I was right. Why are we on the battlefield? Why are we competing based on gender?

Yet this behavior is not all men. I have a male mentor who is a business owner, who shares his experiences and insights and we attempt to have lunch on an annual basis. At a Women in Transportation Seminar (WTS) event we were casually speaking about a situation I encountered and his response to me was "Vicki, you are teaching me things now that I have never encountered. I'm learning from you."

To illustrate the issue that women and minority firms experience with procurement is due to the privity of the prime contract, are not allowed to have access to procurement, accounting, engineering, or any division of the owner. There is the exception of the EEO office. This leaves us powerless and without intelligence of the solicitation on the street to streamline our teaming efforts. If there is a conflict or inequity, then we can file a complaint. If I ever filed a complaint, I would never get work again.

When I team on pursuits there is a conversation, an agreement on scope of services, a cost proposal and company information. 99% of the time I never receive a copy of the team proposal for our records. There is a general lack of communication to inform us of a win or loss. Many times, it is an afterthought on the Prime's part and we are asked to start work without an executed contract. I don't allow working without a contract or notice to proceed anymore. Too many times the dollar values assigned to my firm in a winning proposal never result in any revenue to my firm.

In 2006 I sat down with a Project Manager (PM) for a large new contract. We discussed staffing and between the time of bidding and winning, one of my employ-

ees was reassigned. He thought I was doing a 'bait and switch' which I was not. He told me what the rate should be, said find someone, and stated, "A mom could do it." Being a 'Mom', I did not sign the contract since if this man showed this level of disrespect to the female president of the company, how would he treat a female employee of mine working side by side in a trailer on a construction project site. When I reached out to another large firm who also was a subcontractor on this same contract, and spoke to that firm's vice president, his response was, "Calm down Norma Rae." In the end, this contract came up unexpectedly prior to COVID and after delays in any signed contract or Notice to Proceed, I rechecked the contract and it included an old overhead (OH) rate. The current PM is a woman and the contract manager wondered why I never had a subcontract—then I remembered the above. Prior to signing I explained to her that since I do not have a contract, I should not be held to an OH in 2006 when times and the firm were different. She in turn then submitted the latest OH for themselves and all subconsultants and we proceeded to meet our deliverables. I do not believe I would have had a similar experience if the PM had been a male.

I'm asked, 'What can you do for me?' If I cannot meet with the owners, agency representatives and I cannot speak with them what can I do for them. In the beginning, I could not even get owner references. As I grew in experience, I have asked, and we have a few now. The only way I have been able to strengthen my network has been by leading a variety of professional organizations. This has provided the opportunity to meet and get to know clients who would never get to know me because of my subcontractor status. This adds a burden to DBE's trying to establish themselves and growing their portfolio of services.

Sometimes, my company will pass on pursuing certain contracts. If I say 'pass' on a pursuit, the response comes back 'why?' Why do I need to explain my decision? This is not a question asked of male-owned firms.

I have many specific examples of discrimination that I've faced over my career that I can recall in detail.

I hired a senior manager from a firm who at the time was our biggest client. I was told to go meet with the President of the firm, a male, and make amends so that our firms can continue to work together. I knew within two months that this new hire was not going to last as he did not want to take direction from me, undermined my decisions, and created a toxic work environment. Why do I need to make amends when someone joins my firm, when the firm will hire an employee from another competitor and then the two will joint venture contracts together? Why the double standard?

Another time, I spoke with a male Prime contractor regarding a contract for my firm. He said to me, "During the negotiations, we negotiated your employees' rate with the Agency PM." I responded that I did not negotiate this rate nor am I going to take a 15 dollar an hour hit on his direct rate. The PM went to my lead (male) and discussed with him the situation to see if he could get around this. My employee sent him back to me.

In September 2014, I was awarded a Prime contract with the FTA as the managing partner of a JV. I teamed with another woman owned firm. Shortly after award the owner of the other firm wanted out of the contract. The FTA Contracting Officer, a woman, walked me through what I needed to do to dissolve the agreement. The FTA had the confidence in awarding the contract solely to Envision. I am extremely grateful to the FTA in having the confidence for us to be a Prime, it has been a large learning curve but I and my team now understand all aspects of being a Federal Contractor and were successful in receiving our second Prime Award with the FTA in 2019.

During the last quarter of 2012, a solicitation DTRT5714D30008 was placed on the street, and I teamed with three large Prime Contractors to bid on the work. Two of the three firms I had worked with in the past, one I had never worked with before. Two firms were successful and awarded the contract. The third firm, the one I had never worked with before never informed me of their success or failure in securing a contract. I spent time (and therefore money) with the firm upfront to put together components of their bid proposal and then never heard from them again despite numerous attempts to contact the firm.

On another occasion, a Prime firm was awarded a contract to do program management oversight. The cost proposal submission included information that Envision would participate in up to \$1,043, 964 of contract work (Indefinite Delivery Indefinite Quantity). A letter from the agency to the Prime stated "In accordance with FAR Clause 52.244-2, entitled "Subcontracts" (OCT 2010), consent cannot be granted for any of your proposed subcontractors." The Prime responded, "In the case of Envision and any other subcontractors listed in this proposal, these firms have been subcontractors to [us] on other federal contracts. Typically, [we] have worked with

all the firms on a cost-reimbursement, time-and-materials, or labor-hour type basis.” I never received a subcontract to execute.

At another time, a Prime firm was also awarded a contract to do Program Management Oversight. Project amount to Envision \$507,475 (IDIQ contract) from cost proposal submission. The Prime received the same letter as stated above. I received an executed contract and one task for \$6,873.00; however never received notice to proceed to perform work and never billed. I remember this solicitation well and even contacted agency procurement for guidance to no avail. I provided the necessary supporting documentation in both cases. Federal Acquisition Regulations and federal government and agency-specific contract clauses were being thrown around and I was unable to get clarity. Since the Primes are engineers, not auditors, they also did not understand what the Agency was requesting, and expected me to simply know the answer. The Agency procurement made this complicated, cumbersome, time consuming and intimidating without understanding the rationale. When reaching out for help why is a man in procurement not asked to provide an explanation? I was not a new business; I was mature and experienced with an audited overhead statement.

To further exemplify the treatment I’ve been faced with, in 2012, I teamed with a joint venture pursuit with two male-owned firms and completed all the necessary proposal documents, including a cost proposal for public outreach services. Envision’s portion of the cost proposal was \$1,164,240. At the time of contract review for execution, I was informed that Envision would only be performing services for one location as the contract was across multiple states, including New Jersey. Envision was not assigned New Jersey but Philadelphia as the joint venture spread the work to local firms. The JV did not share their plan to spread out the work with multiple additional vendors with me at the time of the proposal. We only received three task orders for a total of \$99,072.18 over two years, and I was left out of the rest of the process.

2012 was the first solicitation we teamed on for the FRA and to date I have not been invited to join subsequent teams for solicitations from this agency for the same scope of work since that time.

If there is no incentive to utilize firms like mine, they will not be utilized. The large firms will pursue on their own and keep the work to themselves. As a business owner I made the decision not to search or pursue teaming opportunities in this arena after my experiences in 2012–2014. If the arena opens to include and incorporate small woman and minority owned businesses like other agencies of government, such as the Federal Transit Administration and the Federal Highways Administration, I would pursue additional contracts.

As Envision continues to grow, we will need to take on more Prime Contracts. If one agency of the government has confidence in my firm to be a Prime, then we should be able to compete for Prime Contracts with another agency. This would open another door to compete nationally for challenging projects that will have a social and economic impact.

I was told years ago by a male agency procurement official “You are not allowed to attend the pre-proposal meeting, only the Primes can attend.” On the other hand, FTA reaches out to and includes DBEs intentionally for pre-proposal conferences, so DBEs can learn firsthand FTA’s expectations and large firms can make contacts with potential sub-DBE’s or joint venture opportunities.

I do not have the luxury of staff positions solely for business development as a large firm does. Large firms have professionals who are employed full time with access to procurement staff and face to face meetings. In all my years of being in business, I have had five face to face meetings with an agency representative, none of which were with procurement. Why? Agencies will not meet with the small businesses. I refer to the importance of these meetings as ‘intelligence’. The large firm has the resources to mine the solicitation, meet and greet the agency, and establish a team. Firms like mine do not have this access unless they hire these types of professionals whose salaries can be higher than the owner, risking the woman and DBE certification.

In conclusion, my story told above identifies that discrimination against women exists in this industry and that there is a need for establishing small woman and minority goals in Federal Passenger Rail Contracting. Unless there are goals established during procurement small woman and minority firms will not be utilized. Envision has pursued only two procurements outlined above in Federal Passenger Rail Contracting in 27 years of doing business. The large private national and global firms will continue to strengthen and dominate this market via mergers and acquisitions. Thus, performing practically 100% of the work to maintain their business interests respectively. The small woman and minority owned businesses still struggle to exist. With only a few large players winning and performing the work, more

and more conflicts of interest will arise. This is an opportunity for small woman and minority owned firms to pursue, partner and team in other capacities with large firms only if the agency is ready to procure with a small woman or minority owned firm.

Mr. PAYNE. Thank you very much.

Now we will hear from Mr. Francisco Otero.

Mr. OTERO. Good morning to the committee. My name is Francisco Otero. I am the founder, president, and CEO of the PACO Group.

PACO is a minority-owned and certified disadvantaged business enterprise that provides program and construction management consulting services. I started my company in 1989. Our headquarters are in New York City, and we maintain a regional office in Miami, Florida.

My company specializes in providing project controls and related services nationally to Federal, State, local, and municipal government agencies that are involved in the design and construction of infrastructure and transportation projects.

My company functions typically as an extension of an agency's staff, helping to protect their interests during the planning, design, bid/award, and construction phases of a project. Our services are intended to provide independent oversight support to the agency by monitoring and tracking the project's cost, schedule, and quality performance.

My personal business experience is that it is almost impossible to compete with majority firms on federally funded projects due to their size, resources, and financial capabilities. I can honestly and emphatically attest to the fact that had it not been for the FTA's federally mandated DBE program, my company probably would not have been able to get started, much less survive for over 31 years.

If you require proof, just look at the private sector of the construction industry where no DBE goals exist, and you will find barely any meaningful minority firm's participation.

The DBE program provided my company the opportunity to subcontract with majority firms on federally funded FTA construction projects and has been the lifeline for contracting opportunities.

As a matter of fact, the FTA's DBE program has enabled my company to participate on numerous high-profile mega projects, including Puerto Rico's Tren Urbano, New Jersey Transit's Hudson-Bergen Light Rail System, New Jersey Transit's Southern New Jersey Light Rail System, New York's East Side Access program, New York's Second Avenue Subway, and many, many other projects.

One would think that the impressive resume of successful projects that my company has compiled over the years would be an adequate testimonial demonstrating the depth of our experience, capabilities, and qualifications.

Unfortunately, that has not been the case. DBEs are relegated to seeking subcontracting opportunities with majority firms, and our teaming success, to a large part, depends on the majority firm's willingness and corporate culture towards diversity and inclusion.

For the record, I do not expect any contract opportunity to be handed to me, and I don't feel any sense of entitlement. I freely

and willingly embrace competing for work. I just expect the competition to be fair and that it provide a level playing field.

I must admit that I do have a serious problem with and find completely unacceptable the way I am treated disrespectfully, rudely, and dismissively by many majority firms.

I have on several occasions had a majority firm come right out and tell me they wish the DBE program would go away so that they would not have to bother teaming with firms like myself, that they would prefer being able to subcontract with whoever they want and not be forced to subcontract with DBE firms.

They have gone so far as to say that DBEs are lazy, that the quality of their work is inferior, et cetera, et cetera, et cetera, all very stereotypical attitudes.

Due to time, I will only mention one example, but in my written testimony there are many other examples of the type of discrimination that we face.

So, in conclusion, recognizing that the small business sector is the economic engine driving the Nation's economy, it is important that DBEs can competitively participate on FRA federally funded railroad projects. The roles and opportunities that the FRA projects can provide will vary from track construction, to engineering, to design, to procurement of supplies, all that are intended to strengthen our rail systems nationally. This would mean millions of dollars for minority businesses and thousands of jobs within the minority community.

PACO is ready, willing, and able to participate in FRA projects once the DBE program is implemented. I strongly encourage the congressional subcommittee to establish an FRA DBE program so that minority-owned businesses, such as myself, will have the opportunity to participate on these Federal projects as well.

I thank you.

[Mr. Otero's prepared statement follows:]

Prepared Statement of Francisco Otero, Founder, President, and Chief Executive Officer, PACO Group, Inc.

My name is Francisco Otero, I am the founder, President & CEO of the PACO Group, Inc. (PACO). PACO is a minority owned and certified Disadvantaged Business Enterprise (DBE) that provides Program & Construction Management consulting services. I started my company in 1989 and our headquarters is located in New York City and we also maintain a regional office in Miami, Florida. My company specializes in providing Project Controls and related services nationally to Federal, State, local and municipal government agencies involved in the design and construction of infrastructure and transportation projects and programs. My company functions typically as an extension of the agencies' staff, helping to protect their interest during the planning, design, bid/award and construction phases of a project. Our services are intended to provide independent oversight support to the Agency by monitoring and tracking the project's costs, schedule, and quality performance. The specific services we offer include: Construction Schedule Management, Independent Cost Estimating, Project Cost Control, Document/Records Management, Claims Management, Risk Assessment, Value Engineering, Asset Management, Operational Analysis, Office Engineering, and Construction Inspection services.

I serve on several civic and industry boards and have received many awards during my career. For over 20 years I have been an active member and have also served on the Board of the American Public Transportation Association (APTA), an international trade organization whose mission is to advocate, strengthen and improve public transportation. I also served a six-year term on the Board of Directors of the National Transit Cooperative Research Board. Additionally, I have a leader-

ship role in numerous minority industry organizations including the Conference of Minority Transportation Officials (COMTO) and Latinos In Transit (LIT), where I advocate for leveling the playing field by providing meaningful procurement opportunities that enable capacity building for minority businesses. I am a Fellow at Rutgers University and Pontifical Javeriana University (Colombia, S.A.) where I am an invited guest lecturer teaching Configuration Management to the graduate and undergrad engineering students. I possess a Bachelor of Science degree, have written various "white papers" and made numerous presentations on Configuration Management.

I was born and raised in Spanish Harlem (aka El Barrio) which is in the upper east side of Manhattan in New York City. My parents were first generation immigrants from Puerto Rico. This was a predominantly Puerto Rican neighborhood and even though we were very poor my parents were always able to provide for us. My first experience with discrimination was when I started my career working at a Fortune 500 company. I observed after a while that all the supervisors, managers, and executives were white and mostly men. I did not at the time think anything of it until I had been working there long enough to inquire about promotional opportunities. I truly felt that I had paid my dues and I was qualified and merited a promotion based on my work performance. However, no promotional opportunity was ever afforded to me. I was shocked by this experience and learned a hard lesson about this so-called "glass ceiling" since I had grown up believing that one is judged by their abilities and not the color of one's skin. After working there for several years, I decided to leave and take a chance to be in control of my own destiny. I started my company with the hope of finding a niche in the highly competitive construction industry. However, I soon learned that as a minority owned business, I would continue to confront challenges and discrimination. This experience had a profound influence and committed me to wanting to build a diverse and inclusive organization. This philosophy is a principal part of my company's core values and is consistently practiced in our recruitment and talent acquisition policy. In fact, we currently employ 50 full-time employees and 80% of our company's leadership team and approximately 65% of the overall staff is comprised of minorities and women.

My personal business experience is that it is almost impossible to compete with majority prime firms on federally funded projects due to their size, resources and financial capabilities. I can honestly and emphatically attest to the fact that had it not been for the FTA federally mandated DBE program, my company probably would not have been able to get started, much less survive, for the past 31 plus years. If you require proof, just look at the private sector of the construction industry where no DBE goals exist and you will barely find any meaningful minority firms participation. The DBE program provided my company the opportunity to subcontract with majority firms on federally funded FTA construction projects and has been the lifeline for contracting opportunities. As a matter of fact, the FTA DBE program has enabled my company to participate on numerous high profile mega projects including: Puerto Rico's Tren Urbano Heavy Rail System; New Jersey Transit's Hudson/Bergen Light Rail System; New Jersey Transit's Southern NJ Light Rail System; New York City/Long Island Railroad's Eastside Access Program; New York City Transit's Second Avenue Subway System; New Jersey Transit's Sandy Recovery Program; New York City's Transit Sandy Recovery Program; Port Authority of NY&NJ's Sandy Recovery Program; Washington Metropolitan Area Transit Authority's Dulles Extension.

One would think that the impressive resume of successful projects that my company has compiled over the years would be adequate testimonial demonstrating the depth of our experience, capabilities and qualifications. Unfortunately, that has not been the case! DBE firms are relegated to seeking subcontracting with majority firms and our teaming success, in large part, depends on the majority firm's willingness and corporate culture toward diversity and inclusion. For the record, I do not expect any contract opportunity to be handed to me nor do I feel any sense of entitlement. I freely and willingly embrace competing for work, I just expect the competition to be fair and that it provides a level playing field. I must admit that I do have a serious problem with and find completely unacceptable when I am treated disrespectfully, rudely and dismissively by majority firms. I have on several occasions had a majority firm come right out and tell me that they wish the DBE program would go away so that they would not have to bother teaming with minority firms. That they would prefer being able to subcontract with whoever they want and not be forced to subcontract with a DBE firm. They have gone so far as to state that all DBEs are lazy, that the quality of our work is inferior, etc. All very stereotypical attitudes and beliefs held by some, not all, majority firms and their employees.

Another example of discrimination practice that I have personally experienced is at the Agencies' pre-bid conference. The pre-bid meeting is arranged by the Agency and is intended to provide an overview of the project and answer questions that prospective bidders may have regarding the Request for Proposal (RFP). These pre-bid meetings also serve as a networking opportunity for DBEs to meet with majority prime firms for potential teaming. The Agency also addresses the DBE goal requirements for the project. I have occasionally witnessed the majority firms strongly opposing and questioning the Agency's representative as to the need for DBE goals. The tone of their remarks are very racially charged and quite clearly expressing their disapproval of the DBE program and goals. I have heard them state "we can't guarantee the quality or schedule of the project if you force us to subcontract 25-35% to DBEs". They start making all kinds of excuses why the Agency should lower the DBE goal or eliminate it. So imagine approaching these majority firms to discuss subcontracting on this project after just witnessing their openly bigoted beliefs towards DBEs. Unfortunately, these procurements wind up being a "shotgun marriage" and I have found these teaming arrangements rarely turn out well for the DBE. The majority firm will do anything to make the relationship miserable to force the DBE to want to cancel their subcontract relationship. A common practice by some majority firms is holding back payments to DBEs to the point that we are in a serious cash flow situation. The majority firm will claim that they have not yet been paid by the client when in fact they have. They also refuse to adhere to the contract's terms and conditions regarding prompt payment. If the DBE complains to the Agency, this causes an even greater conflict in the relationship.

In my opinion ideally, the DBE program should not only provide subcontracting opportunities but should also foster capacity building for DBE firms by providing meaningful participation. Obviously for this to work it requires a true partnership between the majority prime firm and the DBE that includes a mentoring-type relationship. The goal being that over time the DBE will build the capacity and be able to grow sufficiently to eventually prime opportunities or become an attractive joint venture teaming partner to majority firms. Hopefully some day, majority firms will come to the conclusion that embracing diversity and inclusion benefits us all.

In conclusion, recognizing that the small business sector is the economic engine driving the nation's economy, it is important that DBEs can competitively participate on FRA federally funded railroad projects. The roles and opportunities that the FRA projects can provide will vary from track construction, to engineering/design, to procurement of supplies that are intended to strengthen our rail system nationally. This would mean millions of dollars for minority businesses and thousands of jobs for the minority communities. PACO is ready, willing, and able to participate in FRA projects once the DBE program is implemented. I strongly encourage the Congressional Committee to establish an FRA DBE program so that minority owned firms have the opportunity to participate on these federal projects as well.

Mr. PAYNE. Thank you very much.

Next we have Mr. Gnanadesikan Ramanujam.

Mr. RAMANUJAM. Thank you, sir.

1776, Philadelphia, Pennsylvania: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty, and the pursuit of Happiness." This is from the Declaration of Independence.

Greetings, Chairman Payne and members of the committee. My name is Ram, and I am the president and CEO of Somat Engineering. We are a minority-owned consulting engineering business, headquartered in Detroit, Michigan, with offices in Cleveland, Ohio; Baltimore, Maryland; and Washington, DC.

I start by saying, in business, both parties, in fact all parties, must get some benefit. That is an absolute must. My written testimony regarding the bias against minority firms and our difficulty to get work in the railroad industry is with your committee. I have presented three specific instances where I explicitly experienced how it feels to be treated differently because of how I look or how I sound.

Number one, I was told to stay in my disadvantaged/minority lane and not aspire to grow in my profession and to compete with others.

Number two, I was saddled—and I am saddled even right now—with different and unfair terms from all kinds of business partners, such as my financial institution, that many of my other non-minority competitors do not have to face.

Number three, I found out about the racist and the sexist communication that goes on behind the veneer of civility. It is couched as humor, but it is there.

But I am not here to complain. I am here to answer questions and to help make the case that a DBE program is essential to level the playing field for minority firms in the railroad industry.

I am often asked how many times have I directly experienced discrimination, in writing or to my face verbally. My answer is: Not by a person in a position to give work out. No.

But that is not surprising, because someone—anyone—who is engaged in questionable behavior, is unlikely to do so explicitly. The discrimination is subtle. It is unspoken.

I just heard a new term recently, “unconscious bias,” “sub-conscious bias,” whatever it may be. However, it is present. It can be inferred. How? By the work that we get—or rather, I should say, the lack of work that we have gotten.

I am also asked to explain many times how a minority firm like Somat has been successful. We have offices in four cities, like I mentioned. If there is discrimination, how did this happen?

But please note, Chairman and Members, the cities that we work in—Detroit, Cleveland, Baltimore, and Washington, DC—it is not by accident that we work in four majority-minority cities. We focus our energies on where we feel welcome, not where we are looked down upon.

Our scriptures called us in my language [speaking foreign language]. We move away from that which is unpleasant and towards what is pleasant.

Despite 35 years of recognitions and awards and a track record of performing higher end engineering services, such as expert review, expert witness, value engineering, we have performed zero—zero—work for the railroad industry and on FRA-funded projects. To me, this speaks volumes.

Well, I end as I began, by saying that in business, all parties must benefit. This program is not an entitlement program, and those who do not perform, DBE or not, must be weeded out. The FRA and the industry will reap the benefit of competition and innovation with this inclusive action.

I welcome your questions. Thank you.

[Mr. Ramanujam’s prepared statement follows:]

Prepared Statement of Gnanadesikan “Ram” Ramanujam, P.E., President and Chief Executive Officer, Somat Engineering, Inc.

Greetings, Honorable Chairman Payne and other committee members:

My name is Gnanadesikan Ramanujam. I go by one name “Ram” (like Prince and Madonna). I am the president and CEO of Somat Engineering, Inc. (Somat), a Detroit, Michigan, headquartered small, minority, disadvantaged engineering consulting business. I use the word “business” deliberately because in business both

parties must get some benefit, and because “business” depends on “relationships”. Business does not, and cannot, co-exist with an attitude of entitlement.

We have been in business since 1986, and we currently provide geotechnical, environmental, civil and structural engineering, construction inspection, material testing and project/program management services. Our focus is on aging infrastructure in our older urban areas, and we have offices in Detroit, Michigan; Cleveland, Ohio; Baltimore, Maryland; and Washington, DC. Our staff level fluctuates between 60 and 100 individuals due to the seasonality of construction work.

Somat did NOT have the Disadvantaged Business Enterprise (DBE) certification for about the first ten years of our existence. We provided services primarily to local municipalities as a subconsultant to local, mainstream engineering consultants. Quality and delivery have been Somat’s trademark, and we earned repeat business, as well as some new business via word-of-mouth referrals. We employed between 10 to 20 people up to that point, working on small local projects which had modest budgets.

In the mid 1990s, one of our clients told us about the Department of Transportation (DOT) DBE program and encouraged us to apply for it. We had not worked on any State DOT projects at that time, but our client pushed us to get certified explaining it would help them, as well as us, if Somat got DBE certified.

In 1995, we worked on our first DOT funded bridge project, the Baldwin Road Bridge over I-75 in Auburn Hills, Michigan. After that, our DOT work really took off thanks to a robust DBE program and our continued emphasis on quality and delivery. Within a few years, in 2004, Somat was nationally recognized by the Federal Highway Administration (FHWA) as the DBE Firm of the Year, and I received the award from then Transportation Secretary Norman Mineta in Washington, DC. In 2013, we also received the Historically Underutilized Business (HUB) Firm of the Year from the Conference of Minority Transportation Officials (COMTO) in Jacksonville, Florida. Today, our annual revenue from DOT work runs in six figure dollar amounts for highway and bridge related engineering and construction inspection & material testing work.

We have done similarly well in the aviation sector and have worked on multiple major and smaller airports in Michigan and Ohio, again, thanks to a robust DBE/SBE (small business enterprise) program advocated by the Federal Aviation Administration (FAA). I am pleased to say that the Wayne County Airport Authority (WCAA) in Romulus, Michigan is currently soliciting Request for Proposals (RFP’s) for consulting engineering services at Detroit Metropolitan Wayne County Airport that includes a Mentor/Protege provision in the solicitations aimed at increasing DBE/MBE/SBE participation. I say this because in the 25+ years that Somat has provided professional services to the WCAA, this is the 1st time this provision has been included in the RFP’s.

I take pride in saying our work has been the best testimonial for our technical competence:

- Somat works for multiple national consulting engineering firms in MI, OH, MD and DC on water/wastewater, highway, aviation, energy, and education projects, with all of them being for repeat customers.
- Somat has worked on several signature private sector projects like the new Detroit Lions football stadium; the new Detroit Tigers baseball stadium; the new Little Caesars Arena (LCA) Entertainment Complex for the Detroit Red Wings and Detroit Pistons; the new Henry Ford Hospital complex in West Bloomfield, Michigan; and multiple automotive suppliers. There is little to no tolerance for shoddy work in the private sector and pay is tied to delivery and quality of services provided.
- Somat has provided expert review services, as well as expert witness services, to national firms, private owners, and agencies in multiple states in the Midwest, and even in Russia for a General Motors plant in St. Petersburg.

Interestingly, and sadly, despite our success over the past 35 years, we find the playing field is still not level for DBE/MBE/SBE firms unless the owners and the agencies promote that concept.

In our own case, the prime consultant that strongly, and repeatedly, pushed Somat to get the DBE certification, waited until we were DBE certified before offering us the opportunity to be on their team. I understand they would have been unable to get the credit for DBE participation if we were not certified, but my point is that the quality of our work would not have been any different whether we were certified as a DBE or not. The fact that the Federal Highway Administration (FHWA) implemented a robust DBE program is the only reason that particular prime consultant gave Somat a chance on that first project in 1995. Without such a program, I have no doubt that Somat would not be doing highway and bridge work today.

Another concrete example of how DBE firms face the challenge of a non-level playing field comes to mind: in 2008, Somat lost our DBE certification because the size standards for small engineering businesses had not been adjusted for inflation. The reaction from our prime consultants was akin to a spigot being turned off. Even though there was not another DBE firm providing geotechnical engineering services (with our quality), the prime consultants removed Somat from their project teams, gave the work to other majority owned geotechnical companies, and tried to meet their DBE commitments by giving other disciplines of design work such as survey, maintenance of traffic, etc., to DBE firms. In some cases, the prime firms submitted good faith effort documentation to the agency to show they were unable to find a DBE to do the work.

This clearly indicated two facts to me: first, the prime firms were pleased with the quality of our work. They were not taking Somat on their team solely because of our lack of the DBE certification. Second, despite being satisfied with our work quality the prime firms gravitated to a non-minority firm when we lost our DBE certification. When a prime consultant chooses a non-DBE, non-minority firm instead of a non-DBE minority firm (despite a long working relationship, expert level work, national recognition etc.), that is a clear indicator the playing field is definitely uphill.

Moreover, when we temporarily lost our DBE certification, other prime consultants stopped taking Somat on their teams for DOT work. I spoke with the leaders of at least seven national and large regional firms about being shut-out. All of them were professional, honest and apologetic. They explained that the only reason they stopped teaming with Somat was our lack of the DBE certification, and they would resume doing business with us if we were to get the DBE certification back.

Our revenue dropped below the federal small business size standard (annual revenue of four and a half million dollars at that time), and we obtained our DBE certification, again. Thankfully, the small business administration adjusted the small business standard after that, and we continue to be DBE certified.

Having been in this business for over thirty years, I have personally experienced situations that definitely felt discriminatory to me. They are hurtful to recall, even now. The way I have handled such instances is to be practical, determine whether this is a client we want to continue to work for, swallow my pride and accept the bad with the good. Life will throw lemons at us, and we have learned how to make lemonade. The alternative is to forget the dream, close the business and work for somebody else. I will mention a few examples of my personal experience with discrimination:

1. We did a fair amount of business as a subconsultant to a large consulting engineering firm in Michigan for the Department of Transportation. As we gained experience, developed some relationships at the agency, and gained confidence, we started pursuing some smaller projects as a prime consultant. We were even successful in winning a prime contract and getting the best of this consultant in the process after declining to be their subconsultant on that pursuit. They were not pleased, and let us know very clearly that if we were to stray from the DBE lane and compete as a prime consultant, they would not work with us. Subsequently, they declined to be our subconsultant for a proposal we were well positioned to win and in fact, did win. It is the prerogative of a business to decide who they do business with. However, in this instance, I felt we were being schooled and put in our place as a minority owned firm for daring to dream that merit, quality and delivery of professional engineering services is what matters. One's socio-economic status or race should not determine one's dream nor the outcome for that matter.
2. Even the most basic of business functions can be, and is, a challenge. Banking is one example. We struggled to get a line of credit from a bank when we opened for business, and frequently used personal credit cards and short-term personal loans to make payroll. However, after 35 years in business, we find that banking is still a challenge. Despite *never* having missed payroll, paying payroll taxes in a timely manner, *never* filing for bankruptcy, having managed our line of credit responsibly, having the requisite insurance coverages, using our personal home equity line of credit, etc., I still have to provide a personal guarantee to the bank that allows them to take anything and everything in my name or in my wife's name should we default on a loan or the line of credit. In speaking to other non-minority companies of our size, I have not found a single firm that requires their major shareholders to give a personal guarantee to their bank. This puts tremendous pressure on me, and impacts every action and reaction of mine. Someone who is not in my shoes cannot understand my situation.

3. About twelve years ago, I received an email from a senior level management person with a company we do business with. The subject line was innocuous. When I opened the email, it consisted of several racist and sexist jokes. I was one of many recipients, and I was the only minority recipient. I felt that I was included by mistake. While I knew this person somewhat well through professional dealings, we did not have the relationship to share such jokes. Neither the sender nor I ever brought this email up, later. I would not have guessed that this person or many of the other recipients would be enjoying such dark, discriminatory, humor behind our backs. Thoughts lead to actions, and I wonder how much influence this attitude has on the teaming decisions of such leaders. Considering the difficulty of being selected for a prime consultant's team when there is no DBE goal, such an attitude clearly has a lot of bearing on who gets the call to be on the team.

Coming now to the Federal Railroad Administration (FRA), and to the railroad industry more particularly, this is our experience:

Zero! Zilch! Nada!

Yes, it is true, and it is troubling, that in 35 years of being in business successfully, Somat has not worked for the railroad industry, nor have we worked on any FRA funded project.

This begs the questions, "Is Somat interested in railroad work and did Somat pursue railroad opportunities?" I shall attempt to answer both these legitimate questions.

To the first question, yes, Somat is definitely interested in railroad related engineering and construction inspection, material testing and project/program management work. We are passionate about, and are in the business of, infrastructure consulting and engineering. Railroads are an integral part of infrastructure.

Moreover, having grown up in Africa and in India during my younger days, I have observed how passenger rail benefits the lower economic classes of society who do not have the means to own their own cars, or purchase their own plane tickets. After coming to the United States, I saw with my own eyes the even starker disparity here. Therefore, I have an interest in railroad work from a social, humanitarian and moral angle, as well. Equity in transportation is a civil right.

To be clear, it is not as though Somat has not done any work related to railroads in our thirty-five years in business. We have worked on multiple railroad grade crossing improvement projects, grade separation projects and some light rail projects. The key point to note is that all of Somat's work for these projects was performed for either State agency, County government or local municipality contracts, primarily as a part of their roadway/highway programs. Not a single railroad project Somat has worked on was performed for the railroad industry or for FRA funded contracts.

Coming to the second question, has Somat pursued railroad work? The short answer is, "Not vigorously." Let me explain.

As I stated in the beginning, business depends on relationships and relationships are developed over time if, and that is a big IF, there is an opportunity to make a personal connection. There is no question of relationship when there is no personal connection.

This really translates to the age-old question of the chicken or the egg—getting selected to be on a team versus having the necessary experience to be selected. Why would the railroad industry take a chance on an engineering firm that has never designed tracks, signals, or structures before? Having said that, how will Somat and other DBE firms ever gain the necessary experience to be selected?

Consider the following:

- Somat works for several national and international infrastructure engineering and consulting firms for other modes of transportation, and for other sectors of infrastructure such as water/wastewater, energy etc. These firms are involved with railroads, but they have never taken us on their teams for railroad work. There is no incentive, and so, they do not want to risk losing a contract because of having an inexperienced DBE subconsultant on their team.
- Somat has worked on railroad crossings, grade separations, bus stations, transit centers, major utilities, and multiple large and complex buildings. Our skills are pertinent, and transferable, to structures and infrastructure related to the railroad industry. However, we cannot show past experience working for the railroad industry or on FRA projects.
- Somat has experienced, first hand, the instantaneous change in the reception we get due to the loss of the DBE certification. When such is the case, even with a robust DBE program, it is not difficult to fathom the reception we see in the railroad industry in the absence of a DBE program.

- At Somat, we have asked the larger firms and looked at RFPs and RFQs from the railroad industry to try and branch out. However, running a small, disadvantaged business takes a lot of time and when you factor in—cash flow issues, line of credit issues, staffing issues, etc., that disproportionately impacts minority DBEs. Time is the one resource that cannot be replenished, and we do not have the luxury of wasting it on pie-in-the-sky pursuits which is what the railroad industry is for us, without a DBE program by the FRA.

There is a bias that is not favorable to minority DBE firms, able and looking to do quality work in the railroad industry. It may be unintentional (in some cases), but it is present, it is subtle, and it is systemic. The experience of this bias cannot be explained because it takes one to know one. The experience of enjoying a rare, fine, wine cannot be explained in a million words. One has to actually taste the wine. However, we can infer or conclude there is a bias against minorities in the railroad sector based on actual data. What percentage of railroad work goes to minority owned companies, compared to the percentage for highway, transit, aviation or maritime work that goes to minority owned firms? Anecdotally, the numbers are not even close and speak louder than I could ever shout.

At this juncture, I must state that Administrator Amit Bose is doing all that is possible to help minorities and DBEs, given that he inherited this situation. In 2015, Congress mandated that FRA perform a disparity study in the FAST Act Bill. This was put on hold indefinitely by the Trump administration. Administrator Bose has picked it back up and is currently executing the disparity study. In addition, the administrator has been responsive to organizations such as the Conference of Minority Transportation Officials (COMTO) that work hard to level the playing field. However, he cannot do this by himself. He needs help.

I strongly plead to you, Chairman Payne and to your committee, to set right this inequity. Other transportation modes within the US DOT all have robust DBE programs, and have given opportunities to DBE firms. It is imperative, and only fair, that the FRA also have a DBE program.

I end as I began—in business both parties must benefit. The DBE program is not an entitlement program. *The DBE firms must deliver the goods.* Firms that do not deliver will drop off or will be dropped off. Prime consultants and the industry will still have options such as Good Faith Efforts to ensure they are not saddled with non-performing DBE companies.

On behalf of the DBE community, I am requesting you to open the door. It is up to DBEs to earn our seat at the table, but absent the opportunity to even make the interview cut, we will be destined to languish forever outside the door.

I will be more than happy to answer any questions. Thank you for your time.

Mr. PAYNE. Thank you very much. I think that is a very important point you made. This is about leveling the playing field and everyone having the opportunity to compete in this great Nation.

Next, we will have Ms. Evalynn Williams.

Ms. WILLIAMS. Thank you, and good morning.

I am the president and CEO of Dikita Enterprises, a family-owned minority engineering firm located in Dallas, Texas. We will celebrate our 42nd year in business this month. In the transit and rail industry, we provide civil rail design, rail program and construction management, and transit market research.

My father, Lucious Williams, founded the firm in 1979 in Milwaukee, Wisconsin, and moved the firm to Dallas, where I was attending college, in 1983.

I am currently an executive board member of APTA, which is the American Public Transportation Association, and I am the first African-American female to chair APTA's Business Member Board of Governors.

When we started the business in 1979, minority programs, such as the Minority Business Enterprise program, was the only way we could get work. Sadly, today, that continues to be the main driver.

I remember my father applying for certification in 1983 and having to report on paper his recollections of how he was discriminated against. It was one of the many requirements of the long, arduous

certification process. I recall how painful it was for him then and how I learned about the awful experiences he had endured.

In the 1940s, when my father was younger, he played for the old Negro Baseball League and played for the Memphis Reds. He explained about being called racial slurs and having to go around the back to get leftovers from diners. When he was on the road, they weren't allowed to go into the White-owned establishments or sleep in regular motel beds. He and his team often slept on the bus or in cars.

I think this is where my children and I get our "can-do, don't stop, get it done" attitude. Being pioneers as the first Black firm to get Government contracts—or one of them—we were often targeted. We survived, however, despite the many hurdles we had to climb, hurdles that are extra because we are a Black engineering firm.

Unless you walk in my shoes, you have no idea how unconscious the typical nonminority is about understanding these microaggressions.

I remember, less than a decade ago, we competed for a project from a midsize transit system in another State. We did our homework, we understood the local politics, and we won the project.

During the negotiations, however, we ran into a problem. While our fees were acceptable and our references did check out, the procurement officer was not comfortable in awarding us the project. He asked me for my tax returns, my financials, my banking credentials.

This was not typical. And as I gathered this information, I became angry. I called his boss, who I knew through transit associations, and I complained. And when the officer called back, his tone had changed.

I asked him, "Why were you treating me so differently?" He told me and confessed that he had never awarded such a large project to a Black company and he was just trying to ensure that we were financially able.

The DBE program provides equity, which in turn helps to build financial capacity and workforce resources. However, being called "disadvantaged" is not a privilege, nor does it sound like a goal a company would strive to be. Quite frankly, it was embarrassing explaining this to my 22-year-old millennial why we were considered a disadvantaged business.

It was then that I had the opportunity to recall my experiences as my father recalled some 35 years earlier. Fast forward, it was only a matter of time that she has now begun to have her own stories.

Large corporations would self-perform 100 percent of the work if left unchecked, just as they do in the private sector.

Once I was a member of a panel discussing the merits of the DBE program. The panel was comprised of industry professionals. To my surprise, one of the panelists of a very large firm openly admitted that, if it was not for the DBE program, they would not subcontract to DBE firms.

He felt as though there should not be such a program and that the entire process was not warranted. He did not see this as discrimination but his right to contract as he pleased.

His remark, it was hurtful, but it was not surprising. These are just a few episodes regarding practices that either keep minority firms small or run them out of business, especially African-American firms.

Regarding work on an FRA, we have only had one project about 10 years ago. It was a customer satisfaction survey for Amtrak. But the fact that the FRA does not have a DBE program speaks volumes as to why we only had one single project in the last 42 years.

The services and skill sets we offer to FTA- and FAA-funded projects are much transferable to the FRA rail projects. And I hope that the FRA will adopt a race-conscious DBE program.

Thank you.

[Ms. Williams' prepared statement follows:]

Prepared Statement of Evalynn A. "Eve" Williams, President and Chief Executive Officer, Dikita Enterprises, Inc.

My name is Evalynn Williams. Most people call me Eve. I am the President and CEO of Dikita (pronounced Da Kee' ta) Enterprises, Inc., a family-owned minority consulting engineering and architectural firm headquartered in Dallas, Texas. We will celebrate our 42nd year in business this month. In the transit and rail industry, we provide civil rail design, rail program and construction management, and transit market research. We employ 35-45 professionals from diverse nationalities, many whom are woman and/or of a minority classification. My father, Lucious Williams, founded the firm in 1979 in Milwaukee Wisconsin and moved the firm to Dallas, where I was attending college in 1983. I promised him 2 years as his CFO in exchange for paying off my \$5,000 college loan. That was 38 years ago, and we've been partners ever since. Lucious owns 51% of the firm and I own 47%, while my oldest daughter owns 2%.

We offer our services to mainly the governmental sectors, that are federally, state or locally funded. We have two division. Our engineering division provides services to public transit, highways, aviation, public educational institutions, including K-12 and higher education, municipalities for roadway and infrastructure projects. Our transit planning division provides market research to the transit industry. We have worked on multi-billion-dollar projects as well as those under \$100,000. We have worked across the nation providing a variety of services, typically transit market research. We are certified in 19 locations across the nation. Being certified in many areas allow us to participate with different transit and rail properties.

I have a BBA degree in information systems and an MBA in accounting. I serve on several civic boards and have won my share of awards. I am currently a member of COMTO and the American Public Transportation Association (APTA) board of directors. I am also the first African American female to chair APTA's distinguished Business Members Board of Governors. APTA membership includes at least 90% of all public transit organizations in North America and practically every large national commercial firm that does business with public transit authorities.

In 2010, I became President and CEO of Dikita, and my father has remained active as the Chairman of the Board and Director of Government Affairs. Being a female, an African American, and a small business in the construction industry has had many challenges. There are certain systemic stereotypes that are associated with all the classes of categories I've mentioned, but typically they all have one thing in common. There is the general mentality that women and/or African Americans produce inferior work products. These certainly aid to create barriers for successfully contracting and being relevant in the industry. Of all these labels, I think being African American, however, presents the biggest challenge when competing for work.

When we started the business in 1979, minority programs, such as the Minority Business Enterprise (MBE) program was the only way we could get work. Sadly, today that continues to be the main driver. I remember my father applying for certification in 1983 and having to report on paper his recollections of how he was discriminated against. It was one of the many requirements of the long arduous certification process.

I recall how painful it was for him then and how I learned about the awful experiences he had endured. It isn't a typical conversation a father or a man has with

his daughter. In the 40's, when my father was younger, he played for the Old Negro Baseball League and played for the Memphis Reds. He explained about being called racial slurs and having to go around to the back to get leftovers from diners. When they were on the road, they were not allowed to go into white-owned establishments or sleep in regular motel beds. He and the team often slept on the bus or in cars. Sometimes, there were Black families who agreed to let him and his teammates sleep at their houses. Having to explain instances of discrimination during the MBE certification process was an opportunity for me to learn history including the painful parts of racism. I think part of our success today comes from the strength and determination he endured growing up. This is where my children and I get our "can-do, don't stop, get it done" attitude.

I believe his courage and relentless posture are why we are still standing today. We were the first Black firm to get prime contracts in most of the local federally and state-funded government civil engineering projects in Dallas. Even after 40 years we still make history occasionally being the first African American firm to prime projects in our local Dallas/Fort Worth area. Many of the firms we began with in the early 80s no longer exist for various reasons, but mostly because of the lack of resources, opportunities, and determination to withstand. Today, we are the oldest African American professional engineering firm in North Texas.

I remember, less than a decade ago, we competed for a project from a mid-size transit system in another state. We did our homework, understood the local politics, developed a great team and submitted a winning proposal. The services we offered were part of a niche market and not many companies compete in the transit ridership survey market. We were shortlisted and granted an interview. The day before the interview we practiced with our team until we were perfect. The next day we walked away from the presentation knowing we had won. During negotiations, however, we ran into a problem. While our fee proposal of \$400,000 was acceptable and our references had checked out, along with the previous experience, the procurement officer was not comfortable awarding the project. He asked me for tax returns, financials, and bank credentials. This was not typical. As I gathered this information, I became angry. This was unusual. So, I refused. I called the officer's boss and explained the situation and how offended I was. When the officer called back his tone had changed. I asked him why he was treating me differently. He told me that he had never awarded such a "large" project to a Black company and he was trying to ensure we were financially able to complete the work. He didn't realize that his admission was discriminatory. He actually felt that an African American company would not be able to complete the job. Did it bother me? Not really. It was just blatant discrimination. What bothered me most was the "normality" of it all. He was being truthful and ignorant. As an African American, I always know, it just rare that people admit it. The bigger picture was winning the contract and doing a great job.

Being a disadvantaged business has certainly helped level the playing field. As the CEO of a 2nd generation African American engineering and architectural firm, we would never have sustained had it not been for disparity programs such as the Federal DBE Program. Competition for prime contracts with the US Department of Transportation would be very difficult at best, and out of reach for most minority and women owned businesses (M/WBE) if it was not for the program. Being the proprietors of an African American consulting engineering firm is a rarity, relative to the majority of engineering firms in the US. It is also a rarity among African American owned businesses. We have been able to sustain mostly because of USDOT's FTA, FAA, and FWHA DBE programs, along with local SBE and MBE programs. I am certain without these initiatives and goals, we would not still be in business, at least not in this industry.

It is almost impossible for DBE firms to compete with large national and international firms. They have the capacity and depth within their workforce and can pull from global office locations. And over the last 15 years, they have gotten even larger, which makes the expansion of the DBE Program is so extremely critical to firms such ours. It provides us with opportunities to join a team as a subconsultant, a prime or joint venture partner, which in turn helps to build financial capacity and workforce resources. It's because of the DBE program, Dikita had an opportunity to have a leadership role in a joint-venture with a large majority firm to design and build the last 3 miles of Dallas Area Rapid Transit system (DART) light rail system. Sixty-one percent of contract dollars went to DBE firms. This experience is an example of an agency that is serious about DBE programs. When a system is serious about DBE participation, it encourages larger firms to form associations with smaller firms who ordinarily wouldn't have a chance to "sit at the table". The lessons and the viewpoint when you are a prime of a large rail construction project is much different than the view from the bottom up. It's not business as usual. In fact, it was

probably the first time in my life that I had the opportunity to be at the helm of such a large contract and award contracts to so many smaller firms. We had 15 sub-consultants, all women or minority-owned. The pride and work ethic of this team was powerful. We saved the agency over \$4 million and DART was able to open for revenue service 2 months ahead of schedule. We all had ownership and we all felt engaged.

This is a great example of how the DBE program can help to grow smaller firms. However, being called “disadvantaged” is not a privilege nor does it sound like a goal that a company would strive to be. The reality is, without the program we would not have a fair chance at competition. Quite frankly, it was embarrassing explaining to my then 22-year-old millennial, why we were considered a disadvantaged business. I can tell you that we had an engaging conversation and a history lesson spun from this exposure. My daughter had no idea of the struggle or the blatant discrimination my father and I experienced over the years. It was then I had the opportunity to recall my experiences, as my father had recalled and disclosed to me some 35 years earlier. Fast forward, it was only a matter of time that she had stories of her own. This is unfortunate because she has witnessed how easy it was for her college buddies to advance to higher positions with salaries that allowed them to live in much better apartments. As an African American, the possibility of advancement is much more of a challenge. However, she has the generational tenacity to forge ahead, especially knowing what’s ahead.

As I explained to her, had we not become certified, we would not still be in this business; no matter how well we performed. The positive effects of the DBE program are evident when you look at private vs. public work. We do not compete well in the private sector where the work is typically won by the “good ole boys”. In the public sector, large firms contract with us only to the extent that it will help them win the project. If the goal is 25%, then they will typically subcontract only that minimum amount, even though we are a proven entity and have the experience and capacity to handle much larger tasks. And if the goal is 25%, there might be 3 firms sharing that percentage. I’ve actually had conversations with firms who have admitted that they would not subcontract any work had there not been for a requirement.

The truth is ... if not for the DBE Program, large corporations would not share the work and would self-perform 100% of contract-work. This is very likely in the private sector. And sometimes, I think larger companies really regret having to share government-funded projects. Once, I was a member of a panel discussing the merits of the DBE program. The panel was comprised of industry companies and government agency staff. The audience included suppliers/manufacturers, engineers, consultants, large and small businesses, government staff and others. Each member of the panel discussed their experiences with the program. To my surprise, one panelist of a very large firm openly admitted that if it were not for the DBE program, he would not subcontract to DBE firms. He felt as though there should not be such a program and the entire process was not warranted. He did not see this as discrimination but as his right to contract as he pleased. His remark was hurtful, but not surprising to me. It just further justifies the need for equitable programs to lessen the consequences the past discriminatory practices.

The firms I do business with are typically not as obvious as the ones mentioned above. Case in point. We were going after a project in a small suburban community near Dallas. I found out about the request for proposal because I had very strong relationships in that community. Much of the project was within our wheelhouse and we felt certain we could successfully propose and win. Since there were parts of the work that others could do better, we reached out to a nationally known local firm that we had worked with in the past. They were not aware of the opportunity. What happened later was shocking but not surprising. In an email thread that was inadvertently sent to me, I read a discussion that went something like this (all names are fictitious and are here to make the conversation easier to understand):

- John informed his boss Ted of XYZ company that I had called about them subcontracting to us to provide service on an upcoming proposal.
- Ted asked about scope and John explained it and thought Dikita and XYZ could do well since they have worked together in the past.
- Ted asked about the minority participation goal.
- John told him that there was no minority goal.
- Ted asked John why they would sub to Dikita.
- John reminded Ted that Dikita was very good at providing these type of specialty services
- Ted told John that XYZ was bigger and to dig into the opportunity.
- When John asked about participating with Dikita, Ted told him that since there was no minority participation, they would just do the project themselves.

- When John questioned Ted again, Ted told him that XYZ was bigger and to reject our offer.
- This is when John sent us an email rejecting our offer and inadvertently included the entire thread.

This kind of conversation among large majority firms is not unusual and is a matter of practice. And often we only suspect or hear about why we were rejected from a third party. However, this was played out in an email and was so painful and disappointing.

These are just a few episodes regarding practices that either keep minority firms small or run them out of business, especially African American firms. It's common knowledge that minority businesses often live month to month unless we have been successful in backfilling our pipelines with future projects. One of the most disheartening feelings is to know that you are only as good as the current project. We have had many relationships with larger firms and have provided excellent service, but it's never quite the excellent services in which you are remembered. We are the token DBE checkbox that fulfilled the requirement. This I say because I have witnessed the less than genuine relationships we have forged. We can perform exceptionally well for many years on a 5-year large project. However, I notice that when that same large firm is going for the exact project-type in another state, they will not invite us to the team. When I've asked about being on the team, the reply is the same, "we needed you in Dallas, we have to use someone else in Houston". When I question why, the answer is always "because you are only useful in Dallas and taking you to other cities or states doesn't help us to win, it's political", even if we are the best in providing the services required. Well, that mentality keeps firms like mine small and confines us to our own neighborhoods. This is sometimes the unintended consequence of the program.

Regarding work on an FRA project, we have had only one. We did do one project with a majority firm about 10 years ago. It was a customer satisfaction survey for AMTRAK. But the fact that FRA does not have a DBE program speaks volumes as to why perhaps we have had only a single opportunity in all of our 42 years. If majority firms were required to fulfill a goal, we would have had the opportunity to participate on a lot more projects because those firms who always get the work would have to share the work. If the USDOT was interested in helping firms of color, it would be natural for the railroad administration to mimic what the aviation, highway, and transit systems are doing to grow firms. Afterall, we want to Buy America or Buy American, but if we do not grow American companies to the point of sustainability, this initiative will fail. More of America is becoming a melting pot of the races therefore it seems the logical and most direct way to ensure that we are the America for all Americans, we ought to consider ensuring that the playing field is level across all of the USDOT's departments. Not just the well-funded and convenient ones. High Speed rail is coming. America is ready to catch up with the rest of the world. But who's going to build it?

In conclusion, the disparity, and the inequities of our capitalistic society, coupled with the injustices from America's history of discriminatory practices against African Americans specifically, are reasons that DBE program must continue to exist and expand. This program is not a handout, it's a leg up. It forces the big companies and big government to play fairly, and quite frankly without it, we would be out of business at the expiration date of the last contracts in our pipeline. We'd love for the FRA to catch up with FTA, FAA, and FWHA. The services and skillsets we offer FTA funded projects are very much transferable to FRA rail projects.

Mr. PAYNE. Thank you very much.

We will now move on to Members' questions. Each Member will be recognized for 5 minutes, and I will start by recognizing myself.

I ask unanimous consent to include for the record the written statement of the Association of American Railroads.

Without objection, so ordered.

[The information follows:]



Statement of Ian Jefferies, President and Chief Executive Officer, Association of American Railroads, Submitted for the Record by Hon. Donald M. Payne, Jr.

On behalf of the members of the Association of American Railroads (AAR), thank you for the opportunity to submit this statement for the record. Freight railroads operating in the United States are the most productive and cost-effective in the world, connecting businesses with each other across the continent and with markets overseas through a private rail network spanning close to 140,000 miles. AAR members account for the vast majority of America's freight railroad mileage, employees, revenue, and traffic. Amtrak and several major commuter railroads are also AAR members.

In recent years, railroads have also invested an average of \$25 billion per year—\$740 billion since 1980—to maintain and modernize its private infrastructure and equipment, and to research and develop new technologies that will ultimately serve to improve safety and reduce greenhouse gas emissions. As a result of these efforts, the American Society of Civil Engineers has given the nation's rail network its highest grade as part of its Infrastructure Report Card. The net economic impact of these investments and rail operations generally is tangible. In 2017, Class I freight railroads supported 1.1 million jobs (approximately eight jobs for every railroad job), \$219 billion in economic output, \$71 billion in wages, and \$26 billion in tax revenues. In addition, millions of people work at firms, including the tens of thousand of firms that are rail suppliers, that are more competitive because of freight railroads. Sustaining these critical investments will be essential for freight railroads to meet the anticipated 30 percent growth in freight transportation demand by 2040 and ensure that our nation's families and businesses receive the goods they need.

Maintaining a privately owned railroad network touching virtually every state in the nation requires a broad range of capital and maintenance spending on infrastructure, technology, equipment, and services. Examples of products and services often provided by diverse-owned suppliers include construction services, equipment rentals, environmental services, information technology services, leadership training, legal services, lodging, machining and tooling, railcar lubricants, relocation services, staff augmentation, signal materials, and video production services.

SUPPLIER DIVERSITY

For many decades, the nation's major freight railroads have been committed to fostering diversity in supplier networks, as diversity is an effective way to promote innovation, reduce costs, and improve service competition. This competition can also introduce new products, services, and solutions that might otherwise be unnoticed. In many cases, competition spurs further investment in the communities in which railroads operate, promoting job creation at the local level.

Today, inclusive procurement is a core value of the leadership of the freight railroad industry. The railroad industry recognizes that commitment at the highest level of management is key to a successful supplier diversity program. Railroads have appointed specific individuals and diversity supplier teams within their companies to provide accountability, measurable tracking, and reporting milestones for senior management.

To achieve results, the major Class I railroads have all initiated Supplier Diversity Programs aimed at disadvantaged, minority-owned, women-owned, and veteran-owned businesses. These programs operate in a variety of ways to generate annual improvements in the diversity of suppliers used by the railroad industry.

EXPANDING OPPORTUNITIES FOR DIVERSE-OWNED SUPPLIERS

Railroads use a variety of strategies to expand the diversity of their supplier base. Some of these efforts include:

- Maintaining web-based portals for potential suppliers to submit profiles of their companies. This allows for suppliers to make themselves known to the railroads and to remain visible on an ongoing basis. Based on the materials and services noted, profiles can then be routed to appropriate sourcing teams. Managers in charge of supplier diversity actively monitor these portals and serve as a liaison between the railroads and their suppliers;
- Partnering with certification councils and other supplier diversity professionals;
- Sponsoring and participating in national, regional, and local events, such as one-on-one matchmaker meetings, roundtable sessions, business fairs, developmental sessions, and new member orientations. For example, certain railroads work with the following organizations: the National Center for American Indian Enterprise Development; the National Minority Supplier Development Council

(NMSDC); the NMSDC Transportation Industry Group; the U.S. Hispanic Chamber of Commerce; the U.S. Pan Asian American Chamber of Commerce; the Women's Business Enterprise Council; the Woman Owned Small Business; various veteran support groups; the Agenda for Building Capacity; the Hispanic Contractors Association; the Hispanic American Construction Industry Association; and the Supplier Diversity Professional Work Group;

- Connecting current and potential disadvantaged businesses with buyers at other corporations to foster opportunities throughout the supply chain;
- Serving on boards of directors and on other committees, such as regional Women's Business Enterprise Councils and the National Minority Supplier Development Council's Transportation Industry Group;
- Advocating within the railroads for qualified suppliers through ongoing project status meetings, supplier review sessions, and buyer participation in events; and
- Guiding non-certified suppliers to become certified as a diverse-owned supplier.

CREATE

By way of example, the Chicago Region Environmental and Transportation Efficiency Program (CREATE) is a public-private partnership underway to complete roughly 70 railroad-related infrastructure improvement projects in the Chicago region. These projects include building and repairing tracks and structures, upgrading signals and technology, and improving safety and delays at certain railroad crossings. CREATE partners, which include federal, state, city and county governments, major freight railroads, Amtrak, and local transit, have worked collaboratively to promote supplier diversity since its inception in 2003. A diverse supplier base has been actively recruited and encouraged to submit bids on projects, and data show that targets have often been met or exceeded. The most recent data, for example, show that 23 percent of the work performed on ten completed railroad projects, with \$37 million in contracts awarded, went to disadvantaged business enterprises. This exceeded the target goal of 21 percent. The CREATE partners have hosted a series of disadvantaged business enterprise contractor diversity workshops in recent years to highlight upcoming bid opportunities within the CREATE Program. The most recent virtual workshop occurred in April 2021 that included participation with several local elected officials.

EFFECTIVE VETTING PROCESSES

Freight railroads have established vetting processes to ensure that suppliers meet their requirements for a diverse-owned supplier. Part of that process is ensuring that a supplier qualifies as a disadvantaged business, including that the business must be at least 51 percent owned, operated, and controlled by a qualifying member of a diverse population (such as a veteran, minority, person with disabilities, female, or LGBT). This may also include reviews for qualification under certain governmental designations, such as HUBZone, Small Disadvantaged Business, Disadvantaged Business Enterprise, and 8(a) Business. Qualified owners must have control of the company and be active in day-to-day management and daily business operations.

LABOR AGREEMENTS AND OUTSOURCING

Approximately 84 percent of Class I railroad employees are unionized. Through collective bargaining, management and labor agree on the parameters of pay, benefits, and working conditions, as well as the types of services that can or cannot be outsourced. Depending on the project at hand, opportunities for contracting for services outside of the railroad labor workforce may be limited or not permitted. When labor agreements do allow for outsourcing, the railroad industry actively seeks diversity in its supplier network.

CONCLUSION

AAR member railroads are committed to proactively identifying, attracting, and developing long-term partnerships with diverse and disadvantaged businesses. Doing so makes good business sense; it enhances value, competition, and innovation; and it is reflective of railroads' customer bases and the communities they serve.

Mr. PAYNE. Ms. Williams, let me start by commending you for being here today and publicly sharing what is certainly an uncomfortable and unsettling experience. It is deeply troubling to hear that your company did not receive fair consideration for a project because there was no minority participation goal.

If these goals were in place for projects and you had the opportunity to fairly compete, in what ways do you think that would have changed your business?

Ms. WILLIAMS. One of the things that is troubling and is often a challenge for small and minority contractors is the ability for sustainability.

As you know, in our arena, we live by projects, projects after projects, and the only way that you can be truly sustainable and successful in this business is by having continuous work. By having continuous work, you are able to have the workforce to move from one project to the other.

Many times what happens to small businesses and African-American businesses is that when the project is over, many times you do not get that continuity between projects, so you end up losing your workforce.

And you know what is worse? What happens more than often is that your staff is now absorbed by your prime contractor, your prime consultant. You look around and your people are working for their people and advancing. And there you are left looking for more people.

So that is the major reason why I think it would change.

Mr. PAYNE. Thank you.

Mr. CANTY, I found your testimony quite profound in that you knew from a young age that you wanted to work in the rail space and continue to do so, despite the racial discrimination you have suffered.

One of my priorities in examining racial discrimination in the Federal passenger rail contracting space is ensuring that minority men- and women-owned businesses have opportunities to build capacity and grow as large as multinational construction firms.

If minority contractors like yourselves were not systematically excluded from the same kind of starting opportunities that were given to large multinational construction firms, what impact would that have?

Mr. CANTY. In 2014–2015 where we reached our apex, particularly when we were doing work with Amtrak, we were trending at 38 employees, we were in 14 different States, 5 regional offices, and were working on an international office in Bulgaria.

If we had been allowed to continue to move forward without this discrimination, we would have been definitely probably into our fifth or sixth large bridge demolition contract. The first one we did was in Charleston, South Carolina, in 2016 to 2017. We would have been probably a force of 50 to 100 employees at least. Definitely would have been in the \$20 to \$30 million range. And we would have actually been knocking on the door of not qualifying for the DBE program anymore, which is the whole point of the program, is not to qualify for it.

Our goal was by 2018 to 2024 that we would have been exiting the DBE program. So we would have been playing a major role,

and a major employer, particularly in Black and Brown communities, because we did have a program of hiring folks from the—we had literally a prison-to-work pipeline that we had enacted where we were hiring folks coming out, because construction is one of the industries that you can start from the bottom and go right to the top no matter what your background is.

I have to tell you, the places we would have been would have been unlimited. The construction business, with all its issues, is still one of those businesses that you can do very well if you work hard, as long as you don't have to deal with the systemic discrimination.

Thank you.

Mr. PAYNE. Thank you very much.

Now I will go to the ranking member, Mr. Crawford, for 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman. I appreciate the opportunity.

I just want to, to any of the panel that want to comment, what would you identify as the single biggest barrier that minority- and women-owned contractors face in receiving contracts for passenger rail projects?

Mr. RAMANUJAM. Well, sir, it is a classic case of the chicken or the egg. It is extremely difficult to compete for business when we cannot show any experience, and we cannot show any experience because we have no opportunity to get it. So, a lot of times that is what I have been told, that, "We like you, but you do not have the experience." That has been a challenge for us.

Mr. CRAWFORD. Thank you.

Anybody else want to weigh in on that?

Mr. CANTY. I would also add the financial constraints, some of them particularly unique to the minority business community.

So, in order to get funding, including bonding, you have to have a certain net worth, or if you don't, then you basically hand over everything you own except a table and four chairs to the bonding company. But in order to be a DBE, you can't exceed a certain net worth.

So, what we are finding is you get in, even if you get the financial background, sometimes owners, but definitely these primes, are using the bonding company in a term from the 1980s called "bond 'em and break 'em." They will bond you, they will break you through the contract, you will lose everything you have, and you can't even start over at that point.

I think the financial constraints are one of the biggest barriers of entry. And the rail work requires significant insurance, and that shouldn't change, but there has got to be some look at how you can be financially viable and not have it used against you.

Mr. CRAWFORD. Ms. Williams, anything to add?

Ms. WILLIAMS. I wanted to ask you to repeat the question, please.

Mr. CRAWFORD. Sure. I am just trying to get a sense of what you find to be the single biggest barrier to being able to compete in receiving those contracts for passenger rail projects.

Ms. WILLIAMS. I don't know if you are speaking of within the DBE, that arena that has established a DBE program, or you mean the FRA nonestablished—

Mr. CRAWFORD. Well, we have established that the FRA doesn't have a DBE, and so I am just trying to gauge the degree of difficulty and what is the single biggest barrier in that space outside of the DBE, what you find the most challenging.

Ms. WILLIAMS. We probably can go back and look and see who is getting the projects, and they are probably the same guys that are getting the projects every time. And as long as they are getting them every time and then they don't have any kind of goal to bring anybody new, or bring in smaller or minority companies, they will continue doing what they are doing.

So, the barrier is that there is a barrier. Nobody is going to—if I have been getting the contract for years and years, why would I bring on a small minority company? So, the barrier is because there is no incentive to do anything different.

Mr. CRAWFORD. Mr. Clark, anything to add?

Mr. CLARK. First of all, I agree with all our panelists here. But I have to break it down to a matter of greed.

The prime contractors do not want to sub out any work that they do, because that is where they make the most money. So, they want to relegate you to smaller areas, such as trucking or maybe supplying materials.

We as a rail contractor want to do rail projects. And we perform well when we are given an opportunity. But if they don't have to, unless they have an incentive to give out work that they do, they will not, and we find that to be a barrier to moving forward.

There are some companies that have made it a habit of not giving out anything related to what they may do. And so, it is more difficult for us to break into the market. And if we do break into the market, then we become a hindrance to everybody there. Now everybody has to listen to us and listen to us trying to come in and do the work.

Mr. PAYNE. Thank you. The gentleman's time has expired.

We will now move on to Mr. Carson for 5 minutes.

Mr. CARSON. Thank you, Chairman.

I really appreciate the testimony today and the leadership of our Chairman Payne.

What do you all think would be the most impactful way to increase the number of Black and Brown professionals in the rail sector overall and the passenger rail sector in particular? Is this led by industry or is there more action needed from the FRA or DOT or even Amtrak to better implement programs that are already in place? And what new efforts might we consider? And what can the subcommittee do to advance diversity in aviation?

Ms. WILLIAMS. I would like to answer that.

One of the things that has to happen is what I see—and I have to commend the agency that has given me probably my biggest leg up and the most work, and that is Dallas Area Rapid Transit. And what they do is it starts at the top. It starts with the CEO. It starts at the board level. And it encouraged—everyone knows, who goes to work for DART, that you are going to start off with the

goal, but that is the minimum. That is the floor. You are not going to win if the goal is 30 percent and you come in with 30 percent.

And case in point, we had a project that we had—I ended up as a joint venture partner 50/50, and we brought on 15 different minority subs. We saved the agency \$4 million, and we brought it in 2 months ahead of time. And the participation on that project was 61 percent. That doesn't happen unless it starts from the top down.

Mr. RAMANUJAM. Representative Carson, this is Ram. Trickle-down economics just does not seem to work when it comes to getting work with the railroad sector. So, to your question, would industry be the right people to take the charge? We have not seen that be effective. It has to be basically both a carrot and a stick approach from the Federal Government to ensure that there is some incentive for smaller minority firms to get some work. So that is what we feel.

Mr. CANTY. Kenneth Canty with Janus. You know, you have got a lot of these bad actors out there. They are typically large, large companies because they get away with this stuff. And I think the most effective thing you can do is make it part of the criteria for picking companies to do this work. If they have any of this in their background, it needs to be used in evaluating if you want to use them for work, because, correspondingly, there are some real good firms out there, medium size, \$200 million, \$300 million range, who started off as small guys, and they are not necessarily minority, but they started off as small guys, and they just don't tolerate this stuff. They just don't tolerate it. Because their bid, come in and work and we are going to give you a fair chance, and they haven't gotten so big where the racism is actually profitable to them.

That is the thing, is the racism is profitable and discriminatory acts are profitable to these people. That is why they continue doing it. They do it because it is profitable.

So, you have got—I think this committee—the agencies through the leadership of this committee have to make that—even if you hear about it, it needs to be answered because where there is smoke, there is fire.

Mr. CARSON. That is helpful.

Lastly, I am proud to represent the largest rail maintenance facility in Beech Grove, Indiana, one of the cities in my district, where they repair locomotives and passenger rail cars. They do great work there. We would like to see them do more, but there appears to be a closed process that is really hard to break if you don't know someone at the facility. And this challenge isn't unique to our district. It is a challenge for many facilities across the country, particularly as it relates to hiring Black and Brown applicants.

What can be done to open these doors wider so we can bring in more diverse workers?

This is an Amtrak maintenance facility, by the way.

Mr. CLARK. Well, I think it is incumbent upon us as minority contractors to reach out and try and train individuals who are interested in the work, for example, in the rail industry.

We did the maintenance on the WMATA contract when they had the work that they had to complete very quickly, the fast-track part work. And we went to a trade school in Brooklyn and brought down

over 50 students who had just graduated, and we gave them an opportunity to learn. We trained them. We gave them housing. And these graduates did a wonderful job for us as we completed the work successfully, and many of them now have careers in doing track work. So, we took it upon ourselves to do this.

And now we do have another maintenance contract we are just starting today with Shell, and we have several people that are coming down to work on this project that we gave the opportunity to work in Washington 2 years ago.

So, we have done this ourselves. I think there should be some kind of incentive to hire workers and train them, some kind of tax credits or something like that that would make a difference to the contractor and would make a difference in pricing that we would give to the prime contractors.

Mr. PAYNE. Thank you.

Mr. CARSON. Thank you, Chairman.

Mr. PAYNE. The Chair now recognizes Mr. LaMalfa for 5 minutes.

Mr. LAMALFA. Thank you, Mr. Chairman. I appreciate working with you, ever since we have known each other at the beginning of our times in Congress together.

So, I just would like to get Mr. Clark's attention for my questions on this here. Basically, what we are looking at here in California is the high-speed rail system that has been troubled from the very beginning. But, early on in the project, it was constantly accused of not getting minority companies involved. So, in 2010, a civil rights coalition claimed only 12 out of 134 prime contractors were minority-owned firms.

So, last week, the L.A. Times published a piece going into detail about the impacts it has been having on the communities themselves. We have disadvantaged communities that are seeing issues with the way the system is doing business.

So, for example, in agriculture, farmers are having their land taken through eminent domain, yet it has taken years and years for them to get paid for it. The projects that are going through a lot of low-income neighborhoods, Black neighborhoods, Latino neighborhoods, it took down, in some cases, some very important institutions. Like in Fresno, the rescue mission there, for example, which helps a lot of people as a homeless shelter in the Central Valley. And Bakersfield is going to lose a homeless shelter here soon. So, the impact on communities is really tough, too.

So, the project also at some point is supposed to go through San Jose, and it is going to go right straight through a Latino neighborhood there. So, these aren't obviously temporary. They will be forever as long as the rail is around.

And so, for folks to get compensated, for them to even be heard as to whether this is a good idea to go through their neighborhood or such, coming back to the Fresno rescue mission, it took 8 years in a lawsuit to get compensated for their being damaged the way they were, being basically eviscerated.

So, Mr. Clark, you are experienced in heavy rail. I would like to see what you think about some—has anything you have been involved with ever been asked to build tracks through these types of neighborhoods, through these types of shelters, and other things

that are pretty critical towards the communities we are talking about here? And have they been held accountable for doing that kind of damage?

Mr. CLARK. Well, absolutely. In my initial testimony, I talked about what we did in Chicago. We worked with the Urban League, we worked with the churches, we worked with the community organizations to recruit and vet minorities and women. And, again, we took them and trained them on the job. On-the-job training is what we gave them. And they ended up working so very well that our prime contractor, who was one of the largest in the world, sent us home for 2 weeks so they could catch up with us.

Now, we did that because we wanted to make sure the community was, one, benefiting with regard to the work and the opportunity that we could give them, but also to make sure that our reputation was such that we do more than just the work. We try to really make an impact in the community. We try to make sure our workforce looks like our ridership.

So, everywhere we have gone, not just Chicago, we have done the same in Atlanta, we have done the same with MARTA, the transit organization there. We have done the same at DART.

Ms. Williams testified about the 61-percent minority workforce that was with her joint venture. Well, we did those two the same. This is what we do. We look to make a difference.

And when Donald Trump came in and tried to take away local workforce hiring, well, they were—the major companies wanted to bring in their workers and not really do anything for the community.

Mr. LAMALFA. Right. That happens around here when we have these issues with the fires burning up the communities here in northern California, that is really difficult to overcome the barriers of small local companies, no matter their makeup, to overcome the big on that with getting contracts.

A relative of mine has a small company, and he can hardly break into doing jobs at his unique business in the bay area, for example, because it is either you are too small or you are not in the union, for example. So, we have got issues across the board on that.

As we have seen with high-speed rail, they pretty much have basically ignored local concerns and don't involve local private companies. Do you think that this will lead to even more problems on the California project or is that—you know, what do you think about that?

Mr. PAYNE. Excuse me, but the gentleman's time has expired.

Mr. LAMALFA. Wow, that was fast.

OK. Thank you, Mr. Chairman.

Mr. PAYNE. Thank you.

Next, we will hear from the vice chair of the subcommittee, Ms. Strickland, for 5 minutes.

Ms. STRICKLAND. Thank you, Chairman Payne and Ranking Member Crawford.

Mr. Chairman, I have an opening statement to enter into the record.

Mr. PAYNE. Without objection.

[The information follows:]

Prepared Statement of Hon. Marilyn Strickland, a Representative in Congress from the State of Washington, and Vice Chair, Subcommittee on Railroads, Pipelines, and Hazardous Materials

Railroad expansion in the United States has historically depended upon discriminatory practices—from the railroads' Western expansion federal land grants that violated federal treaties with Indian tribes to limiting Black, Asian-Pacific Islanders and Latino American employment opportunities. The American railway labor force has been sharply segmented along gender, ethnic, and racial lines since its beginning in the late 1820s and early 1830s. Minority men played a critical role in constructing the infrastructure necessary to develop the railroad industry. Immigrants from China, Japan, and Mexico and formerly enslaved African Americans comprised much of the workforce that graded roadbeds, laid track, and ensured upkeep over rail networks throughout the U.S. White men avoided this work as it was considered arduous and dangerous. High level and well-paying jobs in the railroad industry were reserved for white men.

In the Pre-Civil War era, southern railroad systems depended on the labor of enslaved individuals. Many railroads made up their entire train crews, except for conductors, with enslaved laborers. This meant enslaved individuals gained experience working as rail firemen, brakemen, and engineers. After the Civil War and Emancipation, southern railroads continued to rely on the labor of African Americans. The number of African American engineers dramatically decreased after the war; white workers were given preference after railroads were made to pay their African American workforce. In the south, African American rail operating employees were predominantly restricted to the roles of firemen and brakemen, or kept at the level of porter in name while performing the duties of firemen and brakemen. In the north, African Americans were entirely barred from the positions of fireman, brakemen, engineer, and conductor.

In 1910, statistics collected by the U.S. Department of Commerce's Bureau of the Census indicate that railroads promoted only three African Americans from fireman to engineer for every hundred whites in the southern United States. In addition to promoting white men to the role of engineer, railroads also paid white workers in fireman and brakeman roles higher wages than their African American counterparts. This limitation of opportunity was reflected in union membership, exacerbated by some unions barring African American engineers from joining their membership.

In 1957, a study conducted by the New York State Commission Against Discrimination and the New Jersey Division against Discrimination found that less than one percent of railroad operating jobs were held by African Americans. In 1962, Congress received testimony that southern railway labor forces had transformed from majority African American to overwhelmingly white. The witness, A. Philip Randolph, argued African Americans' rapid exit from railroad operating departments demonstrated the urgent need for fair employment legislation. Increased access of African Americans to good-paying railroad operating jobs was driven by the passage of the Civil Rights Act in 1964. However, discrimination has persisted.

In 1976, Congress passed the Railroad Revitalization and Regulatory Reform Act (4R Act), which stated that activities funded by the bill must not discriminate against any person. In 1979, the Government Accountability Office (GAO) found the FRA was not effectively enforcing this provision of the law. The GAO stated that discrimination would persist unless, "minority business enterprises and entrepreneurs were made aware of opportunities in which they could participate; and assistance was made available to them to overcome endemic problems of minority businesses in this country, i.e. lack of capital, lack of access to major markets and lack of sufficient supply of capable managers." GAO's principal findings noted marginal success in internal FRA efforts to prohibit discrimination on federal contracts and that progress was not substantial. Furthermore, in examining the industry climate for minority businesses, GAO quoted stakeholders describing the railroads receiving 4R Act funding as "dragging their feet' and ... doing only what they are forced to do."

Women were also denied advancement to high-level and good-paying jobs in the railroad industry. Since the inception of railroading, women worked a variety of jobs including coach and depot cleaners, restaurant servers, passenger train hostesses, telegraphers, and clerks. The role of coach cleaner was most commonly filled by African American women. During WWI and WWII, employment of women on railroads spiked to fill vacancies left by men assigned to the war effort. While the experience women built in these roles allowed some to stay in the industry after the wars, most

of their positions were returned to male workers. Women were firmly excluded from operating and skilled maintenance crafts until the 1970s.

Ms. STRICKLAND. And, Mr. Chairman, I want to thank you for your leadership in holding this important hearing today. And I especially want to thank all of the witnesses for your factual, compelling, and diverse stories of discrimination.

The topic of this hearing today is, does discrimination exist in Federal passenger rail contracting? And without having to even do a disparity study, I knew the answer was yes, and those who have testified have demonstrated that.

We also know that a lot of the racial and gender discrimination that exists through your stories and experiences, there are other people who have the same stories to tell, but they are just not here today. They have been denied contracts, opportunities, and fair consideration. And I sincerely thank all of our witnesses today.

Mr. Clark, I would like to start with a question for you. In your testimony, you noted that some of the success that GWP has had after you acquired control, including serving as the DBE rail contractor for Chicago Transit Authority, can you please tell us about the differences your firm has experienced in pursuing projects with DBE programs, like FTA's, versus agencies that don't have the programs?

Mr. CLARK. Well, the agencies that don't have the program just don't give us any opportunity to work. I have been saying for a long time as an advocate that if they don't have to, they won't. They will not share anything. There are so many prime contractors now, OK, that we have good relationships with, that only call us when they have a project that requires some kind of goal to be met.

So, other than that, we don't have that opportunity. Or if we do bid them—and sometimes we bid these contracts with private groups, OK, and agencies—they don't tell you where you stand in your bid. They just say who has won the job and they move on.

So, we don't win those types of jobs. Actually, we are very seldom solicited. However, this week, something new happened—last week, I am sorry—and we were actually sent a solicitation from Norfolk Southern, and we were knocked off our feet, OK, because we have been trying to get in to let them know what we do for the longest. And it was a minority business representative, and we were shocked because they never had anything like that before.

So, I felt like what was going on, what is going on here today, and what has been pushed by the Congressional Black Caucus, is starting to make a difference. People are recognizing that they are going to have to accept this. And we can make a difference. We feel that we have made a difference as a small contractor in several States.

Ms. STRICKLAND. Thank you.

I now want to turn to Mr. Canty. Sir, the examples of intimidation and blatant discrimination that you noted in your testimony is simply unconscionable. Could you talk more about the toll that takes on you as a contractor and business owner about what it takes to pursue action against these actions and how it affects your ability to compete?

Mr. CANTY. The toll it takes is—everybody on this Zoom, at the end of the day, we're not that different. We are all people. Right? We are all people. And the toll it takes on a person is indescribable. It is indescribable. It is the worst. I wouldn't wish this on anybody.

We don't have time to get into it in totality, but the toll is indescribable. I mean, the toll it has on your families, the toll it has then on your ability to provide for your family, your ability to provide for your employees, is huge.

So, there is a net ripple effect of bills that literally just can't get paid and net ripple effect of—and this is the reason I believe what was done to me was done was, as far as like [inaudible]—and I forgot to mention to you guys, I used to work for these guys as an employee for a joint venture. So, I knew them and they knew me. And I had the first mentor-protégé in the history of the United States DOT having served there with them. I think the reason why they do this is to make sure nobody else stands up, because their racism, it is profitable. It is profitable, so—

Ms. STRICKLAND. Thank you.

And as we look at doing a DBE study, I also want to make sure that we are looking at both the carrot and stick. There must be enforcement and accountability.

I yield back.

Mr. PAYNE. The gentlewoman yields back, and she is absolutely correct.

Next, we will have Mrs. Steel for 5 minutes.

[Pause.]

Mr. PAYNE. You are on mute.

[Pause.]

Mr. PAYNE. OK. Next, we will go to Mr. Johnson for 5 minutes.

Mr. JOHNSON OF GEORGIA. Thank you, Mr. Chairman, for holding this very important hearing. And thank you to the witnesses for your time and your testimony.

I have been a longstanding advocate of the DOT's Disadvantaged Business Enterprise program, which facilitates the success of women- and minority-owned businesses throughout the transportation sector. Unfortunately, however, there is no DBE program for Federal funds administered under the Federal Railroad Administration, the FRA, despite systemic discrimination based on race and sex that severely limits the economic prosperity of minority-owned businesses.

Not only must Congress strengthen the existing DBE program under DOT, we must also establish a similar program under the FRA for the rail transportation industry. And this is crucial to mitigating inequality.

Mr. Canty, your testimony asserts that discriminatory and unprofessional behavior by prime contractors has gone unpunished by Florida DOT, FDOT. And what is more, the FDOT has demonstrated a willingness to ignore discriminatory complaints altogether, allowing bad actors to receive additional funding.

Your firm has engaged in work across the east coast and the South, including in my home State of Georgia. Based on your experience, how confident are you that the discriminatory experience you were subjected to is representative of that experienced by minority-owned firms across the country?

Mr. CANTY. I am very confident of it, because since my story has been told, I have had a plethora of folks send me information on it, including a picture of a noose on a job in LaGuardia by the same contractor, which I was blown away by, even with my experience of seeing what I have seen.

So, it is absolutely representative. I think maybe the difference with me a little bit is I came up under these folks, so I was able to document in the way they were able to document, and that way it didn't just get swept under the rug.

I am no tougher than any other man or woman or anybody here, but I mean—you know, you just can't give up. And no matter what, one day somebody will hear it. Some places in the country are worse than others.

A lot of the reason nothing changes is that chain of custody from the State for them to really control it doesn't exist. Like in Florida, they really don't have any control over the prime, so—

Mr. JOHNSON OF GEORGIA. OK. Gotcha. Thank you.

Mr. Ramanujam, your testimony indicates the challenges DBE businesses face due to current limitations in the program, such as how size standards for small businesses have not been adjusted for inflation. How does the lack of a uniform DBE size standard diminish a minority-owned prime contractor's ability to compete with non-DBE firms?

Mr. RAMANUJAM. Thank you, sir. My testimony referred to the time when we actually lost our DBE status earlier. And it has since been adjusted, but it needs to be adjusted some more.

To answer your question, the value of the dollar is not as much as it was before. We all know that, whether it is a gallon of milk or a gallon of gas. The projects that are coming out are much larger. And with the recent—and I thank all of you Members here for passing the infrastructure stimulus.

With the recent infrastructure stimulus, the projects are much, much larger. The size standards are not amenable or favorable for a small firm like ours to even get anything as a prime. We are constantly having to depend being a sub, and once you are dependent on being a sub, your destiny is not in your hands.

So, it is very real. It has a very limiting and a very negative impact on small businesses to not have the size standard pegged into inflation.

Mr. JOHNSON OF GEORGIA. All right. Thank you.

Mr. Otero, I commend your leadership as a minority business owner for more than 30 years.

How do you believe the existing DBE program can be strengthened to increase meaningful participation of businesses beyond subcontracting opportunities?

Mr. OTERO. Well, I think that what the program should also be focusing on is capacity building. All too often, we are given subcontracting an [inaudible] but it's just a point here, a point there, and that doesn't really help the small business in any way. There should be more of a mentoring relationship.

But the agency has to be the one who drives this kind of philosophy that says, OK, you are going to have 10 or 5 different sub-consultants on this project, but what are their roles? That there is a meaningful role that that firm is going to provide that is going

to help that firm grow its own capacity. Because if all you are doing is some menial type of task that is going to be what you are relegated to, all it is doing is satisfying the goal but not achieving the true spirit of what the program is intended for, which is have meaningful participation so that these firms are growing and are able to eventually survive on their own.

Mr. JOHNSON OF GEORGIA. Thank you, sir.

And I yield back.

Mr. PAYNE. The gentleman's time has expired.

Next, we have Mr. Auchincloss for 5 minutes.

Mr. AUCHINCLOSS. Thank you, Chair.

This is a timely hearing to hold as, 3 days ago, the House passed, and the President signed into law, a historic investment in our Nation's infrastructure. The bipartisan infrastructure bill includes \$66 billion for passenger and freight rail. Part of the bill's mission is to address the history of discrimination and how it has shaped our communities.

The Disadvantaged Business Enterprise program was established under President Reagan, and yet four decades later, Federal contracting awards are still struggling to include smaller businesses that strengthen local economies and create good jobs. Notably, this designation does not currently exist within the FRA, the Federal Railroad Administration.

As we make these news investments in rail made possible by BIF, especially the South Coast Rail in Massachusetts and potentially East-West Passenger Rail and North-South Rail Link as well, and further projects spurred by the passage of the infrastructure bill, we should not repeat the mistakes of the past.

For Mr. Otero, you offered an idea in your testimony that the Disadvantaged Business Enterprise program should not only provide subcontracting opportunities, but should also foster capacity building for DBE firms by providing meaningful participation.

Can you expand more on that idea? And would there be incentives to the mentoring entity or a post-mentorship evaluation for each participating company?

Mr. OTERO. In my experience, being in business for 32 years and being—I would say 80 percent of our work is as a subconsultant; 20 percent is prime. All too often, the prime thinks that by having 10, 15 subs on their proposal, that is the way to win. And they may win. But the problem is what work is being divvied out to those 15 subconsultants is menial. OK?

What I try to talk to primes when they are giving me the opportunity to provide some input to how they are going to frame the team, I say, look at what are the scopes of services that you are going to sub out and give it to one or two firms and approach it that way, so that, at the end of the day, I know I am responsible for the following work, should we win.

This way it is in my wheelhouse. I am using the staff and the capabilities that I have, and I am building that capacity and providing a meaningful service that I feel very capable of providing, so that it is a win-win situation all around.

But a lot of times, the primes don't want to look at it that way. They just want to have the 15 window dressing of firms on the team, and what they wind up giving to them and how meaningful

it is not part of their philosophy in terms of diversity and inclusion.

Mr. AUCHINCLOSS. That is helpful. I appreciate that insight.

And then my final question for Ms. Malaszecki, you noted in your testimony that if the contracting arena becomes more tailored to support small women- and minority-owned businesses, like other agencies of Government, your business would certainly pursue additional contracts. What can the FTA and the FHWA do throughout these processes so that smaller businesses can equitably compete with the bigger entities?

Ms. MALASZECKI. Congressman, right now, I have been awarded two FTA contracts back to back 5 years as a prime contractor, nationwide contract for program management oversight. So, to answer that question as to the FTA, they are already doing it.

It was a big learning curve. It starts with the procurement at the agency to assist someone like me to answer the questions. We have to do all the other work, but there is a lot of administrative background to be a Federal contractor.

And the second time we went after the contract, it was competitive, and we are 1 of 5 small businesses out of 21 in the country that have this as a prime.

What occurs, though—and many of the people speaking today—is it changes the game because the large prime contractors don't want me to be in that prime arena. They want me to stay where I am. And that is the piece that, with the DBE financial requirements and the different things that all of you have going on presently right now, is we are capable to get to that next level, but we are strapped by other different pieces, such as the financial capacity and our—

Mr. AUCHINCLOSS. Thank you, ma'am. My time has expired I appreciate the answer.

And I yield back.

Mr. PAYNE. I thank the gentleman.

Next, we will go to Mr. Garcia for 5 minutes.

Mr. GARCÍA OF ILLINOIS. Thank you, Chairman Payne and Chairman DeFazio, for holding this very important hearing on whether discrimination exists in Federal passenger rail contracting.

Congress recently passed historic infrastructure legislation that authorizes hundreds of billions of dollars in new infrastructure spending, including \$66 billion for passenger and freight rail.

As the U.S. Department of Transportation and State and local governments award contracts over the next few years to spend this historic amount of money, we must make sure that they include disadvantaged business enterprises in those contracts, especially Black-, Brown-, and women-owned businesses.

I want to thank our brave witnesses here today for sharing their harrowing and painful stories of how they faced unjust discrimination as they sought to expand their contracting businesses. We must work in Congress to eliminate this insidious discrimination.

A question for Mr. Melvin Clark. In your testimony, you mentioned how you established an office in Chicago and have worked successfully with the Chicago Transit Authority, most notably with respect to the rehabilitation of the Dan Ryan portion of the Red Line.

Why have you had success in getting contracts from CTA? And what lessons can Congress take away from what CTA has implemented in terms of Disadvantaged Business Enterprise programs and goals?

Mr. CLARK. Well, one of the factors that I feel has made a difference for us is that we did something and were accepted by the minority community. When we came in to work on that project, as I told you, we went to the churches and the Urban League, and the city supported all of that. They saw people being hired and they saw a positive difference it made in the community.

And so, we ended up becoming their contractor of choice, OK, because we were supported by more than just the fact that we can do the work, but that we were doing positive things. Our motto is to do well by doing good and—

Mr. GARCÍA OF ILLINOIS. Local government made [inaudible].

Mr. CLARK. Hello? You are frozen.

Hello?

Mr. PAYNE. We are having a little bit of a technical difficulty here. We are going to see if we can get Mr. García back up.

Mr. CLARK. OK.

Mr. PAYNE. What we will do here is go to the gentleman from Louisiana, Mr. Carter, and we can come back to Mr. García.

[Pause.]

Mr. PAYNE. Mr. Carter?

[Pause.]

Mr. PAYNE. We are having technical difficulties with everyone. Be patient with us for a second, please.

[Pause.]

Mr. PAYNE. We just ask the witnesses to be patient with us.

[Pause.]

Mr. PAYNE. Mr. García? Mr. García, can you hear me?

Mr. GARCÍA OF ILLINOIS. Thank you so much, Mr. Chairman. I apologize, but I think we all had some technical issues. Yes, I can.

Mr. PAYNE. OK. You can continue. You have about 3 minutes left.

[Technical difficulties.]

Mr. PAYNE. And it is not working.

Mr. CLARK. Hello, can you hear me now?

Mr. PAYNE. Yes, we can hear you, sir, Mr. Clark.

Mr. CLARK. All right. Are we continuing or—

Mr. PAYNE. Yes.

Mr. CLARK. OK. Well, he was talking about how the community and local government had embraced us, and I said yes, they have. In fact, when I was working on the fast-track program in Washington, they allowed me to come and recruit workers in Chicago, and we announced it on the radio. Some of the people and the deputy mayor were fully supportive of us. Actually, we brought buses to bring down workers to give them opportunities again that we had, that they didn't necessarily have in Chicago at the time. And those are the things that have endeared us to the community.

And the prime contractors know now that G.W. Peoples makes a difference, and that CTA and the local government is very pleased with what we do and the way we do it, and so we are getting more opportunities.

And we felt like it is not just low price that wins something, but it should be what difference are you making in a community when you have these kinds of opportunities.

Mr. PAYNE. Thank you.

Mr. García?

Mr. GARCÍA OF ILLINOIS. Yes. Can you hear me, Chairman?

Mr. PAYNE. Yes, now we can.

Mr. GARCÍA OF ILLINOIS. Chairman, can you hear me?

Mr. PAYNE. Yes.

Mr. GARCÍA OF ILLINOIS. Mr. Chairman? OK.

Mr. Canty, you touched on the personal net wealth cap of \$1.32 million and how the cap disadvantages DBEs. Can you expand on why the cap hurts the growth of DBEs and what you think Congress—if we should raise that cap?

Mr. CANTY. Yes, sir. Typically, when that cap comes into place where it is harmful is in the bonding program. And if you are living in an area, the majority of the area of the country, like the Northeast or Chicago or the west coast, your home is typically included in that equity, the value of your home—in the 8(a) program, it is not, but in the DOT programs, a lot of them they are and any retirement programs.

So, if you have already been established, you have got to be very careful of not exceeding the cap. But in order to get the bonding you need, typically they are going to look at, if you want a \$10 million bonding program, you have got to have \$1 million in the bank somewhere or you can't indemnify yourself; meaning, if it all goes wrong, you get to give up everything you have.

So, perhaps there is a need for legislation where, for DBEs, you can either do jobs that don't require the same level of bonding or some kind of tweak to the bonding program, that could be where it is for DBEs specifically, or some change on the jobs where the jobs are actually self-insured anyway, the majority of them, and the DBE's bonding is covered by the prime's bond.

Mr. PAYNE. Thank you very much.

Mr. GARCÍA OF ILLINOIS. Thank you very much.

Mr. Chairman, I yield back.

Mr. PAYNE. The gentleman's time is expired.

We are going to have Mr. Carter for 5 minutes.

Mr. CARTER OF LOUISIANA. Mr. Chairman, thank you very much. I greatly appreciate the opportunity to address this significant issue.

We know that DBEs historically have had a difficult time when cracking into the mainstream of doing business with majority firms and even with the Federal Government. We know that, currently, roughly 5 percent of Federal contracting dollars go to minority-owned businesses. So, that is something that we have to do a better job at. And I am very proud that this infrastructure bill establishes the Minority Business Development Agency within the Department of Commerce.

So, to the panelists, I would ask that you gather as many of your experiences as possible and share them with us in writing so that we can—as this development of the Minority Business Development Agency is armed, we can begin by giving them all of the horror stories of things that you have experienced.

I know that many times small businesses are choked when it comes to getting paid. The prime gets paid, and then the sub is choked for 90, 120 days and beyond, oftentimes making it next to impossible to run a business, because you need your resources; oftentimes to find that prime companies come in and then offer pennies on the dollar to close out a file where members of the minority community, minority businesses, women-owned business have already expended resources.

So, I would ask either of the panelists—or all of you, very briefly, because I have got a little bit of time, to share your experiences as it relates to the process of getting paid. Once a prime has been paid, oftentimes subs are left on the sideline waiting to be paid, oftentimes getting far less.

Can anyone speak to that?

Mr. RAMANUJAM. We have definitely—thank you, Congressman. We have definitely experienced that in terms of getting late payments. And as we speak right now, we have a really large national firm whose average AR days, that is the average number of days it takes them to pay us, is over 120 days.

That goes to my second point in my testimony about the relationship and the difficulty of having a fair relationship with the bank, because we have to borrow. We have to borrow. And I have had to write off, or take less money on occasions, to take care of this. But it is a lot of stress. There is no cash flow, and I have—

Mr. CARTER OF LOUISIANA. Absolutely. And I don't want to cut you off. I have got a little bit of time, but I agree. I appreciate that.

I would like to hear from a few other panelists as well.

Mr. OTERO. I would like to address that as well.

What we found is also sometimes the culprit is the agency itself. So, what we try to do is work with the agency to see if they can speed up the payment process internally, because that is what the prime is telling us, is that they haven't been paid, even though there is a prompt payment requirement in the contract. So, we talk to the agency also and make them aware of how much pain this causes us, and that sometimes sensitizes the agency to try to improve or monitor the invoicing cycle by the prime.

Mr. CARTER OF LOUISIANA. But the issue that I am bringing forward is ones that I have heard a million times before. And while I acknowledge that the agency oftentimes could be the culprit, many times the culprit is the prime is paid and then withholds payment from the sub when you can least afford that.

Mr. Clark, can you chime in for a brief second on that? And then I am going to ask—do it in 10 seconds because I have only got a little over a minute left.

Mr. CLARK. Yes, certainly. I think that there should be some legislation, regulations put in the DBE program where the minority business contractor, subcontractor, the small business normally, is paid within 30 days.

Mr. CARTER OF LOUISIANA. A payment of some kind with the prime, right? When a prime is paid, they can pay you commensurate.

Mr. CLARK. Well, sometimes the prime is not paid because of their issues, and we as the small business are sitting around waiting. We are in that situation right now. OK? We had nothing to

do with them not being paid. However, they are saying that we signed the same contract: "paid when paid." That is what we are supposed to do. Well, I think—go ahead.

Mr. CARTER OF LOUISIANA. Mr. Clark, I am sorry, I have got 24 seconds, and it looks like Kenneth wants to jump in there real fast. Can you do it in about 5 seconds?

Mr. CANTY. I think the best way is to have 14-day pay terms just like the Small Business Act is used with the 8(a) program. And the prime should be required to pay, even if they haven't been paid within those 14 days, and they can carry the cost of that in their contract to the owner.

Mr. CARTER OF LOUISIANA. In closing, what I would ask everyone to do is as I started: Cobble together as many of those experiences and give them to the committee in writing. Share with us your experiences. I mean, we have limited time to talk today. But as this development of the Minority Business Agency comes about, we want to be able to think about those problems that you had and address them in as thoughtful a way as possible.

Does us no good to have a \$1.2 trillion infrastructure bill if the people that are in the community that have been negatively impacted the most never have an opportunity to participate, to share your professional knowledge or skills, your wares.

That is what we are here for, to make sure that we have equity in Federal Government contracting, but also to make sure that we create opportunities across the board.

So I know I am out of time, Mr. Chairman. Thank you very much. I yield back.

Mr. PAYNE. No, thank you. The gentleman's comments are well received.

Next, I will ask Mrs. Steel if she has any questions for the witnesses.

Mrs. STEEL. Thank you, Mr. Chairman.

Actually, I submitted written questions, so I think I am going to stay as-is, because they are almost the same as Congressman Doug LaMalfa, because I was quoting the L.A. Times and high-speed rail. So, I am just going to submit the written statements.

Thank you, Mr. Chairman.

Mr. PAYNE. OK. Thank you.

That concludes our hearing today.

And I would like to, again, thank each of the witnesses for their testimony today.

I ask unanimous consent that the record of today's hearing remain open until such time as our witnesses have provided answers to any questions that may have been submitted to them in writing.

I also ask unanimous consent that the record remain open for 15 days for any additional comments and information submitted by Members or witnesses to be included in the record of today's hearing.

Without objection, so ordered.

And the subcommittee stands adjourned.

[Whereupon, at 12:47 p.m., the subcommittee was adjourned.]

SUBMISSIONS FOR THE RECORD

Prepared Statement of Hon. Sam Graves, a Representative in Congress from the State of Missouri, and Ranking Member, Committee on Transportation and Infrastructure

Thank you, Chair Payne, and thank you to our witnesses for being here today. Thank you for calling today's hearing to examine the potential need for a Disadvantaged Business Enterprise, or DBE, program for passenger rail contracting.

It has been roughly 40 years since Congress first created the DBE program, which was intended to help small businesses owned and controlled by those facing barriers in the transportation construction and airport concession industries.

Congress has recognized the success of the DBE programs in the Department of Transportation by authorizing their continuation and making adjustments as needed.

The Federal Railroad Administration is currently working on a disparity study that will inform Congress on the need to create a DBE program for passenger rail. I look forward to receiving the results of that study when it is complete.

I look forward to hearing more from our witnesses on this subject.

Thank you, Chair Payne. I yield back.

Letter of November 22, 2021, from Laura C. Dutton, Former Administrative Assistant, Atlantic Meridian Contracting Corp., Inc., Submitted for the Record by Hon. Donald M. Payne, Jr.

NOVEMBER 22, 2021.

TO WHOM IT MAY CONCERN:

I was employed by Atlantic Meridian Contracting Corp., Inc. (AMC), owned by Mr. Kenneth Canty, from 10/14/2019 through 12/31/2020. I served as the Administrative and Accounting Assistant for the company and submitted billings on the company's behalf.

Our biggest client during this period of time was Skanska Corporation. The project on which we were employed by Skanska was the New Pensacola Bridge. AMC was hired as a subcontractor to complete the demolition of the old bridge. I arranged for housing for our crew in Pensacola, I submitted Certified Payrolls weekly, and I submitted progress billings on the project.

To the best of my recollection, Skanska rejected the majority of our billings, stating the billings were not accurate. Our company controller, Mr. Richard Ellis, made every effort to communicate with Skanska's accounts receivable department, the Skanska project managers, and other Skanska company representatives to try to get direction on how to correct the billings so that AMC could be paid. Each time we asked for clarification, Skanska would simply say we were not accomplishing the work for which we were billing.

Likewise, our Certified Payroll reports were being rejected and, we felt, nitpicked. As soon as we corrected one issue, another issue would be found. For one particular date, there was a report from the Skanska project manager that two members of AMC's crew were interviewed. However, both those members were on personal leave and were not on the worksite day. We received a negative report for our payroll for that particular date because we had not reported hours worked for those two employees. It took several phone calls and emails back and forth to convince Skanska that their project manager was in error about the date. It certainly felt like harassment.

I performed identical job duties previously for a white owned subcontractor, and my experience as a representative of that employer was quite different, virtually opposite as far as professional respect and open communication between contractor and subcontractor. My billings were almost never rejected and, if they were, the rea-

son was clearly communicated with an opportunity to correct the issue. My experience with submitting Certified Payrolls on federally funded projects for a white owned subcontractor was also starkly different than when I worked for AMC. The payrolls were almost always accepted, and if there was ever an issue, it was due to a legitimate error on my part that I was given the opportunity to correct without undue scolding or threats of discontinuing the project.

Mr. Canty was in constant contact with Skanska on every aspect of the Pensacola project, to include our progress billings. After several months of having our bills questioned and then rejected, Ken was told that Skanska had altered their Standard of Values (SOV). However, AMC was not allowed to alter our SOV to reflect what Skanska showed was the accurate picture of the costs of the project. An SOV is crucial to a contractor's being paid accurately for their work. It is the official itemized form on which billings are submitted. This was unacceptable and made it impossible for us to submit accurate billings. Not only was AMC's SOV different from Skanska's SOV; Mr. Canty also discovered that the specifics for the entire project were not presented to him accurately when he was awarded the job. This caused enormous cost overruns for an already expensive project for AMC. After months of rejected progress billings and no compensation from Skanska, AMC was no longer able to meet their financial obligations.

Looking back on these events, there was no reason whatsoever for Skanska officials to behave so unprofessionally unless they were doing so deliberately to try to frustrate AMC's efforts. I believe it was March/April 2020 that AMC was sued by Skanska for failing to fulfill their contract, and AMC was terminated from the project. As you know, AMC has counter-sued, and Mr. Canty has filed a discrimination lawsuit as well. As a minority business owner, he has been subjected to the most egregious and blatant disrespect and unprofessional treatment imaginable. His employees were subjected to open racism and hostility on the jobsite in Pensacola. There were no repercussions for the offenders. Both in person and on paper, the discrimination was rampant throughout the project.

Respectfully submitted,

LAURA C. DUTTON,
Former Administrative Assistant, Atlantic Meridian Contracting Corp., Inc.

Please allow my name above to serve as my signature.

Letter from Richard J. Ellis, Jr., Controller, Atlantic Meridian Contracting Corp., Inc., Submitted for the Record by Hon. Donald M. Payne, Jr.

HONORABLE DONALD M. PAYNE, JR.,

I am submitting this Letter Of Record on behalf of Mr. Kenneth Canty and his testimony of discrimination on the jobsite that Atlantic Meridian Contracting Corp was involved in.

My name is Richard Joseph Ellis, Jr. I am a 66-year-old, Caucasian male. I am the Controller for AMC. I have worked in accounting for 46 years for sole proprietors to corporations with multiple businesses and over 600 stores across the nation. My diversified experience over the 46 years has given me insight into the various ways across the board that companies do business in paying their bills and in their day to day relationships with subcontractors and other AP vendors.

What I have witnessed at AMC from SKANSKA I have never witnessed before. Their actions, which I will elaborate on further in the letter, show a distinct aggressiveness and intentional conflict to delay or avoid paying AMC at times when SKANSKA knew it was critical to get on time payment for labor and equipment which AMC had paid up front in order to provide the work that needed to get done.

Over and over there were intentional challenges and avoidance openly to the point that it could only be because of Mr. Canty's race. It was so openly done to the point that they were not only being prejudiced but to the point of not trying to hide it because they acted like they thought they were immune to any action AMC would take to challenge them. To put it simply, it was like they were saying "we are going to do this and there is nothing you can do about it". I can't stress how much my disbelief was that they worked like this and that it was not just with the accounting dept, but seemed to be ingrained in the whole company attitude from other areas. "We are the big boys on the block and we can do whatever we want."

I will start listing some examples of ways they intentionally hurt AMC which includes openly hiding site conditions they knew about that the Florida DOT provided them which they withheld from AMC, to delay tactics for payment and to actual on-site sabotage of working areas and conditions for our employees.

A common delay practice they would use is to be nick picky about our Pay App. Each time it would be something and they would ask us to do this or that. Once I did and would resubmit, they would then tell us that the whole approval process had to start over and that our payment would now fall into a different pay period and we would have to wait another month. The corrections they would ask for were usually issues of presentation about how they wanted the Pay App, but that would change every time. They would constantly delay and keep pushing our payments back.

On our final payment which was never paid, I talked to their Controller 3 or 4 times about when we would be paid. He would give me an actual date that the pay run would be made. Then when time came there was not payment. Time and again he told me the payment would be a certain date. Of course, we are budgeting our AP and Payroll based on that and when they did not pay then we would be in a worse position because we had already committed to making our payments based on receiving those funds. This occurred at least 3 times where they directly told me the date of payment. On my last contact with them about getting this payment, the Controller simply replied to me that there was no payment scheduled for AMC nor would there be. This after a month of emails promising us payment, telling us a payment date and then not paying.

These occurrences continually happened and I have NEVER seen such outright deception that they openly did almost like saying, we can do whatever we want, you are just some little DBE minority owned company and we will pay or not pay when we tell you. They blatantly and openly did this over and over to us and I am absolutely sure it was because of Mr. Canty's race and his knowledge of the work being much better than theirs to the point they wanted to show him, yes you might be smarter but we are bigger!!!

I humbly submit this as my opinion that there was outright racism from this company.

RICHARD J. ELLIS, JR.,
Controller, Atlantic Meridian Contracting Corp., Inc.

APPENDIX

QUESTION FROM HON. DONALD M. PAYNE, JR. TO GNANADESIKAN “RAM” RAMANUJAM, P.E., PRESIDENT AND CHIEF EXECUTIVE OFFICER, SOMAT ENGINEERING, INC.

Question 1. No business should have the door closed on them before they can prove that they deserve a seat at the table.

If this behavior continues, what do you see as the long-term consequences to minority and women-owned businesses looking to make their way into the rail industry?

ANSWER. The consequences to minority and women-owned businesses are many, and impact different aspects of their existence, sustenance and growth.

Financial consequence: Minority business that invest money, time and resources in building their skill set to serve the rail industry will suffer two ways. First, they would have wasted their resources because there will be no work—kind of like getting a degree in basket weaving. Second, they would have spent time that could have otherwise been spent on other productive pursuits, and time is a resource that cannot be replenished. Some businesses will even have to close their doors. These business owners will never realize, or will lose, the fruits of investment of multiple years of hard work and sacrifice.

Educational consequence: It is an established fact that minority businesses are the ones that provide meaningful employment to minority populations, with opportunities to advance and evolve professionally. If the current behavior continues, minority students will not pursue education related to rail industry, further narrowing opportunities for minority and women businesses.

Innovation and business consequences: Transportation in the 21st century is no longer in silos. Multimodal projects are being planned and executed all over the United States, with rail, transit and road modes intersecting each other. The lack of rail industry opportunities will severely and adversely impact minority and women businesses compete effectively for such work, and develop innovative solutions. This will actually reduce their ability to compete even in their traditional markets of transit and road work, or be relegated to commodity aspects of such work.

Perception consequences: “Perception is Reality.” The lack of opportunity, and experience, in rail work will leave minority/women businesses without the opportunity to acquire that skill set. This in turn will cause a perception that such businesses are unable, or uninterested, to acquire those skills and become a complete, full-service business. Once such a perception takes root, minority and women businesses will be considered even less for any opportunity. This is a highly impactful consequence.

Social consequences: Failure is crushing to a person’s confidence. The failure of multiple efforts to penetrate the rail industry, or keep a business open and running, will send a strong message to younger, future minority and women entrepreneurs. That message is that they are not welcome, not considered capable and should not aspire. That is a disastrous consequence for multiple future generations.

In 1947, Jackie Robinson showed us that black folk can play major league baseball. Today, the FRA has the opportunity to show that minority folk can play ball in the rail industry.

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