STATE OF NEW YORK
EXECUTIVE CHAMBER
ALBANY 12224

DAVID A. PATERSON
GOVERNOR

May 5, 2010

Dear New Yorkers:

In 2006, the New York State Department of Economic Development commissioned a study, as required by Executive Law § 312-a, to determine "whether there is a disparity between the number of qualified minority and women-owned businesses ready, willing and able to perform state contracts for commodities, services and construction, and the number of such contractors actually engaged to perform such contracts, and to determine what changes, if any, should be made to state policies affecting minority and women-owned business enterprises."

In accordance with that statute, NERA Economic Consulting performed an extensive statistical analysis and survey of anecdotal evidence concerning the place of minority and women's business enterprises (MWBEs) in the New York market, including state contracting. The study concludes that MWBEs are present in substantially lower numbers and were substantially more likely to be denied access to credit than would have been the case if the market operated in a race and gender neutral manner. It further found that during the period April 2004 to March 2008, MWBEs were utilized in state contracting at rates far lower than their availability would indicate. The authors of the study determined that the statistical and anecdotal evidence support the conclusion that these outcomes are the result of discrimination.

In short, the study powerfully demonstrates the need for a robust New York State program to ensure a level playing field for MWBEs.

Since becoming Governor, and indeed even before, I have pledged to usher in a new era of equal opportunity in contracting for minority and women owned businesses. This study provides the factual foundation upon which to build a comprehensive program to advance that goal. I am committed to working with the Legislature towards putting such a program in place this legislative session.

Very truly yours,

David A. Paterson

David A. Paterson

April 29, 2010

The State of Minority- and Woman-Owned Business Enterprise: Evidence from New York

Prepared for the New York State Department of Economic Development

NERA
Economic Consulting

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Acknowledgments

This Study would not have been possible without the assistance of personnel throughout New York State government, especially at the Department of Economic Development. Special thanks go to the State's project manager for this study, Jeff Metzler, Vice President for Economic Empowerment, Empire State Development Corporation.

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About the Project Team—NERA Economic Consulting

NERA Economic Consulting is a global firm of experts dedicated to applying economic, finance, and quantitative principles to complex business and legal challenges. For half a century, NERA's economists have been creating strategies, studies, reports, expert testimony, and policy recommendations for government authorities and the world's leading law firms and corporations. We bring academic rigor, objectivity, and real world industry experience to bear on issues arising from competition, regulation, public policy, strategy, finance, and litigation.

NERA's clients value our ability to apply and communicate state-of-the-art approaches clearly and convincingly, our commitment to deliver unbiased findings, and our reputation for quality and independence. Our clients rely on the integrity and skills of our unparalleled team of economists and other experts backed by the resources and reliability of one of the world's largest economic consultancies. With its main office in New York City, NERA serves clients from over 20 offices across North America, Europe, and Asia Pacific.

NERA's employment and labor experts advise clients on a wide range of issues both inside and outside the courtroom. We have provided expert testimony on statistical issues both at the class certification phase (on issues of commonality and typicality) and at the liability phase (for class or pattern-and-practice cases). Our experts have extensive experience examining issues of statistical liability in discrimination and other wrongful termination claims. We also provide detailed statistical analyses of workforce composition to identify potential disparities in hiring, layoffs, promotions, pay, and performance assessments and have conducted studies on labor union issues and on affirmative action programs for historically disadvantaged business enterprises.

NERA Vice President Dr. Jon Wainwright led the NERA project team for this Study. Dr. Wainwright heads NERA's disparity study practice and is a nationally recognized expert on business discrimination and affirmative action. He has authored books, papers, and numerous research studies on the subject, and has been repeatedly qualified to testify on these and other issues as an expert in state and federal courts. At NERA, Dr. Wainwright directs and conducts economic and statistical studies of discrimination for attorneys, corporations, governments, and non-profit organizations. He also directs and conducts research and provides clients with advice on adverse impact and economic damage matters arising from their hiring, performance assessment, compensation, promotion, termination, or contracting activities.

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About the Project Team—NERA Research Partners

Colette Holt & Associates is a Chicago-based law practice specializing in public sector affirmative action programs. The firm provides legal and consulting services to governments and businesses relating to procurement and contracting; employment discrimination; regulatory compliance; organizational change; program development, evaluation and implementation; and issues relating to inclusion, diversity and affirmative action. Colette Holt, J.D. is a nationally recognized expert in designing and implementing legally defensible affirmative action programs and is a frequent author and media commentator in this area. On this Study, Colette Holt served as legal counsel for NERA, providing advice and recommendations for the study's design and implementation, conducting interviews with business owners and state procurement officials, and drafting key study findings, among other duties.

Abt SRBI is a New York-based business with a national reputation for excellence in computer assisted telephone interviewing. Abt SRBI provides analysis in the rapidly evolving markets and public policy areas of communications, financial services, utilities, transportation, media, health and business services. The firm was founded in 1981 with the explicit purpose of combining high quality analytic capabilities with in-house control of the research implementation to ensure accurate, timely and actionable research use by decision makers working in rapidly changing environments. Abt SRBI clients include the Eagleton Institute at Rutgers, the Annenburg Institute at the University of Pennsylvania, and the major networks. Abt SRBI has conducted numerous surveys of M/WBEs and non-M/WBEs on behalf of the NERA team. On this Study, Abt SRBI conducted telephone surveys of race and gender misclassification and of mail survey non-response under the supervision of Abt SRBI Project Manager Andrew Evans.

J&D Data Services is a small business enterprise owned by Mr. Joe Deegan and based in Plano, Texas. After a long career with ScanTron, Mr. Deegan started his own business to offer a solid and proven alternative to the time consuming and expensive job of key data entry long associated with mail surveys. The firm helps its clients conserve their surveying resources by designing and delivering survey instruments that can be electronically and automatically scanned upon return and sent directly to electronic format. J&D Data Services has conducted numerous surveys of M/WBEs and non-M/WBEs on behalf of the NERA team. On this assignment they provided printing, postage, mail-out and mail-back service for the subcontract data collection, the mail survey, and the business owner interview invitations.

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About the Project Team—NERA Research Partners

RMBDC, Inc. is a small business with offices in Rochester and Albany. The firm's primary focus is the design and implementation of programs and services that provide meaningful economic participation for enterprises owned by minorities and women in public and private sectors. RMBDC is certified as a M/WBE and DBE with New York State and the NYS Dormitory Authority and is also a certified SBA 8(a) business. Previous clients include the City of Rochester, Dormitory Authority of the State of New York, and the New York State Department of Transportation. On this assignment RMBDC provided outreach and support to populate the business owner interview sessions in Albany, Rochester, and Buffalo.

Spectrum Personal Communications Corp. is a small business founded in 1994 as a diversified business consulting firm and is located in New York City. The firm is a certified MBE with the State of New York, New York City, New York City School Construction Authority, the Port Authority of NY and NJ, and the Metropolitan Transit Authority. CEO Mark O'Luck has over 20 years experience as a consultant to major corporations and governments. Mr. O'Luck is a graduate of Norfolk University and holds an Honorary Doctor of Law degree from St. Joseph's College. Spectrum offers its clients advisory, development, implementation and support services on a wide array of business topics including Local/Small/Disadvantaged/Minority/Women-Owned business consulting services. On this assignment, Spectrum provided outreach and support to populate the business owner interview sessions in New York City, Long Island, and Westchester.

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The opinions expressed in this report are valid only for the purpose stated herein and as of the date of this report. No obligation is assumed to revise this report to reflect changes, events or conditions, which occur subsequent to the date hereof.

All decisions in connection with the implementation or use of advice or recommendations contained in this report are the sole responsibility of the New York State Department of Economic Development. This report does not represent investment advice nor does it provide an opinion regarding the fairness of any transaction to any and all parties.

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Executive Summary

A. Introduction

Executive Law § 312-a authorizes and directs the Department of Economic Development to commission a statewide disparity study regarding the participation of minority and women-owned business enterprises in state contracts. Pursuant to this law, NERA was commissioned by the Department to examine the past and current status of minority-owned and women-owned business enterprises ("M/WBEs") in the geographic and product markets for contracting and procurement of the State of New York (hereinafter "the State" or "NYS"). The purpose of this Study is to assist the State in evaluating whether its current program to assist minority-owned and women-owned business enterprises M/WBEs is still necessary to remedy discrimination, and to narrowly tailor existing and any new measures that may be adopted.

The results of NERA's Study (hereinafter the "2010 Study"), provide the evidentiary record necessary for the State's consideration of whether to implement renewed M/WBE policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted M/WBEs to participate on a fair basis in the State's contracting and procurement activity. ***The 2010 Study finds both statistical and anecdotal evidence of business discrimination against M/WBEs in the State's relevant market area***.

B. Legal Standards for Government Affirmative Action Contracting Programs

To be effective, enforceable, and legally defensible, a race- and gender-based program must meet the judicial test of constitutional "strict scrutiny." Strict scrutiny requires current "strong evidence" of the persistence of discrimination, and any remedies adopted must be "narrowly tailored" to that discrimination. Applying these terms to government affirmative action contracting programs is complex and constantly shifting, and cases are quite fact specific. Over the last 21 years, federal appellate and district courts have developed parameters for establishing a state government's compelling interest in remedying discrimination and evaluating whether the remedies adopted to address that discrimination are narrowly tailored. The 2010 Study follows the guidelines developed by the National Academy of Sciences, which our team was proud to develop.[1]

Chapter II of the Study provides a detailed and up-to-date overview of current constitutional standards and case law and outlines the legal and program development issues New York must consider in evaluating its M/WBE Program and any future initiatives, with emphasis on critical issues and evidentiary concerns.

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[1] Wainwright, J. and C. Holt (2010), *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*, Transportation Research Board of the National Academies, NCHRP Report, Issue No. 644.

C. Defining the Relevant Markets

Chapter III describes how the relevant geographic and product markets were defined for this Study. Five years of prime contract and subcontract records were analyzed to determine the geographic radius around NYS that accounts for at least 75 percent of aggregate contract and subcontract spending. These records were also analyzed to determine those detailed industry categories that collectively account for over 99 percent of contract and subcontract spending in excess of $50,000 in the relevant procurement categories, which were Construction, Construction-Related Professional Services ("CRS") such as architectural, engineering, surveying, and testing services, Other Professional and General Services ("Services"), and Commodities, Supplies and Equipment ("Commodities).[2] The State's relevant geographic market area was determined to be the State of New York plus the balance of the New York-Northern New Jersey-Long Island Consolidated Metropolitan Statistical Area.

The relevant geographic and product markets were then used to focus and frame the quantitative and qualitative analyses in the remainder of the Study.

D. M/WBE Availability in the State's Market Area

Chapter IV estimates the percentage of firms in the State's relevant market area that are owned by minorities and/or women. For each industry category, M/WBE availability is defined as the number of M/WBEs divided by the total number of businesses in the State's contracting market area. Determining the total number of businesses in the relevant markets is more straightforward than determining the number of minority-owned or women-owned businesses in those markets. The latter task has three main parts: (1) identifying all listed M/WBEs in the relevant market; (2) verifying the ownership status of listed M/WBEs; and (3) estimating the number of unlisted M/WBEs in the relevant market.

Table A below provides an executive level summary of the current M/WBE availability estimates derived in the Study.

[2] For construction contracts, the minimum threshold was $100,000.

Table A. Overall Current Availability—By Major Procurement Category and Overall

Detailed Industry	African-American (%)	Hispanic (%)	Asian (%)	Native American (%)	MBE (%)	Non-minority Female (%)	M/WBE (%)	Non-M/WBE (%)
CONSTRUCTION	4.00	6.94	3.18	0.21	14.33	8.41	22.74	77.26
CRS	3.19	4.66	4.46	0.90	13.21	11.32	24.53	75.47
SERVICES	3.50	4.19	11.56	0.35	19.60	17.44	37.04	62.96
COMMODITIES	3.66	4.64	7.45	0.37	16.12	10.93	27.05	72.95
TOTAL	3.71	5.41	7.08	0.33	16.53	12.39	28.92	71.08

Source: Table 4.17.

Notes: For this study, "Black" or "African American" refers to a person having origins in any of the Black African racial groups; "Hispanic" refers to a person of Mexican, Puerto Rican, Dominican, Cuban, Central or South American, of either Indian or Hispanic origin, regardless of race; "Asian and Pacific Islander" or "Asian" refers to a person having origins in any of the Far East countries, South East Asia, the Indian Subcontinent, or the Pacific Islands; "Native American" refers to a person having origins in any of the original peoples of North America; and "White" or "non-minority" means a non-Hispanic person having origins in Europe, North Africa, or the Middle East.

E. Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Chapter V demonstrates that **current M/WBE availability levels in the New York State market area, as measured in Chapter IV, are substantially lower than those that we would expect to observe if commercial markets operated in a race- and gender-neutral manner and that these levels are statistically significant.**[3] In other words, minorities and women are substantially and significantly less likely to own their own businesses as the result of marketplace discrimination than would be expected based upon their observable characteristics, including age, education, geographic location, and industry. We find that these groups also suffer substantial and significant earnings disadvantages relative to comparable non-minority males, whether they work as employees or entrepreneurs.

In particular, we found that annual average wages for African-Americans (both sexes) in 2006–2008, were 25 percent lower in the New York State market area than for non-minority males who were otherwise similar in terms of geographic location, industry, age, and education. These differences are large and statistically significant. Large, adverse, and statistically significant wage disparities were also observed for Hispanics, Asians, Native Americans, persons of mixed race, and non-minority women. These disparities are consistent with the presence of market-wide discrimination. Observed disparities for these groups ranged from a low of -23 percent for Hispanics to a high of -33 percent for non-minority women. Similar results were observed when the analysis was restricted to the Construction and CRS sector. That is, large, adverse, and

[3] 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. *See also fn.* 182

statistically significant wage disparities were observed for all minority groups and for non-minority women. All wage and salary disparity analyses were then repeated to test whether observed disparities in the New York State market area were different enough from elsewhere in the country or the economy to alter any of the basic conclusions regarding wage and salary disparity. They were not.

This analysis demonstrates that minorities and women earn substantially and significantly less than their non-minority male counterparts. Such disparities are symptoms of discrimination in the labor force that, in addition to its direct effect on workers, reduce the future availability of M/WBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are most likely to lead to entrepreneurial opportunities. These disparities reflect more than mere "societal discrimination" because they demonstrate the nexus between discrimination in the job market and reduced entrepreneurial opportunities for minorities and women. Other things equal, these reduced entrepreneurial opportunities in turn lead to lower M/WBE availability levels than would be observed in a race- and gender-neutral marketplace.

Next, we analyzed race and sex disparities in business owner earnings. We observed large, adverse, and statistically significant business owner earnings disparities for African-Americans, Hispanics, Asians, Native Americans, and non-minority women consistent with the presence of discrimination in these markets. Large, adverse, and statistically significant business owner earnings disparities were observed overall as well as in the Construction and CRS sector. As with the wage and salary disparity analysis, we enhanced our basic statistical model to test whether minority and female business owners in the New York State market area differed significantly enough from business owners elsewhere in the U.S. economy to alter any of our basic conclusions regarding disparity. They did not.

As was the case for wage and salary earners, minority and female entrepreneurs earned substantially and significantly less from their efforts than similarly situated non-minority male entrepreneurs. These disparities are a symptom of discrimination in commercial markets that directly and adversely affects M/WBEs. Other things equal, if minorities and women cannot earn remuneration from their entrepreneurial efforts comparable to that of non-minority males, growth rates will slow, business failure rates will increase, and as demonstrated in this Chapter, business formation rates will decrease. Combined, these phenomena result in lower M/WBE availability levels than would otherwise be observed in a race- and gender-neutral marketplace.

Next, we analyzed race and gender disparities in business formation. As with earnings, in almost every case we observed large, adverse, and statistically significant disparities consistent with the presence of discrimination in these markets in the overall economy, in the Construction and CRS sector, and in the Services & Commodities sector.[4] In almost every instance, business formation rates for African-Americans, Hispanics, Asians, Native Americans, and females were substantially and statistically significantly lower than the corresponding non-minority male business formation rate.

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[4] The Construction and CRS sectors were combined for the analyses in Chapter V, as were the Services & Commodities sector. Elsewhere in the study they are analyzed separately

Finally, as a further check on the statistical findings in this Chapter, we examined evidence from the Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO).[5] These data show large, adverse, and statistically significant disparities between M/WBEs' share of overall revenues and their share of overall firms in the U.S. as a whole, and in the states of New York, New Jersey, and Connecticut. The size of the disparities facing minority and female-owned firms in these three states is striking. For example, although 6.65 percent of all firms in these three states are owned by African Americans, they earn barely 1.0 percent of all sales and receipts. African-American employer firms are 1.9 percent of the total but earn only 0.8 percent of sales and receipts. Disparities for women and for other minority groups are also very large in these three states.

F. Statistical Disparities in Credit/Capital Markets

In Chapter VI, we analyzed current and historical data from the Survey of Small Business Finances, conducted by the Federal Reserve Board and the U.S. Small Business Administration, along with data from nine customized matching mail surveys we have conducted throughout the nation since 1999. This data examines whether discrimination exists in the small business credit market. Credit market discrimination can have an important effect on the likelihood that M/WBEs will succeed. Moreover, discrimination in the credit market might even prevent such businesses from opening in the first place. This analysis has been held by the courts to be probative of a public entity's compelling interest in remedying discrimination. We provide qualitative and quantitative evidence supporting the view that M/WBE firms, particularly African-American-owned firms, suffer discrimination in this market.

The results are as follows:

- Minority-owned firms were particularly likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied.
- When minority-owned firms did apply for a loan, their requests were substantially more likely to be denied than other groups, even after accounting for differences in factors like size and credit history.
- When minority-owned firms did receive a loan, they paid higher interest rates than comparable non-minority-owned firms.
- Far more minority-owned firms report that credit market conditions are a serious concern than is the case for non-minority-owned firms.
- A greater share of minority-owned firms believes that the availability of credit is the most important issue likely to confront the firm in the next 12 months.
- Judging from the analysis done using data from the SSBF, there is no reason to believe that evidence of discrimination in the market for credit is different in the New

[5] Formerly known as the *Survey of Minority- and Women-Owned Business Enterprises* (SMWOBE).

York market area than in the nation as a whole. The evidence from NERA's own credit surveys in a variety of states and metropolitan areas across the country is entirely consistent with the results from the SSBF.

We conclude that there is evidence of discrimination against M/WBEs in the New York State market area in the small business credit market. This discrimination is particularly acute for African-American-owned firms.

G. M/WBE Public Sector Utilization vs. Availability in the State's Contracting and Procurement Markets, FY 2004–2008

Chapter VII analyzes the extent to which M/WBEs were utilized by NYS between SFY 2004-2008 and compares this utilization rate to the availability of M/WBEs in the relevant market area.

Table B provides an executive level summary of utilization findings for the 2010 Study by industry category and M/WBE type.

Table B. M/WBE Utilization in NYS Contracting and Procurement, 2004-2008

M/WBE Type	Procurement Category				
	Construction (%)	**CRS** (%)	**Services** (%)	**Commodities** (%)	**Overall** (%)
African-American	2.51	0.93	0.15	0.05	0.70
Hispanic	2.65	3.73	0.11	0.04	0.81
Asian	2.56	10.61	0.39	0.04	1.13
Native American	0.86	0.14	0.00	0.00	0.21
MBE	8.59	15.41	0.65	0.12	2.85
Non-minority Females	3.80	4.02	2.18	0.63	2.18
M/WBE Total	12.39	19.43	2.83	0.75	5.03
Non-M/WBE Total	87.61	80.57	97.17	99.25	94.97
Total (%)	100.00	100.00	100.00	100.00	100.00
Total ($)	*7,901,356,795*	*1,067,335,628*	*14,703,277,248*	*9,620,367,432*	*33,297,297,342*

Source: Table 7.1

Next we compared the State's and its prime contractors' use of or collaboration with M/WBEs to our measure of M/WBE availability levels in the relevant marketplaces. If M/WBE utilization is statistically significantly lower than measured availability in a given category we report this result as a disparity.

Table C provides a top-level summary of our disparity findings for the 2010 Study for Construction, CRS, Services, and Commodities. **We find significant evidence of disparity in the State's contracting and procurement activity, despite the operation of the M/WBE Program.**

Table C. Disparity Results for NYS Contracting, Overall and By Procurement Category, 2004-2008

Procurement Category / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio	
Construction				
Black	2.51	4.00	62.72	
Hispanic	2.65	6.94	38.18	**
Asian	2.56	3.18	80.60	
Native	0.86	0.21		
Minority-owned	8.59	14.34	59.91	**
White female	3.80	8.41	45.23	**
M/WBE total	12.39	22.74	54.48	**
CRS				
Black	0.93	3.19	29.24	
Hispanic	3.73	4.66	80.08	
Asian	10.61	4.46		
Native	0.14	0.90	15.07	
Minority-owned	15.41	13.21		
Non-minority female	4.02	11.32	35.54	**
M/WBE total	19.43	24.53	79.21	
Services				
Black	0.15	3.50	4.17	
Hispanic	0.11	4.19	2.70	
Asian	0.39	11.56	3.35	
Native	0.00	0.35	0.36	
Minority-owned	0.65	19.60	3.30	
Non-minority female	2.18	17.44	12.5	
M/WBE total	2.83	37.04	7.63	
Commodities				
Black	0.05	3.66	1.25	
Hispanic	0.04	4.64	0.76	
Asian	0.04	7.45	0.58	**
Native	0.00	0.37	0.00	
Minority-owned	0.12	16.11	0.77	**
Non-minority female	0.63	10.93	5.73	**
M/WBE total	0.75	27.05	2.77	**
All Procurement				
Black	0.70	3.71	18.96	
Hispanic	0.81	5.41	14.96	
Asian	1.13	7.08	15.98	
Native	0.21	0.33	63.05	
Minority-owned	2.85	16.53	17.27	*
Non-minority female	2.18	12.39	17.58	
M/WBE total	5.03	28.92	17.40	**

Source: Table 7.10.

Note: "*" indicates an adverse disparity that is statistically significant at the 10% level or better. "**" indicates the disparity is significant at a 5% level or better. "***" indicates significance at a 1% level or better. An empty cell in the Disparity ratio column indicates that no adverse disparity was observed for that category.

Finally, Chapter VII compares current levels of M/WBE availability for NYS with what we would expect to observe in a race- and gender-neutral marketplace. If there is perfect parity in the relevant marketplace, then the expected M/WBE availability rate (that is, the M/WBE availability level that would be observed in a non-discriminatory marketplace) will be equal to the actual current M/WBE availability rate, because the disparity ratio will equal 100. If there are adverse disparities facing M/WBEs in the relevant market area, however, as documented in Chapters V, VI, VII, and VIII of this Study, then expected availability will *exceed* actual current availability, because the disparity ratio is less than 100. Expected availability percentages for the State's overall contracting and by major procurement category are presented below in Table D. Expected availability exceeds actual current availability in all but two cases.

Table D. Expected Availability and Actual Current Availability, Overall and By Major Procurement Category

Procurement Category	M/WBE Type	Current Availability (%)	Expected Availability (%)
All	African-American:	3.71	7.03
	Hispanic	5.41	7.41
	Asian	7.08	8.02
	Native American	0.33	0.43
	Minority total	16.53	25.08
	Non-minority female	12.39	17.21
	M/WBE total	28.92	42.16
Construction	African-American:	4.00	6.21
	Hispanic	6.94	10.64
	Asian	3.18	4.31
	Native American	0.21	0.30
	Minority total	14.34	21.76
	Non-minority female	8.41	14.88
	M/WBE total	22.74	35.98
CRS	African-American:	3.19	4.95
	Hispanic	4.66	7.15
	Asian	4.46	6.05
	Native American	0.90	1.29
	Minority total	13.21	20.05
	Non-minority female	11.32	20.04
	M/WBE total	24.53	38.81
Services	African-American:	3.50	7.35
	Hispanic	4.19	5.88
	Asian	11.56	13.47
	Native American	0.35	0.48
	Minority total	19.60	27.76
	Non-minority female	17.44	0.00
	M/WBE total	37.04	52.39
Commodities	African-American:	3.66	7.69
	Hispanic	4.64	6.52
	Asian	7.45	8.68
	Native American	0.37	0.51
	Minority total	16.11	22.82
	Non-minority female	10.93	0.00
	M/WBE total	27.05	38.26

Source: Table 7.30.

H. Anecdotal Evidence

Chapter VIII presents the results of a large scale mail survey we conducted of M/WBEs and non-M/WBEs about their experiences and difficulties in obtaining contracts. The survey quantified and compared anecdotal evidence on the experiences of M/WBEs and non-M/WBEs as a method to examine whether any differences might be due to discrimination.

We found that M/WBEs that have been hired in the past by non-M/WBE prime contractors to work on public sector contracts with M/WBE goals are rarely hired—or even solicited—by these prime contractors to work on projects without M/WBE goals. The relative lack of M/WBE hiring and, moreover, the relative lack of solicitation of M/WBEs in the absence of affirmative efforts by NYS and other public entities in the New York State market area shows that business discrimination continues to fetter M/WBE business opportunities in the State's relevant markets.

We found that M/WBEs in the State's market area report suffering business-related discrimination in large numbers and with statistically significantly greater frequency than non-M/WBEs. These differences remain statistically significant when firm size and other "capacity-related" owner characteristics are held constant. We also find that M/WBEs in these markets are more likely than similarly situated non-M/WBEs to report that specific aspects of the regular business environment make it harder for them to conduct their businesses, less likely than similarly situated non-M/WBEs to report that specific aspects of the regular business environment make it easier for them to conduct their businesses.

We conclude that the statistical evidence presented in this report is consistent with these anecdotal accounts of contemporary business discrimination.

Chapter VIII also presents the results from a series of in-depth personal interviews conducted with M/WBE and non-M/WBE business owners in the New York State market area. Similar to the survey responses, the interviews strongly suggest that M/WBEs continue to suffer discriminatory barriers to full and fair access to NYS, other public sector, and private sector contracts. Participants reported stereotyping, perceptions of M/WBE incompetence and being subject to higher performance standards; exclusion from industry networks; jobsite harassment; discrimination in access to commercial loans; inability to obtain public sector prime contracts; difficulties in receiving fair treatment in obtaining public sector subcontracts; and virtual exclusion from private sector opportunities to perform as either prime contractors as subcontractors.

While not definitive proof that NYS has a compelling interest in implementing race- and gender-conscious remedies for these impediments, the results of the surveys and the personal interviews are the types of anecdotal evidence that, especially in conjunction with the Study's extensive statistical evidence, the courts have found to be highly probative of whether, without affirmative interventions, NYS would be a passive participant in a discriminatory local marketplace. It is also highly relevant for narrowly tailoring any M/WBE goals for its state- funded contracts.

I. M/WBE Program Overview and Feedback Interviews

Chapter IX provides an overview of the State's M/WBE Program and a discussion of the operations of the current efforts. We interviewed hundreds of business owners throughout the State to solicit their feedback regarding these Programs.

Chapter IX presents a summary of our interviews, which covered the following subjects:

- **M/WBE certification**

In general, minorities and women reported that race- and gender-conscious contracting programs are needed to ensure full and fair access to government contracts. Being certified created opportunities that otherwise would not have presented themselves. Several firms, both M/WBEs and non-M/WBEs, expressed concerns about "front" firms, that is, enterprises that were not legitimately minority- or woman-owned, managed and controlled.

- **Access to information**

Smaller and new firms found it very difficult to access information on upcoming opportunities or to contact the appropriate State personnel.

- **Supportive Services Programs**

More supportive services were repeatedly cited as a critical need by M/WBEs and prime contractors. These ranged from technical assistance with preparing bids to bonding and financing programs to more "matchmaking" sessions with State buyers and prime vendors.

- **Contract specifications**

Contract size was a recurring objection by M/WBEs and small non-certified firms. Some owners felt that the State has a mindset that bigger is better and always more qualified. There was significant support a for a small business setaside or target market, that would restrict bidding to small, New York-based firms.

- **Meeting M/WBE goals**

Many M/WBEs believed that compliance with Program requirements was inadequate. Many M/WBEs doubted that prime vendors had real commitment to inclusion. However, whatever the failings of the implementation of the goal setting process, most M/WBEs believed goals were essential to creating opportunities for them to participate on State contracts. M/WBEs who were fortunate enough to obtain prime contracts stated that they should be allowed to count their self-performance towards the goal for which they qualify, as in the USDOT's Disadvantaged Business Enterprise Program.

Many prime vendors expressed frustration with the capabilities of certified firms and the overall process of meeting goals. Some prime contractors reported using brokers to meet the goals. Several prime contractors stated that they received little assistance from the agencies in trying to meet the goals, which were often perceived as arbitrary. Differing approaches to goal setting and

review of good faith efforts between State agencies creates confusion and uncertainty. Bidders or proposers that failed to meet the goals sometimes sought waivers, but more often submitted and tried to attain the goals during contract performance. Some prime vendors suggested that the program be eliminated and replaced with efforts focused solely on increasing the quality of M/WBEs, without reference to goals or actual utilization. There was much support for refocusing the program on a firm's employment of minorities and women rather than developing business ownership. Some non-M/WBEs stated that many certified firms no longer suffer any competitive disadvantage. In some sub-industries like land surveying, non-certified firm owners reported that they have been shut out of State subcontracts because these areas have plentiful M/WBE availability and prime contractors meet goals in those areas.

- **Contract performance monitoring**

Numerous concerns were raised about how New York monitors Program compliance during contract performance.

- **Payment**

Payment was a universal problem. Smaller firms, including most M/WBEs, found slow pay to be a major barrier to participating on State contracts as either a prime vendor or a subcontractor.

J. Conclusion

As summarized above, and based on the detailed findings below, we conclude that there is strong evidence of large, adverse, and frequently statistically significant disparities between minority and female participation in business enterprise activity in New York State's relevant market area and the actual current availability of those businesses. We further conclude that these disparities cannot be explained solely, or even mostly, by differences between M/WBE and n0n-M/WBE business populations in factors untainted by discrimination, and that these differences therefore give rise to a strong inference of the presence of discrimination.

I. Introduction

The Empire State Development Corporation of the State of New York commissioned this study, pursuant to Executive Law 312-a, to evaluate whether M/WBEs in the State of New York's contracting marketplace have full and fair opportunities to compete for its prime contracts and associated subcontracts. The Study was commissioned in conformance with the statutory mandate to conduct a disparity study, adopted by the legislature in 2006, and will assist the State in evaluating whether its current M/WBE initiatives are still necessary to remedy discrimination, and to narrowly tailor existing and new measures.

Like many state governments, NYS has a long record of commitment to including M/WBEs in its contracting and procurement activities. As will be documented in this Study, from state fiscal years 2004 through 2008 NYS has continued to be a source of demand in the regional economy for the products and services provided by M/WBEs—demand that, in general, is found to be lacking in the private sector of the regional economy.

As documented below in Chapter VII, New York's prior efforts have produced some positive results—M/WBEs earned approximately 5 percent of New York's contracting and purchasing dollars from state fiscal year ("SFY") 2004 through SFY 2008. The courts have made it clear, however, that in order to implement a race- and gender-based program that is effective, enforceable and legally defensible, the State must meet the judicial test of constitutional "strict scrutiny" to determine the legality of such initiatives. Strict scrutiny requires current "strong evidence" of the persistence of discrimination, and "narrowly tailored" measures to remedy that discrimination. These legal principles guide and inform our work for New York State.

A. History of New York State's Affirmative Action Contracting Programs

NYS first adopted its M/WBE Program in 1988, Article 15-A of the Executive Law, Participation by Minority Group Members and Women with Respect to State Contracts, embodies the policy to promote equal opportunity in employment for all persons, without discrimination on account of race, creed, color, national origin, sex, age, disability or marital status, to promote equality of economic opportunity for minority group members and women, and business enterprises owned by them, and to eradicate through effective programs the barriers that have unreasonably impaired access by minority and women-owned business enterprises to state contracting opportunities.

In 1990, a federal court preliminarily enjoined New York from implementing Article 15-A until the state could provide a "'strong basis in evidence for its conclusion that race-conscious remedial action was necessary.'"[6] In order to save the statute, the State promulgated emergency regulations suspending its M/WBE program until it could compile evidence to show that a factual basis demonstrated a compelling state interest. In July 1992, the Division of Minority- and Women-Owned Business Development issued a formal report, *Opportunity Denied!*

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[6] *Harrison & Burrowes Bridge Constructors, Inc. v. Cuomo (Harrison & Burrowes I*), 743 F. Supp. 977, 1001 (N.D.N.Y. 1990) (quoting *Croson*, 488 U.S. at 500).

compiling evidence of past race discrimination in New York. On the basis of that report, New York re-issued regulations, ended the suspension, and enforced Article 15-A again.[7]

B. Study Outline

To ensure compliance with constitutional mandates and M/WBE best practices, NYS commissioned NERA to examine the past and current status of M/WBEs in the State's geographic and product markets for contracting and procurement. The results of the 2010 provide the evidentiary record necessary for the State's consideration of whether to implement renewed M/WBE policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted M/WBEs to participate on a fair basis in the State's contracting and procurement activity.

The 2010 Study finds both statistical and anecdotal evidence of business discrimination against M/WBEs in the private sector of the New York State market area. As part of our statistical findings, we surveyed the contracting experiences and credit access experiences of M/WBEs and non-M/WBEs in the market area and conducted a series of in-depth personal interviews with local business enterprises, both M/WBE and non-M/WBE. Statistical analyses of the State's public sector contracting behavior are contained in Chapters III, IV and VII.

The Study is presented in nine chapters, and is designed to answer the following questions:

Chapter I: Introduction

Chapter II: What are the current constitutional standards and case law governing strict scrutiny review of race- and gender-conscious government efforts in public contracting?

Chapter III: What is the relevant geographic market for NYS and how is it defined? What are the relevant product markets for NYS and how are they defined?

Chapter IV: What percentage of all businesses in the State's market area are owned by minorities and/or women? How are these availability estimates constructed?

Chapter V: Do minority and/or female wage and salary earners earn less than similarly situated non-minority males? Do minority and/or female business owners earn less from their businesses than similarly situated non-minority males? Are minorities and/or women in the NYS market area less likely to be self-employed than similarly situated non-minority males? How do the findings in the New York State market area differ from the national findings on these questions? How have these findings changed over time?

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[7] *See* N.Y. Comp. Codes R. & Regs. Title 9, §§ 540-544 (1992) (current version at N.Y. Comp. Codes R. & Regs. tit.5, ß 140-144).

Chapter VI: Do minorities and/or women face discrimination in the market for commercial capital and credit compared to similarly-situated non-minority males? How, if at all, do findings locally differ from findings nationally?

Chapter VII: To what extent have M/WBEs been utilized by NYS between 2004-2008, and how does this utilization compare to the availability of M/WBEs in the relevant marketplace?

Chapter VIII: How many M/WBEs experienced disparate treatment in the study period? What types of discriminatory experiences are most frequently encountered by M/WBEs? How do the experiences of M/WBEs differ from those of similar non-M/WBEs regarding difficulties in obtaining prime contracts and subcontracts?

Chapter IX: What general policies and procedures govern the State's M/WBE program? What were some of the most frequently encountered comments from M/WBEs and non-M/WBEs concerning the State's contracting affirmative action programs?

In assessing these questions, we present in Chapters III through VIII a series of quantitative and qualitative analyses that compare minority and/or female outcomes to non-minority male outcomes in all of these business-related areas. The Executive Summary, above, provides a brief overview of our key findings and conclusions.

II. Legal Standards for Government Affirmative Action Contracting Programs

A. General Overview of Strict Scrutiny

To be effective, enforceable, and legally defensible, a race- and gender-based program must meet the judicial test of constitutional "strict scrutiny." Strict scrutiny requires current "strong evidence" of the persistence of discrimination, and any remedies adopted must be "narrowly tailored" to that discrimination.

This area of constitutional law is complex and constantly shifting, and cases are quite fact specific. Over the last 21 years, federal appellate and district courts have developed parameters for establishing a state government's compelling interest in remedying discrimination and evaluating whether the remedies adopted to address that discrimination are narrowly tailored. The following are the legal and program development issues New York must consider in evaluating its M/WBE Program and future initiatives.

1. *City of Richmond v. J.A. Croson*

City of Richmond v. J.A. Croson Co.[8] established the constitutional contours of permissible race-based public contracting programs. Reversing long established law, the Supreme Court for the first time extended the highest level of judicial examination from measures designed to limit the rights and opportunities of minorities to legislation that benefits these historic victims of discrimination. Strict scrutiny requires that a government entity prove both its "compelling interest" in remedying identified discrimination based upon "strong evidence," and that the measures adopted to remedy that discrimination are "narrowly tailored" to that evidence. However benign the government's motive, race is always so suspect a classification that its use must pass the highest constitutional test of "strict scrutiny."

The Court struck down the City of Richmond's Minority Business Enterprise Plan that required prime contractors awarded City construction contracts to subcontract at least 30 percent of the project to MBEs. A business located anywhere in the country which was at least 51 percent owned and controlled by "Black, Spanish-speaking, Oriental, Indian, Eskimo, or Aleut" citizens was eligible to participate. The Plan was adopted after a public hearing at which no direct evidence was presented that the City had discriminated on the basis of race in awarding contracts or that its prime contractors had discriminated against minority subcontractors. The only evidence before the City Council was: (a) Richmond's population was 50 percent Black, yet less than one percent of its prime construction contracts had been awarded to minority businesses; (b) local contractors' associations were virtually all White; (c) the City Attorney's opinion that the Plan was constitutional; and (d) general statements describing widespread racial discrimination in the local, Virginia, and national construction industries.

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[8] 488 U.S. 469 (1989).

In affirming the court of appeals' determination that the Plan was unconstitutional, Justice Sandra Day O'Connor's plurality opinion rejected the extreme positions that local governments either have *carte blanche* to enact race-based legislation or must prove their own illegal conduct:

> [A] state or local subdivision…has the authority to eradicate the effects of private discrimination within its own legislative jurisdiction.… [Richmond] can use its spending powers to remedy private discrimination, if it identifies that discrimination with the particularity required by the Fourteenth Amendment.… [I]f the City could show that it had essentially become a "passive participant" in a system of racial exclusion…[it] could take affirmative steps to dismantle such a system.[9]

Strict scrutiny of race-based remedies is required to determine whether racial classifications are in fact motivated by either notions of racial inferiority or blatant racial politics. This highest level of judicial review "smokes out" illegitimate uses of race by assuring that the legislative body is pursuing a goal important enough to warrant use of a highly suspect tool.[10] It further ensures that the means chosen "fit" this compelling goal so closely that there is little or no possibility that the motive for the classification was illegitimate racial prejudice or stereotype. The Court made clear that strict scrutiny seeks to expose racial stigma; racial classifications are said to create racial hostility if they are based on notions of racial inferiority.[11]

Race is so suspect a basis for government action that more than "societal" discrimination is required to restrain racial stereotyping or pandering. The Court provided no definition of "societal" discrimination or any guidance about how to recognize the ongoing realities of history and culture in evaluating race-conscious programs. The Court simply asserted that

> [w]hile there is no doubt that the sorry history of both private and public discrimination in this country has contributed to a lack of opportunities for black entrepreneurs, this observation, standing alone, cannot justify a rigid racial quota in the awarding of public contracts in Richmond, Virginia…. [A]n amorphous claim that there has been past discrimination in a particular industry cannot justify the use of an unyielding racial quota. It is sheer speculation how many minority firms there would be in Richmond absent past societal discrimination.[12]

Richmond's evidence was found to be lacking in every respect. The City could not rely upon the disparity between its utilization of MBE prime contractors and Richmond's minority population because not all minority persons would be qualified to perform construction projects; general population representation is irrelevant. No data were presented about the availability of MBEs in

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[9] *Id*. at 491-92.

[10] *See also Grutter v. Bollinger*, 539 U.S. 306, 327 (2003) ("Not every decision influenced by race is equally objectionable, and strict scrutiny is designed to provide a framework for carefully examining the importance and the sincerity of the reasons advanced by the governmental decision maker for the use of race in that particular context.").

[11] 488 U.S. at 493.

[12] *Id*. at 499.

either the relevant marketplace or their utilization as subcontractors on City projects. According to Justice O'Connor, the extremely low MBE membership in local contractors' associations could be explained by "societal" discrimination or perhaps Blacks' lack of interest in participating as business owners in the construction industry. To be relevant, the City would have to demonstrate statistical disparities between eligible MBEs and actual membership in trade or professional groups. Further, Richmond presented no evidence concerning enforcement of its own anti-discrimination ordinance. Finally, Richmond could not rely upon Congress' determination that there has been nationwide discrimination in the construction industry. Congress recognized that the scope of the problem varies from market to market, and in any event it was exercising its powers under Section Five of the Fourteenth Amendment, whereas a local government is further constrained by the Amendment's Equal Protection Clause.[13]

> In the case at hand, the City has not ascertained how many minority enterprises are present in the local construction market nor the level of their participation in City construction projects. The City points to no evidence that qualified minority contractors have been passed over for City contracts or subcontracts, either as a group or in any individual case. Under such circumstances, it is simply impossible to say that the City has demonstrated "a strong basis in evidence for its conclusion that remedial action was necessary."[14]

The foregoing analysis was applied only to Blacks. The Court then emphasized that there was "absolutely no evidence" against other minorities. "The random inclusion of racial groups that, as a practical matter, may have never suffered from discrimination in the construction industry in Richmond, suggests that perhaps the City's purpose was not in fact to remedy past discrimination."[15]

Having found that Richmond had not presented evidence in support of its compelling interest in remedying discrimination— the first prong of strict scrutiny— the Court went on to make two observations about the narrowness of the remedy— the second prong of strict scrutiny. First, Richmond had not considered race-neutral means to increase MBE participation. Second, the 30 percent quota had no basis in evidence, and was applied regardless of whether the individual MBE had suffered discrimination.[16] Further, Justice O'Connor rejected the argument that individualized consideration of Plan eligibility is too administratively burdensome.

Apparently recognizing that the opinion might be misconstrued to categorically eliminate all race-conscious contracting efforts, Justice O'Connor closed with these admonitions:

> 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

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[13] *Id*. at 504; *but see Adarand v. Peña*, 515 U.S. 200 (1995) ("*Adarand III*") (applying strict scrutiny to Congressional race-conscious contracting measures).

[14] 488 U.S. at 510.

[15] *Id*.

[16] *See Grutter*, 529 U.S. at 336-337 (quotas are not permitted; race must be used in a flexible, non-mechanical way).

> evidence before it that non-minority 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. Under such circumstances, the City could act to dismantle the closed business system by taking appropriate measures against those who discriminate based on race or other illegitimate criteria. In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion.…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.[17]

2. Strict Scrutiny as Applied to Federal Enactments

In *Adarand v. Peña*,[18] the Court again overruled long settled law and extended the analysis of strict scrutiny under the Due Process Clause of the Fourteenth Amendment to federal enactments. Just as in the local government context, when evaluating federal legislation and regulations

> [t]he strict scrutiny test involves two questions. The first is whether the interest cited by the government as its reason for injecting the consideration of race into the application of law is sufficiently compelling to overcome the suspicion that racial characteristics ought to be irrelevant so far as treatment by the government is concerned. The second is whether the government has narrowly tailored its use of race, so that race-based classifications are applied only to the extent absolutely required to reach the proffered interest. The strict scrutiny test is thus a recognition that while classifications based on race may be appropriate in certain limited legislative endeavors, such enactments must be carefully justified and meticulously applied so that race is determinative of the outcome in only the very narrow circumstances to which it is truly relevant.[19]

a. U.S. Department of Transportation's Disadvantaged Business Enterprise Program

In the wake of *Adarand*, Congress reviewed and revised the Disadvantaged Business Enterprise (DBE) Program statute[20] and implementing regulations[21] for federal-aid contracts in the transportation industry. To date, every court that has considered the issue has found the

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[17] 488 U.S. at 509 (citations omitted).

[18] 515 U.S. 200 (1995) (*Adarand III*).

[19] *Adarand Constructors, Inc. v. Peña*, 965 F. Supp. 1556, 1569-1570 (D. Colo. 1997), *rev'd*, 228 F.3d 1147 (2000) ("*Adarand IV*"); *see also Adarand III*, 515 U.S. at 227.

[20] Transportation Equity Act for the 21st Century (TEA-21), Pub. L. No. 105-178 (b)(1), 112 Stat. 107, 113.

[21] 49 CFR Part 26.

regulations to be constitutional on their face.[22] While binding strictly only upon the DBE Program, these cases provide important guidance to New York about the types of evidence necessary to establish its compelling interest in adopting affirmative action contracting programs and how to narrowly tailor those programs.

Congress had strong evidence of widespread race discrimination in the construction industry.[23] Relevant evidence before Congress included:

- Disparities between the earnings of minority-owned firms and similarly situated non-minority-owned firms;
- Disparities in commercial loan denial rates between Black business owners compared to similarly situated non-minority business owners;
- The large and rapid decline in minorities' participation in the construction industry when affirmative action programs were struck down or abandoned; and
- Various types of overt and institutional discrimination by prime contractors, trade unions, business networks, suppliers and sureties against minority contractors.[24]

The Eighth Circuit Court of Appeals took a "hard look" at the evidence Congress considered, and concluded that the legislature had

> spent decades compiling evidence of race discrimination in government highway contracting, of barriers to the formation of minority-owned construction businesses, and of barriers to entry. In rebuttal, [the plaintiffs] presented evidence that the data were susceptible to multiple interpretations, but they 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. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.[25]

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[22] *See, e.g., Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147 (10th Cir. 2000) ("*Adarand VII*"), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941, 534 U.S. 103 (2001); *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2004 U.S. Dist. LEXIS 3226 at *64 (N.D. Ill., Mar. 3, 2004) ("*Northern Contracting I*").

[23] *See also Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983, 993 (9th Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006) ("In light of the substantial body of statistical and anecdotal material considered at the time of TEA-21's enactment, Congress had a strong basis in evidence for concluding that- in at least some parts of the country- discrimination within the transportation contracting industry hinders minorities' ability to compete for federally funded contracts.").

[24] *See id.*, 407 F.3d at 992-93.

[25] *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964, 970 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004); *see also Adarand VII*, 228 F.3d at 1175 (Plaintiff has not met its burden "of introducing credible, particularized evidence to rebut the government's initial showing of the existence of a compelling interest in remedying the nationwide effects of past and present discrimination in the federal construction procurement subcontracting market.").

Next, the regulations were facially narrowly tailored, as was the State of Minnesota's application of those regulations. Unlike the prior program,[26] Part 26 provides that:

- The overall goal must be based upon demonstrable evidence of the number of DBEs ready, willing, and able to participate on the recipient's federally assisted contracts.
- The goal may be adjusted to reflect the availability of DBEs but for the effects of the DBE Program and of discrimination.
- The recipient must meet the maximum feasible portion of the goal through race-neutral measures as well as estimate that portion of the goal it predicts will be met through such measures.
- The use of quotas and set-asides is limited to only those situations where there is no other remedy.
- The goals are to be adjusted during the year to remain narrowly tailored.
- Absent bad faith administration of the Program, a recipient cannot be penalized for not meeting its goal.
- The presumption of social disadvantage for racial and ethnic minorities and women is rebuttable, "wealthy minority owners and wealthy minority firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage."[27]
- Exemptions and waivers from any or all Program requirements are available.

These elements have led the courts to conclude that the program is narrowly tailored on its face. First, the regulations place strong emphasis on the use of race-neutral means to achieve minority and women participation. Relying upon *Grutter v. Bollinger*, the Eighth Circuit held that while "[n]arrow tailoring does not require the exhaustion of every conceivable race-neutral alternative … it does require serious, good faith consideration of workable race-neutral alternatives."[28]

The DBE Program is also flexible. Eligibility is limited to small firms owned by persons whose net worth is less than $750,000. There are built-in Program time limits, and the State may terminate the Program if it meets its annual overall goal through race-neutral means for two consecutive years. Moreover, the authorizing legislation is subject to Congressional reauthorization that will ensure periodic public debate.

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[26] 49 C.F.R. Part 23.

[27] 345 F.3d. at 973.

[28] *Id*. at 972.

The court next held that the goals are tied to the relevant labor market. "Though the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*…."[29]

Finally, Congress has taken significant steps to minimize the race-conscious nature of the Program. "[W]ealthy minority owners and wealthy minority-owned firms are excluded, and certification is available to persons who are not presumptively [socially] disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor."[30]

DBE programs based upon a methodology similar to that for this Study for New York, including the availability analysis and the examination of disparities in the business formation rates and business earnings of minorities and women compared to similarly situated non-minority males, have been held to be narrowly tailored in their application of Part 26. The Minnesota Department of Transportation (Mn/DOT) relied upon a Study conducted by NERA and Colette Holt & Associates to set its DBE goal. The Eighth Circuit opined that while plaintiff

> presented evidence attacking the reliability of NERA's data, it failed to establish that better data was [sic] available or that Mn/DOT was otherwise unreasonable in undertaking this thorough analysis and in relying on its results. The precipitous drop in DBE participation in 1999, when no race-conscious methods were employed, supports Mn/DOT's conclusion that a substantial portion of its 2001 overall goal could not be met with race-neutral measures, and there is no evidence that Mn/DOT failed to adjust its use of race-conscious and race-neutral methods as the year progressed, as the DOT regulations require.[31]

Likewise, the Seventh Circuit Court of Appeals affirmed the district court's trial verdict that the Illinois Department of Transportation's application of Part 26 was narrowly tailored based in large part upon the report and expert trial testimony of NERA and CHA.[32] IDOT had a compelling interest in remedying discrimination in the marketplace for federally-funded highway contracts, and its Federal Fiscal Year 2005 DBE Plan was narrowly tailored to that interest and in conformance with the DBE Program regulations.

To determine whether IDOT met its constitutional and regulatory burdens, the court reviewed the evidence of discrimination against minority and women construction firms in the Illinois area. IDOT had commissioned a NERA Availability Study to meet Part 26's requirements. Similar to this Study for New York, the IDOT Study included a custom census of the availability of DBEs

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[29] *Id.*

[30] *Id*. at 973.

[31] *Id*.

[32] *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 (7th Cir. 2007) (7th Cir. 2007) ("*Northern Contracting III")*. Ms. Holt authored IDOT's DBE goal submission, and she and Dr. Wainwright testified as IDOT's expert witnesses at the trial.

in IDOT's marketplace, weighted by the location of IDOT's contractors and the types of goods and services IDOT procures. NERA estimated that DBEs comprised 22.77 percent of IDOT's available firms.[33] The IDOT Study next examined whether and to what extent there are disparities between the rates at which DBEs form businesses relative to similarly situated non-minority men, and the relative earnings of those businesses. If disparities are large and statistically significant, then the inference of discrimination can be made. Controlling for numerous variables such as the owner's age, education, and the like, the Study found that in a race- and gender-neutral marketplace the availability of DBEs would be approximately 20.8 percent higher, for an estimate of DBE availability "but for" discrimination of 27.51 percent.

In addition to the IDOT Study by NERA, the court also relied upon:

- A NERA Availability Study conducted for Metra, the Chicago-area commuter rail agency;
- Expert reports relied upon by an earlier trial court in finding that the City of Chicago had a compelling interest in its minority and women business program for construction contracts;[34]
- Expert reports and anecdotal testimony presented to the Chicago City Council in support of the City's revised M/WBE Procurement Program ordinance in 2004;
- Anecdotal evidence gathered at IDOT's public hearings on the DBE program;
- Data on DBE involvement in construction projects in markets without DBE goals; and
- IDOT's "zero goal" experiment, where DBEs received approximately 1.5 percent of the total value of the contracts. This was designed to test the results of "race-neutral" contracting policies, that is, the utilization of DBEs on contracts without goals, which several courts have held to be highly relevant and probative of the continuing need for race-conscious remedies.

"Also of note, IDOT examined the system utilized by the Illinois State Toll Highway Authority, which does not receive federal funding; though the Tollway has a DBE goal of 15 percent, this goal is completely voluntary -- the average DBE usage rate in 2002 and 2003 was 1.6 percent. On the basis of all of this data, IDOT adopted 22.77 percent as its Fiscal Year 2005 DBE goal."[35]

Based upon this record, the court of appeals agreed with the trial court's judgment that the Program was narrowly tailored. IDOT's plan was based upon sufficient proof of discrimination

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[33] This baseline figure of DBE availability is the "step 1" estimate U.S. DOT grant recipients must make pursuant to 49 CFR §26.45.

[34] *Builders Association of Greater Chicago v. Chicago*, 298 F. Supp. 2d 725 (N.D. Ill. 2003).

[35] *Northern Contracting III*, 473 F.3d at 719.

such that race-neutral measures alone would be inadequate to assure that DBEs operate on a "level playing field" for government contracts.

> The stark disparity in DBE participation rates on goals and non-goals contracts, when combined with the statistical and anecdotal evidence of discrimination in the relevant marketplaces, indicates that IDOT's 2005 DBE goal represents a "plausible lower-bound estimate" of DBE participation in the absence of discrimination.…Plaintiff presented no persuasive evidence contravening the conclusions of IDOT's studies, or explaining the disparate usage of DBEs on goals and non-goals contracts.…IDOT's proffered evidence of discrimination against DBEs was not limited to alleged discrimination by prime contractors in the award of subcontracts. IDOT also presented evidence that discrimination in the bonding, insurance, and financing markets erected barriers to DBE formation and prosperity. Such discrimination inhibits the ability of DBEs to bid on prime contracts, thus allowing the discrimination to indirectly seep into the award of prime contracts, which are otherwise awarded on a race- and gender-neutral basis. This indirect discrimination is sufficient to establish a compelling governmental interest in a DBE program…. Having established the existence of such discrimination, a governmental entity "has a compelling interest in assuring that public dollars, drawn from the tax contributions of all citizens, do not serve to finance the evil of private prejudice."[36]

Most recently, the district court in a challenge to New Jersey Transit's (NJT) DBE program, applied *Sherbrooke*, *Northern Contracting* and *Western States* to dismiss plaintiff's argument that New Jersey must independently establish its compelling interest in implementing the federal regulations as a "red herring."[37] It held that a recipient's constitutional duty under Part 26 is to narrowly tailor its program; it "does not need to justify establishing its DBE program, as it has already been justified by the [federal] legislators."[38] The court then held that there were sufficient factual disputes about whether NJT's goal setting method, step 2 adjustment, and included groups were narrowly tailored to preclude summary judgment, and ordered the case to trial.

b. U.S. Department of Defense's Small Disadvantaged Business Program

In 2009, the Federal Circuit Court of Appeals struck down the Department of Defense (DOD) program for Small Disadvantaged Businesses (SDBs) in *Rothe Development Corporation v. U.S. Department of Defense*.[39] The program set an overall annual goal of five percent for DOD contracting with SDBs and authorized various race-conscious measures to meet the goal.

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[36] *Northern Contracting II*, at *82 (internal citations omitted); *see Croson*, 488 U.S. at 492.

[37] *GEOD Corp. v. New Jersey Transit Corp.*, 2009 U.S. Dist. Lexis 74120, *11 (D. N. J. Aug. 20, 2009),.

[38] *Id*. at *12.

[39] 545 F.3d 1023 (*Fed. Cir.* 2008) ("*Rothe VII*").

The court held that Section 1207,[40] which, among other remedies, provided a 10 percent bid preference to SDBs, violated strict constitutional scrutiny because Congress did not have a "strong basis in evidence" upon which to conclude that DOD was a passive participant in racial discrimination in relevant markets across the country. The six local disparity studies upon which DOD primarily relied for evidence of relevant discrimination did not meet the compelling interest requirement—and in any event were not "before" Congress when it reenacted the program in 2006—and other statistical and anecdotal evidence did not rise to the heavy constitutional burden.

Rothe VII was the latest iteration of an 11-year-old challenge by a firm owned by a white female to DOD's award of a contract to an Asian American–owned business despite the fact that plaintiff was the lowest bidder. Since the case began in 1998, Congress has reenacted Section 1207 a number of times, the district court has rendered judgment three times, and the appellate court has remanded the case twice. *Rothe VII* ends this litigation, as DOD did not appeal the judgment. The statute would have expired on its terms at the end of federal fiscal year 2009.

First enacted in 1986, Section 1207 set a goal of expanding five percent of DOD procurement, research and design, construction, and maintenance contracts with small business concerns owned and controlled by "socially and economically disadvantaged individuals," as defined by the Small Business Act.[41] Section 8(d) of the Small Business Act and relevant regulations, in turn, provided at that time that Black Americans, Hispanic Americans, Native Americans, Asian Pacific Americans, and other minorities were presumed to be "socially and economically disadvantaged individuals."[42] To facilitate achievement of the five percent goal, the secretary of defense was permitted to enter into contracts using less than full and open competitive procedures (including awards under section 8(a) of the Small Business Act), with a price preference not to exceed 10 percent.[43]

In 2006, Congress amended the statute to reduce the burden on SDBs by, among other changes, ensuring that no particular industry would bear a disproportionate share of the contracts awarded to attain the five percent goal; a minority owner must establish that his or her personal net worth is less than $750,000; and a disappointed bidder may protest the SDB status of the successful bidder.

In *Rothe VII*, the appeals court reviewed the district court's holding[44] *de novo*, and applied the strict scrutiny standard because the statute incorporates explicit racial classifications. DOD bore

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[40] 10 U.S.C. § 2323.

[41] 15 U.S.C. 673.

[42] 15 U.S.C. ß 637(d)(3)(C)(ii) (1990).

[43] *Public Law* 99-661, § 1207(e)(3).

[44] The court discusses an interesting jurisdictional question that is not relevant to the strict scrutiny analysis, *i.e.*, whether the Federal Circuit, whose jurisdiction rests upon an appeal of a judgment based in whole or in part on the Tucker Act (28 U.S.C. ß 1295[a][2]) has jurisdiction over the appeal where the Tucker Act claim had been satisfied. Moreover, the very limited jurisdiction of the Federal Circuit to federal contract claims casts into question the precedential value of its reasoning on a constitutional matter far afield from its statutorily defined docket.

the burden of production of evidence of its "compelling interest" in remedying discrimination and that the remedies adopted are "narrowly tailored" to that evidence.

The opinion discusses in detail the evidence that Congress considered in the 2006 reenactment. This consisted of:

- Six disparity studies of state or local contracting in the cities of Dallas,[45] Cincinnati,[46] and New York;[47] in Cuyahoga County, Ohio,[48] and Alameda County, California;[49] and in the Commonwealth of Virginia;[50]
- A September 2005 document issued by the United States Commission on Civil Rights (USCCR) titled "Federal Procurement After *Adarand*";
- Letters from individual business owners describing incidents of perceived discrimination in state, local, and private contracting;
- Various anecdotes regarding discrimination recounted by members of Congress in floor statements or remarks;
- Testimony by small business owners before the House Small Business Committee in 2001 and 2004; and
- Three studies from the Small Business Administration regarding the ownership and success rates of small businesses.

The primary focus of the evidence was the strength of the six disparity studies. The court reaffirmed that such studies are relevant to the compelling interest analysis. It then turned to Rothe's first argument and rejected the position that data more than five years old must be discarded. The court "decline[d] to adopt such a *per se* rule here.… [The government] should be able to rely on the most recently available data so long as that data is reasonably up-to-date."[51]

While the studies were sufficiently current, the court held that they were not sufficiently before Congress to be relied upon to meet strict scrutiny. "The six studies were not discussed at any congressional hearings. And because Congress made no findings concerning these studies, we

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[45] "City of Dallas Availability and Disparity Study," Mason Tillman Associates, Ltd. (2002).

[46] "City of Cincinnati Disparity Study," Griffin & Strong, PC (2002).

[47] "City of New York Disparity Study," Mason Tillman Associates, Ltd. (2005).

[48] "Ohio Multi-Jurisdictional Disparity Studies," Mason Tillman Associates, Ltd. (2003).

[49] "Alameda County Availability Study," Mason Tillman Associates, Ltd. (2004).

[50] "Procurement Disparity Study of the Commonwealth of Virginia," MGT of America, Inc. (2004).

[51] 545 F.3d at 1038–1039.

cannot even broach the question of whether to defer to Congress in any respect regarding them."[52]

Despite finding that Congress did not rely upon the studies, the court chose to review them anyway, and held that "we need not decide whether these six studies were put before Congress, because we will hold in any event that the studies do not provide a substantially probative and broad-based statistical foundation necessary for the 'strong basis in evidence' that must be the predicate for nationwide, race-conscious action."[53]

The district court held that Rothe's failure to offer any expert reports to rebut the studies did not meet its burden of persuasion to demonstrate that Congress lacked compelling evidence because the studies were irrelevant or flawed.[54] The appellate court disagreed, saying the studies should have been examined *de novo* despite the lack of a trial record because the type of general objections raised by Rothe was of the "same general character" as that voiced by Justice O'Connor in *Croson*. Without addressing later cases that have given substance to *Croson*'s broad comments in the context of actual studies by establishing that generalized objections are not sufficient, and despite the lack of expert reports or the testimony of the studies' authors to guide its consideration of complex statistical issues, the Federal Circuit stated that "the potential pitfalls of race-conscious legislation are far too great for a court to dismiss such objections as incompetently offered, rather than to address them on their merits."[55] Rather than remand the case to the district court for development of a factual record, the appeals court reached to consider the merits of the studies for the first time.

In the absence of expert testimony about accepted econometric models of discrimination, the court was troubled by the failure of five of the studies to account for size differences and "qualifications" of the minority firms in the denominator of the disparity analysis,[56] or as the court terms it, "relative capacity."[57] The court was concerned about the studies' inclusion of possibly "unqualified" minority firms and the failure to account for whether a firm can perform more than one project at a time in two of the studies.[58] In the court's view, the combination of these perceived deficits rendered the studies insufficiently probative to meet Congress' burden.

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[52] *Ibid.*

[53] *Ibid.* at 1040.

[54] *Rothe Development Corp. v. U.S. Department of Defense et al*, 499 F.Supp.2d 775, 847 (W.D. Tex. 2007) ("*Rothe VI*"): "Rothe did not submit an expert report attacking the data, methodology, or conclusions of the New York Study…. The Court rejects Rothe's objections to the data or reliability of the six disparity studies, including the New York Study, because those objections are not supported by an expert report or other competent summary judgment evidence…. General criticism of disparity studies, as opposed to particular evidence undermining the reliability of the particular study, is of little persuasive value."

[55] 545 F.3d at 1040.

[56] There is no explanation why similar concerns should not be raised about non-minority-owned firms included in the denominator.

[57] 545 F.3d at 1042.

[58] *Ibid.*

The appellate court ignored the cases upholding the USDOT Disadvantaged Business Enterprise Program and the City of Denver's local affirmative action contracting program where the fallacy of "capacity" was debunked, all of which were cited extensively by the district court. It relied instead on a report from the USCCR, which adopts the views of anti-affirmative action writers, including those of plaintiff's consultant.[59]

However, the court is careful to limit the reach of its review to the facts of the case:

> To be clear, we do *not* hold that the defects in the availability and capacity analyses in these six disparity studies render the studies wholly unreliable for any purpose. Where the calculated disparity ratios are low enough, we do not foreclose the possibility that an inference of discrimination might still be permissible for *some* of the minority groups in *some* of the studied industries in *some* of the jurisdictions. And we recognize that a minority owned firm's capacity and qualifications may themselves be affected by discrimination. But we hold that the defects we have noted detract dramatically from the probative value of these six studies, and, in conjunction with their limited geographic coverage, render the studies insufficient to form the statistical core of the "strong basis in evidence" required to uphold the statute.[60]

Finally, the additional statistical evidence relied upon by the district court was held to be insufficiently current, or was not "before" Congress, or failed to account for "capacity".[61]

The Federal Circuit concludes its analysis of compelling interest by "stress[ing] that our holding is grounded in the particular terms of evidence offered by DOD and relied on by the district court in this case, and should not be construed as stating blanket rules, for example, about the reliability of disparity studies."[62]

Given the holding that Congress lacked a strong basis in evidence for Section 1207, the court did not rule on whether its provisions were narrowly tailored. The lack of "strongly probative statistical evidence makes it impossible" to determine whether the five percent goal reflects "the share of contracts minorities would receive in the absence of discrimination."[63] It did note, however, its prior rulings that the program is flexible, limited in duration, and not unduly burdensome to third parties, and that the program has tended to narrow the reach of its remedies over time.

The question of broad application in *Rothe VII* is whether disparity studies must somehow control for "capacity" without reference to the impact of discrimination on the variables usually cited. First, the absence of expert testimony may have influenced the court's analysis. Where reports have been proffered by highly qualified experts, judges have understood that variables

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[59] USCCR, *Disparity Studies as Evidence of Discrimination in Federal Contracting* (May 2006): 79.

[60] 545 F.3d at 1045 (quoting from Justice Scalia's dissent in *Concrete Works V*, 540 U.S. 1027, 1032 [2003]).

[61] *Id.* at 1047–1048.

[62] *Id.* at 1049.

[63] *Id.* at 1049–1050.

such as firms' size and experience are adversely affected by discrimination. In fact, the Federal Circuit alludes to this fact, noting "that a minority owned firm's capacity and qualifications may themselves be affected by discrimination," without seeming to understand the implications for econometric modeling of discrimination.[64] Had DOD presented expert testimony, Section 1207 might have been upheld as has the USDOT DBE program.

Next, claims that the availability measure in the disparity statistic does not factor in "capacity" or, stated another way, that availability statistics may include firms that are not "qualified, willing, and able" to perform the work are arguably unwarranted and unscientific. Adjusting statistical evidence in disparity studies for so-called "capacity" measures will prevent accurate measurement of the existence of the "market failure" of discrimination.[65] Many, if not all, "capacity" indicators are themselves impacted by discrimination. Therefore, it is not good social science to limit availability measures by factors such as firm age, revenues, or numbers of employees.

Further, the reality is that large, adverse statistical disparities between minority-owned or women-owned businesses and non-minority male-owned businesses have been documented in numerous research studies and reports since *Croson*.[66] Business outcomes, however, can be influenced by multiple factors, and it is important that disparity studies examine the likelihood of whether discrimination is an important contributing factor to observed disparities.

Moreover, terms such as "capacity," "qualifications," and "ability" are not well defined in any statistical sense. Does "capacity" mean revenue level, employment size, bonding limits, or number of contracts bid or awarded? Does "qualified" or "able" mean possession of a business license, certain amounts of training, types of work experience, or the number of contracts a firm can perform at a given moment? What mix of business attributes properly reflects "capacity"? Does the meaning of such terms differ from industry to industry, locality to locality, or through time? Where and how might such data be reliably gathered?

Even if capacity is well-defined and adequate data are gathered, when measuring the existence of discrimination, the statistical method used should not improperly limit the availability measure by incorporating factors that are themselves impacted by discrimination, such as firm age, revenues, bonding limits, or numbers of employees.

Consider an extreme example where discrimination has prevented the emergence of any minority owned firms. Suppose that racial discrimination was ingrained in a state's highway construction market. As a result, few minority construction employees are given the opportunity to gain managerial experience in the business; minorities who do end up starting construction firms are denied the opportunity to work as subcontractors for non-minority prime contractors; and non-minority prime contractors place pressure on unions not to work with minority firms and on bonding companies and banks to prevent minority owned construction firms from securing

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[64] 545 F.3d at 1045.

[65] *Builders Association v. Chicago*, 298 F.Supp.2d at, 737.

[66] Enchautegui, et al. (1996).

bonding and capital. In this example, discrimination has prevented the emergence of a minority highway construction industry with "capacity." Those MBEs that exist at all will be smaller and less experienced and have lower revenues, bonding limits, and employees– that is, "capacity"– because of discrimination than firms that have benefited from the exclusionary system.

Using revenue as the measure of qualifications illustrates the point. If M/WBEs are subject to marketplace discrimination, their revenues will be smaller than non-minority, male-owned businesses because they will be less successful at obtaining work. Revenue measures the extent to which a firm has succeeded in the marketplace, perhaps in spite of discrimination—it does not measure the ability to succeed in the absence of discrimination and should not be used to evaluate the effects of discrimination.

Therefore, focusing on the "capacity" of businesses in terms of employment, revenue, bonding limits, number of trucks, and so forth is simply wrong as a matter of economics because it can obscure the existence of discrimination. A truly "effective" discriminatory system would lead to a finding of no "capacity," and under the "capacity" approach, a finding of no discrimination. Excluding firms from an availability measure based on their "capacity" in a discriminatory market merely affirms the results of discrimination, not meliorates these results them. A capacity requirement would preclude the State from doing anything to rectify its passive participation through public dollars in a clearly discriminatory system. The capacity argument fails to acknowledge that discrimination has prevented the emergence of "qualified, willing, and able" minority firms. Without such firms, there can be no statistical disparity.

Further, in dynamic business environments, and especially in the construction sector, such "qualifications" or "capacity" can be obtained relatively easily. It is well known that small construction companies can expand rapidly as needs arise by hiring workers and renting equipment, and many general contractors subcontract the majority of a project. Firms grow quickly when demand increases and shrink quickly when demand decreases. Subcontracting is one important source of this elasticity, as has been noted by several academic studies.[67] Other industry sectors, especially in this era of Internet commerce and independent contractors, can also quickly grow or shrink in response to demand.

Finally, even where "capacity"-type factors have been controlled for in statistical analyses, results consistent with business discrimination are still typically observed. For example, large and statistically significant differences in commercial loan denial rates between minority and non-minority firms are evident throughout the country, even when detailed balance sheet and creditworthiness measures are held constant.[68] Similarly, economists using decennial census data

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[67] Clinton C. Bourdon and Raymond E. Levitt, *Union and Open-Shop Construction, Compensation, Work Practices, and Labor Markets* (Lexington, MA: Lexington Books, 1980); *see also* Robert G. Eccles, "Bureaucratic versus Craft Administration: The Relationship of Market Structure to the Construction Firm," *Administrative Science Quarterly*, v.26, 1981; *and* Frederick Elliot Gould, "Investigation in Construction Entrepreneurship," Masters Thesis, MIT, May 1980.

[68] *See* "Discrimination Facing Small Minority Owned and Women-Owned Businesses in Commercial Credit Markets," Testimony of Jon S. Wainwright before the Committee on Small Business and Entrepreneurship, U.S. Senate, September 11, 2008.

have demonstrated that statistically significant disparities in business formation and business owner earnings between minorities and non-minorities remain even after controlling for a host of additional relevant factors, including educational achievement, labor market experience, marital status, disability status, veteran status, interest and dividend income, labor market attachment, industry, geographic location, and local labor market variables such as the unemployment rate, population growth rate, government employment rate, or per capita income.[69]

To summarize, the statistical analysis of the availability of minority firms compared to non-minority firms to examine the existence and effects of discrimination in disparity studies should not adjust for "capacity" because:

- "Capacity" has been ill-defined;
- Small firms, particularly in the construction industry, are highly elastic with regard to ability to perform;
- Many disparity studies have shown that even when "capacity" and "qualifications"-type factors are held constant in statistical analyses, evidence of disparate impact against DBE and M/WBE firms tends to persist; and
- Most important, identifiable indicators of "capacity" are themselves impacted by discrimination.

3. Preferences for Women

Whether affirmative action procurement programs that benefit women are subject to the lesser constitutional standard of "intermediate scrutiny" has yet to be settled by the Supreme Court.[70] Most courts have applied intermediate scrutiny to preferences for women,[71] and then upheld or struck down the female preference under that standard.[72] This is probably a distinction without meaningful difference, as only one post-*Croson* court has upheld WBE provisions while striking

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[69] Jon S. Wainwright, "Racial Discrimination and Minority Business Enterprise, Evidence from the 1990 Census," *Studies in Entrepreneurship Series*, Edited by S. Bruchey, New York, NY: Garland Publishing, 2000.

[70] *Cf. United States v. Virginia*, 518 U.S. 515 (1996) (applying standard of "exceedingly persuasive justification" in striking down Virginia Military Institute's males only admissions policy).

[71] *See, e.g., Associated Utility Contractors of Maryland, Inc. v. Mayor and City Council of Baltimore et al*, 83 F.Supp.2d 613, 620 (D. Md. 2000).

[72] *See, e.g., Northern Contracting I*, at *44 (women's status as presumptively socially disadvantaged passes intermediate scrutiny); *W.H. Scott Construction Co., Inc. v. City of Jackson*, 199 F.3d 206, 215 n.9 (5th Cir. 1999); *Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Engineering Contractors* ("*Engineering Contractors II*"), 122 F.3d 895, 907-910 (11th Cir. 1997); *Concrete Works, Inc. v. City and County of Denver ("Concrete Works II")*, 36 F.3d 1513, 1519 (10th Cir. 1994); *Contractors Association of Eastern Pennsylvania v. City of Philadelphia ("Philadelphia II")*, 6 F.3d 990, 1009 (3rd Cir, 1993); *Coral Construction Co. v. King County*, 941 F.2d 910, 930-931 (9th Cir. 1991); *Associated Utility Contractors of Maryland, Inc. v. Baltimore*, 83 F.Supp 2d 613 (D. Md. 2000) (*"Baltimore I"*); *but see Brunet v. City of Columbus*, 1 F.3d 390, 404 (6th Cir. 1993) (applying strict scrutiny).

down M/WBE measures.[73] Further, as observed by the Seventh Circuit Court of Appeals, applying intermediate scrutiny to gender "creates the paradox that a public agency may provide stronger remedies for sex discrimination than for race discrimination; it is difficult to see what sense that makes."[74] Therefore, the State would be wise to meet the rigors of strict scrutiny for gender preferences.

4. Burdens of Production and Proof

Unlike most legal challenges, the defendant has the initial burden of producing "strong evidence" in support of the program. The plaintiff must then proffer evidence to rebut the government's case, and bears the ultimate burden of production and persuasion that the affirmative action program is unconstitutional.[75] There is no need of formal legislative findings,[76] nor "an ultimate judicial finding of discrimination before [a local government] can take affirmative steps to eradicate discrimination."[77] When the statistical information is sufficient to support the inference of discrimination, the plaintiff must prove that the statistics are flawed.[78] A plaintiff cannot rest upon general criticisms of studies or other evidence; it must carry the case that the government's proof is inadequate to meet strict scrutiny, rendering the legislation or governmental program illegal.[79] The determination whether a plaintiff has met this burden is a question of law, subject to *de novo* review.[80]

B. New York's Compelling Interest in Remedying Identified Discrimination in Its Contracting Marketplaces

Much of the discussion in the case law has revolved around what type of evidence is sufficiently "strong" to establish the continuing existence and effects of economic discrimination against minorities resulting in diminished opportunities to do business with the government. Proof of the disparate impacts of economic factors on M/WBEs and the disparate treatment of such firms by actors critical to success is necessary to meet strict scrutiny. Discrimination must be shown using

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[73] *Coral Construction*, 941 F.2d at 932 (applying intermediate scrutiny); *cf. Western States Paving Co.*, 407 F.3d. at 991 n.6 (no need to conduct a separate analysis of sex-based classifications under intermediate scrutiny because it would not yield a different result from strict scrutiny).

[74] *Builders Association of Greater Chicago v. County of Cook*, 256 F.3d 642, 644 (7th Cir. 2001).

[75] *Adarand VII*, 228 F.3d at 1166; *Scott*, 199 F.3d at 219.

[76] *Webster v. Fulton County, Georgia*, 51 F.Supp2d 1354, 1364 (N.D. Ga. 1999), *aff'd*, 218 F.3d 1267 (2000), *cert. denied*, 532 U.S. 942 (2001).

[77] *Concrete Works II*, 36 F.3d at 1522.

[78] *Engineering Contractors II*, 122 F.3d at 916; *Coral Construction*, 941 F.2d at 921.

[79] *Adarand VII*, 228 F.3d at 1166; *Engineering Contractors II*, 122 F.3d at 916; *Contractors Association of Eastern Pennsylvania v. City of Philadelphia ("Philadelphia III")*, 91 F.3d 586, 597 (3rd Cir. 1996); *Concrete Works II*, 36 F.3d at 1522 1523; *Webster*, 51 F. Supp. 2d at 1364; *see also Wygant v. Jackson Board of Education*, 476 U.S. 267, 277-278 (1986).

[80] *Adarand VII*, 228 F.3d at 1161; *Associated General Contractors of Ohio v. Drabik*, 214 F.3d 730, 734 (6th Cir. 2000); *Scott*, 199 F.3d at 211; *but see Engineering Contractors II*, 122 F.3d at 917 (meeting constitutional test is a question of fact, subject only to appellate review for abuse of discretion).

statistics and economic models to examine the effects of systems or markets on different groups, as well as by evidence of personal experiences with discriminatory conduct, policies or systems.[81] Specific evidence of discrimination or its absence may be direct or circumstantial, and should include economic factors and opportunities in the private sector affecting the success of M/WBEs.[82]

1. Definition of New York State's Marketplace

Croson counsels that a state or local government may only remedy discrimination within its own contracting marketplace. Richmond was specifically faulted for including minority contractors from across the country in its program.[83] Therefore, this Study employs long established economic principles to empirically establish the geographic and industry dimensions of the State's contracting marketplace in order to ensure that the evidence is narrowly tailored.[84]

2. Examining Disparities Between M/WBE Availability and Utilization

Next, statistical examination of the availability of minorities and women to participate in New York's projects and the history of utilizing M/WBEs as prime contractors and utilizing M/WBEs as subcontractors by the State and its prime contractors is required. Simple disparities between New York's overall minority population and the State's and its prime contractors' utilization of minority- and women-owned firms are not enough.[85] The primary inquiry is whether there are statistically significant disparities between the availability of M/WBEs and the utilization of such firms.

> 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.…In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion.[86]

This is known as the "disparity index" or "disparity ratio." This index is calculated by dividing the utilization of M/WBEs by the availability of M/WBEs. Courts have looked to disparity indices in determining whether *Croson's* evidentiary foundation is satisfied.[87] An index less than

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[81] *Adarand VII*, 228 F.3d at 1166 ("statistical and anecdotal evidence are appropriate").

[82] *Id*.

[83] 488 U.S. at 508.

[84] *Concrete Works II*, 36 F.3d at 1520 (to confine data to strict geographic boundaries would ignore "economic reality").

[85] *Croson*, 488 U.S. at 501-02; *Drabik*, 214 F.3d at 736.

[86] *Croson*, 488 U.S. at 509*; see Webster*, 51 F.Supp.2d at 1363, 1375.

[87] *Scott*, 199 F.3d at 218; *Concrete Works II*, 36 F.3d at 1526-1527; *O'Donnell Construction Co., Inc, v. District of Columbia*, 963 F.2d 420, 426 (D.C. Cir. 1992); *Cone Corp. v. Hillsborough County*, 908 F.2d 908, 916 (11th Cir. 1990), *cert. denied*, 498 U.S. 983 (1990).

100 percent indicates that a given group is being utilized less than would be expected based on its availability.

Calculations of the availability of minority- and women-owned firms are therefore the crucial foundation for examining affirmative action in contracting.[88] In addition to creating the disparity index, correct measures of availability are necessary to determine whether discriminatory barriers depress the formation of firms by minorities and women, and the success of such firms in doing business in both the private and public sectors.[89]

New York need not prove that the statistical inferences of discrimination are "correct." In upholding Denver's M/WBE Program, the Tenth Circuit noted that strong evidence supporting Denver's determination that remedial action was necessary need not have been based upon "irrefutable or definitive" proof of discrimination. Statistical evidence creating inferences of discriminatory motivations was sufficient and therefore evidence of marketplace discrimination was properly used to meet strict scrutiny. It is the plaintiff who must prove by a preponderance of the evidence that such proof does not support those inferences.[90]

It is also the case that if M/WBEs are overutilized under the State's program, that does not end the inquiry. This is critical for a government like the State of New York, which has implemented a program for many years. Where the government has been implementing affirmative action remedies M/WBE utilization reflects those efforts; it does not signal the end of discrimination. For example, the Tenth Circuit held that Denver's overutilization of M/WBEs on City projects with goals went only to the weight of the evidence because it reflected the effects of a remedial program. Denver presented evidence that goals and non-goals projects were similar in purpose and scope and that the same pool of contractors worked on both types. "Particularly persuasive" was evidence that M/WBE participation declined significantly when the program was amended in 1989. "The utilization of M/WBEs on City projects has been affected by the affirmative action programs that have been in place in one form or another since 1977. Thus, the non-goals data is [sic] the better indicator of discrimination in public contracting" and supports the position that discrimination was present before the enactment of the ordinances.[91]

3. Unremediated Markets Data

It is also useful to measure M/WBE participation in the absence of affirmative action goals, if such evidence is available. Evidence of race and gender discrimination in relevant

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[88] *Philadelphia III*, 91 F.3d at 603; *Webster*, 51 F.Supp.2d at 1372 (no explanation for the source nor any indicia of the accuracy or reliability of availability figures).

[89] *Webster*, 51 F.Supp.2d at 1372; *see Northern Contracting II*, at *70 (IDOT's custom census approach was supportable because "discrimination in the credit and bonding markets may artificially reduce the number of registered" minority- and women-owned firms).

[90] *Concrete Works, Inc. v. City and County of Denver*, 321 F.3d, 950, 971 (10th Cir. 2003), *cert. denied*, 540 U.S. 1027 (2003) ("*Concrete Works IV")*.

[91] *Id*. at 987-988.

"unremediated"[92] markets provides an important indicator of what level of actual M/WBE participation can be expected in the absence of government mandated affirmative efforts to contract with M/WBEs.[93] The courts are clear that the government has a compelling interest in not financing the evil of private prejudice with public dollars.[94] If M/WBE utilization is below availability in unremediated markets, an inference of discrimination may be supportable. The virtual disappearance of M/WBE participation after programs have been enjoined or abandoned strongly indicates substantial barriers to minority subcontractors, "raising the specter of racial discrimination."[95] Unremediated markets analysis addresses whether the government has been and continues to be a "passive participant" in such discrimination, in the absence of affirmative action remedies.[96] The results of non-goals contracts can help to demonstrate that, but for the interposition of remedial affirmative action measures, discrimination would lead to disparities in government contracting. The "dramatic decline in the use of M/WBEs when an affirmative action program is terminated, and the paucity of use of such firms when no affirmative action program was ever initiated," has been held to be proof of the government's compelling interest in employing race- and gender-conscious measures.[97] Evidence of unremediated markets "sharpens the picture of local market conditions for MBEs and WBEs."[98] It is particularly useful as a comparison where the agency has been applying race-conscious remedies for discrimination.

4. Anecdotal Evidence

Anecdotal evidence of experiences with discrimination in contracting opportunities is relevant because it goes to the question of whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes.[99] As observed by the Supreme Court, anecdotal evidence presented in a pattern or practice discrimination case can be persuasive because it "brought the cold [statistics] convincingly to life".[100]Testimony about discrimination by prime contractors, unions, bonding companies, suppliers, and lenders has been found relevant regarding barriers both to minority subcontractors' business formation and to their success on governmental projects.[101] While anecdotal evidence is insufficient standing alone, "[p]ersonal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a

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[92] "Unremediated market" means "markets that do not have race- or gender-conscious subcontracting goals in place to remedy discrimination." *Northern Contracting II*, at *36.

[93] *See, e.g., Western States*, 407 F.3d at 992 (Congress properly considered evidence of the "significant drop in racial minorities' participation in the construction industry" after state and local governments removed affirmative action provisions).

[94] *See, e.g., Drabik*, 214 F.3d at 734-735.

[95] *Adarand VII*, 228 F.3d at 1174.

[96] *See also Philadelphia III*, 91 F.3d at 599-601.

[97] *Builders Association v. Chicago*, 298 F. Supp.2d at 737; *see also Concrete Works IV*, 321 F.3d at 987-988.

[98] *Concrete Works II*, 36 F.3d at 1529.

[99] *Webster*, 51 F.Supp.2d at 1363, 1379.

[100] *International Brotherhood of Teamsters v. United States*, 431 U.S. 324, 399 (1977).

[101] *Adarand VII*, 228 F.3d at 1168-1172.

[government's] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative."[102] "[W]e do not set out a categorical rule that every case must rise or fall entirely on the sufficiency of the numbers. To the contrary, anecdotal evidence might make the pivotal difference in some cases; indeed, in an exceptional case, we do not rule out the possibility that evidence not reinforced by statistical evidence, as such, will be enough."[103]

There is no requirement that anecdotal testimony be verified or corroborated, as befits the role of evidence in legislative decision-making as opposed to judicial proceedings. "Denver was not required to present corroborating evidence and [plaintiff] was free to present its own witnesses to either refute the incidents described by Denver's witnesses or to relate their own perceptions on discrimination in the Denver construction industry."[104]

C. Narrowly Tailoring a Minority-Owned and Women-Owned Business Enterprise Procurement Program for the State of New York

The following factors must be considered in determining whether any race- and gender-based remedies that might be adopted by the State are narrowly tailored to achieve their purpose:

- The efficacy of race-neutral remedies at overcoming identified discrimination;
- The relationship of numerical benchmarks for government spending to the availability of M/WBEs and to subcontracting goal setting procedures;
- The flexibility of the program requirements, including the provision for good faith efforts to meet goals and contract specific goal setting procedures;
- The congruence between the remedies adopted and the beneficiaries of those remedies;
- Any adverse impact of the relief on third parties; and
- The duration of the program.[105]

The Fourth Circuit Court of Appeals has described the narrow tailoring requirements as follows:

> The preferences may remain in effect only so long as necessary to remedy the discrimination at which they are aimed; they may not take on a life of their own. The numerical goals must be waivable if qualified minority applications are scarce, and such goals must bear a reasonable relation to minority percentages in the relevant qualified

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[102] *Concrete Works II*, 36 F.3d at 1520, 1530.

[103] *Engineering Contractors II*, 122 F.3d at 926.

[104] *Concrete Works IV*, 321 F.3d at 989.

[105] *United States v. Paradise*, 480 U.S. 149, 171 (1987); *see also Sherbrooke*, 345 F.3d at 971972; *Drabik*, 214 F.3d at 737-738.

labor pool, not in the population as a whole. Finally, the preferences may not supplant race-neutral alternatives for remedying the same discrimination.[106]

1. Race- and Gender-Neutral Remedies

Race- and gender-neutral approaches have become a necessary component of a defensible and effective M/WBE program.[107] Such measures include unbundling of contracts into smaller units, providing technical support, and addressing issues of financing, bonding, and insurance important to all small and emerging businesses.[108] Difficulty in accessing procurement opportunities, restrictive bid specifications, excessive experience requirements, and overly burdensome insurance and/or bonding requirements, for example, might be addressed by the State without resort to using race or gender in its decision-making. Further, governments have a duty to ferret out and punish discrimination against minorities and women by their contractors, staff, lenders, bonding companies or others.[109] At a minimum, entities must track the utilization of M/WBE firms as a measure of their success in the bidding process, including as subcontractors.[110]

However, strict scrutiny does not require that every race-neutral approach must be implemented and then proven ineffective before race-conscious remedies may be utilized.[111] While an entity must give good faith consideration to race-neutral alternatives, "strict scrutiny does not require exhaustion of every possible such alternative…however irrational, costly, unreasonable, and unlikely to succeed such alternative might be…. [s]ome degree of practicality is subsumed in the exhaustion requirement."[112]

2. Targeted Goal Setting

Numerical goals or benchmarks for M/WBE participation must be substantially related to their availability in the relevant market.[113] It is settled case law that goals should reflect the particulars of the contract, not reiterate annual aggregate targets; goals must be contract specific. For example, in the second challenge to Baltimore's M/WBE Program by the Associated Utility Contractors, the court specifically noted that the 2000 ordinance, in contrast to an earlier

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[106] *Maryland Troopers Association, Inc. v. Evans*, 993 F.2d 1072, 1076-77 (4th Cir. 1993) (citations omitted).

[107] *Croson*, 488 U.S. at 507 (Richmond considered no alternatives to race-based quota); *Drabik*, 214 F.3d at 738; *Philadelphia III*, 91 F.3d at 609 (City's failure to consider race-neutral alternatives was particularly telling); *Webster*, 51 F.Supp.2d at 1380 (for over 20 years County never seriously considered race-neutral remedies).

[108] *See* 49 CFR § 26.51.

[109] *Croson*, 488 U.S. at 503 n.3; *Webster*, 51 F.Supp.2d at 1380.

[110] *See, e.g., Virdi v. DeKalb County School District*, 2005 U.S. App. LEXIS 11203 at n.8 (11th Cir. June 13, 2005).

[111] *Grutter*, 529 U.S. at 339.

[112] *Coral Construction*, 941 F.2d at 923.

[113] *Webster*, 51 F.Supp.2d at 1379, 1381 (statistically insignificant disparities are insufficient to support an unexplained goal of 35 percent M/WBE participation in County contracts); *see also Associated Utility Contractors*, 83 F.Supp.2d at 621.

program struck down as unconstitutional, specifically requires that goals be set on a contract-by-contract and craft-by-craft basis.[114]

One unanswered question is whether goals or benchmarks for overall agency contracting may be set higher than estimates of actual current availability. To freeze the goals at current head counts would set the results of discrimination — depressed M/WBE availability — as the marker of the elimination of discrimination. It therefore should be reasonable for the government to seek to attempt to level the racial and gender playing field by setting targets somewhat higher than current headcount. For example, 49 C.F.R. Part 26[115] requires recipients to determine the availability of DBEs in their marketplaces absent the presence of discrimination, that is, "but for" discrimination.[116] In upholding the DBE regulations, the Tenth Circuit stated that

> because Congress has evidence that the effects of past discrimination have excluded minorities from the construction industry and that the number of available minority subcontractors reflects that discrimination, the *existing* percentage of minority-owned businesses is not necessarily an absolute cap on the percentage that a remedial program might legitimately seek to achieve. Absolute proportionality to overall demographics is an unreasonable goal. However, *Croson* does not prohibit setting an aspirational goal above the current percentage of minority-owned businesses that is substantially below the percentage of minority persons in the population as a whole. This aspirational goal is reasonably construed as narrowly tailored to remedy past discrimination that has resulted in homogenous ownership within the industry. It is reasonable to conclude that allocating more than 95% of all federal contracts to enterprises owned by non-minority persons, or more than 90% of federal transportation contracts to enterprises owned by non-minority males, is in and of itself a form of passive participation in discrimination that Congress is entitled to seek to avoid. *See Croson*, 488 U.S. at 492 (Op. of O'Connor, J.).[117]

At least one court has recognized that goal setting is not an absolute science. In holding the DBE regulations to be narrowly tailored, the Eighth Circuit noted that "[t]hough the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson.*"[118] "On the other hand, sheer speculation cannot form the basis for an enforceable measure."[119]

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[114] *Associated Utility Contractors of Maryland, Inc. v. Mayor and City Council of Baltimore*, 218 F.Supp.2d 749, 751-52 (D. Md. 2002) ("*Baltimore II*").

[115] 49 CFR Part 26 governs New York's receipt of U.S. Department of Transportation funds.

[116] 49 CFR § 26.45.

[117] *Adarand VII*, 228 F.3d at 1181 (emphasis in the original).

[118] *Sherbrooke*, 345 F.3d at 972.

[119] *Id*. (complete absence of evidence for 12-15 percent DBE goal); *see also BAGC v. Chicago*, 298 F.Supp.2d at 740 (City's MBE and WBE goals were "formulistic" percentages not related to the availability of firms).

Goals can be set at various levels of particularity and participation. The entity may set an overall, aspirational goal for its annual, aggregate spending. Specific projects must be subject to subcontracting goals based upon availability of M/WBEs to perform the anticipated scopes of subcontracting. Not only is this legally mandated,[120] but also this approach reduces the need to conduct good faith efforts reviews as well as the temptation to create "front" companies and sham participation to meet unreasonable contract goals.

3. Flexibility of Goals and Requirements

It is imperative that remedies not operate as fixed quotas. A M/WBE program must provide for contract awards to firms who fail to meet the subcontracting goals but make good faith efforts to do so. Further, firms who meet the goals cannot be favored over those who made good faith efforts. In *Croson*, the Court refers approvingly to the contract-by-contract waivers used in the USDOT's DBE program.[121] This feature has been central to the holding that the DBE program meets the narrow tailoring requirement.[122]

4. Program Over-inclusiveness and Under-inclusiveness

The over- or under-inclusiveness of those persons to be included in any program is an additional consideration, and goes to whether the remedies truly target the evil identified.[123] The "fit" between the problem and the remedy manifests in three ways: which groups to include, how to define those groups, and which persons will be eligible to be included within those groups.

First, the groups to include must be based upon the evidence.[124] The "random inclusion" of ethnic or racial groups that may never have experienced discrimination in the entity's marketplace may indicate impermissible "racial politics."[125] Similarly, the Seventh Circuit, in striking down Cook County's program, remarked that a "state or local government that has discriminated just against blacks may not by way of remedy discriminate in favor of blacks and Asian-Americans and women."[126] However, at least one court has held some quantum of evidence of discrimination for each group is sufficient; *Croson* does not require that each group included in the ordinance suffer equally from discrimination.[127]

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[120] *See Sherbrooke*, 345 F.3d at 972; *Coral Construction*, 941 F.2d at 924.

[121] 488 U.S. at 508; *see also Adarand VII*, 228 F.3d at 1181.

[122] *See*, e.g., *Sherbrooke*, 345 F.3d at 972.

[123] *Association for Fairness in Business, Inc. v. New Jersey*, 82 F.Supp.2d 353, 360 (D.N.J. 2000).

[124] *Philadelphia II*, 6 F.3d at 1007 (strict scrutiny requires data for each minority group; data was insufficient to include Hispanics, Asians or Pacific Islanders or Native Americans); *cf. Northeastern Florida Chapter of the AGC v. Jacksonville*, 508 U.S. 656, 660-661 (1993) (new ordinance narrowed to Blacks and women).

[125] *Webster*, 51 F.Supp.2d at 1380–1381.

[126] *BAGC v. Cook County*, 256 F.3d at 646.

[127] *Concrete Work IV*, 321 F.3d at 9761.

The level of specificity at which to define beneficiaries is the next question. Approaches range from a single M/WBE or DBE goal that includes all racial and ethnic minorities and non-minority women,[128] to separate goals for each minority group and women.[129] Ohio's Program was specifically faulted for lumping together all "minorities," with the court questioning the legitimacy of forcing Black contractors to share relief with recent Asian immigrants.[130]

Third, program remedies should be limited to those firms that have suffered actual harm. The DBE Program's rebuttable presumptions of social and economic disadvantage have been central to the courts' holdings that it is narrowly tailored. "While TEA-21 creates a rebuttable presumption that members of certain racial minorities fall within that class, the presumption is rebuttable, wealthy minority owners and wealthy minority-owned firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor."[131] Moreover, anyone can challenge the disadvantage of any firm.[132]

The U.S. Court of Appeals for the Second Circuit addressed an interesting permutation of this element of narrow tailoring. An Hispanic-owned firm whose owner was not Latin American challenged the State's limitation of MBE program eligibility to Hispanics from Latin America as violative of strict scrutiny. The court held that whether a race-conscious program is under-inclusive is subject only to rational basis scrutiny, not strict scrutiny.[133]

> We conclude that the narrow-tailoring requirement allows New York to identify which groups it is prepared to prove are in need of affirmative action without demonstrating conclusively that no other groups merit inclusion.… [T]he state need not bear the burden of persuasion to justify its decision not to extend affirmative action to other groups.… The plaintiffs, in effect, are asking us to declare that the fit in Article 15-A is too tight -- that equal protection requires it to be expanded to include other racial and ethnic groups that may have been discriminated against. Such a requirement would have no limit.… If it instituted any affirmative action program for some groups with a history of discrimination, the state would be required to prove a negative -- to show that no other group had also been discriminated against. We doubt that the Supreme Court had such

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[128] *See* 49 CFR §26.45(h) (overall goal must not be subdivided into group-specific goals).

[129] *See Engineering Contractors II*, 122 F.3d at 900 (separate goals for Blacks, Hispanics and women).

[130] *Drabik*, 214 F.3d at 737; *see also Western States*, 407 F.3d at 998 ("We have previously expressed similar concerns about the haphazard inclusion of minority groups in affirmative action program ostensibly designed to remedy the effects of discrimination.").

[131] *Sherbrooke*, 345 F.3d at 973; *see also Grutter*, 539 U.S. at 341; *Adarand VII*, 228 F.3d at 1183-1184 (personal net worth limit is element of narrow tailoring); *cf. Associated General Contractors v. City of New Haven*, 791 F.Supp. 941, 948 (D. Conn. 1992), *vacated on other grounds*, 41 F.3d 62 (2nd Cir. 1992) (definition of "disadvantage" was vague and unrelated to goal).

[132] 49 CFR §26.87.

[133] *Jana-Rock Construction, Inc. v. New York State Department of Economic Development*, 438 F.3d 195 (2nd Cir. 2005).

> court-ordered expansions of affirmative action programs in mind when it decided *Croson* and *Adarand.*[134]

The court also rejected the argument that the exclusion of persons whose origins were in Spain violates strict scrutiny. While

> the fact that a particular governmental decision to use classifications based on race or national origin in a particular context passes strict scrutiny does not relieve those categories of their possible arbitrariness and unreliability as bases for classifying specific individuals.… Once it has been established that the government is justified in resorting to the "highly suspect tool" of racial or national origin classifications, strict scrutiny has little utility in supervising the government's definition of its chosen categories. The purpose of the test is to ensure that the government's choice to use racial classifications is justified, not to ensure that the contours of the specific racial classification that the government chooses to use are in every particular correct.[135]

Finally, the court held that there was no evidence of a discriminatory animus against Spanish speakers that would trigger strict scrutiny. "Without any indication of that sort of discriminatory purpose for the statute's exclusion of persons of Spanish descent, we evaluate the plaintiff's underinclusiveness claim using rational basis review."[136] That judicial opinions, federal statutes, and federal regulations have declared that Hispanics in general have suffered discrimination; the plaintiff has had personal experiences with discrimination; and the State's 1994 study of discrimination included all Hispanics for some analyses, was not enough to render New York's' decision discriminatory or irrational. "[I]t was not irrational for New York to conclude that Hispanics of Latin American origin were in greater need of remedial legislation."[137]

5. Sharing of the Burden by Third Parties

Failure to make "neutral" changes to contracting and procurement policies and procedures that disadvantage M/WBEs and other small businesses may result in a finding that the program unduly burdens non-M/WBEs.[138] However, "innocent" parties can be made to share some of the burden of the remedy for eradicating racial discrimination.[139] "Implementation of the race-

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[134] *Id*. at 206-07.

[135] *Id*. at 210.

[136] *Id*. at 212.

[137] *Id*. at 214.

[138] *See Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Dade County* ("*Engineering Contractors I*"), 943 F.Supp. 1546, 1581-1582 (S.D. Fla. 1996) (County chose not to change its procurement system).

[139] *Concrete Works IV*, 321 F.3d at 973; *Wygant*, 476 U.S. at 280-281; *Adarand VII*, 228 F.3 at 1183 ("While there appears to be no serious burden on prime contractors, who are obviously compensated for any additional burden occasioned by the employment of DBE subcontractors, at the margin, some non-DBE subcontractors such as *Adarand* will be deprived of business opportunities"); *cf. Northern Contracting II*, at *5 ("Plaintiff has presented little evidence that is [sic] has suffered anything more than minimal revenue losses due to the program.").

conscious contracting goals for which TEA-21 provides will inevitably result in bids submitted by non-DBE firms being rejected in favor of higher bids from DBEs. Although this places a very real burden on non-DBE firms, this fact alone does not invalidate TEA-21. If it did, all affirmative action programs would be unconstitutional because of the burden upon non-minorities."[140] Effective remedies are not costless.

6. Duration and Review of Programs

"Narrow tailoring also implies some sensitivity to the possibility that a program might someday have satisfied its purposes."[141] It was the unlimited duration and lack or review that led to the City of Augusta, Georgia's DBE program's being enjoined.[142] Likewise, one of the factors leading to the court's holding that the City of Chicago's M/WBE Program was no longer narrowly tailored was the lack of a sunset provision.[143] As recently reiterated by the Eleventh Circuit Court of Appeals, the "unlimited duration of the [District's] racial goals also demonstrates a lack of narrow tailoring.…While the District's effort to avoid unintentional discrimination should certainly be ongoing, its reliance on racial classifications should not."[144] Similarly, the USDOT DBE Program's periodic review by Congress has been repeatedly held to provide adequate durational limits.[145] Therefore, a sunset date and periodic review during the statute's implementation are necessary to meet strict scrutiny.

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[140] *Western States*, 407 F.3d at 995.

[141] *Drabik*, 214 F.3d at 737.

[142] *Thompson Building Wrecking Co., Inc. v. City of Augusta, Georgia*, 2007 U.S. Dist. Lexis 27127 (S.D. Ga. 2007) at *22-23.

[143] *BAGC* v. *Chicago*, 298 F.Supp.2d at 739; *see also Webster*, 51 F. Supp. 2d at 1382 (one of Fulton County's telling disqualifiers was that it had been implementing a "quota" program since 1979 with no contemplation of program expiration).

[144] *Virdi*, at *18.

[145] *See Western States*, 407 F.3d at 995.

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III. Defining the Relevant Markets

A. Preparing the Master Contract/Subcontract Database

The U.S. Supreme Court in *Croson* indicated that the U.S. Congress' *national* findings of minority business discrimination in construction and related industries were not specific enough, standing alone, to support a MBE program in the City of Richmond. According to the Court, "[t]he probative value of these findings for demonstrating the existence of discrimination in Richmond is extremely limited."[146] To support its conclusion, the Court noted that the federal DBE program, by including waivers and other provisions whereby DBE affirmative action requirements could be relaxed under certain conditions, "explicitly recognized that the scope of the problem would vary from market area to market area."[147]

The first step, therefore, in our evaluation of M/WBE availability and participation for NYS must be to define the relevant market area for its Construction, Construction-related Professional Services, Services, and Commodities procurement.[148] Markets have both a product and a geographic dimension, both of which are considered.[149] For this Study, we define the State's market area based on its own historical contracting and subcontracting records. We define the geographic market dimension by calculating from zip code data where the majority of the State's contractors and subcontractors are located, and we define the product market dimension by estimating which North American Industrial Classification System (NAICS) codes best describe each identifiable contractor, subcontractor, subconsultant, or supplier in those records.[150] In both cases, the definitions are weighted according to how many dollars were spent with firms from each NAICS code so that industries receiving relatively more contracting dollars receive relatively more weight in the estimation of M/WBE availability. Once the geographic and industry parameters of the State's market area have been defined, we can restrict our subsequent analyses to business enterprises and other phenomena within this market area. Restricting our analyses in this manner narrowly tailors our findings to the State's specific market area and contracting circumstances.

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[146] *Croson*, 488 U.S. at 504.

[147] *Id*. Since *Croson* concerned a challenge to local program while *Fullilove* concerned a challenge to a federal program, the *Croson* ruling did not directly affect the federal government's array of DBE programs. In the summer of 1995, a 5-4 Supreme Court majority in *Adarand* extended strict scrutiny to the federal government as well, thus formally overturning the *Fullilove* decision.

[148] Although Part 26 and Part 23 do not require that recipients establish the presence of discrimination in their individual markets, determining M/WBE availability and utilization are necessary to narrowly tailor their programs. *See* 49 CFR § 26.45(c).

[149] *See*, for example, Areeda, Phillip, and Louis Kaplow, *Antitrust Analysis: Problems, Text, Cases*, New York: Aspen Publishers, 6th Edition, 2004.

[150] Executive Office of the President, Office of Management and Budget, *North American Industrial Classification system: United States, 2007I*, Lanham, MD: Bernan, 2007.

1. New York State Contracting and Procurement

With assistance from the Department of Economic Development and the State Comptroller, NERA collected contract and purchase order data for the State's Construction, Construction-related professional services ("CRS"),[151] Other Professional and General Services ("Services"), and Commodities, Supplies, and Equipment contracts ("Commodities") that were active between April 2003 and March 2008 (SFY 2004–2008).[152]

For each contract or purchase order from the study period, we obtained available data from the State including the prime contractor name and address, contract or purchase description, contract or purchase order number, contractor gender and ethnicity, contract award or purchase date, and total contracted dollar amount. For subcontractors, we worked with the State to obtain all missing subcontractor information from the relevant prime contractors or vendors. Information collected included subcontractor name and address, subcontractor gender and ethnicity, final award amount, and final amount paid.

We restricted our analysis to NYS contracts and purchase orders of $50,000 or more; and in the case of construction contracts, of $100,000 or more.[153] During the five-year study period, there were 28,735 such contracts or purchase orders, as shown below:[154]

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[151] Construction-related professional services includes engineering services, architectural services, construction management services, testing services, environmental consulting services, and other construction-related consulting services.

[152] Thus, the study also includes contracts that were initiated in prior to April 2003 and still active as of that time.

[153] Article 15-A covers contracts and purchases of $25,000 or more. For construction, Article 15-A covers contracts of $100,000 or more. We did not attempt to obtain subcontract information for contracts under $50,000, as such contracts tend to have a low likelihood of significant subcontract activity. Article 15-A also does not apply to contracts with other public entities, contracts with non-profit entities, revenue contracts, contracts involving the leasing or acquisition of real property, and certain grants; and these contracts were also excluded from the study where they could be identified as such. Finally, although contracts for Banking, Insurance, and other Financial Services were not covered by Article 15-A during the study period. However, these contracts were retained in the study at the request of the State, in anticipation of an amendment to Article 15-A effective March 1, 2010 that includes these services.

[154] The second row of figures within each procurement category are the row percentages. For example, In Construction, 90.61 percent of records were in the sample universe and 9.39 percent were not. The third row are column percentages. For example, of the records in the sample universe, 57.15 percent are in Construction, 12.19 percent are in CRS, *etc*.

Table 3.A. Distribution of State Contracts and Purchase Orders by Procurement Category and Subcontractable Opportunities

Procurement Category	In Sample Universe NO	YES	Total
CONSTRUCTION	618	5,965	6,583
	9.39	90.61	100.00
	3.38	57.15	22.91
CRS	189	1,272	1,461
	12.94	87.06	100.00
	1.03	12.19	5.08
SERVICES	1,203	3,200	4,403
	27.32	72.68	100.00
	6.57	30.66	15.32
COMMODITIES	16,288	0	16,288
	100.00	0.00	100.00
	89.02	0.00	56.68
Total	18,298	10,437	28,735
	63.68	36.32	100.00
	100.00	100.00	100.00

Of these, 56.7 percent were for Commodities, which typically do not have subcontracting opportunities. The remaining 43.3 percent (*i.e.* purchases in Construction, CRS, and Services) do typically have subcontracting opportunities. As shown above, 22.9 percent were for Construction; 5.1 percent were for CRS; and 15.3 percent were for Services.

The State has not maintained the records of subcontracting activity during the study period sufficient for the disparity study assessment, particularly in the case of non-M/WBE subcontractors. It was therefore necessary to select a statistically representative sample of the State's prime contractors, consultants, and vendors in the procurement categories of Construction, CRS, and Services to obtain this missing information. Commodities were not included in the sample since they typically do not have subcontracting opportunities.

The table above shows that 10,437 of the 28,735 State contracts and purchase orders during the study period had subcontracting opportunities.[155] In other words, these contracts and purchase orders were "In the Sample Universe." The remaining 18,298 contracts and purchase orders, the bulk of which were for Commodities, were not in the sample universe. This does not mean these contracts were not studied, only that no subcontracting information had to be collected from the prime contractors and vendors for these contracts and purchase orders.

These 10,437 contracts and purchase orders had a total awarded value of $37.11B, and it was from this group of contracts and purchase orders that we drew our sample. We sampled the

[155] The vast majority of contracts and purchase orders without subcontract opportunities were in the Commodities category. As shown in the table, however, a portion of contracts in the other categories were also deemed to have no subcontract opportunities. These include items such as temporary staffing contracts and contracts with single individuals. As shown in the table above, such contracts account for 3.4 percent of Construction contracts, 1.0 percent of CRS contracts, and 6.6 percent of Services contracts.

largest contracts and purchase orders with certainty, and sampled smaller contracts and purchase orders randomly with replacement[156] across state agencies and institutions of higher education. The sample drawn included 2,037 of the 10,437 contracts and purchase orders in the sample universe, or 20 percent of the total; and $29.63B of $37.11B dollars, or 80 percent of the total.

A comparably sized sample of Commodities contracts, small contracts, and other contracts with a low likelihood of subcontracting activity was created from the remaining 18,298 contracts and purchase orders and included in the final file for study analysis. These 18,298 contracts and purchase orders had a total awarded value of $12.51B. Our sample from this group included 2,844 records, or 16 percent of the total; and $9.80B of $12.51B dollars, or 78 percent of the total.

The following agencies and sub-agencies were represented in the study:[157]

Table 3.B. Agencies and Sub-Agencies Included in the Study

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DEPARTMENT OF CIVIL SERVICE
DEPARTMENT OF TAXATION & FINANCE
DEPARTMENT OF TRANSPORTATION
DEPT OF TEMPORARY & DISABILITY ASSISTANCE
DIVISION OF THE LOTTERY
NEW YORK STATE THRUWAY AUTHORITY
NYS POWER AUTHORITY
OFFICE FOR TECHNOLOGY
OFFICE OF GENERAL SERVICES
STATE UNIVERSITY CONSTRUCTION FUND
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEPARTMENT OF HEALTH
---------------------------------------------------------------------------
        DEPARTMENT OF HEALTH
        HELEN HAYES HOSPITAL
        VETERANS' HOME AT SAINT ALBANS
        NYS VETERAN'S HOME-MONTROSE
        VETERANS' HOME AT OXFORD
        WESTERN NEW YORK VETERANS' HOME AT BATA

METROPOLITAN TRANSPORTATION AUTHORITY
---------------------------------------------------------------------------
        MTA NYC TRANSIT
        MTA LONG ISLAND RR
        MTA METRO-NORTH RR
        MTA BRIDGES & TUNNELS
        MTA HEADQUARTERS
        MTA LONG ISLAND BUS
        MTA CAPITAL CONSTRUCTION
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[156] "With replacement" means that it is possible for a given purchase order to be included in the sample more than once. In the present context, sampling with replacement has certain desirable statistical properties that sampling without replacement lacks. Fifteen purchases orders were included twice and three purchase orders were included three times.

[157] A complete list of State Agencies, Authorities, and Other Budget Entities subject to Article 15-A appears below in Appendix B.

Table 3.B. Agencies and Sub-Agencies Included in the Study, Cont'd

STATE UNIVERSITY OF NEW YORK

STONY BROOK
HEALTH SCI CENTER AT SYRACUSE
HEALTH SCI CENTER AT BROOKLYN
ALBANY
COLLEGE AT BUFFALO
COLLEGE AT MORRISVILLE
SUNY AT BUFFALO
COLLEGE AT CORTLAND
COLLEGE AT POTSDAM
COLLEGE AT OSWEGO
COLLEGE OF TECHNOLOGY AT ALFRED
COLLEGE AT FREDONIA
BINGHAMTON
COLLEGE AT ONEONTA
COLLEGE AT NEW PALTZ
BROCKPORT
COLLEGE OF TECHNOLOGY AT CANTON
COLLEGE AT GENESEO
COLLEGE AT PLATTSBURGH
COLLEGE AT PURCHASE
SUNY ALL STATE OPERATED COLLEGES AND SCHOOLS
COLLEGE OF AGRICULTURE AND TECHNOLOGY A COBLESKILL
SUNY CENTRAL ADMIN
COLLEGE AT OLD WESTBURY
COLLEGE OF TECHNOLOGY AT DELHI
COLLEGE OF TECHNOLOGY AT FARMINGDALE
COLLEGE OF OPTOMETRY
EMPIRE STATE COLLEGE
MARITIME COLLEGE
COLLEGE OF ENVIRONMENTAL SCIENCE & FORESTRY
FIDUCIARY STUDENT LOANS-FED AND STATE

DEPARTMENT OF CORRECTIONAL SERVICES

DEPARTMENT OF CORRECTIONAL SERVICES
ADIRONDACK CORRCTIONAL FACILITY
ALBION CORRECTIONAL FACILITY
ALTONA CORRECTIONAL FACILITY
ARTHUR KILL CORRECTIONAL FACILITY
ATTICA CORR FACILITY
AUBURN CORR FACILITY
BARE HILL CORRECTIONAL FACILITY
BAYVIEW CORRECTIONAL FACILITY
BEACON CORRECTIONAL FACILITY
BEDFORD HILLS CORRECTIONAL FACILITY
BUFFALO CORRECTIONAL FACILITY
BUTLER CORRECTIONAL FACILITY
CAMP GABRIELS CORRECTIONAL FACILITY
CAMP GEORGETOWN CORRECTIONAL FACILITY
CAMP PHARSALIA CORRECTIONAL FACILITY
CAPE VINCENT CORRECTIONAL FACILITY
CAYUGA CORRECTIONAL FACILITY
CENTRAL OFFICE MEDICAL BILL PAYING UNIT
CENTRAL PHARMACY
CHATEAUGAY ALCOHOL SUBSTANCE ABUSE CORR
CLINTON CORRECTIONAL FACILITY
COLLINS CORRECTIONAL FACILITY
COXSACKIE CORR FACILITY
DOWNSTATE CORRECTIONAL FACILITY
EASTERN CORRECTIONAL FACILITY
EDGECOMBE CORRECTIONAL FACILITY
ELMIRA CORR & RECEPTION CTR
FISHKILL CORRECTIONAL FACILITY

DEPARTMENT OF CORRECTIONAL SERVICES, CONT'D

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FIVE POINTS CORRECTIONAL FACILITY
        FRANKLIN CORRECTIONAL FACILITY
        FULTON CORRECTIONAL FACILITY
        GOUVERNEUR CORRECTIONAL FACILITY
        GOWANDA CORRECTIONAL FACILITY
        GREAT MEADOW CORR FACILITY
        GREEN HAVEN CORR FACILITY
        GREENE CORRECTIONAL FACILITY
        GROVELAND CORRECTIONAL FACILITY
        HALE CREEK ALCOHOL SUBSTANCE ABUSE TREA
        HUDSON CORRECTIONAL FACILITY
        LAKEVIEW SHOCK INCARCERATION CORR FAC
        LINCOLN CORRECTIONAL FACILITY
        LIVINGSTON CORRECTIONAL FACILITY
        LYON MOUNTAIN CORRECTIONAL FACILITY
        MARCY CORRECTIONAL FACILITY
        MID-ORANGE CORRECTIONAL FACILITY
        MID-STATE CORRECTIONAL FACILITY
        MOHAWK CORRECTIONAL FACILITY
        MONTEREY SHOCK INCARCERATION CORRECTION
        MORIAH SHOCK INCARCERATION CORRECTIONAL
        MT. MCGREGOR CORRECTIONAL FACILITY
        OGDENSBURG CORRECTIONAL FACILITY
        ONEIDA CORRECTIONAL FACILITY
        ORLEANS CORRECTIONAL FACILITY
        OTISVILLE CORRECTIONAL FACILITY
        QUEENSBORO CORRECTIONAL FACILITY
        RIVERVIEW CORRECTIONAL FACILITY
        SHAWANGUNK CORRECTIONAL FACILITY
        SING SING CORRECTIONAL FACILITY
        SOUTHPORT CORRECTIONAL FACILITY
        SULLIVAN CORRECTIONAL FACILITY
        SUMMIT SHOCK INCARCERATION CORRECTIONAL
        TACONIC CORRECTIONAL FACILITY
        ULSTER CORRECTIONAL FACILITY
        UPSTATE CORRECTIONAL FACILITY
        WALLKILL CORRECTIONAL FACILITY
        WASHINGTON CORRECTIONAL FACILITY
        WATERTOWN CORRECTIONAL FACILITY
        WENDE CORRECTIONAL FACILITY
        WILLARD DRUG TREATMENT CENTER
        WOODBOURNE CORRECTIONAL FACILITY
        WYOMING CORRECTIONAL FACILITY
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After an intensive data collection effort and with the assistance of select state personnel at the represented agencies, we were ultimately able to obtain the associated subcontract information for 1,583 prime contracts, or 78 percent of the total prime contracts sampled, and 14,755 associated subcontracts. The total dollar value of the 1,583 prime contracts and their associated subcontracts was $23.45B, or 79 percent of all dollars in the sample. These percentages are sufficiently large to be well representative of the entire universe of contracts and subcontracts being examined for this study. As mentioned above, we included an additional 2,844 contracts and purchase orders worth $9.80B to represent Commodities purchasing and other areas with a low likelihood of subcontracting activity.[158]

[158] Additionally, 191 prime contracts and 134 subcontracts were added because contracts were sampled with replacement, meaning it was possible that some contracts were included in the sample more than once.

Therefore, the final sample of contracts and subcontracts to be used for the study contains 4,618 contracts and purchase orders and 14,889 associated subcontracts, with a total dollar value of $33.3B.

Together, as shown below in Tables 3.1 and 3.2, these prime contracts and subcontracts comprise the Master Contract/Subcontract Database compiled for this Study. Table 3.1 shows total number of prime contracts, subcontracts, and contract dollars awarded, by major procurement category. Table 3.2 shows the total number of prime contracts awarded during each year of the study period and total dollar awards associated with those contracts, by major procurement category. Table 3.3 shows a similar distribution among the State agencies included in the study.

B. Geographic Market Definition for Contracting and Procurement

To determine the geographic dimension of the State's contracting and procurement markets, we used the Master Contract/Subcontract Database, as described in the previous section, to obtain the zip codes and thereby the county and state for each contractor and subcontractor identified in our sample. Using this location information, we then calculated the percentage of NYS contract and subcontract dollars awarded to businesses by state, metropolitan area, and county during the study period.

As discussed above, the geographic market area is defined as that region which accounts for at least 75 percent of overall contracting and procurement spending by a given government entity. Contractors located within the State of New York or within the balance of the New York, Northern New Jersey, Long Island, NY-NJ-CT-PA Consolidated Metropolitan Statistical Area (CMSA) account for the vast majority of contracting and procurement expenditures by NYS and its prime contractors during the study period.

As shown in Table 3.4, the overall share of expenditures inside this market area is 80.6 percent of dollars awarded and 81.3 percent of dollars paid. The share is highest in CRS (97.0 and 96.9 percent, respectively) and lowest in Services (75.2 and 74.7 percent, respectively). For purposes of this Study, we therefore define the primary geographic market area to be the State of New York and the New York-Northern New Jersey-Long Island, NY-NJ-CT-PA CMSA.[159]

Within the market area, the geographic distribution of contract and procurement dollars across all procurement categories is shown in the following table.

[159] The New York-Northern New Jersey-Long Island, NY-NJ-CT-PA CMSA includes, in descending order according to general population size, Kings County, NY; Queens County, NY; New York County, NY; Suffolk County, NY; Nassau County, NY; Bronx County, NY; Westchester County, NY; Bergen County, NJ; Essex County, NJ; Middlesex County, NJ; Litchfield County, CT; Monmouth County, NJ; Hudson County, NJ; Union County, NJ; Ocean County, NJ; New Haven County, CT; Passaic County, NJ; Morris County, NJ; Richmond County, NY; Mercer County, NJ; Orange County, NY; Somerset County, NJ; Rockland County, NY; Dutchess County, NY; Fairfield County, CT; Sussex County, NJ; Hunterdon County, NJ; Warren County, NJ; Putnam County, NY; and Pike County, PA.

Table 3.C. Distribution of Prime Contracts and Subcontracts Award Dollars by State and County, 2004-2008

STATE	COUNTY	AMOUNT	PERCENT OF SPENDING IN MARKET AREA	CUMULATIVE PERCENT OF SPENDING IN MARKET AREA
NY	New York	$10,169,957,670	37.9%	37.9%
NY	Albany	$2,451,197,650	9.1%	47.0%
NY	Queens	$1,562,623,531	5.8%	52.8%
NY	Westchester	$1,429,270,443	5.3%	58.2%
NY	Onondaga	$954,586,897	3.6%	61.7%
NY	Erie	$923,967,650	3.4%	65.2%
NY	Bronx	$855,819,499	3.2%	68.3%
NY	Nassau	$820,461,484	3.1%	71.4%
NY	Oneida	$800,421,130	3.0%	74.4%
NY	Monroe	$757,315,343	2.8%	77.2%
NY	Suffolk	$655,693,985	2.4%	79.6%
NY	Saratoga	$505,594,029	1.9%	81.5%
NY	Kings	$431,228,425	1.6%	83.1%
NJ	Bergen	$315,868,932	1.2%	84.3%
NY	Schenectady	$269,043,452	1.0%	85.3%
NY	Broome	$244,877,310	0.9%	86.2%
NY	New York	$242,248,442	0.9%	87.1%
NY	Bronx	$228,173,272	0.9%	88.0%
NY	Rensselaer	$202,984,968	0.8%	88.7%
NJ	Morris	$170,427,671	0.6%	89.4%
NJ	Hudson	$161,459,103	0.6%	90.0%
NY	Ulster	$138,476,545	0.5%	90.5%
NY	Schoharie	$132,699,388	0.5%	91.0%
NJ	Somerset	$123,091,862	0.5%	91.4%
NY	Ontario	$121,865,667	0.5%	91.9%
NY	Orange	$118,952,633	0.4%	92.3%
CT	Fairfield	$117,953,077	0.4%	92.8%
NJ	Monmouth	$112,836,686	0.4%	93.2%
NJ	Middlesex	$98,268,639	0.4%	93.6%
NJ	Mercer	$93,013,973	0.4%	93.9%
NY	Livingston	$91,216,212	0.3%	94.2%
NY	Otsego	$89,344,706	0.3%	94.6%
NY	Chemung	$82,265,388	0.3%	94.9%
NJ	Essex	$73,942,368	0.3%	95.2%
NY	Rockland	$68,569,290	0.3%	95.4%
NY	Bronx	$66,837,058	0.3%	95.7%
NY	Herkimer	$65,962,426	0.3%	95.9%
NY	Warren	$65,740,002	0.2%	96.2%
NY	Dutchess	$64,519,398	0.2%	96.4%
NY	Madison	$62,769,753	0.2%	96.6%
NJ	Union	$59,112,514	0.2%	96.8%
NJ	Passaic	$56,533,374	0.2%	97.1%
CT	New Haven	$55,121,001	0.2%	97.3%
NY	Steuben	$54,688,176	0.2%	97.5%
NY	Niagara	$48,578,602	0.2%	97.6%
NY	Clinton	$43,264,013	0.2%	97.8%
NY	Cortland	$42,886,401	0.2%	98.0%

STATE	COUNTY	AMOUNT	PERCENT OF SPENDING IN MARKET AREA	CUMULATIVE PERCENT OF SPENDING IN MARKET AREA
NY	Queens	$39,660,458	0.2%	98.1%
NY	Richmond	$35,963,538	0.1%	98.3%
NY	Tompkins	$35,735,466	0.1%	98.4%
NY	Sullivan	$35,152,475	0.1%	98.5%
NY	Greene	$34,234,844	0.1%	98.6%
NY	Orleans	$28,149,360	0.1%	98.7%
NY	Oswego	$26,708,015	0.1%	98.8%
Balance (37 counties)		$310,838,263	1.2%	100.0%

Outside the market area, regions with a significant amount of spending activity included:[160]

CONSTRUCTION

Allegheny County, PA;

Jefferson County, KY;

Northampton County, PA;

Plymouth County, MA; and

Worcester County, MA.

CRS

Allegheny County, PA;

St. Louis County, MO; and

Middlesex County, MA.

SERVICES

Cook County, IL

Milwaukee County, WI

Washtenaw County, MI

St. Louis County, MO; and

Philadelphia County, PA.

COMMODITIES

Allegheny County, PA;

Cook County, IL;

San Mateo County, CA;

St. Louis County, MO;

Baltimore County, MD;

Fulton County, GA;

Middlesex County, MA;

Lake County, IL;

Montgomery County, PA;

Hennepin County, MN;

Mecklenburg County, NC;

Dallas County, TX;

Hillsborough County, NH;

Hartford County, CT;

Montgomery County, OH;

Ramsey County, MN; and

Berks County, PA.

[160] We define "significant" here, somewhat arbitrarily, as counties or countries that accounted for more than approximately 0.25% of total spending among three or more vendors.

C. Product Market Definition for Contracting and Procurement

Using the major procurement categories for each prime contract and the primary NAICS codes assigned by NERA to each prime contractor and subcontractor in the Master Contract/Subcontract Database, we identified the most important Industry Sub-sectors within each contracting and procurement category, as measured by totals dollars awarded.[161]

The relevant NAICS codes and their associated dollar weights appear below in Tables 3.5 through 3.8, for Construction, CRS, Services, and Commodities, respectively. These four main procurement categories (Construction, CRS, Services, and Commodities) were assigned based on the State's own prime contract data for the study period. It is clear from these four tables that, although numerous Industry Sub-sectors play a role in the State's contracting activities, actual contracting and subcontracting opportunities are not distributed evenly among them. The distribution of contract expenditures is, in fact, highly skewed.

In Construction, for example, we see from Table 3.5 that one Industry Sub-sector alone (NAICS 238) accounts for two-fifths of all contract spending spent and four Sub-sectors account for over 90 percent, with the remaining 10 percent distributed among 56 additional Industry Sub-sectors. In CRS (Table 3.6), we see an even more concentrated pattern—one Industry Sub-sector (NAICS 541) accounts for 69 percent of all contract spending. In Services, one Sub-sector (NAICS 424) accounts for 63 percent of all contract spending and six Sub-sectors together account over 90 percent. In Commodities, two Sub-sectors account for more than 40 percent of all spending and six Sub-sectors together account for almost 75 percent.

Each Industry Sub-sector (three-digit NAICS) identified in Tables 3.5 through 3.8 consists of several more detailed Industry Groups (four-digit NAICS) and Industries (five-digit and six-digit NAICS). Overall, NYS contracting expenditures in our sample occur in 76 NAICS Industry Sub-sectors, 212 NAICS Industry Groups, and 484 NAICS Industries.

In Construction, NYS contract spending occurs across 61 NAICS Industry Sub-sectors, 154 NAICS Industry Groups, and 316 NAICS Industries. In CRS, NYS contract spending occurs across 38 NAICS Industry Sub-sectors, 76 NAICS Industry Groups, and 113 NAICS Industries. In Services, NYS contract spending occurs across 68 NAICS Industry Sub-sectors, 148 NAICS Industry Groups, and 256 NAICS Industries. In Commodities, NYS contract spending occurs across 60 NAICS Industry Sub-sectors, 154 NAICS Industry Groups, and 288 NAICS Industries.

The resulting percentage weights from these NAICS Industries are used below in Chapter IV to calculate average M/WBE availability figures for Construction, CRS, Services, and Commodities.[162]

Now that the geographic and industry parameters of the State's contracting and procurement market area have been established, we will restrict our subsequent analyses, in Chapter IV and beyond, to business enterprises and other phenomena within this specific market area so as to narrowly tailor our findings to the State's specific contracting circumstances.

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[161] Calculations were also made using dollars paid as the measure. The results, not shown here, were very similar.

[162] After re-normalizing the percentage weights to sum to 100.

D. Tables

Table 3.1. Summary of Master Contract/Subcontract Database: Prime Contracts and Subcontracts by Procurement Category, 2004-2008

CONTRACT CATEGORY	NUMBER OF CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
CONSTRUCTION		7,901,356,795	7,579,828,524
Prime Contracts	1,029	4,743,872,407	4,411,421,089
Subcontracts	12,309	3,157,484,389	3,168,407,435
CRS		1,067,335,628	897,855,068
Prime Contracts	465	805,159,868	713,433,024
Subcontracts	1,547	262,175,760	184,422,044
SERVICES		14,703,277,248	14,313,283,964
Prime Contracts	768	11,035,249,183	10,652,706,336
Subcontracts	1,019	3,668,028,065	3,660,577,629
COMMODITIES		9,620,367,432	6,972,793,780
Prime Contracts	2,355	9,620,367,432	6,972,793,780
Subcontracts	0	0	0
GRAND TOTAL		33,297,297,342	29,768,716,475
Prime Contracts	4,618	26,205,746,002	22,751,366,769
Subcontracts	14,889	7,091,551,340	7,017,349,706

Source: NERA calculations from Master Contract/Subcontract Database. Note: Prime Contract dollar amounts are net of subcontract amounts.

Table 3.2. Summary of Master Contract/Subcontract Database: Prime Contracts by Year of Award

PROCUREMENT CATEGORY & YEAR OF AWARD	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
CONSTRUCTION			
2004	137	1,164,445,900	1,139,628,788
2005	145	1,491,348,068	1,398,078,269
2006	198	1,153,820,438	1,121,172,638
2007	231	1,917,111,172	1,828,277,653
2008	318	2,159,183,974	2,079,345,470
TOTAL	1,029	7,885,909,552	7,566,502,818
CRS			
2004	95	301,230,019	254,373,654
2005	88	193,680,856	129,066,912
2006	108	155,552,976	153,665,907
2007	98	153,829,290	116,667,820
2008	76	255,719,750	239,068,694
TOTAL	465	1,060,012,891	892,842,987
SERVICES			
2004	148	6,824,424,784	6,591,946,644
2005	122	1,030,281,936	867,826,802
2006	151	4,858,976,364	4,923,845,533
2007	165	476,583,665	409,274,659
2008	182	1,342,912,988	1,376,550,908
TOTAL	768	14,533,179,737	14,169,444,546

Table 3.2. Summary of Master Contract/Subcontract Database: Prime Contracts by Year of Award, Cont'd

PROCUREMENT CATEGORY & YEAR OF AWARD	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
COMMODITIES			
2004	470	1,897,545,272	1,001,510,513
2005	444	1,827,223,224	1,329,577,520
2006	465	2,234,977,395	1,368,291,123
2007	447	1,740,648,585	1,521,122,413
2008	529	1,919,972,957	1,752,292,210
TOTAL	2,355	9,620,367,432	6,972,793,780
ALL			
2004	850	10,187,645,975	8,987,459,600
2005	799	4,542,534,084	3,724,549,503
2006	922	8,403,327,173	7,566,975,201
2007	941	4,288,172,712	3,875,342,545
2008	1,105	5,677,789,668	5,447,257,282
TOTAL	4,618	33,104,429,851	29,606,539,270

Source: See Table 3.1.

Table 3.3. Summary of Master Contract/Subcontract Database: Prime Contracts by State Agency

DEPARTMENT	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
CONSTRUCTION	1,029	7,901,356,795	7,579,828,524
DEPARTMENT OF ENVIRONMENTAL CONSERVATION	61	174,400,364	161,542,172
DEPARTMENT OF TRANSPORTATION	209	2,756,005,099	2,697,659,595
METROPOLITAN TRANSPORTATION AUTHORITY	114	2,710,655,616	2,540,753,318
NEW YORK STATE THRUWAY AUTHORITY	67	683,927,168	657,058,624
NYS POWER AUTHORITY	69	78,118,487	75,609,183
OFFICE FOR TECHNOLOGY	1	32,400	32,400
OFFICE OF GENERAL SERVICES	193	639,488,030	613,005,906
STATE UNIVERSITY CONSTRUCTION FUND	74	595,845,206	577,181,922
THE STATE UNIVERSITY OF NEW YORK	241	262,884,425	256,985,403
CRS	465	1,067,335,628	897,855,068
DEPARTMENT OF ENVIRONMENTAL CONSERVATION	4	787,584	758,243
DEPARTMENT OF TRANSPORTATION	39	347,652,801	316,695,077
METROPOLITAN TRANSPORTATION AUTHORITY	76	433,671,896	306,197,832
NEW YORK STATE THRUWAY AUTHORITY	59	73,460,440	83,834,100
OFFICE FOR TECHNOLOGY	1	30,000	12,375
OFFICE OF GENERAL SERVICES	67	100,199,939	84,544,394
STATE UNIVERSITY CONSTRUCTION FUND	65	52,297,319	47,843,589
THE STATE UNIVERSITY OF NEW YORK	154	59,235,648	57,969,458
SERVICES	768	14,703,277,248	14,313,283,964
DEPARTMENT OF CIVIL SERVICE	19	9,793,852,539	9,566,859,122
DEPARTMENT OF CORRECTIONAL SERVICES	28	131,263,932	249,837,623
DEPARTMENT OF ENVIRONMENTAL CONSERVATION	34	46,904,170	43,222,224
DEPARTMENT OF HEALTH	106	1,854,746,829	1,678,539,737
DEPARTMENT OF TAXATION & FINANCE	38	287,347,888	256,511,063
DEPARTMENT OF TRANSPORTATION	30	81,425,346	65,522,985
DEPT OF TEMPORARY & DISABILITY ASSISTANCE	29	408,626,926	379,326,844
DIVISION OF THE LOTTERY	9	544,872,412	545,653,744

DEPARTMENT	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
METROPOLITAN TRANSPORTATION AUTHORITY	31	507,075,266	375,168,709
NEW YORK STATE THRUWAY AUTHORITY	22	14,366,061	12,024,907
NYS POWER AUTHORITY	55	73,152,357	61,911,665
OFFICE FOR TECHNOLOGY	66	31,561,710	26,548,418
OFFICE OF GENERAL SERVICES	39	472,649,124	630,934,669
STATE UNIVERSITY CONSTRUCTION FUND	1	128,368	125,322
THE STATE UNIVERSITY OF NEW YORK	261	455,304,320	421,096,933
COMMODITIES	2,355	9,620,367,432	6,972,793,780
DEPARTMENT OF CIVIL SERVICE	2	7,857,284	6,092,325
DEPARTMENT OF CORRECTIONAL SERVICES	27	28,040,378	20,815,070
DEPARTMENT OF ENVIRONMENTAL CONSERVATION	5	10,806,475	5,236,112
DEPARTMENT OF HEALTH	15	45,490,098	29,215,291
DEPARTMENT OF TAXATION & FINANCE	6	22,633,812	20,655,441
DEPARTMENT OF TRANSPORTATION	10	162,199,102	92,892,728
DEPT OF TEMPORARY & DISABILITY ASSISTANCE	2	46,431,499	44,603,861
DIVISION OF THE LOTTERY	2	48,967,940	40,443,321
METROPOLITAN TRANSPORTATION AUTHORITY	1,444	3,642,762,030	2,528,380,075
NYS POWER AUTHORITY	119	80,597,552	73,907,979
OFFICE FOR TECHNOLOGY	16	177,795,494	41,298,038
OFFICE OF GENERAL SERVICES	629	5,064,450,435	3,854,858,296
THE STATE UNIVERSITY OF NEW YORK	78	282,335,335	214,395,242
OVERALL	4,617	33,292,337,103	29,763,761,336
DEPARTMENT OF CIVIL SERVICE	21	9,801,709,822	9,572,951,447
DEPARTMENT OF CORRECTIONAL SERVICES	55	159,304,310	270,652,693
DEPARTMENT OF ENVIRONMENTAL CONSERVATION	104	232,898,593	210,758,751
DEPARTMENT OF HEALTH	121	1,900,236,927	1,707,755,028
DEPARTMENT OF TAXATION & FINANCE	44	309,981,700	277,166,504
DEPARTMENT OF TRANSPORTATION	288	3,347,282,348	3,172,770,385
DEPT OF TEMPORARY & DISABILITY ASSISTANCE	31	455,058,425	423,930,705

DEPARTMENT	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
DIVISION OF THE LOTTERY	11	593,840,352	586,097,065
METROPOLITAN TRANSPORTATION AUTHORITY	1,665	7,294,164,808	5,750,499,934
NEW YORK STATE THRUWAY AUTHORITY	148	771,753,669	752,917,631
NYS POWER AUTHORITY	243	231,868,396	211,428,827
OFFICE FOR TECHNOLOGY	84	209,419,604	67,891,231
OFFICE OF GENERAL SERVICES	928	6,276,787,528	5,183,343,266
STATE UNIVERSITY CONSTRUCTION FUND	140	648,270,893	625,150,833
THE STATE UNIVERSITY OF NEW YORK	734	1,059,759,728	950,447,036

Source: See Table 3.1.

Table 3.4. Distribution of State Contracting and Procurement Dollars by Geographic Location

Location	Construction (%)	CRS (%)	Services (%)	Commodities (%)	Overall (%)
	Award Dollars				
Inside New York State plus New York CMSA	92.4	97.0	75.2	77.4	80.6
Outside New York State plus New York CMSA	7.6	3.0	24.8	22.6	19.4
Inside New York State	86.5	89.6	73.8	69.9	76.2
Outside New York State	13.5	10.4	26.2	30.1	23.8
	Paid Dollars				
Inside New York State plus New York CMSA	92.3	96.9	74.7	80.8	81.3
Outside New York State plus New York CMSA	7.7	3.1	25.3	19.2	18.7
Inside New York State	86.2	90.6	73.2	73.9	77.2
Outside New York State	13.8	9.4	26.8	26.1	22.8

Source: See Table 3.1.

Table 3.5. Distribution of Contract and Subcontract Dollars Awarded by Industry Sub-sector: Construction

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
238	Specialty Trade Contractors	40.04	40.04
237	Heavy and Civil Engineering Construction	25.33	65.37
236	Construction of Buildings	10.88	76.25
423	Merchant Wholesalers, Durable Goods	8.67	84.92
541	Professional, Scientific, and Technical Services	5.25	90.16
332	Fabricated Metal Product Manufacturing	2.77	92.93
562	Waste Management and Remediation Services	1.23	94.17
484	Truck Transportation	1.20	95.36
561	Administrative and Support Services	1.05	96.41
327	Nonmetallic Mineral Product Manufacturing	1.00	97.41
532	Rental and Leasing Services	0.59	98.00
336	Transportation Equipment Manufacturing	0.39	98.39
334	Computer and Electronic Product Manufacturing	0.28	98.67
424	Merchant Wholesalers, Nondurable Goods	0.24	98.91
811	Repair and Maintenance	0.18	99.09
333	Machinery Manufacturing	0.12	99.21
442	Furniture and Home Furnishings Stores	0.11	99.32
335	Electrical Eqpmt., Appliance, and Component Mfg.	0.11	99.43
339	Miscellaneous Manufacturing	0.09	99.52
517	Telecommunications	0.08	99.61
321	Wood Product Manufacturing	0.06	99.67
326	Plastics and Rubber Products Manufacturing	0.06	99.73
522	Credit Intermediation and Related Activities	0.05	99.78
444	Building Material & Garden Eqpmt. & Supplies Dealers	0.05	99.82
524	Insurance Carriers and Related Activities	0.04	99.87
331	Primary Metal Manufacturing	0.03	99.90
	Balance of industries (35 industries)	0.10	100.00
	TOTAL - $7,901,356,795		

Source: See Table 3.1.

Table 3.6. Distribution of Contract and Subcontract Dollars Awarded by Industry Sub-sector: CRS

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
541	Professional, Scientific, and Technical Services	69.17	69.17
236	Construction of Buildings	11.79	80.95
423	Merchant Wholesalers, Durable Goods	7.52	88.47
561	Administrative and Support Services	3.33	91.80
237	Heavy and Civil Engineering Construction	2.64	94.44
238	Specialty Trade Contractors	1.44	95.88
332	Fabricated Metal Product Manufacturing	0.92	96.80
532	Rental and Leasing Services	0.67	97.47
713	Amusement, Gambling, and Recreation Industries	0.65	98.12
327	Nonmetallic Mineral Product Manufacturing	0.55	98.67
562	Waste Management and Remediation Services	0.37	99.04
811	Repair and Maintenance	0.14	99.18
531	Real Estate	0.14	99.32
336	Transportation Equipment Manufacturing	0.10	99.43
339	Miscellaneous Manufacturing	0.09	99.52
323	Printing and Related Support Activities	0.09	99.61
488	Support Activities for Transportation	0.08	99.68
621	Ambulatory Health Care Services	0.07	99.75
524	Insurance Carriers and Related Activities	0.04	99.80
334	Computer and Electronic Product Manufacturing	0.04	99.84
333	Machinery Manufacturing	0.02	99.86
484	Truck Transportation	0.02	99.87
326	Plastics and Rubber Products Manufacturing	0.02	99.89
325	Chemical Manufacturing	0.02	99.90
	Balance of industries (14 industries)	0.10	100.00
	TOTAL - $1,067,335,628		

Source: See Table 3.1.

Table 3.7. Distribution of Contract and Subcontract Dollars Awarded by Industry Sub-sector: Services

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
424	Merchant Wholesalers, Nondurable Goods	63.28	63.28
541	Professional, Scientific, and Technical Services	10.60	73.87
524	Insurance Carriers and Related Activities	6.54	80.41
623	Nursing and Residential Care Facilities	4.71	85.12
423	Merchant Wholesalers, Durable Goods	3.38	88.50
561	Administrative and Support Services	2.51	91.01
518	Data Processing, Hosting and Related Services	2.30	93.31
485	Transit and Ground Passenger Transportation	1.02	94.34
713	Amusement, Gambling, and Recreation Industries	0.78	95.12
522	Credit Intermediation and Related Activities	0.74	95.86
236	Construction of Buildings	0.56	96.42
238	Specialty Trade Contractors	0.53	96.95
446	Health and Personal Care Stores	0.45	97.40
722	Food Services and Drinking Places	0.33	97.73
624	Social Assistance	0.32	98.05
621	Ambulatory Health Care Services	0.30	98.35
484	Truck Transportation	0.27	98.63
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	0.26	98.89
237	Heavy and Civil Engineering Construction	0.13	99.01
562	Waste Management and Remediation Services	0.10	99.12
336	Transportation Equipment Manufacturing	0.10	99.22
812	Personal and Laundry Services	0.10	99.31
511	Publishing Industries (except Internet)	0.09	99.41
333	Machinery Manufacturing	0.07	99.48
334	Computer and Electronic Product Manufacturing	0.07	99.55
517	Telecommunications	0.06	99.60
332	Fabricated Metal Product Manufacturing	0.05	99.65
327	Nonmetallic Mineral Product Manufacturing	0.05	99.70
532	Rental and Leasing Services	0.04	99.74
488	Support Activities for Transportation	0.03	99.77

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
321	Wood Product Manufacturing	0.03	99.80
492	Couriers and Messengers	0.03	99.83
323	Printing and Related Support Activities	0.02	99.85
622	Hospitals	0.02	99.87
531	Real Estate	0.02	99.89
493	Warehousing and Storage	0.02	99.90
	Balance of industries (32 industries)	0.10	100.00
	TOTAL - $14,703,277,248		

Source: See Table 3.1.

Table 3.8. Distribution of Contract and Subcontract Dollars Awarded by Industry Sub-sector: Commodities

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
423	Merchant Wholesalers, Durable Goods	23.61	23.61
424	Merchant Wholesalers, Nondurable Goods	18.54	42.15
336	Transportation Equipment Manufacturing	18.30	60.45
517	Telecommunications	8.50	68.95
541	Professional, Scientific, and Technical Services	3.19	72.15
312	Beverage and Tobacco Product Manufacturing	2.67	74.82
441	Motor Vehicle and Parts Dealers	2.40	77.21
238	Specialty Trade Contractors	2.19	79.41
221	Utilities	2.19	81.60
325	Chemical Manufacturing	2.10	83.70
334	Computer and Electronic Product Manufacturing	1.98	85.68
532	Rental and Leasing Services	1.69	87.37
511	Publishing Industries (except Internet)	1.64	89.01
332	Fabricated Metal Product Manufacturing	1.11	90.13
237	Heavy and Civil Engineering Construction	0.92	91.05
323	Printing and Related Support Activities	0.92	91.97
236	Construction of Buildings	0.86	92.83
333	Machinery Manufacturing	0.72	93.54
339	Miscellaneous Manufacturing	0.49	94.03
561	Administrative and Support Services	0.48	94.51
331	Primary Metal Manufacturing	0.37	94.88
621	Ambulatory Health Care Services	0.37	95.25
322	Paper Manufacturing	0.36	95.61
335	Electrical Equipment, Appliance, and Component Manufacturing	0.36	95.97
311	Food Manufacturing	0.35	96.32
324	Petroleum and Coal Products Manufacturing	0.34	96.66
522	Credit Intermediation and Related Activities	0.32	96.99
442	Furniture and Home Furnishings Stores	0.28	97.27
443	Electronics and Appliance Stores	0.26	97.53
811	Repair and Maintenance	0.24	97.77

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
562	Waste Management and Remediation Services	0.20	97.98
488	Support Activities for Transportation	0.19	98.17
321	Wood Product Manufacturing	0.18	98.35
524	Insurance Carriers and Related Activities	0.18	98.53
713	Amusement, Gambling, and Recreation Industries	0.18	98.70
327	Nonmetallic Mineral Product Manufacturing	0.17	98.87
453	Miscellaneous Store Retailers	0.16	99.03
337	Furniture and Related Product Manufacturing	0.16	99.18
518	Data Processing, Hosting and Related Services	0.11	99.29
446	Health and Personal Care Stores	0.10	99.40
624	Social Assistance	0.10	99.50
485	Transit and Ground Passenger Transportation	0.07	99.57
315	Apparel Manufacturing	0.06	99.63
484	Truck Transportation	0.06	99.68
519	Other Information Services	0.05	99.73
313	Textile Mills	0.05	99.78
512	Motion Picture and Sound Recording Industries	0.04	99.82
326	Plastics and Rubber Products Manufacturing	0.04	99.86
525	Funds, Trusts, and Other Financial Vehicles	0.03	99.89
451	Sporting Goods, Hobby, Book, and Music Stores	0.03	99.92
	Balance of industries (10 industries)	0.08	100.00
	TOTAL - $9,620,367,432		

Source: See Table 3.1.

IV. M/WBE Availability in New York's Marketplace

A. Identifying Businesses in the Relevant Markets

M/WBE availability (unweighted) is defined as the number of M/WBEs divided by the total number of businesses in the State's contracting market area—what we will refer to as the Baseline Business Universe.[163] Determining the total number of businesses in the relevant markets, however, is more straightforward than determining the number of minority- or women-owned businesses in those markets. The latter task has three main parts: (1) identify all listed M/WBEs in the relevant market; (2) verify the ownership status of listed M/WBEs; and (3) estimate the number of unlisted M/WBEs in the relevant market. This section describes how these tasks were accomplished for NYS.

It is important to note that NERA's availability analysis is free from variables tainted by discrimination. Our approach recognizes that discrimination may impact many of the variables that contribute to a firm's success in obtaining work as a prime or a subcontractor. Factors such as firm size, time in business, qualifications, and experience are all adversely affected by discrimination if it is present in the marketplace. Despite the obvious relationship, some commentators argue that disparities should only be assessed between firms with similar "capacities."[164] However, the courts in our view have properly refused to make the results of discrimination the benchmarks for non-discrimination.[165] They have acknowledged that M/WBEs may be smaller, newer, and otherwise less competitive than non-M/WBEs because of the very discrimination sought to be remedied by race-conscious contracting programs. Racial and gender differences in these "capacity" factors are the *outcomes* of discrimination and it is therefore inappropriate as a matter of economics and statistics to use them as "control" variables in a disparity study.[166]

1. Estimate the Total Number of Businesses in the Market

We used data supplied by Dun & Bradstreet's Hoovers subsidiary to determine the total number of businesses operating in the relevant geographic and product markets (these markets were discussed in the previous section). Dun & Bradstreet produces the most comprehensive publicly available database of businesses in the U.S. This database contains over 15 million records and is updated continuously. Each record in Dun & Bradstreet represents a business or business

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[163] To yield a percentage, the resulting figure is multiplied by 100.

[164] *See* Remarks of George LaNoue, U.S. Commission on Civil Rights, "Disparity Studies as Evidence of Discrimination in Federal Contracting," May 2006 (LaNoue was rejected as an expert witness by the court in *Gross Seed Company v. Nebraska Department of Roads*, No. 02-3016 (D. Neb. 2002)).

[165] *Concrete Works of Colorado, Inc. v. City and County of Denver*, 321 F.3d 950, 981, 983 (10th Cir. 2003), *cert. denied*, 124 S.Ct. 556 (2003) (emphasis in the originals) ("MWBE construction firms are generally smaller and less experienced *because* of discrimination.… Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract*.")

[166] *Concrete Works*, 321 F.3d at 981 (emphasis in the original). *See also*, Wainwright and Holt (2010), Appendix B "Understanding Capacity."

establishment and includes the business name, address, telephone number, NAICS code, SIC code, business type, DUNS Number (a unique number assigned to each establishment by Dun & Bradstreet) and other descriptive information. Dun & Bradstreet gathers and verifies information from many different sources. These sources include among others annual management interviews, payment experiences, bank account information, filings for suits, liens, judgments and bankruptcies, news items, the U. S. Postal Service, utility and telephone service, business registrations, corporate charters, Uniform Commercial Code filings, and records of the Small Business Administration and other governmental agencies.

We used the Dun & Bradstreet database to identify the total number of businesses in each six-digit NAICS code to which we had anticipated assigning a product market weight. Table 4.1 shows the number of businesses identified in each NAICS sub-sector within the Construction category, along with the associated industry weight according to dollars expended. Comparable data for CRS, Services, and Commodities appears in Tables 4.2-4.4, respectively. These four main procurement categories (Construction, CRS, Services, and Commodities) were assigned based on the State's own prime contract data for the study period.

Although numerous industries play a role in the State's Baseline Business Universe, contracting and subcontracting opportunities are not distributed evenly among them. The distribution of contract expenditures is, in fact, highly skewed, as documented above in Chapter III.

2. Identify Listed M/WBEs

While extensive, Dun & Bradstreet does not sufficiently identify all businesses owned by minorities or women. Although many such businesses *are* correctly identified in Dun & Bradstreet, experience has demonstrated that many are also missed. For this reason, several additional steps were required to identify the appropriate percentage of M/WBEs in the relevant market.

First, NERA completed an intensive regional search for information on minority-owned and woman-owned businesses in the New York area. Beyond the information already in Dun & Bradstreet, NERA collected lists of M/WBEs from the Empire State Development Corporation as well as other public and private entities. These additional directories included: New York State Unified Certification Program; the City of New York; New York City Small Business Services; Buffalo Niagara International Airport; New York State Department of Transportation; Rochester Black Business Association; Rochester School District; Rochester Boule; Women: Together Inspiring Entrepreneurial Success; Women's Business Owners' Connection; National Association of Women Business Owners (New York, Rochester, Pittsburgh, Central Jersey & South Jersey Chapters); Cities of Bridgeport and New Haven, Connecticut; Connecticut Department of Administration Services Supplier Diversity Program; Connecticut Department of Transportation; The Entrepreneurial Women's Network; Black Pages of New England; Cambridge Community Development; City of Boston; New England Black Chamber of Commerce Business Center; State of Massachusetts; Women Business Owners Alliance of the Pioneer Valley; Chinatown Main Street; The Burroughs Group; Asian Indian Chamber of Commerce-New Jersey; Hudson County; New Jersey Department of Transportation; New Jersey Transit; City of Newark; State of New Jersey Department of Treasury; State of New Jersey

Department of Commerce; the Port Authority of New York and New Jersey; African American Chamber of Commerce – Philadelphia; City of Philadelphia; Brotha Ash Productions; Pennsylvania Unified Certification Program; State of Pennsylvania Department of General Services; African American Chamber of Commerce of Central Pennsylvania; Rhode Island Department of Transportation; State of Vermont Agency of Transportation; Vermont Women's Business Center; Women Business Owners Network; Asian Women in Business; Business Research Services, Inc. National File of Minority- and Women-Owned Businesses; Diversity Information Resources National Minority and Women-Owned Business Database; DiversityBusiness.com; National Association of Women in Construction; Native American Business Alliance; Small Business Administration/Central Contractor Registry; the National Center for American Indian Enterprise Development; U.S. Department of Commerce; U.S. Women's Chamber of Commerce; Women Business Enterprise National Council; African American Business Directory; American Indian Search; Minority Professional Network, and the United Indian Development Association.[167]

The M/WBEs identified in this manner are referred to as "listed" M/WBEs. Table 4.5 shows the number of listed M/WBEs identified in each NAICS sub-sector within the Construction category, along with the associated industry weight according to dollars expended—the same industry weight as used in corresponding Table 4.1. Comparable data for CRS, Services, and Commodities appears in Tables 4.6-4.8, respectively.

If the listed M/WBEs identified in the Tables 4.5-4.8 are in fact *all* M/WBEs and are the *only* M/WBEs among all the businesses identified in Tables 4.1-4.4, then an estimate of "listed" M/WBE availability is simply the number of listed M/WBEs (taken from Tables 4.5–4.8, respectively) divided by the total number of businesses in the relevant market (taken from Tables 4.1-4.4, respectively). However, as we shall see below, neither of these two conditions holds true in practice and this is therefore *not* an appropriate method for measuring M/WBE availability.

There are two reasons for this. First, it is likely that some of the M/WBEs listed in the tables 4.5-4.8 are not actually minority-owned or woman-owned. Second, it is likely that there are additional "unlisted" M/WBEs among all the businesses included in Tables 4.1-4.4. Such businesses may not appear in any of the directories we gathered and are therefore not included as M/WBEs in Tables 4.5-4.8. Additional steps are required to test these two conditions and to arrive at a more accurate representation of M/WBE availability within the Baseline Business Universe. We discuss these steps in Sections 3.A and 3.B below.

3. Verify Listed M/WBEs and Estimate Unlisted M/WBEs

It is likely that information on M/WBEs from Dun & Bradstreet and other M/WBE directories is not correct in all instances. Phenomena such as ownership changes, associate or mentor status,

[167] We also obtained information from certain entities that was duplicative of either Dun & Bradstreet or one or more of the other sources listed above. These entities are listed below in Appendix A. We were unable to obtain relevant lists or directories from a number of entities. The reasons for this include: (1) the entity did not have a list or the entity's list did not include race and sex information; (2) the entity was unresponsive to repeated attempts at contacts; or, (3) the entity simply declined to provide us the list. These entities, as well, are listed in Appendix A.

recording errors, or even outright misrepresentation will lead to businesses being listed as M/WBEs in a particular directory even though they may actually be owned by non-minority males. Other things equal, this type of error would cause our availability estimate to be biased upward from the actual availability number.

The second likelihood that must be addressed is that not all M/WBE businesses are necessarily listed—either in Dun & Bradstreet or in any of the other directories we collected. Such phenomena as geographic relocation, ownership changes, directory compilation errors, and limitations in M/WBE outreach could all lead to M/WBEs being unlisted. Other things equal, this type of error would cause our availability estimate to be biased downward from the actual availability number.

In our experience, we have found that both types of bias are not uncommon. For this Study, we corrected for the effect of these biases using statistical sampling procedures. We surveyed a large, stratified random sample of more than 9,000 establishments drawn from the Baseline Business Universe and measured how often they were misclassified (or unclassified) by race and/or sex.[168]

Strata were defined according to NAICS sub-sectors code and listed M/WBE status.[169] In the phone survey, up to 10 attempts were made to reach each business and speak with an appropriate respondent. Attempts were scheduled for a mix of day and evening, weekdays and weekends, and appointments were scheduled for callbacks when necessary. Of the 9,250 firms in our sample, 3,846 (41.6%) were listed M/WBEs and 5,404 (58.4%) were unclassified by race or sex. However, 771 establishments were excluded as "unable to contact." Exclusions resulted primarily from establishments that were no longer in business.[170] Of the remaining 8,479 firms, 3,595 (42.4%) were listed M/WBEs and the remaining 4,884 establishments (57.6%) were unclassified.

The first part of the survey tested whether our sample of listed M/WBEs was correctly classified by race and/or sex. The second part of the survey tested whether the unclassified firms could all be properly classified as non-M/WBEs. Both elements of the survey are described in more detail below.

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[168] A similar methodology has also been employed by the Federal Reserve Board to deal with similar problems in designing and implementing the National Surveys of Small Business Finances for 1993 and 1998. *See* Catherine Haggerty, Karen Grigorian, Rachel Harter and John D. Wolken. "The 1998 Survey of Small Business Finances: Sampling and Level of Effort Associated with Gaining Cooperation from Minority-Owned Business," *Proceedings of the Second International Conference on Establishment Surveys,* Buffalo, NY, June 17-21, 2000.

[169] Nineteen separate industry strata were created based on NAICS code and on whether a particular NAICS code was among those NAICS codes accounting for the top 90 percent of state contract and subcontract spending or not. All 19 strata were then split according to listed M/WBE status to create a total of 38 strata. Generally, listed M/WBEs were sampled at a higher rate than unclassified establishments.

[170] A Fisher's Exact Test to check if putative M/WBEs were more likely to be affected by this than non-M/WBEs was not statistically significant.

a. Survey of Listed M/WBEs

We selected a stratified random sample of 3,846 listed M/WBEs to verify the race and gender status of their owner(s). Of these, 251 (6.5%) were excluded as "unable to contact." Of the 3,595 remaining establishments, we obtained complete interviews from 1,728, for a response rate of 48.0 percent.[171]

Of the 1,728 establishments interviewed, 377 (21.8 percent) were owned by non-minority males. The amount of misclassification was substantial in every NAICS stratum. It was highest in NAICS 441 and 447 (Motor Vehicle and Parts Dealers, Gasoline Stations) and lowest in NAICS 48 and 49 (Transportation and Warehousing) as shown in Table 4.9. Misclassification varied by putative race and sex, as shown in Table 4.10, and was highest among putative Native American firms, followed by Hispanics, Non-minority females, MBEs of unknown putative race, Asians, and finally African-Americans.[172]

The race and gender status of the listed M/WBEs responding to the survey was changed, if necessary, according to the survey results. For example, if a business originally listed as a non-minority female-owned was actually non-minority male-owned, then that business was counted as non-minority male-owned for purposes of calculating M/WBE availability. But what about the remaining putatively non-minority female-owned establishments that we did not interview? For these businesses, we estimate the race and sex of their ownership based on the amount of misclassification we observed among the non-minority female-owned firms that we did interview. In this example, our interviews show that 61.0 percent of these firms are indeed actually non-minority female-owned, 23.8 percent are actually non-minority male-owned, and 15.2 percent are actually minority-owned (see Table 4.10). Therefore, we assign each of the remaining putative non-minority female firms a 61.0 percent probability of actually being non-minority female-owned, a 23.8 percent probability of actually being non-minority male-owned, and a 15.2 percent probability of being minority-owned. We repeated this procedure within each sample stratum and for all putative race and sex categories.

b. Survey of Unclassified Businesses

In a manner exactly analogous to our survey of listed M/WBEs, in the second part of our survey we examined unclassified businesses, *i.e.* any business that was not originally identified as a M/WBE, either in *MarketPlace* or in one or more of the other directories.

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[171] For this study, "Black" or "African American" refers to a person having origins in any of the Black African racial groups; "Hispanic" refers to a person of Mexican, Puerto Rican, Dominican, Cuban, Central or South American, of either Indian or Hispanic origin, regardless of race; "Asian and Pacific Islander" or "Asian" refers to a person having origins in any of the Far East countries, South East Asia, the Indian Subcontinent, or the Pacific Islands; "Native American" refers to a person having origins in any of the original peoples of North America; and "White" or "non-minority" means a non-Hispanic person having origins in Europe, North Africa, or the Middle East.

[172] By "putative," we mean the race and gender that we initially assigned to each firm based on the information provided by the State, by Dun & Bradstreet by our master M/WBE directory, or identified from other sources.

We selected a stratified random sample of 5,404 unclassified businesses from the Baseline Business Universe to verify the race and gender status of their owner(s). Of these, 520 (9.6%) were excluded as "unable to contact." Of the 4,884 remaining establishments, we obtained 1,824 complete interviews, for a response rate of 37.3 percent.

Of the 1,824 establishments interviewed, 1,459 (80.0%) were owned by non-minority males, 163 (8.9%) by non-minority females, and 201 (11.1%) by minorities, as shown in Table 4.12. A similar phenomenon was observed within each industry stratum, as shown in Table 4.11.

As with the survey of listed M/WBEs, the race and gender status of unclassified businesses was changed, if necessary, according to the survey results. For example, if an interviewed business that was originally unclassified indicated that it was actually non-minority male-owned, then that business was counted as non-minority male-owned for purposes of the M/WBE availability calculation. If it indicated it was non-minority female-owned, it was counted as non-minority female, and so on. For unclassified businesses that were not interviewed, we assigned probability values (probability actually non-minority male-owned, probability actually non-minority female-owned, probability actually African-American-owned, etc.) based on the interview responses. We again carried out the probability assignment procedure within each stratum.

Clearly, a large majority of unclassified businesses in the Baseline Business Universe (80.0 percent overall) are non-minority male-owned. Nevertheless, this means that 20.0 percent were *not* non-minority male-owned. Among the latter, the largest group was non-minority female-owned, with descending size shares accounted for by Asian-owned, Hispanic-owned, African-American-owned, and finally Native American-owned. Table 4.12 shows the actual survey results by race and sex.

B. Estimates of M/WBE Availability by Detailed Race, Sex, and Industry

Tables 4.13-4.16 present detailed estimates of M/WBE availability by race, sex, M/WBE status, and detailed NAICS industry. These estimates have been statistically corrected to adjust for misclassification and non-classification bias in the Baseline Business Universe as described in the previous section. Summary level estimates are weighted averages with weights based on industry-level contracting and procurement award dollars, as described in Chapter III, Section C.

Table 4.13 provides estimated M/WBE availability for all industries in the Construction procurement category during the study period. Overall, M/WBE availability in Construction is estimated at 22.74 percent.

Table 4.14 provides estimated M/WBE availability for all industries in the CRS procurement category during the study period. Overall, M/WBE availability in CRS is estimated at 24.53 percent.

Table 4.15 provides estimated M/WBE availability for all industries in the Services procurement category during the study period. Overall, M/WBE availability in Services is estimated at 37.04 percent.

Table 4.16 provides estimated M/WBE availability for all industries in the Commodities procurement category during the study period. Overall, M/WBE availability in Commodities is estimated at 27.05 percent.

Next, Table 4.17 shows that overall M/WBE availability in the State's relevant marketplace is 28.92 percent. Non-M/WBE availability is 71.08 percent. Overall, among M/WBEs, availability of African-American-owned businesses is 3.71 percent, availability of Hispanic-owned businesses is 5.41 percent, availability of Asian-owned businesses is 7.08 percent, availability of Native American-owned businesses is 0.33 percent, and availability of non-minority female-owned businesses is 12.39 percent.

C. Tables

Table 4.1. Construction—Number of Businesses and Industry Weight, by NAICS Code, 2010

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
2373	Highway, Street, and Bridge Construction	1,639	23.36	23.36
2382	Building Equipment Contractors	25,023	20.74	44.10
2362	Nonresidential Building Construction	4,208	10.88	54.98
2381	Foundation, Structure, and Building Exterior Contractors	7,367	8.73	63.72
2383	Building Finishing Contractors	11,640	5.45	69.17
2389	Other Specialty Trade Contractors	11,796	5.11	74.28
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	1,188	4.20	78.47
5413	Architectural, Engineering, and Related Services	18,139	3.83	82.31
3323	Architectural and Structural Metals Manufacturing	1,306	2.58	84.89
4233	Lumber and Other Construction Materials Merchant Wholesalers	2,499	1.37	86.25
2379	Other Heavy and Civil Engineering Construction	156	1.23	87.49
5416	Management, Scientific, and Technical Consulting Services	11,000	1.20	88.68
4841	General Freight Trucking	7,024	1.20	89.88
3273	Cement and Concrete Product Manufacturing	239	0.96	90.84
4236	Electrical and Electronic Goods Merchant Wholesalers	4,885	0.95	91.78
5617	Services to Buildings and Dwellings	17,116	0.81	92.59
2371	Utility System Construction	719	0.73	93.32
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	2,227	0.72	94.03
5629	Remediation and Other Waste Management Services	326	0.65	94.69
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	6,641	0.64	95.33
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	1,495	0.58	95.91
5622	Waste Treatment and Disposal	1,049	0.55	96.46
4232	Furniture and Home Furnishing Merchant Wholesalers	3,321	0.42	96.88
3365	Railroad Rolling Stock Manufacturing	30	0.38	97.26
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	5,910	0.34	97.60
4247	Petroleum and Petroleum Products Merchant Wholesalers	931	0.19	97.78
3341	Computer and Peripheral Equipment Manufacturing	233	0.15	97.94
5614	Business Support Services	536	0.14	98.08
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	1,431	0.13	98.21
5415	Computer Systems Design and Related Services	13,868	0.12	98.33
4422	Home Furnishings Stores	4,666	0.11	98.44
3399	Other Miscellaneous Manufacturing	3,368	0.09	98.53

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
3324	Boiler, Tank, and Shipping Container Manufacturing	30	0.09	98.62
3329	Other Fabricated Metal Product Manufacturing	482	0.09	98.71
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	1,182	0.07	98.78
5172	Wireless Telecommunications Carriers (except Satellite)	2,186	0.07	98.86
5616	Investigation and Security Services	3,618	0.06	98.92
3339	Other General Purpose Machinery Manufacturing	462	0.06	98.98
3219	Other Wood Product Manufacturing	530	0.06	99.04
3353	Electrical Equipment Manufacturing	284	0.06	99.10
3342	Communications Equipment Manufacturing	610	0.05	99.16
5221	Depository Credit Intermediation	5,711	0.05	99.21
8112	Electronic and Precision Equipment Repair and Maintenance	1,735	0.05	99.26
5418	Advertising, Public Relations, and Related Services	4,794	0.04	99.30
5241	Insurance Carriers	1,200	0.04	99.34
4239	Miscellaneous Durable Goods Merchant Wholesalers	7,300	0.04	99.39
4441	Building Material and Supplies Dealers	4,683	0.04	99.43
3261	Plastics Product Manufacturing	841	0.04	99.47
5414	Specialized Design Services	5,039	0.04	99.50
5613	Employment Services	5,194	0.03	99.54
5621	Waste Collection	19	0.03	99.57
3351	Electric Lighting Equipment Manufacturing	95	0.03	99.59
4246	Chemical and Allied Products Merchant Wholesalers	1,383	0.02	99.62
3359	Other Electrical Equipment and Component Manufacturing	734	0.02	99.64
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	307	0.02	99.66
3312	Steel Product Manufacturing from Purchased Steel	81	0.02	99.69
3272	Glass and Glass Product Manufacturing	246	0.02	99.71
3262	Rubber Product Manufacturing	197	0.02	99.72
4241	Paper and Paper Product Merchant Wholesalers	1,901	0.01	99.74
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	1,080	0.01	99.75
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	1,477	0.01	99.76
2372	Land Subdivision	3,114	0.01	99.78
3331	Agriculture, Construction, and Mining Machinery Manufacturing	124	0.01	99.79
3271	Clay Product and Refractory Manufacturing	117	0.01	99.80
2123	Nonmetallic Mineral Mining and Quarrying	145	0.01	99.81
3279	Other Nonmetallic Mineral Product Manufacturing	210	0.01	99.82
3332	Industrial Machinery Manufacturing	345	0.01	99.83
3333	Commercial and Service Industry Machinery Manufacturing	439	0.01	99.84
3326	Spring and Wire Product Manufacturing	146	0.01	99.85
5171	Wired Telecommunications Carriers	1,795	0.01	99.86

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
3372	Office Furniture (including Fixtures) Manufacturing	285	0.01	99.87
5417	Scientific Research and Development Services	224	0.01	99.88
5312	Offices of Real Estate Agents and Brokers	33,170	0.01	99.89
5321	Automotive Equipment Rental and Leasing	861	0.01	99.90
1153	Support Activities for Forestry	60	0.01	99.90
5411	Legal Services	34,694	0.01	99.91
2211	Electric Power Generation, Transmission and Distribution	63	0.01	99.91
5311	Lessors of Real Estate	2,002	0.01	99.92
3315	Foundries	79	0.01	99.92
4442	Lawn and Garden Equipment and Supplies Stores	914	0.01	99.93
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	2,538	0.00	99.93
3311	Iron and Steel Mills and Ferroalloy Manufacturing	178	0.00	99.94
8111	Automotive Repair and Maintenance	14,692	0.00	99.94
3222	Converted Paper Product Manufacturing	204	0.00	99.94
3241	Petroleum and Coal Products Manufacturing	208	0.00	99.95
2131	Support Activities for Mining	90	0.00	99.95
2212	Natural Gas Distribution	168	0.00	99.95
3255	Paint, Coating, and Adhesive Manufacturing	261	0.00	99.96
1151	Support Activities for Crop Production	110	0.00	99.96
5231	Securities and Commodity Contracts Intermediation and Brokerage	810	0.00	99.96
5419	Other Professional, Scientific, and Technical Services	2,072	0.00	99.96
4884	Support Activities for Road Transportation	2,450	0.00	99.97
3321	Forging and Stamping	332	0.00	99.97
5111	Newspaper, Periodical, Book, and Directory Publishers	1,302	0.00	99.97
5612	Facilities Support Services	264	0.00	99.97
8129	Other Personal Services	1,174	0.00	99.97
3231	Printing and Related Support Activities	631	0.00	99.97
3362	Motor Vehicle Body and Trailer Manufacturing	80	0.00	99.98
5179	Other Telecommunications	3,308	0.00	99.98
4431	Electronics and Appliance Stores	5,995	0.00	99.98
3251	Basic Chemical Manufacturing	349	0.00	99.98
4421	Furniture Stores	3,845	0.00	99.98
3313	Alumina and Aluminum Production and Processing	16	0.00	99.98
3364	Aerospace Product and Parts Manufacturing	50	0.00	99.98
6114	Business Schools and Computer and Management Training	301	0.00	99.98
4859	Other Transit and Ground Passenger Transportation	942	0.00	99.99
4511	Sporting Goods, Hobby, and Musical Instrument Stores	2,886	0.00	99.99
3335	Metalworking Machinery Manufacturing	236	0.00	99.99
1119	Other Crop Farming	1,412	0.00	99.99
1114	Greenhouse, Nursery, and Floriculture Production	214	0.00	99.99
3259	Other Chemical Product and Preparation Manufacturing	302	0.00	99.99
4242	Drugs and Druggists' Sundries Merchant Wholesalers	1,852	0.00	99.99

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
3344	Semiconductor and Other Electronic Component Manufacturing	469	0.00	99.99
6215	Medical and Diagnostic Laboratories	1,469	0.00	99.99
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing	178	0.00	99.99
3149	Other Textile Product Mills	304	0.00	99.99
3141	Textile Furnishings Mills	242	0.00	99.99
4821	Rail Transportation	112	0.00	99.99
5152	Cable and Other Subscription Programming	583	0.00	99.99
5615	Travel Arrangement and Reservation Services	5,277	0.00	99.99
3328	Coating, Engraving, Heat Treating, and Allied Activities	567	0.00	100.00
4411	Automobile Dealers	2,687	0.00	100.00
7211	Traveler Accommodation	3,091	0.00	100.00
4921	Couriers and Express Delivery Services	614	0.00	100.00
4885	Freight Transportation Arrangement	2,908	0.00	100.00
5112	Software Publishers	1,819	0.00	100.00
5222	Nondepository Credit Intermediation	1,722	0.00	100.00
4412	Other Motor Vehicle Dealers	442	0.00	100.00
3133	Textile and Fabric Finishing and Fabric Coating Mills	140	0.00	100.00
8114	Personal and Household Goods Repair and Maintenance	1,270	0.00	100.00
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	1,395	0.00	100.00
3379	Other Furniture Related Product Manufacturing	120	0.00	100.00
4244	Grocery and Related Product Merchant Wholesalers	345	0.00	100.00
4543	Direct Selling Establishments	12	0.00	100.00
4452	Specialty Food Stores	1,137	0.00	100.00
6243	Vocational Rehabilitation Services	777	0.00	100.00
4883	Support Activities for Water Transportation	63	0.00	100.00
5174	Satellite Telecommunications	29	0.00	100.00
4541	Electronic Shopping and Mail-Order Houses	1,650	0.00	100.00
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	69	0.00	100.00
3361	Motor Vehicle Manufacturing	27	0.00	100.00
4881	Support Activities for Air Transportation	6	0.00	100.00
3121	Beverage Manufacturing	16	0.00	100.00
8123	Drycleaning and Laundry Services	4,665	0.00	100.00
4413	Automotive Parts, Accessories, and Tire Stores	2,070	0.00	100.00
7223	Special Food Services	178	0.00	100.00
5251	Insurance and Employee Benefit Funds	3	0.00	100.00
3343	Audio and Video Equipment Manufacturing	241	0.00	100.00
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	37	0.00	100.00
3118	Bakeries and Tortilla Manufacturing	2,348	0.00	100.00
2213	Water, Sewage and Other Systems	412	0.00	100.00
1124	Sheep and Goat Farming	58	0.00	100.00

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
8121	Personal Care Services	159	0.00	100.00
5223	Activities Related to Credit Intermediation	3,537	0.00	100.00
	CONSTRUCTION	*396,651*		

Source: Dun & Bradstreet's *MarketPlace*; M/WBE business directory information compiled by NERA; Master Contract/Subcontract Database.

Table 4.2. CRS—Number of Businesses and Industry Weight, by NAICS Code, 2010

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
5413	Architectural, Engineering, and Related Services	18,139	66.13	66.13
2362	Nonresidential Building Construction	4,208	11.79	77.91
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	3,533	7.17	85.08
5614	Business Support Services	536	3.03	88.11
2373	Highway, Street, and Bridge Construction	1,639	2.56	90.67
5415	Computer Systems Design and Related Services	13,868	2.08	92.75
3323	Architectural and Structural Metals Manufacturing	769	0.89	93.64
2382	Building Equipment Contractors	25,023	0.71	94.35
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	299	0.67	95.02
7139	Other Amusement and Recreation Industries	590	0.65	95.67
2389	Other Specialty Trade Contractors	11,796	0.65	96.32
3273	Cement and Concrete Product Manufacturing	4	0.55	96.87
5416	Management, Scientific, and Technical Consulting Services	12,489	0.53	97.40
5629	Remediation and Other Waste Management Services	326	0.37	97.77
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	5,870	0.28	98.05
5418	Advertising, Public Relations, and Related Services	6,352	0.25	98.30
5617	Services to Buildings and Dwellings	15,841	0.16	98.45
5616	Investigation and Security Services	2,435	0.13	98.59
5417	Scientific Research and Development Services	224	0.12	98.71
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	1,431	0.10	98.81
5312	Offices of Real Estate Agents and Brokers	33,170	0.10	98.91
3399	Other Miscellaneous Manufacturing	1,438	0.09	99.00
3365	Railroad Rolling Stock Manufacturing	30	0.09	99.09
3231	Printing and Related Support Activities	632	0.09	99.18
4882	Support Activities for Rail Transportation	291	0.08	99.26
2381	Foundation, Structure, and Building Exterior Contractors	6,723	0.07	99.33
5414	Specialized Design Services	10,199	0.05	99.39
6211	Offices of Physicians	38,802	0.05	99.43
2379	Other Heavy and Civil Engineering Construction	156	0.05	99.48
5313	Activities Related to Real Estate	342	0.04	99.53
5241	Insurance Carriers	1,200	0.04	99.57
2371	Utility System Construction	637	0.04	99.60
8111	Automotive Repair and Maintenance	765	0.04	99.64
4236	Electrical and Electronic Goods Merchant Wholesalers	4,360	0.03	99.67
3328	Coating, Engraving, Heat Treating, and Allied Activities	47	0.03	99.70
4233	Lumber and Other Construction Materials Merchant Wholesalers	2,304	0.03	99.73
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	350	0.02	99.75

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
6213	Offices of Other Health Practitioners	4,402	0.02	99.77
4841	General Freight Trucking	5,223	0.02	99.79
3342	Communications Equipment Manufacturing	452	0.02	99.81
3261	Plastics Product Manufacturing	723	0.02	99.82
3339	Other General Purpose Machinery Manufacturing	288	0.02	99.84
3256	Soap, Cleaning Compound, and Toilet Preparation Mfg.	175	0.01	99.85
5182	Data Processing, Hosting, and Related Services	2,137	0.01	99.87
2211	Electric Power Generation, Transmission and Distribution	5	0.01	99.88
4412	Other Motor Vehicle Dealers	542	0.01	99.89
5612	Facilities Support Services	264	0.01	99.90
5411	Legal Services	34,694	0.01	99.91
5122	Sound Recording Industries	75	0.01	99.92
7223	Special Food Services	152	0.01	99.93
8129	Other Personal Services	1,174	0.01	99.94
3364	Aerospace Product and Parts Manufacturing	147	0.01	99.95
4532	Office Supplies, Stationery, and Gift Stores	6,082	0.01	99.95
8112	Electronic and Precision Equipment Repair and Maintenance	1,166	0.01	99.96
4244	Grocery and Related Product Merchant Wholesalers	1,384	0.00	99.96
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	754	0.00	99.97
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	23	0.00	99.97
2383	Building Finishing Contractors	6,912	0.00	99.98
4246	Chemical and Allied Products Merchant Wholesalers	1,050	0.00	99.98
3152	Cut and Sew Apparel Manufacturing	92	0.00	99.99
3121	Beverage Manufacturing	195	0.00	99.99
1151	Support Activities for Crop Production	110	0.00	99.99
5179	Other Telecommunications	3,308	0.00	99.99
8123	Drycleaning and Laundry Services	165	0.00	99.99
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	1,188	0.00	100.00
3259	Other Chemical Product and Preparation Manufacturing	226	0.00	100.00
5321	Automotive Equipment Rental and Leasing	1,093	0.00	100.00
6215	Medical and Diagnostic Laboratories	1,469	0.00	100.00
5419	Other Professional, Scientific, and Technical Services	2,072	0.00	100.00
5622	Waste Treatment and Disposal	343	0.00	100.00
3369	Other Transportation Equipment Manufacturing	11	0.00	100.00
5613	Employment Services	1,994	0.00	100.00
1153	Support Activities for Forestry	60	0.00	100.00
4441	Building Material and Supplies Dealers	1,928	0.00	100.00
4239	Miscellaneous Durable Goods Merchant Wholesalers	3,101	0.00	100.00
5111	Newspaper, Periodical, Book, and Directory Publishers	1,148	0.00	100.00
	CRS	*313,124*		

Source: See Table 4.1.

Table 4.3. Services—Number of Businesses and Industry Weight, by NAICS Code, 2010

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4242	Drugs and Druggists' Sundries Merchant Wholesalers	1,852	63.18	63.18
5241	Insurance Carriers	1,786	6.53	69.70
6231	Nursing Care Facilities	213	4.71	74.41
5418	Advertising, Public Relations, and Related Services	7,486	4.16	78.57
5415	Computer Systems Design and Related Services	13,961	3.10	81.66
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	6,139	2.87	84.53
5416	Management, Scientific, and Technical Consulting Services	11,073	2.41	86.95
5182	Data Processing, Hosting, and Related Services	2,137	2.30	89.25
5613	Employment Services	5,194	1.38	90.63
4859	Other Transit and Ground Passenger Transportation	942	0.89	91.52
7132	Gambling Industries	55	0.78	92.30
5221	Depository Credit Intermediation	5,711	0.71	93.02
5413	Architectural, Engineering, and Related Services	18,139	0.67	93.68
2362	Nonresidential Building Construction	4,208	0.56	94.25
5614	Business Support Services	1,785	0.53	94.78
2382	Building Equipment Contractors	25,023	0.47	95.25
4236	Electrical and Electronic Goods Merchant Wholesalers	4,885	0.46	95.71
4461	Health and Personal Care Stores	7,141	0.45	96.16
7223	Special Food Services	152	0.33	96.49
6243	Vocational Rehabilitation Services	777	0.32	96.81
4841	General Freight Trucking	5,223	0.27	97.09
5239	Other Financial Investment Activities	946	0.26	97.35
5617	Services to Buildings and Dwellings	15,841	0.23	97.58
5411	Legal Services	34,697	0.21	97.78
5615	Travel Arrangement and Reservation Services	6,158	0.21	97.99
5616	Investigation and Security Services	2,737	0.17	98.16
6219	Other Ambulatory Health Care Services	4,443	0.10	98.26
3365	Railroad Rolling Stock Manufacturing	30	0.10	98.36
6211	Offices of Physicians	40,430	0.09	98.45
5112	Software Publishers	1,819	0.09	98.55
2379	Other Heavy and Civil Engineering Construction	156	0.08	98.62
5622	Waste Treatment and Disposal	1,049	0.08	98.70
4244	Grocery and Related Product Merchant Wholesalers	3,592	0.08	98.78
4852	Interurban and Rural Bus Transportation	146	0.07	98.85
8123	Drycleaning and Laundry Services	4,767	0.07	98.92
4855	Charter Bus Industry	295	0.06	98.98
6215	Medical and Diagnostic Laboratories	1,469	0.05	99.04
3273	Cement and Concrete Product Manufacturing	180	0.05	99.08
3323	Architectural and Structural Metals Manufacturing	491	0.05	99.13
3339	Other General Purpose Machinery Manufacturing	490	0.04	99.17
3341	Computer and Peripheral Equipment Manufacturing	442	0.04	99.21
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	1,495	0.04	99.25

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
5179	Other Telecommunications	3,308	0.03	99.28
2371	Utility System Construction	637	0.03	99.32
3219	Other Wood Product Manufacturing	75	0.03	99.34
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	24	0.03	99.37
6214	Outpatient Care Centers	1,480	0.03	99.40
8129	Other Personal Services	1,174	0.03	99.43
2383	Building Finishing Contractors	11,640	0.03	99.45
4885	Freight Transportation Arrangement	2,908	0.02	99.48
4921	Couriers and Express Delivery Services	614	0.02	99.50
6213	Offices of Other Health Practitioners	11,877	0.02	99.53
2389	Other Specialty Trade Contractors	11,796	0.02	99.55
5419	Other Professional, Scientific, and Technical Services	3,703	0.02	99.57
5629	Remediation and Other Waste Management Services	393	0.02	99.60
5171	Wired Telecommunications Carriers	1,795	0.02	99.62
3231	Printing and Related Support Activities	5,293	0.02	99.64
5222	Nondepository Credit Intermediation	948	0.02	99.66
6222	Psychiatric and Substance Abuse Hospitals	379	0.02	99.68
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	621	0.02	99.70
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	1,188	0.02	99.72
5312	Offices of Real Estate Agents and Brokers	33,170	0.02	99.74
4931	Warehousing and Storage	1,422	0.02	99.75
5417	Scientific Research and Development Services	224	0.02	99.77
2373	Highway, Street, and Bridge Construction	1,639	0.02	99.79
5242	Agencies, Brokerages, and Other Insurance Related Activities	11,197	0.02	99.80
2381	Foundation, Structure, and Building Exterior Contractors	4,327	0.01	99.82
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	1,395	0.01	99.83
5414	Specialized Design Services	10,199	0.01	99.84
4431	Electronics and Appliance Stores	4,259	0.01	99.85
3118	Bakeries and Tortilla Manufacturing	590	0.01	99.86
5191	Other Information Services	32	0.01	99.87
8112	Electronic and Precision Equipment Repair and Maintenance	1,166	0.01	99.88
4241	Paper and Paper Product Merchant Wholesalers	1,661	0.01	99.89
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	2,227	0.01	99.90
3133	Textile and Fabric Finishing and Fabric Coating Mills	140	0.01	99.90
4233	Lumber and Other Construction Materials Merchant Wholesalers	2,499	0.01	99.91
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	5,870	0.01	99.92
1133	Logging	393	0.01	99.93
4541	Electronic Shopping and Mail-Order Houses	1,650	0.01	99.93

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4881	Support Activities for Air Transportation	6	0.01	99.94
3121	Beverage Manufacturing	211	0.01	99.94
4922	Local Messengers and Local Delivery	136	0.00	99.95
3343	Audio and Video Equipment Manufacturing	241	0.00	99.95
3342	Communications Equipment Manufacturing	452	0.00	99.96
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	1,431	0.00	99.96
7211	Traveler Accommodation	3,091	0.00	99.96
5152	Cable and Other Subscription Programming	583	0.00	99.96
3399	Other Miscellaneous Manufacturing	3,897	0.00	99.97
5122	Sound Recording Industries	75	0.00	99.97
5111	Newspaper, Periodical, Book, and Directory Publishers	4,409	0.00	99.97
5121	Motion Picture and Video Industries	5,268	0.00	99.97
8121	Personal Care Services	159	0.00	99.97
8114	Personal and Household Goods Repair and Maintenance	735	0.00	99.98
5621	Waste Collection	19	0.00	99.98
4532	Office Supplies, Stationery, and Gift Stores	7,321	0.00	99.98
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	81	0.00	99.98
4232	Furniture and Home Furnishing Merchant Wholesalers	3,321	0.00	99.98
4441	Building Material and Supplies Dealers	1,928	0.00	99.98
5511	Management of Companies and Enterprises	2,687	0.00	99.98
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	1,172	0.00	99.99
3115	Dairy Product Manufacturing	222	0.00	99.99
3222	Converted Paper Product Manufacturing	154	0.00	99.99
3111	Animal Food Manufacturing	8	0.00	99.99
4422	Home Furnishings Stores	2,277	0.00	99.99
6216	Home Health Care Services	1,712	0.00	99.99
3116	Animal Slaughtering and Processing	14	0.00	99.99
4239	Miscellaneous Durable Goods Merchant Wholesalers	7,300	0.00	99.99
6114	Business Schools and Computer and Management Training	301	0.00	99.99
4452	Specialty Food Stores	1,137	0.00	99.99
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	1,688	0.00	99.99
5223	Activities Related to Credit Intermediation	3,537	0.00	99.99
3353	Electrical Equipment Manufacturing	59	0.00	100.00
3149	Other Textile Product Mills	304	0.00	100.00
7115	Independent Artists, Writers, and Performers	1,797	0.00	100.00
3391	Medical Equipment and Supplies Manufacturing	614	0.00	100.00
5151	Radio and Television Broadcasting	295	0.00	100.00
5172	Wireless Telecommunications Carriers (except Satellite)	2,186	0.00	100.00
7114	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	881	0.00	100.00
3324	Boiler, Tank, and Shipping Container Manufacturing	18	0.00	100.00

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	230	0.00	100.00
4821	Rail Transportation	112	0.00	100.00
1151	Support Activities for Crop Production	110	0.00	100.00
4442	Lawn and Garden Equipment and Supplies Stores	914	0.00	100.00
4413	Automotive Parts, Accessories, and Tire Stores	2,070	0.00	100.00
1129	Other Animal Production	389	0.00	100.00
3328	Coating, Engraving, Heat Treating, and Allied Activities	218	0.00	100.00
3254	Pharmaceutical and Medicine Manufacturing	865	0.00	100.00
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	175	0.00	100.00
1153	Support Activities for Forestry	60	0.00	100.00
4543	Direct Selling Establishments	178	0.00	100.00
2211	Electric Power Generation, Transmission and Distribution	58	0.00	100.00
6221	General Medical and Surgical Hospitals	922	0.00	100.00
3332	Industrial Machinery Manufacturing	85	0.00	100.00
3321	Forging and Stamping	329	0.00	100.00
3262	Rubber Product Manufacturing	139	0.00	100.00
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	219	0.00	100.00
3162	Footwear Manufacturing	22	0.00	100.00
7221	Full-Service Restaurants	103	0.00	100.00
4884	Support Activities for Road Transportation	2,268	0.00	100.00
4247	Petroleum and Petroleum Products Merchant Wholesalers	99	0.00	100.00
3261	Plastics Product Manufacturing	8	0.00	100.00
3113	Sugar and Confectionery Product Manufacturing	6	0.00	100.00
3152	Cut and Sew Apparel Manufacturing	26	0.00	100.00
4482	Shoe Stores	111	0.00	100.00
3369	Other Transportation Equipment Manufacturing	49	0.00	100.00
4246	Chemical and Allied Products Merchant Wholesalers	333	0.00	100.00
3333	Commercial and Service Industry Machinery Manufacturing	40	0.00	100.00
	SERVICES	*461,298*		

Source: See Table 4.1.

Table 4.4. Commodities—Number of Businesses and Industry Weight, by NAICS Code, 2010

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	5,910	16.24	16.24
4247	Petroleum and Petroleum Products Merchant Wholesalers	931	11.85	28.09
3365	Railroad Rolling Stock Manufacturing	30	10.75	38.84
5171	Wired Telecommunications Carriers	1,795	8.06	46.90
3361	Motor Vehicle Manufacturing	27	7.39	54.29
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	2,538	3.17	57.46
3121	Beverage Manufacturing	89	2.67	60.13
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	1,668	2.64	62.76
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	6,345	2.43	65.19
4411	Automobile Dealers	2,687	2.35	67.54
2212	Natural Gas Distribution	168	2.11	69.65
4246	Chemical and Allied Products Merchant Wholesalers	1,383	1.51	71.17
2382	Building Equipment Contractors	25,023	1.42	72.59
5112	Software Publishers	1,819	1.41	74.01
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	1,495	1.38	75.38
3342	Communications Equipment Manufacturing	610	1.32	76.71
5415	Computer Systems Design and Related Services	13,868	1.29	77.99
4241	Paper and Paper Product Merchant Wholesalers	1,901	1.27	79.26
3251	Basic Chemical Manufacturing	405	1.06	80.32
4236	Electrical and Electronic Goods Merchant Wholesalers	4,885	0.97	81.29
3323	Architectural and Structural Metals Manufacturing	820	0.93	82.22
3231	Printing and Related Support Activities	5,343	0.92	83.13
3254	Pharmaceutical and Medicine Manufacturing	869	0.87	84.00
2362	Nonresidential Building Construction	4,208	0.86	84.86
5416	Management, Scientific, and Technical Consulting Services	9,392	0.69	85.55
4242	Drugs and Druggists' Sundries Merchant Wholesalers	1,852	0.63	86.19
2373	Highway, Street, and Bridge Construction	1,639	0.60	86.79
5413	Architectural, Engineering, and Related Services	12,511	0.59	87.38
2389	Other Specialty Trade Contractors	11,796	0.56	87.94
5417	Scientific Research and Development Services	224	0.55	88.48
3341	Computer and Peripheral Equipment Manufacturing	485	0.49	88.97
3391	Medical Equipment and Supplies Manufacturing	614	0.38	89.35
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	1,188	0.37	89.72
3331	Agriculture, Construction, and Mining Machinery Manufacturing	155	0.35	90.07
3241	Petroleum and Coal Products Manufacturing	146	0.34	90.41
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	1,933	0.33	90.74
5179	Other Telecommunications	3,308	0.32	91.06
5321	Automotive Equipment Rental and Leasing	2,190	0.31	91.38

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4244	Grocery and Related Product Merchant Wholesalers	2,829	0.31	91.68
6215	Medical and Diagnostic Laboratories	1,469	0.30	91.98
2379	Other Heavy and Civil Engineering Construction	156	0.30	92.28
3222	Converted Paper Product Manufacturing	352	0.28	92.57
3116	Animal Slaughtering and Processing	8	0.27	92.83
4431	Electronics and Appliance Stores	5,995	0.26	93.10
4233	Lumber and Other Construction Materials Merchant Wholesalers	2,304	0.25	93.35
5616	Investigation and Security Services	2,435	0.24	93.59
3311	Iron and Steel Mills and Ferroalloy Manufacturing	178	0.24	93.83
4422	Home Furnishings Stores	2,277	0.23	94.07
5111	Newspaper, Periodical, Book, and Directory Publishers	4,304	0.23	94.30
5221	Depository Credit Intermediation	5,711	0.21	94.51
3353	Electrical Equipment Manufacturing	355	0.18	94.69
7132	Gambling Industries	55	0.18	94.87
2383	Building Finishing Contractors	9,798	0.17	95.04
5622	Waste Treatment and Disposal	372	0.16	95.20
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	1,431	0.16	95.36
4532	Office Supplies, Stationery, and Gift Stores	1,239	0.16	95.52
3211	Sawmills and Wood Preservation	59	0.15	95.67
4882	Support Activities for Rail Transportation	291	0.14	95.81
3359	Other Electrical Equipment and Component Manufacturing	667	0.14	95.95
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	303	0.14	96.09
5613	Employment Services	5,194	0.13	96.22
3273	Cement and Concrete Product Manufacturing	180	0.12	96.34
5172	Wireless Telecommunications Carriers (except Satellite)	2,186	0.12	96.46
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	2,227	0.12	96.58
3259	Other Chemical Product and Preparation Manufacturing	302	0.12	96.70
5242	Agencies, Brokerages, and Other Insurance Related Activities	11,197	0.11	96.82
3399	Other Miscellaneous Manufacturing	4,421	0.11	96.93
5222	Nondepository Credit Intermediation	948	0.11	97.04
5182	Data Processing, Hosting, and Related Services	2,137	0.11	97.16
3339	Other General Purpose Machinery Manufacturing	463	0.10	97.26
4461	Health and Personal Care Stores	5,159	0.10	97.36
3321	Forging and Stamping	51	0.10	97.46
6243	Vocational Rehabilitation Services	777	0.10	97.56
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	169	0.10	97.66
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	1,069	0.09	97.75
3362	Motor Vehicle Body and Trailer Manufacturing	46	0.09	97.84

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
5617	Services to Buildings and Dwellings	7,716	0.09	97.93
2211	Electric Power Generation, Transmission and Distribution	63	0.08	98.01
3221	Pulp, Paper, and Paperboard Mills	60	0.08	98.08
3118	Bakeries and Tortilla Manufacturing	590	0.08	98.16
3315	Foundries	48	0.07	98.23
3333	Commercial and Service Industry Machinery Manufacturing	479	0.07	98.30
3344	Semiconductor and Other Electronic Component Manufacturing	630	0.07	98.37
3364	Aerospace Product and Parts Manufacturing	82	0.07	98.43
5241	Insurance Carriers	367	0.06	98.50
3313	Alumina and Aluminum Production and Processing	19	0.06	98.55
5414	Specialized Design Services	10,199	0.06	98.61
4841	General Freight Trucking	5,223	0.06	98.67
3335	Metalworking Machinery Manufacturing	307	0.05	98.72
3152	Cut and Sew Apparel Manufacturing	92	0.05	98.77
5191	Other Information Services	32	0.05	98.82
4421	Furniture Stores	3,845	0.05	98.87
3133	Textile and Fabric Finishing and Fabric Coating Mills	143	0.05	98.92
4412	Other Motor Vehicle Dealers	944	0.05	98.97
8111	Automotive Repair and Maintenance	13,729	0.05	99.01
5629	Remediation and Other Waste Management Services	326	0.04	99.05
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	273	0.04	99.09
3272	Glass and Glass Product Manufacturing	182	0.04	99.14
5121	Motion Picture and Video Industries	4,998	0.04	99.18
6219	Other Ambulatory Health Care Services	4,443	0.04	99.22
3326	Spring and Wire Product Manufacturing	146	0.04	99.26
2381	Foundation, Structure, and Building Exterior Contractors	1,933	0.04	99.30
4851	Urban Transit Systems	213	0.04	99.34
3261	Plastics Product Manufacturing	773	0.03	99.37
3351	Electric Lighting Equipment Manufacturing	128	0.03	99.40
5259	Other Investment Pools and Funds	885	0.03	99.44
8112	Electronic and Precision Equipment Repair and Maintenance	2,901	0.03	99.47
3332	Industrial Machinery Manufacturing	170	0.03	99.50
4511	Sporting Goods, Hobby, and Musical Instrument Stores	2,886	0.03	99.52
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	38	0.03	99.55
2371	Utility System Construction	637	0.03	99.58
3324	Boiler, Tank, and Shipping Container Manufacturing	30	0.03	99.60
6211	Offices of Physicians	38,802	0.03	99.63
8129	Other Personal Services	1,174	0.02	99.65
3329	Other Fabricated Metal Product Manufacturing	211	0.02	99.67
4239	Miscellaneous Durable Goods Merchant Wholesalers	3,794	0.02	99.70
4543	Direct Selling Establishments	1,396	0.02	99.72
5614	Business Support Services	1,311	0.02	99.74

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4232	Furniture and Home Furnishing Merchant Wholesalers	1,356	0.02	99.76
3372	Office Furniture (including Fixtures) Manufacturing	139	0.02	99.78
4883	Support Activities for Water Transportation	65	0.02	99.80
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	68	0.02	99.82
4884	Support Activities for Road Transportation	2,268	0.02	99.83
4441	Building Material and Supplies Dealers	3,874	0.01	99.85
3343	Audio and Video Equipment Manufacturing	241	0.01	99.86
5418	Advertising, Public Relations, and Related Services	4,576	0.01	99.88
4881	Support Activities for Air Transportation	6	0.01	99.89
4859	Other Transit and Ground Passenger Transportation	942	0.01	99.90
3255	Paint, Coating, and Adhesive Manufacturing	142	0.01	99.91
4855	Charter Bus Industry	295	0.01	99.92
5411	Legal Services	34,694	0.01	99.93
4854	School and Employee Bus Transportation	389	0.01	99.94
3363	Motor Vehicle Parts Manufacturing	41	0.01	99.95
3159	Apparel Accessories and Other Apparel Manufacturing	372	0.01	99.95
5239	Other Financial Investment Activities	281	0.01	99.96
3169	Other Leather and Allied Product Manufacturing	29	0.01	99.97
3262	Rubber Product Manufacturing	169	0.01	99.97
3115	Dairy Product Manufacturing	43	0.00	99.98
3314	Nonferrous Metal (except Aluminum) Production and Processing	20	0.00	99.98
3119	Other Food Manufacturing	237	0.00	99.98
3219	Other Wood Product Manufacturing	75	0.00	99.99
3149	Other Textile Product Mills	340	0.00	99.99
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	230	0.00	99.99
7221	Full-Service Restaurants	103	0.00	99.99
4922	Local Messengers and Local Delivery	136	0.00	100.00
8114	Personal and Household Goods Repair and Maintenance	1,270	0.00	100.00
4442	Lawn and Garden Equipment and Supplies Stores	914	0.00	100.00
5311	Lessors of Real Estate	1,246	0.00	100.00
3271	Clay Product and Refractory Manufacturing	17	0.00	100.00
3132	Fabric Mills	103	0.00	100.00
3328	Coating, Engraving, Heat Treating, and Allied Activities	302	0.00	100.00
4512	Book, Periodical, and Music Stores	1,715	0.00	100.00
4931	Warehousing and Storage	1,368	0.00	100.00
3322	Cutlery and Handtool Manufacturing	218	0.00	100.00
	COMMODITIES	*381,824*		

Source: See Table 4.1.

Table 4.5. Construction—Number of Listed M/WBEs and Industry Weight, by NAICS Code, 2010

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
2373	Highway, Street, and Bridge Construction	154	23.36	23.36
2382	Building Equipment Contractors	1,344	20.74	44.10
2362	Nonresidential Building Construction	530	10.88	54.98
2381	Foundation, Structure, and Building Exterior Contractors	609	8.73	63.72
2383	Building Finishing Contractors	778	5.45	69.17
2389	Other Specialty Trade Contractors	668	5.11	74.28
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	76	4.20	78.47
5413	Architectural, Engineering, and Related Services	1,665	3.83	82.31
3323	Architectural and Structural Metals Manufacturing	136	2.58	84.89
4233	Lumber and Other Construction Materials Merchant Wholesalers	190	1.37	86.25
2379	Other Heavy and Civil Engineering Construction	13	1.23	87.49
5416	Management, Scientific, and Technical Consulting Services	1,891	1.20	88.68
4841	General Freight Trucking	423	1.20	89.88
3273	Cement and Concrete Product Manufacturing	10	0.96	90.84
4236	Electrical and Electronic Goods Merchant Wholesalers	543	0.95	91.78
5617	Services to Buildings and Dwellings	1,454	0.81	92.59
2371	Utility System Construction	50	0.73	93.32
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	171	0.72	94.03
5629	Remediation and Other Waste Management Services	59	0.65	94.69
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	628	0.64	95.33
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	70	0.58	95.91
5622	Waste Treatment and Disposal	68	0.55	96.46
4232	Furniture and Home Furnishing Merchant Wholesalers	393	0.42	96.88
3365	Railroad Rolling Stock Manufacturing	1	0.38	97.26
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	684	0.34	97.60
4247	Petroleum and Petroleum Products Merchant Wholesalers	35	0.19	97.78
3341	Computer and Peripheral Equipment Manufacturing	31	0.15	97.94
5614	Business Support Services	77	0.14	98.08
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	82	0.13	98.21
5415	Computer Systems Design and Related Services	2,182	0.12	98.33
4422	Home Furnishings Stores	493	0.11	98.44
3399	Other Miscellaneous Manufacturing	473	0.09	98.53
3324	Boiler, Tank, and Shipping Container Manufacturing	2	0.09	98.62
3329	Other Fabricated Metal Product Manufacturing	49	0.09	98.71
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	98	0.07	98.78

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
5172	Wireless Telecommunications Carriers (except Satellite)	75	0.07	98.86
5616	Investigation and Security Services	279	0.06	98.92
3339	Other General Purpose Machinery Manufacturing	43	0.06	98.98
3219	Other Wood Product Manufacturing	53	0.06	99.04
3353	Electrical Equipment Manufacturing	27	0.06	99.10
3342	Communications Equipment Manufacturing	54	0.05	99.16
5221	Depository Credit Intermediation	35	0.05	99.21
8112	Electronic and Precision Equipment Repair and Maintenance	150	0.05	99.26
5418	Advertising, Public Relations, and Related Services	744	0.04	99.30
5241	Insurance Carriers	73	0.04	99.34
4239	Miscellaneous Durable Goods Merchant Wholesalers	767	0.04	99.39
4441	Building Material and Supplies Dealers	348	0.04	99.43
3261	Plastics Product Manufacturing	70	0.04	99.47
5414	Specialized Design Services	2,029	0.04	99.50
5613	Employment Services	910	0.03	99.54
5621	Waste Collection	3	0.03	99.57
3351	Electric Lighting Equipment Manufacturing	9	0.03	99.59
4246	Chemical and Allied Products Merchant Wholesalers	135	0.02	99.62
3359	Other Electrical Equipment and Component Manufacturing	37	0.02	99.64
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	22	0.02	99.66
3312	Steel Product Manufacturing from Purchased Steel	9	0.02	99.69
3272	Glass and Glass Product Manufacturing	36	0.02	99.71
3262	Rubber Product Manufacturing	27	0.02	99.72
4241	Paper and Paper Product Merchant Wholesalers	258	0.01	99.74
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	65	0.01	99.75
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	126	0.01	99.76
2372	Land Subdivision	105	0.01	99.78
3331	Agriculture, Construction, and Mining Machinery Manufacturing	8	0.01	99.79
3271	Clay Product and Refractory Manufacturing	42	0.01	99.80
2123	Nonmetallic Mineral Mining and Quarrying	14	0.01	99.81
3279	Other Nonmetallic Mineral Product Manufacturing	22	0.01	99.82
3332	Industrial Machinery Manufacturing	24	0.01	99.83
3333	Commercial and Service Industry Machinery Manufacturing	35	0.01	99.84
3326	Spring and Wire Product Manufacturing	7	0.01	99.85
5171	Wired Telecommunications Carriers	168	0.01	99.86
3372	Office Furniture (including Fixtures) Manufacturing	27	0.01	99.87
5417	Scientific Research and Development Services	25	0.01	99.88
5312	Offices of Real Estate Agents and Brokers	3,296	0.01	99.89
5321	Automotive Equipment Rental and Leasing	18	0.01	99.90
1153	Support Activities for Forestry	4	0.01	99.90
5411	Legal Services	2,515	0.01	99.91

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
2211	Electric Power Generation, Transmission and Distribution	1	0.01	99.91
5311	Lessors of Real Estate	139	0.01	99.92
3315	Foundries	4	0.01	99.92
4442	Lawn and Garden Equipment and Supplies Stores	77	0.01	99.93
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	158	0.00	99.93
3311	Iron and Steel Mills and Ferroalloy Manufacturing	11	0.00	99.94
8111	Automotive Repair and Maintenance	765	0.00	99.94
3222	Converted Paper Product Manufacturing	21	0.00	99.94
3241	Petroleum and Coal Products Manufacturing	8	0.00	99.95
2131	Support Activities for Mining	3	0.00	99.95
2212	Natural Gas Distribution	3	0.00	99.95
3255	Paint, Coating, and Adhesive Manufacturing	24	0.00	99.96
1151	Support Activities for Crop Production	11	0.00	99.96
5231	Securities and Commodity Contracts Intermediation and Brokerage	23	0.00	99.96
5419	Other Professional, Scientific, and Technical Services	292	0.00	99.96
4884	Support Activities for Road Transportation	64	0.00	99.97
3321	Forging and Stamping	36	0.00	99.97
5111	Newspaper, Periodical, Book, and Directory Publishers	183	0.00	99.97
5612	Facilities Support Services	34	0.00	99.97
8129	Other Personal Services	41	0.00	99.97
3231	Printing and Related Support Activities	83	0.00	99.97
3362	Motor Vehicle Body and Trailer Manufacturing	6	0.00	99.98
5179	Other Telecommunications	120	0.00	99.98
4431	Electronics and Appliance Stores	453	0.00	99.98
3251	Basic Chemical Manufacturing	17	0.00	99.98
4421	Furniture Stores	318	0.00	99.98
3313	Alumina and Aluminum Production and Processing	1	0.00	99.98
3364	Aerospace Product and Parts Manufacturing	5	0.00	99.98
6114	Business Schools and Computer and Management Training	79	0.00	99.98
4859	Other Transit and Ground Passenger Transportation	90	0.00	99.99
4511	Sporting Goods, Hobby, and Musical Instrument Stores	201	0.00	99.99
3335	Metalworking Machinery Manufacturing	11	0.00	99.99
1119	Other Crop Farming	67	0.00	99.99
1114	Greenhouse, Nursery, and Floriculture Production	26	0.00	99.99
3259	Other Chemical Product and Preparation Manufacturing	31	0.00	99.99
4242	Drugs and Druggists' Sundries Merchant Wholesalers	231	0.00	99.99
3344	Semiconductor and Other Electronic Component Manufacturing	58	0.00	99.99
6215	Medical and Diagnostic Laboratories	64	0.00	99.99
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing	20	0.00	99.99
3149	Other Textile Product Mills	41	0.00	99.99
3141	Textile Furnishings Mills	49	0.00	99.99
4821	Rail Transportation	2	0.00	99.99

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
5152	Cable and Other Subscription Programming	14	0.00	99.99
5615	Travel Arrangement and Reservation Services	1,253	0.00	99.99
3328	Coating, Engraving, Heat Treating, and Allied Activities	53	0.00	100.00
4411	Automobile Dealers	72	0.00	100.00
7211	Traveler Accommodation	171	0.00	100.00
4921	Couriers and Express Delivery Services	49	0.00	100.00
4885	Freight Transportation Arrangement	283	0.00	100.00
5112	Software Publishers	152	0.00	100.00
5222	Nondepository Credit Intermediation	78	0.00	100.00
4412	Other Motor Vehicle Dealers	12	0.00	100.00
3133	Textile and Fabric Finishing and Fabric Coating Mills	11	0.00	100.00
8114	Personal and Household Goods Repair and Maintenance	131	0.00	100.00
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	167	0.00	100.00
3379	Other Furniture Related Product Manufacturing	18	0.00	100.00
4244	Grocery and Related Product Merchant Wholesalers	19	0.00	100.00
4543	Direct Selling Establishments	3	0.00	100.00
4452	Specialty Food Stores	140	0.00	100.00
6243	Vocational Rehabilitation Services	21	0.00	100.00
4883	Support Activities for Water Transportation	6	0.00	100.00
5174	Satellite Telecommunications	2	0.00	100.00
4541	Electronic Shopping and Mail-Order Houses	289	0.00	100.00
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	6	0.00	100.00
3361	Motor Vehicle Manufacturing	1	0.00	100.00
4881	Support Activities for Air Transportation	-	0.00	100.00
3121	Beverage Manufacturing	1	0.00	100.00
8123	Drycleaning and Laundry Services	982	0.00	100.00
4413	Automotive Parts, Accessories, and Tire Stores	93	0.00	100.00
7223	Special Food Services	22	0.00	100.00
5251	Insurance and Employee Benefit Funds	-	0.00	100.00
3343	Audio and Video Equipment Manufacturing	19	0.00	100.00
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	10	0.00	100.00
3118	Bakeries and Tortilla Manufacturing	270	0.00	100.00
2213	Water, Sewage and Other Systems	7	0.00	100.00
1124	Sheep and Goat Farming	13	0.00	100.00
8121	Personal Care Services	14	0.00	100.00
5223	Activities Related to Credit Intermediation	159	0.00	100.00
	CONSTRUCTION	*37,236*		

Source: See Table 4.1.

Table 4.6. CRS—Number of Listed M/WBEs and Industry Weight, by NAICS Code, 2010

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
5413	Architectural, Engineering, and Related Services	1,665	66.13	66.13
2362	Nonresidential Building Construction	530	11.79	77.91
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	400	7.17	85.08
5614	Business Support Services	77	3.03	88.11
2373	Highway, Street, and Bridge Construction	154	2.56	90.67
5415	Computer Systems Design and Related Services	2,182	2.08	92.75
3323	Architectural and Structural Metals Manufacturing	88	0.89	93.64
2382	Building Equipment Contractors	1,344	0.71	94.35
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	15	0.67	95.02
7139	Other Amusement and Recreation Industries	25	0.65	95.67
2389	Other Specialty Trade Contractors	668	0.65	96.32
3273	Cement and Concrete Product Manufacturing	-	0.55	96.87
5416	Management, Scientific, and Technical Consulting Services	2,215	0.53	97.40
5629	Remediation and Other Waste Management Services	59	0.37	97.77
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	565	0.28	98.05
5418	Advertising, Public Relations, and Related Services	1,102	0.25	98.30
5617	Services to Buildings and Dwellings	1,379	0.16	98.45
5616	Investigation and Security Services	217	0.13	98.59
5417	Scientific Research and Development Services	25	0.12	98.71
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	82	0.10	98.81
5312	Offices of Real Estate Agents and Brokers	3,296	0.10	98.91
3399	Other Miscellaneous Manufacturing	194	0.09	99.00
3365	Railroad Rolling Stock Manufacturing	1	0.09	99.09
3231	Printing and Related Support Activities	83	0.09	99.18
4882	Support Activities for Rail Transportation	27	0.08	99.26
2381	Foundation, Structure, and Building Exterior Contractors	535	0.07	99.33
5414	Specialized Design Services	3,333	0.05	99.39
6211	Offices of Physicians	3,213	0.05	99.43
2379	Other Heavy and Civil Engineering Construction	13	0.05	99.48
5313	Activities Related to Real Estate	17	0.04	99.53
5241	Insurance Carriers	73	0.04	99.57
2371	Utility System Construction	44	0.04	99.60
8111	Automotive Repair and Maintenance	35	0.04	99.64
4236	Electrical and Electronic Goods Merchant Wholesalers	500	0.03	99.67
3328	Coating, Engraving, Heat Treating, and Allied Activities	2	0.03	99.70
4233	Lumber and Other Construction Materials Merchant Wholesalers	187	0.03	99.73
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	30	0.02	99.75

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
6213	Offices of Other Health Practitioners	732	0.02	99.77
4841	General Freight Trucking	318	0.02	99.79
3342	Communications Equipment Manufacturing	38	0.02	99.81
3261	Plastics Product Manufacturing	65	0.02	99.82
3339	Other General Purpose Machinery Manufacturing	29	0.02	99.84
3256	Soap, Cleaning Compound, and Toilet Preparation Mfg.	27	0.01	99.85
5182	Data Processing, Hosting, and Related Services	357	0.01	99.87
2211	Electric Power Generation, Transmission and Distribution	-	0.01	99.88
4412	Other Motor Vehicle Dealers	24	0.01	99.89
5612	Facilities Support Services	34	0.01	99.90
5411	Legal Services	2,515	0.01	99.91
5122	Sound Recording Industries	8	0.01	99.92
7223	Special Food Services	18	0.01	99.93
8129	Other Personal Services	41	0.01	99.94
3364	Aerospace Product and Parts Manufacturing	36	0.01	99.95
4532	Office Supplies, Stationery, and Gift Stores	1,347	0.01	99.95
8112	Electronic and Precision Equipment Repair and Maintenance	106	0.01	99.96
4244	Grocery and Related Product Merchant Wholesalers	150	0.00	99.96
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	69	0.00	99.97
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	2	0.00	99.97
2383	Building Finishing Contractors	451	0.00	99.98
4246	Chemical and Allied Products Merchant Wholesalers	104	0.00	99.98
3152	Cut and Sew Apparel Manufacturing	17	0.00	99.99
3121	Beverage Manufacturing	15	0.00	99.99
1151	Support Activities for Crop Production	11	0.00	99.99
5179	Other Telecommunications	120	0.00	99.99
8123	Drycleaning and Laundry Services	15	0.00	99.99
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	76	0.00	100.00
3259	Other Chemical Product and Preparation Manufacturing	23	0.00	100.00
5321	Automotive Equipment Rental and Leasing	35	0.00	100.00
6215	Medical and Diagnostic Laboratories	64	0.00	100.00
5419	Other Professional, Scientific, and Technical Services	292	0.00	100.00
5622	Waste Treatment and Disposal	25	0.00	100.00
3369	Other Transportation Equipment Manufacturing	1	0.00	100.00
5613	Employment Services	288	0.00	100.00
1153	Support Activities for Forestry	4	0.00	100.00
4441	Building Material and Supplies Dealers	124	0.00	100.00
4239	Miscellaneous Durable Goods Merchant Wholesalers	234	0.00	100.00
5111	Newspaper, Periodical, Book, and Directory Publishers	131	0.00	100.00
	CRS	*32,321*		

Source: See Table 4.1.

Table 4.7. Services—Number of Listed M/WBEs and Industry Weight, by NAICS Code, 2010

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4242	Drugs and Druggists' Sundries Merchant Wholesalers	231	63.18	63.18
5241	Insurance Carriers	92	6.53	69.70
6231	Nursing Care Facilities	11	4.71	74.41
5418	Advertising, Public Relations, and Related Services	1,260	4.16	78.57
5415	Computer Systems Design and Related Services	2,189	3.10	81.66
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	708	2.87	84.53
5416	Management, Scientific, and Technical Consulting Services	1,902	2.41	86.95
5182	Data Processing, Hosting, and Related Services	357	2.30	89.25
5613	Employment Services	910	1.38	90.63
4859	Other Transit and Ground Passenger Transportation	90	0.89	91.52
7132	Gambling Industries	1	0.78	92.30
5221	Depository Credit Intermediation	35	0.71	93.02
5413	Architectural, Engineering, and Related Services	1,665	0.67	93.68
2362	Nonresidential Building Construction	530	0.56	94.25
5614	Business Support Services	435	0.53	94.78
2382	Building Equipment Contractors	1,344	0.47	95.25
4236	Electrical and Electronic Goods Merchant Wholesalers	543	0.46	95.71
4461	Health and Personal Care Stores	422	0.45	96.16
7223	Special Food Services	18	0.33	96.49
6243	Vocational Rehabilitation Services	21	0.32	96.81
4841	General Freight Trucking	318	0.27	97.09
5239	Other Financial Investment Activities	57	0.26	97.35
5617	Services to Buildings and Dwellings	1,379	0.23	97.58
5411	Legal Services	2,516	0.21	97.78
5615	Travel Arrangement and Reservation Services	1,369	0.21	97.99
5616	Investigation and Security Services	251	0.17	98.16
6219	Other Ambulatory Health Care Services	198	0.10	98.26
3365	Railroad Rolling Stock Manufacturing	1	0.10	98.36
6211	Offices of Physicians	3,402	0.09	98.45
5112	Software Publishers	152	0.09	98.55
2379	Other Heavy and Civil Engineering Construction	13	0.08	98.62
5622	Waste Treatment and Disposal	68	0.08	98.70
4244	Grocery and Related Product Merchant Wholesalers	324	0.08	98.78
4852	Interurban and Rural Bus Transportation	8	0.07	98.85
8123	Drycleaning and Laundry Services	991	0.07	98.92
4855	Charter Bus Industry	35	0.06	98.98
6215	Medical and Diagnostic Laboratories	64	0.05	99.04
3273	Cement and Concrete Product Manufacturing	5	0.05	99.08
3323	Architectural and Structural Metals Manufacturing	48	0.05	99.13
3339	Other General Purpose Machinery Manufacturing	44	0.04	99.17
3341	Computer and Peripheral Equipment Manufacturing	54	0.04	99.21
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	70	0.04	99.25

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
5179	Other Telecommunications	120	0.03	99.28
2371	Utility System Construction	44	0.03	99.32
3219	Other Wood Product Manufacturing	8	0.03	99.34
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	1	0.03	99.37
6214	Outpatient Care Centers	90	0.03	99.40
8129	Other Personal Services	41	0.03	99.43
2383	Building Finishing Contractors	778	0.03	99.45
4885	Freight Transportation Arrangement	283	0.02	99.48
4921	Couriers and Express Delivery Services	49	0.02	99.50
6213	Offices of Other Health Practitioners	1,745	0.02	99.53
2389	Other Specialty Trade Contractors	668	0.02	99.55
5419	Other Professional, Scientific, and Technical Services	580	0.02	99.57
5629	Remediation and Other Waste Management Services	66	0.02	99.60
5171	Wired Telecommunications Carriers	168	0.02	99.62
3231	Printing and Related Support Activities	726	0.02	99.64
5222	Nondepository Credit Intermediation	23	0.02	99.66
6222	Psychiatric and Substance Abuse Hospitals	32	0.02	99.68
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	56	0.02	99.70
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	76	0.02	99.72
5312	Offices of Real Estate Agents and Brokers	3,296	0.02	99.74
4931	Warehousing and Storage	75	0.02	99.75
5417	Scientific Research and Development Services	25	0.02	99.77
2373	Highway, Street, and Bridge Construction	154	0.02	99.79
5242	Agencies, Brokerages, and Other Insurance Related Activities	902	0.02	99.80
2381	Foundation, Structure, and Building Exterior Contractors	380	0.01	99.82
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	167	0.01	99.83
5414	Specialized Design Services	3,333	0.01	99.84
4431	Electronics and Appliance Stores	353	0.01	99.85
3118	Bakeries and Tortilla Manufacturing	93	0.01	99.86
5191	Other Information Services	-	0.01	99.87
8112	Electronic and Precision Equipment Repair and Maintenance	106	0.01	99.88
4241	Paper and Paper Product Merchant Wholesalers	230	0.01	99.89
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	171	0.01	99.90
3133	Textile and Fabric Finishing and Fabric Coating Mills	11	0.01	99.90
4233	Lumber and Other Construction Materials Merchant Wholesalers	190	0.01	99.91
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	565	0.01	99.92
1133	Logging	16	0.01	99.93
4541	Electronic Shopping and Mail-Order Houses	289	0.01	99.93
4881	Support Activities for Air Transportation	-	0.01	99.94

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
3121	Beverage Manufacturing	16	0.01	99.94
4922	Local Messengers and Local Delivery	10	0.00	99.95
3343	Audio and Video Equipment Manufacturing	19	0.00	99.95
3342	Communications Equipment Manufacturing	38	0.00	99.96
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	82	0.00	99.96
7211	Traveler Accommodation	171	0.00	99.96
5152	Cable and Other Subscription Programming	14	0.00	99.96
3399	Other Miscellaneous Manufacturing	620	0.00	99.97
5122	Sound Recording Industries	8	0.00	99.97
5111	Newspaper, Periodical, Book, and Directory Publishers	514	0.00	99.97
5121	Motion Picture and Video Industries	448	0.00	99.97
8121	Personal Care Services	14	0.00	99.97
8114	Personal and Household Goods Repair and Maintenance	111	0.00	99.98
5621	Waste Collection	3	0.00	99.98
4532	Office Supplies, Stationery, and Gift Stores	1,540	0.00	99.98
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	10	0.00	99.98
4232	Furniture and Home Furnishing Merchant Wholesalers	393	0.00	99.98
4441	Building Material and Supplies Dealers	124	0.00	99.98
5511	Management of Companies and Enterprises	54	0.00	99.98
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	109	0.00	99.99
3115	Dairy Product Manufacturing	32	0.00	99.99
3222	Converted Paper Product Manufacturing	15	0.00	99.99
3111	Animal Food Manufacturing	1	0.00	99.99
4422	Home Furnishings Stores	166	0.00	99.99
6216	Home Health Care Services	310	0.00	99.99
3116	Animal Slaughtering and Processing	1	0.00	99.99
4239	Miscellaneous Durable Goods Merchant Wholesalers	767	0.00	99.99
6114	Business Schools and Computer and Management Training	79	0.00	99.99
4452	Specialty Food Stores	140	0.00	99.99
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	101	0.00	99.99
5223	Activities Related to Credit Intermediation	159	0.00	99.99
3353	Electrical Equipment Manufacturing	5	0.00	100.00
3149	Other Textile Product Mills	41	0.00	100.00
7115	Independent Artists, Writers, and Performers	193	0.00	100.00
3391	Medical Equipment and Supplies Manufacturing	55	0.00	100.00
5151	Radio and Television Broadcasting	13	0.00	100.00
5172	Wireless Telecommunications Carriers (except Satellite)	75	0.00	100.00
7114	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	120	0.00	100.00
3324	Boiler, Tank, and Shipping Container Manufacturing	1	0.00	100.00
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	25	0.00	100.00

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4821	Rail Transportation	2	0.00	100.00
1151	Support Activities for Crop Production	11	0.00	100.00
4442	Lawn and Garden Equipment and Supplies Stores	77	0.00	100.00
4413	Automotive Parts, Accessories, and Tire Stores	93	0.00	100.00
1129	Other Animal Production	107	0.00	100.00
3328	Coating, Engraving, Heat Treating, and Allied Activities	25	0.00	100.00
3254	Pharmaceutical and Medicine Manufacturing	53	0.00	100.00
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	27	0.00	100.00
1153	Support Activities for Forestry	4	0.00	100.00
4543	Direct Selling Establishments	4	0.00	100.00
2211	Electric Power Generation, Transmission and Distribution	1	0.00	100.00
6221	General Medical and Surgical Hospitals	17	0.00	100.00
3332	Industrial Machinery Manufacturing	12	0.00	100.00
3321	Forging and Stamping	36	0.00	100.00
3262	Rubber Product Manufacturing	22	0.00	100.00
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	11	0.00	100.00
3162	Footwear Manufacturing	2	0.00	100.00
7221	Full-Service Restaurants	7	0.00	100.00
4884	Support Activities for Road Transportation	51	0.00	100.00
4247	Petroleum and Petroleum Products Merchant Wholesalers	5	0.00	100.00
3261	Plastics Product Manufacturing	2	0.00	100.00
3113	Sugar and Confectionery Product Manufacturing	-	0.00	100.00
3152	Cut and Sew Apparel Manufacturing	9	0.00	100.00
4482	Shoe Stores	9	0.00	100.00
3369	Other Transportation Equipment Manufacturing	2	0.00	100.00
4246	Chemical and Allied Products Merchant Wholesalers	31	0.00	100.00
3333	Commercial and Service Industry Machinery Manufacturing	10	0.00	100.00
	SERVICES	*47,268*		

Source: See Table 4.1.

Table 4.8. Commodities—Number of Listed M/WBEs and Industry Weight, by NAICS Code, 2010

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	684	16.24	16.24
4247	Petroleum and Petroleum Products Merchant Wholesalers	35	11.85	28.09
3365	Railroad Rolling Stock Manufacturing	1	10.75	38.84
5171	Wired Telecommunications Carriers	168	8.06	46.90
3361	Motor Vehicle Manufacturing	1	7.39	54.29
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	158	3.17	57.46
3121	Beverage Manufacturing	3	2.67	60.13
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	162	2.64	62.76
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	614	2.43	65.19
4411	Automobile Dealers	72	2.35	67.54
2212	Natural Gas Distribution	3	2.11	69.65
4246	Chemical and Allied Products Merchant Wholesalers	135	1.51	71.17
2382	Building Equipment Contractors	1,344	1.42	72.59
5112	Software Publishers	152	1.41	74.01
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	70	1.38	75.38
3342	Communications Equipment Manufacturing	54	1.32	76.71
5415	Computer Systems Design and Related Services	2,182	1.29	77.99
4241	Paper and Paper Product Merchant Wholesalers	258	1.27	79.26
3251	Basic Chemical Manufacturing	19	1.06	80.32
4236	Electrical and Electronic Goods Merchant Wholesalers	543	0.97	81.29
3323	Architectural and Structural Metals Manufacturing	73	0.93	82.22
3231	Printing and Related Support Activities	727	0.92	83.13
3254	Pharmaceutical and Medicine Manufacturing	55	0.87	84.00
2362	Nonresidential Building Construction	530	0.86	84.86
5416	Management, Scientific, and Technical Consulting Services	1,605	0.69	85.55
4242	Drugs and Druggists' Sundries Merchant Wholesalers	231	0.63	86.19
2373	Highway, Street, and Bridge Construction	154	0.60	86.79
5413	Architectural, Engineering, and Related Services	1,324	0.59	87.38
2389	Other Specialty Trade Contractors	668	0.56	87.94
5417	Scientific Research and Development Services	25	0.55	88.48
3341	Computer and Peripheral Equipment Manufacturing	57	0.49	88.97
3391	Medical Equipment and Supplies Manufacturing	55	0.38	89.35
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	76	0.37	89.72
3331	Agriculture, Construction, and Mining Machinery Manufacturing	12	0.35	90.07
3241	Petroleum and Coal Products Manufacturing	8	0.34	90.41
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	205	0.33	90.74
5179	Other Telecommunications	120	0.32	91.06
5321	Automotive Equipment Rental and Leasing	63	0.31	91.38

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4244	Grocery and Related Product Merchant Wholesalers	263	0.31	91.68
6215	Medical and Diagnostic Laboratories	64	0.30	91.98
2379	Other Heavy and Civil Engineering Construction	13	0.30	92.28
3222	Converted Paper Product Manufacturing	41	0.28	92.57
3116	Animal Slaughtering and Processing	1	0.27	92.83
4431	Electronics and Appliance Stores	453	0.26	93.10
4233	Lumber and Other Construction Materials Merchant Wholesalers	187	0.25	93.35
5616	Investigation and Security Services	217	0.24	93.59
3311	Iron and Steel Mills and Ferroalloy Manufacturing	11	0.24	93.83
4422	Home Furnishings Stores	166	0.23	94.07
5111	Newspaper, Periodical, Book, and Directory Publishers	481	0.23	94.30
5221	Depository Credit Intermediation	35	0.21	94.51
3353	Electrical Equipment Manufacturing	35	0.18	94.69
7132	Gambling Industries	1	0.18	94.87
2383	Building Finishing Contractors	621	0.17	95.04
5622	Waste Treatment and Disposal	26	0.16	95.20
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	82	0.16	95.36
4532	Office Supplies, Stationery, and Gift Stores	193	0.16	95.52
3211	Sawmills and Wood Preservation	4	0.15	95.67
4882	Support Activities for Rail Transportation	27	0.14	95.81
3359	Other Electrical Equipment and Component Manufacturing	33	0.14	95.95
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	27	0.14	96.09
5613	Employment Services	910	0.13	96.22
3273	Cement and Concrete Product Manufacturing	5	0.12	96.34
5172	Wireless Telecommunications Carriers (except Satellite)	75	0.12	96.46
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	171	0.12	96.58
3259	Other Chemical Product and Preparation Manufacturing	31	0.12	96.70
5242	Agencies, Brokerages, and Other Insurance Related Activities	902	0.11	96.82
3399	Other Miscellaneous Manufacturing	664	0.11	96.93
5222	Nondepository Credit Intermediation	23	0.11	97.04
5182	Data Processing, Hosting, and Related Services	357	0.11	97.16
3339	Other General Purpose Machinery Manufacturing	45	0.10	97.26
4461	Health and Personal Care Stores	290	0.10	97.36
3321	Forging and Stamping	4	0.10	97.46
6243	Vocational Rehabilitation Services	21	0.10	97.56
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	8	0.10	97.66
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	87	0.09	97.75
3362	Motor Vehicle Body and Trailer Manufacturing	2	0.09	97.84

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
5617	Services to Buildings and Dwellings	420	0.09	97.93
2211	Electric Power Generation, Transmission and Distribution	1	0.08	98.01
3221	Pulp, Paper, and Paperboard Mills	4	0.08	98.08
3118	Bakeries and Tortilla Manufacturing	93	0.08	98.16
3315	Foundries	3	0.07	98.23
3333	Commercial and Service Industry Machinery Manufacturing	45	0.07	98.30
3344	Semiconductor and Other Electronic Component Manufacturing	85	0.07	98.37
3364	Aerospace Product and Parts Manufacturing	7	0.07	98.43
5241	Insurance Carriers	16	0.06	98.50
3313	Alumina and Aluminum Production and Processing	3	0.06	98.55
5414	Specialized Design Services	3,333	0.06	98.61
4841	General Freight Trucking	318	0.06	98.67
3335	Metalworking Machinery Manufacturing	18	0.05	98.72
3152	Cut and Sew Apparel Manufacturing	17	0.05	98.77
5191	Other Information Services	-	0.05	98.82
4421	Furniture Stores	318	0.05	98.87
3133	Textile and Fabric Finishing and Fabric Coating Mills	11	0.05	98.92
4412	Other Motor Vehicle Dealers	27	0.05	98.97
8111	Automotive Repair and Maintenance	719	0.05	99.01
5629	Remediation and Other Waste Management Services	59	0.04	99.05
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	50	0.04	99.09
3272	Glass and Glass Product Manufacturing	31	0.04	99.14
5121	Motion Picture and Video Industries	425	0.04	99.18
6219	Other Ambulatory Health Care Services	198	0.04	99.22
3326	Spring and Wire Product Manufacturing	7	0.04	99.26
2381	Foundation, Structure, and Building Exterior Contractors	246	0.04	99.30
4851	Urban Transit Systems	6	0.04	99.34
3261	Plastics Product Manufacturing	69	0.03	99.37
3351	Electric Lighting Equipment Manufacturing	12	0.03	99.40
5259	Other Investment Pools and Funds	20	0.03	99.44
8112	Electronic and Precision Equipment Repair and Maintenance	256	0.03	99.47
3332	Industrial Machinery Manufacturing	14	0.03	99.50
4511	Sporting Goods, Hobby, and Musical Instrument Stores	201	0.03	99.52
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	2	0.03	99.55
2371	Utility System Construction	44	0.03	99.58
3324	Boiler, Tank, and Shipping Container Manufacturing	2	0.03	99.60
6211	Offices of Physicians	3,213	0.03	99.63
8129	Other Personal Services	41	0.02	99.65
3329	Other Fabricated Metal Product Manufacturing	30	0.02	99.67
4239	Miscellaneous Durable Goods Merchant Wholesalers	294	0.02	99.70
4543	Direct Selling Establishments	86	0.02	99.72
5614	Business Support Services	392	0.02	99.74

NAICS Code	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4232	Furniture and Home Furnishing Merchant Wholesalers	132	0.02	99.76
3372	Office Furniture (including Fixtures) Manufacturing	12	0.02	99.78
4883	Support Activities for Water Transportation	5	0.02	99.80
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	4	0.02	99.82
4884	Support Activities for Road Transportation	51	0.02	99.83
4441	Building Material and Supplies Dealers	279	0.01	99.85
3343	Audio and Video Equipment Manufacturing	19	0.01	99.86
5418	Advertising, Public Relations, and Related Services	634	0.01	99.88
4881	Support Activities for Air Transportation	-	0.01	99.89
4859	Other Transit and Ground Passenger Transportation	90	0.01	99.90
3255	Paint, Coating, and Adhesive Manufacturing	13	0.01	99.91
4855	Charter Bus Industry	35	0.01	99.92
5411	Legal Services	2,515	0.01	99.93
4854	School and Employee Bus Transportation	37	0.01	99.94
3363	Motor Vehicle Parts Manufacturing	1	0.01	99.95
3159	Apparel Accessories and Other Apparel Manufacturing	49	0.01	99.95
5239	Other Financial Investment Activities	7	0.01	99.96
3169	Other Leather and Allied Product Manufacturing	7	0.01	99.97
3262	Rubber Product Manufacturing	25	0.01	99.97
3115	Dairy Product Manufacturing	2	0.00	99.98
3314	Nonferrous Metal (except Aluminum) Production and Processing	4	0.00	99.98
3119	Other Food Manufacturing	27	0.00	99.98
3219	Other Wood Product Manufacturing	8	0.00	99.99
3149	Other Textile Product Mills	47	0.00	99.99
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	25	0.00	99.99
7221	Full-Service Restaurants	7	0.00	99.99
4922	Local Messengers and Local Delivery	10	0.00	100.00
8114	Personal and Household Goods Repair and Maintenance	131	0.00	100.00
4442	Lawn and Garden Equipment and Supplies Stores	77	0.00	100.00
5311	Lessors of Real Estate	91	0.00	100.00
3271	Clay Product and Refractory Manufacturing	1	0.00	100.00
3132	Fabric Mills	8	0.00	100.00
3328	Coating, Engraving, Heat Treating, and Allied Activities	26	0.00	100.00
4512	Book, Periodical, and Music Stores	235	0.00	100.00
4931	Warehousing and Storage	72	0.00	100.00
3322	Cutlery and Handtool Manufacturing	13	0.00	100.00
	COMMODITIES	*35,057*		

Source: See Table 4.1.

Table 4.9. Listed M/WBE Survey—Amount of Misclassification, by NAICS Code Grouping

Listed M/WBE By NAICS Code Grouping	Misclassification (Percentage non-minority male)	Percentage Actually M/WBE-owned	Number of Businesses Interviewed
NAICS 236-A	13.5	86.5	223
NAICS 237-A	30.3	69.7	99
NAICS 238-A	31.2	68.8	218
NAICS 31-33-A	36.8	63.2	38
NAICS 48-49-A	24.7	75.3	89
NAICS 423-A	25.4	74.6	122
NAICS 424-A	15.5	84.5	116
NAICS 441, 447-A	55.9	44.1	34
NAICS 52-53-A	15.3	84.7	131
NAICS OTHR-A	16.5	83.5	97
NAICS 62-A	23.9	76.1	67
NAICS 54-A	12.6	87.4	111
NAICS 11, 21, 22-B	39.0	61.0	59
NAICS 31-33-B	18.0	82.0	61
NAICS 48-49-B	12.1	87.9	58
NAICS 42-B	16.7	83.3	54
NAICS 52-53-B	27.5	72.5	40
NAICS OTHR-B	16.7	83.3	48
NAICS 54, 62-B	15.9	84.1	63
All NAICS Codes	21.8	78.2	1,728

Source: NERA/Abt SRBI telephone surveys, 2010.

Note: Two groupings of strata, A and B, were created. NAICS codes reflecting approximately 90 percent of all contract and subcontract spending were stratified into group A with the balance stratified into group B.

Table 4.10. Listed M/WBE Survey—Amount of Misclassification, by Putative M/WBE Type

Putative Race/Sex	Misclassif-ication (Percentage Non-minority Male)	Misclassification (Percentage Other M/WBE Type)	Percentage Correctly Classified	Number of Businesses Interviewed
African-American (either sex)	9.0	18.0	73.0	178
Hispanic (either sex)	31.7	9.0	59.3	290
Asian (either sex)	15.2	8.4	76.4	309
Native American (either sex)	43.8	37.4	18.8	16
Non-minority Female	23.8	15.2	61.0	774
Unknown	19.3	80.7	0.0	161
All M/WBE Types	21.8	19.6	58.6	1,728

Source and Notes: See Table 4.9. Similar calculations, not shown here, were performed for each stratum.

Table 4.11. Unclassified Businesses Survey —By NAICS Code Grouping

Listed M/WBE By SIC Code Grouping	Percentage Actually non-minority male-owned	Percentage M/WBE	Number of Businesses Interviewed
NAICS 236-A	86.4	13.6	199
NAICS 237-A	84.4	15.6	256
NAICS 238-A	81.2	18.8	149
NAICS 31-33-A	82.8	17.2	192
NAICS 48-49-A	76.2	23.8	63
NAICS 423-A	83.7	16.3	98
NAICS 424-A	65.4	34.6	81
NAICS 441, 447-A	89.1	10.9	137
NAICS 52-53-A	76.7	23.3	73
NAICS OTHR-A	71.1	28.9	83
NAICS 62-A	77.7	22.3	112
NAICS 54-A	84.0	16.0	94
NAICS 11, 21, 22-B	81.4	18.6	43
NAICS 31-33-B	72.3	27.7	47
NAICS 48-49-B	75.8	24.2	33
NAICS 42-B	74.4	25.6	39
NAICS 52-53-B	73.8	26.2	42
NAICS OTHR-B	60.5	39.5	38
NAICS 54, 62-B	64.4	35.6	45
All NAICS Codes	80.0	20.0	1,824

Source and Notes: See Table 4.9.

Table 4.12. Unclassified Businesses Survey—By Race and Sex

Verified Race/Sex	Number of Businesses Interviewed	Percentage of Total
Non-minority male	1,460	80.0
Non-minority Female	163	8.9
African-American (either sex)	50	2.7
Hispanic (either sex)	67	3.7
Asian (either sex)	78	4.3
Native American (either sex)	6	0.3
TOTAL	1,824	100.0

Source and Notes: See Table 4.9. Similar calculations, not shown here, were performed for each stratum.

Table 4.13. Detailed M/WBE Availability—Construction, 2010

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Highway, Street, and Bridge Construction (NAICS 2373)	1.48	6.15	1.84	0.32	11.12	20.90	79.10
Building Equipment Contractors (NAICS 2382)	4.74	7.89	2.51	0.10	7.44	22.68	77.32
Nonresidential Building Construction (NAICS 2362)	3.45	4.39	6.01	0.16	9.20	23.20	76.80
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	4.12	8.55	2.65	0.28	9.14	24.74	75.26
Building Finishing Contractors (NAICS 2383)	2.83	6.09	4.04	0.05	8.81	21.83	78.17
Other Specialty Trade Contractors (NAICS 2389)	3.92	7.12	2.68	0.05	8.29	22.06	77.94
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	0.30	0.62	10.95	0.08	8.03	19.99	80.01
Architectural, Engineering, and Related Services (NAICS 5413)	3.19	4.73	4.06	1.03	11.93	24.93	75.07
Architectural and Structural Metals Manufacturing (NAICS 3323)	3.48	2.29	3.74	0.59	13.57	23.66	76.34
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	9.93	1.48	8.44	2.45	8.13	30.44	69.56
Other Heavy and Civil Engineering Construction (NAICS 2379)	2.44	8.56	1.63	0.30	9.13	22.05	77.95
Management, Scientific, and Technical Consulting Services (NAICS 5416)	3.48	4.69	2.64	1.06	17.34	29.21	70.79
General Freight Trucking (NAICS 4841)	5.65	9.49	4.16	0.21	7.46	26.98	73.02
Cement and Concrete Product Manufacturing (NAICS 3273)	2.14	1.17	2.47	0.60	10.26	16.65	83.35
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	2.87	1.72	10.05	0.64	9.71	24.99	75.01
Services to Buildings and Dwellings (NAICS 5617)	4.83	11.70	5.40	0.07	16.50	38.50	61.50
Utility System Construction (NAICS 2371)	0.97	3.44	6.43	0.01	11.39	22.24	77.76
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	10.26	1.38	8.28	2.27	8.09	30.28	69.72
Remediation and Other Waste Management Services (NAICS 5629)	4.71	7.53	5.56	0.73	13.40	31.93	68.07

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	8.36	1.37	8.94	1.94	8.99	29.60	70.40
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)	5.57	12.67	5.11	0.00	18.44	41.79	58.21
Waste Treatment and Disposal (NAICS 5622)	0.79	6.89	9.01	0.14	11.59	28.41	71.59
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)	10.38	1.16	8.57	2.27	9.18	31.57	68.43
Railroad Rolling Stock Manufacturing (NAICS 3365)	1.74	0.87	2.11	0.73	11.76	17.21	82.79
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)	2.32	1.37	12.16	0.61	9.46	25.93	74.07
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)	3.20	2.69	14.00	0.20	16.01	36.10	63.90
Computer and Peripheral Equipment Manufacturing (NAICS 3341)	4.17	3.13	7.66	0.02	20.04	35.02	64.98
Business Support Services (NAICS 5614)	6.11	10.97	5.36	0.06	20.92	43.42	56.58
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Main	5.85	12.80	5.24	0.00	18.04	41.93	58.07
Computer Systems Design and Related Services (NAICS 5415)	5.05	5.90	10.56	0.29	15.61	37.41	62.59
Home Furnishings Stores (NAICS 4422)	10.23	1.55	7.91	2.35	8.46	30.51	69.49
Other Miscellaneous Manufacturing (NAICS 3399)	4.37	3.06	5.76	0.07	21.86	35.12	64.88
Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)	5.06	2.75	3.94	0.00	19.67	31.42	68.58
Other Fabricated Metal Product Manufacturing (NAICS 3329)	4.48	2.64	5.07	0.01	22.43	34.62	65.38
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	4.46	2.25	4.45	0.02	18.52	29.70	70.30
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)	0.22	6.44	9.71	0.06	10.02	26.46	73.54

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Investigation and Security Services (NAICS 5616)	8.08	12.99	5.23	0.04	17.39	43.73	56.27
Other General Purpose Machinery Manufacturing (NAICS 3339)	4.42	3.50	5.63	0.00	20.02	33.57	66.43
Other Wood Product Manufacturing (NAICS 3219)	4.14	2.74	8.64	0.01	18.39	33.92	66.08
Electrical Equipment Manufacturing (NAICS 3353)	4.27	2.87	5.23	0.00	20.46	32.83	67.17
Communications Equipment Manufacturing (NAICS 3342)	5.35	3.40	6.00	0.00	18.61	33.36	66.64
Depository Credit Intermediation (NAICS 5221)	4.88	7.10	0.13	0.00	14.31	26.42	73.58
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)	6.46	12.79	5.42	0.12	18.55	43.34	56.66
Advertising, Public Relations, and Related Services (NAICS 5418)	4.36	6.13	7.35	0.26	18.47	36.57	63.43
Insurance Carriers (NAICS 5241)	5.29	6.53	1.16	0.11	15.20	28.29	71.71
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	9.53	1.49	8.11	2.28	9.03	30.43	69.57
Building Material and Supplies Dealers (NAICS 4441)	9.96	1.35	7.89	2.39	8.12	29.71	70.29
Plastics Product Manufacturing (NAICS 3261)	4.64	3.08	4.87	0.12	19.41	32.13	67.87
Specialized Design Services (NAICS 5414)	9.40	8.45	3.37	0.02	38.42	59.67	40.33
Employment Services (NAICS 5613)	4.64	6.11	7.27	0.23	19.16	37.41	62.59
Waste Collection (NAICS 5621)	4.90	7.57	7.06	0.77	10.98	31.28	68.72
Electric Lighting Equipment Manufacturing (NAICS 3351)	4.75	2.13	5.66	0.01	20.03	32.58	67.42
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)	3.53	3.06	14.87	0.35	16.40	38.21	61.79
Other Electrical Equipment and Component Manufacturing (NAICS 3359)	4.66	2.26	5.25	0.00	18.39	30.56	69.44
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS	3.93	2.60	4.80	0.00	20.84	32.17	67.83
Steel Product Manufacturing from Purchased Steel (NAICS 3312)	3.69	1.86	10.79	0.00	19.94	36.28	63.72
Glass and Glass Product Manufacturing (NAICS 3272)	4.28	2.04	6.40	0.00	20.11	32.82	67.18

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Rubber Product Manufacturing (NAICS 3262)	7.14	2.07	4.82	0.00	21.34	35.37	64.63
Paper and Paper Product Merchant Wholesalers (NAICS 4241)	4.28	3.88	14.42	0.34	19.41	42.32	57.68
Household and Institutional Furniture and Kitchen Cabinet Manufacturing (NAICS 3371)	4.67	2.62	6.30	0.01	18.75	32.35	67.65
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)	9.80	0.93	8.16	2.34	9.07	30.30	69.70
Land Subdivision (NAICS 2372)	5.21	7.09	0.23	0.00	15.30	27.82	72.18
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)	4.58	2.10	4.34	0.83	19.83	31.68	68.32
Clay Product and Refractory Manufacturing (NAICS 3271)	6.21	10.73	4.18	0.00	22.94	44.05	55.95
Nonmetallic Mineral Mining and Quarrying (NAICS 2123)	1.05	2.31	7.18	0.00	14.66	25.20	74.80
Other Nonmetallic Mineral Product Manufacturing (NAICS 3279)	3.90	2.57	4.36	0.02	21.23	32.09	67.91
Industrial Machinery Manufacturing (NAICS 3332)	4.18	2.60	5.46	0.01	18.78	31.03	68.97
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	5.17	2.70	4.80	0.00	19.20	31.87	68.13
Spring and Wire Product Manufacturing (NAICS 3326)	4.12	2.24	4.77	0.00	19.25	30.37	69.63
Wired Telecommunications Carriers (NAICS 5171)	5.68	8.90	5.35	0.38	8.57	28.88	71.12
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)	4.59	3.43	5.11	0.42	19.10	32.65	67.35
Scientific Research and Development Services (NAICS 5417)	5.67	2.04	11.51	0.01	21.13	40.36	59.64
Offices of Real Estate Agents and Brokers (NAICS 5312)	4.99	6.99	0.38	0.02	18.13	30.50	69.50
Automotive Equipment Rental and Leasing (NAICS 5321)	5.51	12.89	5.21	0.00	16.79	40.40	59.60
Support Activities for Forestry (NAICS 1153)	0.08	2.42	6.68	0.00	12.74	21.92	78.08
Legal Services (NAICS 5411)	4.61	2.55	7.09	0.03	24.52	38.80	61.20
Electric Power Generation, Transmission and Distribution (NAICS 2211)	0.08	6.10	9.05	0.00	9.78	25.02	74.98
Lessors of Real Estate (NAICS 5311)	5.04	7.03	0.72	0.00	16.64	29.44	70.56
Foundries (NAICS 3315)	4.11	2.05	4.53	0.00	19.00	29.69	70.31

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)	9.69	1.46	7.88	2.30	9.37	30.71	69.29
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)	2.26	1.18	9.69	0.53	8.27	21.94	78.06
Iron and Steel Mills and Ferroalloy Manufacturing (NAICS 3311)	4.44	2.75	4.66	0.00	19.12	30.97	69.03
Automotive Repair and Maintenance (NAICS 8111)	5.52	13.52	5.27	0.07	16.94	41.32	58.68
Converted Paper Product Manufacturing (NAICS 3222)	6.26	2.36	4.10	0.00	22.05	34.77	65.23
Petroleum and Coal Products Manufacturing (NAICS 3241)	4.01	2.09	4.42	0.00	18.14	28.66	71.34
Support Activities for Mining (NAICS 2131)	1.91	2.29	6.57	0.10	9.40	20.26	79.74
Natural Gas Distribution (NAICS 2212)	3.51	8.16	6.15	0.04	6.97	24.84	75.16
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)	4.40	2.28	5.54	0.00	20.78	32.99	67.01
Support Activities for Crop Production (NAICS 1151)	8.03	10.85	4.99	0.00	17.64	41.52	58.48
Securities and Commodity Contracts Intermediation and Brokerage (NAICS 5231)	5.16	7.11	0.29	0.01	14.90	27.47	72.53
Other Professional, Scientific, and Technical Services (NAICS 5419)	6.80	11.70	5.29	0.10	22.36	46.24	53.76
Support Activities for Road Transportation (NAICS 4884)	4.70	12.18	5.71	0.09	15.85	38.53	61.47
Forging and Stamping (NAICS 3321)	4.35	3.12	4.45	0.49	20.24	32.65	67.35
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)	4.37	2.05	5.40	0.01	24.13	35.96	64.04
Facilities Support Services (NAICS 5612)	5.42	2.82	7.52	1.15	25.17	42.09	57.91
Other Personal Services (NAICS 8129)	5.50	13.48	5.06	0.00	16.68	40.72	59.28
Printing and Related Support Activities (NAICS 3231)	7.22	11.68	5.91	0.00	20.38	45.20	54.80
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)	3.99	1.87	4.63	0.00	24.64	35.13	64.87
Other Telecommunications (NAICS 5179)	1.26	7.05	8.84	0.07	11.37	28.59	71.41
Electronics and Appliance Stores (NAICS 4431)	10.37	1.08	8.77	2.35	7.32	29.88	70.12
Basic Chemical Manufacturing	3.32	1.83	3.94	1.35	12.98	23.42	76.58

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
(NAICS 3251)							
Furniture Stores (NAICS 4421)	9.71	1.71	7.97	2.31	8.98	30.69	69.31
Alumina and Aluminum Production and Processing (NAICS 3313)	4.24	2.28	4.24	0.00	16.98	27.75	72.25
Aerospace Product and Parts Manufacturing (NAICS 3364)	3.83	4.81	3.83	2.00	17.72	32.19	67.81
Business Schools and Computer and Management Training (NAICS 6114)	6.36	3.20	9.42	0.17	30.00	49.16	50.84
Other Transit and Ground Passenger Transportation (NAICS 4859)	5.22	9.03	5.12	0.43	8.92	28.73	71.27
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)	9.47	2.31	7.93	2.19	9.17	31.07	68.93
Metalworking Machinery Manufacturing (NAICS 3335)	4.11	2.07	4.63	0.00	19.41	30.23	69.77
Other Crop Farming (NAICS 1119)	0.16	2.37	6.94	0.00	11.63	21.10	78.90
Greenhouse, Nursery, and Floriculture Production (NAICS 1114)	0.26	2.60	6.65	0.02	15.08	24.61	75.39
Other Chemical Product and Preparation Manufacturing (NAICS 3259)	4.74	1.94	6.62	0.01	20.62	33.92	66.08
Drugs and Druggists' Sundries Merchant Wholesalers (NAICS 4242)	2.93	3.50	15.92	0.28	18.16	40.79	59.21
Semiconductor and Other Electronic Component Manufacturing (NAICS 3344)	4.47	3.21	5.04	0.18	20.31	33.22	66.78
Medical and Diagnostic Laboratories (NAICS 6215)	4.16	0.36	6.08	1.02	13.12	24.74	75.26
Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing (NAICS 3252)	4.23	1.95	7.43	0.00	20.48	34.09	65.91
Other Textile Product Mills (NAICS 3149)	5.58	2.78	6.55	0.08	23.17	38.17	61.83
Textile Furnishings Mills (NAICS 3141)	4.21	2.00	4.70	0.00	27.40	38.31	61.69
Rail Transportation (NAICS 4821)	0.11	6.12	9.04	0.00	10.04	25.32	74.68
Cable and Other Subscription Programming (NAICS 5152)	0.59	6.14	9.29	0.00	9.79	25.82	74.18
Travel Arrangement and Reservation Services (NAICS 5615)	1.41	8.97	9.35	0.30	18.71	38.75	61.25
Coating, Engraving, Heat Treating, and Allied Activities	4.52	3.42	5.19	0.14	20.17	33.45	66.55

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
(NAICS 3328)							
Automobile Dealers (NAICS 4411)	0.99	3.39	3.36	0.00	5.28	13.01	86.99
Traveler Accommodation (NAICS 7211)	5.57	12.44	6.00	0.03	17.90	41.94	58.06
Couriers and Express Delivery Services (NAICS 4921)	0.85	6.89	10.19	0.20	11.31	29.44	70.56
Freight Transportation Arrangement (NAICS 4885)	0.72	6.82	11.01	0.12	11.83	30.51	69.49
Software Publishers (NAICS 5112)	4.16	5.95	8.85	0.25	14.18	33.39	66.61
Nondepository Credit Intermediation (NAICS 5222)	4.85	7.05	0.24	0.05	15.73	27.92	72.08
Other Motor Vehicle Dealers (NAICS 4412)	9.81	0.89	7.92	2.39	6.65	27.65	72.35
Textile and Fabric Finishing and Fabric Coating Mills (NAICS 3133)	10.71	0.49	7.88	2.28	8.07	29.42	70.58
Personal and Household Goods Repair and Maintenance (NAICS 8114)	6.13	13.34	4.87	0.00	19.46	43.80	56.20
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)	9.56	1.21	9.47	2.21	10.15	32.60	67.40
Other Furniture Related Product Manufacturing (NAICS 3379)	3.96	3.57	4.43	0.00	24.34	36.30	63.70
Grocery and Related Product Merchant Wholesalers (NAICS 4244)	9.75	1.26	7.69	2.34	7.93	28.97	71.03
Direct Selling Establishments (NAICS 4543)	7.03	3.72	5.09	0.82	25.94	42.61	57.39
Specialty Food Stores (NAICS 4452)	9.54	1.57	9.00	2.22	10.63	32.96	67.04
Vocational Rehabilitation Services (NAICS 6243)	4.79	2.29	6.55	0.15	22.33	36.11	63.89
Support Activities for Water Transportation (NAICS 4883)	0.59	7.17	9.80	0.33	13.07	30.98	69.02
Satellite Telecommunications (NAICS 5174)	0.00	6.33	11.91	0.00	11.22	29.47	70.53
Electronic Shopping and Mail-Order Houses (NAICS 4541)	9.75	1.91	8.50	2.15	13.32	35.64	64.36
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing (NAICS 3327)	3.91	2.03	5.75	0.04	20.50	32.23	67.77
Motor Vehicle Manufacturing (NAICS 3361)	2.00	0.81	2.28	0.83	11.85	17.77	82.23
Support Activities for Air Transportation (NAICS 4881)	6.59	5.10	5.74	0.85	12.65	30.92	69.08
Beverage Manufacturing	8.16	1.99	3.99	0.00	18.04	32.18	67.82

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
(NAICS 3121)							
Drycleaning and Laundry Services (NAICS 8123)	6.51	11.88	7.65	0.00	19.53	45.57	54.43
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)	10.28	1.65	7.88	2.42	6.43	28.66	71.34
Special Food Services (NAICS 7223)	7.29	7.04	5.84	0.79	20.10	41.06	58.94
Insurance and Employee Benefit Funds (NAICS 5251)	4.76	7.14	0.00	0.00	14.29	26.19	73.81
Audio and Video Equipment Manufacturing (NAICS 3343)	4.74	2.78	7.03	0.03	17.71	32.28	67.72
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)	5.24	1.82	6.53	0.00	29.66	43.26	56.74
Bakeries and Tortilla Manufacturing (NAICS 3118)	10.00	2.88	7.97	2.32	9.60	32.77	67.23
Water, Sewage and Other Systems (NAICS 2213)	0.12	6.06	9.00	0.01	9.81	25.00	75.00
Sheep and Goat Farming (NAICS 1124)	0.00	2.52	7.85	0.00	20.06	30.43	69.57
Personal Care Services (NAICS 8121)	5.73	12.63	4.54	0.07	19.60	42.57	57.43
Activities Related to Credit Intermediation (NAICS 5223)	4.78	7.30	0.26	0.00	15.79	28.12	71.88
CONSTRUCTION	*4.00*	*6.94*	*3.18*	*0.21*	*8.41*	*22.74*	*77.26*

Source: See Table 4.1.

Table 4.14. Detailed M/WBE Availability—CRS, 2010

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Architectural, Engineering, and Related Services (NAICS 5413)	3.10	4.51	3.84	1.08	11.76	24.28	75.72
Nonresidential Building Construction (NAICS 2362)	3.45	4.39	6.01	0.16	9.20	23.20	76.80
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)	1.33	1.21	13.10	0.43	9.29	25.37	74.63
Business Support Services (NAICS 5614)	6.11	10.97	5.36	0.06	20.92	43.42	56.58
Highway, Street, and Bridge Construction (NAICS 2373)	1.48	6.15	1.84	0.32	11.12	20.90	79.10
Computer Systems Design and Related Services (NAICS 5415)	5.38	5.97	10.45	0.32	16.10	38.21	61.79
Architectural and Structural Metals Manufacturing (NAICS 3323)	4.73	3.44	4.89	0.23	21.61	34.90	65.10
Building Equipment Contractors (NAICS 2382)	4.73	7.88	2.40	0.11	7.23	22.35	77.65
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)	5.57	12.66	5.11	0.00	18.44	41.78	58.22
Other Amusement and Recreation Industries (NAICS 7139)	0.68	6.82	8.66	0.04	11.71	27.91	72.09
Other Specialty Trade Contractors (NAICS 2389)	4.07	7.37	2.53	0.07	7.77	21.82	78.18
Cement and Concrete Product Manufacturing (NAICS 3273)	1.56	0.78	1.95	0.78	7.81	12.89	87.11
Management, Scientific, and Technical Consulting Services (NAICS 5416)	3.43	4.80	2.73	1.04	17.53	29.52	70.48
Remediation and Other Waste Management Services (NAICS 5629)	4.71	7.53	5.56	0.73	13.40	31.93	68.07
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	1.21	1.77	10.25	0.26	9.70	23.20	76.80
Advertising, Public Relations, and Related Services (NAICS 5418)	5.24	3.40	7.84	0.25	31.28	48.00	52.00
Services to Buildings and Dwellings (NAICS 5617)	6.31	12.79	5.20	0.19	16.70	41.19	58.81
Investigation and Security Services (NAICS 5616)	7.83	12.87	5.24	0.01	17.77	43.72	56.28
Scientific Research and Development Services (NAICS	5.63	2.05	11.39	0.02	21.23	40.33	59.67

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
5417)							
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Main	5.85	12.80	5.24	0.00	18.04	41.93	58.07
Offices of Real Estate Agents and Brokers (NAICS 5312)	4.99	6.99	0.38	0.02	18.13	30.50	69.50
Other Miscellaneous Manufacturing (NAICS 3399)	4.37	3.08	5.79	0.07	21.83	35.15	64.85
Railroad Rolling Stock Manufacturing (NAICS 3365)	1.74	0.87	2.11	0.73	11.76	17.21	82.79
Printing and Related Support Activities (NAICS 3231)	7.19	11.60	5.90	0.00	20.35	45.04	54.96
Support Activities for Rail Transportation (NAICS 4882)	1.71	6.70	8.76	0.42	12.33	29.93	70.07
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	4.03	7.94	2.37	0.06	7.09	21.48	78.52
Specialized Design Services (NAICS 5414)	8.82	9.28	3.91	0.06	34.69	56.76	43.24
Offices of Physicians (NAICS 6211)	4.61	2.55	7.53	0.02	24.55	39.27	60.73
Other Heavy and Civil Engineering Construction (NAICS 2379)	2.44	8.56	1.63	0.30	9.13	22.05	77.95
Activities Related to Real Estate (NAICS 5313)	5.56	7.03	0.05	0.00	15.88	28.52	71.48
Insurance Carriers (NAICS 5241)	5.27	6.56	1.12	0.11	15.26	28.32	71.68
Utility System Construction (NAICS 2371)	0.79	3.48	6.43	0.01	11.53	22.24	77.76
Automotive Repair and Maintenance (NAICS 8111)	5.70	13.78	5.12	0.00	16.65	41.25	58.75
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	1.02	1.84	10.35	0.19	9.86	23.25	76.75
Coating, Engraving, Heat Treating, and Allied Activities (NAICS 3328)	4.07	3.37	4.23	0.00	17.95	29.62	70.38
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	9.67	1.71	8.59	2.49	8.53	30.98	69.02
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	4.43	3.91	5.27	0.03	18.79	32.42	67.58
Offices of Other Health Practitioners (NAICS 6213)	4.76	2.96	7.69	0.01	28.93	44.35	55.65

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
General Freight Trucking (NAICS 4841)	5.65	9.49	4.16	0.21	7.46	26.98	73.02
Communications Equipment Manufacturing (NAICS 3342)	5.01	3.05	6.12	0.00	18.63	32.81	67.19
Plastics Product Manufacturing (NAICS 3261)	4.62	3.17	4.92	0.14	19.72	32.58	67.42
Other General Purpose Machinery Manufacturing (NAICS 3339)	4.34	2.68	5.59	0.01	20.54	33.16	66.84
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)	4.25	2.43	6.44	0.57	23.31	37.01	62.99
Data Processing, Hosting, and Related Services (NAICS 5182)	4.79	6.02	8.16	0.19	18.76	37.92	62.08
Electric Power Generation, Transmission and Distribution (NAICS 2211)	0.00	6.06	9.09	0.00	9.09	24.24	75.76
Other Motor Vehicle Dealers (NAICS 4412)	9.15	2.53	7.19	1.99	9.45	30.30	69.70
Facilities Support Services (NAICS 5612)	5.42	2.82	7.52	1.15	25.17	42.09	57.91
Legal Services (NAICS 5411)	4.61	2.55	7.09	0.03	24.52	38.80	61.20
Sound Recording Industries (NAICS 5122)	5.78	10.58	4.71	0.04	21.80	42.92	57.08
Special Food Services (NAICS 7223)	11.07	0.79	8.72	2.24	10.03	32.85	67.15
Other Personal Services (NAICS 8129)	5.50	13.48	5.06	0.00	16.68	40.72	59.28
Aerospace Product and Parts Manufacturing (NAICS 3364)	4.74	5.95	6.68	0.00	22.99	40.36	59.64
Office Supplies, Stationery, and Gift Stores (NAICS 4532)	8.76	2.30	8.91	1.98	16.57	38.51	61.49
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)	7.53	12.70	5.89	0.00	17.57	43.68	56.32
Grocery and Related Product Merchant Wholesalers (NAICS 4244)	9.85	2.93	8.90	2.27	8.38	32.33	67.67
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	10.54	1.03	8.25	2.26	8.59	30.66	69.34
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)	3.89	1.94	4.53	0.00	22.30	32.66	67.34
Building Finishing Contractors (NAICS 2383)	1.88	4.90	5.12	0.03	9.22	21.15	78.85
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)	2.92	3.20	15.39	0.16	17.24	38.90	61.10

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Cut and Sew Apparel Manufacturing (NAICS 3152)	4.56	2.61	7.68	0.00	22.97	37.81	62.19
Beverage Manufacturing (NAICS 3121)	4.28	3.66	4.80	0.55	18.72	32.01	67.99
Support Activities for Crop Production (NAICS 1151)	8.03	10.85	4.99	0.00	17.64	41.52	58.48
Other Telecommunications (NAICS 5179)	1.26	7.05	8.84	0.07	11.37	28.59	71.41
Drycleaning and Laundry Services (NAICS 8123)	7.00	12.26	5.27	0.00	19.35	43.89	56.11
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	0.30	0.62	10.95	0.08	8.03	19.99	80.01
Other Chemical Product and Preparation Manufacturing (NAICS 3259)	4.87	1.96	6.98	0.00	20.13	33.94	66.06
Automotive Equipment Rental and Leasing (NAICS 5321)	5.65	13.08	5.25	0.00	16.89	40.88	59.12
Medical and Diagnostic Laboratories (NAICS 6215)	4.16	0.36	6.08	1.02	13.12	24.74	75.26
Other Professional, Scientific, and Technical Services (NAICS 5419)	6.80	11.70	5.29	0.10	22.36	46.24	53.76
Waste Treatment and Disposal (NAICS 5622)	0.56	7.01	9.20	0.47	11.81	29.04	70.96
Other Transportation Equipment Manufacturing (NAICS 3369)	3.17	2.54	3.36	0.38	17.81	27.26	72.74
Employment Services (NAICS 5613)	4.49	5.88	7.37	0.23	18.92	36.90	63.10
Support Activities for Forestry (NAICS 1153)	0.08	2.42	6.68	0.00	12.74	21.92	78.08
Building Material and Supplies Dealers (NAICS 4441)	10.00	1.10	7.86	2.42	8.06	29.44	70.56
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	10.07	0.88	8.52	2.34	8.15	29.96	70.04
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)	5.07	3.01	5.45	0.09	20.63	34.25	65.75
CRS	*3.19*	*4.66*	*4.46*	*0.90*	*11.32*	*24.53*	*75.47*

Source: See Table 4.1.

Table 4.15. Detailed M/WBE Availability—Services, 2010

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Drugs and Druggists' Sundries Merchant Wholesalers (NAICS 4242)	2.93	3.50	15.92	0.28	18.16	40.79	59.21
Insurance Carriers (NAICS 5241)	5.97	5.70	2.55	0.27	12.56	27.05	72.95
Nursing Care Facilities (NAICS 6231)	4.44	0.76	5.86	0.77	14.71	26.55	73.45
Advertising, Public Relations, and Related Services (NAICS 5418)	4.45	6.07	7.26	0.35	18.36	36.49	63.51
Computer Systems Design and Related Services (NAICS 5415)	4.27	6.31	8.54	0.45	13.85	33.43	66.57
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)	0.90	1.22	13.08	0.32	9.47	24.99	75.01
Management, Scientific, and Technical Consulting Services (NAICS 5416)	3.41	4.40	2.32	1.05	17.76	28.95	71.05
Data Processing, Hosting, and Related Services (NAICS 5182)	4.79	6.02	8.16	0.19	18.76	37.92	62.08
Employment Services (NAICS 5613)	5.74	7.93	6.48	0.19	21.02	41.36	58.64
Other Transit and Ground Passenger Transportation (NAICS 4859)	5.22	9.03	5.12	0.43	8.92	28.73	71.27
Gambling Industries (NAICS 7132)	3.64	5.88	7.19	0.00	13.13	29.84	70.16
Depository Credit Intermediation (NAICS 5221)	4.88	7.10	0.13	0.00	14.31	26.42	73.58
Architectural, Engineering, and Related Services (NAICS 5413)	3.46	4.09	4.82	0.87	14.51	27.74	72.26
Nonresidential Building Construction (NAICS 2362)	3.45	4.39	6.01	0.16	9.20	23.20	76.80
Business Support Services (NAICS 5614)	6.82	12.04	4.85	0.01	21.07	44.80	55.20
Building Equipment Contractors (NAICS 2382)	4.82	7.93	2.66	0.10	7.87	23.38	76.62
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	2.80	1.72	10.06	0.63	9.73	24.94	75.06
Health and Personal Care Stores (NAICS 4461)	10.13	0.74	8.05	2.39	8.19	29.50	70.50
Special Food Services (NAICS 7223)	11.07	0.79	8.72	2.24	10.03	32.85	67.15
Vocational Rehabilitation Services (NAICS 6243)	4.79	2.29	6.55	0.15	22.33	36.11	63.89
General Freight Trucking (NAICS 4841)	5.65	9.49	4.16	0.21	7.46	26.98	73.02

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Other Financial Investment Activities (NAICS 5239)	6.05	7.10	0.60	0.01	16.27	30.02	69.98
Services to Buildings and Dwellings (NAICS 5617)	8.02	12.98	4.87	0.09	19.37	45.34	54.66
Legal Services (NAICS 5411)	4.60	2.55	7.09	0.03	24.52	38.80	61.20
Travel Arrangement and Reservation Services (NAICS 5615)	1.12	7.09	9.43	0.09	14.71	32.45	67.55
Investigation and Security Services (NAICS 5616)	8.98	13.09	5.12	0.09	16.93	44.21	55.79
Other Ambulatory Health Care Services (NAICS 6219)	4.59	2.36	6.83	0.01	23.57	37.35	62.65
Railroad Rolling Stock Manufacturing (NAICS 3365)	1.74	0.87	2.11	0.73	11.76	17.21	82.79
Offices of Physicians (NAICS 6211)	4.62	2.58	7.51	0.02	24.85	39.59	60.41
Software Publishers (NAICS 5112)	4.16	5.95	8.85	0.25	14.18	33.39	66.61
Other Heavy and Civil Engineering Construction (NAICS 2379)	2.44	8.56	1.63	0.30	9.13	22.05	77.95
Waste Treatment and Disposal (NAICS 5622)	0.68	6.98	9.04	0.14	11.20	28.03	71.97
Grocery and Related Product Merchant Wholesalers (NAICS 4244)	9.82	2.20	9.10	2.37	7.84	31.33	68.67
Interurban and Rural Bus Transportation (NAICS 4852)	0.91	6.58	8.75	0.14	11.41	27.80	72.20
Drycleaning and Laundry Services (NAICS 8123)	5.35	12.64	4.87	0.97	20.27	44.10	55.90
Charter Bus Industry (NAICS 4855)	0.78	7.68	9.14	0.27	14.02	31.89	68.11
Medical and Diagnostic Laboratories (NAICS 6215)	4.16	0.36	6.08	1.02	13.12	24.74	75.26
Cement and Concrete Product Manufacturing (NAICS 3273)	1.93	1.02	2.28	0.67	9.38	15.29	84.71
Architectural and Structural Metals Manufacturing (NAICS 3323)	3.30	2.10	3.54	0.65	12.47	22.06	77.94
Other General Purpose Machinery Manufacturing (NAICS 3339)	4.15	3.61	5.25	0.00	20.69	33.71	66.29
Computer and Peripheral Equipment Manufacturing (NAICS 3341)	5.03	2.82	7.86	0.01	19.04	34.76	65.24
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)	4.56	8.60	6.39	0.11	15.67	35.33	64.67
Other Telecommunications	1.26	7.05	8.84	0.07	11.37	28.59	71.41

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
(NAICS 5179)							
Utility System Construction (NAICS 2371)	0.79	3.48	6.43	0.01	11.53	22.24	77.76
Other Wood Product Manufacturing (NAICS 3219)	4.13	2.73	8.76	0.00	18.32	33.95	66.05
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)	4.68	2.96	7.29	0.00	16.21	31.14	68.86
Outpatient Care Centers (NAICS 6214)	4.43	2.17	6.69	0.00	21.76	35.05	64.95
Other Personal Services (NAICS 8129)	5.50	13.48	5.06	0.00	16.68	40.72	59.28
Building Finishing Contractors (NAICS 2383)	0.90	3.44	6.25	0.01	10.65	21.26	78.74
Freight Transportation Arrangement (NAICS 4885)	0.72	6.82	11.01	0.12	11.83	30.51	69.49
Couriers and Express Delivery Services (NAICS 4921)	0.85	6.89	10.19	0.20	11.31	29.44	70.56
Offices of Other Health Practitioners (NAICS 6213)	4.76	2.95	7.69	0.01	28.90	44.31	55.69
Other Specialty Trade Contractors (NAICS 2389)	4.20	7.59	2.40	0.09	7.33	21.62	78.38
Other Professional, Scientific, and Technical Services (NAICS 5419)	4.27	3.65	6.73	0.28	23.87	38.79	61.21
Remediation and Other Waste Management Services (NAICS 5629)	4.71	7.53	5.57	0.73	13.40	31.93	68.07
Wired Telecommunications Carriers (NAICS 5171)	5.68	8.90	5.35	0.38	8.57	28.88	71.12
Printing and Related Support Activities (NAICS 3231)	6.80	10.16	5.86	0.01	20.74	43.58	56.42
Nondepository Credit Intermediation (NAICS 5222)	4.84	7.06	0.28	0.01	15.03	27.22	72.78
Psychiatric and Substance Abuse Hospitals (NAICS 6222)	4.63	1.21	5.72	0.89	18.20	30.64	69.36
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	4.09	4.77	4.83	0.01	18.92	32.61	67.39
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	0.30	0.62	10.95	0.08	8.03	19.99	80.01
Offices of Real Estate Agents and Brokers (NAICS 5312)	4.99	6.99	0.38	0.02	18.13	30.50	69.50
Warehousing and Storage (NAICS 4931)	0.35	6.29	9.07	0.03	11.83	27.58	72.42
Scientific Research and Development Services (NAICS 5417)	4.60	2.64	7.79	0.20	24.40	39.63	60.37

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Highway, Street, and Bridge Construction (NAICS 2373)	1.48	6.15	1.84	0.32	11.12	20.90	79.10
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)	6.92	5.35	5.15	0.04	10.89	28.35	71.65
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	4.17	8.46	2.65	0.41	10.07	25.76	74.24
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)	9.56	1.21	9.47	2.21	10.15	32.60	67.40
Specialized Design Services (NAICS 5414)	9.40	8.45	3.38	0.02	38.41	59.66	40.34
Electronics and Appliance Stores (NAICS 4431)	10.57	1.06	9.12	2.34	7.39	30.48	69.52
Bakeries and Tortilla Manufacturing (NAICS 3118)	4.37	2.64	4.94	0.00	24.73	36.68	63.32
Other Information Services (NAICS 5191)	4.23	6.30	5.11	0.00	14.85	30.50	69.50
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)	7.53	12.70	5.89	0.00	17.57	43.68	56.32
Paper and Paper Product Merchant Wholesalers (NAICS 4241)	9.74	1.56	9.30	2.17	10.11	32.89	67.11
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	10.11	1.71	8.23	2.26	7.77	30.09	69.91
Textile and Fabric Finishing and Fabric Coating Mills (NAICS 3133)	10.71	0.49	7.88	2.28	8.07	29.42	70.58
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	9.75	1.64	8.54	2.47	8.40	30.81	69.19
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	4.27	1.51	9.64	0.96	8.87	25.24	74.76
Logging (NAICS 1133)	4.11	2.36	4.52	0.00	18.90	29.89	70.11
Electronic Shopping and Mail-Order Houses (NAICS 4541)	9.75	1.91	8.50	2.15	13.32	35.64	64.36
Support Activities for Air Transportation (NAICS 4881)	6.59	5.10	5.74	0.85	12.65	30.92	69.08
Beverage Manufacturing (NAICS 3121)	5.07	3.32	4.63	0.44	18.58	32.04	67.96
Local Messengers and Local Delivery (NAICS 4922)	0.25	9.36	8.48	0.44	10.54	29.07	70.93
Audio and Video Equipment Manufacturing (NAICS 3343)	4.74	2.78	7.03	0.03	17.71	32.28	67.72
Communications Equipment Manufacturing (NAICS 3342)	5.28	3.34	6.02	0.00	18.61	33.26	66.74

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Main	5.85	12.80	5.24	0.00	18.04	41.93	58.07
Traveler Accommodation (NAICS 7211)	5.57	12.44	6.00	0.03	17.90	41.94	58.06
Cable and Other Subscription Programming (NAICS 5152)	0.59	6.14	9.29	0.00	9.79	25.82	74.18
Other Miscellaneous Manufacturing (NAICS 3399)	4.37	3.08	5.80	0.07	21.86	35.17	64.83
Sound Recording Industries (NAICS 5122)	5.78	10.58	4.71	0.04	21.80	42.92	57.08
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)	4.45	2.15	5.40	0.02	23.78	35.81	64.19
Motion Picture and Video Industries (NAICS 5121)	6.66	12.43	5.16	0.02	19.38	43.65	56.35
Personal Care Services (NAICS 8121)	5.73	12.63	4.54	0.07	19.60	42.57	57.43
Personal and Household Goods Repair and Maintenance (NAICS 8114)	5.76	13.21	7.54	0.00	18.64	45.16	54.84
Waste Collection (NAICS 5621)	4.90	7.57	7.06	0.77	10.98	31.28	68.72
Office Supplies, Stationery, and Gift Stores (NAICS 4532)	8.90	2.21	9.01	2.01	15.93	38.07	61.93
Fruit and Vegetable Preserving and Specialty Food Manufacturing (NAICS 3114)	4.96	2.76	4.37	0.00	22.38	34.48	65.52
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)	10.08	1.34	8.87	2.26	9.75	32.30	67.70
Building Material and Supplies Dealers (NAICS 4441)	10.00	1.10	7.86	2.42	8.06	29.44	70.56
Management of Companies and Enterprises (NAICS 5511)	4.84	7.09	0.20	0.00	15.00	27.14	72.86
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)	9.91	1.31	8.10	2.28	9.85	31.45	68.55
Dairy Product Manufacturing (NAICS 3115)	3.58	2.58	4.70	0.00	25.68	36.54	63.46
Converted Paper Product Manufacturing (NAICS 3222)	3.84	2.04	4.53	0.00	22.73	33.14	66.86
Animal Food Manufacturing (NAICS 3111)	8.97	0.00	7.66	2.24	14.21	33.08	66.92
Home Furnishings Stores (NAICS 4422)	10.29	1.49	7.90	2.36	8.01	30.05	69.95
Home Health Care Services (NAICS 6216)	5.31	3.26	7.53	0.37	28.63	45.09	54.91
Animal Slaughtering and Processing (NAICS 3116)	5.21	1.34	5.49	0.63	21.59	34.27	65.73

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	10.05	0.90	8.51	2.34	8.19	29.99	70.01
Business Schools and Computer and Management Training (NAICS 6114)	6.36	3.20	9.42	0.17	30.00	49.16	50.84
Specialty Food Stores (NAICS 4452)	9.54	1.57	9.00	2.22	10.63	32.96	67.04
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)	9.80	1.49	8.16	2.38	7.38	29.20	70.80
Activities Related to Credit Intermediation (NAICS 5223)	4.78	7.30	0.26	0.00	15.79	28.12	71.88
Electrical Equipment Manufacturing (NAICS 3353)	3.91	2.30	5.64	0.00	20.53	32.39	67.61
Other Textile Product Mills (NAICS 3149)	5.41	2.98	6.36	0.07	22.82	37.65	62.35
Independent Artists, Writers, and Performers (NAICS 7115)	7.08	12.02	4.91	0.40	20.47	44.88	55.12
Medical Equipment and Supplies Manufacturing (NAICS 3391)	4.50	2.73	5.61	0.01	19.99	32.82	67.18
Radio and Television Broadcasting (NAICS 5151)	0.89	6.30	8.84	0.00	11.09	27.11	72.89
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)	0.22	6.44	9.71	0.06	10.02	26.46	73.54
Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures (NAICS 7114)	7.08	11.60	4.75	0.01	22.67	46.10	53.90
Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)	9.63	2.62	4.07	0.00	16.01	32.33	67.67
Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers (NAICS 4248)	9.61	3.12	9.29	2.29	8.17	32.48	67.52
Rail Transportation (NAICS 4821)	0.11	6.12	9.04	0.00	10.04	25.32	74.68
Support Activities for Crop Production (NAICS 1151)	8.03	10.85	4.99	0.00	17.64	41.52	58.48
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)	9.69	1.46	7.88	2.30	9.37	30.71	69.29
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)	10.28	1.65	7.88	2.42	6.43	28.66	71.34
Other Animal Production (NAICS 1129)	0.05	2.59	6.24	0.00	24.15	33.04	66.96
Coating, Engraving, Heat Treating, and Allied Activities (NAICS 3328)	4.40	3.41	5.33	0.02	20.97	34.13	65.87

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Pharmaceutical and Medicine Manufacturing (NAICS 3254)	4.35	2.13	6.26	0.12	18.37	31.23	68.77
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)	4.25	2.43	6.44	0.57	23.31	37.01	62.99
Support Activities for Forestry (NAICS 1153)	0.08	2.42	6.68	0.00	12.74	21.92	78.08
Direct Selling Establishments (NAICS 4543)	9.94	0.43	7.68	2.46	6.62	27.14	72.86
Electric Power Generation, Transmission and Distribution (NAICS 2211)	0.11	6.12	9.04	0.00	10.01	25.28	74.72
General Medical and Surgical Hospitals (NAICS 6221)	4.40	2.21	6.63	0.02	22.32	35.57	64.43
Industrial Machinery Manufacturing (NAICS 3332)	5.90	3.06	5.74	0.01	20.67	35.38	64.62
Forging and Stamping (NAICS 3321)	4.37	3.36	4.50	0.61	21.02	33.86	66.14
Rubber Product Manufacturing (NAICS 3262)	4.46	2.84	6.97	0.01	22.08	36.36	63.64
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS	4.20	2.37	5.62	0.02	18.82	31.03	68.97
Footwear Manufacturing (NAICS 3162)	3.87	1.93	4.54	0.00	22.54	32.89	67.11
Full-Service Restaurants (NAICS 7221)	5.49	5.87	6.63	0.58	15.30	33.89	66.11
Support Activities for Road Transportation (NAICS 4884)	5.47	13.25	5.14	0.00	16.64	40.50	59.50
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)	3.18	2.39	13.73	0.31	17.29	36.90	63.10
Plastics Product Manufacturing (NAICS 3261)	4.75	1.60	13.49	0.00	22.49	42.33	57.67
Sugar and Confectionery Product Manufacturing (NAICS 3113)	5.26	1.77	4.83	0.43	15.04	27.32	72.68
Cut and Sew Apparel Manufacturing (NAICS 3152)	5.35	2.16	8.05	0.00	31.98	47.54	52.46
Shoe Stores (NAICS 4482)	6.65	8.98	6.81	0.97	13.43	36.85	63.15
Other Transportation Equipment Manufacturing (NAICS 3369)	4.02	2.22	4.32	0.00	19.13	29.68	70.32
Chemical and Allied Products Wholesalers (NAICS 4246)	9.65	1.64	9.68	2.29	8.07	31.33	68.67
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
SERVICES	*3.50*	*4.19*	*11.56*	*0.35*	*17.44*	*37.04*	*62.96*

Source: See Table 4.1.

Table 4.16. Detailed M/WBE Availability—Commodities, 2010

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)	1.75	1.51	11.36	0.43	10.05	25.09	74.91
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)	3.18	2.44	13.77	0.29	17.10	36.78	63.22
Railroad Rolling Stock Manufacturing (NAICS 3365)	1.74	0.87	2.11	0.73	11.76	17.21	82.79
Wired Telecommunications Carriers (NAICS 5171)	5.68	8.90	5.35	0.38	8.57	28.88	71.12
Motor Vehicle Manufacturing (NAICS 3361)	2.00	0.81	2.28	0.83	11.85	17.77	82.23
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)	2.99	1.15	9.51	0.71	8.16	22.53	77.47
Beverage Manufacturing (NAICS 3121)	8.15	1.99	3.99	0.00	18.04	32.18	67.82
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)	3.36	4.02	14.62	0.19	18.52	40.71	59.29
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	4.12	1.63	9.76	0.93	9.59	26.03	73.97
Automobile Dealers (NAICS 4411)	0.99	3.39	3.36	0.00	5.28	13.01	86.99
Natural Gas Distribution (NAICS 2212)	3.51	8.16	6.15	0.04	6.97	24.84	75.16
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)	2.94	3.19	15.38	0.16	17.21	38.88	61.12
Building Equipment Contractors (NAICS 2382)	4.77	7.89	2.33	0.12	7.14	22.24	77.76
Software Publishers (NAICS 5112)	4.16	5.95	8.85	0.25	14.18	33.39	66.61
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)	5.49	12.37	5.21	0.01	18.23	41.31	58.69
Communications Equipment Manufacturing (NAICS 3342)	5.15	3.26	5.79	0.11	18.81	33.13	66.87
Computer Systems Design and Related Services (NAICS 5415)	4.95	5.85	10.35	0.26	15.62	37.02	62.98
Paper and Paper Product Merchant Wholesalers (NAICS 4241)	5.05	3.58	13.74	0.59	18.11	41.07	58.93
Basic Chemical Manufacturing (NAICS 3251)	2.89	1.45	3.27	1.93	11.03	20.57	79.43

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	2.40	1.75	10.13	0.53	9.73	24.54	75.46
Architectural and Structural Metals Manufacturing (NAICS 3323)	3.38	2.15	3.57	0.63	12.77	22.50	77.50
Printing and Related Support Activities (NAICS 3231)	4.55	2.56	5.06	0.04	21.16	33.36	66.64
Pharmaceutical and Medicine Manufacturing (NAICS 3254)	4.42	2.11	6.85	0.12	18.20	31.70	68.30
Nonresidential Building Construction (NAICS 2362)	3.45	4.39	6.01	0.16	9.20	23.20	76.80
Management, Scientific, and Technical Consulting Services (NAICS 5416)	3.70	4.54	2.49	1.06	18.35	30.13	69.87
Drugs and Druggists' Sundries Merchant Wholesalers (NAICS 4242)	2.93	3.50	15.92	0.28	18.16	40.79	59.21
Highway, Street, and Bridge Construction (NAICS 2373)	1.48	6.15	1.84	0.32	11.12	20.90	79.10
Architectural, Engineering, and Related Services (NAICS 5413)	3.27	4.22	4.35	0.98	13.00	25.83	74.17
Other Specialty Trade Contractors (NAICS 2389)	4.18	7.57	2.41	0.09	7.39	21.64	78.36
Scientific Research and Development Services (NAICS 5417)	5.62	2.06	11.34	0.02	21.28	40.32	59.68
Computer and Peripheral Equipment Manufacturing (NAICS 3341)	4.65	2.23	6.72	0.00	19.16	32.76	67.24
Medical Equipment and Supplies Manufacturing (NAICS 3391)	4.24	2.75	5.62	0.01	20.39	33.01	66.99
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	0.30	0.62	10.95	0.08	8.03	19.99	80.01
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)	4.56	2.10	4.35	0.80	19.88	31.69	68.31
Petroleum and Coal Products Manufacturing (NAICS 3241)	4.01	2.10	4.42	0.00	18.26	28.79	71.21
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)	9.56	1.21	9.47	2.21	10.12	32.56	67.44
Other Telecommunications (NAICS 5179)	1.26	7.05	8.84	0.07	11.37	28.59	71.41
Automotive Equipment Rental and Leasing (NAICS 5321)	5.52	12.91	5.22	0.00	16.80	40.45	59.55
Grocery and Related Product Merchant Wholesalers (NAICS 4244)	9.86	2.12	8.76	2.37	7.77	30.88	69.12

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Medical and Diagnostic Laboratories (NAICS 6215)	4.16	0.36	6.08	1.02	13.12	24.74	75.26
Other Heavy and Civil Engineering Construction (NAICS 2379)	2.44	8.56	1.63	0.30	9.13	22.05	77.95
Converted Paper Product Manufacturing (NAICS 3222)	3.71	2.96	5.04	0.01	22.06	33.78	66.22
Animal Slaughtering and Processing (NAICS 3116)	5.22	1.33	5.51	0.64	21.64	34.35	65.65
Electronics and Appliance Stores (NAICS 4431)	10.54	1.04	9.06	2.35	7.35	30.34	69.66
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	10.20	1.39	8.39	2.41	7.95	30.34	69.66
Investigation and Security Services (NAICS 5616)	8.29	12.96	5.19	0.04	17.43	43.91	56.09
Iron and Steel Mills and Ferroalloy Manufacturing (NAICS 3311)	4.44	2.75	4.66	0.00	19.12	30.97	69.03
Home Furnishings Stores (NAICS 4422)	10.29	1.49	7.90	2.36	8.01	30.05	69.95
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)	4.45	2.09	5.22	0.03	22.86	34.64	65.36
Depository Credit Intermediation (NAICS 5221)	4.88	7.10	0.13	0.00	14.31	26.42	73.58
Electrical Equipment Manufacturing (NAICS 3353)	4.10	2.48	5.22	0.00	21.75	33.55	66.45
Gambling Industries (NAICS 7132)	3.64	5.88	7.19	0.00	13.13	29.84	70.16
Building Finishing Contractors (NAICS 2383)	0.44	2.74	6.95	0.05	10.97	21.15	78.85
Waste Treatment and Disposal (NAICS 5622)	0.81	6.88	8.99	0.11	11.58	28.37	71.63
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Main	5.85	12.80	5.24	0.00	18.04	41.93	58.07
Office Supplies, Stationery, and Gift Stores (NAICS 4532)	9.96	1.52	9.80	2.22	11.32	34.83	65.17
Sawmills and Wood Preservation (NAICS 3211)	4.40	1.98	5.81	0.05	18.42	30.66	69.34
Support Activities for Rail Transportation (NAICS 4882)	1.71	6.70	8.76	0.42	12.33	29.93	70.07
Other Electrical Equipment and Component Manufacturing (NAICS 3359)	4.51	2.08	6.49	0.00	20.26	33.34	66.66
Household and Institutional Furniture and Kitchen Cabinet Manufacturing (NAICS 3371)	4.43	2.43	7.04	0.00	18.88	32.78	67.22

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Employment Services (NAICS 5613)	4.54	5.96	7.34	0.23	19.01	37.08	62.92
Cement and Concrete Product Manufacturing (NAICS 3273)	3.59	2.12	3.77	0.16	16.44	26.07	73.93
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)	0.22	6.44	9.71	0.06	10.02	26.46	73.54
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	9.42	2.77	8.15	2.14	7.79	30.27	69.73
Other Chemical Product and Preparation Manufacturing (NAICS 3259)	4.41	1.90	5.75	0.03	21.81	33.90	66.10
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)	6.92	5.35	5.15	0.04	10.89	28.35	71.65
Other Miscellaneous Manufacturing (NAICS 3399)	4.22	2.60	5.09	0.08	22.98	34.98	65.02
Nondepository Credit Intermediation (NAICS 5222)	4.84	7.06	0.28	0.01	15.03	27.22	72.78
Data Processing, Hosting, and Related Services (NAICS 5182)	4.79	6.02	8.16	0.19	18.76	37.92	62.08
Other General Purpose Machinery Manufacturing (NAICS 3339)	4.53	3.37	5.74	0.00	19.63	33.26	66.74
Health and Personal Care Stores (NAICS 4461)	9.91	0.74	8.84	2.41	7.14	29.04	70.96
Forging and Stamping (NAICS 3321)	4.19	2.37	5.70	0.00	19.89	32.15	67.85
Vocational Rehabilitation Services (NAICS 6243)	4.79	2.29	6.55	0.15	22.33	36.11	63.89
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS	4.06	3.10	4.86	0.00	18.30	30.33	69.67
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	4.39	2.32	5.46	0.31	19.13	31.62	68.38
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)	4.02	2.47	4.18	0.00	19.72	30.40	69.60
Services to Buildings and Dwellings (NAICS 5617)	4.69	11.64	5.42	0.07	16.40	38.23	61.77
Electric Power Generation, Transmission and Distribution (NAICS 2211)	0.08	6.10	9.05	0.00	9.80	25.05	74.95
Pulp, Paper, and Paperboard Mills (NAICS 3221)	3.97	1.99	4.47	0.00	21.07	31.49	68.51
Bakeries and Tortilla Manufacturing (NAICS 3118)	4.37	2.64	4.94	0.00	24.73	36.68	63.32

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Foundries (NAICS 3315)	3.76	1.88	10.02	0.00	19.59	35.25	64.75
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	4.76	5.05	4.65	0.00	23.20	37.66	62.34
Semiconductor and Other Electronic Component Manufacturing (NAICS 3344)	4.60	3.56	5.48	0.25	21.07	34.96	65.04
Aerospace Product and Parts Manufacturing (NAICS 3364)	6.28	2.04	4.20	0.00	19.89	32.41	67.59
Insurance Carriers (NAICS 5241)	6.09	5.55	2.79	0.30	12.10	26.83	73.17
Alumina and Aluminum Production and Processing (NAICS 3313)	3.85	2.24	4.32	0.00	22.21	32.62	67.38
Specialized Design Services (NAICS 5414)	9.19	8.76	3.57	0.03	37.04	58.60	41.40
General Freight Trucking (NAICS 4841)	5.65	9.49	4.16	0.21	7.46	26.98	73.02
Metalworking Machinery Manufacturing (NAICS 3335)	5.07	3.44	4.35	0.00	18.99	31.85	68.15
Cut and Sew Apparel Manufacturing (NAICS 3152)	4.56	2.61	7.68	0.00	22.97	37.81	62.19
Other Information Services (NAICS 5191)	4.23	6.30	5.11	0.00	14.85	30.50	69.50
Furniture Stores (NAICS 4421)	9.71	1.71	7.97	2.31	8.98	30.69	69.31
Textile and Fabric Finishing and Fabric Coating Mills (NAICS 3133)	9.72	0.74	7.32	1.93	9.44	29.15	70.85
Other Motor Vehicle Dealers (NAICS 4412)	9.72	1.19	7.83	2.33	6.93	27.99	72.01
Automotive Repair and Maintenance (NAICS 8111)	5.53	13.58	5.35	0.09	16.96	41.51	58.49
Remediation and Other Waste Management Services (NAICS 5629)	4.71	7.53	5.56	0.73	13.40	31.93	68.07
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)	4.38	2.15	5.88	0.37	25.81	38.59	61.41
Glass and Glass Product Manufacturing (NAICS 3272)	3.83	3.05	5.08	0.00	25.67	37.63	62.37
Motion Picture and Video Industries (NAICS 5121)	6.66	12.43	5.16	0.02	19.38	43.65	56.35
Other Ambulatory Health Care Services (NAICS 6219)	4.59	2.36	6.83	0.01	23.57	37.35	62.65
Spring and Wire Product Manufacturing (NAICS 3326)	4.09	2.16	4.51	0.00	18.15	28.90	71.10
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	2.28	5.92	4.98	0.34	12.60	26.13	73.87
Urban Transit Systems (NAICS	0.07	6.97	8.77	0.01	9.91	25.74	74.26

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
4851)							
Plastics Product Manufacturing (NAICS 3261)	4.56	3.06	4.86	0.13	19.73	32.34	67.66
Electric Lighting Equipment Manufacturing (NAICS 3351)	4.60	2.07	6.75	0.01	19.39	32.82	67.18
Other Investment Pools and Funds (NAICS 5259)	4.92	7.21	0.40	0.00	14.79	27.33	72.67
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)	7.10	12.73	5.70	0.05	17.97	43.54	56.46
Industrial Machinery Manufacturing (NAICS 3332)	4.06	2.03	6.13	0.00	20.51	32.74	67.26
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)	9.47	2.31	7.93	2.19	9.17	31.07	68.93
Veneer, Plywood, and Engineered Wood Product Manufacturing (NAICS 3212)	4.36	2.58	4.25	0.00	17.30	28.50	71.50
Utility System Construction (NAICS 2371)	0.79	3.48	6.43	0.01	11.53	22.24	77.76
Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)	8.82	2.65	4.05	0.00	16.66	32.17	67.83
Offices of Physicians (NAICS 6211)	4.61	2.55	7.53	0.02	24.55	39.27	60.73
Other Personal Services (NAICS 8129)	5.50	13.48	5.06	0.00	16.68	40.72	59.28
Other Fabricated Metal Product Manufacturing (NAICS 3329)	4.43	2.78	5.35	0.01	23.21	35.79	64.21
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	9.63	1.37	8.18	2.29	8.87	30.34	69.66
Direct Selling Establishments (NAICS 4543)	10.49	0.77	7.87	2.40	7.75	29.30	70.70
Business Support Services (NAICS 5614)	9.17	9.24	3.88	0.01	34.31	56.60	43.40
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)	10.49	1.09	8.47	2.28	8.98	31.32	68.68
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)	4.35	3.14	6.59	1.12	17.87	33.07	66.93
Support Activities for Water Transportation (NAICS 4883)	0.19	8.24	8.58	0.00	11.55	28.56	71.44
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)	4.83	2.86	7.00	0.00	16.52	31.21	68.79
Support Activities for Road Transportation (NAICS 4884)	5.47	13.25	5.14	0.00	16.64	40.50	59.50

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Building Material and Supplies Dealers (NAICS 4441)	9.99	1.19	7.87	2.41	8.08	29.53	70.47
Audio and Video Equipment Manufacturing (NAICS 3343)	4.74	2.78	7.03	0.03	17.71	32.28	67.72
Advertising, Public Relations, and Related Services (NAICS 5418)	4.47	6.37	7.25	0.25	18.56	36.89	63.11
Support Activities for Air Transportation (NAICS 4881)	6.59	5.10	5.74	0.85	12.65	30.92	69.08
Other Transit and Ground Passenger Transportation (NAICS 4859)	5.22	9.03	5.12	0.43	8.92	28.73	71.27
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)	5.54	2.97	4.76	0.00	19.72	32.99	67.01
Charter Bus Industry (NAICS 4855)	0.78	7.68	9.14	0.27	14.02	31.89	68.11
Legal Services (NAICS 5411)	4.61	2.55	7.09	0.03	24.52	38.80	61.20
School and Employee Bus Transportation (NAICS 4854)	0.86	6.46	9.01	0.01	13.99	30.33	69.67
Motor Vehicle Parts Manufacturing (NAICS 3363)	4.30	2.02	4.42	0.06	18.21	29.01	70.99
Apparel Accessories and Other Apparel Manufacturing (NAICS 3159)	4.29	2.08	9.43	0.14	25.82	41.76	58.24
Other Financial Investment Activities (NAICS 5239)	4.70	7.14	0.06	0.00	15.49	27.40	72.60
Other Leather and Allied Product Manufacturing (NAICS 3169)	6.71	1.99	4.28	6.90	23.60	43.49	56.51
Rubber Product Manufacturing (NAICS 3262)	5.40	3.81	6.09	0.00	21.11	36.42	63.58
Dairy Product Manufacturing (NAICS 3115)	4.35	2.03	5.97	0.00	18.04	30.39	69.61
Nonferrous Metal (except Aluminum) Production and Processing (NAICS 3314)	3.40	1.70	4.52	0.00	30.28	39.91	60.09
Other Food Manufacturing (NAICS 3119)	4.32	2.99	5.67	0.42	20.80	34.21	65.79
Other Wood Product Manufacturing (NAICS 3219)	4.13	2.73	8.76	0.00	18.32	33.95	66.05
Other Textile Product Mills (NAICS 3149)	4.03	2.79	7.99	0.01	21.94	36.75	63.25
Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers (NAICS 4248)	9.61	3.12	9.29	2.29	8.17	32.48	67.52
Full-Service Restaurants (NAICS 7221)	5.49	5.87	6.63	0.58	15.30	33.89	66.11
Local Messengers and Local Delivery (NAICS 4922)	0.25	9.36	8.48	0.44	10.54	29.07	70.93

Detailed Industry	African-American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Personal and Household Goods Repair and Maintenance (NAICS 8114)	6.13	13.34	4.87	0.00	19.46	43.80	56.20
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)	9.69	1.46	7.88	2.30	9.37	30.71	69.29
Lessors of Real Estate (NAICS 5311)	5.05	7.03	0.73	0.00	16.64	29.45	70.55
Clay Product and Refractory Manufacturing (NAICS 3271)	4.01	2.00	4.44	0.00	20.60	31.04	68.96
Fabric Mills (NAICS 3132)	3.88	2.55	4.39	0.00	21.79	32.61	67.39
Coating, Engraving, Heat Treating, and Allied Activities (NAICS 3328)	4.72	3.45	4.99	0.33	18.98	32.47	67.53
Book, Periodical, and Music Stores (NAICS 4512)	9.47	1.68	8.27	2.16	12.17	33.74	66.26
Warehousing and Storage (NAICS 4931)	0.38	6.47	9.63	0.18	10.89	27.55	72.45
Cutlery and Handtool Manufacturing (NAICS 3322)	4.06	2.91	4.62	0.00	19.14	30.72	69.28
COMMODITIES	*3.66*	*4.64*	*7.45*	*0.37*	*10.93*	*27.05*	*72.95*

Source: See Table 4.1.

Table 4.17. Estimated Availability—Overall and By Procurement Category

Detailed Industry	African-American	Hispanic	Asian	Native American	MBE	Non-minority Female	M/WBE	Non-M/WBE
CONSTRUCTION	4.00	6.94	3.18	0.21	14.33	8.41	22.74	77.26
CRS	3.19	4.66	4.46	0.90	13.21	11.32	24.53	75.47
SERVICES	3.50	4.19	11.56	0.35	19.60	17.44	37.04	62.96
COMMODITIES	3.66	4.64	7.45	0.37	16.12	10.93	27.05	72.95
TOTAL	3.71	5.41	7.08	0.33	16.53	12.39	28.92	71.08

Source: See Table 4.1.

V. Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

A. Review of Relevant Literature

In this chapter we examine disparities in business formation and earnings principally in the private sector, where contracting activities are generally *not* subject to M/WBE or other affirmative action requirements. Statistical examination of disparities in the private sector of the relevant geographic marketplace is important for several reasons. First, to the extent that discriminatory practices by contractors, suppliers, insurers, lenders, customers, and others limit the ability of M/WBEs to compete, those practices will impact the larger private sector as well as the public sector. Second, examining the utilization of M/WBEs in the private sector provides an indicator of the extent to which M/WBEs are used in the absence of race-conscious efforts, since few firms in the private sector make such efforts. Third, the Supreme Court in *Croson* and other courts acknowledged that state and local governments have a constitutional duty not to contribute to the perpetuation of discrimination in the private sector of their relevant geographic and product markets.

After years of comparative neglect, research on the economics of entrepreneurship—especially upon self-employment—has expanded in the last twenty years.[173] There is a good deal of agreement in the literature on the micro-economic correlates of self-employment.[174] In the U.S., it appears that self-employment rises with age, is higher among men than women and higher among non-minorities than African-Americans. The least educated have the highest probability of being self-employed. However, evidence is also found in the U.S. that the most highly educated also have relatively high probabilities. On average, however, increases in educational attainment are generally found to lead to increases in the probability of being self-employed. A higher number of children in the family increases the likelihood of (male) self-employment. Workers in agriculture and construction are also especially likely to be self-employed.

There has been relatively less work on how institutional factors influence self-employment. Such work that has been conducted includes examining the role of minimum wage legislation (Blau,

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[173] Microeconometric work includes Fuchs (1982), Borjas and Bronars (1989), Evans and Jovanovic (1989), Evans and Leighton (1989), Fairlie and Meyer (1996, 1998), Reardon (1998), Fairlie (1999), Wainwright (2000), Blanchflower and Wainwright (2005), and Blanchflower (2009) for the United States, Rees and Shah (1986), Pickles and O'Farrell (1987), Blanchflower and Oswald (1990, 1998), Meager (1992), Blanchflower and Freeman (1994), Taylor (1996), Robson (1998a, 1998b), and Blanchflower and Shadforth (2007) for the UK, DeWit and van Winden (1990) for the Netherlands, Alba-Ramirez (1994) for Spain, Bernhardt (1994), Schuetze (1998), Arai (1997), Lentz and Laband (1990), and Kuhn and Schuetze (1998) for Canada, Laferrere and McEntee (1995) for France, Blanchflower and Meyer (1994) and Kidd (1993) for Australia, and Foti and Vivarelli (1994) for Italy. There are also several theoretical papers including Kihlstrom and Laffonte (1979), Kanbur (1982), Holmes and Schmitz (1990), Croate and Tennyson (1992), and Cagetti and DeNardi (2006), plus a few papers that draw comparisons across countries *i.e.* Schuetze (1998) for Canada and the U.S., Blanchflower and Meyer (1994) for Australia and the U.S., Alba-Ramirez (1994) for Spain and the United States, and Acs and Evans (1994), Blanchflower (2000), Blanchflower, Oswald, and Stutzer (2001), and Blanchflower and Oswald (2008) for many countries.

[174] Parker (2004) and Aronson (1991) provide good overviews.

1987), immigration (Fairlie and Meyer, 1998; 2003; Olson, Zuiker and Montalto, 2000; Mora and Davila 2006, Robles and Cordero-Gúzman, 2007),[175] immigration policy (Borjas and Bronars, 1989), and retirement policies (Quinn, 1980). Studies by Long (1982), and Blau (1987), and more recently by Schuetze (1998), have considered the role of taxes.[176] A number of other studies have also considered the cyclical aspects of self-employment and in particular how movements of self-employment are correlated with movements in unemployment. Meager (1992), provides a useful summary of much of this work.[177]

Blanchflower, Oswald and Stutzer (2001) found that there is a strikingly large latent desire to own a business. There exists frustrated entrepreneurship on a huge scale in the U.S. and other Organization for Economic Co-operation and Development (OECD) countries.[178] In the U.S., 7 out of 10 people say they would prefer to be self-employed. This compares to an actual proportion of self-employed people in 2001 of 7.3 percent of the civilian labor force, which also shows that the proportion of the labor force that is self-employed has declined steadily since 1990 following a small increase in the rate from 1980 to 1990. This raises an important question. Why do so few individuals in the U.S. and OECD countries manage to translate their preferences into action? Lack of start-up capital is one likely explanation. This factor is commonly cited by

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[175] Fairlie and Meyer (1998) found that immigration had no statistically significant impact at all on African-American self-employment. In a subsequent paper Fairlie and Meyer (2004), found that self-employed immigrants did displace self-employed native non-African-Americans. They found that immigration has a large negative effect on the probability of self-employment among native non-African-Americans, although, surprisingly, they found that immigrants increase native self-employment earnings.

[176] In an interesting study pooling individual level data for the U.S. and Canada from the CPS and the Survey of Consumer Finances, respectively, Schuetze (1998), finds that increases in income taxes have large and positive effects on the male self-employment rate. He found that a 30 percent increase in taxes generated a rise of 0.9 to 2.0 percentage points in the male self-employment rate in Canada compared with a rise of 0.8 to 1.4 percentage points in the U.S. over 1994 levels.

[177] Evans and Leighton (1989) found that non-minority men who are unemployed are nearly twice as likely as wage workers to enter self-employment. Bogenhold and Staber (1991) also find evidence that unemployment and self-employment are positively correlated. Blanchflower and Oswald (1990) found a strong negative relationship between regional unemployment and self-employment for the period 1983-1989 in the U.K. using a pooled cross-section time-series data set. Blanchflower and Oswald (1998) confirmed this result, finding that the log of the county unemployment rate entered negatively in a cross-section self-employment model for young people age 23 in 1981 and for the same people aged 33 in 1991. Taylor (1996) confirmed this result using data from the British Household Panel Study of 1991, showing that the probability of being self-employed rises when expected self-employment earnings increase relative to employee earnings, *i.e.*, when unemployment is low. Acs and Evans (1994) found evidence from an analysis of a panel of countries that the unemployment rate entered negatively in a fixed effect and random effects formulation. However, Schuetze (1998) found that for the U.S. and Canada the elasticity of the male self-employment rate with respect to the unemployment rate was considerably smaller than found for the effect from taxes discussed above. The elasticity of self-employment associated with the unemployment rate is about 0.1 in both countries using 1994 figures. A decrease of 5 percentage points in the unemployment rate in the U.S. (about the same decline occurred from 1983-1989) leads to about a 1 percentage point decrease in self-employment. Blanchflower (2000) found that there is generally a negative relationship between the self-employment rate and the unemployment rate. It does seem then that there is some disagreement in the literature on whether high unemployment acts to discourage self-employment because of the lack of available opportunities or encourage it because of the lack of viable alternatives.

[178] The OECD is an international organization of those developed countries that accept the principles of representative democracy and a free market economy. There are currently 30 full members.

small-business managers themselves (Blanchflower and Oswald, 1998). There is also econometric evidence that confirms this barrier. Holding other influences constant, people who inherit cash, who win the lottery, or who have large family assets, are all more likely both to set up and sustain a lasting small business. By contrast, childhood personality test-scores turn out to have almost no predictive power about which persons will be running their own businesses as adults (Blanchflower and Oswald, 1998).

One primary impediment to entrepreneurship among minorities is lack of capital. In work based on U.S. micro data at the level of the individual, Evans and Leighton (1989), and Evans and Jovanovic (1989), have argued formally that entrepreneurs face liquidity constraints. The authors use the National Longitudinal Survey of Young Men for 1966-1981, and the Current Population Surveys for 1968-1987. The key test shows that, all else remaining equal, people with greater family assets are more likely to switch to self-employment from employment. This asset variable enters econometric equations significantly and with a quadratic form. Although Evans and his collaborators draw the conclusion that capital and liquidity constraints bind, this claim is open to the objection that other interpretations of their correlation are feasible. One possibility, for example, is that inherently acquisitive individuals both start their own businesses and forego leisure to build up family assets. In this case, there would be a correlation between family assets and movement into self-employment even if capital constraints did not exist. A second possibility is that the correlation between family assets and the movement to self-employment arises because children tend to inherit family firms. Blanchflower and Oswald (1998), however, find that the probability of self-employment depends positively upon whether the individual ever received an inheritance or gift.[179] Moreover, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Work by Holtz-Eakin, Joulfaian and Harvey (1994a, 1994b), drew similar conclusions using different methods on U.S. data, examining flows into and out of self-employment and finding that inheritances both raise entry and slow exit. In contrast, Hurst and Lusardi (2004), citing evidence from the U.S. *Panel Study of Income Dynamics*, claim to show that wealth is not a significant determinant of entry into self-employment. In response, however, Fairlie and Krashinsky (2006) have demonstrated that when the sample is split into two segments—those who enter self-employment after job loss and those who do not—the strong correlation between assets and rate of entry business formation is evident in both segments.

The work of Black *et al.* (1996) for the United Kingdom discovers an apparently powerful role for house prices (through its impact on equity withdrawal) in affecting the supply of small new firms. Cowling and Mitchell (1997), find a similar result. Again this is suggestive of capital constraints. Finally, Lindh and Ohlsson (1996) adopt the Blanchflower-Oswald procedure and provide complementary evidence for Sweden. Bernhardt (1994), in a study for Canada, using data from the 1981 Social Change in Canada Project also found evidence that capital constraints appear to bind. Using the 1991 French Household Survey of Financial Assets, Laferrere and McEntee (1995), examined the determinants of self-employment using data on intergenerational transfers of wealth, education, informal human capital and a range of demographic variables.

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[179] This emerges from British data, the National Child Development Study; a birth cohort of children born in March 1958 who have been followed for the whole of their lives.

They also find evidence of the importance played by the family in the decision to enter self-employment. Intergenerational transfers of wealth, familial transfers of human capital and the structure of the family were found to be determining factors in the decision to move from wage work into entrepreneurship. Broussard et al. (2003) found that the self-employed have between 0.2 and 0.4 more children compared to the non-self-employed. The authors argue that having more children can increase the likelihood that an inside family member will be a good match at running the business. One might also think that the existence of family businesses, which are particularly prevalent in construction and in agriculture, is a further way to overcome the existence of capital constraints. Transfers of firms within families will help to preserve the status quo and will work against the interests of African-Americans in particular who do not have as strong a history of business ownership as indigenous non-minorities. Analogously, Hout and Rosen (2000) and Fairlie and Robb (2007a) found that the offspring of self-employed parents are more likely than others to become self-employed and argued that the historically low rates of self-employment among African-Americans and Latinos may contribute to their low contemporary rates. Fairlie and Robb (2007b), using data from the U.S. *Characteristics of Business Owners* survey, and Dunn and Holtz-Eakin (2000), using data from the U.S. *National Longitudinal Surveys*, show that the transmission of positive effects of family on self-employment operates through two channels, intergenerational transmission of entrepreneurial preferences and wealth, and the acquisition of general and specific human capital.

A continuing puzzle in the literature has been why, nationally, the self-employment rate of African-American males is one third of that of non-minority males and has remained roughly constant since 1910. Fairlie and Meyer (2000) rule out a number of explanations for the difference. They found that trends in demographic factors, including the Great Migration and the racial convergence in education levels “did not have large effects on the trend in the racial gap in self-employment” (p. 662). They also found that an initial lack of business experience “cannot explain the current low levels of black self-employment.” Further they found that “the lack of traditions in business enterprise among blacks that resulted from slavery cannot explain a substantial part of the current racial gap in self-employment” (p. 664).

Fairlie (1999) and Wainwright (2000) have shown that a considerable part of the explanation of the differences between the African-American and non-minority self-employment rate can be attributed to discrimination. Using PUMS data from the 1990 Census, Wainwright (2000) demonstrated that these disparities tend to persist even when factors such as geography, industry, occupation, age, education and assets are held constant.

Bates (1989) finds strong supporting evidence that racial differences in levels of financial capital have significant effects upon racial patterns in business failure rates. Fairlie (1999, 2006) demonstrates, for example, that the African-American exit rate from self-employment is twice as high as that of non-minorities. An example will help to make the point. Two baths are being filled with water. In the first scenario, both have the plug in. Water flows into bath A at the same rate as it does into bath B -- that is, the inflow rate is the same. When we return after ten minutes the amount of water (the stock) will be the same in the two baths as the inflow rates were the same. In the second scenario, we take out the plugs and allow for the possibility that the outflow rates from the two baths are different. Bath A (the African-American firms) has a much larger drain and hence the water flows out more quickly than it does from bath B (the non-minority firms). When we return after 10 minutes, even though the inflow rates are the same there is much

less water in bath A than there is in bath B. A lower exit rate for non-minority-owned firms than is found for minority-owned firms is perfectly consistent with the observed fact that minority-owned firms are younger and smaller than non-minority-owned firms. The extent to which that will be true is a function of the relative sizes of the inflow and the outflow rates.

B. Race and Sex Disparities in Earnings

In this section, we examine earnings to determine whether minority and female entrepreneurs earn less from their businesses than do their non-minority male counterparts. Other things equal, if minority and female business owners as a group cannot achieve comparable earnings from their businesses as similarly-situated non-minorities because of discrimination, then failure rates for M/WBEs will be higher and M/WBE formation rates will be lower than would be observed in a race- and gender-neutral marketplace. Both phenomena would contribute directly to lower levels of minority and female business ownership.

Below, we first examine earnings disparities among wage and salary employees, that is, non-business owners. It is helpful to examine this segment of the labor force since a key source of new entrepreneurs in any given industry is the pool of experienced wage and salary workers in similar or related industries (Blanchflower, 2000; 2004). Employment discrimination that adversely impacts the ability of minorities or women to succeed in the labor force directly shrinks the available pool of potential M/WBEs. In almost every instance examined, a statistically significant adverse impact on wage and salary earnings is observed—both the economy at large and also in the construction and construction-related professional services sector.[180]

We then turn to an examination of differences in earnings among the self-employed, that is, among business owners. Here too, among the pool of minorities and women who have formed businesses despite discrimination in both employment opportunities and business opportunities, statistically significant adverse impacts are observed in the vast majority of cases in construction and construction-related professional services (hereafter, "construction"), and other sectors of the economy.

In the remainder of this Chapter we discuss the methods and data we employed and present the specific findings.

1. Methods

We used the statistical technique of linear regression analysis to estimate the effect of each of a set of observable characteristics, such as education and age, on an outcome variable of interest. In this case, the outcome variable of interest is earnings and we used regression to compare

[180] There is a growing body of evidence that discriminatory constraints in the capital market prevent minority-owned businesses from obtaining business loans. Furthermore, even when they are able to obtain them there is evidence that these loans are not obtained on equal terms: minority-owned firms have to 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* Chapter VI, *infra*.

earnings among individuals in similar geographic and product markets at similar points in time and with similar years of education and potential labor market experience and see if any adverse race or sex differences remain. In a discrimination free marketplace, one would not expect to observe significant differences in earnings by race or sex among such similarly situated observations.

Regression also allows us to narrowly tailor our statistical tests to the State's relevant geographic market, and assess whether disparities in that market are statistically significantly different from those observed elsewhere in the nation. Starting from an economy-wide data set, we first estimated the basic model of earnings differences just described and also included an indicator variable for the New York State Market Area (NYSMA), which encompasses the State of New York and the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA. This model appears as Specification (1) in Tables 5.1 through 5.12. Next, we estimated Specification (2), which is the same model as (1) but with the addition of indicator variables that interact race and sex with the NYSMA indicator. Specification (3) represents our ultimate specification, which includes all the variables from the basic model as well as any of the interaction terms from Specification (2) that were statistically significant.[181]

Any negative and statistically significant differences by race or sex that remain in Specification (3) after holding all of these other factors constant—time, age, education, geography, and industry—are consistent with what would be observed in a market suffering from business-related discrimination.[182]

2. Data

The analyses undertaken in this Study require individual-level data (*i.e.* "microdata") with relevant information on business ownership status and other key socioeconomic characteristics. Two primary data sources are used.

The first is the American Community Survey (ACS) Public Use Microdata Sample (PUMS) for 2006–2008. The Census Bureau's ACS is an ongoing survey covering the same type of information collected in the decennial census. The ACS is sent to approximately 3 million addresses annually, including housing units in all counties in the 50 states and the District of Columbia. The PUMS files from the ACS contain records for a subsample of the full ACS. The data used here are the multi-year estimates combining the 2006, 2007, and 2008 ACS PUMS records. The combined file contains over 3.6 million person-level records. Released in early 2010, the ACS PUMS provides the full range of population and housing information collected in the annual ACS and in the decennial census. 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

[181] If none of these terms is significant then Specification (3) reduces to Specification (1).

[182] Typically, a given test statistic is considered to be statistically significant if there is a reasonably low probability that the value of the statistic is due to random chance alone. In this and the two following chapters we typically indicate three levels of statistical significance, corresponding to 10 percent, 5 percent, and 1 percent probabilities that results were the result of random chance.

variable allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings.

The second source of data is the Annual Demographic File from the Current Population Survey (CPS).[183] The CPS has been conducted monthly by the Census Bureau and the Bureau of Labor Statistics for over 40 years, and is a primary source of official government statistics on employment and unemployment. Currently, about 56,500 households are scientifically selected for the CPS on the basis of area of residence in order to represent the nation as a whole, individual states and the largest metropolitan areas. In addition to information on employment status, the CPS collects information on age, sex, race, marital status, educational attainment, earnings, occupation, industry, and other characteristics. These statistics serve to update the information collected every 10 years through the decennial census.

3. Findings: Race and Sex Disparities in Wage and Salary Earnings

Tables 5.1 through 5.6 report results from our regression analyses of annual earnings among wage and salary workers. Tables 5.1 through 5.3 focus on the economy as a whole and Tables 5.4 through 5.6 on Construction and CRS. Tables 5.1 and 5.4 are derived from the 2006–2008 ACS PUMS, Tables 5.2 and 5.5 are derived from the 1980–1991 March CPS files, and Tables 5.3 and 5.6 are derived from the 1992–2008 March CPS files. The numbers shown in each of these six tables indicate the percentage difference between the average wages of a given race/sex group and comparable non-minority males.

a. Specification (1) - the Basic Model

For example, in Table 5.1 Specification (1) the estimated percentage difference in annual wages between African-Americans (both sexes) and non-minority males in 2006–2008 was -32.6 percent. That is, average annual wages among African-Americans were 32.6 percent lower than for non-minority males who were otherwise similar in terms of geographic location, industry, age, and education. The number in parentheses below each percentage difference is the t-statistic, which indicates whether the estimated percentage difference is statistically significant or not. In Tables 5.1 through 5.6, a t-statistic of 1.99 or larger indicates statistical significance at a 95 percent confidence level or better.[184] In the example just used, the t-statistic of 172.0 indicates that the result is statistically significant.

Specification (1) in Tables 5.1-5.3 shows adverse and statistically significant wage disparities for African-Americans, Hispanics, Asians, Native Americans, persons reporting in multiple race categories, and non-minority women consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from a low of -12.7 percent for the

[183] The Annual Demographic Survey of the CPS is conducted each March. It contains all the monthly CPS data plus additional data on work experience, income and earnings, noncash benefits, and migration. *See* King, Ruggles, et al. (2009).

[184] From a two-tailed test.

"other race" category (primarily Asians and Native Americans) in Table 5.2 to a high of -32.6 percent for African-Americans in Table 5.1.

Specification (1) in Tables 5.4 through 5.6 shows similar results when the basic analysis is restricted to the Construction industries and the Architecture and Engineering (CRS) industries. In this sector, large, adverse, and statistically significant wage disparities are once again observed for African-Americans, Hispanics, Asians, Native Americans, persons reporting in multiple race categories, and non-minority women. A comparison of Tables 5.1 and 5.4 shows that for Hispanics, Asians, and Native Americans, the disparities in the Construction and CRS sector are somewhat smaller than those observed in the economy as a whole. For African-Americans and non-minority women, they are somewhat larger.

A comparison of Tables 5.2 and 5.3 shows changes in observed wage disparities over time for the economy as a whole. Tables 5.5 and 5.6 do the same for Construction and CRS.

For African-Americans between 1980 and 1991, the wage disparity in the economy as a whole was 30.2 percent, shrinking slightly to 28.0 percent in the 1992-2008 period. In Construction and CRS, the disparity was 35.2 percent in the earlier period. Although diminishing significantly in recent years, to 24.2 percent, the disparity remains substantial.

For Hispanics between 1980 and 1991, the wage disparity in the economy as a whole was 20.4 percent, shrinking only slightly to 19.7 percent in the 1992-2008 period. In Construction and CRS, the disparity was 15.8 percent in the earlier period, actually increasing slightly to 16.7 percent in more recent years.

For Asians and Native Americans, tracking time trends is more difficult since in the earlier period these two groups were combined together in the CPS into the category "Other race." In the economy as a whole, the wage disparity for the "Other race" category in the 1980-1991 period was 12.7 percent. In the 1992-2008 period, the wage disparities worsened significantly: to 21.7 percent for Asians and 23.4 percent for Native Americans. In Construction and CRS, the "Other race" disparity in the earlier period was 12.8 percent, growing to 18.3 percent for Asians and 15.6 percent for Native Americans during the 1992-2008 period.

For non-minority women between 1980 and 1991, the wage disparity in the economy as a whole was 28.3 percent, shrinking to 21.7 percent in the 1992-2008 period. In Construction and CRS, the disparity was 30.2 percent in the earlier period. Though diminishing significantly in recent years to 20.7 percent, the disparity for this group also remains large.

b. Specifications (2) and (3) - the Full Model Including NYSMA-Specific Interaction Terms

Next, we turn to Specifications (2) and (3) in Tables 5.1 through 5.6. In each of these Tables, Specification (2) is the basic regression model with a set of interaction terms added that test whether minorities and women in the NYSMA differ significantly from those elsewhere in the U.S. economy. Specification (2) in Table 5.1, for example, shows a -33.1 percent wage difference that estimates the direct effect of being African-American in 2006–2008, as well as a statistically significant 7.9 percent wage increment in that year that captures the indirect effect of

residing in the NYSMA and being African-American. That is, wages for African-Americans in the NYSMA, on average, were 7.9 percent higher than for African-Americans in the nation as a whole and 25.2 percent (-33.1 percent plus 7.9 percent) lower than for non-minority males in the NYSMA.

Specification (3) simply repeats Specification (2), dropping any NYSMA interactions that are not statistically significant. In Table 5.1, for example, the only interaction term included in the final specification is for Asians and Pacific Islanders. The net result of Specification (3) in Tables 5.1, 5.2 and 5.3 is evidence of large, adverse, and statistically significant wage disparities for all minority groups and for non-minority women. In Tables 5.4, 5.5 and 5.6, for Construction and CRS, there is evidence of large, adverse, and statistically significant wage disparities for all minority groups and for non-minority women as well.

c. Conclusions

Clearly, minorities and women earn substantially and significantly less from their labor than do their non-minority male counterparts—in the New York State market area just as in the nation as a whole. Such disparities are symptoms of discrimination in the labor force that, in addition to its direct effect on workers, reduces the future availability of M/WBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are most likely to lead to entrepreneurial opportunities. These disparities reflect more than mere “societal discrimination” because they demonstrate the nexus between discrimination in the job market and reduced entrepreneurial opportunities for minorities and women. Other things equal, these reduced entrepreneurial opportunities in turn lead to lower M/WBE availability levels than would be observed in a race- and gender-neutral marketplace.

4. Findings: Race and Sex Disparities in Business Owner Earnings

The patterns of discrimination that affect minority and female wage earners affect minority and female entrepreneurs as well. We turn next to the analysis of race and sex disparities in business owner earnings. Tables 5.7 through 5.9 focus on the economy as a whole and Tables 5.10 through 5.12 on Construction and CRS. Tables 5.7 and 5.10 are derived from the 2006–2008 ACS PUMS, Tables 5.8 and 5.11 are derived from the 1980–1991 CPS, and Tables 5.9 and 5.12 are derived from the 1992–2008 CPS. The numbers shown in each of these six tables indicate the percentage difference between the average annual self-employment earnings of a given race/sex group and comparable non-minority males.

a. Specification (1) - the Basic Model

Specification (1) in Tables 5.7 through 5.9 shows large, adverse, and statistically significant business owner earnings disparities for African-Americans, Hispanics, Asians, Native Americans, persons reporting multiple races, and non-minority women consistent with the presence of discrimination in these markets. The measured difference for African-Americans ranges between 28 percent and 40 percent lower than for comparable non-minority males; for Hispanics, from 20 percent to 25 percent; for Asians, from 9 percent to 21 percent; for Native

Americans, from 28 percent to 36 percent; and for non-minority women from 38 percent to 46 percent.

Turning to the Construction and CRS sector, Specification (1) in Tables 5.10 through 5.12 shows large, adverse, and, with two exceptions, statistically significant business owner earnings disparities for African-Americans, Hispanics, Asians, Native Americans, persons reporting multiple races, and non-minority women consistent with the presence of discrimination in these markets.[185] The measured difference for African-Americans ranges between 23 percent and 43 percent lower than for comparable non-minority males; for Hispanics, 16 percent; for Asians, from 13 percent to 18 percent; for Native Americans, from 13 percent to 31 percent; and for non-minority women from 22 percent to 46 percent.

A comparison of Tables 5.8 and 5.9 shows changes in observed business owner earnings disparities over time for the economy as a whole. Tables 5.11 and 5.12 do the same for Construction and CRS.

For African-Americans between 1980 and 1991, the business owner earnings disparity in the economy as a whole was 33.6 percent, shrinking to 28.0 percent in the 1992-2008 period. In Construction and CRS, the disparity was 39.6 percent in the earlier period. Although diminishing significantly in recent years, to 23.3 percent, the disparity remains quite large.

For Hispanics between 1980 and 1991, the business owner earnings disparity in the economy as a whole was 19.9 percent, increasing to 24.8 percent in the 1992-2008 period. In Construction and CRS, the disparity has remained constant at 16.0 percent.

For Asians and Native Americans, in the economy as a whole, the business owner earnings disparity for the “Other race” category in the 1980-1991 period was 9.0 percent. In the 1992-2008 period, the business owner earnings disparities worsened significantly: to 21.4 percent for Asians and 28.2 percent for Native Americans. In Construction and CRS, the “Other race” disparity in the earlier period was only 0.5 percent, but grew to 13.0 percent for Asians and 12.8 percent for Native Americans during the 1992-2008 period.

For non-minority women between 1980 and 1991, the business owner earnings disparity in the economy as a whole was 45.7 percent, shrinking to 37.8 percent in the 1992-2008 period. In Construction and CRS, the disparity was 38.1 percent in the earlier period and, although diminishing significantly in recent years to 22.4 percent, the disparity remains large.

b. Specifications (2) and (3) - the Full Model Including NYSMA-Specific Interaction Terms

Next, we turn to Specifications (2) and (3) in Tables 5.7 through 5.12. Specification (2) is the basic regression model enhanced by a set of interaction terms to test whether minorities and women in the NYSMA differ significantly from those elsewhere in the U.S. economy. Specification (3) drops any NTSMA interaction terms that are not statistically significant.

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[185] The adverse disparity for “Other races” in Table 5.11 is not statistically significant.

For the economy as a whole in 2000, Table 5.7 shows that only the NYSMA interaction term for Hispanics is statistically significant, indicating that disparities for minorities in NYSMA are no better or worse than in the nation as a whole, while disparities for Hispanics are significantly worse in the NYSMA than in the nation as a whole. Table 5.8 for the 1980-1991 period, and Table 5.9 for the 1992-2008 period, shows that minorities and non-minority women face disparities in the NYSMA that are similar to those observed in the nation as a whole.

For the Construction and CRS sector in 2006–2008, Tables 5.10, 5.11, and 5.12 show that the estimates for the NYSMA are in agreement with results for the nation as a whole, with the exception that Table 5.12 shows significantly worse disparities for African Americans in the NYSMA.

c. Conclusions

As was the case for wage and salary earners, minority and female entrepreneurs earn substantially and significantly less from their efforts than similarly situated non-minority male entrepreneurs. The situation is, in general, little different in the New York State market area than in the nation as a whole. These disparities are a symptom of discrimination in commercial markets that directly and adversely affect M/WBEs. Other things equal, if minorities and women are prevented by discrimination from earning remuneration from their entrepreneurial efforts comparable to that of similarly situated non-minority males, then growth rates may slow, business failure rates may increase, and as demonstrated in the next section, business formation rates may decrease. Combined, these phenomena result in lower M/WBE availability levels than would be observed in a race- and gender-neutral marketplace.

C. Race and Sex Disparities in Business Formation

As discussed in the two prior sections, discrimination that affects the wages and entrepreneurial earnings of minorities and women will ultimately affect the number of businesses formed by these groups as well. In the final section of this chapter, we turn to the analysis of race and sex disparities in business formation.[186] We compare self-employment rates by race and sex to determine whether minorities or women are as likely to enter the ranks of entrepreneurs as similarly-situated non-minority males. We find that they are not as likely to do so and that minority and female business formation rates would likely be substantially and significantly higher if markets operated in a race- and gender-neutral manner.

Discrimination in the labor market, symptoms of which are evidenced in Section B.3 above, might cause wage and salary workers to turn to self-employment in hopes of encountering less discrimination from customers and suppliers than from employers and co-workers. Other things equal, and assuming minority and female workers did not believe that discrimination pervaded commercial markets as well, this would lead minority and female business formation rates to be higher than would otherwise be expected.

[186] We use the phrases “business formation rates” and “self-employment rates” interchangeably in this Study.

On the other hand, discrimination in the labor market prevents minorities and women from acquiring the very skills, experience, and positions that are often observed among those who leave the ranks of the wage and salary earners to start their own businesses. Many construction contracting concerns have been formed by men who were once employed as foremen for other contractors, fewer by those who were employed instead as laborers. Similarly, discrimination in commercial capital and credit markets, as well as asset and wealth distribution, prevents minorities and women from acquiring the financial credit and capital that are so often prerequisite to starting or expanding a business. Other things equal, these phenomena would lead minority and female business formation rates to be lower than otherwise would be expected.

Further, discrimination by commercial customers and suppliers against M/WBEs, symptoms of which are evidenced in Section B.4 above and elsewhere, operates to increase input prices and lower output prices for M/WBEs. This discrimination leads to higher rates of failure for some minority and women firms, lower rates of profitability and growth for others, and prevents some minorities and women from ever starting businesses at all.[187] All of these phenomena, other things equal, would contribute directly to relatively lower observed rates of minority and female self-employment.

1. Methods and Data

To see if minorities or non-minority women are as likely to be business owners as are comparable non-minority males, we use a statistical technique known as Probit regression. Probit 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. Probit 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. For example, Probit regression is used by statisticians to estimate the likelihood that an individual participates in the labor force, retires this year, or contracts a particular disease—these are all variables that can be categorized by a response of "yes" (for example, she is in the labor force) or "no" (for example, she is not in the labor force)—and the extent to which certain factors are positively or negatively related to the likelihood (for example, the more education she has, the more likely that she is in the labor force). Probit regression is one of several techniques that can be used to examine qualitative outcomes. Generally, other techniques such as Logit regression yield similar results.[188] In the present case, Probit regression is used to examine the relationship between the choice to own a business (yes or no) and the other demographic and socioeconomic characteristics in our basic model. The underlying data for this section is once again the 2006–2008 ACS PUMS, the 1980-1991 CPS, and the 1992-2008 CPS.

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[187] See also the materials cited at fn. 180 *supra*.

[188] For a detailed discussion, see G.S. Maddala, *Limited Dependent and Qualitative Variables in Econometrics*, Cambridge University Press, 1983. Probit analysis is performed here using the "dprobit" command in the statistical program STATA.

2. Findings: Race and Sex Disparities in Business Formation

As a point of reference for what follows, Tables 5.13 and 5.14 provide a summary of business ownership rates in 2006–2008 by race and sex. A striking feature of both tables is how much higher business ownership rates are for non-minority males than for all other groups. Moreover, the disparities for almost every category are larger in the NYSMA than in the nation as a whole.

Table 5.13, for example, shows a 9.56 percentage point difference between the overall self-employment rate of African-Americans and non-minority Males in the NYSMA (14.98 – 5.42 = 9.56). In the top panel of Table 5.14, for Construction and CRS, an even larger 11.06 percentage point difference is observed for African-Americans compared to non-minority males in the NYSMA. As shown in the final column, this 11.06 percentage point gap translates into a African-American business formation rate in the NYSMA Construction and CRS sector that is 40.4 percent lower than the non-minority male business formation rate (*i.e.*, (16.31 – 27.37) ÷ 27.37 ≈ -40.4%). In the NYSMA Services and Commodities sector, similarly large business formation rate disparities are observed for all minority groups and non-minority women, as shown in the bottom panel of Table 5.14.

For African-Americans nationally, the overall business formation rate is 62.2 percent lower than the non-minority male rate. In the NYSMA, it is 63.8 percent lower. In the NYSMA Construction and CRS sector, the African-American rate is 40.4 percent lower, compared to 36.5 percent lower in the U.S. as a whole. In the NYSMA Services and Commodities sector, the African-American rate is 62.2 percent lower, compared to 59.9 percent lower for the nation as a whole.

For Hispanics nationally, the overall business formation rate is 39.2 percent lower than the non-minority male rate. In the NYSMA, it is 47.1 percent lower. In the NYSMA Construction and CRS sector, the Hispanic rate is 43.4 percent lower, compared to 44.2 lower percent for the nation as a whole. In the NYSMA Services and Commodities sector, the Hispanic rate is 44.6 percent lower, compared to 36.2 lower percent for the nation as a whole.

For Asians nationally, the overall business formation rate is 25.6 percent lower than the non-minority male rate. In the NYSMA, it is 27.4 percent lower. In the NYSMA Construction and CRS sector, the Asian rate is 34.7 percent lower, compared to 32.4 percent lower for the nation as a whole. In the NYSMA Services and Commodities sector, the Asian rate is 18.5 percent lower than the non-minority male rate, compared to 14.4 percent for the nation as a whole.

For Native Americans nationally, the overall business formation rate is 39.2 percent lower than the non-minority male rate. In the NYSMA, it is 39.6 percent lower. In the NYSMA Construction and CRS sector, the Native American rate is 0.7 percent higher, compared to 31.0 percent lower in the U.S. as a whole. In the NYSMA Services and Commodities sector, the Native American rate is 45.4 percent lower, compared to 38.5 percent lower for the nation as a whole.

For minorities as a group, nationally, the overall business formation rate is 44.1 percent lower than the non-minority male rate. In the NYSMA, it is 47.0 percent lower. In the NYSMA Construction and CRS sector, the minority rate is 41.1 percent lower, compared to 41.2 percent

lower for the nation as a whole. In the NYSMA Services and Commodities sector, the minority rate is 43.2 percent lower than the non-minority male rate, compared to 40.2 percent for the nation as a whole.

For non-minority women nationally, the overall business formation rate is 38.4 percent lower than the non-minority male rate. In the NYSMA, it is 43.2 percent lower. In the NYSMA Construction and CRS sector, the non-minority female rate is 49.4 percent lower, compared to 41.4 percent lower for the nation as a whole. In the NYSMA Services and Commodities sector, the non-minority female rate is 35.3 percent lower than the non-minority male rate, compared to 28.6 percent for the nation as a whole.

There is no doubt that part of the group differences expressed in Tables 5.13 and 5.14 are associated with differences in the distribution of individual characteristics and preferences between minorities, women, and non-minority males. It is well known, for example, that earnings tend to increase with age (i.e. labor market experience). It is also true that the propensity toward self-employment increases with experience.[189] Since most minority populations in the United States have a lower median age than the non-Hispanic non-minority population, we must examine whether the disparities in business ownership evidenced in Tables 5.13 and 5.14 are largely—or even entirely—due to differences in the age distribution or other factors such as education, geographic location, or industry preferences of minorities and non-minority women compared to non-minority males.

To do this, the remainder of this section presents a series of regression analyses that test whether large, adverse, and statistically significant race and sex disparities for minorities and women remain when these other factors are held constant. Tables 5.15 through 5.17 focus on the economy as a whole and Tables 5.18 through 5.20 focus on the Construction and CRS sector. As in previous sections, the first in each triad of tables is derived from the 2006–2008 ACS PUMS, the second from the 1980–1991 CPS, and the third from the 1992–2008 CPS. The numbers shown in each of these tables indicate the percentage point difference between the probability of self-employment for a given race/sex group compared to similarly-situated non-minority males.

a. Specification (1) - the Basic Model

Specification (1) in Tables 5.15 through 5.17 shows large, adverse, and statistically significant business formation disparities for African-Americans, Hispanics, Asians, Native Americans, persons reporting multiple races, and non-minority women consistent with the presence of discrimination in these markets. Specification (1) in Tables 5.18a through 5.20 shows large, negative, and statistically significant business formation disparities for every group in the Construction and CRS sectors as well as in the Goods and Services sectors.

Tables 5.16 and 5.17 for the economy as a whole, and Tables 5.19 and 5.20 for the Construction and CRS sector, show changes in observed business formation disparities over time.

[189] Wainwright (2000), p. 86.

For African-Americans between 1980 and 1991, the business formation rate disparity in the economy as a whole was 3.7 percentage points, remaining essentially unchanged at 3.6 percentage points in the 1992-2008 period. In Construction and CRS, the disparity was 12.2 percentage points in the earlier period, decreasing to 9.9 percentage points in the 1992-2008 period.

For Hispanics between 1980 and 1991, the business formation rate disparity in the economy as a whole was 2.2 percentage points, rising to 2.8 percentage points in the 1992-2008 period. In Construction and CRS, the disparity was 7.4 percentage points during 1980-1991, rising to 8.6 percentage points in the 1992-2008 period.

For Asians and Native Americans, in the economy as a whole, the business formation rate disparity for the "Other race" category in the 1980-1991 period was only 0.3 percentage points. In the 1992-2008 period, the business formation rate disparities worsened significantly: to 1.0 percentage points for Asians and 2.1 percentage points for Native Americans. In Construction and CRS, the "Other race" disparity in the earlier period was 7.9 percentage points, falling to 4.2 percentage points for Asians and 6.0 percentage points for Native Americans during the 1992-2008 period.

For non-minority women between 1980 and 1991, the business formation rate disparity in the economy as a whole was 3.3 percentage points, falling to 2.5 percentage points in the 1992-2008 period. In Construction and CRS, the disparity was 12.1 percent in the earlier period, falling to 8.7 percentage points in more recent years.

b. Specifications (2) and (3) - the Full Model Including NYSMA-Specific Interaction Terms

Several of the NYSMA interaction terms included in Specification (2) were significant. The final results are in Specification (3) for Tables 5.15-5.20.

To summarize for the economy-wide results (Tables 5.15, 5.16 and 5.17):

- For African-Americans, business formation rates are between 3.6 and 4.8 percentage points lower than what would be expected in a race- and gender-neutral marketplace.

- For Hispanics, business formation rates are between 3.2 percentage points and 3.7 percentage points lower than what would be expected in a race- and gender-neutral marketplace.

- For Asians, business formation rates are between 1.0 and 1.4 percentage points lower than what would be expected in a race- and gender-neutral marketplace.

- For Native Americans, business formation rates are between 2.1 and 2.7 percentage points lower than what would be expected in a race- and gender-neutral marketplace.

- For non-minority women, business formation rates are between 3.3 and 4.3 percentage points lower than what would be expected in a race- and gender-neutral marketplace.

To summarize for the Construction and CRS sector results (Tables 5.18a, 5.19 and 5.20):

- For African-Americans, business formation rates are between 9.2 and 12.2 percentage points lower than what would be expected in a race- and gender-neutral marketplace.
- For Hispanics, business formation rates are between 7.1 and 8.6 percentage points lower than what would be expected in a race- and gender-neutral marketplace.
- For Asians, business formation rates are between 4.2 and 6.3 percentage points lower than what would be expected in a race- and gender-neutral marketplace.
- For Native Americans, business formation rates are between 6.0 and 7.9 percentage points lower than what would be expected in a race- and gender-neutral marketplace.
- For non-minority women, business formation rates are between 11.8 and 18.0 percentage points lower than what would be expected in a race- and gender-neutral marketplace.

c. Conclusions

This section has demonstrated that observed M/WBE availability levels in the New York State market area are substantially and statistically significantly lower in every case examined than those that would be expected to be observed if commercial markets operated in a race- and gender-neutral manner. Discrimination results in minorities and women being substantially and significantly less likely to own their own businesses than would be expected based upon their observable characteristics including age, education, geographic location, industry, and trends over time. As demonstrated in previous sections, these groups also suffer substantial and significant earnings disadvantages relative to comparable non-minority males whether they work as employees or as entrepreneurs.

D. Expected Business Formation Rates—Implications for Current M/WBE Availability[190]

In Table 5.21, the Probit regression results from Tables 5.15, 5.18a, and 5.18b for the overall New York state market area economy, the NYSMA Construction and CRS sector, and the NYSMA Services and Commodities sector, respectively, are combined with weighted average self-employment rates by race and sex from the 2006–2008 ACS PUMS (Tables 5.13 and 5.14) to determine the expected difference between baseline availability and expected availability in a race- and gender-neutral marketplace. These figures appear in column (2) of each panel in Table 5.21.

The business formation rate in the NYSMA for minorities and women in the Construction and CRS sector is 15.4 percent (see middle panel of Table 5.21, last row). According to the regression specification underlying Table 5.18a, however, that rate would be 24.4 percent, or 58.3 percent higher, in a race- and gender-neutral marketplace. Put differently, the disparity

[190] This exercise addresses the requirements of 49 CFR 26.45 ("Step 2") for the USDOT DBE Program.

index of the actual business formation rate to the expected business formation rate is 63.2. Disparity indices are adverse and statistically significant for all groups examined.[191]

In Construction and CRS, the largest disparity observed is for non-minority females (56.5), followed in descending order by African-Americans (64.4), Hispanics (65.2), Native Americans (69.6), and Asians (73.7). For M/WBEs as a group in the NYSMA Construction and CRS sectors, the disparity index is 63.2.

In the Goods and Services sector, the largest disparity observed is for African-Americans (47.6), followed by Hispanics (71.2), non-minority women (71.6), Native Americans (72.5), persons reporting multiple races (78.5), and Asians (85.8). For M/WBEs as a group in the NYSMA Goods and Services sectors, the disparity index is 70.7.

Given the large disparities observed throughout Table 5.21, goal-setters may consider adjusting baseline estimates of M/WBE availability upward to account for the continuing effects of discrimination. The business formation rate disparities documented in Table 5.21 can be combined with the estimates of current M/WBE availability documented in Tables 4.17 and elsewhere to provide estimates of expected availability. These estimates appear below in Table 7.30. In every single instance in the New York State market area, expected M/WBE availability exceeds current M/WBE availability.

E. Evidence from the Survey of Business Owners

As a final check on the statistical findings in this Chapter, we present evidence from a Census Bureau data collection effort dedicated to M/WBEs. The Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO), formerly known as the *Survey of Minority- and Women-Owned Business Enterprises* (SMWOBE), collects and disseminates data on the number, sales, employment, and payrolls of businesses owned by women and members of racial and ethnic minority groups. This survey has been conducted every five years since 1972 as part of the *Economic Censuses* program. Data from the 2002 SBO were just released in 2007.

The SBO estimates are created by matching data collected from income tax returns by the Internal Revenue Service with Social Security Administration data on race and ethnicity, and supplementing this information using statistical sampling methods. The unique field for conducting this matching is the Social Security Number (SSN) or the Employer Identification Number (EIN), as reported on the tax return.[192]

The SBO covers women and five groups of minorities—(1) African-Americans, (2) Hispanics, (3) Asians, (4) Native Hawaiians and Pacific Islanders, and (5) American Indians and Alaskan

[191] The disparity indices for Asians and for persons reporting multiple races are, however, higher than 80.0 percent in two of the three panels of Table 5.21.

[192] Prior to 2002, "C" corporations were not included in the SMWOBE universe due to technical difficulties. This has been rectified in the 2002 SBO. For more information, consult the discussion of SBO survey methodology at http://www.census.gov/econ/sbo/.

Natives. The 2002 SBO also includes comparative information for non-minority-owned, non-women-owned firms.[193]

The SBO provides aggregate estimates of the number of minority-owned and women-owned firms and their annual sales and receipts. The SBO distinguishes employer firms from nonemployer firms, and for the former also includes estimates of aggregate annual employment and payroll.

Although compared to the ACS PUMS or the CPS the SBO is more limited in the scope of industrial and geographic detail it provides, it nonetheless contains a wealth of information on the character of minority and female business enterprise in the U.S as a whole as well as in the New York State market area. In the remainder of this section we present 2002 SBO statistics for the United States as a whole and the New York State market area and calculate disparity indices from them. We find that results in the SBO regarding disparities are consistent with our findings above using the ACS PUMS and the CPS.

Tables 5.22 and 5.23 contain data for all industries combined. Table 5.22 is for the U.S. as a whole, Table 5.23 is for the states of New York, New Jersey, and Connecticut combined.[194] Panel A in these three tables summarizes the 2002 SBO results for each grouping. Panel A of Table 5.22, for example, shows that there were 22.48 million firms in the U.S. in 2002 (column 1) with overall sales and receipts of $8.784 trillion (column 2). Of these 22.48 million firms, 5.17 million had one or more employees (column 3) and these 5.17 million firms had overall sales and receipts of $8.039 trillion (column 4). Column (5) shows a total of 55.37 million employees on the payroll of these 5.17 million firms and a total annual payroll expense of $1.627 trillion (column 6).

The remaining rows in Panel A provide comparable statistics for women-owned and minority-owned firms. For example, Table 5.22 shows that there were 1.2 million African-American-owned firms counted in 2002, and that these 1.2 million firms registered $88.6 billion in sales and receipts. It also shows that 94,518 of these African-American-owned firms had one or more employees, and that they employed a total of 753,978 workers in 2002 with an annual payroll total of $17.55 billion.

Panel A of Table 5.23 provides comparable information for NY-NJ-CT combined. In 2002 the Census Bureau counted 772,392 female-owned firms in these three states,[195] 175,918 African-American-owned firms, 222,837 Hispanic-owned firms, 207,855 Asian- or Pacific Islander-owned firms, and 14,979 Native American-owned firms.

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[193] In the ACS PUMS and CPS data, discussed above, the unit of analysis is the business owner, or self-employed person. In the SBO data the unit of analysis is the business rather than the business owner. Furthermore, unlike most other business statistics, including the other components of the *Economic Censuses*, the unit of analysis in the SBO is the firm, rather than the establishment.

[194] It is not possible with the SBO data to exactly replicate the NYSMA. The NY-NJ-CT numbers presented in this section therefore also include portions of New Jersey and Connecticut that are not part of the New York-Northern New Jersey-Long Island CMSA, nor do they include Pike County, PA which is also in the CMSA.

[195] Additionally 221,457 equally male/female-owned firms were counted.

Panel B in each Table converts the figures in Panel A to percentage distributions within each column. For example, Column (1) in Panel B of Table 5.23 shows that African-American-owned firms were 6.65 percent of all firms in these three states in 2002, and that female-owned firms were 29.19 percent of all firms in these states. Additionally, 8.42 percent of firms were Hispanic-owned, 7.86 percent were Asian- or Pacific Islander-owned and 0.57 percent were Native American-owned.

Column (2) in Panel B provides the same percentage distribution for overall sales and receipts. Table 5.23, for example, shows that although African-American-owned firms were 6.65 percent of all firms in these three states, they accounted for only 1.02 percent of all sales and receipts. Similar results are obtained when the sample is restricted to firms with one or more paid employees. Column (3) in Table 5.23 shows that African-American-owned employer firms accounted for 1.87 percent of all firms but only 0.79 percent of all sales and receipts. Large disparities in NY-NJ-CT are observed not only for African-Americans, but also for female-owned firms, Hispanic-owned firms, Asian-owned firms, and Native American-owned firms.

The disparity indices are presented in Panel C of each Table. Disparity indices of 80 percent or less indicate disparate impact consistent with business discrimination against minority-owned and female-owned firms (0 percent being complete disparity and 100 percent being full parity). In NY-NJ-CT, these disparity indices fall beneath the 80 percent threshold in every single case.

Tables 5.25 shows comparable SBO data for Construction and CRS (NAICS 23 and 54) in NY-NJ-CT, while Table 5.27 shows data for Goods and Services (balance of NAICS codes). Disparity indices in NY-NJ-CT are again large and statistically significant in every single case.

Tables

Table 5.1. Annual Wage Earnings Regressions, All Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.326 (172)	-0.331 (166.91)	-0.331 (167.57)
Hispanic	-0.226 (122.21)	-0.225 (115.94)	-0.225 (122.16)
Asian	-0.265 (109.99)	-0.267 (102.72)	-0.267 (103.11)
Native American	-0.309 (47.71)	-0.308 (46.79)	-0.309 (47.74)
Other Race	-0.262 (62.75)	-0.263 (60.2)	-0.262 (62.75)
Non-minority Female	-0.325 (293.55)	-0.325 (281.73)	-0.325 (293.5)
Age	0.182 (572.57)	0.182 (572.56)	0.182 (572.57)
Age^2	-0.002 (498.77)	-0.002 (498.76)	-0.002 (498.77)
NYSMA	0.175 (33.39)	0.170 (29.25)	0.166 (31.38)
NYSMA*African-American		0.076 (9.61)	0.079 (10.51)
NYSMA*Hispanic		-0.012 (1.79)	
NYSMA* Asian/Pacific Islanders		0.018 (2.26)	0.021 (2.81)
NYSMA* Native American		-0.049 (1.11)	
NYSMA*Other Race		0.007 (.42)	
NYSMA*non-minority Female		-0.005 (1.07)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	2548959	2548959	2548959
R^2	.4591	.4591	.4591

Source: NERA calculations from the 2006-2008 ACS Public Use Microdata Samples.

Notes: (1) Universe is all private sector wage and salary workers between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number is the percentage difference in annual wages between a given group and non-minority men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence; (6) "NYSMA" is shorthand for "New York State Market Area," which is the State of New York, plus the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA.

Table 5.2. Annual Wage Earnings Regressions, All Industries, 1980-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.302 (82.25)	-0.306 (77.72)	-0.306 (77.72)
Hispanic	-0.204 (57.67)	-0.201 (52.96)	-0.201 (52.95)
Other Race	-0.127 (15.62)	-0.128 (14.75)	-0.126 (15.58)
Non-minority Female	-0.283 (127.02)	-0.286 (122.45)	-0.286 (122.46)
Age	0.099 (150.3)	0.099 (150.32)	0.099 (150.33)
Age^2	-0.001 (124.43)	-0.001 (124.46)	-0.001 (124.47)
NYSMA		0.046 (4.8)	0.046 (4.84)
NYSMA*African-American		0.049 (3.97)	0.048 (3.94)
NYSMA*Hispanic		-0.035 (3.53)	-0.036 (3.58)
NYSMA*Other Race		0.019 (.73)	
NYSMA*non-minority Female		0.037 (4.71)	0.037 (4.71)
Time (13 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	689172	689172	689172
R^2	.6349	.6349	.6349

Source: NERA calculations from the Annual Demographic File of the 1980-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector wage and salary workers between age 16 and 64; (2) Reported number is the percentage difference in annual wages between a given group and non-minority men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Asian/Pacific Islanders and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.3. Annual Wage Earnings Regressions, All Industries, 1992-2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.280 (94.01)	-0.282 (89.46)	-0.282 (89.75)
Hispanic	-0.197 (70.61)	-0.196 (65.85)	-0.197 (70.26)
Asian	-0.217 (48.93)	-0.219 (45.54)	-0.220 (45.73)
Native American	-0.234 (27.82)	-0.233 (27.16)	-0.235 (27.93)
Non-minority Female	-0.217 (104.91)	-0.220 (102.48)	-0.220 (103.1)
Age	0.095 (165.2)	0.095 (165.23)	0.095 (165.23)
Age^2	-0.001 (139.37)	-0.001 (139.38)	-0.001 (139.38)
NYSMA	0.027 (3.09)	0.009 (.98)	0.006 (.66)
NYSMA*African-American		0.026 (2.42)	0.030 (2.86)
NYSMA*Hispanic		-0.011 (1.32)	
NYSMA*Asian		0.029 (2.09)	0.032 (2.42)
NYSMA*Native American		-0.057 (1.19)	
NYSMA*non-minority Female		0.045 (5.97)	0.049 (7)
Time (11 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	1054627	1054627	1054627
R^2	.5953	.5954	.5954

Source: NERA calculations from the Annual Demographic File of the 1992-2008 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector wage and salary workers between age 16 and 64; (2) Reported number is the percentage difference in annual wages between a given group and non-minority men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Asian/Pacific Islanders and American Indians/Alaska Natives; (5) Geography is defined based on place of residence; (6) "NYSMA" is shorthand for "New York State Market Area," which is the State of New York, plus the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA.

Table 5.4. Annual Wage Earnings Regressions, Construction and Related Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.351 (44.24)	-0.355 (42.76)	-0.355 (42.82)
Hispanic	-0.196 (36.76)	-0.192 (34.92)	-0.192 (35.03)
Asian	-0.220 (19.43)	-0.203 (16.55)	-0.204 (16.57)
Native American	-0.309 (17.16)	-0.313 (17.22)	-0.314 (17.24)
Other Race	-0.226 (15.82)	-0.227 (15.31)	-0.225 (15.77)
Non-minority Female	-0.360 (81.42)	-0.358 (78.03)	-0.360 (81.39)
Age	0.149 (139.46)	0.149 (139.48)	0.149 (139.48)
Age^2	-0.001 (119.49)	-0.001 (119.5)	-0.001 (119.51)
NYSMA	0.187 (11.04)	0.200 (11.29)	0.194 (11.2)
NYSMA*African-American		0.071 (2.05)	0.076 (2.21)
NYSMA*Hispanic		-0.053 (2.6)	-0.049 (2.39)
NYSMA* Asian/Pacific Islanders		-0.138 (4.08)	-0.134 (3.96)
NYSMA* Native American		0.330 (2.01)	0.337 (2.04)
NYSMA*Other Race		0.035 (.56)	
NYSMA*non-minority Female		-0.038 (1.84)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	221546	221546	221546
R^2	.2758	.2759	.2758

Source and Notes: See Table 5.1.

Table 5.5. Annual Wage Earnings Regressions, Construction and Related Industries, 1980-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.352 (21.84)	-0.358 (21)	-0.352 (21.84)
Hispanic	-0.158 (12.25)	-0.155 (11.56)	-0.158 (12.25)
Other Race	-0.128 (3.83)	-0.120 (3.37)	-0.128 (3.83)
Non-minority Female	-0.302 (25.15)	-0.303 (24.11)	-0.302 (25.15)
Age	0.122 (48.55)	0.122 (48.56)	0.122 (48.55)
Age^2	-0.001 (40.02)	-0.001 (40.03)	-0.001 (40.02)
NYSMA		0.041 (1.25)	0.045 (1.4)
NYSMA*African-American		0.110 (1.74)	
NYSMA*Hispanic		-0.048 (1.1)	
NYSMA*Other Race		-0.113 (1.53)	
NYSMA*non-minority Female		0.013 (.27)	
Time (13 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	49976	49976	49976
R^2	.5524	.5525	.5524

Source: See Table 5.2.

Table 5.6. Annual Wage Earnings Regressions, Construction and Related Industries, 1992-2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.242 (18.54)	-0.244 (17.66)	-0.242 (18.54)
Hispanic	-0.167 (19.36)	-0.166 (18.39)	-0.167 (19.36)
Asian	-0.183 (9.17)	-0.176 (8.27)	-0.183 (9.17)
Native American	-0.156 (6.79)	-0.159 (6.84)	-0.156 (6.79)
Non-minority Female	-0.207 (20.51)	-0.206 (19.7)	-0.207 (20.51)
Age	0.098 (48.99)	0.098 (49)	0.098 (48.99)
Age^2	-0.001 (40.85)	-0.001 (40.85)	-0.001 (40.85)
NYSMA	-0.037 (1.27)	-0.035 (1.18)	-0.037 (1.27)
NYSMA*African-American		0.034 (.71)	
NYSMA*Hispanic		-0.010 (.39)	
NYSMA*Asian		-0.057 (.89)	
NYSMA*Native American		0.137 (.7)	
NYSMA*non-minority Female		-0.007 (.17)	
Time (11 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	83316	83316	83316
R^2	.4948	.4948	.4948

Source: See Table 5.3.

Table 5.7. Annual Business Owner Earnings Regressions, All Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.400 (32.12)	-0.406 (31.23)	-0.401 (32.13)
Hispanic	-0.231 (20.75)	-0.224 (19.28)	-0.224 (19.27)
Asian	-0.094 (5.82)	-0.090 (5.18)	-0.093 (5.78)
Native American	-0.358 (10.17)	-0.366 (10.32)	-0.358 (10.18)
Other Race	-0.363 (16.2)	-0.369 (15.93)	-0.363 (16.2)
Non-minority Female	-0.407 (67.4)	-0.409 (65.61)	-0.409 (65.7)
Age	0.163 (79.16)	0.163 (79.18)	0.163 (79.18)
Age^2	-0.002 (69.65)	-0.002 (69.66)	-0.002 (69.66)
NYSMA	0.121 (4.02)	0.105 (3.32)	0.115 (3.68)
NYSMA*African-American		0.102 (1.78)	
NYSMA*Hispanic		-0.091 (2.33)	-0.098 (2.56)
NYSMA* Asian/Pacific Islanders		-0.027 (.56)	
NYSMA* Native American		0.601 (1.64)	
NYSMA*Other Race		0.149 (1.34)	
NYSMA*non-minority Female		0.053 (2.09)	0.045 (1.83)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	284365	284365	284365
R^2	.1676	.1677	.1676

Source: NERA calculations from the 2006-2008 ACS Public Use Microdata Samples.

Notes: (1) Universe is all persons in the private sector with positive business earnings between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number is the percentage difference in annual business earnings between a given group and non-minority men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence; (6) "NYSMA" is shorthand for "New York State Market Area," which is the State of New York, plus the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA.

Table 5.8. Annual Business Owner Earnings Regressions, All Industries, 1980-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.336 (15.34)	-0.346 (14.63)	-0.336 (15.34)
Hispanic	-0.199 (13.03)	-0.202 (12.51)	-0.199 (13.03)
Other Race	-0.090 (3.05)	-0.079 (2.45)	-0.090 (3.05)
Non-minority Female	-0.457 (48.63)	-0.458 (46.79)	-0.457 (48.63)
Age	0.101 (32.83)	0.101 (32.82)	0.101 (32.83)
Age^2	-0.001 (29.46)	-0.001 (29.46)	-0.001 (29.46)
NYSMA	0.031 (.81)	0.023 (.59)	0.031 (.81)
NYSMA*African-American		0.126 (1.69)	
NYSMA*Hispanic		0.042 (.85)	
NYSMA*Other Race		-0.108 (1.46)	
NYSMA*non-minority Female		0.014 (.38)	
Time (13 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	74895	74895	74895
R^2	.5172	.5172	.5172

Source: NERA calculations from the Annual Demographic File of the 1980-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector incorporated and unincorporated self-employed with positive business earnings between age 16 and 64; (2) Reported number is the percentage difference in annual business earnings between a given group and non-minority men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Asian/Pacific Islanders and American Indians/Alaska Natives; (5) Geography is defined based on place of residence; (6) "NYSMA" is shorthand for "New York State Market Area," which is the State of New York, plus the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA.

Table 5.9. Annual Business Owner Earnings Regressions, All Industries, 1992-2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.280 (16.32)	-0.274 (15.09)	-0.280 (16.32)
Hispanic	-0.248 (19.21)	-0.243 (17.88)	-0.248 (19.21)
Asian	-0.214 (12.8)	-0.210 (11.56)	-0.214 (12.8)
Native American	-0.282 (8.14)	-0.277 (7.9)	-0.282 (8.14)
Non-minority Female	-0.378 (43.13)	-0.378 (41.66)	-0.378 (43.13)
Age	0.097 (30.48)	0.097 (30.48)	0.097 (30.48)
Age^2	-0.001 (28.47)	-0.001 (28.47)	-0.001 (28.47)
NYSMA	0.052 (1.25)	0.060 (1.41)	0.052 (1.25)
NYSMA*African-American		-0.080 (1.29)	
NYSMA*Hispanic		-0.057 (1.32)	
NYSMA*Asian		-0.032 (.67)	
NYSMA*Native American		-0.165 (.69)	
NYSMA*non-minority Female		0.005 (.15)	
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	115869	115869	115869
R^2	.3823	.3824	.3824

Source: NERA calculations from the Annual Demographic File of the 1992-2002 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector incorporated and unincorporated self-employed with positive business earnings between age 16 and 64; (2) Reported number is the percentage difference in annual business earnings between a given group and non-minority men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Asian/Pacific Islanders and American Indians/Alaska Natives; (5) Geography is defined based on place of residence; (6) "NYSMA" is shorthand for "New York State Market Area," which is the State of New York, plus the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA.

Table 5.10. Business Owner Earnings Regressions, Construction and Related Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.434 (14.11)	-0.437 (13.7)	-0.434 (14.11)
Hispanic	-0.159 (6.95)	-0.144 (6.03)	-0.143 (6.02)
Asian/Pacific Islanders	-0.177 (3.61)	-0.135 (2.54)	-0.135 (2.53)
Native American	-0.312 (4.48)	-0.316 (4.51)	-0.311 (4.46)
Other Race	-0.279 (5.39)	-0.285 (5.36)	-0.278 (5.37)
Non-minority Female	-0.458 (22.9)	-0.457 (22.06)	-0.458 (22.89)
Age	0.126 (27.47)	0.126 (27.47)	0.126 (27.48)
Age^2	-0.001 (24.73)	-0.001 (24.74)	-0.001 (24.74)
NYSMA	0.025 (.43)	0.051 (.86)	0.054 (.93)
NYSMA*African-American		0.090 (.58)	
NYSMA*Hispanic		-0.224 (2.78)	
NYSMA* Asian/Pacific Islanders		-0.336 (2.46)	
NYSMA* Native American		0.498 (.64)	
NYSMA*Other Race		0.172 (.62)	
NYSMA*non-minority Female		-0.029 (.28)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	47414	47414	47414
R^2	.0529	.0532	.0531

Source and Notes: See Table 5.7.

Table 5.11. Business Owner Earnings Regressions, Construction and Related Industries, 1980-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.396 (8.73)	-0.406 (8.51)	-0.396 (8.73)
Hispanic	-0.161 (4.63)	-0.150 (4.07)	-0.161 (4.63)
Other Race	-0.005 (.08)	0.015 (.22)	-0.005 (.08)
Non-minority Female	-0.381 (9.14)	-0.389 (9.01)	-0.381 (9.14)
Age	0.106 (15.86)	0.106 (15.87)	0.106 (15.86)
Age^2	-0.001 (14.27)	-0.001 (14.28)	-0.001 (14.27)
NYSMA		0.179 (1.79)	0.178 (1.78)
NYSMA*African-American		0.165 (.84)	
NYSMA*Hispanic		-0.142 (1.4)	
NYSMA*Other Race		-0.312 (.84)	
NYSMA*non-minority Female		0.238 (1.2)	
Time (13 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	13171	13171	13171
R^2	.3324	.3327	.3324

Source and Notes: See Table 5.8.

Table 5.12. Business Owner Earnings Regressions, Construction and Related Industries, 1992-2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.233 (5.57)	-0.201 (4.68)	-0.201 (4.69)
Hispanic	-0.159 (6.06)	-0.155 (5.56)	-0.160 (6.07)
Asian	-0.130 (2.24)	-0.138 (2.29)	-0.131 (2.26)
Native American	-0.128 (1.9)	-0.129 (1.89)	-0.128 (1.89)
Non-minority Female	-0.224 (6.99)	-0.224 (6.87)	-0.224 (6.99)
Age	0.073 (11.29)	0.073 (11.26)	0.073 (11.28)
Age^2	-0.001 (10.23)	-0.001 (10.2)	-0.001 (10.21)
NYSMA	-0.022 (.33)	-0.007 (.11)	-0.010 (.16)
NYSMA*African-American		-0.374 (2.23)	-0.372 (2.22)
NYSMA*Hispanic		-0.051 (.65)	
NYSMA*Asian		0.077 (.35)	
NYSMA*Native American		0.053 (.11)	
NYSMA*non-minority Female		0.007 (.04)	
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	22992	22992	22992
R^2	.2524	.2529	.2529

Source and Notes: See Table 5.9.

Table 5.13. Self-Employment Rates in 2006–2008 for Selected Race and Sex Groups: United States and the New York State Market Area, All Industries

Race/Sex	U.S. (%)	New York State Market Area (%)	Percent Difference from Non-minority male (NYSMA)
African-American	5.38	5.42	-63.8%
Hispanic	8.65	7.93	-47.1%
Asian	10.58	10.88	-27.4%
Native American	8.65	9.05	-39.6%
Multiple Races	8.96	9.14	-39.0%
MBE	7.95	7.94	-47.0%
Non-minority female	8.76	8.51	-43.2%
M/WBE	8.38	8.21	-45.2%
Non-minority male	14.22	14.98	

Source: NERA calculations from the 2006-2008 ACS Public Use Microdata Samples.

Table 5.14. Self-Employment Rates in 2006–2008 for Selected Race and Sex Groups: United States and the New York State Market Area, Construction and CRS Sectors and Goods and Services Sectors

Race/Sex	U.S. (%)	New York State Market Area (%)	Percent Difference from Non-minority male (NYSMA)
Construction and CRS Sectors			
African-American	16.61	16.31	-40.4%
Hispanic	14.60	15.50	-43.4%
Asian	17.68	17.88	-34.7%
Native American	18.06	27.57	0.7%
Multiple Races	18.93	15.86	-42.1%
MBE	15.40	16.12	-41.1%
Non-minority female	15.34	13.86	-49.4%
M/WBE	15.39	15.58	-43.1%
Non-minority male	26.17	27.37	
Goods and Services Sectors			
African-American	4.81	4.89	-62.2%
Hispanic	7.65	7.18	-44.6%
Asian	10.26	10.56	-18.5%
Native American	7.37	7.07	-45.4%
Multiple Races	8.01	8.49	-34.4%
MBE	7.17	7.35	-43.2%
Non-minority female	8.56	8.38	-35.3%
M/WBE	7.93	7.85	-39.4%
Non-minority male	11.99	12.95	

Source: NERA calculations from the 2006-2008 ACS Public Use Microdata Samples.

Table 5.15. Business Formation Regressions, All Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.042 (74.46)	-0.042 (70.12)	-0.042 (70.23)
Hispanic	-0.032 (65)	-0.032 (61.74)	-0.032 (65.08)
Asian/Pacific Islanders	-0.019 (27.32)	-0.019 (26.25)	-0.019 (26.39)
Native American	-0.027 (15.05)	-0.027 (14.56)	-0.027 (15)
Other Race	-0.020 (16.42)	-0.020 (15.36)	-0.020 (16.44)
Non-minority Female	-0.028 (80.33)	-0.028 (75.52)	-0.028 (75.81)
Age	0.010 (115.63)	0.010 (115.61)	0.010 (115.6)
Age^2	-0.000 (80.51)	-0.000 (80.49)	-0.000 (80.48)
NYSMA	-0.004 (3.09)	-0.002 (1.05)	-0.002 (1.51)
NYSMA*African-American		-0.007 (2.74)	-0.006 (2.49)
NYSMA*Hispanic		-0.003 (1.75)	
NYSMA* Asian/Pacific Islanders		0.004 (2.02)	0.005 (2.37)
NYSMA* Native American		-0.016 (1.31)	
NYSMA*Other Race		-0.006 (1.33)	
NYSMA*non-minority Female		-0.007 (6.2)	-0.006 (5.84)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	2695435	2695435	2695435
Pseudo R^2	.2194	.2195	.2195

Source: NERA calculations from the 2006-2008 ACS Public Use Microdata Samples.

Notes: (1) Universe is all private sector labor force participants between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and non-minority men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence; (6) "NYSMA" is shorthand for "New York State Market Area," which is the State of New York, plus the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA.

Table 5.16. Business Formation Regressions, All Industries, 1980-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.037 (50.59)	-0.037 (47.22)	-0.037 (50.66)
Hispanic	-0.022 (31.38)	-0.021 (27.65)	-0.021 (27.73)
Other Race	-0.003 (1.77)	-0.002 (1.13)	-0.003 (1.8)
Non-minority Female	-0.033 (62.15)	-0.032 (57.79)	-0.032 (57.91)
Age	0.012 (91.02)	0.012 (91.04)	0.012 (91.03)
Age^2	-0.000 (71.55)	-0.000 (71.58)	-0.000 (71.58)
NYSMA		0.015 (6.09)	0.014 (5.96)
NYSMA*African-American		-0.002 (.74)	
NYSMA*Hispanic		-0.016 (7.22)	-0.016 (7.1)
NYSMA*Other Race		-0.009 (1.75)	
NYSMA*non-minority Female		-0.011 (7.47)	-0.011 (7.42)
Time (6 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	770337	770377	770377
Pseudo R^2	.2530	.2532	.2532

Source: NERA calculations from the Merged Outgoing Rotation Groups of the 1980-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector labor force participants between age 16 and 64; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and non-minority men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Asian/Pacific Islanders and American Indians/Alaska Natives; (5) Geography is defined based on place of residence; (6) "NYSMA" is shorthand for "New York State Market Area," which is the State of New York, plus the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA.

Table 5.17. Business Formation Regressions, All Industries, 1992-2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.036 (48.26)	-0.036 (44.86)	-0.036 (48.32)
Hispanic	-0.028 (41.23)	-0.027 (38.19)	-0.028 (38.41)
Asian	-0.010 (9.23)	-0.010 (8.27)	-0.010 (9.37)
Native American	-0.021 (10.95)	-0.021 (10.81)	-0.021 (10.86)
Non-minority Female	-0.025 (46.27)	-0.024 (42.94)	-0.024 (43.28)
Age	0.012 (85.75)	0.012 (85.73)	0.012 (85.74)
Age^2	-0.000 (64.31)	-0.000 (64.29)	-0.000 (64.3)
NYSMA	0.003 (1.3)	0.007 (2.94)	0.006 (2.62)
NYSMA*African-American		-0.005 (1.85)	
NYSMA*Hispanic		-0.005 (2.46)	-0.005 (2.07)
NYSMA*Asian		-0.003 (1.1)	
NYSMA*Native American		0.010 (.77)	
NYSMA*non-minority Female		-0.010 (5.79)	-0.009 (5.47)
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	1177892	1177887	1177887
Pseudo R^2	.2089	.2090	.2089

Source: NERA calculations from the Merged Outgoing Rotation Groups of the 1992-2002 Current Population.

Notes: (1) Universe is all private sector labor force participants between age 16 and 64; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and non-minority men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Asian/Pacific Islanders and American Indians/Alaska Natives; (5) Geography is defined based on place of residence; (6) "NYSMA" is shorthand for "New York State Market Area," which is the State of New York, plus the balance of the New York-Northern New Jersey-Long Island, NY-NJ-CT CMSA.

Table 5.18a. Business Formation Regressions, Construction and Related Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.092 (21.7)	-0.091 (20.27)	-0.092 (21.7)
Hispanic	-0.078 (28.06)	-0.078 (27.24)	-0.078 (28.05)
Asian/Pacific Islanders	-0.063 (10.31)	-0.062 (9.45)	-0.063 (10.33)
Native American	-0.079 (8.28)	-0.079 (8.18)	-0.079 (8.27)
Other Race	-0.041 (5.48)	-0.041 (5.19)	-0.041 (5.48)
Non-minority Female	-0.096 (37.27)	-0.095 (35.44)	-0.095 (35.5)
Age	0.025 (46.74)	0.025 (46.73)	0.025 (46.73)
Age^2	-0.000 (32.48)	-0.000 (32.47)	-0.000 (32.47)
NYSMA	-0.011 (1.52)	-0.008 (1.09)	-0.009 (1.24)
NYSMA*African-American		-0.024 (1.46)	
NYSMA*Hispanic		0.005 (.44)	
NYSMA* Asian/Pacific Islanders		-0.007 (.37)	
NYSMA* Native American		0.007 (.1)	
NYSMA*Other Race		-0.009 (.31)	
NYSMA*non-minority Female		-0.024 (2.14)	-0.023 (2.09)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	259606	259606	259606
Pseudo R^2	.0813	.0813	.0813

Source and Notes: See Table 5.15.

Table 5.18b. Business Formation Regressions, Goods and Services Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.053 (78.18)	-0.052 (73.81)	-0.053 (78.21)
Hispanic	-0.031 (47.08)	-0.031 (45.36)	-0.031 (47.22)
Asian/Pacific Islanders	-0.027 (33.84)	-0.028 (33.13)	-0.028 (33.18)
Native American	-0.028 (12.02)	-0.028 (11.61)	-0.028 (11.97)
Other Race	-0.022 (14.59)	-0.022 (13.95)	-0.022 (14.63)
Non-minority Female	-0.027 (68.08)	-0.026 (63.41)	-0.026 (63.76)
Age	0.010 (92.1)	0.010 (92.09)	0.010 (92.09)
Age^2	-0.000 (61.62)	-0.000 (61.6)	-0.000 (61.6)
NYSMA	0.003 (1.84)	0.005 (2.95)	0.005 (2.95)
NYSMA*African-American		-0.005 (1.88)	
NYSMA*Hispanic		0.003 (1.21)	
NYSMA* Asian/Pacific Islanders		0.011 (4.13)	0.011 (4.26)
NYSMA* Native American		-0.019 (1.22)	
NYSMA*Other Race		-0.001 (.2)	
NYSMA*non-minority Female		-0.008 (5.73)	-0.008 (5.98)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	3721681	3721681	3721681
Pseudo R^2	.0738	.0738	.0738

Source: See Table 5.15.

Table 5.19. Business Formation Regressions, Construction and Related Industries, 1980-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.122 (16.92)	-0.125 (16.43)	-0.122 (16.92)
Hispanic	-0.074 (12.19)	-0.076 (12.18)	-0.076 (12.15)
Other Race	-0.079 (5.11)	-0.075 (4.66)	-0.079 (5.12)
Non-minority Female	-0.121 (21.32)	-0.119 (19.94)	-0.118 (19.9)
Age	0.037 (36.27)	0.037 (36.25)	0.037 (36.24)
Age^2	-0.000 (28.99)	-0.000 (28.97)	-0.000 (28.96)
NYSMA	0.055 (3.2)	0.056 (3.2)	0.058 (3.3)
NYSMA*African-American		0.058 (1.83)	
NYSMA*Hispanic		0.054 (2.07)	0.050 (1.96)
NYSMA*Other Race		-0.072 (1.23)	
NYSMA*non-minority Female		-0.059 (2.44)	-0.062 (2.55)
Time (6 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	63877	63877	63877
Pseudo R^2	.1078	.1078	.1078

Source: See Table 5.16.

Table 5.20. Business Formation Regressions, Construction and Related Industries, 1992-2008

Independent Variables	Specification		
	(1)	(2)	(3)
African-American	-0.099 (16.24)	-0.098 (15.08)	-0.099 (16.24)
Hispanic	-0.086 (19.56)	-0.087 (18.97)	-0.086 (19.56)
Asian	-0.042 (3.99)	-0.038 (3.3)	-0.042 (4)
Native American	-0.060 (4.96)	-0.060 (4.95)	-0.060 (4.95)
Non-minority Female	-0.087 (18.62)	-0.085 (17.48)	-0.085 (17.5)
Age	0.032 (35.03)	0.032 (35.03)	0.032 (35.03)
Age^2	-0.000 (26.86)	-0.000 (26.85)	-0.000 (26.86)
NYSMA	0.019 (1.19)	0.022 (1.36)	0.022 (1.39)
NYSMA*African-American		-0.021 (.91)	
NYSMA*Hispanic		0.018 (1.18)	
NYSMA*Asian		-0.038 (1.27)	
NYSMA*Native American		0.039 (.47)	
NYSMA*non-minority Female		-0.040 (2.12)	-0.040 (2.14)
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	107440	107440	107440
Pseudo R^2	.0955	.0956	.0956

Source: See Table 5.17.

Table 5.21. Actual and Potential Business Formation Rates in the New York State Market Area

Race/Sex	Business Formation Rate (%)	Expected Business Formation Rate (%)	Disparity Index
All Industries	(1)	(2)	(3)
African-American	5.38	10.18	52.8
Hispanic	8.65	11.85	73.0
Asian	10.58	11.98	88.3
Native American	8.65	11.35	76.2
Multiple races reported	8.96	10.96	81.8
MBE	7.95	12.07	65.9
Non-minority female	8.76	12.16	72.0
All M/WBE	8.38	12.21	68.6
Construction and CRS Sectors	(1)	(2)	(3)
African-American	16.61	25.81	64.4
Hispanic	14.60	22.40	65.2
Asian	17.68	23.98	73.7
Native American	18.06	25.96	69.6
Multiple races reported	18.93	23.03	82.2
MBE	15.40	23.36	65.9
Non-minority female	15.34	27.14	56.5
All M/WBE	15.39	24.37	63.2
Goods and Services Sectors	(1)	(2)	(3)
African-American	4.81	10.11	47.6
Hispanic	7.65	10.75	71.2
Asian	10.26	11.96	85.8
Native American	7.37	10.17	72.5
Multiple races reported	8.01	10.21	78.5
MBE	7.17	10.16	70.6
Non-minority female	8.56	11.96	71.6
All M/WBE	7.93	11.21	70.7

Source: 2006–2008 ACS Public Use Microdata Sample. See Tables 5.15, 5.18a, 5.18b.

Notes: Figures in column (1) are average self-employment rates weighted using ACS population-based person weights. Figures in column (2), top, middle, and bottom panels, are derived by combining the figure in column (1) with the corresponding result from the regression reported in Table 5.15, 5.18a, or 5.18b, respectively. Column (3) is the figure in column (1) divided by the figure in column (2), with the result multiplied by 100.

Table 5.22. Disparity Indices from the 2002 Survey of Business Owners: United States, All Industries

	Number of Firms	Sales and Receipts ($000s)	Employer Firms	Sales and Receipts ($000s)	Employees	Payroll ($000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
United States	22,480,256	8,783,541,146	5,172,064	8,039,252,709	55,368,216	1,626,785,430
Female	6,489,259	939,538,208	916,657	802,851,495	7,141,369	173,528,707
Equally male-/female-owned	2,693,360	731,678,703	717,961	627,202,424	5,664,948	129,700,997
African-American	1,197,567	88,641,608	94,518	65,799,425	753,978	17,550,064
Hispanic	1,573,464	221,927,425	199,542	179,507,959	1,536,795	36,711,718
Asian	1,103,587	326,663,445	319,468	291,162,771	2,213,948	56,044,960
Native Hawaiian/Pac. Islander	28,948	4,279,591	3,693	3,502,157	29,319	826,217
Am. Indian & Alaska Native	201,387	26,872,947	24,498	21,986,696	191,270	5,135,273
Panel B. Column Percentages						
United States	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	28.87%	10.70%	17.72%	9.99%	12.90%	10.67%
Equally male-/female-owned	11.98%	8.33%	13.88%	7.80%	10.23%	7.97%
African-American	5.33%	1.01%	1.83%	0.82%	1.36%	1.08%
Hispanic	7.00%	2.53%	3.86%	2.23%	2.78%	2.26%
Asian	4.91%	3.72%	6.18%	3.62%	4.00%	3.45%
Native Hawaiian/Pac. Islander	0.13%	0.05%	0.07%	0.04%	0.05%	0.05%
Am. Indian & Alaska Native	0.90%	0.31%	0.47%	0.27%	0.35%	0.32%
Panel C. Disparity Indices		**(2) vs. (1)**		**(4) vs. (3)**	**(5) vs. (3)**	**(6) vs. (3)**
Female		37.06%		56.35%	72.77%	60.19%
Equally male-/female-owned		69.53%		56.20%	73.71%	57.43%
African-American		18.94%		44.79%	74.52%	59.03%
Hispanic		36.10%		57.88%	71.94%	58.49%
Asian		75.76%		58.63%	64.74%	55.78%
Native Hawaiian/Pac. Islander		37.84%		61.01%	74.16%	71.13%
Am. Indian & Alaska Native		34.15%		57.74%	72.93%	66.64%

Source: NERA calculations using 2002 SBO. Excludes publicly-owned, foreign-owned, and not-for-profit firms.

Table 5.23. Disparity Indices from the 2002 Survey of Business Owners: NY-NJ-CT, All Industries

	Number of Firms	Sales and Receipts ($000s)	Employer Firms	Sales and Receipts ($000s)	Employees	Payroll ($000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
NY-NJ-CT	2,646,103	1,120,717,062	637,978	1,024,999,389	6,021,013	209,811,385
Female	772,392	118,627,376	107,105	100,453,982	800,301	22,271,800
Equally male-/female-owned	221,457	70,819,438	60,612	60,615,278	433,275	12,267,131
African-American	175,918	11,406,561	11,960	8,124,778	75,368	2,086,049
Hispanic	222,837	20,847,769	22,340	16,361,643	119,367	3,253,326
Asian	204,235	50,766,422	54,157	44,865,846	262,626	7,594,662
Native Hawaiian/Pac. Islander	3,620	237,861	165	-	-	-
Am. Indian & Alaska Native	14,979	1,133,152	1,320	709,083	7,709	166,914
Panel B. Column Percentages						
NY-NJ-CT	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	29.19%	10.58%	16.79%	9.80%	13.29%	10.62%
Equally male-/female-owned	8.37%	6.32%	9.50%	5.91%	7.20%	5.85%
African-American	6.65%	1.02%	1.87%	0.79%	1.25%	0.99%
Hispanic	8.42%	1.86%	3.50%	1.60%	1.98%	1.55%
Asian	7.72%	4.53%	8.49%	4.38%	4.36%	3.62%
Native Hawaiian/Pac. Islander	0.14%	0.02%	0.03%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.57%	0.10%	0.21%	0.07%	0.13%	0.08%
Panel C. Disparity Indices						
Female		36.26%		58.38%	79.17%	63.23%
Equally male-/female-owned		75.50%		62.25%	75.74%	61.54%
African-American		15.31%		42.28%	66.77%	53.04%
Hispanic		22.09%		45.59%	56.62%	44.28%
Asian		58.69%		51.56%	51.38%	42.64%
Native Hawaiian/Pac. Islander		15.51%		0.00%	0.00%	0.00%
Am. Indian & Alaska Native		17.86%		33.44%	61.88%	38.45%

Source: See Table 5.22.

Table 5.24. Disparity Indices from the 2002 Survey of Business Owners: United States, Construction and CRS Industries

	Number of Firms	Sales and Receipts ($000s)	Employer Firms	Sales and Receipts ($000s)	Employees	Payroll ($000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
United States	5,996,428	1,685,502,784	1,406,037	1,476,285,725	10,446,834	410,330,833
Female	1,136,584	147,556,354	185,072	119,542,082	1,028,439	37,265,214
Equally male-/female-owned	566,062	132,088,134	154,135	108,702,609	871,950	28,975,443
African-American	190,840	19,026,591	19,743	14,600,451	125,988	4,596,509
Hispanic	350,845	46,462,089	44,506	34,190,411	288,520	9,446,399
Asian	193,007	36,948,648	37,390	31,489,180	242,907	11,627,079
Native Hawaiian/Pac. Islander	6,092	1,173,615	321	172,732	1,351	53,364
Am. Indian & Alaska Native	54,758	8,145,166	8,103	6,435,409	46,650	1,712,542
Panel B. Column Percentages						
United States	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	18.95%	8.75%	13.16%	8.10%	9.84%	9.08%
Equally male-/female-owned	9.44%	7.84%	10.96%	7.36%	8.35%	7.06%
African-American	3.18%	1.13%	1.40%	0.99%	1.21%	1.12%
Hispanic	5.85%	2.76%	3.17%	2.32%	2.76%	2.30%
Asian	3.22%	2.19%	2.66%	2.13%	2.33%	2.83%
Native Hawaiian/Pac. Islander	0.10%	0.07%	0.02%	0.01%	0.01%	0.01%
Am. Indian & Alaska Native	0.91%	0.48%	0.58%	0.44%	0.45%	0.42%
Panel C. Disparity Indices						
Female		46.19%		61.52%	74.79%	69.00%
Equally male-/female-owned		83.02%		67.17%	76.14%	64.42%
African-American		35.47%		70.43%	85.89%	79.78%
Hispanic		47.11%		73.17%	87.25%	72.73%
Asian		68.11%		80.21%	87.44%	106.56%
Native Hawaiian/Pac. Islander		68.54%		51.25%	56.65%	56.96%
Am. Indian & Alaska Native		52.92%		75.64%	77.49%	72.42%

Source: See Table 5.22.

Table 5.25. Disparity Indices from the 2002 Survey of Business Owners: NY-NJ-CT, Construction and CRS Industries

	Number of Firms	Sales and Receipts ($000s)	Employer Firms	Sales and Receipts ($000s)	Employees	Payroll ($000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
NY-NJ-CT	685,645	192,651,110	164,133	167,747,214	1,094,382	50,412,246
Female	143,599	20,078,809	22,117	16,135,530	114,869	4,880,953
Equally male-/female-owned	44,516	10,324,803	11,603	7,709,128	53,622	2,277,038
African-American	27,813	1,807,572	2,510	1,281,560	11,215	405,880
Hispanic	34,957	3,567,327	3,899	2,602,760	18,582	772,421
Asian	37,225	5,521,417	7,476	4,390,482	34,326	1,689,668
Native Hawaiian/Pac. Islander	33	-	17	-	-	-
Am. Indian & Alaska Native	3,810	274,718	479	119,119	766	34,345
Panel B. Column Percentages						
NY-NJ-CT	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	20.94%	10.42%	13.48%	9.62%	10.50%	9.68%
Equally male-/female-owned	6.49%	5.36%	7.07%	4.60%	4.90%	4.52%
African-American	4.06%	0.94%	1.53%	0.76%	1.02%	0.81%
Hispanic	5.10%	1.85%	2.38%	1.55%	1.70%	1.53%
Asian	5.43%	2.87%	4.55%	2.62%	3.14%	3.35%
Native Hawaiian/Pac. Islander	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.56%	0.14%	0.29%	0.07%	0.07%	0.07%
Panel C. Disparity Indices						
Female		49.76%		71.38%	77.89%	71.85%
Equally male-/female-owned		82.55%		65.01%	69.31%	63.89%
African-American		23.13%		49.96%	67.01%	52.65%
Hispanic		36.32%		65.32%	71.48%	64.50%
Asian		52.79%		57.46%	68.86%	73.59%
Native Hawaiian/Pac. Islander		0.00%		0.00%	0.00%	0.00%
Am. Indian & Alaska Native		25.66%		24.33%	23.98%	23.34%

Source: See Table 5.22.

Table 5.26. Disparity Indices from the 2002 Survey of Business Owners: United States, Goods and Services Industries

	Number of Firms	Sales and Receipts ($000s)	Employer Firms	Sales and Receipts ($000s)	Employees	Payroll ($000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
United States	16,483,828	7,098,038,362	3,766,027	6,562,966,984	44,921,382	1,216,454,597
Female	5,352,675	791,981,854	731,585	683,309,413	6,112,930	136,263,493
Equally male-/female-owned	2,127,298	599,590,569	563,826	518,499,815	4,792,998	100,725,554
African-American	1,006,727	69,615,017	74,775	51,198,974	627,990	12,953,555
Hispanic	1,222,619	175,465,336	155,036	145,317,548	1,248,275	27,265,319
Asian	910,580	289,714,797	282,078	259,673,591	1,971,041	44,417,881
Native Hawaiian/Pac. Islander	22,856	3,105,976	3,372	3,329,425	27,968	772,853
Am. Indian & Alaska Native	146,629	18,727,781	16,395	15,551,287	144,620	3,422,731
Panel B. Column Percentages						
United States	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	32.47%	11.16%	19.43%	10.41%	13.61%	11.20%
Equally male-/female-owned	12.91%	8.45%	14.97%	7.90%	10.67%	8.28%
African-American	6.11%	0.98%	1.99%	0.78%	1.40%	1.06%
Hispanic	7.42%	2.47%	4.12%	2.21%	2.78%	2.24%
Asian	5.52%	4.08%	7.49%	3.96%	4.39%	3.65%
Native Hawaiian/Pac. Islander	0.14%	0.04%	0.09%	0.05%	0.06%	0.06%
Am. Indian & Alaska Native	0.89%	0.26%	0.44%	0.24%	0.32%	0.28%
Panel C. Disparity Indices						
Female		34.36%		53.60%	70.05%	57.66%
Equally male-/female-owned		65.46%		52.77%	71.27%	55.31%
African-American		16.06%		39.29%	70.41%	53.63%
Hispanic		33.33%		53.79%	67.50%	54.45%
Asian		73.89%		52.83%	58.58%	48.75%
Native Hawaiian/Pac. Islander		31.56%		56.66%	69.54%	70.96%
Am. Indian & Alaska Native		29.66%		54.43%	73.95%	64.63%

Source: See Table 5.22.

Table 5.27. Disparity Indices from the 2002 Survey of Business Owners: NY-NJ-CT, Goods and Services Industries

	Number of Firms	Sales and Receipts ($000s)	Employer Firms	Sales and Receipts ($000s)	Employees	Payroll ($000s)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Levels						
NY-NJ-CT	1,960,458	928,065,952	473,845	857,252,175	4,926,631	159,399,139
Female	628,793	98,548,567	84,988	84,318,452	685,432	17,390,847
Equally male-/female-owned	176,941	60,494,635	49,009	52,906,150	379,653	9,990,093
African-American	148,105	9,598,989	9,450	6,843,218	64,153	1,680,169
Hispanic	187,880	17,280,442	18,441	13,758,883	100,785	2,480,905
Asian	167,010	45,245,005	46,681	40,475,364	228,300	5,904,994
Native Hawaiian/Pac. Islander	3,587	237,861	148	-	-	-
Am. Indian & Alaska Native	11,169	858,434	841	589,964	6,943	132,569
Panel B. Column Percentages						
NY-NJ-CT	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	32.07%	10.62%	17.94%	9.84%	13.91%	10.91%
Equally male-/female-owned	9.03%	6.52%	10.34%	6.17%	7.71%	6.27%
African-American	7.55%	1.03%	1.99%	0.80%	1.30%	1.05%
Hispanic	9.58%	1.86%	3.89%	1.60%	2.05%	1.56%
Asian	8.52%	4.88%	9.85%	4.72%	4.63%	3.70%
Native Hawaiian/Pac. Islander	0.18%	0.03%	0.03%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.57%	0.09%	0.18%	0.07%	0.14%	0.08%
Panel C. Disparity Indices						
Female		33.11%		54.84%	77.57%	60.83%
Equally male-/female-owned		72.22%		59.67%	74.51%	60.60%
African-American		13.69%		40.03%	65.29%	52.85%
Hispanic		19.43%		41.24%	52.57%	39.99%
Asian		57.23%		47.93%	47.04%	37.60%
Native Hawaiian/Pac. Islander		14.01%		0.00%	0.00%	0.00%
Am. Indian & Alaska Native		16.24%		38.78%	79.40%	46.86%

Source: See Table 5.22.

VI. Statistical Disparities in Capital Markets

Discrimination occurs whenever the terms of a transaction are affected by personal characteristics of the participants that are not relevant to the transaction. Among such characteristics, the most commonly considered are race, ethnicity and gender. In labor markets, this might translate into equally productive workers in similar jobs being paid different salaries because of their race, ethnicity or gender. In credit markets, it might translate into loan approvals differing across racial or gender groups with otherwise similar financial backgrounds.

In this Chapter, we examine whether there is evidence consistent with the presence of discrimination in the small business credit market against minority-owned or women-owned small businesses. Discrimination in the credit market against such businesses can have an important effect on the likelihood that they will succeed. Moreover, discrimination in the credit market might even prevent businesses from opening in the first place.

In our analysis, we use data from the Federal Reserve Board to examine the existence or otherwise of discrimination in the small business credit market for 1993, 1998 and 2003. These surveys are based on a large representative sample of firms with fewer than 500 employees and are administered by the Federal Reserve Board and the U.S. Small Business Administration. The 1993 and 1998 surveys deliberately oversampled minority-owned firms but the 2003 survey did not.[196]

These data provide qualitative and quantitative evidence consistent with the presence of discrimination against minorities in the credit market for small businesses. For example, we find that African-American-owned firms are much more likely to report being seriously concerned with credit market problems and report being less likely to apply for credit because they fear the loan would be denied. Moreover, after controlling for a large number of characteristics of the firms, we find that African-American-owned firms, Hispanic-owned firms, and to a lesser extent other minority-owned firms are substantially and statistically significantly more likely to be denied credit than are non-minority-owned firms. We find some evidence that women are discriminated against in this market as well. The principal results are as follows:

- Minority-owned firms were more likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied.
- When minority-owned firms applied for a loan their loan requests were substantially more likely to be denied than non-minorities, even after accounting for differences like firm size and credit history.
- When minority-owned firms *did* receive a loan they were obligated to pay higher interest rates on the loans than comparable non-minority-owned firms.

[196] The 2003 survey took other steps, however, to increase the likelihood that minority-owned and women-owned firms were captured in the sampling frame. For more details, see NORC (2005), p. 11.

- A larger proportion of minority-owned firms than non-minority-owned firms report that credit market conditions are a serious concern.
- A larger share of minority-owned firms than non-minority-owned firms believes that the availability of credit is the most important issue likely to confront them in the upcoming year.
- There is no evidence that discrimination in the market for credit is significantly different in the Middle Atlantic census division or in the construction and construction-related professional services industries than it is in the nation or the economy as a whole.
- There is no evidence that the level of discrimination in the market for credit has diminished between 1993 and 2003.

The structure of this Chapter is as follows. First, we outline the main theories of discrimination and discuss how they might be tested. Second, we examine the evidence on the existence of capital/liquidity constraints facing individuals in the mortgage market, households in the non-mortgage loan market, and for small businesses in the commercial credit market. Third, we describe the data files used in the remainder of the Chapter and then examine in more detail problems faced by minority-owned firms in obtaining credit. Fourth, we provide a series of answers to criticisms. Finally, we present our conclusions.

A. Theoretical Framework and Review of the Literature

Most recent economic studies of discrimination draw on the analyses contained in Gary Becker's (1957) *The Economics of Discrimination*. Becker's main contribution was to translate the notion of discrimination into financial terms. Discrimination, in this view, results from the desire of owners, workers, or customers to avoid contact with certain groups. This being the case, transactions with the undesired groups would require more favorable terms than those that occur with a desired group. Assume that the primary objective of a financial institution is to maximize their expected profits. The expected return on a loan will depend on the interest rate charged and the likelihood that a borrower defaults. The financial institution would approve any loan for which the expected return on the loan exceeded the cost of the funds to the institution. Discrimination would then result in either (a) higher interest rates being charged to undesired groups having otherwise similar characteristics to the desired group or (b) requiring better characteristics (*i.e.* a lower expected default rate) from the undesired group at any given interest rate. In other words, applicants from the disadvantaged group might either be appraised more rigorously or be given less favorable terms on the loan.

A similar connection between the likelihood of loan approval and the race, ethnicity or gender of the applicant might also be found if lenders employ statistical discrimination—meaning that lenders use personal characteristics such as race, ethnicity or gender to infer the likelihood of default on the loan. If experience has suggested that certain groups of individuals are on average more or less likely to default, then the lender may use this information to economize on the costs of gathering more directly relevant information. Hence, discrimination would not reflect the preferences of the owner but would rather reflect an attempt to minimize costs. Empirically, the

racial, ethnic or gender characteristics of the applicant could proxy for unobserved characteristics of their creditworthiness.

There has been an active debate about whether banks discriminate against minority applicants for mortgages. In particular, banks were often accused of "redlining"—that is, not granting loans for properties located in certain areas. To analyze that issue, the Home Mortgage Disclosure Act was passed to require lenders to disclose information on the geographic location of their home mortgage loans. These data, however, were not sufficient to assess whether or not there was discrimination in the market for mortgage loans.

In 1992, researchers at the Federal Reserve Bank of Boston collected additional information from mortgage lenders (Munnell et al., 1996). In particular, they tried to collect any information that might be deemed economically relevant to whether a loan would be approved. In the raw data, non-minorities had 10 percent of their loans rejected whereas rejection rates were 28 percent for both African-Americans and Hispanics. Even after the creditworthiness of the borrowers (including the amount of the debt, debt-to-income ratio, credit history, loan characteristics, etc.) were controlled for, African-Americans were still found to be 7 percentage points less likely to be granted the loan. A variety of criticisms have been launched at this study (see, for example, Horne, 1994; Day and Liebowitz, 1998; Harrison, 1998). Responses to these criticisms are found in Browne and Tootell (1995).

In addition to the type of statistical analysis done in the Munnell et al. (1996) study, two other approaches have been used to measure discrimination in mortgage markets. First, Federal Reserve regulators can examine a lending institution's files to try to identify any cases where a loan rejection looks suspicious. Second, audit studies have been used with paired "identical" applicants. Such studies have also found evidence of discrimination (*c.f.* Cloud and Galster, 1993) although the audit approach is not without its critics (Heckman, 1998).

Another relevant literature is concerned with the severity of liquidity constraints affecting consumers in non-mortgage credit markets. A consumer is said to be liquidity-constrained when lenders refuse to make the household a loan or offer the household less than they wished to borrow (Ferri and Simon, 1997). Many studies have suggested that roughly twenty percent of U.S. families are liquidity-constrained (cf. Hall and Mishkin, 1982; and Jappelli, 1990). As might be expected, liquidity-constrained households are typically younger, with less wealth and accumulated savings (Hayashi, 1985; and Jappelli, 1990). The research shows non-minority households to be substantially more likely to be liquidity-constrained even when a variety of financial characteristics of households are controlled for (Jappelli, 1990; and Ferri and Simon, 1997).

We now turn to the more directly relevant evidence on liquidity constraints facing small businesses. Just like individuals and households, businesses can also face liquidity constraints.[197]

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[197] Evans and Leighton (1989) and Evans and Jovanovic (1989) have argued formally that entrepreneurs face difficulties borrowing money. As in the discussion above, such individuals are labeled liquidity constrained by economists. Using data from the National Longitudinal Survey of Youth from 1966-1981 and the Current Population Surveys from 1968-1987, these authors found that, all else equal, people with greater family assets are more likely to switch to self-employment from employment. Blanchflower and Oswald (1998) studied the

Liquidity constraints can be a problem in starting a business as well as in running it. Discrimination in the credit market against minority-owned small businesses can have a devastating effect on the success of such businesses, and even prevent them from opening in the first place. Evidence of the latter effect is provided in the economics literature on self-employment.[198]

In his 2003 report for *Builders Association of Greater Chicago v. the City of Chicago*,[199] Bates argued that "from its origins, the black-business community has been constrained by limited access to credit, limited opportunities for education and training, and non-minority stereotypes about suitable roles for minorities in society" (Bates, 1989; Bates, 1993; Bates, 1973). Indeed, as Bates points out, Gunner Myrdal observed,

> "The Negro businessman … encounters greater difficulties than whites in securing credit. This is partly due to the marginal position of Negro business. It is also partly due to prejudicial opinions among whites concerning business ability and personal reliability of Negroes. In either case a vicious circle is in operation keeping Negro business down" (Myrdal, 1944, 308).

Bates goes on to argue that commercial banks lend most easily to non-minority males who possess significant amounts of equity capital to invest in their businesses (Bates, 1991a). Apart from banks, an important source of debt capital for small business is likely to be family and friends, but the low wealth of African-American households reduces the availability of debt capital that family and friends could invest in small business operations (Bates, 1993; Bates, 1991b).

Additional evidence indicates that capital constraints for African-American-owned businesses are particularly large. For instance, Bates (1989) finds that racial differences in levels of financial capital do have a significant effect upon racial patterns in business failure rates. Fairlie and Meyer (1996) find that racial groups with higher levels of unearned income have higher levels of self-employment. In an important paper Fairlie (1999) uses data from the 1968-1989 Panel Study of Income Dynamics to examine why African-American men are one-third as likely to be self-employed as non-minority men. The author finds that the large discrepancy is due to a African-American transition rate into self-employment that is approximately one half the non-minority rate and a African-American transition rate out of self-employment that is twice the non-minority rate. He finds that capital constraints—measured by interest income and lump-sum cash

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probability that an individual reports him or herself as self-employed. Consistent with the existence of capital constraints on potential entrepreneurs, their econometric estimates imply that the probability of being self-employed depends positively upon whether the individual ever received an inheritance or gift. Second, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Holtz-Eakin et al. (1994a, 1994b) examine flows in and out of self-employment and find that inheritances both raise entry and slow exit. Black, de Meza and Jeffreys (1996) find that housing equity plays an important role in shaping the supply of entrepreneurs. Lindh and Ohlsson (1996) suggest that the probability of being self-employed increases when people receive windfall gains in the form of lottery winnings and inheritances.

[198] *See* Chapter V, above.

[199] 298 F.Supp.2d 725 (N.D. Ill. 2003).

payments—significantly reduce the flow into self-employment from wage/salary work, with this effect being nearly seven times larger for African-American self-employed than for non-minority self-employed persons. Fairlie then attempts to decompose the racial gap in the transition rate into self-employment into a part due to differences in the distributions of individual characteristics and a part due to differences in the processes generating the transitions. He finds that differences in the distributions of characteristics between African-Americans and non-minorities explain only a part of the racial gap in the transition rate into self-employment. In addition, racial differences in specific variables, such as levels of assets and the likelihood of having a self-employed father provide important contributions to the gap. He concludes, however, that "the remaining part of the gap is large and is due to racial differences in the coefficients. Unfortunately, we know much less about the causes of these differences. They may be partly caused by lending or consumer discrimination against blacks" (1998, p.14).

There is also research into racial differences in access to credit among small businesses. Cavalluzzo and Cavalluzzo (1998) use data from the 1988-1989 National Survey of Small Business Finances (NSSBF), conducted by the Board of Governors of the Federal Reserve System, to analyze differences in application rates, denial rates, and other outcomes by race, ethnicity and gender in a manner similar to the econometric models reported in this study. This paper documents that a large discrepancy exists in credit access between non-minorities and minority-owned firms that cannot be explained by a handful of firm characteristics. Unfortunately, the earlier NSSBF data did not over-sample minority-owned firms and included limited information on a firm's credit history and that of its owner, reducing the ability to provide a powerful test of the causal impact of race, ethnicity or gender on loan decisions. In an unpublished paper, Cole (1998) uses the 1993 NSSBF and estimates models of loan denials similar in nature to those discussed in this Study.

The present analysis takes advantage of the 1993 NSSBF data, the 1998 Survey of Small Business Finances (SSBF) data, and the 2003 SSBF data. All three datasets have better information on creditworthiness than did the earlier NSSBF data, and the 1993 and 1998 surveys have larger sample of minority-owned firms than did the earlier NSSBF data. These datasets are also used to conduct an extensive set of specification checks designed to weigh the possibility that our results are subject to alternative interpretations.

B. Empirical Framework and Description of the Data

1. Introduction

Disputes about discrimination typically originate in differences in the average outcomes for two groups. To determine whether a difference in the loan denial rate for African-American-owned firms compared to non-minority-owned firms is consistent with discrimination, it is necessary to compare African-American- and non-minority-owned firms that have similar risks of default, that is, the fraction of the African-American firms' loans that would be approved if they had the same creditworthiness as the non-minority-owned firms. A standard approach to this problem is to statistically control for firms' characteristics relevant to the loan decision. If African-American-owned firms with the same likelihood of default as non-minority-owned firms are less likely to be approved, then it is appropriate to attribute such a difference to discrimination.

Following Munnell et al. (1996) we estimated the following loan denial equation:

(1) $$\text{Prob}(D_i = 1) = \Phi(\beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i),$$

where D_i represents an indicator variable for loan denial for firm *i* (that is, 1 if the loan is denied and 0 if accepted), CW represents measures of creditworthiness, X represents other firm characteristics, R represents the race, ethnicity or gender of the firm's ownership, and Φ is the cumulative normal probability distribution.[200] This econometric model can be thought of as a reduced form version of a structural model that incorporates firms' demand for and financial institutions' supply of loan funds as a function of the interest rate and other factors.[201] Within the framework of this model, a positive estimate of β_3 is consistent with the presence of discrimination.[202]

2. 1993 NSSBF Data

The 1993 NSSBF data contain substantial information regarding credit availability on a nationally representative target sample of for-profit, non-farm, non-financial business enterprises with fewer than 500 employees. The survey was conducted during 1994 and 1995 for the Board of Governors of the Federal Reserve System and the U.S. Small Business Administration; the data relate to the years 1992 and 1993. The data file used here contains 4,637 firms.[203] In this NSSBF file, minority-owned firms were over-sampled, but sampling weights are provided to generate nationally representative estimates. Of the firms surveyed, 9.5 percent were owned by African-Americans, 6.4 percent were owned by Hispanics, and 7.4 percent were owned by individuals of other races (*i.e.* Asians, Pacific Islanders, American Indians, and Alaska Natives).[204]

Table 6.1 presents population-weighted sample means from these data for all firms in the sample that applied for credit. The estimates indicate that African-American-owned firms are almost 2.5

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[200] Additional discussion of Probit regression appears in Chapter V, Section C.1.

[201] Maddala and Trost (1994) describe two variants of such a model, one in which the interest rate is exogenous and another in which the interest rate is endogenously determined, but is capped so that some firms' loan applications are approved and others are rejected. If the interest rate is exogenous, they show that a reduced form model which controls for the loan amount, such as we report below, uniquely identifies supply-side differences in the treatment of African-American-owned firms. If the interest rate is endogenous, a reduced form approach requires an assumption that the determinants of demand for non-minority and African-American-owned firms are identical, other things being equal. The main alternative empirical strategy is to estimate a structural supply and demand model, in which proper identification generally is not feasible. Any characteristic of the borrower that affects his/her expected rate of return on the investment will affect his/her ability to repay and should be taken into consideration by the lender as well. For instance, in their structural model of mortgage decisions, Maddala and Trost (1994) impose questionable exclusion restrictions, like omitting marital status from the loan supply equation.

[202] The Equal Credit Opportunity Act prohibits discrimination in access to credit by race and would apply to both Becker-type and statistical discrimination.

[203] The median size of firms in the sample was 5.5 and mean size was 31.6 full-time equivalent employees; 440 firms out of 4,637 had 100 or more full-time equivalent employees.

[204] There were also two firms in the "Other race" category in 1993 that reported multiple or mixed race.

times more likely to have a loan application rejected as are non-Hispanic White-owned firms (hereafter "non-minority") (65.9 percent versus 26.9 percent).[205] Other minority groups are denied at rates higher than non-minorities as well, but the magnitude of the African-American-non-minority differential is especially striking.

Minority-owned firms, however, do have characteristics that are different from those of non-minority-owned firms, and such differences may contribute to the gap in loan denial rates. For instance, minority-owned firms were younger, smaller (whether measured in terms of sales or employment), more likely to be located in urban areas, and more likely to have an owner with fewer years of experience than their non-minority counterparts. Minority firms were also less creditworthy, on average, than their non-minority counterparts, as measured by whether (a) the owner had legal judgments against him or her over the previous three years, (b) the firm had been delinquent for more than 60 days on business obligations over the preceding three years, or (c) the owner had been delinquent for more than 60 days on personal obligations over the prior three years. Additionally, compared to non-minority-owned firms, African-American-owned firms were also more likely, on average to have owners who had declared bankruptcy over the preceding seven years.

Minority-owned firms also sought smaller amounts of credit than non-minority-owned firms. This was particularly true for African-American-owned firms, who requested loans that were, on average, about 60 percent smaller than those requested by non-minority-owned firms; and Hispanic-owned firms, who requested loans about 42 percent smaller than those requested by non-minority-owned firms.

The NSSBF database does not identify the specific city or state where the firm is located; instead, data are reported for four census regions, nine census divisions, and urban or rural location. Table 6.2 presents evidence for the Middle Atlantic Census division (hereafter MIDATL), which includes all of New York State and all of the New York-Newark-Bridgeport, NY-NJ-CT-PA Combined Statistical Area, except for the Connecticut portion.[206] The 1993 MIDATL sample includes the owners of 600 firms, of which 241 firms (40.2%) said that they had applied for a loan over the preceding three-year period.

The overall denial rate in the MIDATL is higher than the national rate reported in Table 6.1, but this difference is not statistically significant. The difference in the denial rates between African-American-owned and non-minority-owned firms is somewhat lower in the MIDATL (39.0 percentage points nationally and 26.2 percentage points in the MIDATL), but again this difference is not statistically significant. Indeed, in the large majority of cases, the weighted

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[205] Cavalluzzo and Cavalluzzo (1998) examined these outcomes using the 1987 NSSBF and similarly found that denial rates (weighted) are considerably higher for minorities. non-minority-owned firms had a denial rate for loans of 22 percent compared with 56 percent for African-Americans, 36 percent for Hispanics, and 24 percent for other races, which are broadly similar to the differences reported here. These estimates for minority groups are estimated with less precision, however, because of the smaller number of minority-owned firms in the 1987 sample.

[206] The Middle Atlantic division includes the state of New York, New Jersey, and Pennsylvania.

sample means are not statistically significantly different in the MIDATL than in the nation as a whole—either overall or by race, ethnicity or gender.

C. Qualitative Evidence

Before moving on to the results of our multivariate analysis, we first report on what business owners themselves say are their main problems. While this evidence is not conclusive in determining whether discrimination exists, it highlights firms' perceptions regarding discrimination in obtaining credit. That African-American-owned firms and other minorities report greater difficulty in obtaining credit than do non-minority-owned firms, but report other types of problems no more frequently, suggests either that discrimination takes place or that perceptions of discrimination exist that are unwarranted. It therefore complements the econometric analysis provided subsequently, which can distinguish between these two hypotheses.

Table 6.3 summarizes, for the U.S. as a whole, responses to specific questions about problems that firms confronted over the 12-month period before the date of response. In the top panel, respondents were asked to what extent credit market conditions had been a problem. African-Americans and Hispanics were much more likely to say that it had been a "serious" problem (31.3 percent and 22.9 percent, respectively) than non-minorities (12.7 percent). The bottom panel of the table reports the results for eight other designated problem areas—(1) training costs; (2) worker's compensation costs; (3) health insurance costs; (4) IRS regulation or penalties; (5) environmental regulations; (6) the Americans with Disabilities Act; (7) the Occupational Safety and Health Act; and (8) the Family and Medical Leave Act. Differences by race, ethnicity or gender are much less pronounced in these eight areas than they are in relation to credit market conditions.[207] The finding that African-American-owned and Hispanic-owned firms are largely indistinguishable from non-minority-owned firms in reporting a variety of problems, except for the case of credit, indicates that minority-owned firms perceive credit availability to be a particular problem for them.

Results are broadly similar in Table 6.4 for the MIDATL division—with African-American and Hispanic firms being more likely than non-minority-owned firms to say that credit market conditions had been a serious problem in the preceding 12 months.

Table 6.5 reports the views of NSSBF respondents for the U.S. as a whole and Table 6.6 reports views for the MIDATL on the most important issue businesses expected to face over the next 12 months. Nationally, credit availability and cash flow again appear to be more important issues for African-American-owned firms than for non-minority-owned firms. Non-minority-owned firms were especially worried about health care costs. Hispanic and Other minority-owned firms were especially worried about general business conditions.

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[207] We also estimated a series of ordered Logit equations (not reported) to control for differences across firms in their creditworthiness, location, industry, size, and the like. It is apparent from these regressions that African-American-owned firms were more likely to report that credit market conditions were especially serious.

In the MIDATL, credit availability and cash flow are far more important issues for African-American-owned firms than for non-minority-owned firms. Almost twice as many African-American-owned firms reported credit availability as the most important issue than non-minority-owned firms, and almost four times as many reported cash flow. In contrast, in the MIDATL general business conditions were a large concern for all types of firms.

Acute credit availability problems for minorities have been reported in surveys other than the NSSBF. In the 1992 Characteristics of Business Owners (CBO) Survey, conducted by the Census Bureau, for example, when owners were asked to identify the impact of various issues on their firm's profitability, 27.0 percent of African-American-owned firms reporting an answer indicated that lack of financial capital had a strong adverse impact—compared to only 17.3 percent among non-minority male-owned firms. Hispanic-owned firms and other minority-owned firms also reported higher percentages than non-minority male-owned firms—21.3 percent and 19.7 percent, respectively. Further, owners who had recently discontinued their business because it was unsuccessful were asked in the CBO survey to identify the reasons why. African-American-owned firms, and to a lesser degree Hispanic-owned firms, other minority-owned firms, and women-owned firms, were much more likely than non-minority male-owned firms to report that the reason was due to lack of access to business or personal loans or credit. For unsuccessful firms that were discontinued, 7.3 percent of firms owned by non-minority males reported it was due to lack of access to business loans or credit compared to 15.5 percent for firms owned by African-Americans, 8.8 percent for Hispanics, 6.1 percent for other minorities, and 9.3 percent for women. Another 2.7 percent of non-minority males said it was due to lack of personal loans or credit compared to 8.4 percent for firms owned by African-Americans, 5.8 percent for Hispanics, 6.4 percent of Other minorities, and 3.3 percent for women.[208]

A more recent study published by the U.S. Chamber of Commerce (2005) is consistent with these findings from the 1993 NSSBF and the 1992 CBO.[209] The Chamber of Commerce survey was conducted in March and April 2005 and detailed the financing problems experienced by small business owners, 95 percent of whom had less than 100 employees. Over 1,000 business owners were interviewed. As detailed in Table 6.7, minority-owned businesses report that availability of credit is their top problem. The biggest difference in responses between minorities and non-minority men and women was availability of credit: 19 percent of non-minority males report credit as their top problem compared with 54 percent for minority males. There was a 15 percentage point difference between minority women and non-minority women. In no other category is there more than a 10 percentage point difference for men or women.

In summary, African-American-owned and Hispanic-owned firms in particular and to a lesser extent other minority-owned firms and women-owned firms report that they had problems with the availability of credit in the past and expected that such difficulties would continue into the

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[208] Bureau of the Census (1997), Table 5a, p. 46, Table 1, p. 21.

[209] Unfortunately, although the CBO is part of the Economic Census, it was not published in 1997. In 2002, the name was changed to the Survey of Business Owners (SBO). Unfortunately, questions relating to the importance of access to financial loans and credit to business success were not included in the 2002 survey.

future. Whether or not these perceptions reflect actual discrimination can be distinguished in the econometric analyses to follow.

D. Differences in Loan Denial Rates by Race, Ethnicity or Gender

Evidence presented to this point indicates that minority-owned firms are more likely to be denied loans and report that their lack of access to credit significantly impairs their business. Can these differences be explained by such things as differences in size, creditworthiness, location, or other factors as some have suggested in the literature on discrimination in mortgage lending (Horne, 1994; Bauer and Cromwell, 1994; and Yezer, Phillips, and Trost, 1994)? To address this question we turn to an econometric examination of whether the loan requests made by minority-owned firms are more likely to be denied, holding constant important differences among firms.

In Table 6.8 and Table 6.9, we report the results from a series of loan denial Probit regressions of the form specified in Equation (1) using data from the 1993 NSSBF for the U.S. and the SATL region.[210] As indicated earlier, the 1993-2003 datasets have the particular advantage that they include information that can be used to proxy an applicant's creditworthiness. We report estimates from these models that can be interpreted as changes or differences in loan denial probabilities depending on the type of variables considered. For indicator variables, such as race, ethnicity and gender indicators, estimates show differences in loan denial probabilities between the indicated group and the base group.[211] In Column (1) of Table 6.8 (in which the regression model contains only race and gender indicators), the estimated coefficient of 0.443 on the African-American indicator can be interpreted as indicating that the denial rate for African-American-owned businesses is 44.3 percentage points higher than that for non-minority male-owned firms.[212]

The remainder of Table 6.8 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race, ethnicity or gender.[213] In Column (2) a

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[210] Firms owned 50-50 by minorities and non-minorities are excluded from this and all subsequent analyses, as are non-minority firms owned 50-50 by women and men.

[211] For "continuous" variables, such as profits and sales, estimates can be thought of as changes in loan denial probability when the continuous variable changes by one unit. For example, in Column (2) of Table 6.8, the estimated coefficient of -0.003 on owner's years of experience indicates that one additional year of owner's experience is related to -0.3 percentage point reduction in loan denial rate.

[212] This estimate largely replicates the raw difference in denial rates between African-American- and non-minority-owned businesses reported in Table 6.1. The raw differential observed there (0.659 – 0.269 = 0.39) differs slightly from the 0.443 differential reported here because this specification also controls for whether the business is owned by a non-minority female and because the regressions are unweighted whereas the descriptive statistics are weighted using the sample weights. When a full set of explanatory control variables are included the unweighted estimates are insignificantly different from the weighted estimates, hence in Table 6.8 and subsequent tables we report only unweighted estimates.

[213] In preliminary analyses, these models were also estimated separately, focusing specifically on the differences in coefficient estimates between non-minorities and African-Americans. The F-Test conducted to determine whether parameter estimates were the same for African-Americans and non-minorities rejected this null hypothesis. Next, the estimates obtained by estimating the model separately by race were used to conduct an Oaxaca (1973) decomposition. The results from this analysis were similar to those obtained by restricting the coefficients to be

number of controls are included that distinguish the creditworthiness of the firm and the owner. Many are statistically significant on a two-tailed test at conventional levels of significance with the expected signs. For instance, having been bankrupt or had legal judgments against the firm or owner raises the probability of denial; stronger sales lower this probability. **Even after controlling for these differences in creditworthiness, however, African-American-owned firms remain 29 percentage points more likely than non-minority-owned firms to have their loan request denied.**

The models reported in Columns (3) through (5) of Table 6.8 control for an array of additional characteristics of firms. Column (3) adds 39 additional characteristics of the firm and the loan application, including such factors as level of employment, change in employment, the size of the loan request, and the use of the loan. Column (4) includes variables to control for differences across regions of the country and major industry group. Column (5) adds variables indicating the month and year in which the loan was requested and the type of financial institution to which the firm applied.[214] In total these three columns add 176 variables to the more parsimonious specification reported in Column (2).[215] Nevertheless, the estimated disadvantage experienced by African-American-owned firms in obtaining credit remains large and statistically significant. The estimate from each of the three additional columns indicates that African-American-owned firms are 24 percentage points more likely than non-minority male-owned firms to have their loan application denied even after controlling for the multitude of factors we have taken into consideration.

The results also indicate that Asians/Pacific Islanders had significantly higher denial rates than non-minority males—12 percentage points. There is little evidence in the 1993 national data, however, that denial rates for firms owned by Native Americans or Hispanics were significantly different from the denial rates of firms owned by non-minorities; or that denial rates for firms owned by non-minority women were significantly different from those for firms owned by non-minority men.

In Table 6.9, we see results for the MIDATL region similar to those reported in Table 6.8 for the nation as a whole. The table shows that the results of our loan denial model in the MIDATL, which includes the State's market area, are not substantially different from the nationwide results

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the same between African-Americans and non-minorities and using the coefficient on the African-American indicator variable to measure the gap between groups. In this Chapter, all the results are reported in this simpler format for ease of exposition and interpretation.

[214] Approximately four out of five (80.5%) of the firms who required a loan applied to a commercial bank. Overall seventeen different types of financial institution were tabulated, although only the following accounted for more than 1% of the (weighted) total— Finance Companies (4.9%); Savings Banks (2.5%); Savings & Loans (2.3%); Leasing Companies (2.1%); and Credit Unions (2.0%).

[215] One piece of information to which we did not have access in the 1993 NSSBF or the 1998 SSBF because of confidentiality concerns was each firm's credit rating. A working paper by Cavalluzzo, Cavalluzzo, and Wolken (1999) was able to incorporate Dun & Bradstreet credit ratings for each firm because the authors' connection to the Federal Reserve Board enabled them to access the confidential firm identifiers. They added these credit rating variables in a model comparable to that reported here and found the results insensitive to the inclusion. The 2003 SSBF includes Dun & Bradstreet credit ratings for each firm. Below, we discuss the impact of incorporating them into a model similar to that presented in Table 6.8 (see Tables 6.27 and 6.28).

reported in Table 6.8. The indicator variable for the MIDATL region is insignificantly different from zero; as are the interaction terms between race/ethnicity/gender and the MIDATL region.[216]

Although the results provided so far strongly indicate that financial institutions treat African-American-owned and non-minority male-owned small businesses differently in lending, other considerations may limit our ability to interpret this finding as discrimination. Of perhaps greatest concern is the possibility that we may not have adequately controlled for differences in the creditworthiness of firms. If African-American-owned firms are less creditworthy and we have failed to sufficiently capture those differences then we would be inadvertently attributing the racial difference in loan denial rates to discrimination. On the other hand, however, if financial institutions discriminate against African-American-owned firms, then the greater likelihood of denial for African-Americans in earlier years is likely to hurt the performance of these firms and appear to make them look less creditworthy. Therefore, controlling for creditworthiness will likely understate the presence of discrimination.

As a check on the foregoing results, therefore, our first approach was to identify the types of information that financial institutions collect in order to evaluate a loan application and compare that with the information available to us in the NSSBF. First, a selection of small business loan applications was collected from various banks. An Internet search of web sites that provide general business advice to small firms was also conducted. Such sites typically include descriptions of the loan application process and list the kinds of information typically requested of applicants.[217]

Bank loan applications typically request detailed information about both the firm and its owner(s). Regarding the firm, banks typically request information on: (a) type of business, (b) years in business, (c) number of full-time employees, (d) annual sales, (e) organization type (corporation or proprietorship), (f) owner share(s), (g) assets and liabilities, (h) whether the business is a party to any lawsuit, and (i) whether any back taxes are owed. Regarding the owner's personal finances, banks typically ask for: (a) assets and liabilities, (b) sources and levels of income, and (c) whether the owner has any contingent liabilities. Some applications ask explicitly if the firm qualifies as a minority-owned enterprise for the purposes of certain government loan guarantee programs. The race of the applicant, however, would be readily identifiable even in the absence of such a question since most of these loans would be originated through face-to-face contact with a representative of the financial institution.

These criteria seem to match reasonably closely the information available in the 1993 NSSBF. The particular strength of the NSSBF is the detail available on the firm, which covers much of the information typically requested on loan application forms. The main shortcoming that we have identified in these data is that less detail is available on the finances of the owner of the firm.[218] Although the creditworthiness measures enable us to identify those owners who have had

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[216] The number of Native Americans in the MIDATL sample was too small to yield statistical results.

[217] An example of a typical application form is presented as Appendix B in Blanchflower, Levine, and Zimmerman (2003).

[218] This deficiency is remedied in the 1998 SSBF and the 2003 SSBF, discussed below, both of which contain information on the owner's home equity, and personal net worth excluding home equity and business equity.

serious financial problems (like being delinquent on personal obligations), we have no direct information regarding the owner's assets, liabilities, and income. These factors would be necessary to identify whether the business owner has sufficient personal resources to draw upon should the business encounter difficulties and to determine the personal collateral available should the firm default on its obligation. We do have measures of the owner's human capital in the form of education and experience, which likely capture at least some of the differential in available personal wealth across firm owners. Nevertheless, our potentially incomplete characterization of the business owner's personal financial condition may introduce a bias into our analysis if African-American business owners have fewer resources than non-minority business owners.

To assess the potential impact of this problem on our results, we separately examined groups of firms who differ in the degree to which personal finances should influence the loan decision and compare the estimated disadvantage experienced by African-American-owned firms in different groups. First, we examine proprietorships and partnerships separately from corporations since owners of incorporated businesses are at least somewhat shielded from incurring the costs of a failed business. Second, we divide firms according to size.[219] Both larger small businesses and those that have been in existence for some time are more likely to rely on the business's funds, rather than the owner's, to repay its obligations. Third, we consider firms that have applied for loans to obtain working capital separately from those firms that seek funds for other purposes (mainly to purchase vehicles, machinery and equipment, and buildings or land). Loans made for any of these other purposes are at least partially collateralized because the financial institution could sell them, albeit at a potentially somewhat reduced rate, should the small business default.[220]

In order to determine whether the findings for the MIDATL region were different from those for the nation, in the second column of Table 6.10 we also report the coefficient and t-statistics on an interaction term between the MIDATL region and African-American ownership. In only one case was the estimated coefficient on this interaction significant, implying that the national results also apply in general to the MIDATL.

Results from these analyses provide no indication that omitting the owner's personal wealth substantially biases the results presented above in Tables 6.8 or 6.9. Estimates presented in row numbers 1 through 8 of Table 6.10 indicate that African-American-owned small businesses are significantly more likely to have their loan applications rejected regardless of the category of

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[219] As reported earlier, the mean and median size of firms is 5.5 and 31.6 full-time equivalent workers, respectively. 14 percent of firms have one or fewer employees and 27 percent have two or fewer employees. In the MIDATL, the figures are 5.5, 31.7, 16 percent, and 28 percent, respectively.

[220] As indicated earlier, greater personal wealth may improve a small business's chances of obtaining credit because it provides collateral should the loan go bad and because wealthy owners can use their own resources to weather bad times, improving the likelihood of repayment. Our separate analysis of corporations and proprietorships and of large and small firms does not account for this second reason because corporations and large businesses may still need to draw on the owner's personal wealth to help it survive short-term shocks. Businesses that have been in existence for several years, however, are less likely to experience these shocks, making them less likely to require infusions from the owner's personal wealth. A loan used to purchase equipment that can be sold if the firm defaults similarly insulates the bank from the need to seek repayment directly from the owner.

firm considered. In particular, when samples are restricted to corporations, larger firms, and firms seeking credit for uses other than working capital, African-American-owned firms are 18, 21, and 17 percentage points more likely, respectively, to have their loan application rejected even though personal resources should be less important in these categories. Moreover, in each group where there are two types of firms (large and small, etc.), the estimates for the two types of firms are not significantly different from each other.

Another issue is whether the racial differences in loan denial rates among firms with similar characteristics can be attributed to differences in the geographic location of African-American- and non-minority-owned firms. If, for example, African-American-owned firms are more likely to be located in the central city, and a central city location is inversely correlated with profitability and the ability to repay debt, then financial institutions may be acting optimally in rejecting the loan applications of African-American-owned firms at a higher rate. As indicated earlier, this type of behavior is labeled "statistical discrimination." In the subsequent text and tables, we present a limited analysis to address whether or not this type of behavior takes place.[221]

To identify whether lenders' behavior is consistent with this hypothesis we distinguish those firms that self-classified their sales market as being local rather than regional, national, or international. A central city location should have a greater impact on future profit expectations for those firms that operate on a local level. If minority-owned firms are more likely to locate in the central city, racial differences in loan denial rates should be greater in the firms that sell in the local marketplace. The results of this test, reported in row numbers 9 and 10 of Table 6.10, reject the hypothesis that differences in loan denial rates are attributable to different propensities to locate in the center of a city. Estimates for the nation as a whole indicate that African-American-owned firms that sell to the local market are 14 percentage points more likely to have their loan applications denied compared to a 21 percent excess denial rate for firms selling primarily to regional, national, or international markets. In the MIDATL, the figures are indistinguishable from those in the nation as a whole.

We also estimate models that address a potential weakness in the specific functional form with which we control for differences in credit history across firms. As shown in Tables 6.1 and 6.2, African-American-owned firms are considerably more likely to have had troubles in the past in the form of judgments against them, late payments by the firm or its owner, or past bankruptcies. The model specifications reported in Tables 6.8 and 6.9 implicitly assume that these past problems are additive in their effect on loan denials and one might suspect the marginal impact would rise as past problems rise. Therefore, in the final three rows of Table 6.10, we separated firms by the number of past problems experienced. In Rows 11 through 13, we restricted the sample to those firms that have never had any past credit problems, those firms that reported one problem only, and those firms that reported more than one of these problems, respectively. The results indicate that even African-American-owned firms with clean credit histories are at a

[221] A strong test to distinguish between statistical discrimination and "Becker-Type" discrimination would require a tremendous amount of detail about the specific location of the firm, characteristics of its surrounding area, characteristics of neighboring firms, and the like, which were unavailable to us. As indicated earlier, both forms of discrimination are illegal and this Chapter applies a definition that incorporates both.

significant disadvantage in getting their loans approved, holding constant their other characteristics. In fact, the estimated differential in loan approval rates between African-American- and non-minority-owned firms is statistically indistinguishable within each of these groups. Asian-owned firms with clean credit histories, as well, are also at a significant disadvantage relative to non-minority-male owned firms.

Finally, we considered whether African-American-owned firms are treated differently from non-minority-owned firms when requesting credit from other sources. The source of credit we examined is credit cards. Such an analysis provides a unique advantage because credit card applications are more likely to be filled out and mailed in, so it is less likely that the race of the applicant is known to the financial institution, at least in the case of African-American-owned firms and Native American-owned firms, where surname is unlikely to provide any signal about minority status. On the other hand, for Asian and Hispanic applicants, it is possible that surname does provide such a signal, although an imperfect one. The 1993 NSSBF asked respondents whether they used either a business or personal credit card for business purposes. Although our analysis of use of credit cards does not condition on application, a finding that African-American- and non-minority-owned small businesses are equally likely to use credit cards may still provide evidence supporting discrimination in small-business lending. In fact, if financial institutions discriminate against African-Americans in providing small business loans, we may even expect to see African-Americans use credit cards more often than non-minorities since they have fewer alternatives. Even though many institutions may offer both types of credit, they may only be aware of the race of the applicant in a small business loan.[222]

In Tables 6.11 and 6.12, we examine the probability that a firm uses either a business credit card (Row 1) or a personal credit card (Row 2) to finance business expenses holding constant other differences across firms.[223] There is no evidence, either for the U.S. as a whole or for the MIDATL, that African-American-owned firms are less likely to access either business or personal credit cards for business expenses. On the other hand, there is evidence in the MIDATL and in the nation as a whole that Asian-owned firms are less likely to access business credit cards. Credit card use for financing business expenses may be an area where further research is warranted. Unfortunately, available data on this subject is quite limited.

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[222] It appears that race may also rarely be known to those institutions that issue credit ratings. As we mentioned above, Cavalluzo, Cavalluzo, and Wolken (1999) show that Dun & Bradstreet Credit Ratings are not helpful in explaining racial disparities in loan denials. Although we are not privy to Dun & Bradstreet's method for establishing its credit ratings, we do know from long experience that the comprehensive indicators of ownership by race are lacking in the Dun & Bradstreet's data. Indeed, this is the reason why NERA's availability estimation method requires creating a master directory of disadvantaged, minority, and women-owned businesses for merging with Dun & Bradstreet's data.

[223] On average, 29 percent of all firms use business credit cards and 41 percent use personal credit cards for business use; these levels vary only modestly by race and ethnicity. In the MIDATL the figures are 29 percent and 39 percent, respectively.

E. Differences in Interest Rates Charged on Approved Loans

Although most of our analysis has addressed whether minority- and non-minority-owned firms are treated equally in terms of their probability of loan denial, another way that differential treatment may emerge is through the interest rate charged for approved loans. Discrimination may be apparent if banks approve loans to equally creditworthy minority- and non-minority-owned firms, but charge the minority-owned firms a higher interest rate. Therefore, we estimated model specifications analogous to those reported previously for loan denials, but now the dependent variable represents the interest rate charged for firms whose loans were approved and the set of explanatory variables includes characteristics of the loan. More formally, the model we estimated takes the form:

(2) $$I_i = \beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i + \beta_4 LC_i + \varepsilon_i,$$

where I represents the interest rate charged on the loan, LC represents characteristics of the loan (see the notes to Table 6.8 for a full list of the variables included in this set), ε_i is a term capturing random factors, and all other notations are the same as in equation (1).

An important consideration is whether the interest rate may be treated as exogenous, as our reduced form model assumes. In the context of small business loans, in which it is possible that the loan terms may be negotiated in the determination process, this assumption may not be valid. As such, a model that simultaneously estimates the interest rate and the loan decision might be appropriate, except that the interest rate that would be charged to firms whose loans were denied is not available in our data. Alternatively, one could estimate an interest rate model alone for those firms whose loan was approved, adjusting for the potential bias brought about by sample selection. To properly identify such a model, however, a variable is required that is linked to the loan denial decision, but unrelated to the level of interest charged on approved loans; no such variable exists in the data.

Nevertheless, one would expect these considerations to impose a downward bias on the estimated differential in interest rates charged on loans to African-American-owned firms. Those firms whose loans were rejected would have been charged higher interest rates than those approved. Since African-American-owned businesses were considerably more likely to be rejected holding constant differences in creditworthiness, one would expect any differential in interest rate to be even greater if those firms were included in the sample. We overlook this implication in the results reported below, but its impact should be kept in mind.

The results obtained from estimating equation (2) are reported in Row 1 of Table 6.13, which includes the complete set of control variables comparable to those in Column (5) of Table 6.8. Estimates indicated that African-American-owned firms pay rates of interest that are roughly 1 full percentage point higher than similarly situated non-minority-owned firms. Row 2 shows that

even African-American-owned firms with good credit histories are charged higher interest rates relative to non-minority-owned firms.[224]

The remainder of the table presents similar specification checks to those reported in Table 6.10. Recall that most of these models identify firms for which the firm's own history is likely to be a more important contributor to its creditworthiness. The specifications by sales market are designed to distinguish the impact of central city location. Unfortunately, sample sizes are smaller in these specifications and reduce the power of the analysis. Nevertheless, we still find that regardless of organization type and firm age, African-American-owned firms face statistically significantly higher interest rates. Overall, the evidence presented indicates that African-Americans, and to a lesser extent Hispanics and Asians, do face disadvantages in the market for small business credit that does not appear to be attributable to differences in geography or creditworthiness.

Table 6.14 shows results for the MIDATL. Findings are comparable to those for the nation as a whole.

F. Loan Approval Rates and Access to Credit

The results presented so far may be biased toward finding too small a disparity between non-minority- and African-American-owned firms because those minority-owned firms that actually apply for credit may represent a selected sample of the most creditworthy. More marginal minority-owned firms whose loans may have been accepted had they been owned by non-minorities may not even be among the pool of loan applicants. First, these firms may have gone out of business or may not have had the opportunity to commence operations because of their inability to obtain capital. Second, some existing firms may have chosen not to apply for credit because they were afraid their application would be rejected due to prejudice.

Although we have no direct evidence regarding the first proposition, data from the 1993 NSSBF provide some evidence for the second: African-American- and Hispanic-owned firms are much more likely to report that they did not apply for a loan, even though they needed credit, because they thought they would be rejected. Table 6.15 reports estimates from Probit models in which the dependent variable is an indicator variable representing failure to apply for a loan fearing denial for all firms. The first row presents racial differences without controlling for any other characteristics of firms, and the results indicate that African-American- and Hispanic-owned firms are 40 and 23 percentage points more likely than non-minority-owned firms to withhold an application fearing denial.

Of course, some of this difference may be attributable to differences in creditworthiness across firms since firms that are bad credit risks should be afraid that their loan would be denied. To adjust for this, the second row of Table 6.15 reports comparable models that control for

[224] Estimates from firms that have had past credit problems are not presented since the higher likelihood of their being denied credit restricts the size of the sample and limits the ability to provide a powerful test of the interest rates charged if they are approved.

differences in creditworthiness and other characteristics of firms. The results from this specification show that the greater fear of rejection among African-American- and Hispanic-owned firms can partially be explained by these differences. Nevertheless, a gap of 26 and 16 percentage points still exists for African-American- and Hispanic-owned firms relative to non-minority-owned firms with similar characteristics. In fact, when asked directly why they were afraid to apply for loans, minority-owned firms were far more likely to report prejudice as the reason (19 percent for African-American-owned firms, 8 percent for Hispanic-owned firms, and 3 percent for non-minority-owned firms).[225] Results obtained in section (b) of Table 6.15 for the MIDATL region are very similar to those found for the nation as a whole. Further, as section (c) of Table 6.15 shows, African-American-owned firms in construction also appear to be fearful of applying because of the possibility of their application being turned down.[226]

If these minority-owned firms had applied for credit and were rejected because of discrimination, estimates of racial disparities based only upon loan applicants (as in Tables 6.8 and 6.9) would be understated. The perception of prejudice among these firms, however, does not necessarily imply that selection bias is present. Those firms that failed to apply because they feared rejection may have had similar loan denial rates as other minority-owned firms with comparable levels of creditworthiness that did apply. If those firms chose to apply for a loan, differences by race in the combined denial rate of the actual and potential applicants would be the same as what we have estimated for the observed sample of applicants.

More formally, suppose that loan denial rates for equally creditworthy non-minority- and minority-owned firms that applied for credit are θ^w and θ^m, respectively; the measure of discrimination employed in the previous analysis is $\theta^m - \theta^w$. Now suppose that firms that are equally creditworthy, but chose not to apply for a loan because they feared rejection, would have been denied at the rates θ^w and ψ^m for non-minority- and minority-owned firms, respectively. Among the non-minority-owned firms, the denial rate is identical regardless of whether the firm chose to apply or not, conditional upon creditworthiness. Among minority-owned firms, however, those who were afraid to apply may have been denied at a higher rate (perhaps because of their greater propensity to locate in the central city or other factors that are related to their race, but unrelated to creditworthiness) compared with other minority-owned firms. Then the correct representation of the disadvantage faced by minority-owned firms is $[\eta\theta^m + (1-\eta)\,\psi^m] - \theta^w$, where η represents the share of minority-owned firms desiring credit that submitted an application. Our earlier findings are biased if θ^m is not equal to ψ^m.

One approach that is frequently employed to address such a problem is to estimate a "Heckman-correction" that would formally model the application process in conjunction with the loan outcome for those who applied. The difficulty with this methodology in the present context is that it is only correctly implemented when some variable is present that is correlated with a firm's decision to apply for a loan, but is independent of the financial institution's decision to

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[225] Other reasons given, including "too little collateral," "poor credit history," and "poor balance sheet," are comparable across groups. Firms could report more than one reason.

[226] It was not possible to report separate construction results in earlier tables because of small sample sizes.

approve or deny the request. Unfortunately, the NSSBF data do not appear to contain any variables that would satisfy these conditions, so we are unable to implement this methodology.[227]

As an alternative that answers a different, but related, question we consider the ability of firms to get credit among those who desired it, regardless of whether or not they applied. This amounts to analyzing access to credit rather than loan approval and includes in the denominator those firms that needed credit but did not apply because they feared rejection. If differences by race in this rate among all firms who needed credit are greater than differences by race in the rate of denial among loan applicants, then this would indicate that African-American- and other minority-owned firms have even less access to credit than an analysis of loan applicants would indicate.

To test this proposition, we estimate a regression model comparable to the one reported in Table 6.10 for the sample of firms that applied for a loan, except that this analysis considers all firms seeking credit and treats those who did not apply for fear of rejection as denials. The sample excludes firms that did not need additional credit in the preceding three years. The results, reported in Table 6.16, are consistent with the previous analysis; we find that selection is not much of an issue for African-American-owned firms nationally, in the MIDATL region, or in construction sub-samples, or for Asian-owned firms nationally or in the MIDATL. Regardless of whether we consider denial rates among applicants or denial rates among firms that desired additional credit, African-American-owned firms are 20-30 percentage points less likely to obtain credit once control variables are included and even higher than that when they are not. For Hispanic-owned firms, however, some selection bias is evident. Among the pool of loan applicants, Hispanic-owned firms are not statistically significantly more likely to be denied than other firms with the same characteristics (see *e.g.* Table 6.8, Column 5). Among the pool of firms seeking additional credit, however, Hispanic-owned firms are 17 percentage points more likely to be denied access to credit, and this difference is statistically significant.

G. Analysis of Credit Market Discrimination in the U.S. in 1998

We turn next to an examination of the extent to which discrimination in the credit market has changed since 1993 using data from the 1998 SSBF conducted by the Board of Governors of the Federal Reserve System.[228] This section updates the several estimates obtained above using the

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[227] The only variable that potentially could meet these conditions in the NSSBF data is the distance between a firm and the nearest financial institution. If greater distance reduced a firm's information regarding the availability of funds, it might be related to the decision to apply for a loan. On the other hand, the creditworthiness of the firm should be independent of its location and should be unlikely to enter into the approval process. Unfortunately, we did not find a direct relationship between distance to the nearest financial institution and the probability of applying for a loan. This may be due to the fact that few firms are located more than a very short distance from the nearest financial institution.

[228] The target population of the survey was for-profit businesses with fewer than 500 employees that were either a single establishment or the headquarters of a multiple establishment company, and were not agricultural firms, financial institutions, or government entities. These firms also had to be in business during December 1998. Data were collected for fiscal year-end 1998. Like its 1993 counterpart, the purpose of this survey was to gather information about small business financial behavior and the use of financial services and financial service providers by these firms. The objectives of the survey were to collect information that can inform researchers and policy makers on the availability of credit to small businesses; the location of the sources of financial services; the types of financial services used, including checking accounts, savings accounts, various types of credit, credit

1993 NSSBF. Two complications are that the overall sample size is smaller and a number of the questions have been changed. However, the result is still clear – African-American-owned firms face discrimination in the credit market. In addition, there is evidence of discrimination in the credit market against other minority-owned firms as well. We present four sections of evidence, all of which are consistent with our findings from the 1993 survey.

1. Qualitative Evidence

Consistent with the 1993 survey, Table 6.17 shows that African-American-owned firms in the 1998 survey report that the biggest problem their firm currently faces is "financing and interest rates." In the 1993 survey, respondents were asked to report problems in the preceding 12 months (Tables 6.3 and 6.4) and over the next 12 months (Tables 6.5 and 6.6). Interestingly, even though credit availability was by far the most important category for African-Americans (21 percent in Table 6.5), interest rates were relatively unimportant (2 percent). The 1998 SSBF, however, did not report separate categories.

2. Differences in Loan Denial Rates by Race/Ethnicity

In 1998 as in 1993, in comparison with firms owned by non-minority males, minority and female-owned firms were less creditworthy, more likely to have their loan applications turned down, more likely not to apply for a loan for fear of being denied, and consistently smaller and younger. Moreover, their owners had lower amounts of both home and non-home equity. Minority-owned firms in general, and African-American-owned firms in particular, were much less likely to be classified as having a "low risk" credit rating by Dun & Bradstreet.[229]

In the 1993 survey, respondents were asked "During the last three years has the firm applied for credit or asked for the renewal of terms on an existing loan?" In 1998, a narrower question limited to new loans was asked – "Did the firm apply for new loans in the last three years?" In 1993, 43 percent answered the question in the affirmative compared with 27 percent in 1998. Despite the fact that in 1993 the question was broader, the pattern of denials by race and sex is similar across the years. As can be seen below, minority-owned firms were especially likely to have their loan applications denied.

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cards, trade credit, and equity injections; as well as the firm's recent credit acquisition experiences. The survey also investigated the level of debt held by these firms and their accessibility to credit. Additionally, the survey collected information on firm and owner demographics, as well as the firm's recent income statement and balance sheet.

[229] Information on home and non-home equity or on the Dun & Bradstreet credit rating was not available in the 1993 survey.

Percentage of Loan Applications Denied		
	1993	1998
Non-minority males	26.2%	24.4%
African-Americans	65.9%	62.3%
Asians, Native Americans, etc.	39.9%	47.0%
Hispanics	35.9%	49.9%
Non-minority females	30.1%	23.5%
Overall	28.8%	28.6%

Similarly, the proportion of firms reporting that they did not apply for fear of being denied is similar by race, ethnicity and gender across the two years. More than half of African-American owners did not apply for a loan for fear of being denied compared with only one out of five non-minority males.

Percentage Not Applying for Fear of Denial		
	1993	1998
Non-minority males	22.5%	20.2%
African-Americans	60.7%	53.9%
Asians, Native Americans, etc.	27.5%	23.1%
Hispanics	41.5%	34.3%
Non-minority females	22.7%	24.2%
Overall	24.7%	23.3%

In the 1998 SSBF survey, respondents who were denied loans were asked if they believed there were reasons other than the official ones provided by their financial institution as to why their loan applications were turned down. Among numerous options provided were the following:

a) Prejudice on a racial/ethnic basis.

b) Prejudice against women.

c) Prejudice against the business location.

d) Prejudice against the business type.

e) Prejudice or discrimination (not-specified or other).

Among firm owners who had applied for credit within the last three years and were denied, 34.1 percent believed there were reasons for their denial beyond the official explanation provided by the financial institution. Among non-minorities, 7.7 percent suspected some sort of prejudice. By contrast, the figure among minorities was 25.8 percent. Among owners who needed credit but did not apply for fear of denial, a similar pattern was observed. Only 1.7 percent of non-minorities believed prejudice was the reason, whereas among minorities the figure was 6.8 percent.

In Tables 6.8 and 6.9 the determinants of loan denial rates were estimated using data from the 1993 NSSBF. It was found that African-American-owned firms were almost twice as likely to have their loans denied than non-minority male-owned firms, even after controlling for a host of

variables included primarily to control for the possibility that minority-owned firms are smaller and less creditworthy than those owned by non-minority men.

A similar exercise is performed below in Tables 6.18 and 6.19 using data from the 1998 SSBF. Column (1) in Table 6.18 shows that African-American-owned firms in 1998 had a 42.2 percentage point higher probability of denial than non-minority male-owned firms before taking account of creditworthiness of the firm or any other characteristics. For 1993 the comparable figure was 44.3 percentage points. The addition of a large number of controls reduces the percentage point differential for African-Americans to 21.8 in Column (5) as the full set of controls is added. For 1993 the comparable figure was 24.1 percentage points.

The main difference between 1993 and 1998 is that now we find evidence that the probability of denial is significantly higher for Hispanic-owned firms as well. In Table 6.18 Column (5), Hispanic-owned firms have a 17.1 percentage point higher probability of being denied than non-minority male-owned firms. In Table 6.8, by contrast, denial probabilities for Hispanic-owned firms were *not* significantly different from those of non-minority male-owned firms. If anything, discrimination in the small business credit market appears to have expanded during the late 1990s.

Table 6.19 focusing on the MIDATL region yields similar results—showing significantly larger denial probabilities for African-American-, Asian-, and Hispanic-owned firms (23.5, 39.1, and 16.2 percentage points, respectively) than for non-minority male-owned firms. The MIDATL indicator was not significant in Table 6.19, nor were the interaction terms between MIDATL and race, ethnicity or gender, with the exception of Asians, indicating that the 1998 loan denial results for the MIDATL are not significantly different than for the nation as a whole.

Although tempered by the smaller sample size available, the quality of the experiment is somewhat better using the 1998 data than it was using the 1993 data due to the availability of an improved set of controls for the creditworthiness of the firm and its owner. In 1998, three new variables are included regarding the financial viability of the firm:

a) The value of the equity, if any, in the owner's home.

b) The owner's net worth excluding home equity and equity in the firm.

c) The firm's 1999 Dun & Bradstreet credit rating in five categories (low, moderate, average, significant and high) indicating the likelihood of loan default.[230]

Despite the fact that these new variables do help to predict loan denials,[231] the estimated race differences including these variables are unchanged from those reported above.[232] This suggests

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[230] The D&B Commercial Credit Score Report predicts the likelihood of a company paying in a delinquent manner (90+ days past terms) during the next 12 months based on the information in D&B's file. The score is intended to help firms decide quickly whether to accept or reject accounts, adjust terms or credit limits, or conduct a more extensive review based on the report D&B provides. Firms can also determine the company's relative ranking among other businesses in the D&B database.

[231] The coefficients and t-statistics on the credit score variables when they were included alone in a U.S. loan denial model was as follows: moderate risk .228 (2.45), average risk= .295 (3.25); significant risk=.319 (3.28); high

that the large estimated differences in the denial probabilities that were estimated in 1993 were not biased significantly upwards by the fact that these variables were unavailable.

3. Effect of 1998 Survey Design Changes on Differences in Loan Denial Rates

The question we used to examine the 1998 data was somewhat narrower than the question used in the 1993 survey because it was changed by the survey designers. The 1998 question asked about new loans over the preceding three years, whereas the 1993 question covered all loans including renewals. Responses in 1998 were as follows:

Applied for New Loans Last Three Years	Number	Percent
Did not apply	2,599	73.0%
Always approved	713	20.0%
Always denied	166	4.7%
Sometimes approved/sometimes denied	83	2.3%
Total	3,561	100.0%

The dependent variable used in Tables 6.18 and 6.19 was set to one if the loan application was always denied and was set to zero if the application was always approved or sometimes approved/sometimes denied. An alternative dependent variable – *denylast* – is set to one if the application is always denied, set to zero if always approved. Those responding "sometimes approved/sometimes denied" are excluded from the analysis. Column (1) of Table 6.20 replicates Column (1) of Table 6.18 using *denylast* as the dependent variable with the smaller sub-sample. African-Americans, Hispanics, Asians and non-minority females are all confirmed to face higher denial rates than non-minority males using this specification. For African-Americans and Hispanics, the difference is 46 and 36 percentage points, respectively. For Asians, the difference is 19 percentage points, and for non-minority females, 8 percentage points.

Results consistent with discrimination are confirmed for African-Americans and Hispanics in Column (2) of Table 6.20 when a host of demographic and financial characteristics and geographic and industry indicators are included. When interaction terms for the MIDATL region are added to the model as in Column (3), results for minorities and non-minority females remain statistically significant. Neither the MIDATL indicator nor any of the interactions between MIDATL and race, ethnicity or gender is significant. In Column (4), however, both the MIDATL indicator and the Asian interaction term are significant and the non-minority female indicator becomes insignificant.

risk= .391 (3.53), n=924 pseudo r^2=.0253. Excluded category 'low risk'. Results were essentially unchanged when a control for MIDATL was included.

[232] This confirms the findings of Cavalluzzo, Cavalluzzo and Wolken (1999) who performed a similar exercise with the 1993 data.

4. Differences in Interest Rates, Credit Card Use, and Failure to Apply for Fear of Denial

Tables 6.21 through 6.23 provide confirmation from the 1998 survey of a number of other results from the 1993 survey reported above.

First, Table 6.21, which is similar to Tables 6.13 and 6.14, finds that conditional on obtaining a loan, African-Americans are charged a higher price for their credit—on average 1.06 percentage points nationally. These results are not significantly different in construction and construction-related industries either.[233] African-Americans in the MIDATL appear to fare even worse in this regard than they do elsewhere in the country.

Table 6.22, which is similar to Table 6.15, shows that African-American owners are much more likely not to apply for a loan fearing they will be denied. Based on all of the foregoing evidence this is perhaps a sensible decision—if and when they do apply they are almost twice as likely as non-minority male-owned firms to have their application rejected. This is evident in the MIDATL as well and also in the construction and construction-related industries.[234]

Finally, Table 6.23, which is comparable to Tables 6.11 and 6.12, suggests that when the financial institution does not know the race or ethnicity of the applicant – as is often the case in an application for a credit card – there are no differences nationally by race or ethnicity in the usage for business purposes of either business or personal credit cards. There was also no evidence of any race effects in the use of business credit cards in the MIDATL region (row 3) or in construction (results not reported here).

Our confidence in the strength of our findings from the 1993 NSSBF survey is elevated by these findings from the 1998 SSBF survey, which strongly confirm the original results. Unfortunately, African-Americans continue to be discriminated against in the market for small business credit. By 1998, this discrimination appears to be on the increase for African-Americans and to be expanding to impact other minority groups, such as Hispanics and Asians, as well. This is an important market failure, and one which governments such as NYS cannot ignore if they are to avoid passive participation in a discriminatory marketplace.

H. Analysis of Credit Market Discrimination in the U.S. in 2003

More recently a new wave of the Survey of Small Business Finances was made available by the Board of Governors of the Federal Reserve System.[235] This is the fourth survey of U.S. small businesses conducted by the Board of Governors since 1987. The survey gathered data from 4,072 firms selected to be representative of small businesses operating in the U.S. at the end of 2003. The survey covered a nationally representative sample of U.S. for profit, non-financial,

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[233] There is some indication that non-minority females nationally pay slightly less for their loans, but this difference is not quite statistically significant.

[234] There is some evidence of this phenomenon for Hispanics nationally as well. However the coefficient of 0.052 in Row (2) of Table 6.22 is not quite statistically significant.

[235] *See* www.federalreserve.gov/pubs/oss/oss3/ssbf03/ssbf03home.html .

non-subsidiary, nonagricultural, and nongovernmental businesses with fewer than 500 employees that were in operation at year end 2003 and at the time of interview. Most interviews took place between June 2004 and January 2005. The sample was drawn from the Dun & Bradstreet Market Identifier file. The numbers of employees varied from zero to 486 with a weighted median of 3.0 and weighted mean of 8.6.

Unfortunately, the 2003 SSBF did not over-sample minority-owned firms, as in the first three survey waves, According to survey staff, this was due to concerns that doing so would delay the survey timeline and reduce the overall response rate.[236]

In 1998 almost 8 percent of survey respondents were African-American, compared to slightly more than 3 percent in 2003. Hispanics were almost 7 percent in 1998 but less than 4 percent in 2003. Other minorities were 6.5 percent in 1998 but only 5.4 percent in 2003.[237] Although the population weights were adjusted to accommodate these changes, even these weighted percentages are significantly smaller for minorities in 2003 than in 1998.[238]

Mach and Wolken (2006) reported using these data that 13.1% of firms were owned by non-White or Hispanic individuals; the share is statistically lower than in 1998 (14.6 percent). The shares for African-Americans and Asians each held roughly constant at 4%; the share of American Indians and Alaska natives held at roughly 1 percent. However the share of Hispanics fell a statistically significant amount from 5.6 percent to 4.2 percent which is somewhat surprising given the evidence that Hispanics are a growing share of the U.S. population – up from 12.5 percent in 2000 to 14.5 percent in 2005. The percentage of firms owned by females also declined from 72.0 percent to 64.8 percent.

Despite these drawbacks, our analysis of the 2003 SSBF yields results that are strongly consistent with those obtained from the 1993 and 1998 survey waves. The next section presents our findings from this analysis.[239]

1. Qualitative Evidence

Table 6.24 reports the results of asking business owners for the most important problem currently facing their firm. Consistent with the 1993 and 1998 surveys, firms owned by minority

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[236] See footnote 196, above.

[237] The impact on women was not as pronounced. Females were 23.3 percent in 1998 and 20.9 percent in 2003. For non-minority females, the figures are 17.8 percent in 1998 and 18.2 percent in 2003.

[238] Mach and Wolken (2006, Table 2) report that weighted figures for African-Americans were 4.1 percent in 1998 and 3.7 percent in 2003. Hispanics were 5.6 and 4.2 percent, respectively. Asians and Pacific Islanders were 4.4 and 4.2 percent, respectively. Native Americans were 0.8 and 1.3 percent, respectively, and women were 24.3 and 22.4 percent, respectively.

[239] The data file provided by the Board of Governors includes five separate observations per firm. That is to say there are 4240*5=21,200 observations. These so-called multiple imputations are done via a randomized regression model, and are included because where there are missing observations several alternative estimates are provided. Where values are not missing the values for each of the five imputations are identical. We make use of the data from the first imputation: the results presented here are essentially identical whichever imputation is used. Overall only 1.8 percent of observations in the data file were missing.

and women-owned firms were more likely to say that their most important problem was "financing and interest rates." Once again the African-American/non-minority difference was most pronounced—only slightly more than 5 percent of non-minority male business owners reported this as their major problem compared to almost 21 percent of African-American business owners.

2. Differences in Loan Denial Rates by Race/Ethnicity

Tables 6.25 and 6.26 present estimates of loan denial probabilities for the nation as a whole and for the MIDATL using a regression model comparable to that which was used with the 1993 and 1998 survey waves.[240]

Column (1) in Table 6.25 (comparable to Table 6.8 for 1993 and 6.18 for 1998) shows that African-American-owned firms in 2003 had a 45.9 percentage point higher probability of denial than non-minority male-owned firms before taking account of creditworthiness of the firm or any other characteristics. The addition of a large number of controls reduces the percentage point differential for African-Americans to 9.4 in Column (5) as the full set of controls is added. The coefficients in Column (5) for non-minority females and other minority groups are not significant however.

Table 6.26 (comparable to Table 6.9 for 1993 and 6.19 for 1998) focuses on the MIDATL division yields similar results—showing significantly larger denial probabilities for African-American-owned firms than for non-minority male-owned firms. The MIDATL indicator as well as the race and gender interaction terms with the MIDATL are also insignificant.

3. Differences in Interest Rates, Credit Card Use, and Failure to Apply for Fear of Denial

Table 6.27 models the interest rate charged for those minority-owned and non-minority female-owned firms that were able to successfully obtain a loan (comparable to Tables 6.13 and 6.14 for 1993 and Table 6.21 for 1998). As was found in earlier surveys, African-American business owners are hurt here as well since they have to pay, nationally on average, 1.05 percentage points more for their loans than non-minority male business owners with identical characteristics. Hispanic business owners, as well, pay 0.99 percentage points more, nationally on average, than their non-minority male counterparts have to pay.

The loan price differential is present for African-American and Hispanic business owners in the MIDATL as well. According to the results in Table 6.27, Hispanic business owners in the MIDATL may pay 1.4 percentage points more for their loans, on average, than comparable non-minority males. For African Americans, the differential is 3.1 percentage points but is not strongly significant.

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[240] In 2003, the credit application question was changed from 1998 to once again include requests for renewals as well as new loans, making it comparable to the 1993 version.

Table 6.28 reports the results of estimating a model where the dependent variable is whether a business or personal credit card is used to pay business expenses (comparable to Tables 6.11 and 6.12 for 1993 and Table 6.23 for 1998). As noted above, the application procedure for business and personal credit cards is usually automated and not conducted face-to-face. If there were missing variables such as creditworthiness or some such characteristic unobserved to the econometrician, then the race and ethnicity indicator variables should enter significantly in these equations. There is some evidence nationally in 2003 that African-Americans are less likely to use personal credit cards for business expenses. However, this result is not observed for business credit cards.

Finally, consistent with earlier results, Table 6.29 (comparable to Tables 6.15 for 1993 and 6.22 for 1998), shows that African-American owners are much more likely not to apply for a loan fearing they will be denied. Even after controlling for a host of demographic, financial, geographic, and industry factors, African-American business owners are still almost 17 percentage points more likely to fail to apply for loans for fear of denial—even though they need the credit.

In the MIDATL division the phenomenon is evident as well—African-American business owners are 14 percentage points more likely to fail to apply for fear of denial. In construction and related industries, the trend is even more pronounced at 30.3 percentage points. There is evidence of this phenomenon for non-minority female business owners as well in the nation as a whole.

I. Further Analysis of Credit Market Discrimination: NERA Surveys 1999-2007

NERA has conducted local credit market surveys at nine times and places across the country since 1999. These include the Chicago metropolitan area in 1999, the State of Maryland[241] in 2000, the Jacksonville, Florida metropolitan area in 2002, the Baltimore-Washington, DC metropolitan area in 2003, the St. Louis metropolitan area in 2004, the Denver metropolitan area in 2005, the State of Maryland (again) in 2005,[242] the State of Massachusetts in 2005, and the Memphis, TN-MS-AR metropolitan area in 2007. The Chicago, Jacksonville, Baltimore, St. Louis, and Denver surveys focused on construction and construction-related industries, while the two Maryland surveys, the Massachusetts surveys and the Memphis surveys included other goods and services as well.

Our Chicago, Maryland I, and Jacksonville survey questionnaires followed the format of the 1993 NSSBF while our Baltimore, St. Louis, Denver, Maryland II, Massachusetts, and Memphis surveys followed the format of the 1998 SSBF questionnaire.

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[241] Including the District of Columbia, the State of Delaware, and the portion of Virginia within the Baltimore-Washington Metropolitan Area.

[242] Including (again) the District of Columbia, the State of Delaware, and the portion of Virginia within the Baltimore-Washington Metropolitan Area.

As a final check on our findings in this chapter, we combined the results of these nine NERA surveys together in a consistent format and re-estimated the basic loan denial model on this larger file. These results appear below in Table 6.30, and are remarkably similar to results seen in Tables 6.8-6.9, 6.18-6.19, and 6.25-6.26. Denial probabilities for African-American-owned firms compared to non-minority male-owned firms are 29 percentage points higher—even when creditworthiness controls, other firm and owner characteristics, and interaction terms are included.

Moreover, the NERA surveys found statistically significant loan denial disparities for Hispanic-owned firms and non-minority female-owned firms as well. Denial rates were 18-24 percentage points higher for Hispanic-owned firms and 5-9 percentage points higher for non-minority female-owned firms than for their non-minority male-owned counterparts. Significant loan denial disparities were also observed for Native American-owned firms in some cases (18 percentage points higher).

Finally, as shown in Table 6.31, we modeled the rate of interest charged, conditional upon receiving loan approval, using our nine-jurisdiction dataset. Results are very similar to that observed in Tables 6.13-6.14, 6.21 and 6.27. African-Americans pay almost 1.7 percentage points more, on average, for their business credit than do non-minority males, declining to 1.5 percentage points when creditworthiness and other firm and owner controls are accounted for.

On the basis of the foregoing, we conclude that the evidence of credit discrimination from NERA's nine local credit market surveys conducted throughout the nation between 1999-2007 is entirely consistent with the results obtained using data from the 1993 NSSBF, the 1998 SSBF, and the 2003 SSBF.

J. Conclusions

The results presented in this chapter indicate that African-American-owned firms face serious obstacles in obtaining credit that are unrelated to their creditworthiness, industry, or geographic location. In a number of cases this is true as well for Hispanic-owned firms, Asian-owned firms, Native American-owned firms, and non-minority female-owned firms.

As in any regression-based study, our analysis hinges upon the proposition that all the factors that are related to loan denial rates have been included in our statistical model. If, for example, African-American business owners possess some unobservable characteristic that makes them less creditworthy, then our statistical finding would overstate the difference in loan denial rates. To check on this possibility, the models we have estimated include an extensive array of factors that could conceivably affect loan decisions. Moreover, we have also estimated several alternative specifications that could potentially identify the impact of such a bias. Moreover, we have conducted our own surveys on numerous occasions and in numerous places across the U.S. Throughout, we have consistently found that African-Americans and often other minorities as well are disadvantaged in the small business credit market and that our specification tests support the interpretation of discrimination.

Another potential criticism is that this study has examined loan denial rates rather than loan default rates; some have claimed that the latter provides a more appropriate strategy for identifying discrimination. For example, if banks only approve loans for relatively good African-American firms then African-American firms should exhibit relatively low default rates. Such an approach has several significant shortcomings that are detailed in Browne and Tootell (1995) and Ladd (1998). For instance, one problem is that it relies on the distribution of default probabilities being similar for African-American and non-minority applicants meeting the acceptance standard used for non-minority firms. A further problem is that it assumes that the loan originators know with a high degree of precision what determines defaults, however little hard information exists on what causes default. Additionally, it would be hard to disentangle the factors associated with differences in default rates between non-minority- and African-American-owned firms given the fact that the African-American-owned firms which obtain credit are typically charged higher interest rates, as we have demonstrated. Finally, such an analysis would require longitudinal data, tracking firms for several years following loan origination. Such data does not exist. While we have highlighted the potential limitations of such an analysis, we believe that it would be fruitful for this sort of longitudinal data collection to take place and for future research to investigate this question more fully.

In addition, many of the criticisms levied against the home mortgage loan discrimination study of Munnell et al. (1996) could perhaps be used here as well. Yet these criticisms appear to have been effectively countered by, for example, Browne and Tootell (1995) and Tootell 1996). What is important to keep in mind in reference to this work compared with Munnell et al. (1996) is the magnitude of the estimated racial disparity. The absolute size of the raw racial differences found in the mortgage study is considerably smaller than those observed in this study regarding business credit.[243]

The magnitude of the racial difference in small business loan approval rates is substantial, even after controlling for observed differences in creditworthiness, and considerably larger than that found in the analysis of discrimination in mortgage markets. Why do the results for small business loans differ so markedly from those obtained from mortgage loans? First, many mortgages are sold in the secondary market and a substantial fraction of mortgage lenders have little intention of keeping the loans they make. This added “distance” in the transaction might reduce the likelihood of discrimination. As Day and Liebowitz (1998, p.6) point out, “economic self-interest, therefore, should reduce racial discrimination in this market more completely than in many others.” A highly sophisticated secondary market for loans to small firms does not exist. Second, the presence of special programs and regulatory incentives to encourage banks and others to increase their mortgage lending to minorities gives these groups some advantages in obtaining a mortgage.

Clearly, a portion of the difference in denial rates between non-minority males and other groups in both types of studies appears to be due to differences in the characteristics of the applicants.

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[243] In the Boston Fed study 10 percent of non-minority mortgage applications were rejected compared with 28 percent for African-Americans. Loan denial rates (weighted) for business credit in this study ranged from 8.3 to 26.2 percent for non-minority males and between 50.0 and 65.9 percent for African-American-owned firms (depending on which NSSBF or SSBF survey is used).

Even after controlling for these differences, however, the gap in denial rates in the small business credit market is considerably larger than that found in the mortgage market.[244]

Our analysis finds significant evidence that African-American-owned businesses face impediments to obtaining credit that go beyond observable differences in their creditworthiness. These firms are more likely to report that credit availability was a problem in the past and expect it to be a problem in the future. In fact, these concerns prevented more African-American-owned firms from applying for loans because they feared being turned down due to prejudice or discrimination. We also found that loan denial rates are significantly higher for African-American-owned firms than for non-minority male-owned firms even after taking into account differences in an extensive array of measures of creditworthiness and other characteristics. This result appears to be largely insensitive to geographic location or to changes in econometric specification. Comparable findings are observed for other minority business owners and for non-minority women as well, although not with as much consistency as the findings for African-Americans.

Overall, the evidence is strong that African-American-owned firms and often other M/WBE firms as well face large and statistically significant disadvantages in the market for small business credit. The larger size and significance of the effects found in our analyses (compared to mortgage market analyses) significantly reduces the possibility that the observed differences can be explained away by some quirk of the econometric estimation procedure and, instead, strongly suggests that the observed differences are due to discrimination.

[244] The gap in denial rates between African-Americans and non-minorities with similar characteristics is between 34-46 percentage points in the small business credit market compared with 7 percentage points in the mortgage market.