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Race, Sex, and Business Enterprise: Evidence from the City of Austin

Final Report Prepared for the City of Austin, Texas

NERA
Economic Consulting

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About the Project Team—NERA Economic Consulting

NERA Economic Consulting is an international firm of economists who understand how markets work. We provide economic analysis and advice to corporations, governments, law firms, regulatory agencies, trade associations, and international agencies. Our global team of more than 500 professionals operates in 19 offices across North and South America, Europe, Asia, and Australia.

NERA provides practical economic advice related to highly complex business and legal issues arising from competition, regulation, public policy, strategy, finance, and litigation. Our more than 40 years of experience creating strategies, studies, reports, expert testimony, and policy recommendations reflects our specialization in industrial and financial economics. Because of our commitment to deliver unbiased findings, we are widely recognized for our independence. Our clients come to us expecting integrity; they understand this sometimes calls for their willingness to listen to unexpected or even unwelcome news.

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.

The NERA project team for this Study was led by NERA Vice President Dr. Jon Wainwright. Dr. Wainwright is a nationally recognized expert on business discrimination and affirmative action and has testified in state and federal court on these issues. He is the author of one book, a National Bureau of Economic Research Working Paper, and numerous research studies on the subject. 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.

About the Project Team—NERA Research Partners

Colette Holt & Associates (CHA) 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 and legally defensible affirmative action programs and is a frequent author and media commentator in this area. On this Study, CHA served as legal counsel, providing advice and recommendations for the study's design and implementation, conducting the review of City policies and procedures, conducting interviews with business owners and with City personnel, and drafting key study findings, among other duties.

Anchondo Research, Management & Strategies (ARMS) provides research, management and strategic planning to clients in Texas, Colorado, Massachusetts, Maryland, and other markets throughout the country. President J. Jorge Anchondo has over 30 years of public policy consulting experience, and has been working on public contracting and procurement-related issues for more than 15 years. He has conducted disparity studies and related activities and advised governments that are conducting disparity studies or implementing revised affirmative action programs. On this Study, ARMS provided logistical and technical assistance for the business owner interview sessions.

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 businesses 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 (JDDS) 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 Optical Character Mark alternative to the time consuming and expensive job of key data entry long associated with mail surveys. JDDS 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. JDDS has conducted numerous surveys of businesses on behalf of the NERA team. On this assignment JDDS provided printing, postage, mail-out and mail-back service for the large scale mail survey of business owners.

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I. Introduction and Executive Summary

A. Introduction

Like many local governments, the City of Austin has a long record of commitment to including minority-owned and women-owned business enterprises ("M/WBEs") in its construction and construction-related contracting and procurement activities. As will be documented in this Study, the City has continued to be a significant source of demand for the products and services produced by M/WBEs—demand that, in general, is found to be lacking in the private sector of the Austin and surrounding Texas economy.

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, Austin 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 any remedies adopted must be "narrowly tailored" to that discrimination.

B. History of Austin's Affirmative Action Contracting Programs

The City of Austin has implemented a contracting affirmative action program for many years. The Minority- and Women-Owned Business Enterprise Program has been regularly reviewed and updated to reflect new evidence and evolving legal standards.

In 1987, the City's Economic Development Commission reviewed the City's policies and experiences relating to contracting opportunities for M/WBEs with the City and suggested revised policies and procedures it determined necessary. The Commission's Small Business and Minority Entrepreneurship Committee held meetings with representatives of various City departments as well as with interested individuals and organizations, conducted a public hearing and took statements from numerous members of the public. The Commission found significant disparities between the number of MBEs and WBEs and City Contracts awarded to, or subcontracted to, MBEs and WBEs. The City Council found that these disparities resulted from discriminatory practices, thereby impairing the competitive position of M/WBEs with the City. As a result, in 1987 the City Council passed an affirmative action program to address the City's role in perpetuating the disparities found in the pattern of contract and subcontract awards to M/WBEs.

In 1989, the U.S. Supreme Court's plurality opinion *City of Richmond v. J.A. Croson Co.*[1] held that a local government may redress race discrimination in its contracting activities if it can demonstrate through relevant evidence a compelling governmental interest sought to be remedied, and that the remedies adopted are narrowly tailored to promote that interest.

In response to *Croson*, in 1992 the City Council engaged a consultant to study the City's history and contracting practices, the availability of M/WBEs in the Austin marketplace, and any disparities in the City's utilization of such businesses. The study, completed in 1993, revealed a

[1] 488 U.S. 469 (1989).

history in the Austin area of *de jure* and continuing de facto racial and gender discrimination in the Austin marketplace. Further, disparities were found between ready, willing, and able M/WBEs and the value of contracts they received from the City.

After receipt of the study, the City conducted a series of public hearings at which additional statistical and other evidence of discriminatory practices and acts against M/WBEs was presented. The City Council appointed a community-based Disparity Study Ordinance Committee to review the studies and the law, and to draft programmatic changes to the current ordinance. The Committee met over several months and recommended certain changes to the current ordinance.

Based on the evidence provided, the City Council determined that prior to the adoption of the 1987 ordinance, there were disparities between the number of qualified M/WBEs ready, willing, and able to perform services on City contracts and the number of such businesses actually engaged by the City or the City's prime contractors. Despite the implementation of the 1987 ordinance, disparities in the utilization of M/WBEs on City contracts continued to exist. Although the City has undertaken since 1990 a variety of race- and gender-neutral technical assistance, insurance and bonding programs, race- and gender-neutral programs alone have not been sufficient to remedy the effects of discrimination. The evidence continued to demonstrate that M/WBEs have been underutilized in contracting opportunities on City contracts as a result of private sector discrimination. The existence of an exclusionary network in public contracting and other systemic barriers have excluded otherwise qualified M/WBEs from receipt of contracts. Although the City had made substantial progress in eliminating discrimination in its own contracting practices, discrimination exists in private companies that contract on public projects. As a result of this discrimination, the Council found that the City has been in the past a passive participant in a system of discrimination and, in the absence of programs to eliminate disparity in utilization, would continue to be a passive participant in such a system. The Council reviewed and revised the M/WBE ordinance to reflect these conclusions.

In 2003, the City engaged a consultant to conduct an updated study of availability of minority and women-owned firms within the metropolitan statistical area of the City. The 2003 study indicated that there continued to be M/WBEs available to perform the work of City contracts and sub-contracts. The City also examined various availability and disparity studies conducted for Texas governments. These studies found that M/WBEs suffer discrimination in access to opportunities in the State of Texas. These efforts produced a revised M/WBE ordinance based upon the new evidence and recent court rulings.

The City retained outside experts in 2005 to gather and evaluate additional statistical and anecdotal evidence of discrimination. Again, while progress towards a level playing field had been made, significant barriers to full and fair participation in City prime contracts and subcontracts remained. In response, the City amended the ordinance in 2006.

In 2007, the City engaged NERA Economic Consulting to conduct this updated availability analysis and other statistical investigations regarding the presence of disparities in the City's marketplace. The 2005 anecdotal findings are also contained herein.

C. The Current Study

To further ensure continuing compliance with constitutional mandates and M/WBE best practices, the City commissioned Colette Holt & Associates (CHA) in late 2005 and NERA in late 2006 to examine the past and current status of M/WBEs in the City's geographic and product markets for construction and construction-related professional services. The results of these two Studies, consolidated here and summarized below (hereafter, the "Study"), provide the evidentiary record necessary to implement renewed M/WBE policies that comply with the requirements of the courts and to assess the extent to which previous policies have assisted M/WBEs to participate on a fair basis in the City's contracting and procurement activity.

The Study also found both statistical and anecdotal evidence of business discrimination against M/WBEs in the private sector of the Austin marketplace. As a check on our statistical findings, we surveyed the contracting experiences and credit access experiences of M/WBEs and non-M/WBEs in the Austin marketplace and conducted a series of in-depth personal interviews with Austin business enterprises, both M/WBE and non-M/WBE. Statistical analyses of Austin public sector contracting behavior are contained in Chapters III, IV, and VII.

The Study is presented in nine chapters. Chapter I contains a brief history of contracting affirmative action in and past evidence of discrimination in Austin and an executive summary of the current Study. Chapter II provides a detailed overview of the current legal standards regarding public sector affirmative action programs. The remaining Chapters address the following questions:

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

Chapter IV: What percentage of all businesses in Austin's relevant markets 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 White males? Do minority and/or female business owners earn less from their businesses than similarly situated White males? Are minorities and/or women in Austin less likely to be self-employed than similarly situated Whites males? How do the findings in Austin differ from the national findings on these questions? How have these findings changed over time?

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

Chapter VII: During the last five years, to what extent have M/WBEs been utilized by Austin, and how does this utilization compare to the availability of M/WBEs in the relevant marketplace?

Chapter VIII: How many M/WBEs report disparate treatment in the last five years? 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 the difficulty of obtaining contracts?

Chapter IX: What race-neutral and gender-neutral activities are currently being undertaken by the City? How does the City's Minority-Owned and Women-Owned Business Enterprise (M/WBE) Procurement Program operate? What were some of the most frequently encountered comments from M/WBEs and non-M/WBEs concerning M/WBE Procurement Program operations?

In assessing these questions, we present in Chapters IV 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 remainder of this Executive Summary provides a brief overview of each Chapter and its key findings and conclusions, where applicable.

1. Legal Standards for Government Affirmative Action Contracting Programs

Chapter II provides a detailed and up-to-date overview of current constitutional standards and case law on strict scrutiny of race-conscious government efforts in public contracting. The elements of Austin's compelling interest in remedying identified discrimination and the narrow tailoring of its programs to address that important government concern are delineated, and particular judicial decisions, orders, statutes, regulations, etc. are discussed as relevant, with emphasis on critical issues and evidentiary concerns. Examples include the proper tests for examining discrimination and the role of disparities; the applicability of private sector evidence; and the City's responsibility for narrowly tailoring its M/WBE Procurement Program.

2. Defining the Relevant Markets

Chapter III describes how the relevant geographic and product markets were defined for this Study. More than five years of prime contract and subcontract records were analyzed to determine the geographic radius around the City 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 approximately 99 percent of contract and subcontract spending in the relevant procurement categories. The relevant geographic and product markets were then used to focus and frame the quantitative and qualitative analyses in the remainder of the Study.

The City's relevant geographic market was determined to be the Austin-Round Rock, Texas Metropolitan Statistical Area.

D. Statistical Evidence

The *Croson* decision and most of its progeny have held that statistical evidence of disparities in business enterprise activity is a requirement for any state or local entity that desires to establish or maintain race-conscious, ethnicity-conscious, or gender-conscious M/WBE remedies. Chapter IV estimates current availability levels in the Austin area for M/WBEs in various industry groups. Chapters V and VI document in considerable detail the extent of disparities facing M/WBEs in the private sector, where contracting and procurement activities are rarely subject to M/WBE requirements. Chapter VII examines whether there is statistical evidence of disparities in the contracting and subcontracting activities of the City of Austin itself. This evidence is also relevant to the City's responsibility to narrowly tailor its MWBE and DBE Programs.

1. M/WBE Availability in the City of Austin's Marketplace

Chapter IV estimates the percentage of firms in the City of Austin's relevant marketplace 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 City'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) 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.

We used Dun & Bradstreet's *MarketPlace* database to determine the total number of businesses operating in the relevant geographic and product markets. *MarketPlace* is the most comprehensive and objective available database of U.S. businesses. *MarketPlace* contains over 13 million records, is updated continuously, and revised each quarter. We used the *MarketPlace* database to identify the total number of businesses in each three-, four-, and six-digit North American Industrial Classification (NAICS) code to which we assigned a product market weight. Industry weights reflect the City's prime contracts and associated subcontracts active between July 2002 and the March 2006.

While extensive, *MarketPlace* does not sufficiently identify all businesses owned by minorities or women. Although many such businesses *are* correctly identified in *MarketPlace*, experience has demonstrated that many more are 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 Austin and the surrounding area. Beyond the information already in *MarketPlace*, NERA collected listings of M/WBEs from the City's own certification listings as well as from numerous other public and private entities in and around the Austin area. The M/WBE businesses identified in this manner are referred to as "listed" M/WBEs.

If the listed M/WBEs we identified are *all* in fact M/WBEs and are the *only* M/WBEs among all the businesses identified, then an estimate of "listed" M/WBE availability is simply the number of listed M/WBEs divided by the total number of businesses in the relevant market. However, neither of these two conditions holds true in practice and therefore this is not an adequate method for measuring M/WBE availability for two reasons. First, it is likely that some proportion of the

M/WBEs listed in the tables 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 our baseline business population. Such businesses do not appear in any of the directories we gathered, and are therefore not included as "listed" M/WBEs.

To account for this, we conducted a supplementary telephone survey on a stratified random sample of firms in our baseline business population that asked them directly about the race and sex of the firm's primary owner(s). We used the results of this survey to statistically adjust our estimates of M/WBE availability for misclassification by race and sex. The resulting estimates of M/WBE availability are presented at the end of Chapter IV. These estimates were used in Chapter VII for disparity testing on the City's own contracting and subcontracting activity during the study period. These availability figures have also been averaged together (using dollar-based contracting weights) to provide guidance to the City's policy makers on overall goal setting.

Tables A.1 and A.2 below provide a top-level summary of the current M/WBE availability estimates derived in this Study. Table A.1 reflects availability for all City of Austin Construction contracting and Architecture, Engineering, and Construction-Related Professional Services ("A&E") contracting. Table A.2 reflects only federally-funded Construction and A&E contracting, which is relevant to the City's federal DBE Program at Austin-Bergstrom International Airport (ABIA).

Table A.1. Estimated M/WBE Availability

Detailed Industry	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
CONSTRUCTION (AWARDS)	1.7	9.8	1.2	1.1	13.8	27.6	72.4
CONSTRUCTION (PAYMENTS)	1.8	9.6	1.2	1.1	13.8	27.5	72.5
CONSTRUCTION (AVERAGE)	*1.7*	*9.7*	*1.2*	*1.1*	*13.8*	*27.6*	*72.4*
A&E (AWARDS)	1.9	8.9	4.5	0.6	15.7	31.5	68.5
A&E (PAYMENTS)	2.0	9.1	4.2	0.6	15.9	31.8	68.2
A&E (AVERAGE)	*1.9*	*9.0*	*4.3*	*0.6*	*15.8*	*31.6*	*68.4*
OVERALL (AWARDS)	1.8	9.6	2.0	1.0	14.2	28.6	71.5
OVERALL (PAYMENTS)	1.8	9.5	1.9	1.0	14.3	28.5	71.5
OVERALL (AVERAGE)	*1.8*	*9.6*	*1.9*	*1.0*	*14.3*	*28.5*	*71.5*

Source: Table 4.15.

Table A.2. Estimated M/WBE Availability (Federally-Funded Only)

Detailed Industry	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
CONSTRUCTION AND A&E COMBINED (AWARDS)	1.52	9.28	2.00	1.06	14.68	28.54	71.46
CONSTRUCTION AND A&E COMBINED (PAYMENT)	1.50	9.50	2.04	1.10	14.43	28.57	71.43
CONSTRUCTION AND A&E COMBINED (AVERAGE)	*1.51*	*9.39*	*2.02*	*1.08*	*14.56*	*28.56*	*71.44*

Source: Table 4.16.

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

Chapter V demonstrates that current M/WBE availability levels in the Austin area economy, as measured in Chapter IV, are substantially and statistically significantly lower than those that we would expect to observe if commercial markets operated in a race- and sex-neutral manner.[2] This suggests that 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 White males, whether they work as employees or entrepreneurs.

Data from the Current Population Survey (CPS) and the Five Percent Public Use Microdata Samples (PUMS) from the 2000 Decennial Census are used to examine the incidence of minority and female business ownership (self-employment) and the earnings of minority and female business owners across the U.S. and within the Austin area. The 2000 PUMS contains observations representing five percent of all U.S. housing units and the persons in them (approximately 14 million records), and provides the full range of population and housing information collected in the most recent census. Business ownership status is identified through the "class of worker" variable, which allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings. The CPS is the source of official government statistics on employment and unemployment and has been conducted monthly for over 40 years by the U.S. Census Bureau and the U.S. Department of Labor. Currently, about

[2] 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*. 126.

56,500 households are interviewed monthly. Households are scientifically selected on the basis of residence to represent the nation as a whole, individual states, and large metropolitan areas.

Using the PUMS and the CPS, we found that annual average wages for Blacks (both sexes) in 2000, both economy-wide and nationwide, were 30 percent lower than for White males who were otherwise similar in terms of geographic location, industry, age, and education. These differences are large and statistically significant. Large, negative, and statistically significant wage disparities were also observed for Hispanics, Asians, Native Americans, and White women. These disparities are consistent with the presence of market-wide discrimination. Observed disparities for these groups ranged from a low of -17 percent for Hispanics to a high of -36 percent for White women. Similar results were observed when the analysis was restricted to the Construction and A&E sector. That is, large, negative, and statistically significant wage disparities were observed for all minority groups and for White women. All wage and salary disparity analyses were then repeated using interaction terms designed to test whether observed disparities in the Austin MSA 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 from their labor than their White 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, negative, and statistically significant business owner earnings disparities for Blacks, Hispanics, Asians, Native Americans, and White women consistent with the presence of discrimination in these markets. Large, negative, and statistically significant business owner earnings disparities were observed overall as well as in the Construction and A&E 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 Austin 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 White male entrepreneurs. These disparities are a symptom of discrimination in commercial markets that directly and adversely affects M/W/DBEs. Other things equal, if minorities and women cannot earn remuneration from their entrepreneurial efforts comparable to that of White 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 sex-neutral marketplace.

Next, we analyzed race and sex disparities in business formation. As with earnings, in almost every case we observed large, negative, and statistically significant disparities consistent with the presence of discrimination in these markets. In almost every instance, business formation rates for Blacks, Hispanics, Asians, Native Americans, and White females were substantially and statistically significantly lower than the corresponding White male business formation rate.

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), formerly known as the *Surveys of Minority- and Women-Owned Business Enterprises* (SMWOBE). The SBO collects and disseminates data on the number, sales, employment, and payrolls of businesses owned by women and members of racial and ethnic minority groups, and has been conducted every five years since 1972. Using the SBO data, we calculated the percentage of firms in the U.S. as a whole, in the State of Texas, and in the Austin MSA that were minority-owned or female-owned and compared this to their corresponding share of sales and receipts in that year. We divided the latter by the former and multiplied the product by 100 to create a disparity ratio.

Disparity ratios of 80 percent or less indicate disparate impact consistent with business discrimination against minority-owned and female-owned firms. In the Austin area, disparity ratios fell beneath the 80 percent threshold in virtually every case examined. In most cases, particularly for Blacks, Hispanics, and Native Americans, disparity ratios were extremely low.

3. Statistical Disparities in Capital Markets

In Chapter VI, we analyze data from the National Survey of Small Business Finances (NSSBF) conducted by the Federal Reserve Board and the U.S. Small Business Administration, along with data from surveys NERA has conducted throughout the U.S. over the last eight years. The survey examined whether discrimination exists in the small business credit market. Discrimination in the credit market against minority-owned small businesses can have an important effect on the likelihood that such firms will succeed. Moreover, discrimination in the credit market might even prevent businesses from opening in the first place. This analysis has been held by the courts to be probative of an entity's compelling interest in remedying discrimination. We provide qualitative and quantitative evidence supporting the view that minority-owned 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 White-owned firms.

- Far more minority-owned firms report that credit market conditions are a serious concern than is the case for White-owned firms.

- A greater share of minority-owned firms believe 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 NSSBF, there is no reason to believe that evidence of discrimination in the market for credit is different in Austin 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 NSSBF.

We conclude that there is evidence of discrimination against M/WBEs in the small business credit market. This discrimination is particularly acute for Black-owned firms.

4. M/WBE Public Sector Utilization and Disparity in the City of Austin's Contracting and Procurement Markets

Chapter VII presents the results of an analysis of the City of Austin's Construction and A&E spending, including associated first-tier subcontractors, subconsultants, and suppliers, awarded between July 2002 and March 2006.

With assistance from the City of Austin's Controller's Office and its Department of Small and Minority Business Resources, NERA collected Construction and A&E prime contract price agreements and purchase orders and associated subcontractor, subconsultant, and supplier data for the study period. For each prime contract obtained we recorded the procurement type, contractor name and address, contractor number, project description, contract number, contractor gender and ethnicity, contract start and end dates, final contract amount, and final amount paid. For subcontractors, we recorded the subcontractor name and address, subcontractor gender and ethnicity, final award amount, and final amount paid.

The final Master Contract/Subcontract Database included 1,702 prime contracts and 3,173 associated subcontracts, with a total value of $791,924,314. Construction contracting and subcontracting accounted for $698,091,025, or 88.2 percent of the total. Architecture, engineering, and other construction-related professional services accounted for the remainder—$93,833,289 or 11.8 percent of the total.

Tables B.1 and B.2 provide top-level summaries of M/WBE utilization findings for the Study.

Table B.1. M/WBE Utilization in City of Austin Construction and A&E Contracting and Subcontracting (Awards)

M/WBE Type	Procurement Category		
	Construction (%)	**A&E** (%)	**Overall** (%)
African-American	2.74	3.65	2.85
Hispanic	17.73	11.95	17.05
Asian	0.95	2.26	1.10
Native American	0.46	0.07	0.41
Minority total	21.88	17.92	21.41
White females	11.23	8.11	10.86
M/W/DBE Total	33.11	26.03	32.27
Non-M/W/DBE Total	66.89	73.97	67.73
Total (%)	100.00	100.00	100.00
Total ($)	*698,091,025*	*93,833,289*	*791,924,314*

Source: Table 7.1.

Table B.2. M/WBE Utilization in City of Austin Construction and A&E Contracting and Subcontracting (Payments)

M/WBE Type	Procurement Category		
	Construction (%)	**A&E** (%)	**Overall** (%)
African-American	2.20	5.48	2.58
Hispanic	14.81	16.98	15.06
Asian	1.11	4.53	1.50
Native American	0.52	0.07	0.46
Minority total	18.63	27.05	19.61
White females	11.19	12.34	11.33
M/W/DBE Total	29.83	39.39	30.93
Non-M/W/DBE Total	70.17	60.61	69.07
Total (%)	100.00	100.00	100.00
Total ($)	*572,995,049*	*74,790,289*	*647,785,337*

Source: Table 7.2.

Next we compared the City's and its prime contractors' use of M/WBEs to our measure of M/WBE availability levels in the relevant marketplace. If M/WBE utilization is statistically significantly lower than measured availability in a given category we report this result as a disparity. Tables C.1 and C.2 provide top-level summaries of our disparity findings for the Study. With some exceptions, we find strong evidence of disparity in the City of Austin's own

contracting activity for Asian-owned firms, Native American-owned firms, and White female-owned firms, despite the presence of its M/WBE Procurement Program.

Table C.1. Overall Disparity Results (Awards)

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
All Procurement				
African-American:	2.85	1.77		
Hispanic	17.05	9.59		
Asian	1.10	1.98	55.8	***
Native American	0.41	0.97	42.3	***
Minority total	21.41	14.31		
White female	10.86	14.24	76.3	***
M/WBE total	32.27	28.55		
Construction				
African-American:	2.74	1.74		
Hispanic	17.73	9.81		
Asian	0.95	1.20	79.3	***
Native American	0.46	1.11	41.3	***
Minority total	21.88	13.85		
White female	11.23	13.80	81.4	***
M/WBE total	33.11	27.64		
A&E				
African-American:	3.65	1.86		
Hispanic	11.95	8.90		
Asian	2.26	4.46	50.7	***
Native American	0.07	0.55	12.6	***
Minority total	17.92	15.77		
White female	8.11	15.70	51.6	***
M/WBE total	26.03	31.47	82.7	***

Source: Table 7.11.

Table C.2. Overall Disparity Results (Payments)

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
All Procurement				
African-American:	2.58	1.81		
Hispanic	15.06	9.52		
Asian	1.50	1.87	80.5	***
Native American	0.46	0.99	47.1	***
Minority total	19.61	14.18		
White female	11.33	14.27	79.4	***
M/WBE total	30.93	28.45		
Construction				
African-American:	2.20	1.75		
Hispanic	14.81	9.64		
Asian	1.11	1.20	92.4	***
Native American	0.52	1.11	46.7	***
Minority total	18.63	13.7		
White female	11.19	13.85	80.8	***
M/WBE total	29.83	27.54		
A&E				
African-American:	5.48	2.02		
Hispanic	16.98	9.09		
Asian	4.53	4.24		
Native American	0.07	0.56	11.8	***
Minority total	27.05	15.91		
White female	12.34	15.88	77.7	***
M/WBE total	39.39	31.79		

Source: Table 7.12.

5. Expected M/WBE Availability

If no disparity is present in the relevant marketplace, then the disparity ratio will be equal to 100 and expected M/WBE availability rate (the M/WBE availability level that would be observed in a non-discriminatory marketplace) will be equivalent to current M/WBE availability. In cases where adverse disparities *are* present in the relevant marketplace, however, as documented in Chapters V and VI of this Study, then the disparity ratio will be less than 100, and, consequently, expected availability rates will exceed current availability rates. Expected availability levels for Austin's overall Construction and A&E contracting are presented below in Table D.

Table D. Overall Expected Availability—All Procurement Categories Combined

Procurement Category / M//WBE Type	Current Availability	Expected Availability
All Procurement		
African-American:	1.79	2.77
Hispanic	9.56	16.29
Asian	1.92	2.50
Native American	0.98	1.17
Minority total	14.25	22.73
White female	14.25	29.50
M/WBE total	28.50	49.83
Construction		
African-American:	1.74	2.69
Hispanic	9.73	16.58
Asian	1.20	1.56
Native American	1.11	1.32
Minority total	13.77	22.15
White female	13.82	28.61
M/WBE total	27.59	48.23
A&E		
African-American:	1.94	3.00
Hispanic	8.99	15.32
Asian	4.35	5.66
Native American	0.56	0.67
Minority total	15.84	24.65
White female	15.79	32.69
M/WBE total	31.63	55.30

Source: Table 7.17.

E. Anecdotal Evidence

1. Anecdotal Evidence of Disparities in the City of Austin's Marketplace

The first section of Chapter VIII presents the results of a large scale mail survey we conducted of both M/WBEs and non-M/WBEs about their experiences and difficulties involved in obtaining contracts. The purpose of this survey was to quantify and compare 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 mailed M/WBE and non-M/WBE questionnaires to a random sample of firms in the City of Austin's geographic market area. We asked about bid requirements and other factors (bonding and insurance requirements, etc.) affecting their ability to obtain contracts. The questionnaires also asked for characteristics of the firms and the owners, such as the number of years the firm has been in business, the number of employees, firm revenues, and the education level of the primary owner. The M/WBE questionnaire also asked firms whether they experienced disparate treatment in various business dealings (such as commercial loan applications and obtaining price

quotes from suppliers or subcontractors) in the past five years due to their race or gender and how often prime contractors who use them as subcontractors on public-sector projects with M/WBE goals also solicit or use them on public-sector or private-sector projects without such goals.

Many survey respondents had done business or attempted to do business with the City of Austin, the State of Texas, or other public entities in the Austin area in the past five years.

We found that M/WBEs in the City's markets 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 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, and that these differences are statistically significant in many cases. Additionally, we find that M/WBE firms 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, even more tellingly, the relative lack of solicitation of M/WBEs in the absence of affirmative efforts by the City of Austin and other public entities in the Austin area shows that business discrimination continues to fetter M/WBE business opportunities in Austin's relevant markets. We conclude that the statistical evidence presented in this report is consistent with these anecdotal accounts of contemporary business discrimination.

2. Business Owner Interviews

The second half of Chapter VIII presents the results from a series of in-depth personal interviews conducted with M/WBE and non-M/WBE business owners in the Austin area. The purpose of these interviews was much the same as the mail surveys: to explore additional anecdotal evidence of possible discrimination against minorities and women in Austin's marketplace for construction and construction-related professional services contracts. Colette Holt & Associates conducted six sessions of interviews with groups of minority, women, and majority business owners about their experiences in seeking and performing contracts in Austin's marketplace. A session was also held with the City's Minority-Owned and Women-Owned Business Enterprise and Small Business Enterprise Procurement Program Advisory Committee (MBE/WBE and SBE Advisory Committee).

The longer interview length and more intimate interview setting were designed to allow for more in-depth responses from business owners. Similar to the survey responses, the interviews suggest that M/WBEs — particularly Black-owned and Hispanic-owned firms — continue to suffer discriminatory barriers to full and fair access to City of Austin, other public sector, and private sector contracts. Participants reported perceptions of M/WBE incompetence and being subject to higher performance standards; discrimination in access to commercial loans and surety bonds; paying higher prices for supplies than non-M/WBEs; 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 or subcontractors.

Participants reported they still experience discrimination and barriers to full and fair opportunities to compete for the City's prime contracts and subcontracts. In particular, they discussed:

- Stereotypes and unprofessional conduct
- Diminished growth opportunities
- Restrictive contract specifications
- Discrimination complaints
- Barriers to obtaining private sector contracts
- Discrimination in access to capital

We also explored interviewees' experiences with the City's M/WBE Procurement Program. Topics covered certification; bidding and performing contracts; the Program's impact on M/WBEs and non-M/WBEs; good faith efforts to meet contract goals; and substitutions of subcontractors.

In general, interviews were supportive of the City's Program and several suggestions were made for its improvement.

This section concludes with an overview of prior evidence considered by the City regarding discrimination in its contracting marketplace.

While not definitive proof that the City of Austin 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, the City would be a passive participant in a discriminatory local marketplace. It is also highly relevant for narrowly tailoring M/WBE goals for locally funded contracts and DBE goals under 49 CFR Part 26.

II. Legal Standards for Government Affirmative Action Contracting Programs

Like many local government agencies, the City of Austin has long been committed to including minority-owned and women-owned business enterprises (M/WBEs) in its contracting activities. As documented below in Chapter VII, Austin's prior efforts have produced results—M/WBEs earned approximately 32 percent of City construction and construction-related contract and subcontract dollars between July 2002 and the March 2006. 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, Austin 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.

A. General Overview of Strict Scrutiny

This area of constitutional law is complex and constantly shifting, and cases are quite fact specific. Over the last 18 years, federal appellate and district courts have developed parameters for establishing a 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 evidentiary and program development issues the City must consider in evaluating its M/WBE Procurement Program.

1. *City of Richmond v. J.A. Croson*[3]

City of Richmond v. J.A. Croson Co. 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)

[3] 488 U.S. 469 (1989).

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.

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.[4]

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.[5] 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.[6]

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.[7]

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

[5] *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.").

[6] 488 U.S. at 493.

[7] *Id*. at 499.

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 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.[8]

> 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."[9]

The foregoing analysis was applied only to Blacks. The Court then emphasized that there was "absolutely no evidence" against other non-Whites. "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."[10]

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.[11] 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:

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

[9] 488 U.S. at 510.

[10] *Id*.

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

> Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the City of Richmond had evidence before it that 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.[12]

2. Strict Scrutiny as Applied to Federal Enactments

In *Adarand v. Peña*[13], 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.[14]

In the wake of *Adarand*, Congress reviewed and revised the Disadvantaged Business Enterprise (DBE) Program statute[15] and implementing regulations[16] for federal-aid contracts in the transportation industry. To date, every court that has considered the issue has found the

[12] 488 U.S. at 509 (citations omitted).

[13] 515 U.S. 200 (1995) (*Adarand III*).

[14] *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.

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

[16] 49 CFR Part 26.

regulations to be constitutional on their face.[17] While binding strictly only upon the DBE Program, these cases provide important guidance to Austin 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.[18] Relevant evidence before Congress included:

- Disparities between the earnings of minority-owned firms and similarly situated White-owned firms;
- Disparities in commercial loan denial rates between Black business owners compared to similarly situated White 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.[19]

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.[20]

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[17] *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*").

[18] *See also Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983, 993 (9th Cir. 2005), *cert. denied*,126 S.Ct. 1332 (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.").

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

[20] *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964, 970 (8th Cir. 2003), *cert. denied*, 124 S.Ct. 2158 (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,[21] 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."[22]

- 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."[23]

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.

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

[21] 49 CFR Part 23.

[22] 345 F.3d. at 973.

[23] *Id*. at 972.

for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*…."[24]

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."[25]

DBE programs based upon a methodology similar to that for Austin, 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 White 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.[26]

Most recently, the Seventh Circuit Court of Appeals affirmed the district court's trial verdict that the Illinois Department of Transportation's application of Part 26[27] was narrowly tailored based in large part upon the report and expert trial testimony of NERA and CHA.[28] 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 Study to meet Part 26's requirements. Similar to this Study for Austin, the IDOT Study included a custom census of the availability of DBEs 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 currently comprise 22.77 percent of IDOT's

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[24] *Id.*

[25] *Id*. at 973.

[26] *Id.*

[27] Ms. Holt authored IDOT's DBE goal submission.

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

available firms.[29] 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 White 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 Study conducted for Metra, the Chicago 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;[30]
- 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."[31]

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 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

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

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

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

> 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."[32]

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.[33] Most courts have applied intermediate scrutiny to preferences for women,[34] and then upheld or struck down the female preference under that standard.[35] This is probably a distinction without meaningful difference, as only one post-*Croson* court has upheld WBE provisions while striking down M/WBE measures.[36] 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."[37] Therefore, Austin would be wise to meet the rigors of strict scrutiny for gender preferences.

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

[33] *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).

[34] *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).

[35] *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); *but see Brunet v. City of Columbus*, 1 F.3d 390, 404 (6th Cir. 1993) (applying strict scrutiny).

[36] *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).

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

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.[38] There is no need of formal legislative findings,[39] nor "an ultimate judicial finding of discrimination before [a local government] can take affirmative steps to eradicate discrimination."[40] When the statistical information is sufficient to support the inference of discrimination, the plaintiff must prove that the statistics are flawed.[41] 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.[42] The determination whether a plaintiff has met this burden is a question of law, subject to *de novo* review.[43]

B. Austin'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 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.[44] 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.[45]

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

[39] *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).

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

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

[42] *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).

[43] *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).

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

[45] *Id*.

1. Definition of Austin'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.[46] Therefore, this Study employs long established economic principles to empirically establish the geographic and industry dimensions of Austin's contracting marketplace in order to ensure that the evidence is narrowly tailored.[47]

2. Examining Disparities Between M/WBE Availability and Utilization

Next, statistical examination of the availability of minorities and women to participate in Austin's projects and the history of utilizing M/WBEs as prime contractors and utilizing M/WBEs as subcontractors by Austin and its prime contractors is required. Simple disparities between Austin's overall minority population and Austin's and its prime contractors' utilization of minority- and women-owned firms are not enough.[48] 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.[49]

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

Austin 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

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[46] 488 U.S. at 508.

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

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

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

[50] *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).

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.[51]

It is also the case that if M/WBEs are overutilized under a program, that does not end the inquiry. 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.[52]

Calculations of the availability of minority- and women-owned firms are therefore the crucial foundation for examining affirmative action in contracting.[53] 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.[54]

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 "unremediated"[55] 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.[56] The courts are clear that the government has a compelling interest in not financing the evil of private prejudice with public dollars.[57] If M/WBE utilization is below

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[51] *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")*.

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

[53] *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).

[54] *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).

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

[56] *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).

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

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."[58] This analysis addresses whether the government has been and continues to be a "passive participant" in such discrimination, in the absence of affirmative action remedies.[59] 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," was proof of the government's compelling interest in employing race- and gender-conscious measures.[60] Evidence of unremediated markets "sharpens the picture of local market conditions for MBEs and WBEs."[61]

4. Anecdotal Evidence

Anecdotal evidence of experiences with discrimination in contracting opportunities, including testimony from other governments' studies and programs, is relevant since it goes to the question of whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes.[62] 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.[63] 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 [government's] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative."[64] "[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."[65]

There is no requirement that anecdotal testimony be verified. "Denver was not required to present corroborating evidence and [plaintiff] was free to present its own witnesses to either

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

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

[60] *Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725, 737 (N.D. Ill. 2003); *see also Concrete Works IV*, 321 F.3d at 987-988.

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

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

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

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

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

refute the incidents described by Denver's witnesses or to relate their own perceptions on discrimination in the Denver construction industry."[66]

C. Narrowly Tailoring a Minority-Owned and Women-Owned Business Enterprise Procurement Program

The following factors must be considered in determining whether Austin's race-and gender-based remedies 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.[67]

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 labor pool, not in the population as a whole. Finally, the preferences may not supplant race-neutral alternatives for remedying the same discrimination.[68]

1. Race- and Gender-neutral Remedies

Race- and gender-neutral approaches have become a necessary component of a defensible and effective M/WBE program.[69] Such measures include unbundling of contracts into smaller units, providing technical support, and addressing issues of financing, bonding, and insurance

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

[67] *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.

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

[69] *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).

important to all small and emerging businesses.[70] 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 City 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.[71] 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.[72]

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.[73] 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."[74]

2. Goal Setting

Numerical goals or benchmarks for M/WBE participation must be substantially related to their availability in the relevant market.[75] It is settled case law that goals should reflect the particulars of the contract, not reiterate annual aggregate targets. 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 program struck down as unconstitutional, specifically requires that goals be set on a contract-by-contract and craft-by-craft basis.[76]

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 playing field by setting targets somewhat higher than current headcount. For example, 49 CFR Part 26[77] requires grant recipients to determine the availability

[70] *See* 49 CFR § 26.51.

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

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

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

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

[75] *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.

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

[77] 49 CFR Part 26 governs Austin's receipt of Federal Aviation Administration funds at Austin-Bergstrom International Airport.

of DBEs in their marketplaces absent the presence of discrimination.[78] 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.).[79]

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.*"[80] "On the other hand, sheer speculation cannot form the basis for an enforceable measure."[81]

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,[82] 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

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

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[78] 49 CFR § 26.45.

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

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

[81] *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).

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

USDOT's DBE program.[83] This feature has been central to the holding that the DBE program meets the narrow tailoring requirement.[84]

4. Over-inclusiveness and Under-inclusiveness of Austin's Affirmative Action Remedies

The over- or under-inclusiveness of those persons to be included in the program is an additional consideration, and goes to whether the remedies truly target the evil identified.[85] 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.[86] The "random inclusion" of ethnic or racial groups that may never have experienced discrimination in the entity's marketplace may indicate impermissible "racial politics."[87] 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."[88] However, at least one court has held some quantum of evidence of discrimination for each group is sufficient. The Tenth Circuit held that *Croson* does not require that each group included in the ordinance suffer equally from discrimination.[89]

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 White women,[90] to separate goals for each minority group and women.[91] 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.[92]

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

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[83] 488 U.S. at 508; *see also Adarand VII*, 228 F.3d at 1181.

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

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

[86] *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).

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

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

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

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

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

[92] *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.").

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."[93] Moreover, anyone can challenge the disadvantage of any firm.[94]

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.[95] However, "innocent" parties can be made to share some of the burden of the remedy for eradicating racial discrimination.[96] "Implementation of the race-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."[97]

6. Duration and Review of Programs

"Narrow tailoring also implies some sensitivity to the possibility that a program might someday have satisfied its purposes."[98] 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.[99] 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

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[93] *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).

[94] 49 CFR §26.87.

[95] *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).

[96] *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.").

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

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

[99] *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).

racial classifications should not."[100] Similarly, the USDOT DBE Program's periodic review by Congress has been repeatedly held to provide adequate durational limits.[101]

D. Table of Authorities

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

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[100] *Virdi*, at *18; *see also Thompson Building Wrecking Co., Inc. v. City of Augusta, Georgia*, at 9 (S.D. Geo. March 14, 2007) ("Court need go no further than point out that the [M/WBE] Program is still in place 13 years after the [Disparity] Study was compiled without any further investigation into the underlying reasons for creating a program, and without any sunset or expiration provision.").

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

Concrete Works of Colorado, Inc. v. City and County of Denver ("*Concrete Works I*"), 823 F.Supp. 821 (D. Colo. 1993).

Concrete Works of Colorado, Inc. v. City and County of Denver ("*Concrete Works II*"), 36 F.3d 1513 (10th Cir. 2003).

Concrete Works of Colorado, Inc. v. City and County of Denver ("*Concrete Works III*"), 86 F.Supp.2d 1042 (D. Colo. 2000).

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

Cone Corporation v. Hillsborough County, 908 F.2d 909 (11th Cir. 1990).

Contractors Association of Eastern Pennsylvania v. City of Philadelphia ("*Philadelphia II*"), 6 F.3d 990 (3rd Cir. 1993).

Contractors Association of Eastern Pennsylvania v. City of Philadelphia ("*Philadelphia III*"), 91 F.3d 586 (3rd Cir. 1996).

Coral Construction Co. v. King County, 941 F.2d. 910 (9th Cir. 1991).

Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Dade County ("*Engineering Contractors I*"), 943 F.Supp. 1546 (S.D. Fla. 1996).

Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County ("*Engineering Contractors II*"), 122 F.3d 895 (11th Cir. 1997).

Gratz v. Bollinger, 539 U.S. 244 (2003).

Grutter v. Bollinger, 539 U.S. 306 (2003).

Maryland Troopers Association, Inc. v. Evans, 993 F.2d 1072, 1076-77 (4th Cir. 1993)

Northeastern Florida Chapter of the AGC v. Jacksonville, 508 U.S. 656 (1993).

Northern Contracting, Inc. v. Illinois Department of Transportation ("*Northern Contracting I")*, 2004 U.S. Dist. LEXIS, 3226 (N.D. Ill., Mar. 3, 2004).

Northern Contracting, Inc. v. Illinois Department of Transportation ("*Northern Contracting II*"), 2005 U.S. Dist. LEXIS 19868 (Sept. 8, 2005).

Northern Contracting, Inc. v. Illinois Department of Transportation, 473 F.3d 715 (7th Cir. 2007) (7th Cir. 2007) ("*Northern Contracting III")*.

O'Donnell Construction Co., Inc, v. District of Columbia, 963 F.2d 420 (D.C. Cir. 1992).

Sherbrooke Turf, Inc. v. Minnesota Department of Transportation, 345 F.3d. 964 (8th Cir. 2003), *cert. denied*, 124 S.Ct. 2158 (2004).

Thompson Building Wrecking Co., Inc. v. City of Augusta, Georgia, (S.D. Geo. March 14, 2007).

United States v. Paradise, 480 U.S. 149 (1987).

United States v. Virginia, 518 U.S. 515 (1996).

Virdi v. DeKalb County School District, 2005 U.S. App. LEXIS 11203 (11th Cir. June 13, 2005).

W.H. Scott Construction Co., Inc. v. City of Jackson, 199 F.3d 206 (5th Cir. 1999).

Webster v. Fulton County, Georgia, 51 F.Supp.2d 1354 (N.D. Ga. 1999).

Western States Paving Co., Inc. v. Washington Department of Transportation, 407 F.3d 983 (9th Cir. 2005), *cert. denied*,126 S.Ct. 1332 (2006).

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

2. Statutes

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

3. Regulations

49 CFR § 26

III. Defining the Relevant Markets

A. Preparing the Master Contract/Subcontract Database

The *Croson* court 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."[102] 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."[103]

The first step, therefore, in our evaluation of M/WBE availability and participation for the City of Austin must be to define the relevant market area for its construction and its architecture, engineering, and other construction-related professional services contracting activities. Markets have both a product and a geographic dimension, both of which are considered.[104] For this Study, we define Austin'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 Austin'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.[105] 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 Austin'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 Austin's specific market area and contracting circumstances.

With assistance from the City of Austin's Controller's Office and its Department of Small and Minority Business Resources, NERA collected prime contract price agreements and purchase orders (collectively, "prime contracts") and associated subcontractor, subconsultant, and supplier (collectively "subcontractor") data spanning the period from the third quarter of 2002 through the first quarter of 2006. Data was collected in the categories of (1) Construction and (2)

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

[103] *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 MBE 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.

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

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

Architecture, Engineering, and other Construction-Related Professional Services (hereafter, "A&E").

For each prime contract or purchase order during the study period, we obtained data from the City including the procurement type, contractor name and address, contractor number, project description, contract number, contractor gender and ethnicity, contract start and end dates, final contract amount, and final amount paid. For subcontractors, we obtained the subcontractor name and address, subcontractor gender and ethnicity, final award amount, and final amount paid.

A total of 1,702 prime contracts and 3,173 associated subcontracts were collected, with a total value of $791,924,314.[106] Construction contracting and subcontracting accounted for $698,091,025, or 88.2 percent of the total. Architecture, engineering, and other construction-related professional services accounted for the remainder—$93,833,289 or 11.8 percent of the total.

Together, as shown below in Tables 3.1 and 3.2, these prime contracts and subcontracts comprised the Master Contract/Subcontract Database compiled for this Study.

Table 3.1 shows total number of prime contracts, subcontracts, dollars awarded, and dollars paid, by major procurement category.

Table 3.2 shows the total number of prime contracts awarded during each year of the study period, total annual contract dollars awarded, and total annual payments on those contracts.

B. Geographic Market Definition

To determine the geographic dimension of the City of Austin's contracting 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 location for each contractor and subcontractor identified in our sample. Using this information, we then calculated the percentage of the City's 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 contract and procurement spending by a given state or local government. Contractors located in the Austin-Round Rock, TX MSA account for the vast majority of contracting and procurement expenditures by the City of Austin during the study period. The Austin-Round Rock, TX MSA includes the following counties, in descending order according to general population size: Travis, Williamson, Hays, Bastrop, and Caldwell.

[106] With the exception of two contracts, this is the entire universe of City of Austin construction and construction-related professional services contracts awarded during the study period. These two prime contracts were excluded from the study because the associated subcontract was no longer available. These were both design-build contracts performed for Austin Energy. They had a total contract value of $16.4 million, or 2.0 percent of all contract dollars examined for this study.

As shown in Table 3.3, the overall share of expenditures inside the MSA is 79.1 percent of dollars awarded and 77.1 percent of dollars paid. The share is even higher in A&E —93.0 percent of dollars awarded and 91.7 percent of dollars paid. For purposes of this Study, we therefore define the primary geographic market area for the City of Austin to be the Austin-Round Rock MSA. Consistent with the general population distribution, Travis county accounts for 80.5 percent of all contract spending in the MSA, followed by Williamson (14.1 percent), Hays (3.6 percent), Bastrop (1.2 percent), and Caldwell (0.6 percent).

Contractors and subcontractors doing business with the City of Austin were dispersed throughout the MSA. In Travis County, firms were located in the following cities/towns (in descending order of dollars awarded): Austin, Pflugerville, Manor, West Lake Hills, Bee Cave, Sunset Valley, Del Valle, Manchaca, Bee Caves, Spicewood, and Leander.[107]

In Williamson County, firms were located in the following cities/towns: Round Rock, Florence, Cedar Park, Austin, Leander, Andice, Pflugerville, Jonah, Georgetown, Hutto, Liberty Hill, Taylor, and Granger.[108]

In Hays County, firms were located in the following cities/towns: Buda, Dripping Springs, Kyle, Woodcreek, San Marcos, Mountain City, Austin, and Driftwood.

In Bastrop County, firms were located in the following cities/towns: Bastrop, Elgin, Cedar Creek, Red Rock, and Paige.

In Caldwell County, firms were located in the following cities/towns: Fentress, Luling, Maxwell, McMahan, and Lockhart.

Outside the Austin-Round Rock MSA, several counties exhibited significant amounts of construction spending activity, defined as 1.0 percent or more of total dollars awarded and five or more prime or subcontracts with two or more distinct firms. These counties were, in descending order of importance, Harris County, TX; Tarrant County, TX; Bell County, TX; Bexar County, TX; Denton County, TX; and Dallas County, TX. In A&E, no other counties met these criteria.

C. Product Market Definition

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 procurement category, as measured by totals dollars awarded. Tables for total dollars paid are presented as well.

The relevant NAICS codes and their associated dollar weights appear below in Tables 3.4 through 3.7. Tables 3.4 and 3.5 represent dollars awarded and dollars paid, respectively, in

[107] Portions of Spicewood and Leander reside in Travis County.

[108] A portion of Austin resides in Williamson County.

Construction and Tables 3.6 and 3.7 show the same for A&E. It is clear from these four tables that, although numerous Industry Sub-sectors play a role in the City of Austin'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 Tables 3.4 and 3.5 that one Industry Sub-sector alone (NAICS 237) accounts for more than two-fifths contract dollars spent and five Sub-sectors account for more than nine-tenths, with the remaining one-tenth distributed among numerous additional Industry Sub-sectors. In A&E (Tables 3.6 and 3.7), we see an even more concentrated pattern — one Industry Sub-sector (NAICS 541) accounts for more than three-fourths of total contract dollars.

Each Industry Sub-sector (three-digit NAICS) identified in Tables 3.4 through 3.7 consists of several more detailed Industry Groups (four-digit NAICS) and Industries (five-digit and six-digit NAICS). Overall, City of Austin contracting expenditures occur in 49 NAICS Industry Sub-sectors, 104 NAICS Industry Groups, and 180 NAICS Industries.

In Construction, 13 NAICS Industry Sub-sectors, 31 NAICS Industry Groups, and 58 NAICS Industries collectively account for 99 percent of all City of Austin contract dollars awarded. In A&E, 9 NAICS Industry Sub-sectors, 19 NAICS Industry Groups, and 27 NAICS Industries collectively account for 99 percent of all City of Austin contract dollars awarded.[109]

The resulting percentage weights from these NAICS Industries are used below in Chapter IV to calculate average M/WBE availability figures for construction and for A&E.[110]

Now that the geographic and industry parameters of Austin's market area have been defined, we can restrict our subsequent analyses, in Chapter Four and beyond, to business enterprises and other phenomena within this specific market area so as to narrowly tailor our findings to the City of Austin's specific contracting circumstances.

[109] For dollars *paid* in construction, the figures are 13, 30, and 51, respectively. In A&E, the figures are 10, 20, and 27, respectively.

[110] 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: Total Dollars Awarded and Total Dollars Paid

CONTRACT CATEGORY	NUMBER OF CONTRACTS	DOLLARS AWARDED
CONSTRUCTION		*698,091,025*
Prime Contracts	1,299	417,238,780
Subcontracts	2,599	280,852,245
ARCHITECTURE, ENGINEERING, AND CRS		*93,833,289*
Prime Contracts	403	74,845,352
Subcontracts	574	18,987,937
GRAND TOTAL		*791,924,314*
Prime Contracts	1,702	492,084,132
Subcontracts	3,173	299,840,182

CONTRACT CATEGORY	NUMBER OF CONTRACTS	DOLLARS PAID
CONSTRUCTION		*572,995,049*
Prime Contracts	1,299	365,369,400
Subcontracts	2,599	207,625,649
ARCHITECTURE, ENGINEERING, AND CRS		*74,790,289*
Prime Contracts	403	46,535,138
Subcontracts	574	28,255,151
GRAND TOTAL		*647,785,337*
Prime Contracts	1,702	411,904,537
Subcontracts	3,173	235,880,800

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 and Procurement Category

YEAR OF AWARD	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
CONSTRUCTION			
2002	49	15,859,690	14,825,658
2003	222	322,094,139	296,590,360
2004	456	190,570,721	178,599,060
2005	444	146,985,911	82,539,110
2006	128	22,580,564	440,863
TOTAL	1,299	698,091,026	572,995,050

YEAR OF AWARD	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
A&E			
2002	21	40,797,059	26,795,247
2003	136	28,251,742	27,407,924
2004	157	17,644,492	16,257,627
2005	74	6,150,628	4,237,855
2006	15	989,368	91,635
TOTAL	403	93,833,289	74,790,288

YEAR OF AWARD	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
GRAND TOTAL			
2002	70	56,656,749	41,620,905
2003	358	350,345,881	323,998,284
2004	613	208,215,213	194,856,687
2005	518	153,136,538	86,776,965
2006	143	23,569,933	532,498
TOTAL	1,702	791,924,314	647,785,339

Source: NERA calculations from Master Contract/Subcontract Database.

Table 3.3. Distribution of Austin Contract Dollars by Contract Category

Location	Construction (%)	A&E (%)	Overall (%)
DOLLARS AWARDED			
Inside Austin MSA	77.2	93.0	79.1
Outside Austin MSA	22.8	7.0	20.9

Location	Construction (%)	A&E (%)	Overall (%)
DOLLARS PAID			
Inside Austin MSA	75.2	91.7	77.1
Outside Austin MSA	24.8	8.2	22.9

Source: NERA calculations from Master Contract/Subcontract Database.

Table 3.4. Distribution of Contract and Subcontract Dollars Awarded by Industry Sub-sector: Construction

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
237	Heavy and Civil Engineering Construction	41.77	41.77
236	Construction of Buildings	23.17	64.94
238	Specialty Trade Contractors	14.80	79.74
423	Merchant Wholesalers, Durable Goods	7.97	87.71
541	Professional, Scientific, and Technical Services	2.64	90.34
327	Nonmetallic Mineral Product Manufacturing	1.91	92.26
484	Truck Transportation	1.57	93.82
332	Fabricated Metal Product Manufacturing	1.27	95.09
562	Waste Management and Remediation Services	1.20	96.30
443	Electronics and Appliance Stores	1.18	97.48
561	Administrative and Support Services	0.71	98.19
424	Merchant Wholesalers, Nondurable Goods	0.43	98.62
331	Primary Metal Manufacturing	0.43	99.05
444	Building Material & Garden Eqpmt. & Supplies Dealers	0.23	99.27
333	Machinery Manufacturing	0.18	99.45
811	Repair and Maintenance	0.09	99.54
532	Rental and Leasing Services	0.08	99.62
334	Computer and Electronic Product Manufacturing	0.08	99.69
335	Electrical Eqpmt., Appliance, & Component Mfg.	0.05	99.75
524	Insurance Carriers and Related Activities	0.04	99.79
212	Mining (except Oil and Gas)	0.04	99.82
325	Chemical Manufacturing	0.03	99.85
339	Miscellaneous Manufacturing	0.03	99.88
321	Wood Product Manufacturing	0.02	99.90
	Balance of industries (20 industries)	0.10	100.00
	TOTAL - $698,091,025		

Source: NERA calculations from Master Contract/Subcontract Database.

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

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
237	Heavy and Civil Engineering Construction	43.11	43.11
236	Construction of Buildings	24.57	67.68
238	Specialty Trade Contractors	12.74	80.43
423	Merchant Wholesalers, Durable Goods	7.48	87.90
541	Professional, Scientific, and Technical Services	2.96	90.86
484	Truck Transportation	1.54	92.40
443	Electronics and Appliance Stores	1.45	93.85
327	Nonmetallic Mineral Product Manufacturing	1.31	95.15
562	Waste Management and Remediation Services	1.19	96.34
332	Fabricated Metal Product Manufacturing	1.16	97.50
561	Administrative and Support Services	0.90	98.41
424	Merchant Wholesalers, Nondurable Goods	0.35	98.75
331	Primary Metal Manufacturing	0.34	99.09
333	Machinery Manufacturing	0.32	99.41
444	Building Material & Garden Eqpmt. & Supplies Dealers	0.21	99.62
334	Computer and Electronic Product Manufacturing	0.08	99.70
811	Repair and Maintenance	0.08	99.78
335	Electrical Eqpmt., Appliance, & Component Mfg.	0.05	99.83
524	Insurance Carriers and Related Activities	0.05	99.87
339	Miscellaneous Manufacturing	0.02	99.90
	Balance of industries (24 industries)	0.10	100.00
	TOTAL - $572,995,049		

Source: NERA calculations from Master Contract/Subcontract Database.

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

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
541	Professional, Scientific, and Technical Services	79.09	79.09
237	Heavy and Civil Engineering Construction	10.79	89.88
238	Specialty Trade Contractors	4.18	94.06
236	Construction of Buildings	1.85	95.90
484	Truck Transportation	1.18	97.08
423	Merchant Wholesalers, Durable Goods	0.56	97.64
561	Administrative and Support Services	0.54	98.18
327	Nonmetallic Mineral Product Manufacturing	0.48	98.66
562	Waste Management and Remediation Services	0.36	99.02
334	Computer and Electronic Product Manufacturing	0.32	99.34
518	ISPs, Web Search Portals, and Data Processing Services	0.31	99.66
323	Printing and Related Support Activities	0.22	99.87
337	Furniture and Related Product Manufacturing	0.04	99.91
	Balance of Industries (15 industries)	0.09	100.00
	TOTAL - $93,833,289		

Source: NERA calculations from Master Contract/Subcontract Database.

Table 3.7. Distribution of Contract and Subcontract Dollars Paid by Industry Sub-sector: A&E

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
541	Professional, Scientific, and Technical Services	74.85	74.85
237	Heavy and Civil Engineering Construction	12.85	87.70
238	Specialty Trade Contractors	3.68	91.38
484	Truck Transportation	2.98	94.35
236	Construction of Buildings	2.06	96.41
561	Administrative and Support Services	0.82	97.23
327	Nonmetallic Mineral Product Manufacturing	0.66	97.90
562	Waste Management and Remediation Services	0.48	98.37
423	Merchant Wholesalers, Durable Goods	0.44	98.81
518	ISPs, Web Search Portals, and Data Processing Services	0.39	99.20
334	Computer and Electronic Product Manufacturing	0.39	99.59
323	Printing and Related Support Activities	0.21	99.81
532	Rental and Leasing Services	0.06	99.87
337	Furniture and Related Product Manufacturing	0.05	99.92
	Balance of Industries (14 industries)	0.08	100.00
	TOTAL - $74,790,289		

Source: NERA calculations from Master Contract/Subcontract Database.

IV. M/WBE Availability in the City of Austin'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 City of Austin's contracting market area—what we will refer to as the Baseline Business Universe.[111] 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 the City of Austin.

1. Estimate the Total Number of Businesses in the Market

We used Dun & Bradstreet's *MarketPlace* database to determine the total number of businesses operating in the relevant geographic and product markets (these markets were discussed in the previous section). *MarketPlace* is a comprehensive database of U. S. businesses. This database contains over 13 million records and is updated continuously. Dun & Bradstreet issues a revised version each quarter. Each record in *MarketPlace* represents a business and includes the company name, address, telephone number, NAICS code, SIC code, business type, DUNS Number (a unique number assigned to each business by Dun & Bradstreet), and other descriptive information. Dun & Bradstreet gathers and verifies information from many different sources. These sources include 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 *MarketPlace* 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 awarded. Table 4.2 shows the same information along with the associated industry weight according to dollars paid. Comparable data for A&E appears in Tables 4.3 and 4.4.

Although numerous industries play a role in the City of Austin'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 discussed above in Chapter III.

2. Identify Listed M/WBEs

While extensive, *MarketPlace* does not sufficiently identify all businesses owned by minorities or women. Although many such businesses *are* correctly identified in *MarketPlace*, experience

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

has demonstrated that many more are 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 Austin metropolitan area. Beyond the information already in *MarketPlace*, NERA obtained the list of MBEs from the City of Austin Department of Small and Minority Business Resources as well as other public and private entities in the Austin metropolitan area and national directories of MBEs. Specifically, directories were included from:[112]the federal government's Central Contractor Registration database,[113] Business Resource Services, Small Business Association Dynamic Small Business Search, Diversity Information Resources, the National Association of Women in Construction, DiversityBusiness.com, the National Center for American Indian Enterprise Development, Roane State Community College, State of Texas Department of Transportation Unified Certification Program, Texas Building and Procurement Commission Historically Underutilized Business (HUB) list including both the Certified Master Bidder's List and the non-certified businesses, United States Hispanic Contractors Association – Austin Chapter, Travis County, Texas Asian Chamber of Commerce, Asian Construction Trades Association, Austin Black Contractors Association, Austin Business Journal, BIG Austin, Greater Austin Hispanic Chamber of Commerce, Hispanic Contractors Association Austin, and the Capital City African American Chamber of Commerce.[114]

We will refer to the M/WBE businesses identified in this manner as "listed" M/WBEs. Tables 4.5 and 4.6 provide the total number of listed M/WBEs in Construction by NAICS sub-sector, with award dollar weights and paid dollars weights, respectively. Tables 4.7 and 4.8 provide comparable information for A&E.

[112] 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 included the Austin Community College, Business Resource Consultants, Capital Metro Transportation Authority, the City of Cedar Park, the City of Lockhart, the City of Round Rock, the City of San Marcos, the Texas Community Mentor Protégé Initiative, Lockhart School District, Round Rock Independent School District, the Texas State University Small Business Development Center, the University of Texas, and the United States DOT Office of Small and Disadvantaged Business Utilization.

[113] The Central Contractor Registration (CCR) is the primary vendor database for the U.S. Federal Government. The CCR collects, validates, stores and disseminates data in support of agency acquisition missions. As of December 2002, the CCR system has eliminated the requirement that small businesses register separately within the Small Business Administration's PRO-Net database.

[114] A number of public and private organizations we contacted were unable or unwilling to provide relevant lists or directories. These included: Austin Women's Chamber of Commerce, Texas Women's Venture Funds, Austin Asian American Chamber of Commerce, Central and South Texas Minority Business Council, Texas Association of Minority Business Enterprise, the Austin Independent School District, Bastrop County, the Bastrop Economic Development Corporation, Bastrop Independent School District, Caldwell County, the Central Texas Business Resource Center, the City of Bastrop, the City of Cedar Park Department of Economic Development, the City of Lakeway, the City of Leander, the City of Pflugerville, the City of Westlake, Concordia University, Dripping Springs Chamber of Commerce, Eanes Independent School District, Huston Tillotson University, the Service Corps of Retired Executives, St. Edward's University, Williamson County, the Women Contractors Association, the Bastrop Chamber of Commerce, the Greater Austin Chamber of Commerce, the Lake Travis Chamber of Commerce, Leander Chamber of Commerce, National Minority Business Council, Round Rock Chamber of Commerce, Wimberley Chamber of Commerce, Hays County, National Association of Minority Contractors, National Indian Business Association, National Minority Supplier Development Council, Society of Women Engineers, United States Pan Asian American Chamber of Commerce, Women's Business Enterprise National Council, and the Texas Association of Mexican-American Chambers of Commerce.

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 and therefore this is not an appropriate method for measuring M/WBE availability.

There are two reasons for this. First, it is likely that some proportion of the M/WBEs listed in the tables 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 do 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 *MarketPlace* and other M/WBE directories is not correct in all instances. Phenomena such as ownership changes, associate or mentor status, recording errors, or even outright misrepresentation could lead to businesses being listed as M/WBEs in a particular directory even though they are actually owned by White 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 *MarketPlace* 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 attempted to correct for the effect of these biases using statistical sampling procedures. We surveyed a large stratified random sample of 5,000 establishments drawn from the Baseline Business Universe and measured how often they were misclassified (or unclassified) by race and/or sex.[115]

Strata were defined according to NAICS sub-sectors code and listed M/WBE status.[116] In the phone survey, up to 10 attempts were made to reach each business and speak with an appropriate

[115] 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.

[116] Eight separate industry strata were created—three for construction, one for architecture and engineering, one for wholesale trade, one for concrete and steel manufacturers, one for trucking, and one for the balance of industries. All eight strata were then split according to listed M/WBE status to create a total of 16 strata. Generally, listed M/WBEs were sampled at a higher rate than unclassified establishments.

respondent. Attempts were scheduled for a mix of day and evening, weekdays and weekends, and appointments were scheduled for callbacks when necessary. Of the 5,000 firms in our sample, 1,950 were listed M/WBEs and 3,050 were unclassified by race or sex. However, 240 establishments were excluded as "unable to contact." Exclusions resulted primarily from establishments that were no longer in business.[117] Of the remaining 4,760 firms, 1,852 were listed M/WBEs and the remaining 2,908 establishments 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.

a. Survey of Listed M/WBEs

We selected a stratified random sample of 1,950 listed M/WBEs to verify the race and gender status of their owner(s). Of these, 98 were excluded as "unable to contact." Of the 1,852 remaining establishments, we obtained complete interviews from 937, for a response rate of 50.6 percent.

Next, since NERA had performed misclassification/nonclassification surveys for the City of Austin in a previous study, we expanded our effective number of responses by incorporating these results. This yielded an additional 367 responses, bringing the total to 1,304.

Of the 1,304 establishments interviewed, 243 (18.6 percent) were owned by White males. The amount of misclassification was substantial in every NAICS stratum, and was highest in NAICS 237, as shown in Table 4.9. Misclassification varied by putative race and sex, and was highest among apparent Native American-owned and White female-owned firms, as shown in Table 4.10.[118]

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 White female-owned was actually White male-owned, then that business was counted as White male-owned for purposes of calculating M/WBE availability. But what about the remaining putatively White 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 White female-owned firms that we did interview. In this example, our interviews show that 74.5 percent of these firms are actually White female-owned, 20.0 percent are actually White male-owned, and 5.5 percent are actually minority-owned (see Table 4.10). Therefore, we assign each of the remaining putative White female firms a 74.5 percent probability of actually being White female-owned, a 20.0 percent probability of actually being White male-owned, and a 5.5

[117] 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.

[118] By "putative," we mean the race and sex that we initially assigned to each firm based on the information provided by Dun & Bradstreet or by our master M/WBE directory.

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.

We selected a stratified random sample of 3,050 unclassified businesses from the Baseline Business Universe to verify the race and gender status of their owner(s). Of these, 142 were excluded as "unable to contact." Of the 2,908 remaining establishments, we obtained 1,534 complete interviews, for a response rate of 52.8 percent.

Next, since NERA had performed misclassification/nonclassification surveys for the City of Austin in a previous study, we expanded our effective number of responses by incorporating these results. This yielded an additional 1,546 responses, bringing the total to 3,080.

Of the 3,080 establishments interviewed, 2,575 (83.6%) were owned by White males, 254 (8.3%) by White females, and 251 (8.1%) by minorities (*see* 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 White male-owned, then that business was counted as White male-owned for purposes of the M/WBE availability calculation. If it indicated it was White female-owned, it was counted as White female, and so on. For unclassified businesses that were not interviewed, we assigned probability values (probability actually White male-owned, probability actually White 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 (almost 84 percent overall) in the Baseline Business Universe are White male-owned. Nevertheless, this means that almost 16 percent were *not* White male-owned. Among the latter, the largest group was White female-owned, with descending size shares accounted for by Hispanic-owned, Asian-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 and 4.14 present detailed estimates of M/WBE availability by race, sex, M/WBE status, procurement category, and detailed industry group 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 expenditures (averaging dollars awarded and dollars paid), as described in Chapter III, Section C.

Table 4.13 provides estimated M/WBE availability for all industry groups in the Construction category with significant amounts of city spending during the study period. Overall, M/WBE availability in Construction is estimated at 27.5 percent.

Table 4.14 provides estimated M/WBE availability for all industries in the A&E procurement category with significant amounts of city spending during the study period. Overall, M/WBE availability in A&E is estimated at 31.8 percent.

Table 4.15 summarizes overall availability estimates for each procurement category and for each race and sex category.

Overall, among M/WBEs, availability of White female-owned businesses is 13.8 percent in Construction and 15.8 percent in A&E. For Hispanic-owned businesses the figures are 9.7 percent in Construction and 9.0 percent in A&E. For African-American-owned businesses the figures are 1.7 and 1.9 percent, respectively. For Asian-owned businesses, the figures are 1.2 and 4.3 percent, respectively. For Native American-owned businesses, the figures are 1.1 and 0.6 percent, respectively.

Table 4.16 presents information analogous to Table 4.15 except that it is restricted to federally-assisted airport contracts only. The availability figures in Table 4.16 can assist City in meeting it's DBE Program requirements for ABIA under 49 CFR Part 26.

C. Tables

Table 4.1. Construction—Number of Businesses and Industry Weight, (Awards) by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
2371	Utility System Construction	71	27.82	27.82
2362	Nonresidential Building Construction	415	23.33	51.14
2373	Highway, Street, and Bridge Construction	114	8.14	59.29
2382	Building Equipment Contractors	1,125	7.40	66.69
2381	Foundation, Structure, and Building Exterior Contractors	527	5.94	72.63
2379	Other Heavy and Civil Engineering Construction	13	5.76	78.39
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	334	3.45	81.84
3273	Cement and Concrete Product Manufacturing	27	1.92	83.76
5413	Architectural, Engineering, and Related Services	936	1.88	85.64
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	28	1.64	87.29
4236	Electrical and Electronic Goods Merchant Wholesalers	128	1.63	88.92
4841	General Freight Trucking	260	1.58	90.50
5629	Remediation and Other Waste Management Services	32	1.21	91.71
4431	Electronics and Appliance Stores	9	1.19	92.90
2383	Building Finishing Contractors	467	0.83	93.73
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	92	0.81	94.53
2389	Other Specialty Trade Contractors	118	0.76	95.30
3329	Other Fabricated Metal Product Manufacturing	8	0.69	95.99
5416	Management, Scientific, and Technical Consulting Services	1,137	0.63	96.62
3323	Architectural and Structural Metals Manufacturing	31	0.52	97.15
5617	Services to Buildings and Dwellings	945	0.50	97.64
2372	Land Subdivision	209	0.46	98.10
3312	Steel Product Manufacturing from Purchased Steel	2	0.41	98.52
4247	Petroleum and Petroleum Products Merchant Wholesalers	48	0.37	98.89
4233	Lumber and Other Construction Materials Merchant Wholesalers	158	0.31	99.20
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	50	0.15	99.34
4442	Lawn and Garden Equipment and Supplies Stores	77	0.12	99.46
3333	Commercial and Service Industry Machinery Manufacturing	20	0.11	99.58

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	75	0.08	99.66
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	35	0.08	99.74
5613	Employment Services	152	0.07	99.81
5616	Investigation and Security Services	43	0.07	99.88
2361	Residential Building Construction	1,201	0.06	99.95
3339	Other General Purpose Machinery Manufacturing	4	0.05	100.00
	TOTAL	8,891		

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

Table 4.2. Construction—Number of Businesses and Industry Weight (Payments), by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
2373	Highway, Street, and Bridge Construction	114	8.82	61.10
2382	Building Equipment Contractors	1,125	6.78	67.88
2379	Other Heavy and Civil Engineering Construction	13	6.67	74.56
2381	Foundation, Structure, and Building Exterior Contractors	527	5.04	79.60
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	334	3.36	82.96
5413	Architectural, Engineering, and Related Services	936	2.13	85.09
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	28	1.59	86.68
4841	General Freight Trucking	260	1.56	88.24
4236	Electrical and Electronic Goods Merchant Wholesalers	128	1.52	89.76
4431	Electronics and Appliance Stores	9	1.46	91.22
3273	Cement and Concrete Product Manufacturing	27	1.31	92.53
5629	Remediation and Other Waste Management Services	32	1.20	93.73
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	92	0.75	94.48
5416	Management, Scientific, and Technical Consulting Services	1,137	0.69	95.17
3329	Other Fabricated Metal Product Manufacturing	8	0.61	95.78
2383	Building Finishing Contractors	305	0.59	96.37
3323	Architectural and Structural Metals Manufacturing	25	0.53	96.89
2372	Land Subdivision	209	0.47	97.37
2389	Other Specialty Trade Contractors	118	0.38	97.74
5613	Employment Services	152	0.37	98.11
5617	Services to Buildings and Dwellings	475	0.34	98.45
3312	Steel Product Manufacturing from Purchased Steel	2	0.34	98.79
4247	Petroleum and Petroleum Products Merchant Wholesalers	48	0.28	99.07
3333	Commercial and Service Industry Machinery Manufacturing	20	0.25	99.33
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	50	0.15	99.48
5616	Investigation and Security Services	43	0.12	99.60
5419	Other Professional, Scientific, and Technical Services	105	0.10	99.70
2361	Residential Building Construction	1,201	0.08	99.78
4442	Lawn and Garden Equipment and Supplies Stores	77	0.08	99.86

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	75	0.07	99.93
3339	Other General Purpose Machinery Manufacturing	4	0.07	100.00
	TOTAL	7,679		

Source: See Table 4.1.

Table 4.3. A&E—Number of Businesses and Industry Weight (Awards), by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
5413	Architectural, Engineering, and Related Services	1,268	73.39	73.39
2371	Utility System Construction	71	9.01	82.40
5416	Management, Scientific, and Technical Consulting Services	1,137	4.65	87.05
2381	Foundation, Structure, and Building Exterior Contractors	196	3.20	90.25
2362	Nonresidential Building Construction	357	1.86	92.11
4841	General Freight Trucking	260	1.19	93.30
2379	Other Heavy and Civil Engineering Construction	13	1.13	94.42
2382	Building Equipment Contractors	1,109	0.77	95.19
2373	Highway, Street, and Bridge Construction	114	0.57	95.76
3273	Cement and Concrete Product Manufacturing	26	0.49	96.25
5418	Advertising and Related Services	154	0.48	96.73
5415	Computer Systems Design and Related Services	215	0.48	97.21
5417	Scientific Research and Development Services	3	0.43	97.64
5617	Services to Buildings and Dwellings	475	0.40	98.05
5629	Remediation and Other Waste Management Services	2	0.33	98.38
5182	Data Processing, Hosting, and Related Services	255	0.32	98.70
4233	Lumber and Other Construction Materials Merchant Wholesalers	65	0.31	99.01
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	20	0.30	99.31
3231	Printing and Related Support Activities	6	0.21	99.51
5419	Other Professional, Scientific, and Technical Services	105	0.17	99.68
2372	Land Subdivision	209	0.16	99.84
4236	Electrical and Electronic Goods Merchant Wholesalers	106	0.16	100.00
	TOTAL	6,166		

Source: See Table 4.1.

Table 4.4. A&E—Number of Businesses and Industry Weight (Payments), by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
5413	Architectural, Engineering, and Related Services	1,268	67.25	67.25
2371	Utility System Construction	71	9.51	76.76
5416	Management, Scientific, and Technical Consulting Services	1,137	5.08	81.85
4841	General Freight Trucking	260	3.01	84.85
2381	Foundation, Structure, and Building Exterior Contractors	196	2.43	87.28
2362	Nonresidential Building Construction	357	2.08	89.37
2373	Highway, Street, and Bridge Construction	114	1.95	91.32
2379	Other Heavy and Civil Engineering Construction	13	1.32	92.63
5418	Advertising and Related Services	154	1.30	93.93
2382	Building Equipment Contractors	1,109	1.02	94.95
5417	Scientific Research and Development Services	3	0.79	95.75
5617	Services to Buildings and Dwellings	475	0.67	96.42
3273	Cement and Concrete Product Manufacturing	26	0.67	97.09
5419	Other Professional, Scientific, and Technical Services	105	0.60	97.70
5415	Computer Systems Design and Related Services	215	0.48	98.17
5629	Remediation and Other Waste Management Services	2	0.44	98.62
5182	Data Processing, Hosting, and Related Services	255	0.40	99.01
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	20	0.37	99.38
3231	Printing and Related Support Activities	6	0.22	99.60
4233	Lumber and Other Construction Materials Merchant Wholesalers	65	0.21	99.81
2372	Land Subdivision	209	0.19	100.00
	TOTAL	6,060		

Source: See Table 4.1.

Table 4.5. Construction—Listed M/WBEs and Industry Weight (Awards), by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
2371	Utility System Construction	9	27.82	27.82
2362	Nonresidential Building Construction	66	23.33	51.14
2373	Highway, Street, and Bridge Construction	31	8.14	59.29
2382	Building Equipment Contractors	139	7.40	66.69
2381	Foundation, Structure, and Building Exterior Contractors	96	5.94	72.63
2379	Other Heavy and Civil Engineering Construction	5	5.76	78.39
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	62	3.45	81.84
3273	Cement and Concrete Product Manufacturing	2	1.92	83.76
5413	Architectural, Engineering, and Related Services	211	1.88	85.64
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	7	1.64	87.29
4236	Electrical and Electronic Goods Merchant Wholesalers	21	1.63	88.92
4841	General Freight Trucking	65	1.58	90.50
5629	Remediation and Other Waste Management Services	4	1.21	91.71
4431	Electronics and Appliance Stores	2	1.19	92.90
2383	Building Finishing Contractors	64	0.83	93.73
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	16	0.81	94.53
2389	Other Specialty Trade Contractors	10	0.76	95.30
3329	Other Fabricated Metal Product Manufacturing	4	0.69	95.99
5416	Management, Scientific, and Technical Consulting Services	280	0.63	96.62
3323	Architectural and Structural Metals Manufacturing	5	0.52	97.15
5617	Services to Buildings and Dwellings	196	0.50	97.64
2372	Land Subdivision	13	0.46	98.10
3312	Steel Product Manufacturing from Purchased Steel	0	0.41	98.52
4247	Petroleum and Petroleum Products Merchant Wholesalers	2	0.37	98.89
4233	Lumber and Other Construction Materials Merchant Wholesalers	16	0.31	99.20
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	9	0.15	99.34
4442	Lawn and Garden Equipment and Supplies Stores	16	0.12	99.46
3333	Commercial and Service Industry Machinery Manufacturing	2	0.11	99.58
8113	Commercial & Industrial Machinery & Equipment (except Automotive and Electronic) Repair and Maintenance	9	0.08	99.66

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	0	0.08	99.74
5613	Employment Services	21	0.07	99.81
5616	Investigation and Security Services	7	0.07	99.88
2361	Residential Building Construction	87	0.06	99.95
3339	Other General Purpose Machinery Manufacturing	0	0.05	100.00
	TOTAL	1,477		

Source: See Table 4.1.

Table 4.6. Construction—Listed M/WBEs and Industry Weight (Payments), by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
2373	Highway, Street, and Bridge Construction	31	8.82	61.10
2382	Building Equipment Contractors	139	6.78	67.88
2379	Other Heavy and Civil Engineering Construction	5	6.67	74.56
2381	Foundation, Structure, and Building Exterior Contractors	96	5.04	79.60
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	62	3.36	82.96
5413	Architectural, Engineering, and Related Services	211	2.13	85.09
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	7	1.59	86.68
4841	General Freight Trucking	65	1.56	88.24
4236	Electrical and Electronic Goods Merchant Wholesalers	21	1.52	89.76
4431	Electronics and Appliance Stores	2	1.46	91.22
3273	Cement and Concrete Product Manufacturing	2	1.31	92.53
5629	Remediation and Other Waste Management Services	4	1.20	93.73
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	16	0.75	94.48
5416	Management, Scientific, and Technical Consulting Services	280	0.69	95.17
3329	Other Fabricated Metal Product Manufacturing	4	0.61	95.78
2383	Building Finishing Contractors	50	0.59	96.37
3323	Architectural and Structural Metals Manufacturing	4	0.53	96.89
2372	Land Subdivision	13	0.47	97.37
2389	Other Specialty Trade Contractors	10	0.38	97.74
5613	Employment Services	21	0.37	98.11
5617	Services to Buildings and Dwellings	77	0.34	98.45
3312	Steel Product Manufacturing from Purchased Steel	0	0.34	98.79
4247	Petroleum and Petroleum Products Merchant Wholesalers	2	0.28	99.07
3333	Commercial and Service Industry Machinery Manufacturing	2	0.25	99.33
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	9	0.15	99.48
5616	Investigation and Security Services	7	0.12	99.60
5419	Other Professional, Scientific, and Technical Services	20	0.10	99.70
2361	Residential Building Construction	87	0.08	99.78
4442	Lawn and Garden Equipment and Supplies Stores	16	0.08	99.86

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	9	0.07	99.93
3339	Other General Purpose Machinery Manufacturing	0	0.07	100.00
	TOTAL	1,272		

Source: See Table 4.1.

Table 4.7. A&E—Listed M/WBEs and Industry Weight (Awards), by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
5413	Architectural, Engineering, and Related Services	275	73.39	73.39
2371	Utility System Construction	9	9.01	82.40
5416	Management, Scientific, and Technical Consulting Services	280	4.65	87.05
2381	Foundation, Structure, and Building Exterior Contractors	47	3.20	90.25
2362	Nonresidential Building Construction	60	1.86	92.11
4841	General Freight Trucking	65	1.19	93.30
2379	Other Heavy and Civil Engineering Construction	5	1.13	94.42
2382	Building Equipment Contractors	136	0.77	95.19
2373	Highway, Street, and Bridge Construction	31	0.57	95.76
3273	Cement and Concrete Product Manufacturing	2	0.49	96.25
5418	Advertising and Related Services	27	0.48	96.73
5415	Computer Systems Design and Related Services	22	0.48	97.21
5417	Scientific Research and Development Services	0	0.43	97.64
5617	Services to Buildings and Dwellings	77	0.40	98.05
5629	Remediation and Other Waste Management Services	2	0.33	98.38
5182	Data Processing, Hosting, and Related Services	60	0.32	98.70
4233	Lumber and Other Construction Materials Merchant Wholesalers	7	0.31	99.01
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	2	0.30	99.31
3231	Printing and Related Support Activities	1	0.21	99.51
5419	Other Professional, Scientific, and Technical Services	20	0.17	99.68
2372	Land Subdivision	13	0.16	99.84
4236	Electrical and Electronic Goods Merchant Wholesalers	17	0.16	100.00
	TOTAL	1,158		

Source: See Table 4.1.

Table 4.8. A&E—Listed M/WBEs and Industry Weight (Payments), by NAICS Code

NAICS Code	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
5413	Architectural, Engineering, and Related Services	275	67.25	67.25
2371	Utility System Construction	9	9.51	76.76
5416	Management, Scientific, and Technical Consulting Services	280	5.08	81.85
4841	General Freight Trucking	65	3.01	84.85
2381	Foundation, Structure, and Building Exterior Contractors	47	2.43	87.28
2362	Nonresidential Building Construction	60	2.08	89.37
2373	Highway, Street, and Bridge Construction	31	1.95	91.32
2379	Other Heavy and Civil Engineering Construction	5	1.32	92.63
5418	Advertising and Related Services	27	1.30	93.93
2382	Building Equipment Contractors	136	1.02	94.95
5417	Scientific Research and Development Services	0	0.79	95.75
5617	Services to Buildings and Dwellings	77	0.67	96.42
3273	Cement and Concrete Product Manufacturing	2	0.67	97.09
5419	Other Professional, Scientific, and Technical Services	20	0.60	97.70
5415	Computer Systems Design and Related Services	22	0.48	98.17
5629	Remediation and Other Waste Management Services	2	0.44	98.62
5182	Data Processing, Hosting, and Related Services	60	0.40	99.01
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	2	0.37	99.38
3231	Printing and Related Support Activities	1	0.22	99.60
4233	Lumber and Other Construction Materials Merchant Wholesalers	7	0.21	99.81
2372	Land Subdivision	13	0.19	100.00
	TOTAL	1,141		

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 White male)	Percentage Actually M/WBE-owned	Number of Businesses Interviewed
NAICS 236	24.0	76.0	104
NAICS 237	37.8	62.2	37
NAICS 238	20.2	79.8	252
NAICS 327, 332	25.0	75.0	12
NAICS 484	18.0	82.0	39
NAICS 42	31.8	68.2	129
NAICS 5413	19.5	80.5	174
Balance of NAICS Codes	12.2	87.8	557
All NAICS Codes	18.6	81.4	1,304

Source: NERA telephone surveys.

Note: NAICS 236 – Building Construction, NAICS 237 – Heavy Construction, NAICS 238 – Special Trades Construction, NAICS 327 –Nonmetallic Mineral Product Mfg., NAICS 332 – Fabricated Metal Product Mfg., NAICS 484 – Truck Transportation, NAICS 42 – Wholesale Trade, NAICS 5413 – Architecture, Engineering & Related Services.

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

Putative Race/Sex	Misclassif-ication (Percentage White male)	Misclassification (Percentage Other M/WBE Type)	Percentage Correctly Classified	Number of Businesses Interviewed
African-American (either sex)	12.3	5.2	82.5	114
Hispanic (either sex)	15.5	4.4	80.1	401
Asian (either sex)	17.1	3.1	73.7	76
Native American (either sex)	47.6	26.2	26.2	42
White female	20.0	5.5	74.5	671
All M/WBE Types	18.6	N/A	81.4	1,304

Source and Notes: See Table 4.9.

Table 4.11. Unclassified Businesses Survey —By NAICS Code Grouping

Listed M/WBE By SIC Code Grouping	Percentage Actually White male-owned	Percentage M/WBE	Number of Businesses Interviewed
NAICS 236	88.4	11.6	335
NAICS 237	88.6	11.4	140
NAICS 238	81.1	18.9	874
NAICS 327, 332	92.1	7.9	63
NAICS 484	67.6	32.4	145
NAICS 42	82.8	17.2	442
NAICS 5413	89.6	10.4	574
Balance of NAICS Codes	80.9	19.1	507
All NAICS Codes	83.6	16.4	3,080

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
White male	2,575	83.6
White female	254	8.3
African-American	26	0.8
Hispanic	170	5.5
Asian	31	1.0
Native American	24	0.8
Total	3,080	100.0

Source and Notes: See Table 4.9.

Table 4.13. Detailed M/WBE Availability—Construction

Detailed Industry	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Utility System Construction (NAICS 2371)	2.25	6.60	0.03	0.34	17.31	26.54	73.46
Nonresidential Building Construction (NAICS 2362)	1.48	8.73	1.30	1.33	14.65	27.49	72.51
Highway, Street, and Bridge Construction (NAICS 2373)	2.60	17.03	2.37	1.78	13.67	37.45	62.55
Building Equipment Contractors (NAICS 2382)	1.96	13.78	0.85	2.10	13.93	32.62	67.38
Foundation, Structure, & Building Exterior Contractors (NAICS 2381)	1.96	23.46	0.81	1.57	15.80	43.59	56.41
Other Heavy and Civil Engineering Construction (NAICS 2379)	10.70	9.86	0.00	0.37	19.74	40.67	59.33
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	1.80	4.34	4.44	0.56	24.95	36.10	63.90
Cement and Concrete Product Manufacturing (NAICS 3273)	0.00	9.57	0.49	0.49	0.47	11.02	88.98
Architectural, Engineering, and Related Services (NAICS 5413)	1.40	8.83	3.20	0.34	25.38	39.15	60.85
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	0.17	10.57	6.03	0.26	22.23	39.26	60.74
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	0.38	8.51	4.60	0.77	17.52	31.79	68.21
General Freight Trucking (NAICS 4841)	15.71	28.49	1.41	1.47	18.18	65.26	34.74
Remediation and Other Waste Management Services (NAICS 5629)	0.54	3.74	0.68	1.45	77.40	83.81	16.19
Electronics and Appliance Stores (NAICS 4431)	10.22	17.31	1.49	0.48	5.33	34.83	65.17
Building Finishing Contractors (NAICS 2383)	1.58	20.08	0.77	1.40	17.99	41.82	58.18
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	0.36	7.42	1.90	0.40	15.49	25.56	74.44
Other Specialty Trade Contractors (NAICS 2389)	2.45	12.53	0.41	3.27	14.75	33.41	66.59
Other Fabricated Metal Product Manufacturing (NAICS 3329)	0.00	11.88	0.00	6.09	5.89	23.86	76.14

Detailed Industry	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Management, Scientific, and Technical Consulting Services (NAICS 5416)	3.39	10.18	2.62	0.93	28.00	45.13	54.87
Architectural and Structural Metals Manufacturing (NAICS 3323)	0.00	11.55	9.91	0.73	0.71	22.89	77.11
Services to Buildings and Dwellings (NAICS 5617)	5.48	12.64	0.96	0.85	19.70	39.62	60.38
Land Subdivision (NAICS 2372)	1.96	7.03	2.04	2.03	14.35	27.41	72.59
Steel Product Manufacturing from Purchased Steel (NAICS 3312)	0.93	3.76	0.53	0.53	6.81	12.55	87.45
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)	1.70	7.01	3.01	1.36	17.91	30.99	69.01
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	0.43	9.27	2.88	0.45	19.86	32.88	67.12
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)	0.56	3.93	5.27	0.53	23.32	33.61	66.39
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)	1.61	9.27	0.86	2.53	28.38	42.64	57.36
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	1.69	6.65	0.95	0.93	16.81	27.01	72.99
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Main	1.50	14.08	2.70	1.30	16.07	35.64	64.36
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)	1.22	4.94	0.70	0.70	8.95	16.50	83.50
Employment Services (NAICS 5613)	3.28	9.09	1.80	1.00	22.40	37.57	62.43
Investigation and Security Services (NAICS 5616)	6.79	16.37	1.04	1.03	14.69	39.92	60.08
Residential Building Construction (NAICS 2361)	1.33	7.12	0.93	0.69	11.69	21.75	78.25
Other General Purpose Machinery Manufacturing (NAICS 3339)	1.54	8.64	0.95	1.18	12.71	25.02	74.98
TOTAL (AWARDS)	*1.74*	*9.81*	*1.20*	*1.11*	*13.80*	*27.64*	*72.36*
TOTAL (PAID)	*1.75*	*9.64*	*1.20*	*1.11*	*13.85*	*27.54*	*72.46*

Source: See Table 4.1.

Table 4.14. Detailed M/WBE Availability—A&E

Detailed Industry	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Architectural, Engineering, and Related Services (NAICS 5413)	2.03	9.58	5.31	0.53	20.79	38.23	61.77
Utility System Construction (NAICS 2371)	2.25	6.61	0.03	0.34	17.23	26.46	73.54
Management, Scientific, and Technical Consulting Services (NAICS 5416)	3.39	10.20	2.57	0.94	28.03	45.13	54.87
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	2.38	26.54	1.02	1.55	15.45	46.94	53.06
Nonresidential Building Construction (NAICS 2362)	1.35	8.84	1.32	1.22	14.75	27.50	72.50
General Freight Trucking (NAICS 4841)	15.71	28.50	1.40	1.47	18.09	65.17	34.83
Other Heavy and Civil Engineering Construction (NAICS 2379)	10.70	9.87	0.00	0.37	19.64	40.58	59.42
Building Equipment Contractors (NAICS 2382)	1.45	13.31	0.93	1.97	13.96	31.60	68.40
Highway, Street, and Bridge Construction (NAICS 2373)	2.60	17.04	2.34	1.79	13.60	37.37	62.63
Cement and Concrete Product Manufacturing (NAICS 3273)	0.00	11.23	0.57	0.58	0.55	12.93	87.07
Advertising and Related Services (NAICS 5418)	2.60	9.05	1.00	0.94	27.00	40.59	59.41
Computer Systems Design and Related Services (NAICS 5415)	2.26	9.33	2.12	0.96	19.76	34.42	65.58
Scientific Research and Development Services (NAICS 5417)	0.77	3.27	0.81	0.51	7.53	12.90	87.10
Services to Buildings and Dwellings (NAICS 5617)	5.06	12.94	0.71	0.79	18.37	37.86	62.14
Remediation and Other Waste Management Services (NAICS 5629)	0.00	1.60	0.54	1.64	96.22	100.00	0.00
Data Processing, Hosting, and Related Services (NAICS 5182)	3.98	8.68	0.89	0.84	31.90	46.29	53.71
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	0.33	13.19	4.02	0.42	15.32	33.29	66.71
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	1.58	6.39	0.89	7.64	18.00	34.50	65.50

Detailed Industry	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Printing and Related Support Activities (NAICS 3231)	1.34	5.70	1.40	0.86	32.74	42.05	57.95
Other Professional, Scientific, and Technical Services (NAICS 5419)	1.73	12.55	0.93	0.88	28.08	44.16	55.84
Land Subdivision (NAICS 2372)	1.96	7.04	2.02	2.04	14.28	27.33	72.67
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	0.37	8.52	4.39	0.78	17.29	31.35	68.65
TOTAL (AWARDS)	1.86	8.90	4.46	0.55	15.70	31.47	68.53
TOTAL (PAID)	2.02	9.09	4.24	0.56	15.88	31.79	68.21

Source: See Table 4.1.

Table 4.15. Overall M/WBE Availability

Detailed Industry	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
CONSTRUCTION (AWARDS)	1.7	9.8	1.2	1.1	13.8	27.6	72.4
CONSTRUCTION (PAYMENTS)	1.8	9.6	1.2	1.1	13.8	27.5	72.5
CONSTRUCTION (AVERAGE)	*1.7*	*9.7*	*1.2*	*1.1*	*13.8*	*27.6*	*72.4*
A&E (AWARDS)	1.9	8.9	4.5	0.6	15.7	31.5	68.5
A&E (PAYMENTS)	2.0	9.1	4.2	0.6	15.9	31.8	68.2
A&E (AVERAGE)	*1.9*	*9.0*	*4.3*	*0.6*	*15.8*	*31.6*	*68.4*
OVERALL (AWARDS)	1.8	9.6	2.0	1.0	14.2	28.6	71.5
OVERALL (PAYMENTS)	1.8	9.5	1.9	1.0	14.3	28.5	71.5
OVERALL (AVERAGE)	*1.8*	*9.6*	*1.9*	*1.0*	*14.3*	*28.5*	*71.5*

Source: See Table 4.1.

Note: Table 4.11 figures are the average of award-dollar weighted availability and payment-dollar weighted availability.

Table 4.16. Estimated Availability—Overall and By Procurement Category (Federally-Funded Only)

Detailed Industry	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
CONSTRUCTION AND A&E COMBINED (AWARDS)	1.52	9.28	2.00	1.06	14.68	28.54	71.46
CONSTRUCTION AND A&E COMBINED (PAYMENT)	1.50	9.50	2.04	1.10	14.43	28.57	71.43
CONSTRUCTION AND A&E COMBINED (AVERAGE)	*1.51*	*9.39*	*2.02*	*1.08*	*14.56*	*28.56*	*71.44*

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

Note: DBE participation on federally-assisted prime Construction and A&E contracts during the study period was 3.11 percent. This figure can assist when using the DBE availability figures in Table 4.16 to set the race-conscious and race-neutral portion of ABIA's DBE goals for FAA.

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

The availability figures presented in Chapter IV represent the percentage of businesses in Austin's construction and construction-related market that are owned by minorities and/or women. These availability figures will be artificially low if discrimination has led minorities and women to be more reluctant to start businesses or if it has made the businesses they start less profitable and therefore more likely to fail. This is the primary reason, for example, why the federal Disadvantaged Business Enterprise (DBE) regulations[119] require state and local recipients of federal highway, transit, and aviation funds to consider whether an adjustment to their baseline DBE availability figure would be necessary in order to approximate the amount of DBE availability that would be expected to be observed in a race-neutral and sex-neutral marketplace.[120]

This section examines local area market evidence relevant to establishing whether the City of Austin has a compelling interest in operating a race- and gender-conscious M/WBE Procurement Program in Construction and A&E and also whether expected M/WBE availability, absent business-related discrimination, would be higher than currently estimated levels. First, the microeconomic and microeconometric literature on self-employment and entrepreneurship is reviewed. Next, we present statistical evidence of disparities in wage and salary earnings, business owner earnings, and business formation rates, using individual-level data ("microdata") from the most recent Decennial Census and the time series data from the Current Population Surveys. The presence of statistically significant business formation and earnings disparities in these data sources is consistent with current discrimination in the Austin market place and/or the ongoing effects of past discrimination in the Austin market place. Evidence of business formation disparities also forms the basis for quantifying the difference between current and expected, or potential, levels of M/WBE availability.

A. Introduction

We examine here disparities in business formation and earnings principally in the private sector, where contracting and procurement activities are generally *not* subject to M/WBE requirements. Statistical examination of disparities in the private sector surrounding the Austin-Round Rock MSA is important for at least three reasons. First, to the extent that discriminatory practices by contractors, suppliers, sureties, insurers, lenders, customers, and others limit the ability of M/WBEs to compete, those practices are likely to be reflected in the far larger private sector as well as in 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 utilized in the absence of affirmative action efforts, since few firms in the private sector make such efforts. Third, the Supreme Court in *Croson* acknowledged that state and local governments had a constitutional duty not to contribute to the perpetuation of racial or ethnic discrimination in the private sector of the local economy.

[119] 49 CFR Part 26.

[120] This is referred to as the "Step 2 adjustment," *see* 49 CFR § 26.45.

After years of comparative neglect, research on the economics of entrepreneurship—especially upon self-employment—is beginning to expand.[121] For example, in the U.S. minorities start businesses at much lower rates than non-Hispanic Whites. Using the Public Use Microdata Samples (PUMS) data from the 1990 Census, Wainwright (2000) demonstrated that these disparities persist even when factors such as geography, industry, occupation, age, education, and assets are held constant.

There is a good deal of agreement in the literature on the micro-economic correlates of self-employment. Aronson (1991) provides a good overview. In the U.S., it appears that self-employment rises with age, is higher among men than women and higher among Whites 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. Increases in educational attainment are generally found to lead to increases in the probability of being self-employed. The more children in the family, the higher 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, 1987), immigration (Fairlie and Meyer, 1998; 2003)[122], 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. 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.

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. Evans and Leighton (1989)

[121] Microeconometric work includes Fuchs (1982), Borjas and Bronars (1989), Evans and Jovanovic (1989), Evans and Leighton (1989), Fairlie (1999), Fairlie and Meyer (1996, 1998), Reardon (1998), Wainwright (2000) for the United States, Rees and Shah (1986), Pickles and O'Farrell (1987), Blanchflower and Oswald (1990, 1994, 1998), Meager (1992), Taylor (1996), and Robson (1998a, 1998b) for the UK, de Wit 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), Croate and Tennyson (1992), and Holmes and Schmitz (1990), 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) for many countries.

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

found that White 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.

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 Organisation for Economic Co-operation and Development (OECD) countries.[123] 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 puzzle. Why do so few individuals in the U.S. and OECD manage to translate their preferences into action? Lack of start-up capital is one likely explanation. This factor is commonly cited by 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

[123] 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.

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.

Indeed, Blanchflower and Oswald (1998), however, find that the probability of self-employment depends positively upon whether the individual ever received an inheritance or gift. 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 that, 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.

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. 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 Whites. Analogously, Hout and Rosen (2000) found that the offspring of self-employed fathers are more likely than others to become self-employed and argued that the historically low rates of self-employment among African-Americans and Hispanics may contribute to their low contemporary rates.

A continuing puzzle in the literature has been why, nationally, the self-employment rate of African-American males is one third of that of White 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 (1998) and Wainwright (2000) have shown that a considerable part of the explanation of the differences between the African-American and White 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. Timothy 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 (1998) also found that the African-American exit rate from self-employment is twice as high as that of Whites. 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, where 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 White 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 White-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 White-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

This section examines earnings to determine whether minority and female entrepreneurs earn less from their businesses than do their White 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 sex-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 critical 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 that same industry (Blanchflower, 2000; 2004). Any 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 earnings is observed in both the economy at large and in the Construction and A&E sector.[124]

Next we examine 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.

The remainder of this section discusses the methods and data we employed and present the specific findings.

1. Methods

We used a statistical technique known as 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 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 Austin-Round Rock MSA, and assess whether disparities there 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 Austin-Round Rock MSA. 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, sex, and the Austin-Round Rock MSA. 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.[125]

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

[124] 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.

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

industry—are consistent with what would be observed in a market suffering from business-related discrimination.[126]

2. Data

The analyses undertaken in this Study require microdata with relevant information on business ownership status and other key socioeconomic characteristics. Two key data sources were available for this study.

The first is the Five Percent Public Use Microdata Samples (PUMS) from the 2000 decennial census. The 2000 PUMS contains observations representing five percent of all U.S. housing units and the persons in them (approximately 14 million records). Released in late 2003, the PUMS provides the full range of population and housing information collected in the 2000 census. Business ownership status is identified in the PUMS through the "class of worker" variable, which distinguishes the unincorporated and incorporated self-employed from others in the labor force. The presence of the class of worker variable allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings.

The second is the Current Population Survey (CPS). 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.[127]

[126] 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 below.

[127] Since 1979, about a quarter of the households in each monthly CPS survey have been asked to provide additional information, including usual weekly earnings and weekly hours of work. These households are said to be in "Outgoing Rotation Groups" (ORG) because of the way the CPS rotates households for interviews. Each household selected for the survey is interviewed once a month for four consecutive months, not interviewed for eight months, and interviewed again once a month for four more months. The households in the ORG are those that are in either the fourth or the eighth survey. The ORG files of the CPS include individual data for about 30,000 individuals each month, or over 350,000 per year. Data in which the Austin-Round Rock MSA is identifiable are available in a comparable form from 1986 through 2002. Data from the ORG files are used below in addition to the PUMS to examine earnings disparities among wage and salary workers. The ORG files however, do not contain data on the earnings of the self-employed. Annual earnings, whether from wages or self-employment are available from the March CPS, however, also known as the Annual Demographic File. This latter file also contains the basic monthly demographic and labor force data. In the March CPS, data on employment, earnings, and income refer to the preceding year, although demographic data refer to the time of the survey. The March surveys are therefore included for the years 1987-2003. Because the information relates to the preceding year, the earnings data relate to the years 1986-2002. The sample consists of any individual who reports positive self-employment earnings in the year preceding the interview.

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

Tables 5.1 through 5.6 below 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 while Tables 5.4 through 5.6 focus on construction and A&E. Tables 5.1 and 5.4 are derived from the 2000 PUMS, Tables 5.2 and 5.5 are derived from the 1986–1991 CPS, and Tables 5.3 and 5.6 are derived from the 1992–2002 CPS. 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 White 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 White males in 2000 was -30.4 percent. That is, average annual wages among African Americans were 30.4 percent lower than for White 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.[128] In the example just used, the t-statistic of 197.61 indicates that the result is statistically significant.

Specification (1) in Tables 5.1–5.3 shows negative and statistically significant wage disparities for African Americans, Hispanics, Asians, Native Americans, persons reporting in multiple race categories, and White women consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from a low of -16.7 percent for Hispanics in Table 5.2 to a high of -35.7 percent for White women 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 and construction-related professional services sector. In this sector as well, large, negative, and statistically significant wage disparities are observed for all minority groups and for White women. For African Americans, the large wage disparities observed in the construction sector are similar to those observed economy-wide. Large wage disparities in construction are also observed for Hispanics, Asians, and Native Americans; however the differences are smaller than those observed in the economy as a whole. For White women, large disparities are observed both economy-wide and in construction—however disparities in construction are larger.

If we compare Specification (1) in, respectively, Tables 5.2 and 5.3 and Tables 5.5 and 5.6 we can consider changes in observed wage disparities over time. For the economy as a whole, as well as for the construction sector, disparities for African Americans became slightly smaller between 1986–1991 (Tables 5.2 and 5.5) and 1992–2002 (Table 5.3 and 5.6), but remain large (average wages about 20 percent below comparable White males). For Hispanics, wage disparities increased substantially during the same period and average wages remain 15-20

[128] From a two-tailed test.

percent lower than for comparable White males in construction and elsewhere. For White women, wage disparities grew substantially smaller between the two periods, both in construction and in the economy as a whole, although they remain large (average wages 18-25 percent below comparable White males).[129]

The last item of note with respect to Specification (1) is that the indicator variable for the Austin-Round Rock MSA is positive and statistically significant in Tables 5.1, 5.3, and 5.4, providing some indication that residents of the Austin-Round Rock MSA enjoy a modest wage advantage over their similarly situated counterparts elsewhere in Texas and the rest of the nation. Unfortunately, the observed wage advantages do not come close to offsetting the much larger wage disadvantages observed for minorities and women throughout the nation and including the Austin-Round Rock MSA.

b. Specifications (2) and (3) - the Full Model Including Austin-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 enhanced by the addition of a set of interaction terms that allow us a test of whether minorities and women in the Austin-Round Rock MSA differ significantly from those elsewhere in the Texas and U.S. economy. Specification (2) in Table 5.1, for example, shows once again the -30.4 percent wage difference that estimates the direct effect of being African American in 2000. We also see an 8.1 percent wage increment in that year that captures the indirect effect of residing in the Austin-Round Rock MSA and being African American. Therefore, the net wage disparity for African Americans in the Austin-Round Rock MSA is approximately -22.3 percent (-30.4 percent plus 8.1 percent).

Specification (3) simply repeats Specification (2), dropping any Austin interaction terms that are not statistically significant. In Table 5.3, for example, the reader can see that the only interaction term included in the final specification was for African Americans, and that this term was statistically significant and shows an additional 10.1 percent wage disadvantage for African Americans in Austin as compared to elsewhere in Texas and the nation. The net result of Specification (3) in Table 5.3 is evidence of large, negative, and statistically significant wage disparities for all minority groups and for White women. Specification (3) in Tables 5.1 through 5.3 is interpreted similarly and shows negative and statistically significant wage disparities in 5 out of 6, 4 out of 4, and 5 out of 5 cases, respectively. Similarly, Specification (3) in Tables 5.4 through 5.6 show negative and statistically significant results in 5 out of 6, 4 out of 4, and 5 out of 5 cases, respectively.[130]

Clearly, prime age minorities and women earn substantially and significantly less from their labors than their White male counterparts. Such disparities are a symptom of discrimination in

[129] It is not possible to perform a similar comparison for Asians or Native Americans, as they were not identified separately in the CPS prior to 1992 and instead were classified together as "Other Race."

[130] Although the direct effect in Tables 5.1 and 5.4 for Native Americans is large, negative, and statistically significant, the indirect effect for Native Americans in Austin is positive and significant. The combined effect, however, is not statistically significantly distinguishable from zero.

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 in the first place. This is more than mere "societal discrimination," it provides a clear linkage 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 sex-neutral marketplace.

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

We turn next to the analysis of race and sex disparities in business owner earnings. Tables 5.7 through 5.12 below report results from our regression analyses of earnings from self-employment. Tables 5.7 through 5.9 focus on the economy as a whole and Tables 5.10 through 5.12 focus on construction and construction-related professional services. Tables 5.7 and 5.10 are derived from the 2000 PUMS, Tables 5.8 and 5.11 are derived from the 1986–1991 CPS, and Tables 5.9 and 5.12 are derived from the 1992–2002 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 White males.

a. Specification (1) - the Basic Model

Specification (1) in Tables 5.7 through 5.9 shows negative and statistically significant wage disparities for African Americans, Hispanics, Asians, Native Americans, persons of mixed race, and White women consistent with the presence of discrimination in these markets. These differences are large as well. The measured difference for African Americans ranges between 30 percent and 59 percent. For Hispanics it ranges from 19 percent to 39 percent. For Asians it ranges from 4 percent to 22 percent. For Native Americans it ranges from 38 percent to 51 percent. The largest business owner earnings disparities, however, are observed for White women, where they range from 44 percent to almost 73 percent.

Specification (1) in Tables 5.10 through 5.12 shows similar results for the construction and construction-related professional services sector. Here too, large negative earnings disparities are observed in virtually every case—in particular for African Americans and White females. In the large majority of instances these differences are statistically significant as well.

If we compare Specification (1) in, respectively, Tables 5.8 and 5.9 and Tables 5.11 and 5.12 we can consider changes in observed business owner earnings disparities over time. For the economy as a whole as well as for the construction sector, already large disparities for African Americans increased between 1986–1991 (Tables 5.8 and 5.11) and 1992–2002 (Table 5.9 and 5.12). For Hispanics, in the economy as a whole, the large earnings disparities observed in the 1986–1991 period increased substantially during the 1992-2002 period. In the construction sector, disparities for Hispanics remain large but appear to have fallen in recent years. For White women, disparities have lessened somewhat in the economy as a whole, but not in the construction sector, where they remain among the largest observed in any of our analyses (between 84 percent and 85 percent lower than White males).

Finally, with respect to Specification (1) we note that the indicator variable for the Austin-Round Rock MSA, although generally positive, as in Tables 5.1 through 5.6, is no longer statistically significant—indicating that residents of the Austin-Round Rock MSA enjoy no apparent earnings advantage or disadvantage over similarly situated entrepreneurs elsewhere in Texas or the rest of the nation.

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

Next we turn to Specifications (2) and (3) in Tables 5.7 through 5.12. Once again, Specification (2) is the basic regression model enhanced by a set of interaction terms to test whether minorities and women in the Austin-Round Rock MSA differ significantly from those elsewhere in the Texas and U.S. economy. Specification (3) simply repeats Specification (2), dropping any Austin interaction terms that are not statistically significant.

For the economy as a whole (Tables 5.7 through 5.9) none of the Austin interaction terms was significant, indicating that estimates for Austin are similar to results from elsewhere in Texas or the nation. The final results for these three tables then are as in Specification (1). The same is true in the construction sector (Tables 5.10 through 5.12) with the exception of Hispanics, for whom the Austin interaction term was statistically significant in Table 5.10 and Table 5.12. In Table 5.10 the interaction term was positive. The combined estimate for Hispanics in Austin is also positive but is not statistically significant.[131] In Table 5.12 the Austin interaction term for Hispanics is statistically significant and negative. The combined estimate for Hispanics in Austin is large, negative, and statistically significant.[132]

As was the case for wage and salary earners, prime age minority and female entrepreneurs earn substantially and significantly less from their efforts than similarly situated White 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 comparable remuneration from their entrepreneurial efforts as White males, growth rates will slow, business failure rates will increase, and as we will see in the next section, business formation rates will decrease. Combined, these phenomena result in lower M/WBE availability levels than would be observed in a race- and sex-neutral marketplace.

C. Race and Sex Disparities in Business Formation

Finally, we turn to the analysis of race and sex disparities in business formation.[133] In this section 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 White males. We find that

[131] The t-statistic for the test that the sum of the Hispanic and Austin*Hispanic coefficients is non-zero is 1.62 – beyond even a 10 percent threshold for two-sided significance.

[132] The t-statistic for the test that the sum of the Hispanic and Austin*Hispanic coefficients is non-zero is 2.26 – well below the 5 percent threshold for two-sided significance.

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

they are not as likely to do so and that minority and business formation rates would likely be substantially and significantly higher if markets operated in a race- and sex-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.

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 foreman for other contractors; fewer by those who were employed instead as laborers. Similarly, discrimination in commercial capital and credit markets, not to mention 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 enterprise. Other things equal, these phenomena would lead minority and female business formation rates to be lower than otherwise would be expected.

Too, 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, leading to higher rates of failure for some M/WBE firms, lower rates of profitability and growth for others, and preventing some minorities and women from ever starting up businesses at all.[134] All of these phenomena, other things equal, would contribute directly to lower observed rates of minority and female self-employment.

1. Methods and Data

To see if minorities or White women are as likely to be business owners as are comparable White 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 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,

[134] See also fn. 124 *supra*.

the more education she has, the more likely that she is in the labor force).[135] 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 2000 PUMS, the 1986-1991 CPS, and the 1992-2002 CPS.

2. Findings: Race and Sex Disparities in Business Formation

As a point of reference for what follows, Tables 5.13 and 5.14 below provide a summary of business ownership rates in 2000 by race and sex. A striking feature of both tables is how much higher business ownership rates in the United States are for White males than for other groups. Table 5.13, for example, shows a 9 percentage point difference between the overall self-employment rate of African Americans and White males in the Austin-Round Rock MSA (13.7 - 4.7 = 9), and Table 5.14 shows a 9.6 point difference in the construction sector self-employment rate for this group. Results such as this are observed whether we consider the country as a whole, just the State of Texas or only the Austin-Round Rock MSA, and it is apparent in the Construction and A&E sector as well as in the economy as a whole.

There is no doubt that part of the group differences shown in Tables 5.13 and 5.14 are associated with differences in the distribution of individual characteristics and preferences between minorities, women, and White males. It is well known that personal earnings tend to increase with age, for example. It is also true that the propensity toward self-employment increases with age, as shown, for example, in Wainwright (2000, p. 86). Since most minority populations in the U.S. have a lower median age than the non-Hispanic White population, is it possible that 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 of minorities compared to non-minorities? Or due to differences in other factors such as education, geographic location, or industry preferences?

While many things are possible, not all are equally probable. The remainder of this section presents a series of regression analyses designed to answer the question of whether or not large, negative, and statistically significant race and sex disparities are found among otherwise similarly-situated individuals. Tables 5.15 through 5.20 below report results from our regression analyses of the decision to start a business. Tables 5.15 through 5.17 focus on the economy as a whole and Tables 5.18 through 5.20 focus on Construction and A&E. As in previous sections, the first in each triad of Tables is derived from the 2000 PUMS, the second from the 1986–1991 CPS, and the third from the 1992–2002 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 and for comparable White males.

[135] 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. For a detailed discussion, see Maddala (1983). Probit analysis is performed here using the "dprobit" command in the statistical program STATA.

a. Specification (1) - the Basic Model

Specification (1) in Tables 5.15 through 5.17 shows negative and statistically significant business formation disparities for African Americans, Hispanics, Asians, Native Americans, persons of mixed race, and White women consistent with the presence of discrimination in these markets. These differences are large as well.

- The remaining difference for African Americans ranges between 4.2 and 4.8 percentage points (approximately 30-35 percent lower than the corresponding White male business formation rate).[136]
- For Hispanics it ranges from 2.9 to 4.1 percentage points (approximately 21-30 percent lower than the White male business formation rate).
- For Asians it ranges from 1.5 to 1.6 percentage points (approximately 11-12 percent lower than the White male business formation rate).
- For Native Americans it ranges from 3.0 to 3.3 percentage points (approximately 22-24 percent lower than the White male business formation rate).
- For White women it ranges from 2.6 to 3.0 percentage points (approximately 19-22 percent lower than the White male business formation rate).

Specification (1) in Tables 5.18 through 5.20 shows similar results for the construction and construction-related professional services sector. Here too, large, negative, and statistically significant business formation disparities are observed in every case.

- For African Americans the remaining difference ranges between 9.0 and 11.0 percentage points (approximately 36-44 percent lower than the corresponding White male business formation rate).
- For Hispanics it ranges from 6.4 to 9.1 percentage points (approximately 26-36 percent lower than the White male business formation rate).
- For Asians it ranges from 5.6 to 7.5 percentage points (approximately 22-30 percent lower than the White male business formation rate).

[136] Since, from Table 5.13, the overall White Male self-employment rate is 13.8 percent, this means that the rate for comparable African Americans are observed to be approximately 30–35 percent lower than expected (i.e. $4.2 \div 13.8 \approx 0.30$; $4.8 \div 13.8 \approx 0.35$).

- For Native Americans it ranges from 7.6 to 8.9 percentage points (approximately 30-36 percent lower than the White male business formation rate).
- For White women it ranges from 4.8 to 9.5 percentage points (approximately 19-38 percent lower than the White male business formation rate).

Once again, if we compare Specification (1) in, respectively, Tables 5.16 and 5.17 and Tables 5.19 and 5.20 we can consider changes in observed business owner earnings disparities over time. For the economy as a whole as well as for the construction sector, disparities for African Americans and Hispanics have worsened in recent years. For White women, business formation disparities have lessened somewhat in the economy as a whole and in the construction sector.

Lastly, with respect to Specification (1), we note that results on the indicator variable for the Austin-Round Rock MSA indicate a positive self-employment effect, in the Construction and A&E sector especially, relative to the rest of Texas and the nation.

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

None of the Austin interaction terms included in Specification (2) was significant in any of the six tables. The final results for these six tables therefore are as in Specification (1).

c. Conclusions

This section demonstrates that observed M/WBE availability levels in the Austin-Round Rock MSA, as indeed elsewhere in Texas and in the nation as a whole, are substantially and statistically significantly lower than those that would be observed if commercial markets operated in a race- and sex-neutral manner.

The evidence presented in this chapter suggests that minorities and women are substantially and significantly less likely to own their own businesses than would be expected based upon their observable characteristics including age, education, geographic location, and industry. These groups also suffer substantial and significant earnings disadvantages relative to comparable White males whether they work as employees or as entrepreneurs.

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

The Probit regression results for the Austin MSA construction and A&E sectors from Table 5.18 are combined with weighted average self-employment rates by race and sex from the 2000 PUMS (Table 5.14) to determine the expected difference between baseline availability and

expected availability in a race-neutral marketplace.[137] These figures appear in column (2) in the second panel of Table 5.21.

Overall, the self-employment rate for minorities and women in the construction and A&E sector is 11.5 percent. According to the regression specification underlying Table 5.18 column 3, that rate would be 20.1 percent, or 75 percent higher, in a race and sex neutral marketplace. Put differently, the disparity ratio of the actual business formation rate to the expected business formation rate is 57.2. Disparity ratios are adverse and statistically significant for all groups examined. In construction and A&E, the largest disparity observed is for White females (48.3), followed in descending order by that for Hispanics (58.7), African Americans (64.6), Asians (76.9), and Native Americans (83.8).

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 *Surveys 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.[138]

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 Natives. The 2002 SBO also includes comparative information for non-minority-owned, non-women-owned firms.[139]

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

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[137] CFR § 26.45(d)(1)(ii), governing federal-aid transportation contracts such as those received by Austin Bergstrom International Airport, requires that a recipient estimate the availability of Disadvantaged Business Enterprises (almost entirely minority- and women-owned firms) but for the effects of discrimination.

[138] 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/census02/text/sbo/sbomethodology.htm (viewed 15 May 2008).

[139] In the PUMS and CPS data, discussed above, the unit of analysis was typically 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.

Compared to the PUMS or the CPS the SBO is more limited in the scope of geographic detail it provides. Nevertheless, it 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 State of Texas and the Austin-Round Rock metropolitan area. In the remainder of this section we present 2002 SBO statistics for the United States as a whole as well as for the State of Texas and the Austin-Round Rock metropolitan area and calculate disparity ratios from them. We find that results in the SBO regarding disparities are consistent with our findings above using the PUMS and the CPS.

Tables 5.22-5.24 contain data for all industries combined. Table 5.22 is for the U.S. as a whole, Table 5.23 is for the State of Texas, and Table 5.24 is for the Austin-Round Rock, TX MSA. 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 (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 in 2002, and that they employed a total of 753,978 workers with an annual payroll total of $17.55 billion.

Panel A of Table 5.23 provides comparable information for the State of Texas. In 2002 the Census Bureau counted 468,705 female-owned firms in Texas,[140] 88,768 African-American-owned firms, 319,340 Hispanic-owned firms, 79,225 Asian or Pacific Islander-owned firms, and 16,204 Native American-owned firms.

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 5.2 percent of all firms in Texas in 2002, and that female-owned firms were 27.6 percent of all firms in the State. Additionally, 18.8 percent of firms in the State were Hispanic-owned, 4.7 percent were Asian or Pacific Islander-owned, and 1.0 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 5.2 percent of all firms in the State, they accounted for only 1.0 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 1.9 percent of all firms but only 0.8 percent of all sales and receipts. Large disparities are observed not only for African-Americans, but also for female-owned firms, Hispanic-owned firms, Asian and Pacific

[140] Additionally 207,591 equally male/female-owned firms were counted.

Islander-owned firms, and Native American-owned firms, in the United States as a whole as well as in the State of Texas.

The disparity ratios are presented in Panel C of each Table. Disparity ratios of 80 percent or less indicate disparate impact consistent with business discrimination against minority-owned and female-owned firms (0 percent being perfect disparity and 100 percent being full parity). In the U.S. as a whole and in Texas, disparity ratios fall beneath the 80 percent threshold in every instance. The most severe disparities are observed for African-American-owned firms.

Table 5.24 presents comparable information for the Austin-Round Rock, TX MSA.[141] The size of the disparities facing minority and female-owned firms is striking. Although African-Americans comprise 3.7 percent of all firms in the MSA, they earn less than 0.3 percent of all sales and receipts. African-American employer firms are 1.9 percent of the total but earn barely more than 0.2 percent of sales and receipts. This leads to disparity ratios for African-American-owned firms in the Austin-Round MSA between 7.4 and 12.5 percent. Disparity ratios for women-owned firms, Hispanic-owned firms, Asian-owned firms, and Native American-owned firms are also extremely low in the Austin-Round Rock MSA.

Tables 5.25-5.27 show comparable 2002 SBO data for the Construction Sub-sector (NAICS 23). Disparity ratios in the Austin-Round Rock MSA are again extremely large for women-owned firms and minority-owned firms.[142]

[141] SBO results for metropolitan areas are, in general, less reliable than are state and national results due to sample design and sample size restrictions.

[142] Disparity ratios for Black-owned firms and Asian-owned firms could not be calculated data for these two groups was suppression by the Census Bureau due to confidentiality restrictions.

F. Tables

Table 5.1. Annual Wage Earnings Regressions, All Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.304	-0.304	-0.304
	(197.61)	(197.45)	(197.47)
Hispanic	-0.216	-0.217	-0.217
	(139.09)	(138.96)	(138.99)
Asian/Pacific Islanders	-0.292	-0.291	-0.292
	(139.06)	(138.69)	(139.08)
Native American	-0.327	-0.328	-0.328
	(70.23)	(70.31)	(70.31)
Other Race	-0.281	-0.281	-0.281
	(89.02)	(88.81)	(89.03)
White female	-0.357	-0.357	-0.357
	(400.16)	(399.65)	(399.72)
Age	0.177	0.177	0.177
	(680.45)	(680.45)	(680.45)
Age^2	-0.002	-0.002	-0.002
	(588.53)	(588.54)	(588.54)
Austin	0.054	0.013	0.009
	(7.57)	(1.15)	(0.84)
Austin*African American		0.081	0.085
		(2.47)	(2.62)
Austin*Hispanic		0.097	0.101
		(5.07)	(5.42)
Austin* Asian/Pacific Islanders		-0.034	
		(0.98)	
Austin* Native American		0.507	0.513
		(2.89)	(2.92)
Austin*Other Race		-0.022	
		(0.39)	
Austin*White female		0.055	0.059
		(3.24)	(3.59)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	3848837	3848837	3848837
R^2	.436	.436	.436
F	18480	17816	18032

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

Notes: (1) Universe is all private sector prime age 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 White 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.

Table 5.2. Annual Wage Earnings Regressions, All Industries, 1986-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.227	-0.227	-0.227
	(143.44)	(143.35)	(143.44)
Hispanic	-0.167	-0.167	-0.167
	(84.05)	(83.90)	(84.00)
Other Race	-0.189	-0.189	-0.189
	(73.81)	(73.76)	(73.81)
White female	-0.218	-0.218	-0.218
	(222.88)	(222.79)	(222.80)
Age	0.059	0.059	0.059
	(237.20)	(237.20)	(237.20)
Age^2	-0.001	-0.001	-0.001
	(193.45)	(193.45)	(193.45)
Austin	-0.016	-0.048	-0.032
	(1.64)	(3.21)	(2.69)
Austin*African American		0.036	
		(0.87)	
Austin*Hispanic		0.052	
		(1.82)	
Austin*Other Race		-0.002	
		(0.03)	
Austin*White female		0.065	0.047
		(2.87)	(2.34)
Time (6 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	863351	863351	863351
R^2	.472	.472	.472
F	7026	6780	6963

Source: NERA calculations from the Merged Outgoing Rotation Groups of the 1986-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual wages between a given group and White 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 Hispanics, 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, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.214	-0.214	-0.214
	(129.47)	(129.21)	(129.20)
Hispanic	-0.205	-0.205	-0.205
	(118.19)	(118.00)	(118.21)
Asian	-0.194	-0.194	-0.194
	(78.92)	(78.92)	(78.92)
Native American	-0.171	-0.171	-0.171
	(38.07)	(37.93)	(38.08)
White female	-0.178	-0.178	-0.178
	(174.59)	(174.44)	(174.59)
Age	0.053	0.053	0.053
	(202.38)	(202.38)	(202.38)
Age^2	-0.001	-0.001	-0.001
	(166.93)	(166.94)	(166.94)
Austin	0.067	0.061	0.074
	(7.10)	(4.05)	(7.63)
Austin*African American		-0.089	-0.101
		(2.52)	(3.01)
Austin*Hispanic		0.029	
		(1.16)	
Austin*Asian		0.109	
		(1.81)	
Austin*Native American		-0.086	
		(1.13)	
Austin*White female		0.015	
		(0.70)	
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	933024	933024	933024
R^2	.467	.467	.467
F	6323	6087	6275

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

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual wages between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.4. Annual Wage Earnings Regressions, Construction and Related Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.334	-0.334	-0.334
	(52.33)	(52.25)	(52.33)
Hispanic	-0.158	-0.158	-0.158
	(31.74)	(31.65)	(31.73)
Asian/Pacific Islanders	-0.195	-0.195	-0.195
	(17.87)	(17.86)	(17.87)
Native American	-0.296	-0.296	-0.296
	(22.41)	(22.47)	(22.47)
Other Race	-0.216	-0.215	-0.216
	(18.73)	(18.68)	(18.74)
White female	-0.395	-0.395	-0.395
	(103.90)	(103.68)	(103.90)
Age	0.157	0.157	0.157
	(174.96)	(174.96)	(174.96)
Age^2	-0.002	-0.002	-0.002
	(149.34)	(149.34)	(149.34)
Austin	0.056	0.039	0.054
	(2.56)	(1.22)	(2.46)
Austin*African American		-0.042	
		(0.28)	
Austin*Hispanic		0.025	
		(0.53)	
Austin* Asian/Pacific Islanders		0.094	
		(0.47)	
Austin* Native American		1.766	1.726
		(2.15)	(2.12)
Austin*Other Race		-0.062	
		(0.30)	
Austin*White female		0.046	
		(0.69)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	307414	307414	307414
R^2	.268	.268	.268
F	1503	1392	1484

Source: See Table 5.1.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64 employed in the construction or construction-related professional services industries; 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 White 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.

Table 5.5. Annual Wage Earnings Regressions, Construction and Related Industries, 1986-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.213	-0.213	-0.213
	(32.07)	(31.94)	(31.93)
Hispanic	-0.139	-0.139	-0.139
	(19.87)	(19.75)	(19.89)
Other Race	-0.098	-0.097	-0.098
	(8.85)	(8.81)	(8.85)
White female	-0.287	-0.287	-0.287
	(61.23)	(61.22)	(61.24)
Age	0.070	0.070	0.070
	(72.46)	(72.47)	(72.47)
Age^2	-0.001	-0.001	-0.001
	(57.41)	(57.41)	(57.42)
Austin	-0.034	-0.039	-0.020
	(1.09)	(0.89)	(0.63)
Austin*African American		-0.267	-0.282
		(1.99)	(2.16)
Austin*Hispanic		-0.006	
		(0.08)	
Austin*Other Race		-0.057	
		(0.29)	
Austin*White female		0.136	
		(1.46)	
Time (6 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	57714	57714	57714
R^2	.369	.369	.369
F	527	497	519

Source: See Table 5.2.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64 employed in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual wages between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.6. Annual Wage Earnings Regressions, Construction and Related Industries, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.196	-0.196	-0.196
	(25.63)	(25.60)	(25.63)
Hispanic	-0.175	-0.175	-0.175
	(29.57)	(29.48)	(29.57)
Asian	-0.116	-0.116	-0.116
	(9.06)	(9.05)	(9.06)
Native American	-0.103	-0.104	-0.103
	(7.20)	(7.26)	(7.20)
White female	-0.245	-0.245	-0.245
	(48.99)	(48.95)	(48.99)
Age	0.062	0.062	0.062
	(61.08)	(61.07)	(61.08)
Age^2	-0.001	-0.001	-0.001
	(47.95)	(47.95)	(47.95)
Austin	-0.003	-0.012	-0.003
	(0.09)	(0.23)	(0.09)
Austin*African American		-0.009	
		(0.05)	
Austin*Hispanic		-0.015	
		(0.19)	
Austin*Asian		n/a	
Austin*Native American		0.218	
		(1.03)	
Austin*White female		0.062	
		(0.55)	
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	60581	60581	60581
R^2	.373	.373	.373
F	433	413	433

Source: See Table 5.3.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64 employed in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual wages between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.7. Annual Business Owner Earnings Regressions, All Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.300	-0.300	-0.300
	(26.45)	(26.48)	(26.45)
Hispanic	-0.190	-0.189	-0.190
	(18.82)	(18.71)	(18.82)
Asian/Pacific Islanders	-0.041	-0.040	-0.041
	(2.85)	(2.81)	(2.85)
Native American	-0.384	-0.384	-0.384
	(14.83)	(14.83)	(14.83)
Other Race	-0.273	-0.272	-0.273
	(15.11)	(15.00)	(15.11)
White female	-0.440	-0.440	-0.440
	(90.29)	(90.14)	(90.29)
Age	0.164	0.164	0.164
	(98.38)	(98.38)	(98.38)
Age^2	-0.002	-0.002	-0.002
	(88.40)	(88.40)	(88.40)
Austin	0.044	0.035	0.044
	(1.17)	(0.68)	(1.17)
Austin*African American		0.326	
		(1.29)	
Austin*Hispanic		-0.040	
		(0.37)	
Austin* Asian/Pacific Islanders		-0.158	
		(0.66)	
Austin* Native American			
Austin*Other Race		-0.230	
		(0.91)	
Austin*White female		0.042	
		(0.51)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	401629	401629	401629
R^2	.166	.166	.166
F	497	482	497

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

Notes: (1) Universe is all persons in the private sector with positive business income 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 White 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.

Table 5.8. Annual Business Owner Earnings Regressions, All Industries, 1986-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.534	-0.533	-0.534
	(10.75)	(10.67)	(10.75)
Hispanic	-0.271	-0.274	-0.271
	(5.97)	(6.01)	(5.97)
Other Race	-0.251	-0.252	-0.251
	(4.03)	(4.05)	(4.03)
White female	-0.725	-0.725	-0.725
	(40.96)	(40.92)	(40.96)
Age	0.203	0.203	0.203
	(23.91)	(23.89)	(23.91)
Age^2	-0.002	-0.002	-0.002
	(21.78)	(21.76)	(21.78)
Austin	0.308	0.264	0.308
	(1.10)	(0.69)	(1.10)
Austin*African American		-0.516	
		(0.74)	
Austin*Hispanic		0.893	
		(0.78)	
Austin*Other Race		0.809	
		(0.37)	
Austin*White female		0.016	
		(0.03)	
Time (6 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	32453	32453	32453
R^2	.160	.160	.160
F	58.27	56.16	58.27

Source: NERA calculations from the Annual Demographic (March) File of the 1986-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual business earnings between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.9. Annual Business Owner Earnings Regressions, All Industries, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.591	-0.592	-0.591
	(14.85)	(14.87)	(14.85)
Hispanic	-0.389	-0.389	-0.389
	(9.78)	(9.73)	(9.78)
Asian	-0.221	-0.222	-0.221
	(3.41)	(3.43)	(3.41)
Native American	-0.511	-0.512	-0.511
	(5.47)	(5.46)	(5.47)
White female	-0.617	-0.617	-0.617
	(31.34)	(31.33)	(31.34)
Age	0.230	0.230	0.230
	(27.26)	(27.25)	(27.26)
Age^2	-0.002	-0.002	-0.002
	(23.8)	(23.79)	(23.80)
Austin	0.108	-0.040	0.108
	(0.49)	(0.14)	(0.49)
Austin*African American		2.277	
		(0.82)	
Austin*Hispanic		-0.060	
		(0.11)	
Austin*Asian		1.045	
		(0.49)	
Austin*Native American		0.396	
		(0.16)	
Austin*White female		0.496	
		(0.83)	
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	55639	55639	55639
R^2	.128	.128	.128
F	63.90	61.51	63.90

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

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual business earnings between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.10. Business Owner Earnings Regressions, Construction and Related Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.338	-0.337	-0.338
	(12.11)	(12.01)	(12.11)
Hispanic	-0.147	-0.151	-0.152
	(6.86)	(7.06)	(7.07)
Asian/Pacific Islanders	-0.068	-0.069	-0.069
	(1.46)	(1.47)	(1.47)
Native American	-0.353	-0.353	-0.353
	(7.00)	(7.00)	(7.00)
Other Race	-0.148	-0.147	-0.149
	(3.40)	(3.36)	(3.41)
White female	-0.505	-0.505	-0.505
	(30.55)	(30.49)	(30.56)
Age	0.136	0.136	0.136
	(36.02)	(36.03)	(36.03)
Age^2	-0.001	-0.001	-0.001
	(33.71)	(33.72)	(33.72)
Austin	0.221	0.128	0.092
	(2.44)	(1.22)	(0.94)
Austin*African American		-0.464	
		(1.19)	
Austin*Hispanic		0.545	0.596
		(2.29)	(2.49)
Austin* Asian/Pacific Islanders		n/a	
Austin* Native American		n/a	
Austin*Other Race		-0.824	
		(1.27)	
Austin*White female		-0.075	
		(0.21)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	64853	64853	64853
R^2	.054	.054	.054
F	49	46	48

Source: See Table 5.7.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64 in the construction or construction-related professional services industries; 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 White 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.

Table 5.11. Business Owner Earnings Regressions, Construction and Related Industries, 1986-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.295	-0.296	-0.295
	(2.31)	(2.32)	(2.31)
Hispanic	-0.326	-0.336	-0.326
	(3.42)	(3.54)	(3.42)
Other Race	-0.089	-0.090	-0.089
	(0.49)	(0.50)	(0.49)
White female	-0.854	-0.856	-0.854
	(14.90)	(14.95)	(14.90)
Age	0.147	0.146	0.147
	(7.94)	(7.91)	(7.94)
Age^2	-0.002	-0.002	-0.002
	(7.64)	(7.61)	(7.64)
Austin	0.181	-0.339	0.181
	(0.35)	(0.69)	(0.35)
Austin*African American			
Austin*Hispanic		2.909	
		(1.34)	
Austin*Other Race			
Austin*White female		10.781	
		(1.27)	
Time (6 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	4907	4907	4907
R^2	.077	.077	.077
F	6.36	6.36	6.36

Source: See Table 5.8.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual business earnings between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.12. Business Owner Earnings Regressions, Construction and Related Industries, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.323	-0.323	-0.323
	(2.40)	(2.40)	(2.40)
Hispanic	-0.141	-0.124	-0.124
	(1.33)	(1.17)	(1.17)
Asian	-0.178	-0.175	-0.175
	(0.84)	(0.82)	(0.82)
Native American	-0.208	-0.205	-0.205
	(0.76)	(0.75)	(0.75)
White female	-0.839	-0.839	-0.839
	(15.71)	(15.69)	(15.69)
Age	0.190	0.189	0.189
	(8.69)	(8.67)	(8.67)
Age^2	-0.002	-0.002	-0.002
	(7.88)	(7.85)	(7.85)
Austin	0.585	1.834	1.819
	(0.97)	(1.87)	(1.90)
Austin*African American		-0.116	
		(0.05)	
Austin*Hispanic		-0.893	-0.893
		(2.12)	(2.13)
Austin*Asian			
Austin*Native American			
Austin*White female			
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	8446	8446	8446
R^2	.064	.065	.064
F	6.90	6.79	6.90

Source: See Table 5.9.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual business earnings between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.13. Self-Employment Rates in 2000 for Selected Race and Sex Groups: All Industries; United States, Texas, and the Austin-Round Rock MSA

Race/Sex	U.S. (%)	Texas (%)	Austin-Round Rock MSA
African American	5.1	5.1	4.7
Hispanic	7.3	7.7	6.5
Asian	10.2	11.4	6.8
Native American	8.5	9.3	6.9
Multiple Races	9.3	9.7	10.0
White female	8.3	8.9	10.7
White male	13.8	14.2	13.7

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

Table 5.14. Self-Employment Rates in 2000 for Selected Race and Sex Groups: Construction and A&E Industries; United States, Texas, and the Austin-Round Rock MSA

Race/Sex	U.S. (%)	Texas (%)	Austin-Round Rock MSA
African American	14.9	13.0	17.7
Hispanic	12.9	14.9	10.8
Asian	16.7	13.5	18.6
Native American	16.7	17.4	39.3
Multiple Races	20.4	24.2	9.2
White female	14.7	14.0	11.7
White male	25.0	25.2	27.3

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

Table 5.15. Business Formation Regressions, All Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.047	-0.047	-0.047
	(104.85)	(104.75)	(104.86)
Hispanic	-0.036	-0.036	-0.036
	(85.06)	(84.82)	(85.00)
Asian/Pacific Islanders	-0.016	-0.016	-0.016
	(26.12)	(26.06)	(26.12)
Native American	-0.033	-0.033	-0.033
	(26.21)	(26.2)	(26.22)
Other Race	-0.018	-0.018	-0.018
	(19.75)	(19.77)	(19.75)
White female	-0.030	-0.030	-0.030
	(105.61)	(105.64)	(105.64)
Age	0.011	0.011	0.011
	(152.62)	(152.63)	(152.63)
Age^2	-0.000	-0.000	-0.000
	(108.22)	(108.23)	(108.23)
Austin	0.004	-0.003	-0.000
	(2.17)	(0.88)	(0.13)
Austin*African American		0.007	
		(0.62)	
Austin*Hispanic		0.008	
		(1.40)	
Austin* Asian/Pacific Islanders		-0.005	
		(0.43)	
Austin* Native American		-0.004	
		(0.09)	
Austin*Other Race		0.016	
		(0.91)	
Austin*White female		0.017	0.015
		(3.72)	(3.49)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	4406525	4406525	4406525
Pseudo R^2	0.162	0.162	0.162
Chi^2	480000	480000	480000
Log Likelihood	-1255762	-1255754	-1255756

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

Notes: (1) Universe is all private sector prime age 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 White 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.

Table 5.16. Business Formation Regressions, All Industries, 1986-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.042	-0.042	-0.042
	(65.99)	(65.95)	(65.99)
Hispanic	-0.029	-0.029	-0.029
	(37.91)	(37.76)	(37.91)
Other Race	-0.017	-0.017	-0.017
	(17.65)	(17.65)	(17.65)
White female	-0.030	-0.030	-0.030
	(70.08)	(70.02)	(70.08)
Age	0.013	0.013	0.013
	(121.32)	(121.32)	(121.32)
Age^2	-0.000	-0.000	-0.000
	(93.98)	(93.98)	(93.98)
Austin	-0.006	-0.007	-0.006
	(1.61)	(1.22)	(1.61)
Austin*African American		0.016	
		(0.68)	
Austin*Hispanic		-0.009	
		(0.73)	
Austin*Other Race		0.015	
		(0.49)	
Austin*White female		0.002	
		(0.25)	
Time (6 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	1213923	1213923	1213923
Pseudo R^2	.236	.236	.236
Chi^2	2.0e+05	2.0e+05	2.0e+05
Log Likelihood	-321339	-321338	-321339

Source: NERA calculations from the Merged Outgoing Rotation Groups of the 1986-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.17. Business Formation Regressions, All Industries, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.048	-0.048	-0.048
	(78.35)	(78.21)	(78.35)
Hispanic	-0.041	-0.041	-0.041
	(61.73)	(61.55)	(61.73)
Asian	-0.015	-0.015	-0.015
	(16.49)	(16.43)	(16.49)
Native American	-0.030	-0.030	-0.030
	(19.25)	(19.25)	(19.25)
White female	-0.026	-0.026	-0.026
	(62.43)	(62.3)	(62.43)
Age	0.013	0.013	0.013
	(125.43)	(125.43)	(125.43)
Age^2	-0.000	-0.000	-0.000
	(89.59)	(89.59)	(89.59)
Austin	0.011	0.017	0.011
	(3.03)	(3.09)	(3.03)
Austin*African American		-0.0223	
		(1.40)	
Austin*Hispanic		-0.005	
		(0.51)	
Austin*Asian		-0.019	
		(0.92)	
Austin*Native American		0.018	
		(0.58)	
Austin*White female		-0.009	
		(1.16)	
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	1924167	1924167	1924167
Pseudo R^2	.215	.215	.215
Chi^2	3.1e+05	3.1e+05	3.1e+05
Log Likelihood	-568243	-568243	-568243

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

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.18. Business Formation Regressions, Construction and Related Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.097	-0.060	-0.097
	(31.11)	(124.15)	(31.11)
Hispanic	-0.076	-0.045	-0.076
	(32.23)	(94.74)	(32.23)
Asian/Pacific Islanders	-0.056	-0.034	-0.056
	(10.58)	(53.03)	(10.58)
Native American	-0.076	-0.038	-0.076
	(11.82)	(26.07)	(11.82)
Other Race	-0.030	-0.026	-0.030
	(5.47)	(25.32)	(5.47)
White female	-0.086	-0.043	-0.086
	(41.45)	(148.88)	(41.45)
Age	0.026	0.012	0.026
	(63.86)	(151.29)	(63.86)
Age^2	-0.000	-0.000	-0.000
	(46.81)	(107.74)	(46.81)
Austin	-0.001	0.004	-0.001
	(0.05)	(2.05)	(0.05)
Austin*African American		0.035	
		(0.49)	
Austin*Hispanic		-0.030	
		(1.41)	
Austin* Asian/Pacific Islanders		-0.185	
		(0.18)	
Austin* Native American		0.174	
		(0.66)	
Austin*Other Race		-0.099	
		(0.98)	
Austin*White female		-0.039	
		(1.20)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	376898	376898	376898
Pseudo R^2	.075	.075	.075
Chi^2	30026	30030	30026
Log Likelihood	-184677	-184675	-184677

Source: See Table 5.15.

Notes: (1) Universe is all private sector prime age labor force participants in the construction sector 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 White 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.

Table 5.19. Business Formation Regressions, Construction and Related Industries, 1986-1991

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.090	-0.090	-0.090
	(17.23)	(17.15)	(17.23)
Hispanic	-0.064	-0.064	-0.064
	(10.94)	(10.76)	(10.94)
Other Race	-0.099	-0.098	-0.099
	(12.63)	(12.59)	(12.63)
White female	-0.095	-0.094	-0.095
	(23.32)	(23.20)	(23.32)
Age	0.031	0.031	0.031
	(42.11)	(42.12)	(42.11)
Age^2	-0.000	-0.000	-0.000
	(33.46)	(33.47)	(33.46)
Austin	0.049	0.104	0.049
	(1.77)	(2.98)	(1.77)
Austin*African American			
Austin*Hispanic		-0.085	
		(1.63)	
Austin*Other Race			
Austin*White female		-0.148	
		(1.83)	
Time (6 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	96275	96262	96275
Pseudo R^2	.087	.088	.087
Chi^2	8657	8661	8657
Log Likelihood	-45194	-45189	-45194

Source: See Table 5.16.

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.20. Business Formation Regressions, Construction and Related Industries, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.110	-0.110	-0.110
	(23.82)	(23.81)	(23.82)
Hispanic	-0.091	-0.091	-0.091
	(20.98)	(20.90)	(20.98)
Asian	-0.075	-0.075	-0.075
	(8.92)	(8.92)	(8.92)
Native American	-0.089	-0.089	-0.089
	(10.12)	(10.06)	(10.12)
White female	-0.048	-0.048	-0.048
	(13.73)	(13.69)	(13.73)
Age	0.033	0.033	0.033
	(48.77)	(48.77)	(48.77)
Age^2	-0.000	-0.000	-0.000
	(36.87)	(36.87)	(36.87)
Austin	0.080	0.083	0.080
	(3.33)	(2.64)	(3.33)
Austin*African American		0.056	
		(0.49)	
Austin*Hispanic		-0.004	
		(0.08)	
Austin*Asian		n/a	
Austin*Native American		-0.080	
		(0.56)	
Austin*White female		-0.023	
		(0.34)	
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	153805	153805	153805
Pseudo R^2	.090	.090	.090
Chi^2	15305	15305	15305
Log Likelihood	-77521	-77520	-77521

Source: See Table 5.17.

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and White 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 Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

Table 5.21. Actual and Potential Business Formation Rates in the Austin-Round Rock MSA

Race/Sex	Business Formation Rate (%)	Expected Business Formation Rate (%)	Disparity Ratio
All Industries	(1)	(2)	(3)
African-American	4.7	9.4	50.0
Hispanic	6.4	10.0	64.0
Asian/Pacific Islander	6.7	8.3	80.7
Native American	6.9	10.2	67.6
Multiple races reported	9.8	11.6	84.5
White female	10.6	13.6	77.9
All minority and female	8.4	11.7	71.8
Construction and A&E Sectors	(1)	(2)	(3)
African-American	17.7	27.4	64.6
Hispanic	10.8	18.4	58.7
Asian/Pacific Islander	18.6	24.2	76.9
Native American	39.3	46.9	83.8
Multiple races reported	9.2	12.2	75.4
White female	11.7	24.2	48.3
All minority and female	11.5	20.1	57.2

Source: 2000: Five Percent PUMS. *See* Tables 5.13, 5.14, 5.15, and 5.18.

Notes: Figures in column (1), top and bottom panels, are average Austin-Round Rock MSA self-employment rates weighted using PUMS population-based person weights from Tables 5.13 and 5.14, respectively. Figures in column (2) are derived by combining those in column (1) with the corresponding result from Table 5.15 and 5.18, respectively. Column (3) is simply the quotient of column (1) divided by column (2), multiplied by 100.

• Table 5.22. Disparity Ratios 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 Ratios		(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 Ratios from the 2002 Survey of Business Owners — State of Texas — 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						
Texas	1,698,875	623,487,527	337,903	562,902,724	4,010,896	111,581,657
Female	468,705	65,817,396	63,312	55,567,359	553,843	12,881,858
Equally male-/female-owned	207,591	53,545,819	44,310	44,392,466	395,665	8,884,596
African-American	88,768	6,419,477	6,509	4,527,098	69,406	1,350,252
Hispanic	319,340	42,214,119	34,399	32,967,072	280,156	6,193,315
Asian	77,834	20,728,045	21,755	18,243,019	176,571	3,804,638
Native Hawaiian/Pac. Islander	1,391	78,212	0	0	0	0
Am. Indian & Alaska Native	16,204	3,137,901	2,208	2,697,194	20,424	509,903
Panel B. Column Percentages						
Texas	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	27.59%	10.56%	18.74%	9.87%	13.81%	11.54%
Equally male-/female-owned	12.22%	8.59%	13.11%	7.89%	9.86%	7.96%
African-American	5.23%	1.03%	1.93%	0.80%	1.73%	1.21%
Hispanic	18.80%	6.77%	10.18%	5.86%	6.98%	5.55%
Asian	4.58%	3.32%	6.44%	3.24%	4.40%	3.41%
Native Hawaiian/Pac. Islander	0.08%	0.01%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.95%	0.50%	0.65%	0.48%	0.51%	0.46%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		38.26%		52.69%	73.70%	61.62%
Equally male-/female-owned		70.28%		60.14%	75.23%	60.72%
African-American		19.71%		41.75%	89.83%	62.82%
Hispanic		36.02%		57.53%	68.61%	54.52%
Asian		72.56%		50.34%	68.38%	52.96%
Native Hawaiian/Pac. Islander		15.32%		–	–	–
Am. Indian & Alaska Native		52.77%		73.33%	77.93%	69.93%

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

Table 5.24. Disparity Ratios from Preliminary 2002 Survey of Business Owners — Austin-Round Rock, TX — 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						
Austin-Round Rock, TX MSA	119,340	134,264,706	26,763	129,757,436	539,622	19,573,652
Female	33,387	4,005,269	4,700	3,144,679	30,188	850,025
Equally male-/female-owned	0	0	0	0	0	0
African-American	4,409	368,806	495	299,566	1,783	66,687
Hispanic	13,889	2,180,274	1,799	1,705,279	16,150	347,624
Asian	4,348	1,082,903	1,323	933,499	8,833	209,961
Native Hawaiian/Pac. Islander	0	0	0	0	0	0
Am. Indian & Alaska Native	952	164,465	105	138,578	470	19,417
Panel B. Column Percentages						
Austin-Round Rock, TX MSA	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	27.98%	2.98%	17.56%	2.42%	5.59%	4.34%
Equally male-/female-owned	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
African-American	3.69%	0.27%	1.85%	0.23%	0.33%	0.34%
Hispanic	11.64%	1.62%	6.72%	1.31%	2.99%	1.78%
Asian	3.64%	0.81%	4.94%	0.72%	1.64%	1.07%
Native Hawaiian/Pac. Islander	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.80%	0.12%	0.39%	0.11%	0.09%	0.10%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		10.66%		13.80%	31.86%	24.73%
Equally male-/female-owned		–		–	–	–
African-American		7.44%		12.48%	17.86%	18.42%
Hispanic		13.95%		19.55%	44.52%	26.42%
Asian		22.14%		14.55%	33.11%	21.70%
Native Hawaiian/Pac. Islander		–		–	–	–
Am. Indian & Alaska Native		15.36%		27.22%	22.20%	25.28%

Source: NERA calculations using 2002.

Table 5.25. Disparity Ratios from the 2002 Survey of Business Owners — United States — Construction

	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	2,751,591	1,101,500,841	706,320	987,285,026	5,974,983	212,860,795
Female	201,784	68,422,913	51,700	62,366,202	455,785	15,976,851
Equally male-/female-owned	276,873	94,265,944	90,642	79,874,591	576,182	18,129,528
African-American	75,026	9,631,757	8,729	7,503,588	55,136	1,717,662
Hispanic	212,502	31,445,557	25,146	22,661,856	190,082	5,279,670
Asian	38,787	9,714,754	7,390	8,129,332	46,850	1,664,551
Native Hawaiian/Pac. Islander	2,853	906,330	0	0	0	0
Am. Indian & Alaska Native	32,253	6,054,570	4,832	4,865,541	31,340	1,071,804
Panel B. Column Percentages						
United States	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	7.33%	6.21%	7.32%	6.32%	7.63%	7.51%
Equally male-/female-owned	10.06%	8.56%	12.83%	8.09%	9.64%	8.52%
African-American	2.73%	0.87%	1.24%	0.76%	0.92%	0.81%
Hispanic	7.72%	2.85%	3.56%	2.30%	3.18%	2.48%
Asian	1.41%	0.88%	1.05%	0.82%	0.78%	0.78%
Native Hawaiian/Pac. Islander	0.10%	0.08%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	1.17%	0.55%	0.68%	0.49%	0.52%	0.50%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		84.71%		86.30%	104.22%	102.54%
Equally male-/female-owned		85.05%		63.04%	75.14%	66.37%
African-American		32.07%		61.50%	74.67%	65.29%
Hispanic		36.97%		64.47%	89.36%	69.67%
Asian		62.57%		78.70%	74.94%	74.74%
Native Hawaiian/Pac. Islander		79.36%		–	–	–
Am. Indian & Alaska Native		46.89%		72.04%	76.67%	73.60%

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

Table 5.26. Disparity Ratios from the 2002 Survey of Business Owners — State of Texas — Construction

	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						
Texas	234,820	80,427,149	37,635	69,109,107	447,996	14,545,183
Female	17,112	5,392,353	3,593	4,822,977	40,731	1,314,220
Equally male-/female-owned	23,945	7,641,559	5,179	0	0	0
African-American	5,120	592,002	358	383,022	4,154	142,870
Hispanic	73,099	7,636,524	4,422	4,387,018	36,874	800,220
Asian	2,421	420,487	269	334,081	1,548	42,179
Native Hawaiian/Pac. Islander	0	0	0	0	0	0
Am. Indian & Alaska Native	2,576	598,532	356	505,033	3,219	91,875
Panel B. Column Percentages						
Texas	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	7.29%	6.70%	9.55%	6.98%	9.09%	9.04%
Equally male-/female-owned	10.20%	9.50%	13.76%	0.00%	0.00%	0.00%
African-American	2.18%	0.74%	0.95%	0.55%	0.93%	0.98%
Hispanic	31.13%	9.49%	11.75%	6.35%	8.23%	5.50%
Asian	1.03%	0.52%	0.71%	0.48%	0.35%	0.29%
Native Hawaiian/Pac. Islander	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	1.10%	0.74%	0.95%	0.73%	0.72%	0.63%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		92.00%		73.10%	95.23%	94.64%
Equally male-/female-owned		93.18%		0.00%	0.00%	0.00%
African-American		33.76%		58.26%	97.48%	103.26%
Hispanic		30.50%		54.03%	70.05%	46.82%
Asian		50.71%		67.63%	48.34%	40.57%
Native Hawaiian/Pac. Islander		–		–	–	–
Am. Indian & Alaska Native		67.84%		77.25%	75.96%	66.78%

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

Table 5.27. Disparity Ratios from Preliminary 2002 Survey of Business Owners — Austin-Round Rock, TX — Construction

	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						
Austin-Round Rock, TX MSA	14,787	7,533,942	3,084	6,660,591	36,454	1,261,050
Female	1,139	182,787	326	154,954	1,813	43,883
Equally male-/female-owned	0	0	0	0	0	0
African-American	–	–	–	–	–	–
Hispanic	3,396	400,940	308	165,123	2,464	35,729
Asian	–	–	–	–	–	–
Native Hawaiian/Pac. Islander	0	0	0	0	0	0
Am. Indian & Alaska Native	256	16,038	–	–	–	–
Panel B. Column Percentages						
Austin-Round Rock, TX MSA	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	7.70%	2.43%	10.57%	2.33%	4.97%	3.48%
Equally male-/female-owned	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
African-American	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Hispanic	22.97%	5.32%	9.99%	2.48%	6.76%	2.83%
Asian	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Native Hawaiian/Pac. Islander	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	1.73%	0.21%	0.00%	0.00%	0.00%	0.00%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		31.50%		22.01%	47.05%	32.92%
Equally male-/female-owned		–		–	–	–
African-American		–		–	–	–
Hispanic		23.17%		24.82%	67.68%	28.37%
Asian		–		–	–	–
Native Hawaiian/Pac. Islander		–		–	–	–
Am. Indian & Alaska Native		12.30%		–	–	–

Source: NERA calculations using 2002. Figures for African-Americans, Asians, and Native Americans were not disclosed by the Census Bureau due to confidentiality restrictions.

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.[143]

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 White-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 did apply for a loan their loan requests were substantially more likely to be denied than non-minorities, even when differences like firm size and credit history are accounted for.

- When minority-owned firms *did* receive a loan they were obligated to pay higher interest rates on the loans than was true of comparable White-owned firms.

- A larger proportion of minority-owned firms than White-owned firms report that credit market conditions are a serious concern.

[143] 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 share of minority-owned firms than White-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 West South Central census region, or in the construction 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 of the existence of capital/liquidity constraints facing individuals in the mortgage market, households in the non-mortgage loan market, and 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 they would 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, Whites 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-White 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.[144]

[144] 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 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.

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.[145]

In his 2003 report for *Builders Association of Greater Chicago v. the City of Chicago*,[146] Timothy 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 White 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 White 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 (1998) 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 White men. The author finds that the large discrepancy is due to an African-American transition rate into self-employment that is approximately one half the White rate and an African-American transition rate out of self-employment that is twice the White rate. He finds that capital constraints—measured by interest income and lump-sum cash payments—significantly reduce the flow into self-employment from wage/salary work, with this effect being nearly 7 times larger for African-American self-employed than for White 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

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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.

[145] *See* Chapter V, above.

[146] 298 F.Supp.2d 725 (N.D. Ill. 2003).

distributions of characteristics between African-Americans and Whites 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 Whites 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 White-owned firms is consistent with discrimination, it is necessary to compare African-American- and White-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 White-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 White-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:

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

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.[147] 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.[148] Within the framework of this model, a positive estimate of β_3 is consistent with the presence of discrimination.[149]

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.[150] 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).[151]

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 times more likely to have a loan application rejected as are non-Hispanic White-owned firms (hereafter "White") (65.9 percent versus 26.9 percent).[152] Other minority groups are denied at

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

[148] 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 Black-owned firms. If the interest rate is endogenous, a reduced form approach requires an assumption that the determinants of demand for White and Black-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.

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

[150] 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.

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

[152] Cavalluzzo and Cavalluzzo (1998) examined these outcomes using the 1987 NSSBF and similarly found that denial rates (weighted) are considerably higher for minorities. White-owned firms had a denial rate for loans of 22 percent compared with 56 percent for Blacks, 36 percent for Hispanics, and 24 percent for other races, which are

rates higher than Whites as well, but the magnitude of the African-American-White differential is especially striking.

Minority-owned firms, however, do have characteristics that are different from those of White-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 White counterparts. Minority firms were also less creditworthy, on average, than their White 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, and (c) the owner had been delinquent for more than 60 days on personal obligations over the prior three years. Additionally, compared to White-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 White-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 White-owned firms; and Hispanic-owned firms, who requested loans that about 42 percent smaller than those requested by White-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 West South Central (WSC) division, which includes the City of Austin, the balance of the State of Texas and three surrounding states.[153] The WSC sample includes 515 firms, of which the owners of 223 firms reported that they had applied for a loan over the preceding three-year period.

The overall denial rate in the WSC is slightly 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 White-owned firms is also slightly larger in the WSC (39.0 percentage points nationally and 43.3 percentage points in the WSC), but again this difference is not statistically significant. Indeed, in the large majority of cases (over 80 percent), the weighted sample means are not statistically significantly different in the WSC 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

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.

[153] The West South Central division includes Arkansas, Louisiana, Oklahoma and Texas.

discrimination in obtaining credit. That African-American-owned firms and other minorities report greater difficulty in obtaining credit than do White-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 Whites (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 American 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.[154] The finding that African-American-owned and Hispanic-owned firms are largely indistinguishable from White-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 WSC region—with African-American, Hispanic, and other minority-owned firms being more likely than White-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 WSC region 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 White-owned firms. White-owned firms were especially worried about health care costs. Hispanic and other minority-owned firms were especially worried about general business conditions.

In the WSC, credit availability and cash flow are far more important issues for African-American-owned and Hispanic-owned firms than for White-owned firms. Almost 6 times as many African-American-owned firms reported credit availability as the most important issue than White-owned firms. In contrast, in the WSC health care costs 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 negative impact—compared to only 17.3

[154] 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 Black-owned firms were more likely to report that credit market conditions were especially serious.

percent among White male-owned firms. Hispanic-owned firms and other minority-owned firms also reported higher percentages than White 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 White 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 White 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 White 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.[155]

A recent study published by the U.S. Chamber of Commerce (2005) is also consistent with these findings from the 1993 NSSBF and the 1992 CBO.[156] 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. This survey showed that minority-owned businesses rely heavily on credit cards to fund their businesses; often do not apply for credit, even though they need it, for fear of being denied; and were especially likely to need working capital. In particular, as shown in Table 6.7, minority-owned firms report that availability of credit is their top problem. The biggest difference in responses between minorities and White men and women was availability of credit: 19 percent of White 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 White 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 woman-owned firms report that they had problems with the availability of credit in the past and expected that such difficulties would continue into the 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,

[155] Bureau of the Census (1997), Table 5a, p. 46, Table 1, p. 21.

[156] 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.

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 WSC region.[157] 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.[158] 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 White male-owned firms.[159]

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.[160] In Column (2) a 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 White-owned firms to have their loan request denied.

[157] 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.

[158] 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.

[159] This estimate largely replicates the raw difference in denial rates between Black- and White-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 White 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.

[160] In preliminary analyses, these models were also estimated separately, focusing specifically on the differences in coefficient estimates between Whites and Blacks. The F-Test conducted to determine whether parameter estimates were the same for Blacks and Whites 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 the same between Blacks and Whites and using the coefficient on the Black 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.

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.[161] In total these three columns add 176 variables to the more parsimonious specification reported in Column (2).[162] 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 White 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 White 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 Whites; or that denial rates for firms owned by White women were significantly different from those for firms owned by White men.

In Table 6.9, we see results for the WSC 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 WSC, which includes Austin, the balance of the State of Texas and a three state surrounding area, are not substantially different from the nationwide results reported in Table 6.8. The indicator variable for the WSC region is insignificantly different from zero, as are the interaction terms between race/ethnicity/gender and the WSC region.

Although the results provided so far strongly indicate that financial institutions treat African-American-owned and White 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

[161] 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%).

[162] 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).

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.[163]

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.[164] Although our creditworthiness measures enable us to identify those owners who have had 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 White 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

[163] An example of a typical application form is presented as Appendix B in Blanchflower, Levine, and Zimmerman (2003).

[164] 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.

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.[165] 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 one 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.[166]

In order to determine whether the findings for the WSC 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 WSC region and African-American ownership. In no case was the estimated coefficient on this interaction significant, implying that the national results also apply to the WSC hence we do not discuss it further below as the national results go through for the West South Central division.

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 9 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 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 21, 24, and 18 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 attributable to differences in the geographic location of African-American- and White-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 negatively 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

[165] As reported earlier, the mean and median size of firms is 5.5 and 31.6 full-time equivalent workers, respectively. Fourteen percent of firms have one or fewer employees and 27 percent have two or fewer employees.

[166] 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.

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.[167]

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 approval 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 indicate that African-American-owned firms that sell to the local market are 13 percentage points more likely to have their loan applications denied compared to a 23 percent excess denial rate for firms selling primarily to regional, national, or international markets.

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 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 White-owned firms is statistically indistinguishable within each of these groups.

Finally, we considered whether African-American-owned firms are treated differently from White-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 more likely that the race of the applicant is unknown 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, albeit a somewhat noisy 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 White-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

` [167] 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.

against African-Americans in providing small business loans, we may even expect to see African-Americans use credit cards more often than Whites 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.[168]

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.[169] There is no evidence, either for the U.S. as a whole or for the WSC, that African-American-owned firms or Native American-owned firms are less likely to access either business or personal credit cards for business expenses. In fact, there is some evidence in the WSC that African-Americans are *more* likely to access business credit cards. On the other hand, there is evidence both in the WSC and the nation as a whole that Asian-owned firms and Hispanic-owned firms are less likely to access business credit cards.

We also had information available on the maximum amount that could be billed to these accounts and found no significant differences by race in a regression that modeled the amount that could be charged. Nor were any racial differences observed when we modeled the typical balance remaining on these cards at the end of a typical month.

E. Differences in Interest Rates Charged on Approved Loans

Although most of our analysis has addressed whether minority- and White-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 White-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:

$$(2) \qquad I_i = \beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i + \beta_4 LC_i + \varepsilon_i,$$

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).

[168] 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 methodology for establishing its credit ratings, we do know from long experience that the good indicators of ownership by race are lacking in Dun & Bradstreet's master business identifier file. Indeed, this is the reason why NERA's availability estimation methodology requires us to create a master directory of disadvantaged, minority, and women-owned businesses for merging with Dun & Bradstreet's data.

[169] 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.

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 100 basis points higher than similarly situated White-owned firms. Row 2 shows that even African-American-owned firms with good credit histories are charged higher interest rates relative to White-owned firms.[170]

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 WSC. Findings are comparable to those for the nation as a whole.

[170]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.

F. Loan Approval Rates and Access to Credit

The results presented so far may be biased toward finding too small a disparity between White- 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 Whites 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 White-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 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 White-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 White-owned firms).[171] Results obtained in section (b) of Table 6.15 for the WSC region are very similar to those found for the nation as a whole. 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.[172]

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

[171] 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.

[172] It was not possible to report separate construction results in earlier tables because of small sample sizes.

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 White- 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 White- and minority-owned firms, respectively. Among the White-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 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.[173]

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

[173] 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.

much of an issue for African-American-owned firms nationally, in the WSC region, or in construction sub-samples, or for Asian-owned firms nationally or in the WSC. 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, 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 16 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.[174] This section updates the several estimates obtained above using the 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, 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.

[174] 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 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.

2. Differences in Loan Denial Rates by Race/Ethnicity

In 1998 as in 1993, in comparison with firms owned by White 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.[175]

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.

Percentage of Loan Applications Denied		
	1993	1998
White males	26.2%	24.4%
African-Americans	65.9%	62.3%
Asians, Native Americans, etc.	39.9%	47.0%
Hispanics	35.9%	49.9%
White 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 White males.

Percentage Not Applying for Fear of Denial		
	1993	1998
White males	22.5%	20.2%
African-Americans	60.7%	53.9%
Asians, Native Americans, etc.	27.5%	23.1%
Hispanics	41.5%	34.3%
White females	22.7%	24.2%
Overall	24.7%	23.3%

[175] Information on home and non-home equity or on the Dun & Bradstreet credit rating was not available in the 1993 survey.

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 Whites, 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 Whites stated 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 White 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 White 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 White 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 6 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 White male-owned firms. In Table 6.8, by contrast, denial probabilities for Hispanic-owned firms were *not* significantly different from those of White 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 WSC region yields similar results—showing significantly larger denial probabilities for African-American- and Hispanic-owned firms (18.7 percent and 16.8 percent, respectively) than for White male-owned firms. The WSC indicator was not significant in Table 6.19, nor where the interaction terms between WSC and race, ethnicity, or gender,

indicating that the loan denial results for the WSC 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.[176]

Despite the fact that these new variables do help to predict loan denials,[177] the estimated race differences including these variables are unchanged from those reported above.[178] This suggests 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 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

[176] 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.

[177] 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 risk = .391 (3.53), n =924 pseudo r^2 =.0253. Excluded category 'low risk'. Results were essentially the same when a control for WSC was also included.

[178] This confirms the findings of Cavalluzzo, Cavalluzzo and Wolken (1999) who performed a similar exercise with the 1993 data.

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 White females are all confirmed to face higher denial rates than White 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 White 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 WSC region are added to the model as in Columns (3) and (4), results for African-Americans and Hispanics remain statistically significant. Neither the WSC indicator nor any of the interactions between WSC and race, ethnicity, or gender is significant.

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 106 basis points nationally. These results are not significantly different in construction and construction-related industries either.[179]

In 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 White male-owned firms to have their application rejected. This is evident in the WSC as well and also in the construction and construction-related industries.[180]

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 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 credit cards in the WSC region (rows 3 and 4) or in construction (results not reported here).

[179] There is some indication that White females nationally pay slightly less for their loans, but this difference is not quite statistically significant. Blacks in the WSC appear to pay less for their loans than Blacks nationally, but again this difference is not quite statistically significant.

[180] There is some evidence of this phenomenon for Hispanics nationally as well. However the coefficient of 0.173 in Row (2) of Table 6.22 is not quite statistically significant.

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, as well. This is an important market failure, and one which governments such as the City of Austin cannot simply 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.[181] This is the fourth survey of U.S. small businesses conducted by the Board of Governors since 1987. The survey gathered data from 4,240 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, 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.[182]

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.[183] Although the population weights were adjusted to accommodate these changes, even these weighted percentages are significantly smaller for minorities in 2003 than in 1998.[184]

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%). 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%. However the share of Hispanics fell a statistically significant amount from 5.6% to 4.2% which is somewhat surprising given the evidence that

[181] See http://www.federalreserve.gov/pubs/oss/oss3/ssbf03/ssbf03home.html (viewed 15 May 2008).

[182] See footnote 143, above.

[183] The impact on women was not as pronounced. Females were 23.3 percent in 1998 and 20.9 percent in 2003. For White females, the figures are 17.8 percent in 1998 and 18.2 percent in 2003.

[184] Mach and Wolken (2006, Table 2) report that weighted figures for Blacks 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.

Hispanics are a growing share of the U.S. population – up from 12.5% in 2000 to 14.5% in 2005 (Table 4). The percentage of firms owned by females also declined from 72.0% to 64.8%.

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 remainder of this section presents our findings from this analysis.[185]

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 and women-owned firms were more likely to say that their most important problem was "financing and interest rates." Once again the African-American-White difference was most pronounced—only slightly more than 5 percent of White 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 WSC using a regression model comparable to that which was used with the 1993 and 1998 survey waves.[186]

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 White 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 White 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 WSC region and yields similar results—showing significantly larger denial probabilities for African-American-owned firms than for White male-owned firms. The WSC indicator was not significant in Table 6.26, and with one exception, neither were the interaction terms between WSC and race, ethnicity, or gender, indicating that the loan denial results for the WSC are not significantly different than for the nation as a whole. The exception was Asian-owned firms, which shows a significantly higher denial probability in the WSC than in the nation as a whole.

[185] 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.

[186] 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.

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 White 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, on average, 104 more basis points for their loans than White male business owners with identical characteristics. Hispanic business owners, as well, pay 100 more basis points than their White male counterparts have to pay one and a half percentage points higher.

The loan price differential appears to be even more severe for African-American and Hispanic business owners in the WSC. According to the results in Table 6.27, African-American business owners pay more than 370 basis points more for their loans than comparable White males. For Hispanics, the differential is 120 basis points. Both results are statistically significant.

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. Unlike earlier years, there is some evidence that African-Americans are less likely to use personal credit cards for business expenses. However, this result is not observed for business credit cards, nor is it observed in the WSC. There is also some evidence that Hispanics in the WSC are less likely to use personal credit cards for business expenses, however this result does not carry over to business credit cards, nor is it observed in the nation as a whole.

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 WSC the phenomenon is evident as well—African-American business owners are more than 18 percentage points more likely to fail to apply for fear of denial. In construction and related industries, the trend is even more pronounced at 28.4 percentage points. Nationally, there is evidence of this phenomenon for White female business owners as well.

I. Further Analysis of Credit Market Discrimination: NERA Surveys 1999-2007

NERA has conducted local credit market surveys at nine other times and places since 1999. These include the Chicago metropolitan area in 1999, the State of Maryland 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, 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.

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 White 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 White female-owned firms as well. Denial rates were 18-24 percentage points higher for Hispanic-owned firms and 5-9 percentage points higher for White female-owned firms than for their White male-owned counterparts. Significant loan denial disparities were also observed for Native American-owned firms in some cases (18-19 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 170 basis points more, on average, for their business credit than do White males, declining to 150 basis 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 White 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 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 White applicants meeting the acceptance standard used for White 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 White- 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 do 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 are considerably smaller than those observed in this study regarding business credit.[187]

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

[187] In the Boston Fed study 10 percent of White mortgage applications were rejected compared with 28 percent for Blacks. Loan denial rates (weighted) for business credit in this study ranged from 8.3 to 26.2 percent for White males and between 50.0 and 65.9 percent for Black-owned firms (depending on which NSSBF or SSBF survey is used).

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 White males and other groups in both types of studies appears to be due to differences in the characteristics of the applicants. 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.[188]

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 White 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 White women as well, although not with as much consistency as the findings for African-Americans.

Overall, the evidence is consistent that African-American-owned firms and other MWBE firms 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.

[188] The gap in denial rates between Blacks and Whites with similar characteristics is between 34-46 percentage points in the small business credit market compared with 7 percentage points in the mortgage market.

K. Tables

Table 6.1. Selected Population-Weighted Sample Means of Loan Applicants from 1993 NSSBF Data

	All	White	African-American	Hispanic	Other Races
% of Firms Denied in the Last Three Years	28.8	26.9	65.9	35.9	39.9
Credit History of Firm/Owners					
% Owners with Judgments Against Them	4.8	4.1	16.9	5.2	15.2
% Firms Delinquent in Business Obligations	24.2	23.1	49.0	25.1	31.6
% Owners Delinquent on Personal Obligations	14.0	12.6	43.4	14.8	24.5
% Owners Declared Bankruptcy in Past 7yrs	2.4	2.4	5.3	2.0	0.8
Other Firm Characteristics					
% Female-Owned	17.9	18.1	18.2	9.7	23.1
Sales (in 1,000s of 1992 $)	1795.0	1870.6	588.6	1361.3	1309.1
Profits (in 1,000s of 1992 $)	86.7	84.5	59.9	189.5	54.0
Assets (in 1,000s of 1992 $)	889.4	922.5	230.3	745.6	747.3
Liabilities (in 1,000s of 1992 $)	547.4	572.8	146.2	308.6	486.0
Owner's Years of Experience	18.3	18.7	15.3	15.9	14.9
Owner's Share of Business	77.1	76.5	86.4	83.9	77.1
% <= 8^{th} Grade Education	0.8	0.7	0.0	3.4	1.0
% 9^{th}-11^{th} Grade Education	2.2	2.2	3.7	1.8	1.2
% High School Graduate	19.6	19.7	12.8	27.7	14.9
% Some College	28.0	28.3	36.0	20.6	19.8
% College Graduate	29.2	29.2	28.0	24.1	36.5
% Postgraduate Education	20.2	19.9	19.5	22.3	26.6
% Line of credit	48.7	49.1	35.8	52.8	43.7
Total Full-time Employment in 1990	11.4	11.8	6.8	9.3	8.8
Total Full-time Employment in 1992	13.6	13.9	8.3	10.8	12.3
Firm age, in years	13.4	13.6	11.5	13.3	9.3
% New Firm Since 1990	9.4	9.4	13.0	6.4	9.5
% Firms Located in MSA	76.5	75.1	91.2	90.7	85.7
% Sole Proprietorship	32.8	32.3	48.6	38.2	24.2
% Partnership	7.8	7.8	7.7	6.7	7.9
% S Corporation	26.1	27.1	11.7	13.7	27.1
% C Corporation	33.4	32.8	32.1	41.4	40.8
% Existing Relationship with Lender	24.6	24.7	12.8	29.6	25.7
% Firms with Local Sales Market	54.1	54.7	42.9	55.0	47.4
Characteristics of Loan Application					
Amount Requested (in 1,000s of 1992$)	300.4	310.8	126.5	179.1	310.5
% Loans to be Used for Working Capital	8.4	8.8	4.9	4.6	5.5
% Loans to be Used for Equipment/Machinery	2.3	2.4	1.7	0.2	0.6
% Loans to be Used for Land/Buildings	0.4	0.4	0.9	0.0	0.0
% Loan to be Backed by Real Estate	28.3	28.6	24.7	26.2	24.7
Sample Size (unweighted)	2,007	1,648	170	96	93

Source: NERA calculations from 1993 NSSBF.

Notes: Sample weights are used to provide statistics that are nationally representative of all small businesses. Sample restricted to firms that applied for a loan over the preceding three years.

Table 6.2. Selected Sample Means of Loan Applicants – WSC

	All	White	African-American	Hispanic	Other Races
% of Firms Denied in the Last Three Years	30.3	28.1	71.4	18.6	49.5
Credit History of Firm/Owners					
% Owners with Judgments Against Them	5.9	3.6	32.9	4.9	20.1
% Firms Delinquent in Business Obligations	25.3	22.9	56.6	11.2	57.6
% Owners Delinquent on Personal Obligations	12.6	9.0	62.4	7.0	35.6
% Owners Declared Bankruptcy in Past 7yrs	3.1	3.0	5.7	4.7	0.0
Other Firm Characteristics					
% Female-Owned	22.3	22.7	22.2	14.7	29.3
Sales (in 1,000s of 1992 $)	1556.0	1715.7	279.3	1072.8	1044.6
Profits (in 1,000s of 1992 $)	109.6	127.4	44.1	•73.6	-20.8
Assets (in 1,000s of 1992 $)	759.2	848.0	173.6	316.2	657.7
Liabilities (in 1,000s of 1992 $)	402.8	446.9	55.4	117.7	482.4
Owner's Years of Experience	17.9	18.9	12.9	15.4	12.4
Owner's Share of Business	78.8	77.1	92.9	91.6	71.6
% <= 8th Grade Education	1.8	0.8	0.0	12.5	0.0
% 9th-11th Grade Education	2.6	3.0	0.0	0.0	3.1
% High School Graduate	13.7	11.5	0.0	23.7	33.7
% Some College	25.7	26.3	59.6	20.8	3.6
% College Graduate	31.9	33.6	31.6	25.6	19.2
% Postgraduate Education	24.4	24.7	8.8	17.4	40.5
% Line of credit	45.7	44.4	16.8	66.6	49.6
Total Full-time Employment in 1990	9.5	10.5	4.5	5.5	6.7
Total Full-time Employment in 1992	12.6	13.8	5.9	7.7	8.4
Firm age, in years	12.4	13.0	10.4	12.1	6.4
% New Firm Since 1990	10.1	11.2	18.6	2.0	3.1
% Firms Located in MSA	75.1	71.7	92.0	89.3	86.7
% Sole Proprietorship	38.1	35.7	75.0	53.9	23.0
% Partnership	7.1	7.6	9.4	7.0	0.0
% S Corporation	27.1	28.6	8.0	9.8	45.7
% C Corporation	27.7	28.2	7.7	29.3	31.3
% Existing Relationship with Lender	27.4	26.5	6.3	45.1	25.5
% Firms with Local Sales Market	55.1	57.4	64.4	48.1	30.6
Characteristics of Loan Application					
Amount Requested (in 1,000s of 1992$)	230.5	251.1	51.2	69.4	319.2
% Loans to be Used for Working Capital	11.3	12.5	0.0	2.6	16.1
% Loans to be Used for Equipment/Machinery	3.6	4.2	0.0	0.0	3.1
% Loans to be Used for Land/Buildings	0.1	0.1	0.0	0.0	0.0
% Loan to be Backed by Real Estate	19.6	20.3	7.4	21.5	16.1
Total Sample Size (unweighted)	515	343	43	82	47

Source: NERA calculations from 1993 NSSBF.

Notes: Sample weights are used to provide statistics that are nationally representative of all small businesses. Some variable means are computed from slightly smaller samples because of missing values. "Other Races" are not reported separately due to small sample size.

Table 6.3. Problems Firms Experienced During Preceding 12 Months - USA

	All	White	African-American	Hispanic	Other Races
Credit Market Conditions					
Percent reporting not a problem	66.2	67.3	43.1	58.9	65.8
Percent reporting somewhat of a problem	20.1	19.9	25.6	18.2	21.3
Percent reporting serious problem	13.7	12.7	31.3	22.9	12.9
Other Potential Problems (% reporting problem is serious)					
Training costs	6.5	6.6	7.2	6.3	4.3
Worker's compensation costs	21.7	21.0	19.3	30.6	28.7
Health insurance costs	32.5	31.6	38.1	44.3	35.0
IRS regulation or penalties	12.3	11.8	17.1	17.9	13.2
Environmental regulations	8.5	8.5	5.6	7.4	11.0
Americans with Disabilities Act	2.7	2.6	3.6	2.7	3.9
Occupational Safety and Health Act	4.5	4.5	3.9	3.6	6.2
Family and Medical Leave Act	2.7	2.5	4.5	3.1	4.8
Number of observations (unweighted)	2,007	1,648	170	96	93

Source: NERA calculations from 1993 NSSBF.

Table 6.4. Problems Firms Experienced During Preceding 12 Months - WSC

	All	White	African-American	Hispanic	Other Races
Credit Market Conditions					
Percent reporting not a problem	65.6	67.6	39.8	51.3	74.8
Percent reporting somewhat of a problem	17.9	18.1	22.3	23.6	6.6
Percent reporting serious problem	16.5	14.4	37.9	25.1	18.5
Other Potential Problems (% reporting problem is serious)					
Training costs	8.5	9.0	10.4	2.4	10.8
Worker's compensation costs	24.6	24.1	23.9	22.7	33.1
Health insurance costs	32.6	29.4	33.7	44.9	49.2
IRS regulation or penalties	16.3	15.4	28.6	16.4	19.7
Environmental regulations	10.6	10.2	5.6	7.5	20.5
Americans with Disabilities Act	5.0	4.5	8.5	1.6	13.4
Occupational Safety and Health Act	6.7	6.1	7.5	4.5	16.0
Family and Medical Leave Act	4.8	4.7	2.8	4.2	6.6
Number of observations (unweighted)	515	343	43	82	47

Source: NERA calculations from 1993 NSSBF.

Table 6.5. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months - USA

	All	White	African-American	Hispanic	Other Races
Credit availability	5.9	5.5	20.5	5.3	4.3
Health care, health insurance	21.1	22.1	12.3	13.7	14.8
Taxes, tax policy	5.7	5.7	2.6	8.7	3.3
General U.S. business conditions	11.8	11.5	8.9	14.4	17.4
High interest rates	5.4	5.7	1.8	3.5	3.4
Costs of conducting business	3.3	3.3	3.8	3.8	3.6
Labor force problems	3.5	3.3	3.9	5.5	3.6
Profits, cash flow, expansion, sales	10.3	9.9	20.3	9.8	11.9
Number of observations (unweighted)	4,388	3,383	424	262	319

Source: NERA calculations from 1993 NSSBF.

Table 6.6. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months - WSC

	All	White	African-American	Hispanic	Other Races
Credit availability	3.9	2.8	16.0	9.8	2.4
Health care, health insurance	22.1	22.6	23.8	19.3	19.5
Taxes, tax policy	7.7	8.3	0.0	2.5	12.2
General U.S. business conditions	9.4	10.0	7.8	6.3	7.1
High interest rates	4.1	4.8	5.1	0.9	0.0
Costs of conducting business	2.0	1.9	2.3	4.1	0.0
Labor force problems	6.0	5.1	5.8	7.0	13.9
Profits, cash flow, expansion, sales	8.6	8.4	15.1	10.3	4.6
Number of observations (unweighted)	488	328	42	76	42

Source: NERA calculations from 1993 NSSBF.

Table 6.7. Types of Problems Facing Your Business, by Race and Gender (%)

	White male	White female	Minority male	Minority female	African-American	Hispanic	Asian
Availability of credit	19	23	54	38	46	52	34
Rising health care costs	60	49	50	41	31	42	66
Excessive tax burden	49	46	48	42	46	34	51
Lack of qualified workers	37	28	33	17	22	20	34
Rising energy costs	37	35	36	35	29	34	44
Rising costs of materials	44	47	36	47	53	42	32
Legal reform	21	15	15	12	11	10	17
Number firms	415	356	80	81	55	50	41

Source: U.S. Chamber of Commerce (2005), Appendix tables, page 55, downloadable at http://www.uschamber.com/publications/reports/access_to_capital.htm (viewed 15 May 2008).

Notes: Total percentages may be greater than 100% due to respondents having the option to select multiple choices. Minorities also include 14 firms owned by Native Americans.

Table 6.8. Determinants of Loan Denial Rates – USA

	(1)	(2)	(3)	(4)	(5)
African-American	0.443	0.288	0.237	0.235	0.241
	(11.21)	(6.84)	(5.57)	(5.22)	(5.13)
Asian	0.225	0.171	0.140	0.121	0.119
	(4.21)	(3.18)	(2.56)	(2.15)	(2.07)
American Indian/Alaskan Eskimo	-0.016	-0.141	-0.097	-0.052	-0.083
	(0.11)	(1.06)	(0.71)	(0.35)	(0.56)
Hispanic	0.129	0.070	0.067	0.035	0.031
	(2.62)	(1.42)	(1.36)	(0.70)	(0.63)
White female	0.088	0.048	0.047	0.036	0.033
	(2.65)	(1.45)	(1.45)	(1.06)	(0.94)
Judgments		0.143	0.129	0.124	0.121
		(2.84)	(2.56)	(2.40)	(2.29)
Firm delinquent		0.176	0.178	0.195	0.208
		(6.50)	(6.43)	(6.77)	(7.00)
Personally delinquent		0.161	0.128	0.124	0.119
		(4.45)	(3.56)	(3.38)	(3.17)
Bankrupt past 7 yrs		0.208	0.179	0.162	0.167
		(3.11)	(2.68)	(2.37)	(2.33)
$1992 profits (*$10^8$)		-0.000	-0.000	-0.000	-0.000
		(0.89)	(1.64)	(1.78)	(1.83)
$1992 sales (*$10^8$)		-0.000	-0.000	-0.000	-0.000
		(3.08)	(3.38)	(3.28)	(3.38)
$1992 assets (*$10^8$)		0.000	0.000	0.000	0.000
		(0.51)	(0.60)	(0.40)	(0.37)
$1992 liabilities (*$10^8$)		0.000	0.000	0.000	0.000
		(0.61)	(1.11)	(1.04)	(1.17)
Owner years experience		-0.003	-0.001	-0.002	-0.002
		(2.59)	(1.30)	(1.55)	(1.72)
Owners' share of business		0.001	0.000	0.000	0.000
		(1.91)	(0.71)	(0.26)	(0.30)
Owner's Education (5 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (13 variables)	No	No	Yes	Yes	Yes
Region (8 indicator variables)	No	No	No	Yes	Yes
Industry (60 indicator variables)	No	No	No	Yes	Yes
Month /Year of Application (51 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (16 indicator vars.)	No	No	No	No	Yes
N	2,007	2,007	2,006	1,985	1,973
Pseudo R^2	.0608	.1412	.2276	.2539	.2725
Chi^2	143.6	333.4	537.3	595.4	635.8
Log likelihood	-1108.8	-1013.8	-911.6	-874.8	-848.7

Source: NERA calculations from 1993 NSSBF.

Notes: Reported estimates are derivatives from Probit models, t-Statistics are in parentheses. "Other firm characteristics" include variables indicating whether the firm had a line of credit, 1990 employment, firm age, metropolitan area, a new firm since 1990, legal form of organization (sole proprietorship, partnership, S-corporation, or C-corporation), 1990-1992 employment change, existing long run relation with lender, geographic scope of market (local, regional, national or international), the value of the firm's inventory, the level of wages and salaries paid to workers, the firm's cash holdings, and the value of land held by the firm. "Characteristics of the loan" include the size of the loan applied for, a variable indicating whether the loan was backed by real estate, and twelve variables indicating the intended use of the loan.

Table 6.9. Determinants of Loan Denial Rates – WSC Region

	(1)	(2)	(3)	(4)	(5)
African-American	0.434	0.289	0.236	0.238	0.242
	(10.33)	(6.55)	(5.3)	(5.04)	(4.89)
Asian	0.206	0.157	0.115	0.091	0.094
	(3.60)	(2.72)	(2.00)	(1.55)	(1.56)
Native American	-0.083	-0.132	-0.105	-0.059	-0.108
	(0.47)	(0.76)	(0.59)	(0.29)	(0.53)
Hispanic	0.154	0.095	0.061	0.028	0.024
	(2.64)	(1.64)	(1.06)	(0.49)	(0.42)
White female	0.082	0.047	0.042	0.029	0.019
	(2.33)	(1.33)	(1.20)	(0.82)	(0.52)
African-American*WSC	0.071	-0.008	0.003	-0.011	0.007
	(0.61)	(0.07)	(0.03)	(0.10)	(0.06)
Asian/Pacific*WSC	0.128	0.071	0.167	0.213	0.188
	(0.83)	(0.50)	(1.04)	(1.26)	(1.10)
Native American*WSC	0.243	-0.053	0.017	0.035	0.105
	(0.67)	(0.17)	(0.05)	(0.11)	(0.27)
Hispanic*WSC	-0.068	-0.087	0.009	0.037	0.047
	(0.70)	(0.91)	(0.09)	(0.33)	(0.40)
White female*WSC	0.045	0.002	0.047	0.062	0.143
	(0.44)	(0.02)	(0.46)	(0.58)	(1.21)
WSC region	-0.003	0.027	0.013	0.126	0.033
	(0.07)	(0.61)	(0.30)	(2.42)	(0.63)
Creditworthiness controls (4 variables)	No	Yes	Yes	Yes	Yes
Owner's Education (5 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (13 variables)	No	No	Yes	Yes	Yes
Region (7 indicator variables)	No	No	No	Yes	Yes
Industry (60 indicator variables)	No	No	No	Yes	Yes
Month /Year of Application (51 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (16 indicator vars.)	No	No	No	No	Yes
N	2007	2,007	2,006	1,985	1,973
Pseudo R^2	.0618	.1419	.2285	.2547	.2736
Chi^2	145.8	334.95	539.3	597.3	638.3
Log likelihood	-1107.5	-1013.1	-910.6	-873.8	-847.5

Source: See Table 6.8.

Note: Creditworthiness controls are those used in Table 6.8 above.

Table 6.10. Alternative Models of Loan Denials

Specification	African-American	African American* WSC	Asian	Hispanic	White female	Sample Size
All	0.236 (5.30)	0.003 (0.03)	0.115 (2.00)	0.061 (1.06)	0.042 (1.20)	2,006
Organization Type						
1) Proprietorships and Partnerships	0.266 (3.15)	0.038 (0.19)	0.240 (2.10)	-0.013 (0.13)	-0.013 (0.18)	536
2) Corporations	0.209 (3.95)	-0.009 (0.06)	0.071 (1.05)	0.095 (1.31)	0.062 (1.53)	1,457
Age of Firm						
3) 12 Years or Under	0.256 (4.22)	0.165 (0.25)	0.042 (2.12)	0.008 (0.10)	0.016 (0.32)	1,074
4) Over 12 Years	0.194 (2.92)	0.002 (0.23)	0.035 (0.03)	0.114 (1.41)	0.094 (1.86)	926
1993 Firm Size						
5) Fewer than 10 Employees	0.226 (3.65)	0.107 (0.53)	0.093 (1.27)	-0.009 (0.12)	-0.019 (0.38)	868
6) 10 or More Employees	0.242 (3.44)	0.119 (0.73)	-0.105 (1.37)	0.141 (1.61)	0.108 (2.16)	1,132
Intended Use of Loan						
7) Working Capital	0.258 (4.65)	0.093 (0.48)	0.087 (1.17)	0.046 (0.6)	0.047 (0.97)	1,086
8) Other Use	0.176 (2.30)	-0.048 (0.35)	0.164 (1.79)	0.086 (0.99)	0.040 (0.83)	913
Scope of Sales Market						
9) Local	0.125 (1.79)	0.350 (1.72)	0.127 (1.63)	0.011 (0.15)	0.036 (0.72)	875
10) Regional, National, or international	0.229 (5.36)	-0.062 (0.97)	0.059 (1.09)	0.086 (1.41)	0.031 (1.07)	1,129
Creditworthiness						
11) No Past Problems	0.269 (4.64)	-0.123 (1.54)	0.150 (2.57)	0.046 (0.83)	0.079 (2.33)	1,386
12) One Past Problem	0.280 (2.69)	-0.089 (0.36)	-0.094 (0.54)	0.182 (1.10)	0.007 (0.07)	376
13) More Than One Problem	0.263 (2.39)	0.003 (0.03)	0.271 (1.74)	-0.022 (0.11)	-0.178 (1.15)	222

Source: NERA calculations from 1993 NSSBF.

Notes: Reported estimates are derivatives from Probit models, t-Statistics are in parentheses. Each line of this table represents a separate regression with the same control variables as Column 3 of Table 6.8. The dependent variable in all specifications represents an indicator for whether or not a loan application was denied. Control for WSC also included.

Table 6.11. Models of Credit Card Use

Specification	African-American	Asian	Native American	Hispanic	White female	Sample Size
1) Business Credit Card	0.035 (1.35)	-0.096 (3.23)	0.085 (1)	0.024 (0.79)	0.018 (0.83)	4,633
2) Personal Credit Card	0.019 (0.74)	-0.019 (0.63)	0.019 (0.23)	-0.042 (1.4)	0.028 (1.28)	4,633

Source: NERA calculations from 1993 NSSBF.

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. Each line of this table represents a separate regression with the same control variables as Column 3 of Table 6.8 but excluding the loan characteristics. The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. In all specifications, the sample size is all firms. Other races are excluded due to sample size limitations.

Table 6.12. Models of Credit Card Use – WSC

Specification	African-American	Asian	Native American	Hispanic	White female	Sample Size
1) Business Credit Card	0.210 (2.32)	-0.214 (2.74)	0.021 (0.31)	-0.028 (0.44)	0.018 (0.83)	514
2) Personal Credit Card	0.019 (0.22)	-0.043 (0.49)	-0.172 (2.65)	-0.085 (1.28)	0.028 (1.28)	514

Source: See Table 6.11.

Notes: See Table 6.11. Control for WSC included.

Table 6.13. Models of Interest Rate Charged – USA

Specification	African-American	Asian	Native American	Hispanic	White female	Sample Size
1) All loans (controls as in column 5, Table 6.8	1.034 (3.72)	0.413 (1.37)	-0.427 (0.63)	0.517 (1.97)	0.025 (0.14)	1,454
Creditworthiness						
2) No credit problems	1.187 (3.27)	0.485 (1.33)	0.910 (1.07)	0.435 (1.48)	0.129 (0.66)	1,137
Organization Type						
3) Proprietorships and Partnerships	1.735 (2.57)	0.826 (1.03)	2.589 (0.90)	1.008 (1.74)	-0.239 (0.53)	364
4) Corporations	0.660 (2.04)	0.359 (1.07)	-0.585 (0.86)	0.491 (1.53)	0.127 (0.66)	1,090
1993 Firm Size						
5) Fewer than 10 Employees	1.200 (2.58)	-0.247 (0.41)	-0.010 (0.01)	0.783 (1.75)	-0.311 (1.02)	574
6) 10 or More Employees	0.450 (1.15)	0.446 (1.21)	-0.197 (0.25)	0.515 (1.37)	0.164 (0.77)	880
Scope of Sales Market						
7) Local	0.751 (1.55)	-0.073 (0.13)	1.773 (1.12)	0.805 (2.05)	0.324 (1.08)	633
8) Regional, National, or International	1.544 (4.26)	1.185 (2.93)	-1.368 (1.85)	0.392 (0.96)	-0.163 (0.73)	821

Source: NERA calculations from 1993 NSSBF.

Notes: Reported estimates are Ordinary Least Squares (OLS) coefficients, t-statistics in parentheses. Each line of this table represents a separate regression with all of the control variables as Column 5 of Table 6.8 (except where specified) as well as: an indicator variable for whether the loan request was for a fixed interest rate loan, the length of the loan, the size of the loan, whether the loan was guaranteed, whether the loan was secured by collateral, and 7 variables identifying the type of collateral used if the loan was secured. The sample consists of firms who had applied for a loan and had their application approved. 'No credit problems' means that neither the firm nor the owner had been delinquent on payments over 60 days, no judgments against the owner for the preceding 3 years and the owner had not been bankrupt in the preceding 7 years.

Table 6.14. Models of Interest Rate Charged – WSC

Specification	African-American	African American * WSC	Asian	Native American	Hispanic	White female	Sample Size
1) All loans (controls as in column 5, Table 6.8	0.853 (2.92)	1.467 (1.73)	0.372 (1.18)	0.570 (0.73)	0.507 (1.61)	-0.027 (0.15)	1,454
2) No credit problems	0.970 (2.51)	1.812 (1.72)	0.508 (1.36)	0.922 (1.08)	0.431 (1.22)	0.109 (0.53)	1,137
3) Proprietorships and Partnerships	1.572 (2.05)	0.706 (0.46)	0.653 (0.77)	2.730 (0.94)	0.747 (1.00)	-0.441 (0.93)	364
4) Corporations	0.549 (1.65)	1.409 (1.07)	0.436 (1.23)	0.573 (0.71)	0.634 (1.73)	0.091 (0.46)	1,090
5) Fewer than 10 Employees	0.994 (2.03)	1.345 (0.97)	-0.302 (0.49)	3.199 (1.74)	0.906 (1.65)	-0.345 (1.09)	574
6) 10 or More Employees	0.238 (0.58)	1.858 (1.57)	0.547 (1.37)	-0.100 (0.13)	0.638 (1.52)	0.070 (0.31)	880
7) Local	0.502 (0.98)	2.208 (1.54)	-0.165 (0.28)	1.650 (1.04)	0.540 (1.14)	0.279 (0.88)	633
8) Regional, National, or International	1.442 (3.77)	0.776 (0.69)	1.162 (2.73)	-0.567 (0.63)	0.701 (1.42)	-0.232 (0.99)	821

Source: See Table 6.13.

Notes: See Table 6.13.

Table 6.15. Racial Differences in Failing to Apply for Loans Fearing Denial

Specification	African-American	Asian	Native American	Hispanic	White female
a) USA					
No Other Control Variables (n=4,637)	0.405 (16.65)	0.099 (3.61)	0.134 (1.72)	0.235 (8.28)	0.031 (1.54)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=4,633)	0.257 (10.02)	0.054 (1.98)	0.019 (0.27)	0.164 (5.69)	-0.008 (0.38)
b) WSC					
No Other Control Variables, except for WSC dummy and race*WSC interactions (n=4,637)	0.404 (15.80)	0.098 (3.34)	0.218 (2.24)	0.247 (7.47)	0.049 (2.26)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=4,633)	0.261 (9.78)	0.053 (1.83)	0.088 (0.97)	0.164 (4.96)	0.009 (0.45)
c) Construction					
No Other Control Variables (n=781)	0.350 (6.74)	0.109 (1.27)	-0.087 (0.54)	0.150 (2.22)	-0.007 (0.12)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=781)	0.181 (3.67)	0.064 (0.78)	-0.132 (1.00)	0.040 (0.65)	-0.063 (1.32)

Source: NERA calculations from 1993 NSSBF.

Notes: Reported estimates are Probit derivatives, t-Statistics in parentheses. Sample consists of all firms. Dependent variable equals one if the firm said they did not apply for a loan fearing denial, zero otherwise.

Table 6.16. Models of Failure to Obtain Credit Among Firms that Desired Additional Credit

Specification	African-American	Asian	Native American	Hispanic	White female
a) USA					
No Other Control Variables (n=2,646)	0.455 (14.84)	0.298 (6.82)	0.188 (1.57)	0.297 (7.76)	0.126 (4.01)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=2,643)	0.276 (6.93)	0.180 (3.42)	-0.008 (0.06)	0.165 (3.51)	0.049 (1.38)
b) WSC					
No Other Control Variables (n=2,646)	0.457 (14.16)	0.299 (6.45)	0.199 (1.45)	0.322 (7.25)	0.138 (4.18)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=2,643)	0.292 (7.02)	0.172 (3.09)	0.041 (0.24)	0.166 (3.07)	0.054 (1.44)
c) Construction					
No Other Control Variables (n=463)	0.413 (6.12)	0.196 (1.46)	0.128 (0.36)	0.255 (2.71)	0.043 (0.51)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=463)	0.257 (2.85)	0.102 (0.53)	-0.180 (0.41)	0.121 (1.00)	-0.094 (1.04)

Source: NERA calculations from 1993 NSSBF.

Notes: Reported estimates are Probit derivatives, t-Statistics in parentheses. The sample consists of all firms that applied for loans along with those who needed credit, but did not apply for fear of refusal. Failure to obtain credit includes those firms that were denied and those that did not apply for fear of refusal. Dependent variable is unity if the firm failed to obtain credit and zero if the firm applied for credit and had their loan application approved.

Table 6.17. What is the Most Important Problem Facing Your Business Today?

	White male	African-American	Other	Hispanic	White female	Total
Financing and interest rates	5.8%	18.2%	10.6%	8.1%	6.2%	6.8%
Taxes	7.7%	1.9%	5.3%	3.1%	6.6%	6.9%
Inflation	0.4%	0.6%	0.0%	1.0%	0.4%	0.4%
Poor sales	7.0%	5.9%	11.6%	7.0%	8.3%	7.5%
Cost/availability of labor	3.9%	3.3%	2.4%	3.5%	4.5%	3.9%
Government regulations/red tape	7.1%	3.0%	4.8%	8.1%	6.5%	6.8%
Competition (from larger firms)	11.1%	10.7%	10.6%	18.4%	10.2%	11.3%
Quality of labor	14.4%	11.0%	9.4%	8.7%	9.1%	12.6%
Cost and availability of insurance	2.6%	1.0%	0.8%	0.0%	2.3%	2.2%
Other	11.4%	10.0%	8.3%	16.0%	12.7%	11.7%
Cash flow	4.6%	10.9%	6.3%	3.5%	3.3%	4.6%
Capital other than working capital	1.1%	1.7%	4.1%	0.8%	1.3%	1.3%
Acquiring and retaining new customers	3.1%	3.9%	5.0%	1.8%	3.3%	3.2%
Growth of firm/industry	0.9%	1.0%	1.2%	0.1%	0.4%	0.8%
Overcapacity of firm/industry	0.1%	0.0%	0.0%	0.3%	0.0%	0.1%
Marketing/advertising	2.1%	3.9%	2.5%	2.8%	3.6%	2.5%
Technology	1.4%	1.2%	1.6%	2.6%	1.3%	1.5%
Costs, other than labor	2.7%	1.8%	2.5%	3.6%	3.8%	2.9%
Seasonal/cyclical issues	1.3%	1.2%	0.7%	0.4%	0.7%	1.1%
Bill collection	2.8%	2.2%	2.4%	2.6%	2.8%	2.8%
Too much work/not enough time	3.6%	2.2%	4.3%	1.4%	5.7%	3.9%
No problems	4.6%	4.3%	5.6%	5.8%	6.4%	5.1%
Not ascertainable	0.4%	0.0%	0.0%	0.0%	0.7%	0.4%

Source: NERA calculations from the 1998 SSBF (n=3561).

Notes: Results are weighted.

Table 6.18. Determinants of Loan Denial Rates - USA

	(1)	(2)	(3)	(4)	(5)
African-American	0.422	0.254	0.217	0.192	0.218
	(7.94)	(5.36)	(5.05)	(4.52)	(4.74)
Asian	0.148	0.129	0.049	0.023	0.028
	(2.54)	(2.52)	(1.25)	(0.65)	(0.77)
Hispanic	0.353	0.269	0.211	0.183	0.171
	(6.44)	(5.37)	(4.69)	(4.21)	(4.00)
White female	0.087	0.049	0.024	0.016	0.011
	(2.22)	(1.55)	(0.96)	(0.66)	(0.44)
Judgments		0.272	0.249	0.272	0.262
		(4.28)	(4.32)	(4.47)	(4.20)
Firm delinquent		0.081	0.115	0.103	0.111
		(2.88)	(4.20)	(3.88)	(4.01)
Personally delinquent		0.092	0.039	0.042	0.045
		(2.85)	(1.59)	(1.69)	(1.76)
Bankrupt past 7 yrs		0.504	0.406	0.392	0.395
		(4.48)	(3.83)	(3.67)	(3.64)
$1998 sales (*$10^8$)		-0.000	-0.000	0.000	0.000
		(2.47)	(0.26)	(0.02)	(0.03)
$1998 firm equity (*$10^8$)		0.000	0.000	0.000	0.000
		(1.40)	(0.46)	(0.20)	(0.06)
Owner home equity (*10^8)		0.000	0.000	0.000	0.000
		(0.52)	(1.47)	(0.96)	(0.90)
Owner net worth (*10^8)		-0.000	-0.000	-0.000	-0.000
		(1.25)	(1.28)	(1.19)	(1.24)
Owner years experience		-0.002	-0.001	-0.000	-0.000
		(1.42)	(0.49)	(0.34)	(0.21)
Owners' share of business		0.000	-0.000	0.000	-0.000
		(0.75)	(0.12)	(0.03)	(0.33)
Dun & Bradstreet credit ratings (4)	No	Yes	Yes	Yes	Yes
Owner's Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Region (8 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	924	924	924	924	905
Pseudo R^2	.1061	.2842	.3714	.3910	.4015
Chi^2	90.0	241.1	315.1	331.8	337.8
Log likelihood	-379.3	-303.7	-266.7	-258.3	-251.7

Source: NERA calculations from 1998 SSBF.

Notes: Reported estimates are derivatives from Probit models, t-Statistics are in parentheses. "Other firm characteristics" include variables indicating whether the firm had a line of credit, 1998 full time equivalent employment, firm age, metropolitan area, legal form of organization (sole proprietorship, partnership, LLP, S-corporation, C-corporation, or LLC), existing long run relation with lender, geographic scope of market (regional, national, foreign, or international), the value of the firm's inventory, the firm's cash holdings, and the value of land held by the firm. "Characteristics of the loan" includes the size of the loan applied for.

Table 6.19. Determinants of Loan Denial Rates - WSC

	(1)	(2)	(3)	(4)	(5)
African-American	0.395	0.205	0.185	0.164	0.187
	(6.70)	(4.10)	(4.09)	(3.65)	(3.86)
Asian	0.155	0.149	0.066	0.040	0.043
	(2.51)	(2.68)	(1.52)	(0.99)	(1.05)
Hispanic	0.331	0.259	0.213	0.182	0.168
	(5.27)	(4.66)	(4.26)	(3.74)	(3.55)
White female	0.094	0.057	0.033	0.027	0.023
	(2.25)	(1.68)	(1.21)	(1.00)	(0.85)
African-American*WSC	0.089	0.131	0.059	0.070	0.077
	(0.78)	(1.22)	(0.72)	(0.82)	(0.87)
Asian/Pacific*WSC	-0.044	-0.069	-0.055	-0.050	-0.047
	(0.31)	(0.88)	(1.04)	(0.95)	(0.84)
Hispanic*WSC	0.054	-0.004	-0.022	-0.002	-0.001
	(0.51)	(0.06)	(0.41)	(0.04)	(0.01)
White female*WSC	0.094	0.057	0.033	0.027	0.023
	(2.25)	(1.68)	(1.21)	(1.00)	(0.85)
WSC region	0.000	0.039	0.041	0.016	0.016
	(0.00)	(0.81)	(0.99)	(0.29)	(0.30)
Creditworthiness Controls (8 variables)	No	Yes	Yes	Yes	Yes
Owner's Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Region (7 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	924	924	924	924	905
Pseudo R^2	.1080	.2907	.3764	.3950	.4059
Chi^2	91.7	246.6	319.35	335.2	341.5
Log likelihood	-378.4	-301.0	-264.6	-256.7	-249.9

Source: NERA calculations from 1998 SSBF.

Notes: t-statistics in parentheses. Other creditworthiness controls are the 4 other variables included in column 2 of Table 6.18.

Table 6.20. More Loan Denial Probabilities

	(1)	(2)	(3)	(4)
	Denylast	*Denylast*	*Denylast*	*Denylast*
African-American	0.457	0.246	0.439	0.220
	(8.00)	(4.76)	(6.82)	(3.91)
Asian	0.185	0.027	0.183	0.037
	(2.81)	(0.65)	(2.67)	(0.81)
Hispanic	0.360	0.171	0.342	0.167
	(6.28)	(3.67)	(5.15)	(3.21)
White female	0.083	0.005	0.087	0.015
	(2.00)	(0.20)	(1.98)	(0.50)
African-American* WSC			0.066	0.054
			(0.57)	(0.61)
Asian* WSC			0.006	-0.041
			(0.03)	(0.50)
Hispanic* WSC			0.056	0.005
			(0.50)	(0.07)
White female* WSC			-0.032	-0.043
			(0.27)	(0.81)
WSC			-0.015	0.021
			(0.26)	(0.34)
Creditworthiness Controls	No	Yes	No	Yes
Owner's Education	No	Yes	No	Yes
Other Firm Characteristics	No	Yes	No	Yes
Characteristics of the loan	No	Yes	No	Yes
Region	No	Yes	No	Yes
Industry	No	Yes	No	Yes
N	846	846	846	846
Pseudo R^2	.1112	.4265	.1121	.4286
Chi^2	90.9	348.7	91.7	350.5
Log likelihood	-363.3	-234.5	-363.0	-233.6

Source: NERA calculations from 1998 SSBF.

Table 6.21. Models of Interest Rate Charged

Specification	African-American	African-American * WSC	African-American * Construc-tion	Asian	Hispanic	White female
1a) All Loans (as in column 5 of Table 6.18) n=765	1.064 (2.66)	-	-	0.559 (1.49)	-0.088 (0.23)	-0.501 (1.93)
1b) All Loans (as in column 5 of Table 6.18) n=765	1.319 (2.86)	-1.875 (1.84)	0.635 (0.63)	0.337 (0.78)	0.167 (0.35)	-0.419 (1.47)

Source: NERA calculations from 1998 SSBF.

Notes: Each line of this table represents a separate regression with all of the control variables. The sample consists of firms who had applied for a loan and had their application approved.

Table 6.22. Racial Differences in Failing to Apply for Loans Fearing Denial

Specification	African-American	Asian	Hispanic	White female
a) U.S.				
No Other Control Variables (n=3,448)	0.353 (11.90)	0.046 (1.48)	0.173 (5.77)	0.051 (2.55)
Full Set of Control Variables (n=3,448)	0.208 (7.04)	-0.012 (0.43)	0.052 (1.87)	0.011 (0.59)
b) WSC region				
No Other Control Variables (n=371)	0.407 (4.78)	-0.026 (0.25)	0.075 (1.13)	0.018 (0.28)
Full Set of Control Variables (n=367)	0.178 (2.67)	-0.053 (1.15)	-0.039 (1.15)	-0.012 (0.36)
c) Construction				
No Other Control Variables (n=613)	0.371 (5.06)	0.117 (1.43)	0.020 (0.26)	0.122 (2.08)
Full Set of Control Variables (n=609)	0.273 (3.69)	0.099 (1.32)	-0.062 (1.13)	0.038 (0.74)

Source: NERA calculations from 1998 SSBF.

Note: Reported estimates are Probit derivatives with t-statistics in parentheses. Full set of control variables as in Column 5 of Table 6.18, except for loan amount, year of application, and type of lender.

Table 6.23. Models of Credit Card Use

Specification	African-American	Asian	Hispanic	White female	Sample Size
1) Business Credit Card	-0.001 (0.02)	-0.038 (1)	-0.014 (0.38)	-0.018 (0.72)	3,561
2) Personal Credit Card	-0.018 (0.54)	0.016 (0.44)	-0.050 (1.42)	0.012 (0.52)	3,561
3) Business Credit Card WSC	-0.002 (0.02)	-0.196 (1.55)	-0.041 (0.46)	0.082 (1.01)	382
4) Personal Credit Card WSC	-0.078 (0.8)	0.197 (1.49)	-0.003 (0.03)	0.079 (0.98)	382
3) Business Credit Card Construction & related	0.056 (0.62)	-0.074 (0.7)	0.087 (0.86)	-0.025 (0.35)	624
4) Personal Credit Card Construction & related	0.003 (0.04)	0.047 (0.46)	-0.092 (1.01)	-0.073 (0.99)	624

Source: NERA calculations from 1998 SSBF.

Notes: Each line of this table represents a separate regression with the same control variables as Column 5 of Table 6.18, except for loan amount, year of application and type of lender. The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. In all specifications, the sample size includes all firms. Reported estimates are Probit derivatives with t-statistics in parentheses.

Table 6.24. What is the Most Important Problem Facing Your Business Today?

	White male	African-American	Other	Hispanic	White female	Total
Financing and interest rates	5.4%	20.7%	9.1%	5.7%	5.8%	6.3%
Taxes	6.3%	2.4%	4.9%	7.7%	4.3%	5.7%
Inflation	2.7%	1.0%	2.3%	0.5%	1.4%	2.3%
Poor sales or profitability	17.8%	38.5%	28.9%	30.0%	22.5%	20.6%
Cost/availability of labor	1.5%	0.0%	0.6%	1.5%	1.5%	1.4%
Government regulations/red tape	4.7%	1.0%	5.4%	9.6%	2.5%	4.5%
Competition from larger firms	4.0%	2.7%	2.7%	3.6%	3.6%	3.8%
Quality of labor	7.9%	6.9%	5.0%	3.8%	6.5%	7.2%
Cost and availability of insurances	10.3%	1.8%	3.1%	5.2%	6.4%	8.6%
Other	2.6%	1.9%	4.0%	2.8%	1.6%	2.5%
None	5.3%	3.4%	9.4%	4.1%	8.6%	6.0%
Cash flow	6.2%	5.1%	4.6%	7.1%	6.8%	6.3%
Growth	0.9%	2.7%	0.4%	1.1%	0.8%	1.0%
Foreign competition	1.3%	0.0%	1.0%	0.1%	0.7%	1.0%
Competition - other	1.6%	0.8%	1.8%	0.1%	1.1%	1.4%
Availability of materials/resources	0.8%	0.8%	0.6%	1.6%	1.2%	0.9%
Labor problems other than cost or quality	1.2%	2.2%	0.2%	0.0%	1.3%	1.1%
Internal management/administrative problems	4.2%	2.5%	4.3%	1.0%	6.1%	4.4%
Environmental constraints	1.4%	0.7%	1.6%	2.3%	2.0%	1.6%
Advertising and public awareness	2.2%	1.8%	2.4%	1.8%	3.3%	2.4%
Market/economic/industry factors	4.9%	1.9%	4.0%	2.3%	6.2%	4.8%
Health care cost and availability	1.5%	0.0%	0.7%	0.8%	1.4%	1.4%
Energy costs	1.5%	0.0%	0.7%	3.7%	1.2%	1.4%
Costs other than health care and energy	2.2%	1.0%	0.1%	3.6%	1.0%	1.9%
Owner's personal problems	0.3%	0.0%	0.0%	0.0%	0.8%	0.4%
Technology	0.4%	0.0%	0.7%	0.0%	0.5%	0.4%
Dealing with insurance companies	0.3%	0.4%	0.0%	0.0%	0.4%	0.3%
War and September 11th	0.2%	0.0%	1.3%	0.0%	0.5%	0.3%

Source: NERA calculations from the 2003 SSBF (n=3561).

Note: Results are weighted.

Table 6.25. Determinants of Loan Denial Rates - USA

	(1)	(2)	(3)	(4)	(5)
African-American	0.459	0.136	0.105	0.091	0.094
	(8.38)	(5.47)	(4.80)	(5.04)	(4.95)
Asian	0.055	0.020	0.009	0.002	0.001
	(1.51)	(1.59)	(1.01)	(0.49)	(0.18)
Hispanic	0.067	0.008	0.004	0.001	0.001
	(1.74)	(0.83)	(0.58)	(0.30)	(0.25)
Native American and Other	0.184	0.061	0.032	0.021	0.021
	(2.22)	(1.95)	(1.47)	(1.43)	(1.49)
White female	0.043	0.003	0.002	0.001	0.002
	(2.17)	(0.70)	(0.49)	(0.57)	(0.76)
Judgments against owner		0.007	0.003	0.003	0.006
		(0.66)	(0.35)	(0.54)	(0.90)
Judgments against firm		0.005	0.005	0.001	0.001
		(1.16)	(1.42)	(0.54)	(0.64)
Firm delinquent		0.032	0.021	0.019	0.021
		(3.78)	(3.23)	(3.89)	(4.08)
Personally delinquent		-0.007	-0.006	-0.003	-0.002
		(0.69)	(1.02)	(0.82)	(0.58)
Owner Bankrupt past 7 yrs		0.046	0.041	0.052	0.044
		(1.36)	(1.35)	(1.81)	(1.66)
Firm Bankrupt past 7 yrs		0.000	0.003	0.001	-0.001
		(0.03)	(0.37)	(0.17)	(0.38)
$1998 sales (*$10^8$)		-0.000	0.000	0.000	0.000
		(1.68)	(0.04)	(0.29)	(0.51)
$1998 firm equity (*$10^8$)		-0.000	-0.000	-0.000	-0.000
		(2.23)	(1.03)	(1.62)	(1.63)
Owner home equity (*10^8)		0.000	0.000	-0.000	-0.000
		(0.28)	(0.02)	(0.45)	(0.26)
Owner net worth (*10^8)		-0.000	-0.000	-0.000	-0.000
		(2.97)	(2.92)	(3.06)	(3.26)
Owner years experience		0.000	0.000	0.000	0.000
		(0.31)	(1.00)	(0.82)	(0.62)
Owners' share of business		0.000	0.000	0.000	0.000
		(0.08)	(0.61)	(0.38)	(0.47)
Dun & Bradstreet credit ratings (4)	No	Yes	Yes	Yes	Yes
Owner's Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Region (8 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	1,664	1,655	1,655	1,655	1,605
Pseudo R^2	.0850	.2267	.2901	.3336	.3681
Chi^2	74.1	192.9	246.8	283.8	310.3
Log likelihood	-399.1	-328.9	-301.9	-283.4	-266.4

Source: NERA calculations from 2003 SSBF. Notes: "Other firm characteristics" include variables indicating whether the firm had a line of credit, 2003 total employment, firm age, metropolitan area, legal form of organization (sole proprietorship, partnership, LLP, S-corporation, C-corporation, or LLC), existing long run relation with lender, geographic scope of market (local, regional, national, foreign, or international), the value of the firm's inventory, the firm's cash holdings, the value of land held by the firm, and total salaries and wages paid. "Characteristics of the loan" includes the size of the loan applied for.

Table 6.26. Determinants of Loan Denial Rates - WSC

	(1)	(2)	(3)	(4)	(5)
African-American	0.414	0.113	0.084	0.076	0.077
	(7.35)	(5.05)	(4.41)	(4.67)	(4.63)
Asian	0.017	0.004	-0.001	-0.002	-0.002
	(0.50)	(0.46)	(0.14)	(0.83)	(1.17)
Hispanic	0.066	0.007	0.003	0.001	0.001
	(1.77)	(0.80)	(0.55)	(0.26)	(0.19)
Native and Other	0.129	0.042	0.016	0.006	0.007
	(1.53)	(1.51)	(0.95)	(0.64)	(0.81)
White female	0.037	0.002	0.001	0.001	0.001
	(1.93)	(0.54)	(0.29)	(0.40)	(0.65)
African-American*WSC	0.277	0.058	0.036	0.020	0.015
	(1.81)	(1.02)	(0.89)	(0.82)	(0.72)
Asian/Pacific*WSC	0.581	0.568	0.683	0.710	0.726
	(2.79)	(3.02)	(3.23)	(3.52)	(3.51)
Native*WSC	0.367	0.142	0.187	0.198	0.134
	(1.46)	(1.23)	(1.45)	(1.61)	(1.43)
White female*WSC	0.037	0.002	0.025	0.020	0.011
	(1.93)	(0.54)	(0.82)	(0.90)	(0.64)
WSC region	-0.063	-0.012	-0.008	-0.005	0.002
	(2.48)	(2.51)	(2.63)	(2.42)	(0.51)
Creditworthiness Controls (10 variables)	No	Yes	Yes	Yes	Yes
Owner's Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Region (7 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	1,664	1,655	1,655	1,655	1,605
Pseudo R^2	.1013	.2469	.3133	.3513	.3858
Chi^2	88.4	210.0	266.5	298.8	325.3
Log likelihood	-392.0	-320.3	-292.1	-275.9	-258.9

Source: NERA calculations from 2003 SSBF.

Notes: t-statistics in parentheses. Other creditworthiness controls are the 4 other variables included in column 2 of Table 6.18.

Table 6.27. Models of Interest Rate Charged

Specification	African-American	African-American* WSC	African-American* Construction	Asian	Hispanic	Native and Other	White female
1a) All Loans (as in column 5 of Table 6.27) n=1,537	1.043 (2.02)	-		0.442 (1.24)	1.003 (2.76)	0.257 (0.34)	-0.142 (0.72)
1b) All Loans (as in column 5 of Table 6.27) n=1,537	0.766 (1.30)	2.959 (1.86)	-0.641 (0.46)	0.539 (1.33)	1.196 (2.65)	0.636 (0.76)	-0.210 (0.95)

Source: NERA calculations from 2003 SSBF.

Notes: Each line of this table represents a separate regression with all of the control variables as indicated. Additionally, controls were included for whether the loan required a co-signer or guarantor, whether collateral was required and, if so, the type of collateral required. The sample consists of firms who had applied for a loan and had their application approved.

Table 6.28. Models of Credit Card Use

Specification	African-American	Asian	Hispanic	Native American and Other	White female	Sample Size
1) Business Credit Card	-0.063 (1.19)	0.037 (0.84)	-0.005 (0.10)	-0.010 (0.12)	0.002 (0.07)	3,676
2) Personal Credit Card	-0.132 (2.66)	0.036 (0.86)	-0.078 (1.72)	-0.037 (0.44)	0.036 (1.56)	3,676
3) Business Credit Card WSC	0.052 (0.28)	-0.142 (0.77)	0.117 (0.96)	-0.001 (0.00)	0.106 (1.27)	354
4) Personal Credit Card WSC	-0.066 (0.37)	0.189 (1.07)	-0.242 (2.12)	-0.269 (1.13)	0.014 (0.17)	354

Source: NERA calculations from 2003 SSBF.

Notes: Each line of this table represents a separate regression with the same control variables as Column 5 of Table 6.27, except for loan amount, year of application, and type of lender. The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. In all specifications, the sample size is all firms. Reported estimates are Probit derivatives with t-statistics in parentheses.

Table 6.29. Racial Differences in Failing to Apply for Loans Fearing Denial

Specification	African-American	Asian	Hispanic	Native and Other	White female
a) U.S.					
No Other Control Variables	0.385	0.059	0.138	0.138	0.072
(n=3,704)	(9.48)	(1.95)	(4.01)	(2.14)	(4.47)
Full Set of Control Variables	0.168	0.037	0.048	0.047	0.035
(n=3,676)	(4.75)	(1.37)	(1.76)	(0.93)	(2.44)
b) WSC region					
No Other Control Variables	0.382	0.050	0.142	0.123	0.064
(n=3,704)	(8.82)	(1.6)	(4.11)	(1.73)	(3.81)
Full Set of Control Variables	0.184	0.033	0.052	0.067	0.029
(n=3,676)	(4.87)	(1.17)	(1.89)	(1.14)	(1.95)
c) Construction					
No Other Control Variables	0.492	-0.022	0.090	0.258	0.026
(n=705)	(4.34)	(0.29)	(1.22)	(2.17)	(0.64)
Full Set of Control Variables	0.284	0.003	-0.010	0.136	-0.002
(n=695)	(3.02)	(0.07)	(0.38)	(1.64)	(0.09)

Source: NERA calculations from 2003 SSBF.

Notes: Reported estimates are Probit derivatives with t-statistics in parentheses. Full set of control variables as in Column 5 of Table 6.27, except for loan amount, year of application, and type of lender. In Panel (b), interaction terms between race, sex, and WSC were all insignificant.

Table 6.30. Determinants of Loan Denial Rates – Nine Jurisdictions

	(1)	(2)
	Most Recent Application	*Last Three Years*
African-American	0.289 (8.2)	0.293 (7.60)
Hispanic	0.178 (3.86)	0.244 (4.59)
Native American	0.087 (1.69)	0.188 (3.29)
Asian	0.042 (0.72)	0.003 (0.05)
Other race	0.313 (3.07)	0.364 (3.15)
White female	0.046 (1.83)	0.086 (2.96)
Judgments	0.051 (1.23)	0.119 (2.24)
Firm delinquent	0.022 (2.7)	0.057 (5.90)
Personally delinquent	0.076 (7.38)	0.077 (6.03)
Bankrupt past 3yrs	0.228 (3.99)	0.328 (4.74)
N	1,855	1,855
Pseudo R^2	.1905	.1721
Chi^2	336.0	363.3
Log likelihood	-714.1	-873.7

Source: NERA Credit Market Surveys, 1999-2007.

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. Indicator variables are also included for the various jurisdictions.

Table 6.31. Determinants of Interest Rates – Nine Jurisdictions

	(1)	(2)
African-American	1.683 (3.44)	1.491 (2.98)
Asian	1.221 (2.16)	0.789 (1.34)
Hispanic	0.820 (1.48)	0.895 (1.56)
Native American	1.241 (1.52)	1.008 (1.24)
Other race	-1.115 (0.63)	-1.072 (0.61)
White female	0.046 (0.16)	0.018 (0.06)
Judgments		0.537 (0.85)
Firm delinquent		-0.041 (0.36)
Personally delinquent		0.644 (3.65)
Bankrupt past 3yrs		1.184 (1.13)
Creditworthiness, Firm, and Owner Characteristics	No	Yes
Loan Characteristics	Yes	Yes
N	1,490	1,463
Adjusted R^2	.0831	.1046
F	11.4	11.05

Source: NERA Credit Market Surveys, 1999-2007.

Notes: Reported estimates are OLS regression models, T-statistics are in parentheses. Source: NERA Credit Market Surveys, 1999-2007. Five indicators for primary owner's education level, four indicators for legal form of organization, loan amount applied for, loan amount granted, and month and year of loan application. Seven additional indicators for jurisdiction are also included.

VII. M/WBE Utilization and Disparity in the City of Austin's Contracting and Procurement Markets

A. Introduction

The *Croson* decision and its progeny have held that statistical evidence of race-based or gender-based disparities in business enterprise activity is a requirement for any state or local entity that desires to establish or maintain race-conscious or gender-conscious requirements for M/WBE participation in contracting and procurement. Such evidence is also highly relevant to goal setting on federally funded contracts. Chapters V and VI documented the extent of disparity facing minority- and women- owned firms in the private sector of the local area economy, where contracting and procurement activity is generally *not* subject to such requirements. In this Chapter we examine whether there is statistical evidence of disparities in the contracting and procurement activities supported by the City of Austin.

To determine whether M/WBEs have been underutilized in the public sector we should ideally examine public expenditures that were *not* subject to affirmative action requirements. However, the City of Austin has a longstanding policy of pursuing affirmative action programs in contracting and procurement, as does USDOT in federally-assisted airport contracting.[189]

Given the history of the City of Austin's M/WBE and DBE policies, the City's own data may not show evidence of underutilization, even if such underutilization exists in the private sector of the Austin area economy. Instead, the City's data is most useful for examining the effectiveness of their M/WBE and DBE policies during the study period. On the other hand, of course, if actual utilization in City contracts still turns out to be significantly less than availability in any given industry or procurement category, then the City's data will still provide evidence of adverse impact.

The statistical evidence reported in Chapter III has already established from which specific industries the City buys the construction and construction-related services it requires as well as from which geographic area it draws the majority of its prime contractors and subcontractors. In addition, the statistical evidence reported in Chapter IV has established what percentage of all firms in the City's geographic and product markets are M/WBEs.

[189] See Chapter I, Section B, for a summary of the City of Austin's historical M/WBE and DBE policies.

This Chapter will document:

- To what extent the City of Austin has utilized M/WBEs in its contracting and subcontracting opportunities during the study period;
- Whether M/WBEs have been utilized by the City to the extent that they are available in the relevant marketplace.

We report this information for Construction, A&E, and for both of these procurement categories combined. All results are reported by race and sex as well as for all M/WBEs combined.

B. M/WBE Utilization

For this Study, we examined 1,702 prime contracts and 3,173 associated subcontracts covering a three and one-half year time period and with a total value of approximately $791.9 million.

NAICS codes, M/WBE status, and detailed race and sex status for the prime contractors and subcontractors included in the master contract/subcontract database were established through extensive computer-assisted cross-referencing of firms in our database with firms in (a) the City's own certification databases, (b) the master directory of M/WBEs assembled for this study, (c) Dun & Bradstreet's *Marketplace*, (d) company profiles drawn from American Business Information, Hoover's, Standard & Poors, and other sources, and (e) the results of our race/sex misclassification/non-classification surveys.

During the study period, we found that M/WBEs as a group earned 33.1 percent of all City contract and subcontract dollars in Construction and 26.0 percent of all contract and subcontract dollars in A&E. Altogether, M/WBEs earned 32.3 percent of all contract and subcontract dollars during the study period.

Table 7.1 details the key results of our analysis of M/WBE participation in City of Austin contracting, measured according to dollars awarded. For minority-owned M/WBEs (i.e. M/WBEs other than White women), utilization was 21.9 percent in Construction, 17.9 percent in A&E, and 21.4 percent overall. Firms owned by Hispanics earned the largest fraction of overall City contracting and subcontracting dollars awarded (17.1 percent), followed in descending order by firms owned by White women (10.9 percent), firms owned by African-Americans (2.9 percent), firms owned by Asians (1.1 percent), and firms owned by Native Americans (0.4 percent).

Table 7.2 details the key results for M/WBE participation in City of Austin contracting, measured according to dollars paid. For minority-owned M/WBEs utilization was 18.6 percent in Construction, 21.6 percent in A&E, and 19.6 percent overall. Firms owned by Hispanics earned the largest fraction of overall City contracting and subcontracting dollars paid (15.1 percent), followed in descending order by firms owned by White women (11.3 percent), firms owned by African-Americans (2.6 percent), firms owned by Asians (1.5 percent), and firms owned by Native Americans (0.5 percent).

Tables 7.3-7.6 provide utilization statistics by NAICS Industry Sub-Sector group (three-digit NAICS code) for each race and sex group in the Study, both for dollars awarded and dollars paid. Tables 7.8-7.10 provide similar utilization statistics by NAICS Industry Group (four-digit NAICS code).[190]

C. Disparity Analysis

We turn next to a comparison between our estimates of M/WBE utilization in the City of Austin's own contracting and subcontracting activities and our estimates of M/WBE availability in the City's geographic and product market area.

Table 7.11 presents the results of this comparison according to dollars awarded and Table 7.12 presents comparable statistics according to dollars paid.

The figures in the utilization column in both of these tables are the same as those from Tables 7.1 and 7.2, respectively and include both prime contract and subcontract dollars. The figures in the availability column are the same as those presented in Table 4.15.

The disparity index, in the final column of each table, is derived by dividing utilization by availability and multiplying the result by 100. A disparity index below 100 indicates that M/WBEs are participating in City contracting and subcontracting at a level that is less than their estimated availability in the relevant marketplace. A disparity index of 80 or lower is considered to be large. A disparity index is said to be adverse and statistically significant if it is less than or equal to 80 and unlikely to be caused by chance alone.

In Construction dollars awarded, statistically significant adverse disparities are observed for Asian-owned firms, Native American owned-firms, and White female-owned firms. In A&E dollars awarded, statistically significant adverse disparities are observed for Asian-owned firms, Native American owned-firms, and White female-owned firms. Statistically significant adverse disparities are also observed for the minority-owned and women-owned firms as a group.

In Construction dollars paid, statistically significant adverse disparities are observed for Asian-owned firms, Native American owned-firms, and White female-owned firms. In A&E dollars paid, statistically significant adverse disparities are observed for Native American owned-firms and White female-owned firms.

Tables 7.13 through 7.16 present disaggregated disparity results by NAICS Industry Sub-Sector, both for dollars awarded and dollars paid. In these disaggregated tables, adverse and statistically significant disparities are observed among all minority and sex groups and in a wide variety of industry categories.[191]

[190] Comparable statistics were calculated at the NAICS Industry level as well (five-digit and six-digit NAICS). In the interest of space, these results are not reported here. Four-digit NAICS codes are most comparable to four-digit Standard Industrial Classification (SIC) codes, which were used prior to the advent of the NAICS system.

[191] Disparity tests were also carried out at the NAICS Industry Group and NAICS Industry level, with similar results to those observed at the Industry Sub-Sector level. In the interest of space, these results are not reported here.

D. Current versus Expected Availability

Finally, Table 7.17 provides a comparison between current levels of M/WBE availability for the City of Austin and levels that we would expect to observe in a race- and gender-neutral marketplace. The latter, referred to as "expected availability," is derived by dividing the current availability figures, as documented in Table 4.15, by the disparity ratios documented in column (3) of Table 5.21. If no disparity is present in the relevant marketplace, the disparity ratio will be equal to 100 and expected availability will be equivalent to current availability. In cases where adverse disparities are present in the relevant marketplace, the disparity ratio will be less than 100 and, consequently, expected availability will exceed current availability. In every instance in the Austin area, expected M/WBE availability exceeds current M/WBE availability.[192]

[192] For additional discussion of expected availability see pp. 95-96 above and footnote 137.

E. Tables

Table 7.1. M/WBE Utilization (Awards)

M/WBE Type	Procurement Category		
	Construction (%)	**A&E** (%)	**Overall** (%)
African-American	2.74	3.65	2.85
Hispanic	17.73	11.95	17.05
Asian	0.95	2.26	1.10
Native American	0.46	0.07	0.41
Minority total	21.88	17.92	21.41
White females	11.23	8.11	10.86
M/WBE Total	33.11	26.03	32.27
Non-M/WBE Total	66.89	73.97	67.73
Total (%)	100.00	100.00	100.00
Total ($)	*698,091,025*	*93,833,289*	*791,924,314*

Source: NERA Master Contract/Subcontract Database.

Table 7.2. M/WBE Utilization (Payments)

M/WBE Type	Procurement Category		
	Construction (%)	**A&E** (%)	**Overall** (%)
African-American	2.20	5.48	2.58
Hispanic	14.81	16.98	15.06
Asian	1.11	4.53	1.50
Native American	0.52	0.07	0.46
Minority total	18.63	27.05	19.61
White females	11.19	12.34	11.33
M/WBE Total	29.83	39.39	30.93
Non-M/WBE Total	70.17	60.61	69.07
Total (%)	100.00	100.00	100.00
Total ($)	*572,995,049*	*74,790,289*	*647,785,337*

Source: NERA Master Contract/Subcontract Database.

Table 7.3. Construction—M/WBE Utilization (Awards) by Industry Sub-Sector (Percentages)

Industry Sub-Sector	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Heavy and Civil Engineering Construction (NAICS 237)	1.46	11.17	0.04	0.13	9.88	22.68	77.32
Construction of Buildings (NAICS 236)	0.00	17.14	0.23	0.00	2.17	19.54	80.46
Specialty Trade Contractors (NAICS 238)	2.78	34.12	1.45	1.01	28.85	68.20	31.80
Merchant Wholesalers, Durable Goods (NAICS 423)	8.71	10.66	3.88	0.43	15.46	39.15	60.85
Professional, Scientific, and Technical Services (NAICS 541)	4.51	41.93	1.21	0.00	6.70	54.34	45.66
Nonmetallic Mineral Product Manufacturing (NAICS 327)	0.00	41.82	0.00	0.00	2.45	44.27	55.73
Truck Transportation (NAICS 484)	44.95	40.52	6.43	0.00	3.74	95.64	4.36
Fabricated Metal Product Manufacturing (NAICS 332)	0.00	9.64	3.45	13.87	8.13	35.10	64.90
Waste Management and Remediation Services (NAICS 562)	0.12	13.44	0.30	0.00	7.49	21.34	78.66
Electronics and Appliance Stores (NAICS 443)	0.00	0.00	0.00	0.00	0.15	0.15	99.85
Administrative and Support Services (NAICS 561)	23.25	31.62	0.24	0.00	38.73	93.84	6.16
Primary Metal Manufacturing (NAICS 331)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Merchant Wholesalers, Nondurable Goods (NAICS 424)	2.15	0.00	38.22	0.00	34.81	75.18	24.82
Machinery Manufacturing (NAICS 333)	0.00	0.00	0.00	23.29	28.85	52.14	47.86
Building Material and Garden Equipment and Supplies Dealers (NAICS 444)	0.00	51.60	0.00	0.00	13.47	65.07	34.93
Repair and Maintenance (NAICS 811)	0.00	3.69	0.00	0.00	91.10	94.80	5.20

Industry Sub-Sector	African-American	Hispanic	Asian	Native Amer-ican	White female	M/WBE	Non-M/WBE
Rental and Leasing Services (NAICS 532)	0.00	1.85	1.55	0.00	0.00	3.40	96.60
CONSTRUCTION	*2.74*	*17.73*	*0.95*	*0.46*	*11.23*	*33.11*	*66.89*

Source: See Table 7.1.

Table 7.4. Construction—M/WBE Utilization (Payments) by Industry Group (Percentages)

Industry Sub-Sector	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Heavy and Civil Engineering Construction (NAICS 237)	1.38	9.44	0.00	0.11	8.90	19.84	80.16
Construction of Buildings (NAICS 236)	0.00	11.00	0.80	0.00	2.02	13.82	86.18
Specialty Trade Contractors (NAICS 238)	1.93	30.69	0.44	1.36	35.07	69.49	30.51
Merchant Wholesalers, Durable Goods (NAICS 423)	6.06	8.52	4.30	0.73	16.25	35.87	64.13
Professional, Scientific, and Technical Services (NAICS 541)	1.30	50.98	11.45	0.00	5.05	68.78	31.22
Truck Transportation (NAICS 484)	36.48	57.27	2.40	0.00	3.62	99.77	0.23
Electronics and Appliance Stores (NAICS 443)	0.00	0.00	0.00	0.00	0.15	0.15	99.85
Nonmetallic Mineral Product Manufacturing (NAICS 327)	0.00	16.69	0.00	0.00	7.98	24.67	75.33
Waste Management and Remediation Services (NAICS 562)	0.14	19.81	0.07	0.00	5.36	25.37	74.63
Fabricated Metal Product Manufacturing (NAICS 332)	0.00	14.06	4.09	16.46	7.81	42.42	57.58
Administrative and Support Services (NAICS 561)	30.85	42.14	0.06	0.00	22.84	95.90	4.10
Primary Metal Manufacturing (NAICS 331)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Machinery Manufacturing (NAICS 333)	0.00	0.00	0.00	15.74	75.90	91.65	8.35
Merchant Wholesalers, Nondurable Goods (NAICS 424)	2.52	0.00	30.32	0.00	35.07	67.91	32.09
Building Material and Garden Equipment and Supplies Dealers (NAICS 444)	0.00	36.77	0.00	0.00	21.97	58.75	41.25
Repair and Maintenance (NAICS 811)	0.00	1.38	0.00	0.00	97.84	99.22	0.78

Industry Sub-Sector	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
CONSTRUCTION	*2.20*	*14.81*	*1.11*	*0.52*	*11.19*	*29.83*	*70.17*

Source: See Table 7.2.

Table 7.5. A&E—M/WBE Utilization (Awards) by Industry Sub-Sector (Percentages)

Industry Sub-Sector	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Professional, Scientific, and Technical Services (NAICS 541)	2.96	12.56	2.81	0.07	9.44	27.83	72.17
Heavy and Civil Engineering Construction (NAICS 237)	1.49	0.05	0.10	0.00	0.35	1.99	98.01
Specialty Trade Contractors (NAICS 238)	0.76	4.25	0.00	0.38	0.33	5.73	94.27
Construction of Buildings (NAICS 236)	0.00	24.87	0.00	0.00	9.17	34.04	65.96
Truck Transportation (NAICS 484)	81.96	16.05	1.99	0.00	0.00	100.00	0.00
Nonmetallic Mineral Product Manufacturing (NAICS 327)	0.00	100.00	0.00	0.00	0.00	100.00	0.00
Merchant Wholesalers, Durable Goods (NAICS 423)	0.00	86.02	0.00	0.00	0.00	86.02	13.98
Administrative and Support Services (NAICS 561)	26.08	35.72	0.00	0.00	35.55	97.35	2.65
Waste Management and Remediation Services (NAICS 562)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Internet Service Providers, Web Search Portals, and Data Processing Services	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Computer and Electronic Product Manufacturing (NAICS 334)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Printing and Related Support Activities (NAICS 323)	0.00	10.52	0.00	0.00	89.48	100.00	0.00
A&E	*3.65*	*11.95*	*2.26*	*0.07*	*8.11*	*26.03*	*73.97*

Source: See Table 7.1.

Table 7.6. A&E—M/WBE Utilization (Payments) by Industry Group (Percentages)

Industry Sub-Sector	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Professional, Scientific, and Technical Services (NAICS 541)	5.32	17.13	5.92	0.09	14.60	43.06	56.94
Heavy and Civil Engineering Construction (NAICS 237)	1.50	0.05	0.50	0.00	4.82	6.87	93.13
Specialty Trade Contractors (NAICS 238)	0.00	9.41	0.00	0.00	0.48	9.88	90.12
Truck Transportation (NAICS 484)	36.43	62.61	0.96	0.00	0.00	100.00	0.00
Construction of Buildings (NAICS 236)	0.00	34.31	0.00	0.00	6.98	41.29	58.71
Administrative and Support Services (NAICS 561)	25.61	25.48	0.00	0.00	46.82	97.90	2.10
Nonmetallic Mineral Product Manufacturing (NAICS 327)	0.00	100.00	0.00	0.00	0.00	100.00	0.00
Waste Management and Remediation Services (NAICS 562)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Internet Service Providers, Web Search Portals, and Data Processing Services	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Computer and Electronic Product Manufacturing (NAICS 334)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Printing and Related Support Activities (NAICS 323)	0.00	0.00	0.00	0.00	100.00	100.00	0.00
Merchant Wholesalers, Durable Goods (NAICS 423)	0.00	83.48	0.00	0.00	0.00	83.48	16.52
A&E	*5.48*	*16.98*	*4.53*	*0.07*	*12.34*	*39.39*	*60.61*

Source: See Table 7.2.

Table 7.7. Construction—M/WBE Utilization (Awards) by Industry Group (Percentages)

Industry Group	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Utility System Construction (NAICS 2371)	0.00	13.72	0.00	0.20	7.57	21.48	78.52
Nonresidential Building Construction (NAICS 2362)	0.00	17.06	0.23	0.00	2.18	19.47	80.53
Highway, Street, and Bridge Construction (NAICS 2373)	1.24	9.60	0.00	0.01	21.68	32.53	67.47
Building Equipment Contractors (NAICS 2382)	2.50	15.35	1.30	0.41	43.69	63.26	36.74
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	3.47	60.28	2.02	0.47	13.02	79.27	20.73
Other Heavy and Civil Engineering Construction (NAICS 2379)	0.96	1.98	0.27	0.00	5.18	8.40	91.60
Machinery, Eqpmt & Supplies Wholesalers (NAICS 4238)	1.05	1.08	0.00	0.00	2.76	4.90	95.10
Cement and Concrete Product Manufacturing (NAICS 3273)	0.00	41.94	0.00	0.00	2.19	44.12	55.88
Architectural, Engineering, and Related Services (NAICS 5413)	1.38	51.19	1.59	0.00	7.77	61.94	38.06
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	10.75	7.81	0.00	0.00	56.06	74.62	25.38
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	29.71	24.81	19.16	0.01	0.43	74.12	25.88
General Freight Trucking (NAICS 4841)	44.95	40.52	6.43	0.00	3.74	95.64	4.36
Remediation and Other Waste Management Services (NAICS 5629)	0.12	13.44	0.30	0.00	7.49	21.34	78.66
Electronics and Appliance Stores (NAICS 4431)	0.00	0.00	0.00	0.00	0.15	0.15	99.85
Building Finishing Contractors (NAICS 2383)	2.16	8.53	0.00	11.16	31.53	53.39	46.61
Hardware, Plumbing Htg Eqpmt & Supplies Whlse (NAICS 4237)	0.00	24.83	0.00	4.24	10.15	39.23	60.77

Industry Group	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Other Specialty Trade Contractors (NAICS 2389)	0.78	39.83	0.00	0.00	5.25	45.87	54.13
Other Fabricated Metal Product Manufacturing (NAICS 3329)	0.00	15.50	0.00	0.00	14.21	29.71	70.29
Mgmt, Scientific, & Technical Consulting Services (NAICS 5416)	13.76	13.14	0.00	0.00	2.23	29.14	70.86
Architectural and Structural Metals Manufacturing (NAICS 3323)	0.00	1.82	8.13	32.66	0.00	42.61	57.39
Services to Buildings and Dwellings (NAICS 5617)	32.39	15.47	0.35	0.00	51.56	99.76	0.24
Land Subdivision (NAICS 2372)	100.00	0.00	0.00	0.00	0.00	100.00	0.00
Steel Product Manufacturing from Purchased Steel (NAICS 3312)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)	0.00	0.00	44.10	0.00	40.16	84.27	15.73
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	0.00	21.75	0.00	0.00	42.38	64.12	35.88
Profess. & Comm. Eqpmt. & Supplies Whlse (NAICS 4234)	0.00	0.51	0.06	0.00	2.25	2.82	97.18
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)	0.00	84.24	0.00	0.00	0.00	84.24	15.76
Commercial/Service Industry Machinery Manufacturing (NAICS 3333)	0.00	0.00	0.00	0.00	34.03	34.03	65.97
Comm./Industr. Machinery & Eqpmt (NAICS 8113)	0.00	0.65	0.00	0.00	93.95	94.61	5.39
Commercial/ Industrial Machinery/ Equipment Rental and Leasing (NAICS 5324)	0.00	1.85	1.55	0.00	0.00	3.40	96.60
Employment Services (NAICS 5613)	0.00	90.73	0.00	0.00	9.27	100.00	0.00
Investigation and Security Services (NAICS 5616)	0.00	71.06	0.00	0.00	0.00	71.06	28.94
Residential Building Construction (NAICS 2361)	0.00	47.30	0.00	0.00	0.00	47.30	52.70

Industry Group	African-American	Hispanic	Asian	Native Amer-ican	White female	M/WBE	Non-M/WBE
Other General Purpose Machinery Mfg (NAICS 3339)	0.00	0.00	0.00	72.47	21.85	94.32	5.68
CONSTRUCTION	*2.74*	*17.73*	*0.95*	*0.46*	*11.23*	*33.11*	*66.89*

Source: See Table 7.1.

Table 7.8. Construction—M/WBE Utilization (Payments) by Industry Group (Percentages)

Industry Group	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Utility System Construction (NAICS 2371)	0.00	12.53	0.00	0.18	7.24	19.95	80.05
Nonresidential Building Construction (NAICS 2362)	0.00	10.90	0.80	0.00	2.03	13.74	86.26
Highway, Street, and Bridge Construction (NAICS 2373)	0.77	6.08	0.00	0.00	18.67	25.53	74.47
Building Equipment Contractors (NAICS 2382)	1.92	14.55	0.79	0.93	50.95	69.14	30.86
Other Heavy and Civil Engineering Construction (NAICS 2379)	0.92	1.81	0.00	0.00	3.49	6.22	93.78
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	1.89	56.29	0.05	0.60	16.12	74.94	25.06
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	1.23	0.35	0.00	0.00	0.81	2.39	97.61
Architectural, Engineering, and Related Services (NAICS 5413)	1.06	63.00	15.94	0.00	6.41	86.40	13.60
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	4.00	4.27	0.00	0.00	69.03	77.30	22.70
General Freight Trucking (NAICS 4841)	36.48	57.27	2.40	0.00	3.62	99.77	0.23
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	22.84	24.44	21.35	0.02	0.56	69.21	30.79
Electronics and Appliance Stores (NAICS 4431)	0.00	0.00	0.00	0.00	0.15	0.15	99.85
Cement and Concrete Product Manufacturing (NAICS 3273)	0.00	16.74	0.00	0.00	7.74	24.48	75.52
Remediation and Other Waste Management Services (NAICS 5629)	0.14	19.81	0.07	0.00	5.36	25.37	74.63
Hardware, Plumbing Htg Eqpmt & Supplies Whlse (NAICS 4237)	0.00	22.26	0.00	7.36	3.18	32.80	67.20
Management, Scientific, and Technical Consulting Services (NAICS 5416)	0.92	17.22	0.00	0.00	0.53	18.67	81.33

Industry Group	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Other Fabricated Metal Product Manufacturing (NAICS 3329)	0.00	24.82	0.00	0.00	14.56	39.38	60.62
Building Finishing Contractors (NAICS 2383)	2.44	3.71	0.00	12.48	29.61	48.24	51.76
Architectural and Structural Metals Manufacturing (NAICS 3323)	0.00	1.62	8.90	35.79	0.00	46.31	53.69
Land Subdivision (NAICS 2372)	100.00	0.00	0.00	0.00	0.00	100.00	0.00
Other Specialty Trade Contractors (NAICS 2389)	1.93	24.03	0.00	0.00	13.28	39.24	60.76
Employment Services (NAICS 5613)	46.88	50.59	0.00	0.00	2.53	100.00	0.00
Services to Buildings and Dwellings (NAICS 5617)	24.41	25.92	0.16	0.00	48.78	99.28	0.72
Steel Product Manufacturing from Purchased Steel (NAICS 3312)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)	0.00	0.00	37.81	0.00	43.74	81.55	18.45
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	0.00	0.00	0.00	0.00	90.31	90.31	9.69
Professional & Comm. Eqpmt. and Supplies Merchant Wholesalers (NAICS 4324)	0.00	0.51	0.06	0.00	6.09	6.66	93.34
Investigation and Security Services (NAICS 5616)	0.00	72.44	0.00	0.00	0.00	72.44	27.56
Other Professional, Scientific, and Technical Services (NAICS 5419)	10.44	26.97	1.20	0.00	7.69	46.29	53.71
Residential Building Construction (NAICS 2361)	0.00	38.11	0.00	0.00	0.00	38.11	61.89
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)	0.00	88.03	0.00	0.00	0.00	88.03	11.97
Commercial and Industrial Machinery and Equipment (except Automotive and Electron) (NAICS 8113)	0.00	0.92	0.00	0.00	98.66	99.58	0.42
Other General Purpose Machinery Manufacturing (NAICS 3339)	0.00	0.00	0.00	74.85	22.43	97.28	2.72

Industry Group	African-American	Hispanic	Asian	Native Amer-ican	White female	M/WBE	Non-M/WBE
CONSTRUCTION	*2.20*	*14.81*	*1.11*	*0.52*	*11.19*	*29.83*	*70.17*

Source: See Table 7.2.

Table 7.9. A&E—M/WBE Utilization (Awards) by Industry Group (Percentages)

Industry Group	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Architectural, Engineering, and Related Services (NAICS 5413)	2.31	13.37	2.68	0.07	6.46	24.90	75.10
Utility System Construction (NAICS 2371)	0.00	0.06	0.12	0.00	0.00	0.18	99.82
Management, Scientific, and Technical Consulting Services (NAICS 5416)	1.52	3.38	0.00	0.00	57.53	62.43	37.57
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	0.97	5.00	0.00	0.00	0.00	5.97	94.03
Nonresidential Building Construction (NAICS 2362)	0.00	24.87	0.00	0.00	9.17	34.04	65.96
General Freight Trucking (NAICS 4841)	81.96	16.05	1.99	0.00	0.00	100.00	0.00
Other Heavy and Civil Engineering Construction (NAICS 2379)	0.00	0.00	0.00	0.00	1.18	1.18	98.82
Building Equipment Contractors (NAICS 2382)	0.00	0.59	0.00	1.78	1.55	3.91	96.09
Highway, Street, and Bridge Construction (NAICS 2373)	0.00	0.00	0.00	0.00	4.33	4.33	95.67
Cement and Concrete Product Manufacturing (NAICS 3273)	0.00	100.00	0.00	0.00	0.00	100.00	0.00
Advertising and Related Services (NAICS 5418)	95.96	0.00	0.00	0.00	0.23	96.20	3.80
Computer Systems Design and Related Services (NAICS 5415)	0.00	3.26	57.41	0.00	0.00	60.67	39.33
Scientific Research and Development Services (NAICS 5417)	0.00	0.00	0.00	0.00	11.63	11.63	88.37
Services to Buildings and Dwellings (NAICS 5617)	34.38	28.78	0.00	0.00	35.86	99.03	0.97
Remediation and Other Waste Management Services (NAICS 5629)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Data Processing, Hosting, and Related Services (NAICS 5182)	0.00	0.00	0.00	0.00	0.00	0.00	100.00

Industry Group	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	0.00	95.47	0.00	0.00	0.00	95.47	4.53
Navig, Measur., Electro-medical, and Control Instruments Mfg (NAICS 3345)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Printing and Related Support Activities (NAICS 3231)	0.00	10.52	0.00	0.00	89.48	100.00	0.00
Other Professional, Scientific, and Technical Services (NAICS 5419)	61.42	13.45	0.00	0.00	23.70	98.57	1.43
Land Subdivision (NAICS 2372)	100.00	0.00	0.00	0.00	0.00	100.00	0.00
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	0.00	88.85	0.00	0.00	0.00	88.85	11.15
A&E	*3.65*	*11.95*	*2.26*	*0.07*	*8.11*	*26.03*	*73.97*

Source: See Table 7.1.

Table 7.10. A&E—M/WBE Utilization (Payments) by Industry Group (Percentages)

Industry Group	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Architectural, Engineering, and Related Services (NAICS 5413)	3.13	18.92	6.33	0.10	11.78	40.26	59.74
Utility System Construction (NAICS 2371)	0.00	0.07	0.68	0.00	0.00	0.76	99.24
Management, Scientific, and Technical Consulting Services (NAICS 5416)	2.13	3.26	0.00	0.00	59.01	64.39	35.61
General Freight Trucking (NAICS 4841)	36.43	62.61	0.96	0.00	0.00	100.00	0.00
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	0.00	13.38	0.00	0.00	0.00	13.38	86.62
Nonresidential Building Construction (NAICS 2362)	0.00	34.31	0.00	0.00	6.98	41.29	58.71
Highway, Street, and Bridge Construction (NAICS 2373)	0.00	0.00	0.00	0.00	17.82	17.82	82.18
Other Heavy and Civil Engineering Construction (NAICS 2379)	0.00	0.00	0.00	0.00	21.11	21.11	78.89
Advertising and Related Services (NAICS 5418)	99.14	0.00	0.00	0.00	0.11	99.25	0.75
Building Equipment Contractors (NAICS 2382)	0.00	0.02	0.00	0.00	1.56	1.57	98.43
Scientific Research and Development Services (NAICS 5417)	0.00	0.00	0.00	0.00	6.57	6.57	93.43
Services to Buildings and Dwellings (NAICS 5617)	31.18	17.21	0.00	0.00	50.88	99.26	0.74
Cement and Concrete Product Manufacturing (NAICS 3273)	0.00	100.00	0.00	0.00	0.00	100.00	0.00
Other Professional, Scientific, and Technical Services (NAICS 5419)	83.38	6.67	0.00	0.00	9.40	99.45	0.55
Computer Systems Design and Related Services (NAICS 5415)	0.00	4.10	46.48	0.00	0.00	50.58	49.42
Remediation and Other Waste Management Services (NAICS 5629)	0.00	0.00	0.00	0.00	0.00	0.00	100.00

Industry Group	African-American	Hispanic	Asian	Native American	White female	M/WBE	Non-M/WBE
Data Processing, Hosting, and Related Services (NAICS 5182)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Navig., Meas., Electro-medical, & Control Instruments Mfg (NAICS 3345)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Printing and Related Support Activities (NAICS 3231)	0.00	0.00	0.00	0.00	100.00	100.00	0.00
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	0.00	96.09	0.00	0.00	0.00	96.09	3.91
Land Subdivision (NAICS 2372)	100.00	0.00	0.00	0.00	0.00	100.00	0.00
A&E	*5.48*	*16.98*	*4.53*	*0.07*	*12.34*	*39.39*	*60.61*

Source: See Table 7.2.

Table 7.11. Aggregate Disparity Results (Awards)

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
All Procurement				
African-American:	2.85	1.77		
Hispanic	17.05	9.59		
Asian	1.10	1.98	55.8	***
Native American	0.41	0.97	42.3	***
Minority total	21.41	14.31		
White female	10.86	14.24	76.3	***
M/WBE total	32.27	28.55		
Construction				
African-American:	2.74	1.74		
Hispanic	17.73	9.81		
Asian	0.95	1.20	79.3	***
Native American	0.46	1.11	41.3	***
Minority total	21.88	13.85		
White female	11.23	13.80	81.4	***
M/WBE total	33.11	27.64		
A&E				
African-American:	3.65	1.86		
Hispanic	11.95	8.90		
Asian	2.26	4.46	50.7	***
Native American	0.07	0.55	12.6	***
Minority total	17.92	15.77		
White female	8.11	15.70	51.6	***
M/WBE total	26.03	31.47	82.7	***

Source: Calculations from NERA Master Contract/Subcontract Database and NERA Baseline Business Universe.

Notes: (1) "*" indicates an adverse disparity that is statistically significant at the 10% level or better (90% confidence). "**" indicates the disparity is significant at a 5% level or better (95% confidence). "***" indicates significance at a 1% level or better (99% confidence). An empty cell in the Disparity Index column indicates that no adverse disparity was observed for that category.

Table 7.12. Aggregate Disparity Results (Payments)

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
All Procurement				
African-American:	2.58	1.81		
Hispanic	15.06	9.52		
Asian	1.50	1.87	80.5	***
Native American	0.46	0.99	47.1	***
Minority total	19.61	14.18		
White female	11.33	14.27	79.4	***
M/WBE total	30.93	28.45		
Construction				
African-American:	2.20	1.75		
Hispanic	14.81	9.64		
Asian	1.11	1.20	92.4	***
Native American	0.52	1.11	46.7	***
Minority total	18.63	13.7		
White female	11.19	13.85	80.8	***
M/WBE total	29.83	27.54		
A&E				
African-American:	5.48	2.02		
Hispanic	16.98	9.09		
Asian	4.53	4.24		
Native American	0.07	0.56	11.8	***
Minority total	27.05	15.91		
White female	12.34	15.88	77.7	***
M/WBE total	39.39	31.79		

Source: Calculations from NERA Master Contract/Subcontract Database and NERA Baseline Business Universe.

Notes: (1) "*" indicates an adverse disparity that is statistically significant at the 10% level or better (90% confidence). "**" indicates the disparity is significant at a 5% level or better (95% confidence). "***" indicates significance at a 1% level or better (99% confidence). An empty cell in the Disparity Index column indicates that no adverse disparity was observed for that category.

Table 7.13. Industry Sub-Sector Disparity Results for Construction Contracting (Awards)

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
Heavy and Civil Engineering Construction (NAICS 237)				
African-American	1.46	4.02	36.32	***
Hispanic	11.17	10.39		
Asian	0.04	0.58	6.44	***
Native	0.13	0.75	17.95	***
Minority-owned	12.8	15.74	81.35	***
White female	9.88	19.3	51.22	***
M/WBE total	22.68	35.03	64.75	***
Construction of Buildings (NAICS 236)				
African-American	0.00	1.71	0.00	***
Hispanic	17.14	10.00		
Asian	0.23	1.51	15.04	***
Native	0.00	1.54	0.00	***
Minority-owned	17.37	14.76	.	
White female	2.17	16.71	12.99	***
M/WBE total	19.54	31.47	62.09	***
Specialty Trade Contractors (NAICS 238)				
African-American	2.78	2.27		
Hispanic	34.12	20.53		
Asian	1.45	0.94		
Native	1.01	2.22	45.46	***
Minority-owned	39.36	25.95		
White female	28.85	17.05		
M/WBE total	68.20	43.00		
Merchant Wholesalers, Durable Goods (NAICS 423)				
African-American	8.71	1.11		
Hispanic	10.66	7.99		
Asian	3.88	5.22	74.34	***
Native	0.43	0.60	71.26	***
Minority-owned	23.69	14.91		
White female	15.46	24.76	62.45	***
M/WBE total	39.15	39.67	98.68	
Professional, Scientific, and Technical Services (NAICS 541)				
African-American	4.51	2.20		
Hispanic	41.93	10.51		
Asian	1.21	3.55	34.22	***
Native	0.00	0.56	0.00	***
Minority-owned	47.65	16.82		
White female	6.70	29.72	22.53	***
M/WBE total	54.34	46.55		
Nonmetallic Mineral Product Manufacturing (NAICS 327)				
African-American	0.00	0.00		
Hispanic	41.82	10.96		
Asian	0.00	0.57	0.00	***

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
Native	0.00	0.57	0.00	***
Minority-owned	41.82	12.10		
White female	2.45	0.54		
M/WBE total	44.27	12.64		
Truck Transportation (NAICS 484)				
African-American	44.95	18.21		
Hispanic	40.52	32.64		
Asian	6.43	1.64		
Native	0.00	1.70	0.00	***
Minority-owned	91.90	54.19		
White female	3.74	20.75	18.01	***
M/WBE total	95.64	74.94		
Fabricated Metal Product Manufacturing (NAICS 332)				
African-American	0.00	0.00		
Hispanic	9.64	13.45	71.70	**
Asian	3.45	4.96	69.60	**
Native	13.87	4.38		
Minority-owned	26.97	22.79		
White female	8.13	4.17		
M/WBE total	35.1	26.96		
Waste Management and Remediation Services (NAICS 562)				
African-American	0.12	0.63	18.67	***
Hispanic	13.44	4.29		
Asian	0.30	0.79	37.45	***
Native	0.00	1.68	0.00	***
Minority-owned	13.85	7.38		
White female	7.49	88.34	8.48	***
M/WBE total	21.34	95.72	22.30	***
Electronics and Appliance Stores (NAICS 443)				
African-American	0.00	11.84	0.00	*
Hispanic	0.00	19.84	0.00	*
Asian	0.00	1.73	0.00	
Native	0.00	0.55	0.00	
Minority-owned	0.00	33.96	0.00	**
White female	0.15	6.09	2.43	
M/WBE total	0.15	40.04	0.37	**
Administrative and Support Services (NAICS 561)				
African-American	23.25	6.22		
Hispanic	31.62	14.49		
Asian	0.24	1.23	19.29	***
Native	0.00	1.03	0.00	***
Minority-owned	55.11	22.98		
White female	38.73	22.20		
M/WBE total	93.84	45.18		
Primary Metal Manufacturing (NAICS 331)				

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
African-American	0.00	1.07	0.00	***
Hispanic	0.00	4.30	0.00	***
Asian	0.00	0.62	0.00	***
Native	0.00	0.62	0.00	***
Minority-owned	0.00	6.61	0.00	***
White female	0.00	7.77	0.00	***
M/WBE total	0.00	14.38	0.00	***
Merchant Wholesalers, Nondurable Goods (NAICS 424)				
African-American	2.15	1.97		
Hispanic	0.00	8.03	0.00	***
Asian	38.22	3.50		
Native	0.00	1.57	0.00	***
Minority-owned	40.37	15.07		
White female	34.81	20.44		
M/WBE total	75.18	35.51		
Machinery Manufacturing (NAICS 333)				
African-American	0.00	1.9	0.00	**
Hispanic	0.00	8.35	0.00	**
Asian	0.00	1.10	0.00	**
Native	23.29	1.17		
Minority-owned	23.29	12.52		
White female	28.85	17.68		
M/WBE total	52.14	30.20		
Building Material and Garden Equipment and Supplies Dealers (NAICS 444)				
African-American	0.00	1.86	0.00	***
Hispanic	51.6	10.62		
Asian	0.00	0.99	0.00	***
Native	0.00	2.93	0.00	***
Minority-owned	51.60	16.41		
White female	13.47	32.39	41.58	***
M/WBE total	65.07	48.8		
Repair and Maintenance (NAICS 811)				
African-American	0.00	1.73	0.00	***
Hispanic	3.69	16.13	22.90	***
Asian	0.00	3.13	0.00	***
Native	0.00	1.51	0.00	***
Minority-owned	3.69	22.51	16.41	***
White female	91.10	18.34		
M/WBE total	94.8	40.84		
Rental and Leasing Services (NAICS 532)				
African-American	0.00	1.41	0.00	***
Hispanic	1.85	5.66	32.69	***
Asian	1.55	0.81		
Native	0.00	0.81	0.00	***
Minority-owned	3.40	8.69	39.15	***
White female	0.00	10.21	0.00	***

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
M/WBE total	3.40	18.90	18.00	***

Source and Notes: See Table 7.11.

Table 7.14. Industry Sub-Sector Disparity Results for Construction Contracting (Payments)

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
Heavy and Civil Engineering Construction (NAICS 237)				
African-American	1.38	4.19	33.01	***
Hispanic	9.44	10.57	89.38	***
Asian	0.00	0.60	0.00	***
Native	0.11	0.76	14.76	***
Minority-owned	10.94	16.12	67.85	***
White female	8.90	19.30	46.13	***
M/WBE total	19.84	35.43	56.02	***
Construction of Buildings (NAICS 236)				
African-American	0.00	1.88	0.00	***
Hispanic	11.00	9.86		
Asian	0.80	1.46	54.74	***
Native	0.00	1.67	0.00	***
Minority-owned	11.80	14.88	79.30	***
White female	2.02	16.49	12.27	***
M/WBE total	13.82	31.37	44.06	***
Specialty Trade Contractors (NAICS 238)				
African-American	1.93	2.27	85.30	***
Hispanic	30.69	20.49		
Asian	0.44	0.94	46.44	***
Native	1.36	2.22	60.97	***
Minority-owned	34.42	25.92		
White female	35.07	17.15		
M/WBE total	69.49	43.07		
Merchant Wholesalers, Durable Goods (NAICS 423)				
African-American	6.06	1.33		
Hispanic	8.52	7.88		
Asian	4.30	5.41	79.50	**
Native	0.73	0.60		
Minority-owned	19.62	15.22		
White female	16.25	25.18	64.55	**
M/WBE total	35.87	40.40	88.79	**
Professional, Scientific, and Technical Services (NAICS 541)				
African-American	1.30	2.07	62.96	***
Hispanic	50.98	10.56		
Asian	11.45	3.14		
Native	0.00	0.54	0.00	***
Minority-owned	63.73	16.30		
White female	5.05	29.20	17.29	***
M/WBE total	68.78	45.50		
Truck Transportation (NAICS 484)				
African-American	36.48	18.21		
Hispanic	57.27	32.64		
Asian	2.40	1.64		

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
Native	0.00	1.70	0.00	***
Minority-owned	96.15	54.19		
White female	3.62	20.75	17.46	***
M/WBE total	99.77	74.94		
Electronics and Appliance Stores (NAICS 443)				
African-American	0.00	11.84	0.00	*
Hispanic	0.00	19.84	0.00	*
Asian	0.00	1.73	0.00	
Native	0.00	0.55	0.00	
Minority-owned	0.00	33.96	0.00	**
White female	0.15	6.09	2.42	
M/WBE total	0.15	40.04	0.37	**
Nonmetallic Mineral Product Manufacturing (NAICS 327)				
African-American	0.00	0.00		
Hispanic	16.69	9.11		
Asian	0.00	0.47	0.00	***
Native	0.00	0.47	0.00	***
Minority-owned	16.69	10.06		
White female	7.98	0.45		
M/WBE total	24.67	10.51		
Waste Management and Remediation Services (NAICS 562)				
African-American	0.14	0.66	20.66	***
Hispanic	19.81	4.49		
Asian	0.07	0.80	9.06	***
Native	0.00	1.67	0.00	***
Minority-owned	20.02	7.63		
White female	5.36	86.08	6.22	***
M/WBE total	25.37	93.70	27.08	***
Fabricated Metal Product Manufacturing (NAICS 332)				
African-American	0.00	0.00		
Hispanic	14.06	13.02		
Asian	4.09	6.24	65.61	**
Native	16.46	5.31		
Minority-owned	34.61	24.57		
White female	7.81	5.06		
M/WBE total	42.42	29.63		
Administrative and Support Services (NAICS 561)				
African-American	30.85	5.25		
Hispanic	42.14	13.46		
Asian	0.06	1.45	4.49	***
Native	0.00	1.06	0.00	***
Minority-owned	73.06	21.22		
White female	22.84	22.41		
M/WBE total	95.90	43.63		
Primary Metal Manufacturing (NAICS 331)				

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
African-American	0.00	1.07	0.00	**
Hispanic	0.00	4.30	0.00	**
Asian	0.00	0.62	0.00	**
Native	0.00	0.62	0.00	**
Minority-owned	0.00	6.61	0.00	**
White female	0.00	7.77	0.00	**
M/WBE total	0.00	14.38	0.00	**
Machinery Manufacturing (NAICS 333)				
African-American	0.00	1.92	0.00	**
Hispanic	0.00	8.09	0.00	**
Asian	0.00	1.10	0.00	**
Native	15.74	1.13		
Minority-owned	15.74	12.24		
White female	75.90	18.22		
M/WBE total	91.65	30.46		
Merchant Wholesalers, Nondurable Goods (NAICS 424)				
African-American	2.52	1.97		
Hispanic	0.00	8.03	0.00	***
Asian	30.32	3.50		
Native	0.00	1.57	0.00	***
Minority-owned	32.84	15.07		
White female	35.07	20.44		
M/WBE total	67.91	35.51		
Building Material and Garden Equipment and Supplies Dealers (NAICS 444)				
African-American	0.00	1.86	0.00	***
Hispanic	36.77	10.62		
Asian	0.00	0.99	0.00	***
Native	0.00	2.93	0.00	***
Minority-owned	36.77	16.41		
White female	21.97	32.39	67.85	***
M/WBE total	58.75	48.80		
Repair and Maintenance (NAICS 811)				
African-American	0.00	1.73	0.00	**
Hispanic	1.38	16.13	8.56	**
Asian	0.00	3.13	0.00	**
Native	0.00	1.51	0.00	**
Minority-owned	1.38	22.51	6.14	**
White female	97.84	18.34		
M/WBE total	99.22	40.84		

Source and Notes: See Table 7.12.

Table 7.15. Industry Sub-Sector Disparity Results for A&E Contracting (Awards)

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
Professional, Scientific, and Technical Services (NAICS 541)				
African-American	2.96	2.44		
Hispanic	12.56	10.98		
Asian	2.81	5.85	48.04	***
Native	0.07	0.65	10.27	***
Minority-owned	18.40	19.92	92.34	
White female	9.44	24.12	39.12	***
M/WBE total	27.83	44.05	63.20	***
Heavy and Civil Engineering Construction (NAICS 237)				
African-American	1.49	3.64	40.98	
Hispanic	0.05	8.60	0.57	
Asian	0.10	0.21	49.12	
Native	0.00	0.52	0.00	
Minority-owned	1.64	12.97	12.68	
White female	0.35	19.63	1.78	*
M/WBE total	1.99	32.60	6.11	**
Specialty Trade Contractors (NAICS 238)				
African-American	0.76	2.55	29.72	
Hispanic	4.25	27.49	15.47	**
Asian	0.00	1.16	0.00	*
Native	0.38	1.89	20.26	
Minority-owned	5.39	33.08	16.30	**
White female	0.33	17.26	1.93	**
M/WBE total	5.73	50.35	11.37	**
Construction of Buildings (NAICS 236)				
African-American	0.00	1.57	0.00	***
Hispanic	24.87	10.14		
Asian	0.00	1.53	0.00	***
Native	0.00	1.42	0.00	***
Minority-owned	24.87	14.65		
White female	9.17	16.80	54.60	***
M/WBE total	34.04	31.45		
Truck Transportation (NAICS 484)				
African-American	81.96	18.21		
Hispanic	16.05	32.67	49.14	
Asian	1.99	1.61		
Native	0.00	1.70	0.00	*
Minority-owned	100.00	54.20		
White female	0.00	20.60	0.00	**
M/WBE total	100.00	74.80		
Nonmetallic Mineral Product Manufacturing (NAICS 327)				
African-American	0.00	0.00		
Hispanic	100.00	12.87		
Asian	0.00	0.66	0.00	

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
Native	0.00	0.67	0.00	
Minority-owned	100.00	14.20		
White female	0.00	0.63	0.00	
M/WBE total	100.00	14.83		
Merchant Wholesalers, Durable Goods (NAICS 423)				
African-American	0.00	0.40	0.00	**
Hispanic	86.02	13.33		
Asian	0.00	4.78	0.00	**
Native	0.00	0.63	0.00	**
Minority-owned	86.02	19.14		
White female	0.00	18.19	0.00	**
M/WBE total	86.02	37.33		
Administrative and Support Services (NAICS 561)				
African-American	26.08	5.86		
Hispanic	35.72	14.83		
Asian	0.00	0.82	0.00	***
Native	0.00	0.91	0.00	***
Minority-owned	61.80	22.43		
White female	35.55	20.92		
M/WBE total	97.35	43.34		
Waste Management and Remediation Services (NAICS 562)				
African-American	0.00	0.00		
Hispanic	0.00	1.84	0.00	
Asian	0.00	0.62	0.00	
Native	0.00	1.91	0.00	
Minority-owned	0.00	4.37	0.00	
White female	0.00	125.41	0.00	
M/WBE total	0.00	129.78	0.00	
Internet Service Providers, Web Search Portals, and Data Processing Services (NAICS 518)				
African-American	0.00	4.62	0.00	
Hispanic	0.00	9.95	0.00	
Asian	0.00	1.02	0.00	
Native	0.00	0.97	0.00	
Minority-owned	0.00	16.56	0.00	
White female	0.00	36.32	0.00	
M/WBE total	0.00	52.88	0.00	**
Computer and Electronic Product Manufacturing (NAICS 334)				
African-American	0.00	1.83	0.00	
Hispanic	0.00	7.32	0.00	
Asian	0.00	1.03	0.00	
Native	0.00	8.87	0.00	
Minority-owned	0.00	19.05	0.00	
White female	0.00	20.50	0.00	
M/WBE total	0.00	39.54	0.00	**
Printing and Related Support Activities (NAICS 323)				

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
African-American	0.00	1.55	0.00	***
Hispanic	10.52	6.54		
Asian	0.00	1.62	0.00	***
Native	0.00	1.00	0.00	***
Minority-owned	10.52	10.71	98.22	
White female	89.48	37.28		
M/WBE total	100.00	47.99		

Source and Notes: See Table 7.11.

Table 7.16. Industry Sub-Sector Disparity Results for A&E Contracting (Payments)

Procurement Category / M/WBE Type	Utilization	Availability	Disparity Index	
Professional, Scientific, and Technical Services (NAICS 541)				
African-American	5.32	2.46		
Hispanic	17.13	10.85		
Asian	5.92	5.51		
Native	0.09	0.64	13.82	***
Minority-owned	28.46	19.47		
White female	14.60	25.72	56.78	***
M/WBE total	43.06	45.19	95.29	***
Heavy and Civil Engineering Construction (NAICS 237)				
African-American	1.50	3.66	40.94	
Hispanic	0.05	9.76	0.53	**
Asian	0.50	0.47		
Native	0.00	0.68	0.00	*
Minority-owned	2.05	14.57	14.08	*
White female	4.82	19.22	25.09	*
M/WBE total	6.87	33.79	20.34	**
Specialty Trade Contractors (NAICS 238)				
African-American	0.00	2.48	0.00	***
Hispanic	9.41	25.95	36.26	***
Asian	0.00	1.13	0.00	***
Native	0.00	2.01	0.00	***
Minority-owned	9.41	31.56	29.81	***
White female	0.48	17.19	2.77	***
M/WBE total	9.88	48.75	20.28	***
Truck Transportation (NAICS 484)				
African-American	36.43	18.21		
Hispanic	62.61	32.67		
Asian	0.96	1.61	59.39	
Native	0.00	1.70	0.00	**
Minority-owned	100.00	54.20		
White female	0.00	20.60	0.00	**
M/WBE total	100.00	74.80		
Construction of Buildings (NAICS 236)				
African-American	0.00	1.57	0.00	***
Hispanic	34.31	10.14		
Asian	0.00	1.53	0.00	***
Native	0.00	1.42	0.00	***
Minority-owned	34.31	14.65		
White female	6.98	16.80	41.54	***
M/WBE total	41.29	31.45		
Administrative and Support Services (NAICS 561)				
African-American	25.61	5.86		
Hispanic	25.48	14.83		
Asian	0.00	0.82	0.00	***

Native	0.00	0.91	0.00	***
Minority-owned	51.09	22.43		
White female	46.82	20.92		
M/WBE total	97.90	43.34		
Nonmetallic Mineral Product Manufacturing (NAICS 327)				
African-American	0.00	0.00		
Hispanic	100.00	12.87		
Asian	0.00	0.66	0.00	
Native	0.00	0.67	0.00	
Minority-owned	100.00	14.20		
White female	0.00	0.63	0.00	
M/WBE total	100.00	14.83		
Waste Management and Remediation Services (NAICS 562)				
African-American	0.00	0.00		
Hispanic	0.00	1.84	0.00	
Asian	0.00	0.62	0.00	
Native	0.00	1.91	0.00	
Minority-owned	0.00	4.37	0.00	
White female	0.00	125.41	0.00	
M/WBE total	0.00	129.78	0.00	
Internet Service Providers, Web Search Portals, and Data Processing Services (NAICS 518)				
African-American	0.00	4.62	0.00	
Hispanic	0.00	9.95	0.00	
Asian	0.00	1.02	0.00	
Native	0.00	0.97	0.00	
Minority-owned	0.00	16.56	0.00	
White female	0.00	36.32	0.00	
M/WBE total	0.00	52.88	0.00	**
Computer and Electronic Product Manufacturing (NAICS 334)				
African-American	0.00	1.83	0.00	
Hispanic	0.00	7.32	0.00	
Asian	0.00	1.03	0.00	
Native	0.00	8.87	0.00	
Minority-owned	0.00	19.05	0.00	
White female	0.00	20.50	0.00	
M/WBE total	0.00	39.54	0.00	*
Printing and Related Support Activities (NAICS 323)				
African-American	0.00	1.55	0.00	*
Hispanic	0.00	6.54	0.00	*
Asian	0.00	1.62	0.00	*
Native	0.00	1.00	0.00	*
Minority-owned	0.00	10.71	0.00	**
White female	100.00	37.28		
M/WBE total	100.00	47.99		
Merchant Wholesalers, Durable Goods (NAICS 423)				
African-American	0.00	0.39	0.00	**
Hispanic	83.48	15.12		
Asian	0.00	4.64	0.00	**

Native	0.00	0.49	0.00	**
Minority-owned	83.48	20.64		
White female	0.00	17.44	0.00	**
M/WBE total	83.48	38.08		

Source and Notes: See Table 7.12.

Table 7.17. Current Availability and Expected Availability

Procurement Category / M//WBE Type	Current Availability	Expected Availability
All Procurement		
African-American:	1.79	2.77
Hispanic	9.56	16.29
Asian	1.92	2.50
Native American	0.98	1.17
Minority total	14.25	22.73
White female	14.25	29.50
M/WBE total	28.50	49.83
Construction		
African-American:	1.74	2.69
Hispanic	9.73	16.58
Asian	1.20	1.56
Native American	1.11	1.32
Minority total	13.77	22.15
White female	13.82	28.61
M/WBE total	27.59	48.23
A&E		
African-American:	1.94	3.00
Hispanic	8.99	15.32
Asian	4.35	5.66
Native American	0.56	0.67
Minority total	15.84	24.65
White female	15.79	32.69
M/WBE total	31.63	55.30

Source: See Tables 4.15. and 5.21.

VIII. Anecdotal Evidence of Disparities in the City of Austin's Marketplace

We have presented a variety of economic and statistical findings above that are consistent with and indicative of the presence of business discrimination against minorities and women in the geographic and product markets that are relevant to the City of Austin's contracting and procurement activities. Chapters V and VI in particular have documented large and statistically significant adverse disparities in the City's relevant markets impacting minority and female entrepreneurs. Commercial loan denial rates are higher, the cost of credit is higher, business formation rates are lower, and business owner earnings are lower — even when comparisons are restricted to similarly situated businesses and business owners.

In addition to the statistical evidence of disparities in the Austin marketplace for construction and construction-related professional services contracts, we gathered anecdotal evidence of the experiences of businesses and business owners in that marketplace. As discussed in Chapter II, anecdotal evidence of experiences with discrimination in contracting opportunities is relevant to whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes.[193] While anecdotal evidence is insufficient standing alone,[194] "[p]ersonal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a [government's] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative."[195] "[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."[196]

Therefore, as a further check on our economic and statistical findings, we investigated anecdotal evidence of disparities in Austin's marketplace. First, we conducted a large scale survey of business establishments in these markets — both M/WBE and non-M/WBE — and asked owners directly about their experiences, if any, with contemporary business-related acts of discrimination. We find that M/WBEs in Austin's markets report suffering business-related discrimination in large numbers and with statistically significantly greater frequency than non-M/WBEs. These differences frequently remain statistically significant when firm size and 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 and 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. Additionally, we find that M/WBE firms that have been hired in the past by non-M/WBE prime contractors to work on public sector contracts with

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

[194] *Engineering Contractors I*, 943 F.Supp. at 1580 (anecdotal evidence cannot cure weaknesses in statistical evidence).

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

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

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, even more tellingly, the relative lack of solicitation of M/WBEs in the absence of affirmative efforts by the City of Austin and other public agencies in Central Texas shows that business discrimination continues to fetter M/WBE business opportunities in Austin's relevant markets. We conclude that the statistical evidence presented in this report is consistent with these anecdotal accounts of contemporary business discrimination.

Additionally, Colette Holt & Associates conducted six sessions of interviews with groups of minority, women, and majority business owners about their experiences in seeking and performing contracts in Austin's marketplace. A session was also held with the City's MBE/WBE and SBE Advisory Committee). These interview sessions confirmed the results of the statistical evidence and the mail surveys: they identified experiences with discrimination and with City contracting.[197] The results are summarized below in Section B.

The remainder of this Chapter is organized as follows. We first discuss the mail survey results in Section A. In Section A.1, we discuss the survey questionnaire, sample frame, and response rate. Section A.2 presents evidence on willingness of firms to do business with the public sector. Section A.3 presents the key findings from the M/WBE and non-M/WBE respondents concerning disparate treatment. Section A.4 documents disparities in firm experience and size among M/WBE and non-M/WBE respondents. Section A.5 presents the key findings concerning the impact of the regular business environment on M/WBEs' ability to conduct their businesses. Section A.6 presents key findings to our questions concerning whether prime contractors solicit or hire M/WBEs for work on public or private contracts without M/WBE goals. Section A.7 then examines whether M/WBEs and non-M/WBEs that responded to the mail surveys are representative of all M/WBEs and non-M/WBEs in the relevant markets. To do so, we surveyed a random sample of M/WBEs and non-M/WBEs that did not respond to our mail survey, and then compared their responses to key questions with those of our survey respondents.

Finally, Section B describes the results of the business experience group interviews. Responses are grouped under the headings of the most common cited barriers and issues facing M/WBEs and non-M/WBEs.

A. Business Experience Surveys

1. Survey Questionnaire, Sample, and Responses

The survey questionnaires asked whether and with what frequency firms had experienced discrimination in a wide variety of likely business dealings in the previous five years. The survey also inquired about the influence of specific aspects of the everyday business environment, such

[197] In addition to the City of Austin, firms had worked for the Texas Department of Transportation (TxDOT); the City of San Antonio; Capital Metro; Travis County; the Austin Independent School District (AISD); the Lower Colorado River Authority (LCRA); Austin Community College; the University of Texas at Austin (UT-Austin); and the State of Texas Historically Underutilized Business (HUB) Program.

as bonding and insurance requirements, on each firm's ability to do business in the City of Austin's relevant markets. We also asked about the relative frequency with which firms that have been used as subcontractors, subconsultants, or suppliers by prime contractors on contracts *with* M/WBE goals have been hired to work, or even solicited to bid, on similar contracts *without* M/WBE goals. Finally, we posed questions about the characteristics of the firm, including firm age, owner's education, employment size, and revenue size to facilitate comparisons of similarly situated firms.

The mail survey sample was stratified by industry and drawn directly from the Baseline Business Universe compiled for this study. Firms were sampled randomly within strata. M/WBE firms were oversampled to facilitate statistical comparisons with non-M/WBEs.[198] Of 8,920 businesses that received the questionnaire, 1,107 (12.4 percent) responded to the survey.[199] However, 46 of these responses were unusable because the respondent left the race/ethnicity question and/or the sex question blank.[200] The distribution of total responses according to the race and sex of the business owner, by major procurement category, appears in Table 8.1.[201]

2. Willingness of Firms to Contract with the Public Sector

The probative value of anecdotal evidence of discrimination increases when it comes from active businesses in the relevant geographic and procurement markets such as in the present case. The value of such evidence increases further when it comes from firms that have actually worked or attempted to work for the public sector within those markets.

As shown below in Table 8.2, there is a strong linkage between the firms responding to our mail survey and the public sector of the Austin area economy. Not only are all respondents located in the relevant geographic and product markets but, moreover, significant numbers of survey respondents have, in the last five years, worked or attempted to do work for the City of Austin or other public entities in Central Texas and the surrounding area. This is observed for virtually all types of M/WBEs and non-M/WBEs in all procurement categories. Overall, 64 percent of non-M/WBEs and 70 percent of M/WBEs have worked or attempted to work for the City of Austin or some other public entity in the area in the previous five years. In A&E the participation figures are even higher.

[198] See Chapter III for a discussion of how the product and geographic markets were defined. See Chapter IV for discussion of how the Baseline Business Universe was assembled.

[199] These figures exclude surveys that were returned undelivered or otherwise undeliverable as well as those that were returned blank.

[200] The total number of valid responses to any particular survey question, however, was sometimes lower than this since not all questions were relevant to and/or answered by all respondents.

[201] Although the present Study focuses on Construction and A&E, a large number of subcontractors, subconsultants, and suppliers are drawn from other types of goods or service producing industries. For this reason, all survey tabulations include four procurement categories: Construction, A&E, Services, and Commodities.

3. Experiences of Disparate Treatment in Business Dealings

The survey included questions about instances of disparate treatment based on race and/or sex experienced in various business dealings during the past five years. As shown in the last row of Table 8.3, 50 percent of minority-owned firms and 36 percent of White female-owned firms said they had experienced at least one instance of disparate treatment in one or more areas of the business dealings identified on the survey in the past five years. Reports of disparate treatment were highest among African-American- and Hispanic-owned firms. Except for Native Americans, all M/WBE rates were higher than those reported by White males, casting doubt on claims of widespread "reverse discrimination." Similar patterns were observed when the data were disaggregated by procurement category as well.

The balance of Table 8.3 show results for each of 14 distinct types of disparate treatment covered in the survey. In many categories, the difference in reported amounts of disparate treatment between M/WBEs and non-M/WBEs is very large. In the areas of commercial loans, for example, minority M/WBEs reported being discriminated against more than 8 times more frequently than White males. For African-American-owned firms it was 17 times more frequent.[202]

In the areas of applying for surety bonds, minority firms reported encountering disparate treatment almost 9 times more often than non-M/WBEs. In the areas of joining or dealing with trade associations and working on private sector prime contracts it was almost six times more frequent. In applying for commercial insurance, obtaining price quotes from suppliers, and encountering double standards in performance, it was 5 times more frequent. Problems were particularly acute for African-American-owned firms, followed by Hispanic-owned firms.

Differences in disparate treatment between White male-owned and White female-owned firms is apparent as well. White female-owned firms reported greater frequency of disparate treatment in 10 of the 14 types of business dealings, as well as overall.

Table 8.4 represents the same disparate treatment information as in Table 8.3, but with the frequency percentages replaced by relative rankings. That is, the 14 kinds of disparate treatment are ranked for each group according to the frequency with which discrimination was reported, with "1" representing the most frequent and "14" representing the least frequent.

Some courts and other observers have asserted that findings such as those in Table 8.3 tell us nothing about discrimination against M/WBEs since, even though they are current, even though they come directly from the businesses alleging disparate treatment, even though they are restricted to the relevant geographic and product markets, even though they are disaggregated by procurement category, and even though they are disaggregated by race and sex, they still do not compare firms of similar size, qualifications, or experience. We have argued elsewhere against such flawed logic (and economics!) since size, qualifications, and experience are *precisely* the factors that are adversely impacted by discrimination (Wainwright, 2000, 86-87). Nevertheless,

[202] Discrimination in access to commercial credit and capital is the most widely and commonly cited problem facing minority-owned firms. See Chapter VI for an extensive discussion of the theory and evidence behind this phenomenon.

if disparities are still observed even when such "capacity" factors are held constant, the case becomes even more compelling. The results reported below in Table 8.5 show that even when levels of size, qualifications, and experience are held constant across firms, large and statistically significant levels of disparate treatment of both minority-owned and White female-owned firms remains evident.

In Table 8.5, we report the results from a series of disparate treatment Probit regressions using the mail survey data.[203] As indicated earlier, the survey questionnaire collected data related to each firm's size, qualifications, and experience. The reported estimates from these models can be interpreted as changes or differences in the probability of disparate treatment conditional on the control variables. For race and gender the estimates in the table show large differences in disparate treatment probabilities between the indicated group and the base group (non-M/WBEs). In Column (1) of Table 8.5, in which the regression model contains only M/WBE status and industry category indicators, the estimated coefficient of 0.114 on the M/WBE indicator can be interpreted as indicating that the likelihood of experiencing disparate treatment for M/WBE firms is 11.4 percentage points higher than that for non-M/WBE firms. This difference is statistically significant within a 95 percent confidence interval or better.

The remainder of Table 8.5 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race or sex. In Column (2) a number of controls are included that distinguish the size and experience of the firm and the education of the owner. Even after controlling for these differences in experience, size, and qualifications, however, M/WBE firms remain 10.8 percentage points more likely than non-M/WBE firms to experience disparate treatment. Results in both columns are statistically significant.

The models reported in Columns (3) and (4) of Table 8.5 are the same as in (1) and (2), respectively, except that the M/WBE indicator is parsed into two components—one for minority firms and one for White women. In Column (3), the estimated coefficient of 0.187 on the Minority M/WBE indicator and 0.03 on the White female indicator shows that the likelihood of experiencing disparate treatment for Minority M/WBE firms is 18.7 percentage points higher and that for White women is 3.0 percentage points higher than that for non-M/WBE firms. The minority result is statistically significant, the White female result is not. Once again in Column (4), controlling for size, experience, and qualifications does not significantly alter the size or significance of the observed disparities.

Columns (5) and (6) show similar results when the M/WBE indicator is parsed into five components—one each for White females, African-Americans, Hispanics, Asians, and Native Americans. Again, disparate treatment appears to affect minority and women-owned firms of all size, experience, and qualification levels. As can be seen in Column (5) the most severe disparities are observed for African-Americans (36.3 percentage points more likely than non-M/WBEs to experience disparate treatment), followed by Hispanics (21.3 percentage points).

The regression models reported in Table 8.5 used as their dependent variable an indicator of whether or not a survey respondent had been treated less favorably in *any* of the 14 different

[203] See Chapters V and VI for descriptions of Probit and "dProbit" regression.

types of business dealings described in the first column of Table 8.3.[204] We re-estimated the three regression models reported in Columns (2), (4), and (6) of Table 8.5 separately using as the dependent variable, in turn, each of the 14 types of business dealings (a total of 42 distinct regressions) and report those results in Table 8.6. As Table 8.6 shows, large and statistically significant amounts of disparate treatment are observed for all M/WBE groups.

4. Disparities in Firm Experience and Firm Size

Disparate treatment of minority-owned and women-owned business enterprises and their owners in the marketplace leads predictably to the types of statistical disparities in outcomes that were documented in Chapters V and VI above. These statistical disparities are evident among our mail survey respondents as well.

We asked M/WBE and non-M/WBE respondents several background questions concerning firm experience, owner qualifications, and firm size. Tables 8.7 through 8.10 report the findings from these questions.

Table 8.7 shows the findings with respect to firm age. It is evident from this table that minority-owned firms and women-owned firms are younger, on average across industries, than their non-minority male counterparts, both across industries and within them. For example, only 10.8 percent of minority-owned firms and 12.5 percent of women-owned firms had been in business for more than 25 years, compared to 27.0 percent for non-M/WDBE -owned firms.

Table 8.8 shows the distribution of M/WBE and non-M/WBE firms by the number of employees on their payrolls at the time of the survey. On average across industries, minority-owned firms and White-female owned firms employ fewer workers than their White male counterparts. Only 1.2 percent of minority-owned firms and 0.9 percent of White female-owned firms, for example, had more than 100 workers, compared to 7.5 percent of non-M/WBE firms.

Table 8.9 shows the distribution of M/WBE and non-M/WBE firms by their total gross sales or revenues during 2006 (the last full year prior to the survey). M/WBE firms are over-represented among small firms and under-represented among larger ones, both across and within industries. The top panel of Table 8.9, for example, shows that 46.5 percent of minority-owned firms and 52.0 percent of White female-owned firms had $250,000 or less in total gross sales or revenues in 2006, compared with only 32.5 percent for non-M/WBEs. At the upper end of the spectrum we observe the reverse—only 6.2 percent of minority firms and 6.3 percent of White female firms had $5,000,000 or more in total 2006 gross sales or revenues, compared with 17.5 percent of non-M/WBEs. Similar patterns are observed by procurement category as well.

Some judges and other observers have suggested that lack of qualifications, rather than discrimination, is the best explanation for the observed adverse disparities facing M/WBEs in

[204] Our disparate treatment question also allowed respondents to indicate the quantity of disparate treatment experienced (never, 1-5 times, 6-20 times, more than 20-times). Although not reported here, we also ran regressions using a dependent variable measuring high frequency of disparate treatment (6 or more times) during the prior five years. Results were more limited due to smaller sample sizes but were qualitatively similar to those obtained in Tables 8.5 and 8.6.

Austin, in Texas, and elsewhere in the U.S. Table 8.10, which shows our survey findings with respect to the question about the highest level of education reached by the firm's primary owner, provides some suggestive findings to the contrary.[205] In some procurement categories, the minority and White female business owners responding to our survey appear to be *better* educated than their White male counterparts. For example, a higher percentage of White-female business owners held post-graduate degrees than their non-M/WBE counterparts in all procurement categories. This was true for minority business owners as well in A&E and in Services.

5. Impact of Current Business Environment on Ability to Win Contracts

Some have argued that M/WBEs are no more disadvantaged than any small business. The survey asked questions about some common features of the business environment to determine which factors were perceived by M/WBEs as serious impediments to obtaining contracts relative to non-M/WBEs.

As Table 8.11 makes clear, substantial percentages of both M/WBEs and non-M/WBEs report that certain factors, such as "Bonding Requirements" and "Large project sizes," make it harder or impossible for M/WBE firms to obtain contracts. For example, among non-M/WBEs 31.2 percent reported that bonding requirements made it harder or impossible for them to win contracts, and 31.3 percent reported that large project sizes made it harder or impossible for them to win contracts. The figures for M/WBEs, however, at 42.3 percent and 41.1 percent, respectively, are substantially and statistically significantly higher than for non-M/WBEs. Indeed, as Table 8.11 shows, M/WBEs reported statistically significantly more difficulty on 6 out of the 9 factors about which they were polled.[206]

To control for firm and owner characteristics, we use a regression technique known as the ordered Probit.[207] Ordered Probit regression is used when the dependent variable is discrete and ordinal (and hence can be ranked). We use ordered Probit to model the ordinal ranking—helps me (1), no effect (2), makes it harder (3), and makes it impossible (4)—of the aspect of procurement under consideration. The firm characteristics used as control variables consist of the age of the firm, the number of employees, the size of revenues, and the education level of the primary owner of the firm. To report results from ordered Probit analysis, we use a "+" to indicate that M/WBEs had more difficulty than non-M/WBEs with similar firm characteristics, and a "–" to indicate that M/WBEs had less difficulty than non-M/WBEs with similar firm characteristics.

Tables 8.12-8.14 report the sign and statistical significance from the ordered Probit analysis. Table 8.12 reports results for all procurement categories combined. Table 8.13 reports results for Construction and A&E combined. Table 8.14 reports results for goods and services combined.

[205] Aronson (1991, 24-25) contains an informative discussion on the positive effect of education on business ownership.

[206] The exceptions were "Insurance Requirements" and "Price of Supplies or Materials" where MBE and non-MBE frequencies were similar.

[207] For a textbook discussion of ordered Probit, see, for example, Greene (1997).

We find that when observable firm characteristics are controlled for, certain factors still prove to be greater difficulties for M/WBEs than for non-M/WBEs (as indicated by the "+" sign). In particular, the disparities in "Previous Experience Requirements," "Prior Dealings with Owner," "Cost of Bidding or Proposing," "Large Project Sizes," and "Late Notice of Bid/Proposal Deadlines" were statistically significant for M/WBEs, depending on procurement category.

6. Solicitation and Use of M/WBEs on Public and Private Projects Without Affirmative Action Goals

Our second to last survey question asked, "How often do prime contractors who use your firm as a subcontractor on public-sector projects with requirements for minority, women and/or disadvantaged businesses also hire your firm on projects (public or private) *without* such goals or requirements?" As shown in Table 8.15, just under 60 percent of M/WBE firms responded that this seldom or never happens. Similar results were observed for all minority groups and for White women, both overall and by procurement category.

At least one court has held that the failure of prime contractors to even solicit qualified minority- and women-owned firms is a "market failure" that established the government's compelling interest in remedying that failure.[208] Among the evidence relied upon for this holding was a survey similar to that performed here for Austin, in which approximately 50 percent of the respondents reported that they were seldom or never solicited for non-goals work.[209]

Our final survey question therefore asked "How often do prime contractors who use your firm as a subcontractor on public-sector projects with requirements for minority, women, and/or disadvantaged businesses *solicit* your firm on projects (public or private) without such goals or requirements?" Responses to this question are tabulated in Table 8.16, which shows the same pattern as in Table 8.15. Overall, just under 60 percent of M/WBEs report that they are seldom or never solicited for non-goals work. Once again, similar results are observed for all minority types and for White women, both across and within procurement categories.

7. Caveats

We conducted telephone surveys of M/WBEs and non-M/WBEs that did not respond to the mail surveys. The purpose of these telephone surveys was to test for evidence of a non-response bias that could affect the results from the original mail surveys. A non-response bias is said to exist when respondents' answers are systematically different from the answers of non-respondents. A non-response bias can be important or unimportant depending on the direction of bias and the questions under consideration.

To conduct our non-response surveys, we attempted to contact a random sample of 1,500 M/WBEs and non-M/WBEs that did not respond to our mail surveys to elicit answers to a few select questions asked in the original mail surveys. We obtained responses from 633 firms, for a

[208] *Builders Association of Greater Chicago v. City of Chicago*, 298 F.Supp.2d 725, 737 (N.D. Ill. 2003).

[209] *Id.*

raw response rate of 42.2 percent. The effective response rate was 51.0 percent since 259 firms in the sample were unreachable.[210]

Non-respondents were asked three key questions from the main survey: (1) did bonding requirements make it easier or harder for them to obtain contracts, (2) had they experienced one or more instances of disparate treatment in applying for commercial loans in the last five years, and (3) had they experienced one or more instances of disparate treatment in obtaining price quotes from suppliers in the last five years.

To test for non-response bias we first pooled the observations from our non-response sample with that from our respondent sample. Next we ran three Probit regressions, one for each question. The dependent variable in each regression equation was the response to the question, reformatted as a binary response where necessary.[211] On the right hand side we included (1) an indicator variable for whether the observation was from a respondent or a non-respondent, (2) an indicator variable for M/WBE status, and (3) an interaction term between non-respondent status and M/WBE status.

The indicator variable for non-respondent status was statistically significant in all three equations. It was negative in the bonding equation, positive in the commercial loan equation and negative in the price quotes equation. Although there is therefore some indication of non-response bias, we must inquire further to determine if its presence changes any of our basic conclusions regarding M/WBE disparities. The more important question therefore is whether the M/WBEs reported problems in these three areas statistically significantly more frequently than non-M/WBEs. In all three equations this proved to be the case.

In the first regression, concerning the bonding question, the M/WBE indicator was positive and statistically significant while the interaction term between M/WBE status and non-response status was negative but statistically insignificant. Therefore, the qualitative outcome is unchanged.

In the second regression, concerning commercial loans, the M/WBE indicator was positive and statistically significant. The interaction term between M/WBE status and non-response status was negative and statistically significant. However, the coefficient on the M/WBE indicator was almost 2.5 times larger than the size of the coefficient on the interaction term. Once again, the qualitative outcome is unchanged.

In the third and final regression, concerning supplier price quotes, the M/WBE indicator was positive and statistically significant while the interaction term between M/WBE status and non-response status was positive and statistically insignificant, and again the qualitative outcome is unchanged.

[210] Firms could be unreachable for a variety of reasons, the most common being wrong numbers and firms no longer in business.

[211] That is, a one (1) indicating problems or disparate treatment or a zero (0) indicating no problem or disparate treatment.

Thus all three pooled regressions show qualitatively similar results to those previously obtained. That is, a greater average likelihood for M/WBE firms to report business condition problems and disparate treatment problems than non-M/WBEs. We therefore conclude that, while the particular sizes of the disparity ratios presented above in this chapter should be interpreted carefully given the survey response rate, for all three questions examined the basic qualitative finding of more problems and greater disparities being observed among M/WBEs than among non-M/WBEs is unchanged.

B. Business Owner Interviews

To explore additional anecdotal evidence of possible discrimination against minorities and women in Austin's marketplace for construction and construction-related professional services contracts, we gathered anecdotal evidence of the experiences of business owners in that marketplace. As discussed in Chapter II, anecdotal evidence of experiences with discrimination in contracting opportunities is relevant to whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes.[212] While anecdotal evidence is insufficient standing alone,[213] "[p]ersonal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a [government's] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative."[214] "[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."[215]

Colette Holt & Associates conducted six sessions of interviews with groups of minority, women, and majority business owners about their experiences in seeking and performing contracts in Austin's marketplace. A session was also held with the City's MBE/WBE and SBE Advisory Committee). They met with 34 MWBE and non-MWBE business owners from the Construction and A&E industries. Firms ranged in size from large national businesses to new start-ups. Owners' backgrounds included individuals with decades of experience in their fields and young entrepreneurs beginning their careers. They sought to explore their experiences in seeking and performing public and private sector contracts, and with Austin's M/WBE Procurement Program.

The following are summaries of the issues discussed. Quotations are italicized, indented, and are representative of the views expressed by session participants.

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

[213] *Engineering Contractors I*, 943 F.Supp. at 1580 (anecdotal evidence cannot cure weaknesses in statistical evidence).

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

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

1. Experiences with Discrimination

a. Obtaining Public Sector Contracts

i. Stereotypes and unprofessional treatment

Some minorities stated that MBEs continue to be treated unprofessionally and condescendingly by majority firms.

> *We went to this one general contractor because he was like, "Oh. We have an open door, come visit and ya, ya, ya." So we go in to give them our proposal for a particular project and he started laughing. He never offered us to sit down. We stood up the whole time while we talked to him. He said, "You know we have a way of getting around this ordinance," and he started joking and laughing about it. He told us he already had a company that worked with him.*

***

> *If you are on a project and a problem arises, the City project managers will take the side of the [General Contractor]. A minority subcontractor is guilty until proven innocent. I mean the GC will go in and say that the minority subcontractor is not performing. The minority subcontractor has to prove that he is performing.*

***

> *I have the number one person here in town in my specialty area. I want to know why do you only award me one percent of the project and you give some other firm that does not have as much experience 17 percent of the project. This firm is sending out personnel to the site that are learning on the job.*

***

> *And as a sub we're treated really unprofessionally. I mean, it is just awful. It affects us financially, and it affects our staff morale. I have been at a session where it was—what do they call them, not partnering session, but just a kick-off session where you have—pre-design. We were all sitting at a table, and I was drawing with a marker, and I swear to god, this other architect took the marker right out of my hand. Now why I let him, I don't know, but it went on and on.*

***

> *Well, so just to add to what you were saying is that this concept or this attitude that you constantly have to be proving yourself and being fair or that the attitude of, well, we are forced to use you and now, you know, we're going to watch everything you do. Not everybody is doing that, but that does come out every once in a while, and so you have to fight that.*

ii. Diminished growth opportunities

Some firms expressed concerns about moving from working as a subcontractor to a prime contractor.

> *I'm a general contractor, so I'm in construction, and it is true that they hardly ever consider us prime, as if we could never be a prime. Everything is geared in construction to be a sub.*

M/WBEs reported that prime contractors who had used M/WBEs as subcontractors resented the new competition from former subcontractors that they had used in the past. There was also the perception that M/WBEs cannot perform larger or more complex projects.

> *I feel like in the case of [Austin Independent School District] we're not getting credit for the success of a project, and specifically it was a new elementary school. We were on a team with three architects, and the other architect got all the credit, and they kind of forgot about us, but see, where there is overt discrimination is the next time the projects are being handed out we get a little project; whereas, you know, I think we earned our—after 25 years I think we get to the front of the pack—You get a small project. Then you get a small project, you get small fees so it has a huge financial impact on your firm.*

***

> *Even though we have demonstrated we can do larger projects, there's still an interesting mentality on a lot of people's part that if you are minority owned you are a subcontractor instead of a prime. I do not think we even get invited sometime to even put our hat in the ring because it's always felt that you want to be on someone's else's skirt tail, and that's a real problem.*

Some firms, especially professional services firms, felt that if they attempted to negotiate more favorable contract terms, they were perceived as troublemakers and denied work.

> *There are some larger national firms that would rather not hire us because we will negotiate with them in a more intelligent, knowledgeable way about contracts, and they would rather have somebody who is dumb, fat and pregnant with a wire wrapped around their feet.*

***

> *The County [Travis], [Texas Department of Transportation] and a number of institutions do that, so everyone knows that it's a subtle intimidation to where if you don't sign [the standard form contract], you are already informed that you have a problem on hand. If you call to attention whatever your concerns might be, you've got to hope those concerns don't rock the boat, because the subjectivity that exists on the part of the people who make decisions as to whether or not you're going to be interviewed or kept in the process or so forth and so on, it can*

make you hold your nose and, you know, sign that thing at night in the dark and hope that if you get the job some of the very harsh terms within it don't come back and bite you in the rear later.

iii. Contract specifications

M/WBEs were also disproportionately impacted by City insurance requirements. While the costs of insurance are a problem for all small firms, M/WBEs felt that the City's blanket requirements made it particularly hard for them to compete.

We have in [our contracts] that we carry reasonable and customary insurance. It works for all of our other clients. We're not going to go out and buy special insurance for one client. It isn't worth our time to process that.

Several non-M/WBE prime contractors agreed that insurance and bonding requirements made it difficult to utilize otherwise qualified M/WBEs. One majority male owner recounted that a minority firm had performed well on his projects, and he sought to keep them involved "in everything we did, but they're a small company. They couldn't meet insurance requirements and all the other things that were required to be able to perform the work" on City contracts. Another prime contractor implements a diversity program, in part to assist M/WBEs with bonding and insurance requirements. Another firm assists M/WBEs with accessing the Small Business Administration's (SBA) bonding program; however, the SBA program is slow to issue the bonds, and because it uses traditional underwriting standards, those firms that are successful would probably have received bonding without SBA guarantees.

Contract specifications were sometime written to favor the "good ole boys."

We do not submit bids to [the Texas Parks and Wildlife Commission] any more. The particular engineer designed the project and specified out a project for one of her buddies. She specified out the project for him. He was the only person that carried it and the only one that could put it in was him. And we won the bid because we were the lowest. And you know what, she stood and said actually it got very nasty—that—that we were not qualified to install it. Well, not only were—we weren't, because we couldn't buy the product. The only way we could buy the product would be to go to Louisiana to buy the product because they refused to sell it to us here in the state.

An engineering MBE stated that the qualifications are designed to favor the large firms, and make it very difficult for his firm to win projects, even when they are fully capable of performing.

From my perspective, it's feeling like we actually have the chance to get the job, because I—I mean, there has been nothing of the people that I've talked to and the things that I have done gave me any indication that I even had—that our firm even had a remote possibility. Now, with engineers, they—you don't—you don't bid money. You bid qualification. You know, and then they say, well, you have to have 20 engineers or whatever telling—well, you don't. If you're little, you don't

have to have many engineers. And so they make the—they make the qualifications particularly with the professional end unattainable. I mean, there are no way they—they write us out. When the write the—when they write the qualifications, they write us out of being able to even bid. I mean, you've got to have certain people in your firm and you don't have it.

There was support for using procurement methods other than invitations for bid for construction contracts. Design-build and construction manager at risk were thought to provide more opportunities for MBEs, based upon the positive experience with the City Hall project.

iv. Discrimination complaints

Minorities and women who experienced discrimination were reluctant to file formal complaints because of fears of retaliation.

I bid on a joint Cap Metro and City of Austin project that I should have known I was not going to win. We went into the interview, there were a couple of City folks in the review team, one that used to be a site plan reviewer with whom I butted heads on a lot of site plans. He asked me some questions that the rest of the people at the table recognized were inappropriate. He should not have asked those questions. The questions had nothing to do with project. What happened at that meeting with the City staff is that it left the prime contractor questioning why there was such a personality problem between me and this person. That incident really hurt me.

***

Minority and woman owned contractors hesitate to use complaint procedures of public entities because they will get blackballed.

***

When we were on the AIA government grievance committee we went to TxDOT and met with contracting office there because a contract was horrible, one sided, no mediation, my word is the final word, all that stuff. So what happened? They retaliated. A project came that had our name all over and we did not even get interviewed.

***

I filed one claim against an agency. Seven years later we still work with each other, but for the longest time I had to go around, justify, get letters from district clerks, county courts in all cities that I practice and show that I did not sue, I did not have these problems, and the problem was minor.

***

You've got to make the decision whether it's just not easier to walk away, and with this particular engineer— female engineer, it's easier to walk away from her because of—because of the type of a personality that she is and she would take it to an undesirable—I mean, she works very closely with the City by the way.

***

I heard something similar from my contractor/client of mine working on a City sewer project that they won't even bid one engineer's work. All the problem jobs are traceable to that design firm, because they're never wrong. Everything they design is perfect and it's always the contractor's fault. And so the contractors know this and they just know this is how it works. But I don't—you know, there doesn't seem to be any mechanism for them to really advise the City that they can do better than this choice of engineer.

***

I learned a long time ago to give my complaints to them anonymously, because if you give it with your name—I did that one time and it sucked up a huge portion of my life trying to keep up with their investigation. And so the next time I just said, huh-uh, you need a hotline for a tip, and you guys do your own investigation.

***

It's not worth it.

b. Obtaining Private Sector Contracts

Private sector contracts were very difficult to obtain for most firms. The majority of M/WBEs had done little or no work in the private sector, especially on construction jobs. One WBE reported that most of her prime contracting work was in the private sector.

At the same time, private firms have recently become more conscious of the need to make outreach efforts to M/WBEs.

But what I'm finding is that there are now owners that are more conscious about this that are private. Whole Foods just built a project. Whole Foods wanted minority participation. They made it clear to the GC.

***

I would say, you know, they're doing private work all over the place; they don't call me for it. So I do think that if when the owner makes it clear that that's what they're interested in, then even on private work where the owner has made that clear, then my phone rings.

***

I have to agree with her, also. Because another thing, when we did some private work, the owner emphasized that he wanted to work with minorities. He also forwarded our name to other companies. One company was from out-of-state, Michigan, and another out-of-state company, when they came here to work, they first called me and asked if I was interested in the project.

c. Access to Capital

One WBE stated that she had fewer problems obtaining loans because of her husband's prior dealings with the lenders.

One woman reported difficulty obtaining a $5,000 bank loan.

The banker never looked me in the face. He never acknowledged my presence, really, no more than tell me "No." That's what he did. So I had to become very creative in how I financed, because I have this kind of business that is called "soft." You know, I don't have the things that she has in the back of her because of the nature of the business, construction. So my business is soft, consulting. You know, you don't know if it's going to work or not work. So, I mean, that's the way they feel. But it was just his attitude, his demeanor towards me.

A minority firm owner related the following incident:

I was talking to Bank One. I was trying to do a simple $20,000 loan line of credit, you know. I was carrying it with a $20,000 CD. They turned me down, and I was like --I had to curse -- you know, I had to call them up -- and be very firm with them to let them know, this don't -- "I stood up in your office and I told you I want to have an opportunity doing business with Bank One." And you said, "No problem. We can do this." I said, "Well, look" -- "I mean, my credit is this way, that way whatever the case may be. Is that going to be an issue?" We should have no problems with this as long as you have some liquid to be able to do it with." I gave him the money, and I just want to establish a relationship, basically, to me, in banking -- and I'm going to be honest with you, my attitude about banking is that it sucks.

2. Experiences with the City of Austin's Minority-Owned and Women-Owned Business Enterprise Procurement Program

a. M/WBE Certification

Almost all comments regarding the recent outsourcing of the City's certification function to the South Central Texas Regional Certification Authority (SCTRCA) were negative.

The outsourced certification office is terrible. I mean, just recently, because of the airport job, I needed to get my DBE letter, and so I called to request the DBE letter. The agency told me they would fax the letter to me. They never sent it. I

called back. Nobody ever answers. You have voice mail from that point on. At least when the City was doing the certification you could physically go to their office.

***

I got a letter telling me that I needed to verify my Hispanic heritage. I had letters going back from when my great grandmother crossed the damn river in 1912. I had to go back and prove that I was Mexican. I'm talking to the agency in Spanish. But it just goes to show that in 15-16 years of doing business with the City there was never a question. They definitely have poor customer service.

***

The SCTRA needs to have a local office and local presence if they're going to be representing local businesses.

Lack of responsiveness and delays in processing applications were mentioned numerous times.

I submitted my application, but I've never heard back from them.

***

I call, call, e-mail, e-mail. I'd call and I'd tell them that I'm not going to go away until they call me back.

***

I said I sent all my required information. A SCTRCA official said that in the conversion my information remained in Austin (DSMBR), apparently my information was not delivered to San Antonio. I had to drop everything I was doing on projects and get my staff to hurry up and courier my application to San Antonio. I also had to get my CPA to write another financial statement, and it was on and on. I have been certified for years, and so it was nuts to go through all of those requirements. I finally received my certification letter, but it was missing one of the certifications. I lost a huge project because I did not have my DBE certification.

***

The agency is understaffed. I had to call the SCTRCA official and if that person is gone, I mean, that's it. They're gone. You have to wait until they return from vacation or sick leave.

Two White women discussed their frustrations at the difficulty of becoming certified as WBEs providing engineering services. The City questioned their ability to manage and control the firms because their husbands were the licensed engineers.

City staff reported that some of the delays in processing certification applications resulted from an increase in the number of firms seeking certification beyond that initially expected when the function was outsourced.

b. Bidding On and Performing Contracts

M/WBEs and non-M/WBEs recounted long waits for payment resulting from change orders.

One WBE complained that the City's project managers do not support the subcontractors. Some project managers appear to have personal relationships with prime contractor personnel.

Some M/WBEs praised recent City efforts to facilitate information for liens and other purposes. Further, biweekly payment has been helpful in managing cash flows.

> *The City implemented this prompt payment system and pilot tested for a year. The system worked. Now once the GC has been paid, he is allowed ten days after the last day of the month to pay his subs. The Public Works Department has a payment auditor who receives the payment requests and schedule of values.*

Mobilization payments have likewise facilitated M/WBEs' ability to work on City contracts. This is especially important given minorities and women's limited access to bank financing.

> *The City was very gracious to let me have a draw down on my contract to start up my project. They were very open to work with me on that. They gave me the money that I needed to start up the project. From that day forward, that was my creative way of getting the funds that I needed to start up my projects. I would ask the City and other clients to provide me with a nominal percentage for the initial start-up of my projects. I never went in to ask the bank to loan me anything for my business. I mean, I just had a real disheartening thing about banks and their attitudes.*

Some firms complained of insufficient information from prime contractors, and suggested that the City mandate that general contractors provide subcontractors with adequate information on their bonding companies, as well as investigate the financial soundness of the bonding company.

M/WBEs stated that Austin should post payments to prime contractors on its website, so that subcontractors can estimate when they should receive their payments form those prime contractors.

There was support for a linked deposit program, whereby City depository institutions would make loans to firms awarded City contracts, using the contracts as collateral. One firm further suggested that the City's Cash Enhancement Program be revived and expanded.

c. Minority-Owned and Women-Owned Business Enterprise Procurement Program Policies and Procedures

i. Program's impact on M/WBEs

Many interviewees reported that the City's M/WBE Procurement Program was essential to their success.

> *I can say that the program is what made me. I do not think I would have had a chance. I was struggling with the large prime contractors of the world. They had their own little in-house minority. I was struggling against them. It was tough. It was really tough. But I still have to say that the minority program with the City of Austin is probably what made my company. Today we're doing over $10 million a year. We've expanded and expanded. We've been very successful. We have between 120 and 150 employees.*

***

> *I also give a lot of credit to the City's M/WBE program for helping me establish relationships with prime contractors who work in the private sector. These relationships helped me get a lot of private sector work. We were introduced to these contractors through our City work. Now they're doing work for developers right now and subdivision work and they're calling us because of our past relationship with them on City work.*

***

> *I would not be able to start [my business]. Getting on a winning team requires that you know how contracting works. The DSMBR staff provided me with that type of insight. I don't understand the systems. I don't know a lot of people. It's the staff of the DSMBR that helped me. Without them I would not be here. If the program got squashed, I would be out of job.*

Whatever their criticisms, M/WBEs agreed that the elimination of the Program would be catastrophic for minorities and women.

> *You will see so many small local minority businesses go out of business. We all know that we're not foolish enough to think and I think that I am more than qualified to do a lot more work than I do, but I'm not foolish enough to think not one of them would call me. They would not pee on me if I was on fire and that's all they had to do. I know they would not hire me. The effect would be disastrous.*

***

> *It would make it a lot worse for minority and woman owned firms.*

***

> *LCRA is an example. The years that they had zero dollars awarded to African American businesses in construction, they will tell you that "While we encourage the use of minorities and women, we don't give or take any brownie points into your evaluation score." So what happens? The agency does nothing.*

However, some African-American-owned firms expressed frustration about the lack of growth in their numbers, and the continuing barriers to success.

ii. Program's impact on non-M/WBEs

In general, non-M/WBEs supported the overall objectives of the Program.

> *I don't think anybody has a problem with the idea of minority business development. It's just that we need to get to it in a way where it's serious and manageable.*

One larger White male-owned contractor reported that the City's goals had become more "realistic" recently, but that high and unattainable goals had driven many companies out of bidding City work.

> *We are trying to kind of force feed it and it really didn't work. So now we need to get it to the point where people are real serious about their business and people should start going into the construction and they're going to run that business the right way, because they're -- you know—and then the Supreme Court rulings rule you really can't make it mandatory.*
>
> ***
>
> *There are many companies who have given up and they do not bid the City.*
>
> ***
>
> *We found it very difficult to find, you know, minority participation and we had certain goals that you have to do and it was practically impossible. The contract is on going right now, but, you know, we try to get as much minority participation as we can. And, I mean, we haven't gotten in trouble or anything for it, but it's just the way it was set up was it was just very difficult for us to be able to meet those goals.*
>
> ***
>
> *First, there are no subcontractors out there. There's not an available pool of them. The way our contract is structured, you have material and labor. There's really no where to get the materials from a minority or woman owned firm. The materials are a big part of the costs of the contract. The way we have to meet our goal is through labor and it's just impossible.*

There was concern amongst prime contractors that the City's goal setting process was based upon inadequate information.

> *What we've experienced in [the underground utility] industry is the availability is not—I mean, when you are going to go do a utility construction job so much of it is materials, so much of it is just your own labor, your equipment and things like that. There's not a lot of sub work out there. There's—and so the goals that they mandate are really unrealistic unless you—and quite frankly, unless you are just kind of playing with it. I mean, you know, you are either going to sub some of the work you do out to another firm, which there's not that many of, or you're going to—you know, you're really restricted by who and where you can use them, because they've narrowed the goals to not just so much women or so much minority. They've broken it down to, you know, numerous types of minorities.*

***

> *Look at each job on an individual basis and when you have a mandatory preconstruction meeting or a pre-bid meeting, you've got all the players right there. Ask them what are you going to sub, okay; then go out and figure out how much of that can be subbed to minority firms, and then set your goals so they're realistic, so that you don't have somebody playing with numbers, for instance, you know, just to make it. They're just brokers, you know. I know they've tried to eliminate most of those brokers. You know, people that are—just get a percentage to watch—and they've eliminated most of those, and that's—that's good.*

There was also concern about the quality of the DSMBR lists from which good faith efforts are to be made. Many firms are not capable of performing in the areas of specialty listed, or are otherwise not viable businesses. "You mail 150 of those postcards and you will get one or two calls." Several prime contractors suggested that DSMBR make the first contact with M/WBEs subcontractors, to relieve the prime contractors of this burden and ensure that subcontractors are qualified for the particular contract.

Some owners expressed strong concerns that M/WBEs are permitted to remain in the Program indefinitely, so long as they continue to meet the eligibility criteria; there is no "up and out" date similar to that of the SBA's 8(a) Program.

> *I have a lot of members [of trade association] that are concerned with how long minority and woman owned firms remain in the program. There should be a deadline or termination date whether it be five years or whatever, but at some point the firms should be graduated from the program.*

Overall, DSMBR was commended for its help in meeting the Program's requirements.

> *The DSMBR is a great brokerage house. And that's what they should do. They serve as a brokerage for minority firms. They are a brokerage house for minority firms. And we do have a great DSMBR office.*

***

Those guys that work in there are good. I mean, I think they're good. We've never had any problems with them. You know, they've answered our questions. They helped us get people certified. They've done what we've asked them to do. It's just the rules they live under are a little sketchy.

One prime contractor suggested that prime contractors should develop their own pre-qualification program for subcontractors.

The other part that was always missing—and I've seen this in other cities—is that the large prime contractors, they wait until they see the job that they want to bid, they get the bids in, and all the small contractors who are either new, inexperienced or just slightly experienced—some make the bids and you get a good number, but the subcontractor really doesn't meet all the qualifications to do the job. So then you, the prime contractor, is stuck not having qualified subcontractors. The preemptive way is for the prime contractor to take the initiative to have some type of pre-qualification for these subcontractors. Consider your pre-qualifications of subcontractors doing some type of business review, for example, they should have insurance. They should find what is required of them to work for your company, not so much to work for the City, to work for your company. And you keep that prequalification list and it also helps you now to find these contractors when you need work—when you need for them to do work for you. But if you wait until you find the job, you send them the stuff that you get from the DSMBR you are going with the eight ball. That's never going to change. So the larger companies have to take a proactive approach to help the situation come together.

***

If you do the prequalification stuff like this, you could sign what you want to, but at that time they determine—you determine whether or not the contractor is bondable. If he or she is not, then you show them how they can be bondable. It's an investment that your company is making anyway. And depending on the size of the contracts that they sub to you, then you have the subcontractors bond back to you and it reduces your exposure. And it works better that way. But it's a process that the large companies have to be a little more pro-active in doing that. What we find in traveling around is that most cases—companies like these, like yours and—they throw yours—they throw the ball back to the City. It's not going to change, because the City has certain responsibilities. They have to have jobs bonded and have to have liability insurance and all that.

iii. Good faith efforts to meet contract goals

Minority firms expressed concerns that prime contractors that want to evade contract goals can "package" their good faith efforts to avoid doing so.

> *I had an incident where I was sent a good faith—I mean, a request for good faith effort. I sent them my request. And then that particular contractor, GC, received the job, but when I called him, he said, "I just sent you that for a request for bid because I have to because of the good faith effort, but I will never use a minority firm for the service that I do." And I said, "Okay. Well, then please don't send me anymore requests," and he said, "No. I will always send them to you because the City requires it." And I don't send them any bids now, but it was just very clear, and, I mean, he was—those were his direct words. And he went on to tell me that the person that he does use, he just writes her in.*

One participant suggested following a system similar to how he described the city of San Antonio's process: bidder must include all subcontract quotes with its bid, and must use a subcontractor submitted with the bid.

iv. Substitutions of subcontractors

Despite provisions in the City's ordinance and Program Rules prohibiting unauthorized substitutions of subcontractors by prime contractors, some MBEs stated that such substitutions still occur. "*They do whatever the hell they want to do.*"

v. Program enforcement

Enforcement of the ordinance remains a major concern. Some firms felt that DSMBR was undercut by other departments.

> *Everybody—Public Works can interpret that ordinance to be what they want it to be. The utility—Water and Wastewater can interpret the way they want it to be. The staff in charge of it, they know the ordinance—I think they do. They know the ordinance on what they're supposed to be doing, but everybody else from other departments can come in and make an interpretation, and that's what they have to put up and live with. That's not the way it should work. The ordinance has given them the authority to interpret. What it creates in an environment in which the DSMBR staff are afraid to implement the ordinance.*

Another example cited was the Robinson Hills Multifamily Project. According to this participant, the Department of Economic Growth and Development was permitted to waive MBE and WBE goals on the project, without the concurrence of DSMBR. Mabel Davis Park was also mentioned, as an instance where goals could have been set on the landscaping portion of the project but were not.

Further, some people felt that DSMBR staff members who attempted to enforce the Program were punished with reassignment or termination.

> *It's a thankless and tough job and you are going to piss off a lot of people. I mean you're going to step on a lot of big White toes and they don't like it.*

***

We have everything that needs to be done in order to be able to do what we got to do to do to get those GCs. Enforcement is the problem. The COA is the owner of the contract, period. The GCs have the regulations they are required to abide, but they do not and no one enforces them.

3. Conclusion

Consistent with other evidence reported in this Study, anecdotal interview information strongly suggests that M/WBEs continue to suffer discriminatory barriers to full and fair access to City of Austin and private sector contracts. This evidence includes perceptions of M/WBE incompetence and being subject to higher performance standards; discrimination in access to commercial loans and surety bonds; paying higher prices for supplies than non-M/WBEs; 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 or as subcontractors. While not definitive proof that the City of Austin 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 evidence that, especially when considered along side the numerous pieces of statistical evidence assembled, the courts have found to be highly probative of whether Austin would be a passive participant in a discriminatory marketplace without affirmative interventions.

C. Summary of Prior Evidence of Discrimination in the Austin Construction Contracting Marketplace

1. 1987 Economic Development Commission Review

In 1987, the Austin City Council directed the Economic Development Commission to review the City's policies and experiences relating to City contracting opportunities for M/WBEs and to suggest any revised policies and procedures, if determined necessary. The Commission met with representatives of various City departments as well as with interested individuals and organizations, conducted a public hearing and took numerous public statements. The Commission found significant disparities between the number of M/WBEs and their utilization as prime contactors and subcontractors on City projects. The City Council found that these disparities resulted from discriminatory practices, thereby impairing the competitive position of MBEs and WBEs with the City. To redress this situation, the City Council passed an affirmative action program to address the City's role in perpetuating these disparities.

2. 1993 "Minority Business Enterprise Utilization Report: A Disparity Study for the City of Austin and Capital Metro"

In 1992, the City of Austin and Capital Metropolitan Area Transportation Authority commissioned a disparity study to respond to the *Croson* decision. The Study, conducted by D.J. Miller & Associates, Inc., included:

- An analysis of the legal framework;
- An analysis of the historical framework;

- An analysis of market conditions;
- Survey of business leaders;
- Interviews with business and community leaders;
- Analysis of City and Capital Metro operational policies and procedures;
- Analysis of the availability of M/WBEs for City and Capital Metro contracting;
- Analysis of the utilization of M/WBEs by the City and Capital Metro;
- Analysis of disparities in utilization of M/WBEs compared to non-M/WBEs; and
- Analysis of race-neutral programs.

The Study concluded, "there is ample evidence of discrimination against African Americans, Hispanics, Other Minority Groups [sic], and Women [sic]". Prior legal discrimination is "manifested in the low participation of minorities and women in the general economy as business owners and supervisors compared to their numbers in the general population.… Investigation has yielded information concerning individual instances of discrimination encountered by firms dealing with the City of Austin and Capital Metro, and barriers encountered by MWBEs that wish to contract with those entities. Calculations of the City's utilization of MWBEs show that governmental entities underutilize MWBEs in contracting. Race neutral business support programs do not result in any lessening of the effects of discrimination."[216] Based upon this evidence, the Study concluded that a race-conscious procurement program was warranted.

After receipt of the study, the City conducted a series of public hearings at which additional statistical and other evidence of discriminatory practices and acts against M/WBEs was presented. The City Council appointed a community-based Disparity Study Ordinance Committee to review the studies and the law, and to draft programmatic changes to the current ordinance. The Committee met over several months and recommended certain changes to the ordinance. Based upon those meetings and the Study, the City adopted a new M/WBE Procurement Program in 1995.

3. 2003 Minority-Owned and Women-Owned Business Enterprise Procurement Program Revisions

In 2003, the City reviewed various availability and disparity studies conducted for Texas governments. These studies indicated that M/WBEs suffer discrimination in access to opportunities in the State of Texas. Austin also commissioned an availability analysis of M/WBEs in construction and construction-related professional services. This analysis, conducted by NERA, found that there was ample availability of M/WBEs in the Austin marketplace.

Based upon this evidence, the City amended the M/WBE Procurement Program ordinance and set new goals that reflected the NERA estimates.[217]

[216] "Minority Business Enterprise Utilization Report: A Disparity Study for the City of Austin and Capital Metro," D.J. Miller & Associates, Inc., at ES11-ES12.

[217] Chapter 2-9 *et seq*, Minority-Owned and Women-Owned Business Enterprise Procurement Program.

D. Tables

Table 8.1. Race, Sex and Procurement Category of Mail Survey Respondents

Group	Construction	A&E	Services	Commodities	Total
African-American	14	1	24	3	42
Hispanic	70	19	34	13	136
Asian	9	7	15	2	33
Native American	19	0	9	6	34
Unknown Minorities	4	0	2	1	7
White female	78	33	104	11	226
Total M/WBE	194	60	188	36	478
White male	313	104	118	48	583
Total	507	164	306	84	1061

Source: NERA mail surveys.

Table 8.2. Survey Respondents Indicating They Had Worked or Attempted to Work for Public Sector Agencies in the Last Five Years

Worked or Attempted to Work, Last Five Years	African-American	Hispanic	Asian	Native American	Total Minority	White female	Total M/WBE	Non-M/WBE
ALL INDUSTRIES								
With the City of Austin	58.5%	56.7%	57.6%	47.1%	55.8%	57.4%	56.6%	46.8%
	(41)	(134)	(33)	(34)	(242)	(223)	(465)	(579)
With Other Public Entity in the Austin Region	59.5%	62.7%	69.7%	47.1%	60.9%	66.4%	63.5%	58.8%
	(42)	(134)	(33)	(34)	(243)	(220)	(463)	(582)
With any Public Entity in the Austin Region	71.4%	68.4%	69.7%	58.8%	67.8%	71.7%	69.7%	64.0%
	(42)	(133)	(33)	(34)	(242)	(223)	(465)	(581)
CONSTRUCTION								
With the City of Austin	69.2%	48.5%	77.8%	52.6%	54.1%	70.1%	60.8%	48.9%
	(13)	(68)	(9)	(19)	(109)	(77)	(186)	(311)
With Other Public Entity in the Austin Region	71.4%	55.1%	77.8%	47.4%	57.7%	68.4%	62.0%	55.9%
	(14)	(69)	(9)	(19)	(111)	(76)	(187)	(313)
With any Public Entity in the Austin Region	85.7%	63.2%	77.8%	57.9%	66.4%	74.0%	69.5%	62.9%
	(14)	(68)	(9)	(19)	(110)	(77)	(187)	(313)
A&E								
With the City of Austin	100.0%	84.2%	57.1%	-	77.8%	81.3%	79.7%	51.9%
	(1)	(19)	(7)	(0)	(27)	(32)	(59)	(104)
With Other Public Entity in the Austin Region	0.0%	88.9%	85.7%	-	84.6%	87.5%	86.2%	73.1%
	(1)	(18)	(7)	(0)	(26)	(32)	(58)	(104)
With any Public Entity in the Austin Region	100.0%	94.4%	85.7%	-	92.3%	90.9%	91.5%	74.0%
	(1)	(18)	(7)	(0)	(26)	(33)	(59)	(104)

Table 8.2. Survey Respondents Indicating They Had Worked or Attempted to Work for Public Sector Agencies in the Last Five Years (Cont'd)

Worked or Attempted to Work, Last Five Years	African-American	Hispanic	Asian	Native American	Total Minority	White female	Total M/WBE	Non-M/WBE
OTHER SERVICES								
With the City of Austin	54.2%	58.8%	46.7%	44.4%	53.7%	36.9%	44.3%	31.6%
	(24)	(34)	(15)	(9)	(82)	(103)	(185)	(117)
With Other Public Entity in the Austin Region	54.2%	70.6%	60.0%	44.4%	61.0%	56.4%	58.5%	47.5%
	(24)	(34)	(15)	(9)	(82)	(101)	(183)	(118)
With any Public Entity in the Austin Region	62.5%	70.6%	60.0%	66.7%	65.9%	61.8%	63.6%	53.0%
	(24)	(34)	(15)	(9)	(82)	(102)	(184)	(117)
COMMODITIES								
With the City of Austin	33.3%	53.8%	50.0%	33.3%	45.8%	90.9%	60.0%	59.6%
	(3)	(13)	(2)	(6)	(24)	(11)	(35)	(47)
With Other Public Entity in the Austin Region	66.7%	46.2%	50.0%	50.0%	50.0%	81.8%	60.0%	74.5%
	(3)	(13)	(2)	(6)	(24)	(11)	(35)	(47)
With any Public Entity in the Austin Region	66.7%	53.8%	50.0%	50.0%	54.2%	90.9%	65.7%	76.6%
	(3)	(13)	(2)	(6)	(24)	(11)	(35)	(47)

Source: Calculations from NERA mail surveys.

Note: Total number of valid responses in parentheses.

Table 8.3. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Sex While Participating in Business Dealings

Business Dealings	African-American	Hispanic	Asian	Native American	Total Minority	White female	Total M/WBEs	Non-M/WBE
Applying for commercial loans	**47.8% (23)**	**23.8% (80)**	0.0% (17)	**14.3% (21)**	**23.4% (141)**	**8.3% (120)**	**16.5% (261)**	**2.8% (284)**
Applying for surety bonds	**31.6% (19)**	**11.9% (59)**	8.3% (12)	***12.5% (16)***	**15.1% (106)**	5.1% (79)	**10.8% (185)**	**1.8% (227)**
Applying for commercial or professional insurance	**24.0% (25)**	**13.4% (97)**	4.5% (22)	**16.7% (24)**	**14.3% (168)**	4.2% (143)	**9.6% (311)**	**2.9% (345)**
Hiring workers from union hiring halls	6.3% (16)	2.8% (36)	0.0% (10)	6.3% (16)	3.8% (78)	0.0% (53)	2.3% (131)	1.3% (154)
Obtaining price quotes from suppliers or subs	**33.3% (24)**	**19.5% (87)**	10.5% (19)	5.0% (20)	**18.7% (150)**	**10.2% (137)**	**14.6% (287)**	**3.9% (337)**
Working or attempting to obtain work on public sector prime contracts	**52.2% (23)**	***31.0% (87)***	31.6% (19)	15.0% (20)	**32.2% (149)**	**10.8% (139)**	21.9% (288)	**22.0% (282)**
Working or attempting to obtain work on public sector subcontracts	**55.2% (29)**	29.2% (89)	26.3% (19)	15.0% (20)	**31.8% (157)**	**11.3% (142)**	22.1% (299)	**21.1% (279)**
Working or attempting to obtain work on private sector prime contracts	**46.4% (28)**	**30.1% (93)**	11.1% (18)	13.0% (23)	**28.4% (162)**	**10.0% (150)**	**19.6% (312)**	**5.1% (334)**
Working or attempting to obtain work on private sector subcontracts	**50.0% (26)**	**26.1% (92)**	11.8% (17)	13.6% (22)	**26.8% (157)**	9.4% (149)	**18.3% (306)**	**6.2% (325)**
Receiving timely payment for work performed	**48.1% (27)**	**37.5% (104)**	25.0% (24)	30.8% (26)	**36.5% (181)**	18.2% (170)	**27.6% (351)**	**17.5% (371)**
Functioning without hindrance or harass-ment on the work site	**41.7% (24)**	**16.3% (92)**	**20.0% (20)**	13.6% (22)	**20.3% (158)**	12.6% (159)	**16.4% (317)**	**6.2% (339)**
Joining or dealing with trade associations	**25.0% (20)**	**14.5% (76)**	0.0% (13)	0.0% (17)	**12.7% (126)**	5.5% (109)	**9.4% (235)**	**2.2% (272)**
Extra work not required of others	**31.8% (22)**	**26.3% (95)**	**27.8% (18)**	18.2% (22)	**26.1% (157)**	12.2% (156)	**19.2% (313)**	**8.4% (334)**
Performance standards not required of others	**42.3% (26)**	**29.3% (92)**	**30.0% (20)**	8.7% (23)	**28.6% (161)**	7.5% (159)	**18.1% (320)**	**6.0% (348)**
In any one of the business dealings listed above	**65.6% (32)**	**52.6% (116)**	37.0% (27)	31.0% (29)	**49.5% (204)**	35.5% (186)	**42.8% (390)**	**32.7% (413)**

Source: See Table 8.2. Note: Total number of valid responses in parentheses. Figures in **boldface** type are statistically significantly different from non-M/WBEs using a conventional two-tailed Fisher's Exact Test and within a 95% or better confidence interval. Figures in ***boldface italicized*** type are significant within a 90% confidence interval.

Table 8.4. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Sex While Participating in Business Dealings (Rankings)

Business Dealings	African-American	Hispanic	Asian	Native American	Total Minority	White female	Total M/WBE
Applying for commercial loans	5	8	12	6	8	9	8
Applying for surety bonds	11	13	10	10	11	12	11
Applying for commercial or professional insurance	13	12	11	3	12	13	12
Hiring workers from union hiring halls	14	14	12	12	14	14	14
Obtaining price quotes from suppliers or subs	9	9	9	13	10	6	10
Working or attempting to obtain work on public-sector prime contracts	2	2	1	4	2	5	3
Working or attempting to obtain work on public-sector subcontracts	1	5	4	4	3	4	2
Working or attempting to obtain work on private-sector prime contracts	6	3	8	9	5	7	4
Working or attempting to obtain work on private-sector subcontracts	3	7	7	7	6	8	6
Receiving timely payment for work performed	4	1	5	1	1	1	1
Functioning without hindrance or harassment on the work site	8	10	6	7	9	2	9
Joining or dealing with trade associations	12	11	12	14	13	11	13
Extra work not required of others	10	6	3	2	7	3	5
Quality or performance standards not required of others	7	4	2	11	4	10	7

Source: See Table 8.2.

Table 8.5. Prevalence of Disparate Treatment Facing M/WBEs

	(1)	(2)	(3)	(4)	(5)	(6)
M/WBE	0.114	0.108				
	(3.24)	(2.82)				
Minority			0.187	0.174		
			(4.40)	(3.78)		
White female			0.030	0.035	0.032	0.037
			(0.67)	(0.73)	(0.70)	(0.77)
African-American					0.363	0.332
					(3.93)	(3.42)
Hispanic					0.213	0.202
					(4.07)	(3.56)
Asian/Pacific Islanders					0.030	0.040
					(0.30)	(0.37)
Native American					0.028	0.015
					(0.28)	(0.14)
Owner's Education (3 indicator variables)	No	Yes	No	Yes	No	Yes
Firm Age (4 indicators)	No	Yes	No	Yes	No	Yes
Employment size bracket (6 indicators)	No	Yes	No	Yes	No	Yes
Sales/revenue size bracket (4 indicators)	No	Yes	No	Yes	No	Yes
Industry category (3 indicators)	Yes	Yes	Yes	Yes	Yes	Yes
N	809.00	777.00	809.00	777.00	809.00	777.00
Pseudo R^2	0.03	0.05	0.03	0.06	0.04	0.06
Chi^2	27.50	51.56	37.25	58.43	47.28	65.88
Log likelihood	(522.28)	(490.07)	(517.40)	(486.64)	(512.39)	(482.91)

Source: See Table 8.2.

Note: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. T-statistics of 1.96 (1.64) or larger indicate that the result is significant within a 95 (90) percent confidence interval.

Table 8.6. Prevalence of Disparate Treatment Facing M/WBEs, by Type of Business Dealing

Business Dealings	African-American	Hispanic	Asian	Native American	Total Minority	White female	Total M/WBE
Applying for commercial loans	59.8% (5.80)	27.8% (5.40)	0.0% (0.00)	23.4% (2.67)	23.4% (5.93)	11.2% (3.04)	12.8% (5.39)
Applying for surety bonds	57.6% (4.35)	23.4% (3.40)	13.4% (1.18)	30.1% (2.61)	21.5% (4.27)	13.5% (2.37)	13.3% (4.05)
Applying for commercial or professional insurance	23.3% (3.43)	13.5% (3.73)	5.5% (0.75)	18.7% (2.78)	12.6% (4.54)	2.4% (0.92)	6.9% (3.65)
Hiring workers from union hiring halls	100.0% (0.00)	0.0% (0.52)	0.0% (0.00)	0.0% (1.25)	1.9% (1.10)	0.0% (0.00)	0.5% (0.90)
Obtaining price quotes from suppliers or subcontracts	32.0% (4.09)	15.0% (3.92)	10.6% (1.37)	1.8% (0.32)	13.1% (4.47)	8.2% (2.81)	8.4% (4.30)
Working or attempting to obtain work on public sector prime contract	29.6% (2.89)	8.3% (1.51)	6.1% (0.60)	-2.8% (-0.27)	9.1% (2.02)	-13.3% (-2.96)	-1.1% (-0.29)
Working or attempting to obtain work on public sector subcontracts	42.5% (4.31)	8.2% (1.51)	2.3% (0.23)	-1.6% (-0.16)	11.3% (2.51)	-10.3% (-2.26)	1.8% (0.48)
Working or attempting to obtain work on private sector prime contract	45.6% (5.20)	27.2% (5.56)	12.9% (1.28)	12.6% (1.56)	22.4% (6.01)	6.7% (1.90)	12.8% (4.95)
Working or attempting to obtain work on private sector subcontracts	47.3% (5.19)	20.1% (4.40)	10.0% (1.05)	10.5% (1.34)	18.5% (5.15)	4.5% (1.34)	10.3% (4.10)
Receiving timely payment for work performed	33.3% (3.43)	19.4% (3.65)	8.5% (0.85)	13.3% (1.35)	18.3% (4.29)	0.7% (0.17)	9.8% (2.89)
Functioning without hindrance or harassment on the work site	41.6% (4.57)	11.6% (2.64)	17.3% (1.96)	10.5% (1.19)	14.6% (4.06)	8.4% (2.42)	9.7% (3.80)
Joining or dealing with construction trade associations	18.9% (2.95)	8.2% (2.74)	0.0% (0.00)	0.0% (0.00)	6.7% (2.92)	2.5% (1.11)	4.0% (2.54)
Having to do inappropriate or extra work not required of comparable non-M/WBEs	33.0% (3.37)	16.8% (3.58)	25.1% (2.44)	7.7% (0.87)	16.8% (4.35)	5.3% (1.41)	10.1% (3.54)
Having to meet quality, inspection, or performance standards not required of comparable non-M/WBEs	47.7% (5.20)	26.1% (5.41)	31.7% (3.29)	-1.4% (-0.19)	23.3% (6.09)	3.3% (0.94)	12.4% (4.58)
In any one of the business dealings listed above	33.2% (3.42)	20.2% (3.56)	4.0% (0.37)	1.5% (0.14)	17.4% (3.78)	3.5% (0.73)	10.8% (2.82)

Source: See Table 8.2.

Note: Reported estimates are derivatives from Probit models with specifications such as in Table 8.5., columns (2), (4), and (6). T-statistics are in parentheses. T-statistics of 1.96 (1.64) or larger indicate that the result is significant within a 95 (90) percent confidence interval.

Table 8.7. Firm Age, by M/WBE Status and Industry

Firm Age	Minority	White female	Non-M/WBE
All Industries			
Less than 1 Year	0.4%	1.3%	0.7%
1 to 2 Years	5.6%	4.9%	1.7%
2 to 5 Years	17.6%	17.3%	13.2%
5 to 10 Years	24.4%	22.2%	17.0%
10 to 15 Years	18.4%	20.9%	17.2%
15 to 25 Years	22.8%	20.9%	23.2%
26 to 50 Years	8.8%	11.6%	21.6%
Over 50 Years	2.0%	0.9%	5.3%
Number of Observations	250	225	582
Construction			
Less than 1 Year	0.9%	2.6%	1.0%
1 to 2 Years	6.1%	3.9%	1.9%
2 to 5 Years	14.8%	14.3%	12.8%
5 to 10 Years	22.6%	16.9%	13.8%
10 to 15 Years	13.9%	19.5%	19.6%
15 to 25 Years	27.8%	28.6%	25.0%
26 to 50 Years	12.2%	13.0%	23.1%
Over 50 Years	1.7%	1.3%	2.9%
Number of Observations	115	77	312
A&E			
Less than 1 Year	0.0%	3.0%	0.0%
1 to 2 Years	0.0%	3.0%	1.0%
2 to 5 Years	11.1%	15.2%	8.7%
5 to 10 Years	18.5%	24.2%	23.1%
10 to 15 Years	25.9%	30.3%	10.6%
15 to 25 Years	25.9%	18.2%	21.2%
26 to 50 Years	14.8%	6.1%	26.9%
Over 50 Years	3.7%	0.0%	8.7%
Number of Observations	27	33	104

Table 8.7. Firm Age, by M/WBE Status and Industry (Cont'd)

Firm Age	Minority	White female	Non-M/WBE
Services			
Less than 1 Year	0.0%	0.0%	0.8%
1 to 2 Years	7.2%	6.7%	2.5%
2 to 5 Years	25.3%	22.1%	17.6%
5 to 10 Years	25.3%	26.9%	26.1%
10 to 15 Years	21.7%	20.2%	16.8%
15 to 25 Years	15.7%	16.3%	17.6%
26 to 50 Years	3.6%	7.7%	15.1%
Over 50 Years	1.2%	0.0%	3.4%
Number of Observations	83	104	119
Commodities			
Less than 1 Year	0.0%	0.0%	0.0%
1 to 2 Years	4.0%	0.0%	0.0%
2 to 5 Years	12.0%	0.0%	14.9%
5 to 10 Years	36.0%	9.1%	2.1%
10 to 15 Years	20.0%	9.1%	17.0%
15 to 25 Years	20.0%	18.2%	29.8%
26 to 50 Years	4.0%	54.5%	17.0%
Over 50 Years	4.0%	9.1%	19.1%
Number of Observations	25	11	47

Source: See Table 8.2.

Note: Columns in each panel may no total exactly 100.0% due to rounding.

Table 8.8. Number of Employees on Payroll, by M/WBE Status and Industry

Number of Employees	Minority	White female	Non-M/WBE
All Industries			
None	27.5%	40.7%	25.0%
1	10.8%	13.7%	8.4%
2 to 5	23.5%	15.9%	24.8%
6 to 10	13.9%	11.9%	9.2%
11 to 25	13.9%	10.6%	12.7%
26 to 50	7.2%	4.9%	6.3%
51 to 100	2.0%	1.3%	6.0%
101 to 250	0.4%	0.9%	2.4%
251 to 500	0.4%	0.0%	2.6%
501 to 750	0.0%	0.0%	0.2%
751 to 1,000	0.0%	0.0%	2.4%
Over 1,000	0.4%	0.0%	0.0%
Number of Observations	251	226	584
Construction			
None	23.3%	20.5%	25.2%
1	6.0%	12.8%	8.0%
2 to 5	31.0%	15.4%	24.0%
6 to 10	10.3%	20.5%	8.3%
11 to 25	19.0%	17.9%	14.4%
26 to 50	6.9%	9.0%	8.6%
51 to 100	2.6%	2.6%	6.1%
101 to 250	0.9%	1.3%	2.9%
251 to 500	0.0%	0.0%	2.2%
501 to 750	0.0%	0.0%	0.0%
751 to 1,000	0.0%	0.0%	0.3%
Over 1,000	0.0%	0.0%	0.0%
Number of Observations	116	78	313
A&E			
None	11.1%	33.3%	17.3%
1	0.0%	9.1%	8.7%
2 to 5	25.9%	33.3%	24.0%
6 to 10	29.6%	3.0%	10.6%
11 to 25	18.5%	15.2%	13.5%
26 to 50	11.1%	6.1%	3.8%
51 to 100	3.7%	0.0%	6.7%
101 to 250	0.0%	0.0%	3.8%
251 to 500	0.0%	0.0%	3.8%
501 to 750	0.0%	0.0%	0.0%
751 to 1,000	0.0%	0.0%	7.7%
Over 1,000	0.0%	0.0%	0.0%
Number of Observations	27	33	104

Table 8.8. Number of Employees on Payroll, by M/WBE Status and Industry (Cont'd)

Number of Employees	Minority	White female	Non-M/WBE
Services			
None	41.0%	62.5%	36.1%
1	16.9%	15.4%	10.9%
2 to 5	13.3%	10.6%	26.9%
6 to 10	13.3%	6.7%	10.1%
11 to 25	4.8%	1.9%	6.7%
26 to 50	8.4%	1.0%	2.5%
51 to 100	0.0%	1.0%	4.2%
101 to 250	0.0%	1.0%	0.0%
251 to 500	1.2%	0.0%	1.7%
501 to 750	0.0%	0.0%	0.0%
751 to 1,000	0.0%	0.0%	0.8%
Over 1,000	1.2%	0.0%	0.0%
Number of Observations	83	104	119
Commodities			
None	20.0%	0.0%	12.5%
1	24.0%	18.2%	4.2%
2 to 5	20.0%	18.2%	27.1%
6 to 10	16.0%	27.3%	10.4%
11 to 25	16.0%	27.3%	14.6%
26 to 50	0.0%	9.1%	6.3%
51 to 100	4.0%	0.0%	8.3%
101 to 250	0.0%	0.0%	2.1%
251 to 500	0.0%	0.0%	4.2%
501 to 750	0.0%	0.0%	2.1%
751 to 1,000	0.0%	0.0%	8.3%
Over 1,000	0.0%	0.0%	0.0%
Number of Observations	25	11	48

Source: See Table 8.2.

Note: Columns in each panel may no total exactly 100.0% due to rounding.

Table 8.9. Gross Sales or Revenues, by M/WBE Status and Industry

Gross Sales/Revenues in 2004	Minority	White female	Non-M/WBE
All Industries			
$0 to $250,000	46.5%	52.0%	32.5%
$250,001 to $500,000	12.3%	12.2%	12.9%
$500,001 to $1,000,000	15.2%	11.3%	15.3%
$1,000,001 to $5,000,000	19.8%	18.1%	21.9%
$5,000,001 to $12,000,000	4.1%	4.5%	7.4%
$12,000,001 to $28,500,000	1.2%	0.9%	3.7%
Over $28,500,000	0.8%	0.9%	6.3%
Number of Observations	243	221	567
Construction			
$0 to $250,000	42.2%	25.7%	29.8%
$250,001 to $500,000	12.1%	20.3%	9.9%
$500,001 to $1,000,000	12.9%	13.5%	18.5%
$1,000,001 to $5,000,000	24.1%	28.4%	23.8%
$5,000,001 to $12,000,000	5.2%	9.5%	7.9%
$12,000,001 to $28,500,000	1.7%	1.4%	5.0%
Over $28,500,000	1.7%	1.4%	5.0%
Number of Observations	116	74	302
A&E			
$0 to $250,000	25.9%	46.9%	25.5%
$250,001 to $500,000	14.8%	12.5%	16.7%
$500,001 to $1,000,000	18.5%	18.8%	12.7%
$1,000,001 to $5,000,000	37.0%	21.9%	23.5%
$5,000,001 to $12,000,000	3.7%	0.0%	6.9%
$12,000,001 to $28,500,000	0.0%	0.0%	2.9%
Over $28,500,000	0.0%	0.0%	11.8%
Number of Observations	27	32	102

Table 8.9. Gross Sales or Revenues, by M/WBE Status and Industry (Cont'd)

Gross Sales/Revenues in 2004	Minority	White female	Non-M/WBE
Services			
$0 to $250,000	66.2%	76.0%	48.3%
$250,001 to $500,000	10.4%	7.7%	18.6%
$500,001 to $1,000,000	11.7%	6.7%	12.7%
$1,000,001 to $5,000,000	7.8%	6.7%	12.7%
$5,000,001 to $12,000,000	2.6%	1.0%	4.2%
$12,000,001 to $28,500,000	1.3%	1.0%	0.8%
Over $28,500,000	0.0%	1.0%	2.5%
Number of Observations	77	104	118
Commodities			
$0 to $250,000	26.1%	18.2%	24.4%
$250,001 to $500,000	17.4%	0.0%	8.9%
$500,001 to $1,000,000	34.8%	18.2%	6.7%
$1,000,001 to $5,000,000	17.4%	45.5%	28.9%
$5,000,001 to $12,000,000	4.3%	18.2%	13.3%
$12,000,001 to $28,500,000	0.0%	0.0%	4.4%
Over $28,500,000	0.0%	0.0%	13.3%
Number of Observations	23	11	45

Source: See Table 8.2.

Note: Columns in each panel may no total exactly 100.0% due to rounding.

Table 8.10. Owner's Education, by M/WBE Status and Industry

Owner's Education	Minority	White female	Non-M/WBE
All Industries			
Some High School	5.7%	1.8%	3.0%
High School Diploma	13.4%	7.2%	9.8%
Some College	20.6%	17.6%	22.0%
Trade, Vocational or Technical Degree	13.8%	5.0%	6.8%
Bachelor's Degree	25.1%	32.4%	35.8%
Postgraduate Degree	21.5%	36.0%	22.6%
Number of Observations	247	222	572
Construction			
Some High School	9.7%	1.3%	4.9%
High School Diploma	21.2%	10.5%	14.7%
Some College	27.4%	26.3%	30.9%
Trade, Vocational or Technical Degree	15.9%	9.2%	9.4%
Bachelor's Degree	21.2%	36.8%	29.0%
Postgraduate Degree	4.4%	15.8%	11.1%
Number of Observations	113	76	307
A&E			
Some High School	0.0%	3.0%	0.0%
High School Diploma	0.0%	3.0%	0.0%
Some College	0.0%	6.1%	1.0%
Trade, Vocational or Technical Degree	3.7%	0.0%	3.0%
Bachelor's Degree	40.7%	30.3%	49.5%
Postgraduate Degree	55.6%	57.6%	46.5%
Number of Observations	27	33	101
Services			
Some High School	2.4%	2.0%	1.7%
High School Diploma	7.3%	4.9%	6.7%
Some College	14.6%	13.7%	13.4%
Trade, Vocational or Technical Degree	17.1%	3.9%	4.2%
Bachelor's Degree	22.0%	30.4%	39.5%
Postgraduate Degree	36.6%	45.1%	34.5%
Number of Observations	82	102	119
Commodities			
Some High School	4.0%	0.0%	0.0%
High School Diploma	12.0%	18.2%	6.7%
Some College	32.0%	27.3%	31.1%
Trade, Vocational or Technical Degree	4.0%	0.0%	4.4%
Bachelor's Degree	36.0%	27.3%	42.2%
Postgraduate Degree	12.0%	27.3%	15.6%
Number of Observations	25	11	45

Source: See Table 8.2.

Note: Columns in each panel may no total exactly 100.0% due to rounding.

Table 8.11. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts

Business Environment	African-American	Hispanic	Asian	Native American	Total Minority	White female	Total M/WBE	Non-M/WBE
Bonding Requirements	**72.2%** **(18)**	***43.6%*** ***(55)***	42.9% (14)	44.4% (18)	**48.6%** **(105)**	34.5% (84)	**42.3%** **(189)**	31.2% (263)
Insurance Requirements	**40.0%** **(25)**	22.1% (95)	**43.5%** **(23)**	22.7% (22)	**27.9%** **(165)**	***25.4%*** ***(138)***	**26.7%** **(303)**	17.4% (407)
Previous Experience Requirements	**30.4%** **(23)**	16.8% (101)	22.2% (27)	14.3% (21)	**19.2%** **(172)**	15.0% (167)	**17.1%** **(339)**	10.8% (437)
Cost of Bidding or Proposing	28.0% (25)	30.9% (94)	***39.1%*** ***(23)***	22.7% (22)	***30.5%*** ***(164)***	**35.7%** **(154)**	**33.0%** **(318)**	23.0% (408)
Large Project Sizes	***48.1%*** ***(27)***	***43.0%*** ***(93)***	**56.0%** **(25)**	23.5% (17)	**43.8%** **(162)**	38.1% (147)	**41.1%** **(309)**	31.3% (384)
Price of Supplies or Materials	29.2% (24)	24.7% (93)	14.3% (21)	18.2% (22)	23.1% (160)	22.5% (138)	22.8% (298)	22.7% (383)
Obtaining Working Capital	**38.5%** **(26)**	26.1% (92)	16.7% (18)	34.8% (23)	***28.3%*** ***(159)***	27.9% (129)	**28.1%** **(288)**	21.0% (371)
Late Notice of Bid/Proposal Deadlines	59.3% (27)	47.1% (87)	50.0% (22)	31.6% (19)	47.7% (155)	47.7% (130)	47.7% (285)	49.3% (345)
Prior Dealings with Owner	**31.8%** **(22)**	9.7% (93)	8.3% (24)	15.0% (20)	13.2% (159)	8.4% (154)	10.9% (313)	8.8% (398)

Source: See Table 8.2.

Note: Total number of valid responses in parentheses. Figures in **boldface** type are statistically significantly different from non-M/WBEs using a conventional two-tailed Fisher's Exact Test and within a 95% or better confidence interval. Figures in ***boldface italicized*** type are significant within a 90% confidence interval.

Table 8.12. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts

Business Environment	M/WBEs
Bonding Requirements	+
Insurance Requirements	+
Previous Experience Requirements	+*
Cost of Bidding or Proposing	+*
Large Project Sizes	+
Price of Supplies or Materials	–
Obtaining Working Capital	+
Late Notice of Bid/Proposal Deadlines	+
Prior Dealings with Owner	+†

Source: See Table 8.2.

Note: A plus (+) indicates that a group is more likely than non-M/WBEs to report difficulty with business environment factors. A minus (–) indicates that a group is less likely than non-M/WBEs to experience difficulty. An asterisk (*) indicates that the disparity is statistically significant within a 95% or better confidence interval. A dagger (†) indicates that the disparity is statistically significant within a 90% or better confidence interval.

Table 8.13. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts, Construction and A&E

Business Environment	M/WBEs
Bonding Requirements	+
Insurance Requirements	+
Previous Experience Requirements	+*
Cost of Bidding or Proposing	+
Large Project Sizes	+
Price of Supplies or Materials	–
Obtaining Working Capital	+
Late Notice of Bid/Proposal Deadlines	–
Prior Dealings with Owner	+*

Source: See Table 8.2.
Note: See Table 8.12.

Table 8.14. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts, Goods and Services

Business Environment	M/WBEs
Bonding Requirements	–
Insurance Requirements	+
Previous Experience Requirements	+
Cost of Bidding or Proposing	+
Large Project Sizes	+[†]
Price of Supplies or Materials	+
Obtaining Working Capital	+
Late Notice of Bid/Proposal Deadlines	+[*]
Prior Dealings with Owner	+

Source: See Table 8.2.
Note: See Table 8.12.

Table 8.15. Percentage of M/WBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with M/WBE Goals Seldom or Never Hire Them on Projects without Such Goals

M/WBE Group	All Industries	Construction	A&E	Services	Commodities
African-American	74.2%	60.0%	-	77.8%	100.0%
	(31)	(10)	(0)	(18)	(3)
Hispanic	57.9%	54.9%	46.7%	66.7%	75.0%
	(95)	(51)	(15)	(21)	(8)
Asian	70.0%	20.0%	85.7%	83.3%	100.0%
	(20)	(5)	(7)	(6)	(2)
Native American	56.3%	57.1%	-	60.0%	50.0%
	(16)	(7)	(0)	(5)	(4)
Total Minorities	62.9%	55.3%	59.1%	72.5%	72.2%
	(167)	(76)	(22)	(51)	(18)
White Women	54.6%	53.7%	61.3%	56.3%	25.0%
	(141)	(54)	(31)	(48)	(8)
Total M/WBEs	59.1%	54.6%	60.4%	64.6%	57.7%
	(308)	(130)	(53)	(99)	(26)

Source: See Table 8.2.

Note: Total number of valid responses in parentheses.

Table 8.16. Percent of M/WBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with M/WBE Goals Seldom or Never Solicit Them on Projects without Such Goals

M/WBE Group	All Industries	Construction	A&E	Services	Commodities
African-American	69.0%	55.6%	-	70.6%	100.0%
	(29)	(9)	(0)	(17)	(3)
Hispanic	58.5%	56.0%	66.7%	57.1%	62.5%
	(94)	(50)	(15)	(21)	(8)
Asian	63.2%	20.0%	71.4%	80.0%	100.0%
	(19)	(5)	(7)	(5)	(2)
Native American	56.3%	62.5%	-	75.0%	25.0%
	(16)	(8)	(0)	(4)	(4)
Total Minorities	60.5%	54.1%	68.2%	66.7%	61.1%
	(162)	(74)	(22)	(48)	(18)
White Women	55.6%	50.9%	65.5%	60.0%	25.0%
	(142)	(55)	(29)	(50)	(8)
Total M/WBEs	58.2%	52.7%	66.7%	63.3%	50.0%
	(304)	(129)	(51)	(98)	(26)

Source: See Table 8.2.

Note: Total number of valid responses in parentheses.

IX. Review of the City of Austin's Minority-Owned and Women-Owned Business Enterprise Procurement Program and Policies

An essential element of determining whether a race- and sex-based contracting program meets constitutional parameters is whether that program is "narrowly tailored" to any evidence of discrimination. The following factors must be considered in determining whether a race-based remedy is narrowly tailored to achieve its 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.[218]

A. Austin's Program is Narrowly Tailored

1. Race-neutral initiatives

The City provides extensive assistance to small businesses in its marketplace. These measures were documented in a 2002 report, "Needs Assessment for Small Business Development Services," prepared by BBC Research & Consulting. In brief, the report described then-existing services to small businesses, and recommended that the City promote greater use of existing services; communicate unmet needs to current service providers; improve its internal processes to make it easier for small businesses to do business with the City; and examine its strategy for small business assistance to ensure maximum impact and sustainability. In addition to the measures identified in the BBC report, the City has adopted, and is in the process of implementing, a race- and gender-neutral "super prompt pay program" that would allow eligible subcontractors to be paid twice per month to address cash flow concerns.

Despite these efforts, there is no evidence that absent the Minority-Owned and Women-Owned Business Enterprise Procurement Program's use of race- and gender-conscious subcontracting goals, M/WBEs would be utilized on City contracts commensurate with their availability. To the contrary, minorities and women, as well as City staff, were adamant that without goals M/WBEs would have few opportunities to work on City contracts. The lack of M/WBE participation on private sector projects without affirmative action goals suggests that race- and gender-neutral approaches will be inadequate to remedy the effects of past and current discrimination in the City's construction marketplace.

[218] *United States v. Paradise*, 480 U.S. 149, 171 (1987).

2. Annual Aspirational Goals for M/WBE Utilization

The current ordinance sets goals based upon the 2003 NERA availability analysis. This approach to determining the available pool of M/WBEs, which has been upheld in court,[219] establishes a clear relationship between the benchmark for government spending to the availability of M/WBEs. An updated analysis will provide fresh data to ensure that the Program's goals "fit" the marketplace.

3. Program Flexibility

Austin's Program is extremely flexible. Goals on construction contracts are set on a contract by contract basis, to reflect the actual availability of certified firms to perform the anticipated subcontracting scope of the project. Goals are not quotas; to the contrary, bidders who demonstrate that despite their good faith efforts to meet the goals they were unsuccessful are in full compliance with the ordinance and the Program Rules. Further, the City Manager may grant a waiver of the good faith efforts requirement, if it is in the best interests of the City.

4. Program Beneficiaries

The statistical portion of the report suggests that all of the racial and ethnic minority groups and White women experience disparities in the Austin construction marketplace.[220] Groups are not randomly included.[221]

5. Adverse Impact on Third Parties

There is no evidence that non-certified firms are unduly impacted by the Program. While majority male-owned firm owners had particular criticisms of the Program, none was shut out of Austin's contracting opportunities or found it impossible to bid City work. There will, of course, be some burden on non-M/WBEs, as that is inherent in the nature of a remedy but as previously discussed, that is not fatal to the City's efforts to level the playing field for minority- and women-owned firms. Moreover, prime contractors were generally supportive of the objectives of the Program, recognizing that some intervention is necessary to create equal opportunities for City contracts and entrepreneurial opportunities in Austin's minority communities.

6. Program Duration

The M/WBE ordinance contains a sunset date. This requires the City Council to periodically review the evidence relevant to the Program and to determine whether race- and sex-conscious remedies must continue. This is sufficient to meet the narrow tailoring requirement. This is also

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[219] *See, e.g., Northern Contracting III*, 473 F.3d at 723; *Northern Contracting II*, at 68 (NERA's custom census approach meets legal and policy concerns).

[220] *See Western State*, 407 F.3d at 37 ("each of the principal minority groups benefited by Washington's DBE program … must have suffered discrimination within the State").

[221] *Cf. BAGC v. Cook*, 256 F.3d at 64 (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").

an essential element for a reenacted and revised M/WBE ordinance and Program policies as discussed in IX.B below.

B. Program Policies and Procedures

To examine the efficacy of the Program's policies and procedures, Colette Holt met with DSMBR staff and the MBE/WBE and SBE Advisory Committee). While in general the Program was thought to be effective, some themes emerged. As a result of the issues identified in these meetings, the City has made changes in the administration of the Program as discussed herein.

1. Contract Goal Setting

In contrast to construction contracts, the annual goals are used for professional services contracts. While this is less of an administrative burden than setting individual goals, concerns were expressed about the defensibility of this blanket approach.

The recent requirement that contractors and subcontractors register with the City prior to submitting a response to a City solicitation or performing work on a City project thereby receiving a vendor number facilitates contract goal setting by creating additional information on "available" firms for a particular project.

2. Contract Monitoring

DSMBR reorganized the contracting function in 2004 to form a pre-award team and a post-award team. The pre-award team is responsible for educating the contracting community about the M/WBE Procurement Program requirements and for reviewing individual bid or proposal compliance with the Program before contract award. The post-award team is responsible for monitoring compliance with the Program after award of contract, including verifying prime contractor payments to subcontractors. This division of responsibility added more in depth monitoring of Program compliance and MBE and WBE utilization.

While the E-CAPRI system has increased DSMBR's ability to monitor projects, enhancements need to be made. For example, the addition or deletion of subcontractors is often not captured, and contractors can receive progress payments without furnishing this information to the City. There also is no field to track subcontractor substitutions. In fact, E-CAPRI does not appear to be designed as a M/WBE Procurement Program compliance tool. Staff suggested either modifying E-CAPRI or implementing specialized compliance software packages to meet this critical need.

3. Contract Sanctions

In the past, staff expressed frustration at what they saw as the lack of sanctions applied to contractors who knowingly and repeatedly ignored or violated the Program Rules, particularly with respect to the substitution of certified subcontractors. For example, Staff observed some prime contractors making unauthorized subcontractor substitutions and labeling them "emergencies"; failing to pay subcontractors in a timely fashion; and failing to meets goals without adequate explanations. Staff also felt that there were insufficient guidelines about when and what type of sanctions can be imposed.

In order to address these concerns, after receiving input from the MBE/WBE and SBE Advisory Committee, and after considering public input, DSMBR adopted new Program Rules in 2008 to address the substitution of subcontractors and adopt sanctions for failing to follow DSMBR's procedures regarding substitutions of all subcontractors, not just M/WBEs. DSMBR worked closely and in coordination with the Law Department, the Purchasing Office, the Department of Public Works and the MBE/WBE and SBE Advisory Committee to implement the new sanctions policy. After the first violation within a rolling 2 year period, DSMBR may send a notice of violation to the contractor. After the second violation, DSMBR may recommend to the Purchasing Office that the contractor be placed on probation. After the third violation, DSMBR may recommend to the Purchasing Office that the contractor be suspended. After the fourth violation, DSMBR may recommend to the Purchasing Office that the contractor be debarred.

DSMBR has also instituted a mechanism to track sanctions.

4. Certification

From the period of approximately January 2005 through January 2007, the City outsourced the contractor certification process to the South Central Texas Regional Certification Agency (SCTRCA). From the outset, Staff expressed criticisms very similar to those of applicants with the outsourced certification process. In addition, Staff and applicants observed that SCTRCA did not communicate adequately with DSMBR and applicants. City Program officials were sometimes concerned about SCTRCA's inability to respond to questions from certified firms.. Further, there was a lack of integration between SCTRCA's and the City's databases. Finally, and most profoundly, the lack of site visits for construction applicants raised questions about the integrity of the process and whether "front" firms were being certified by SCTRCA.

To address these concerns, the City terminated the relationship with SCTRCA in January 2007 and re-assigned the certification function to DSMBR. DSMBR now processes, evaluates and follows-through on MBE/WBE and DBE certifications.

5. Department Responsibilities

In the past, DSMBR staff felt that other City departments should take ownership of the Program. In their experience, while there are several project managers who support the Program and do their best to enforce its provisions, some project managers and other user department personnel treated compliance as DSMBR's problem, not a City-wide policy and objective. This led to a lack of communication and a "pass the buck" attitude that hindered the Program and diminished opportunities for M/WBEs.

In 2007, all City project managers were required to undergo training to understand major elements of the Program. In addition, the criteria under which project managers' annual performance is reviewed were modified to include an examination of the project managers' assistance on Program objectives. In 2008, the City created the Office of Contract and Land Management, which is responsible for managing most of the City's major construction and professional service contracts and includes a M/WBE Coordination section.

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