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The State of Minority- and Women-Owned Business Enterprise in Construction: Evidence from Houston

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Acknowledgments

About the Project Team—NERA Economic Consulting

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

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

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

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

About the Project Team—NERA Research Partners

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

A. O. Phillips & Associates (AOP) Is a certified MBE business established in 1981 and based in Houston. President and CEO Acie O. Phillips, Jr. has over 35 years of Operational and Financial Management experience. He is a graduate of Tuskegee University and holds a Bachelor of Science in Finance and Accounting. Select AOP clients include Harris County, the Port of Houston Authority, and the Houston Independent School District. On this assignment, AOP assisted in publicizing, populating, and conducting all of the focus group sessions and the public meeting.

Armand Resource Group, Inc. (ARG) is a certified MBE business with offices in Houston. The firm specializes in the design and implementation of comprehensive diversity programs, as well as compliance monitoring and reporting services. ARG has extensive experience assisting transportation systems and local government agencies with compliance requirements and goals. On this assignment, ARG assisted in publicizing and populating all of the focus group 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 for the explicit purpose of combining high quality analytic capabilities with in-house control of the research implementation to ensure accurate, timely and actionable research used by decision makers working in rapidly changing environments. Abt SRBI clients include the Eagleton Institute at Rutgers, the Annenburg Institute at the University of Pennsylvania, and the major networks. Abt SRBI has conducted numerous surveys of M/WBEs and non-M/WBEs on behalf of the NERA team. On this Study, Abt SRBI conducted telephone surveys of race and gender misclassification and of mail survey non-response under the supervision of Abt SRBI Project Manager, Andrew Evans.

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

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Glossary

ACS. *The American Community Survey*. The Census Bureau's ACS is an ongoing survey covering the same type of information collected in the decennial census. The ACS is sent to approximately 3 million addresses annually, including housing units in all counties in the 50 states and the District of Columbia.

African American: Or "Black" refers to an individual having origins in any of the Black racial groups of Africa.

Aggregation, aggregated: Refers to the practice of combining smaller groups into larger groups. In the present context, this term is typically used in reference to the presentation of utilization, availability, or related statistics according to industry. For example, statistics presented for the "Construction" sector as a whole are more aggregated than separate statistics for "Building Construction," "Heavy Construction," and Special Trades Construction" industries. See also "Disaggregation, disaggregated."

Anecdotal evidence: Qualitative data regarding business owners' accounts of experiences with disparate treatment and other barriers to business success.

Asian: Refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islanders (except Native Hawaiians).

Availability: A term of art in disparity studies that refers to the percentage of a given population of businesses owned by one or more groups of interest. For example, Table A indicates that M/WBE availability in Construction is 32.39 percent, indicating our estimate that 32.39 percent of all the construction establishments in the State's relevant market area are owned by minorities or women. *See also* Utilization, Disparity Ratio.

Baseline Business Universe: The underlying population of business establishments that is used in an availability analysis. The denominator in an M/WBE availability measure.

Black: Or "African American" refers to an individual having origins in any of the Black racial groups of Africa.

Capacity: This term has no single definition. See Chapters II and IV for extended discussions of this concept and its role in disparity studies.

Constitutional significance or **substantive significance:** An indication of how large or small a given disparity is. Under the EEOC's "four-fifths" rule, a disparity ratio is substantively significant if it is 0.8 or less on a scale of 0 to 1 or 80 or less on a scale of 1 to 100.

Decennial: Refers to the census conducted every decade by the U.S. Census Bureau. The last decennial census was conducted in 2010.

Demand-side: Refers to activity on the demand-side of an economic market. For example, when State agencies hire contractors or vendors they are creating market demand. *See also* "Supply-side."

Dependent variable: In a regression analysis, a variable whose value is postulated to be influenced by one or more other "independent" or "exogenous" or "explanatory" variables. For example, in business owner earnings regressions, business owner earnings is the dependent variable, and other variables, such as industry, geographic location, or age, are the explanatory variables. *See also* "Independent variable," "Exogenous variable."

Disaggregation, disaggregated: Refers to the practice of splitting larger groups into smaller groups. In the present context, this term is typically used in reference to the presentation of utilization, availability, or related statistics according to industry. For example, statistics presented for "Building Construction," "Heavy Construction," and Special Trades Construction" industries are more disaggregated than statistics for the "Construction" sector as a whole.

Disparate impact: A synonym for "disparity," often used in the employment discrimination litigation context. A disparate impact occurs when a "good" outcome for a given group occurs significantly less often than expected given that group's relative size, or when a "bad" outcome occurs significantly more often than expected.

Disparity ratio (or Disparity Index): A measure derived from dividing utilization by availability and multiplying the result by 100. A disparity ratio of less than 100 indicates that utilization is less than availability. A disparity ratio of 80 or less can be taken as evidence of disparate impact. *See also* Availability, Constitutional significance, Utilization.

Distribution. A set of numbers and their frequency of occurrence collected from measurements over a statistical population.

Econometrics, econometrically: Econometrics is the field of economics that concerns itself with the application of statistical inference to the empirical measurement of relationships postulated by economic theory. *See also* "Regression."

Endogenous variable: A variable that is correlated with the residual in a regression analysis or equation. Endogenous variables should not be used in statistical tests for the presence of disparities. See also "Exogenous variable."

Exogenous variable: A variable that is uncorrelated with the residual in a regression analysis or equation. Exogenous variables are appropriate for use in statistical tests for the presence of disparities. *See also* "Endogenous variable," "Independent variable," "Dependent variable."

FY: Fiscal Year. Houston's Fiscal Year runs from July 1 through June 30.

First-tier subcontractors: Subcontractors, subconsultants, or suppliers hired directly by the prime contractor.

Hispanic: Refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Independent variable: In a regression analysis, one or more variables that are postulated to influence or explain the value of another, "dependent" variable. For example, in business owner earnings regressions, business owner earnings is the dependent variable, and other variables,

such as industry, geographic location, or age, are the independent or explanatory variables. *See also* "Dependent variable," "Exogenous variable."

MBE: Minority-Owned Business Enterprise. A business establishment that is 51% or more owned and controlled by racial or ethnic minorities (i.e., African Americans, Hispanics, Asians, or Native Americans).

Mean: A term of art in statistics, synonymous in this context with the arithmetic average. For example, the mean value of the series 1, 1, 2, 2, 2, 4, 5 is 2.43. This is derived by calculating the sum of all the values in the series (i.e., 17) and dividing that sum by the number of elements in the series (i.e., 7).

Median: A term of art in statistics, meaning the middle value of a series of numbers. For example, the median value of the series 1, 1, 2, 2, 2, 4, 5 is 2.

Microdata or micro-level data: Quantitative data rendered at the level of the individual person or business, as opposed to data rendered for groups or aggregates of individuals or businesses. For example, Dun and Bradstreet provides micro-level data on business establishments. The Census Bureau's *Survey of Business Owners*, provides grouped or aggregated data on businesses.

Misclassification: In the present context, this term refers to a situation when a listing or directory of minority-owned or women-owned firms has incorrectly classified a firm's race or gender status. For example, when a firm listed as Hispanic-owned is actually African American-owned, or when a firm listed as nonminority female-owned is actually nonminority male-owned. *See also* "Nonclassification."

MSA: Metropolitan Statistical Area. As defined by the federal Office of Management and Budget, contains at least one urbanized area that has a total population of 50,000 or more, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.

NAICS: North American Industry Classification System. The standard system for classifying industry-based data in the U.S. Superseded the Standard Industrial Classification (SIC) System in 1997. *See also* "SIC."

Nonclassification: In the present context, this term refers to a type of misclassification when a listing or directory has not identified firms as minority-owned or women-owned when, in fact, they are. See "Misclassification."

NSSBF or SSBF. The *Survey of Small Business Finances*, formerly the *National Survey of Small Business Finances*, was produced jointly by the Federal Reserve Board and the U.S. Small Business Administration to provide a periodic statistical picture of small business finances. The SSBF was discontinued in 2003.

Native American: Refers to an individual having origins in any of the original peoples of North America, including Native Hawaiians.

Nonminority: Firms that are not M/WBEs, i.e., not owned by African Americans, Hispanics, Asians, Native Americans, or White females.

PUMS: Public Use Microdata Sample. Both the decennial census and the American Community Survey publish PUMS products.

p-value: A standard measure used to represent the level of statistical significance. It states the numerical probability that the stated relationship is due to chance alone. For example, a p-value of 0.05 or 5% indicates that the chance a given statistical difference is due purely to chance is 1-in-20. *See also* "Statistical Significance."

Regression, multiple regression, multivariate regression: A type of statistical analysis which examines the correlation between two variables ("regression") or three or more variables ("multiple regression" or "multivariate regression") in a mathematical model by determining the line of best fit through a series of data points. Econometric research typically employs regression analysis. *See also* "Econometrics."

SBO: The Census Bureau's *Survey of Business Owners* statistical data series is devoted to capturing statistical information on the nation's minority-owned and women-owned business enterprises. Part of the five-year *Economic Census* series.

Setaside, setasides: A contracting practice where certain contracts or classes of contracts are reserved for competitive bidding exclusively among a given subset of contractors, for example minority-owned and women-owned contractors.

SIC: Standard Industrial Classification system. Prior to 1997, the standard system for classifying industry-based data in the U.S. Superseded by the North American Industry Classification System (NAICS). *See also* "NAICS."

Statistical significance: A statistical outcome or result that is unlikely to have occurred as the result of random chance alone. The greater the statistical significance, the smaller the probability that it resulted from random chance alone. *See also* "p-value."

SSBF. *See* NSSBF.

Stratified: In the present context, this refers to a statistical practice where random samples are drawn within different categories or "strata" such as time period, industry sector, or M/WBE status.

Substantive significance or **constitutional significance:** An indication of how large or small a given disparity is. Under the EEOC's "four-fifths" rule, a disparity ratio is substantively significant if it is 0.8 or less on a scale of 0 to 1.

Supply-side: Refers to activity on the supply-side of an economic market. For example, when new businesses are formed, other things equal, the supply of contractors to the market is increased. See also "Demand-side."

t-test, t-statistic, t-distribution: Often employed in disparity studies to determine the statistical significance of a particular disparity statistic. A t-test is a statistical hypothesis test based on a test statistic whose sampling distribution is a t-distribution. Various t-tests, strictly speaking, are aimed at testing hypotheses about populations with normal probability distributions. However, statistical research has shown that t-tests often provide quite adequate results for non-normally distributed populations as well.

Two-tailed (or two-sided) statistical test: A "two-tailed" test means that one is testing the hypothesis that two values, say u (utilization) and a (availability), are equal against the alternate hypothesis that u is not equal to a. In contrast, a one-sided test means that you are testing the hypothesis that u and a are equal against the alternate hypothesis u is not equal to a in only one direction. That is, that it is either larger than a or smaller than a.

Utilization: A term of art in disparity studies that refers to the percentage of a given amount of contracting and/or procurement dollars that is awarded or paid to businesses owned by one or more groups of interest. For example, Table B1 indicates that M/WBE utilization in construction is 29.36 percent, indicating our estimate that 29.36 percent of the $3.67B of construction awards by the City of Houston accrued to minorities or women, either as prime contractors or first-tier subcontractors. *See also* Availability, Disparity Ratio.

WBE: Women-Owned Business Enterprise: A business establishment that is 51% or more owned and controlled by nonminority women. In this Study, unless otherwise indicated, WBE refers to nonminority women-owned firms.

WSC: Refers to the Wes South Central region in the NSSBF and SSBF data sets. The West South Central region includes the states of Texas, Arkansas, Louisiana, and Oklahoma.

Executive Summary

A.   Introduction

To ensure compliance with constitutional mandates and M/WBE best practices and implement a Settlement Agreement in litigation against the City of Houston's Small/Minority Business Enterprise Program for Construction Contracts (the "M/WBE Program"), NERA Economic Consulting was commissioned to examine the past and current status of minority-owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs") (collectively "M/WBEs") in the geographic and product markets for construction contracting of the City of Houston. The Study finds both statistical and anecdotal evidence of business discrimination against M/WBEs in the City's relevant market area.

The City of Houston has implemented a remedial program for construction contracts since 1984. The current policy governing the administration of the Minority, Women and Small Business Enterprise Program includes construction services, the supply of goods and nonpersonal or nomnprofessional services, and the performance of personal or professional services. The Program is codified in Chapter 15 of the City Code, Article V.

The results of NERA's Study provide the evidentiary record necessary for the City's consideration of whether to implement renewed M/WBE and Small Business Enterprise ("SBE") policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted M/W/SBEs to participate on a fair basis in the City's contracting and procurement activities. The Study will also assist the City to narrowly tailor existing race- and gender-based measures any new measures that may be considered.

B.   Legal Standards for Government Race- and Gender-Based Affirmative Action Contracting Programs

To be effective, enforceable, and legally defensible, a race- and gender-based program must meet the judicial test of constitutional "strict scrutiny." Strict scrutiny requires a "compelling interest" in remedying discrimination, which has been defined as a "strong basis in evidence" of the persistence of discrimination, and any remedies adopted must be "narrowly tailored" to address that discrimination. Applying these terms to government affirmative action contracting programs is complex, and cases are quite fact specific. Since 1989, federal appellate and district courts have developed parameters for establishing a state or local government's compelling interest in remedying discrimination and evaluating whether the remedies adopted to address that discrimination are narrowly tailored. This Study follows the guidelines promulgated by the *National Academy of Sciences*, which our team developed.[1]

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

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

C.   Defining the Relevant Markets

Chapter III describes how the relevant geographic and product markets were defined for this Study, using data from the City's own construction contract and subcontract records, supplemented with records from the City's prime construction contractors.

This database, which we refer to as the Master Contract/Subcontract Database, contains information on 756 prime construction contracts and 7,440 associated subcontracts awarded between July 2004 and December 2009 (City Fiscal Years 2005-2009 and the first half of Fiscal Year 2010). The total award value for these contracts is $2.82 billion and the total paid value is $2.76 billion (*See* Tables 3.1-3.4).

The records in the Master Contract/Subcontract Database were analyzed to determine the geographic radius around the City of Houston that accounts for at least 75 percent of aggregate contract and subcontract spending. These records were also analyzed to determine those detailed industry categories that collectively account for over 99 percent of contract and subcontract spending in the City's construction contracts.

Using the Master Contract/Subcontract Database, we determined that the City's relevant geographic market area was determined to be the Houston-Sugar Land-Baytown Metropolitan Statistical Area, consisting of the counties of Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, San Jacinto, and Waller (*See* Table 3.5).

Using the same database, we determined that the City's product markets included firms in 134 different North American Industrial Classification System (NAICS) industry groups. Of these 134 industry groups, three accounted for more than half of City construction spending, nine accounted for more than four-fifths, 19 accounted for over 95 percent, and 40 accounted for 99 percent. An additional 94 accounted for the remaining one percent (*See* Table 3.6).

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

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

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

M/WBEs; and (3) estimating the number of unlisted M/WBEs in the relevant market. Chapter IV details how these three tasks were carried out to produce estimates of current M/WBE availability. Table A below provides an overall summary of the current M/WBE availability estimates derived in the Study. Estimates for more detailed industry categories within the construction sector appear in Table 4.9.

Table A. Overall Current Availability for City of Houston Construction Contracting

	African American	Hispanic	Asian	Native American	MBE	Non-minority Female	M/WBE	Non-M/WBE
CONSTRUCTION (WEIGHTED BY DOLLARS AWARDED)	4.95	13.12	4.29	1.04	23.39	11.34	34.73	65.27
CONSTRUCTION (WEIGHTED BY DOLLARS PAID)	4.90	13.22	4.27	1.03	23.42	11.32	34.74	65.26

Source: Table 4.10.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations (2) The availability figures presented above are weighted averages of many underlying detailed industry availability estimates, with the weights being the dollars awarded or paid within each industry category. (3) For this study, "Black" or "African American" refers to an individual having origins in any of the Black racial groups of Africa; "Hispanic" refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; "Asian" refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islanders (except Native Hawaiians); "Native American" refers to an individual having origins in any of the original peoples of North America, including Native Hawaiians. Businesses owned by members of these groups are collectively referred to as M/WBEs.

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

Chapter V demonstrates that current M/WBE availability levels in the City of Houston market area, as measured in Chapter IV, are substantially lower in most instances than those that we would expect to observe if commercial markets operated in a race- and gender-neutral manner and that these levels are statistically significant.[2] In other words, minorities and women are substantially and significantly less likely to own their own businesses as the result of 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 nonminority males, whether they work as employees or entrepreneurs.

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[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*. 236.

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For example, we found that annual average wages for African Americans in 2006–2008 in the construction sector were 53 percent lower in the Houston market area than for nonminority males who were otherwise similar in terms of geographic location, industry, age, and education. This difference is large and statistically significant. Large, adverse, and statistically significant wage disparities were also observed for Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting two or more races, and nonminority women. These disparities are consistent with the presence of market-wide discrimination. Observed disparities for these groups ranged from a low of -35 percent for Hispanics to a high of -53 percent for African Americans and nonminority women. Similar results were observed when the analysis was restricted to the goods and services sector or expanded to the economy as a whole. That is, large, adverse, and statistically significant wage disparities were observed for all minority groups and for nonminority women. All wage and salary disparity analyses were then repeated to test whether observed disparities in the Houston market area were different enough from elsewhere in the country or the economy to alter any of the basic conclusions regarding wage and salary disparities. They were not.

This analysis demonstrates that minorities and women earn substantially and significantly less than their nonminority 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 market area.

Next, we analyzed race and gender disparities in business owner earnings. We found, for example that annual earnings for self-employed for African Americans in 2006–2008 in the construction sector were 43 percent lower in the Houston market area than for nonminority males who were otherwise similar in terms of geographic location, industry, age, and education. This difference is large and statistically significant. Large, adverse, and statistically significant wage disparities were also observed for Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting two or more races, and nonminority women. These disparities, as well, are consistent with the presence of market-wide discrimination. Observed disparities for these groups ranged from a low of -16 percent for Hispanics to a high of -46 percent for nonminority women. Similar results were observed when the analysis was restricted to the goods and services sector or expanded to the economy as a whole. That is, large, adverse, and statistically significant wage disparities were observed for all minority groups and for nonminority women. As with the wage and salary disparity analysis, we enhanced our basic statistical model to test whether minority and female business owners in the Houston market area differed significantly enough from business owners elsewhere in the U.S. economy to alter any of our basic conclusions regarding disparity. They did not.

As was the case for wage and salary earners, minority and female entrepreneurs earned substantially and significantly less from their efforts than similarly situated nonminority male entrepreneurs. These disparities are a symptom of discrimination in commercial markets that

directly and adversely affects M/WBEs. Other things equal, if minorities and women cannot earn remuneration from their entrepreneurial efforts comparable to that of nonminority males, growth rates will slow, business failure rates will increase, and business formation rates may decrease. Combined, these phenomena result in lower M/WBE availability levels than would otherwise be observed in a race- and gender-neutral market area.

Next, we analyzed race and gender disparities in business formation. As with earnings, in most cases we observed large, adverse, and statistically significant disparities consistent with the presence of discrimination in these markets in the overall economy, in the construction sector, and in the goods and services sector. In the construction sector, for example, business formation rates for African Americans, were 9.1 percentage points lower than for comparable nonminority males. For other groups, disparities ranged from a low of 4.1 percentage points lower for persons reporting two or more races to a high of 9.6 percentage points lower for nonminority females. Overall, business formation rates for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting two or more races, and nonminority women, were substantially and statistically significantly lower than the corresponding nonminority male business formation rate. Similar results were observed in the goods and services sector and in the economy as a whole.

Finally, as a further check on the statistical findings in this Chapter, we examined evidence from the Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO).[3] These data show large, adverse, and statistically significant disparities between M/WBEs' share of overall revenues and their share of overall firms in the U.S. as a whole, and in the State of Texas.[4] The size of the disparities facing minority- and women-owned firms in Texas is striking. For example, although 2.95 percent of all construction firms in Texas are owned by African Americans, they earned only 0.68 percent of all sales and receipts. Hispanic-owned construction firms are 32.30 percent of all firms in Texas, yet they earned only 10.66 percent of all sales and receipts. Asian-owned construction firms are 1.18 percent of all construction firms in Texas, but earned only 0.93 percent of sales and receipts. Native Americans are 1.67 percent of all construction firms in Texas, yet earned only 0.87 percent of all sales and receipts. Women own 9.53 percent of all construction firms in Texas, but earned only 7.77 percent of sales and receipts.

F.   Statistical Disparities in Credit/Capital Markets

In Chapter VI, we analyzed current and historical data from the Survey of Small Business Finances ("SSBF"), conducted by the Federal Reserve Board and the U.S. Small Business Administration, along with data from nine customized matching mail surveys we have conducted throughout the nation since 1999. This data examines whether discrimination exists in the small business credit market.

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

[4]   It is not possible with this particular data source to examine the Houston area separately from the rest of Texas.

Executive Summary

Credit market discrimination can have an important effect on the likelihood that M/WBEs will succeed. Moreover, discrimination in the credit market might even prevent such businesses from opening in the first place. This analysis has been held by the courts to be probative of a public entity's compelling interest in remedying discrimination. We provide qualitative and quantitative evidence supporting the view that M/WBE firms, particularly African American-owned firms, suffer discrimination in this market.

The SSBF datasets are constructed for the nation as a whole and for nine Census divisions. The City of Houston Market Area is part of the West South Central Census division, which includes the states of Texas, Arkansas, Louisiana, and Oklahoma. To render the results as narrowly tailored as possible, we included indicator variables in our statistical analyses to determine whether the results for the West South Central division were different from those for the nation as a whole. We determined that the national results also apply in general to the West South Central division.

The main 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 (*See* Tables 6.15, 6.22, 6.29).

- When minority-owned firms did apply for a loan, their loan requests were substantially more likely to be denied than non-minorities, even after accounting for differences like firm size and credit history (*See* Tables 6.8, 6.9, 6.18, 6.19, 6.25, 6.26).

- When minority-owned firms did receive a loan they were obligated to pay higher interest rates on the loans than comparable nonminority-owned firms (*See* Tables 6.13, 6.14, 6.21, 6.27).

- Far more minority-owned firms report that credit market conditions are a serious concern than is the case for nonminority-owned firms (*See* Tables 6.3, 6.4, 6.5, 6.6, 6.7, 6.17, 6.24).

- A greater share of minority-owned firms believed that the availability of credit was the most important issue likely to confront the firm in the near future (*See* Tables 6.5, 6.6).

- Judging from the analysis done using data from the SSBF, there is no reason to believe that evidence of discrimination in the market for credit is different in the West South Central division, which includes the City of Houston Market Area, than in the nation as a whole. The evidence from NERA's own credit surveys in a variety of states and metropolitan areas across the country is entirely consistent with the results from the SSBF.

We conclude that there is evidence of discrimination against M/WBEs in the Houston market area in the small business credit market. This discrimination is particularly acute for African

American-owned small businesses where, even after adjusting for differences in assets, liabilities, and creditworthiness, the loan denial rate ranges from 8 to 24 percentage points higher than for nonminority male-owned small businesses.

G. M/WBE Public Sector Utilization vs. Availability in the City's Construction Contracting Market Area, FY 2005–2010

Chapter VII analyzes the extent to which M/WBEs were utilized by the City of Houston from FY 2005 through the first half of FY 2010 and compares this utilization rate to the availability of M/WBEs in the relevant market area. Table B1 provides an executive level summary of utilization findings for the Study by M/WBE type.

Table B1. M/WBE Construction Utilization at City of Houston, Fiscal Years 2005-2010

M/WBE Type	Dollars Awarded		Dollars Paid	
	($)	(%)	(S)	(%)
African American	80,762,648	2.86	77,913,191	2.82
Hispanic	385,093,241	13.66	376,485,742	13.64
Asian	59,846,434	2.12	67,342,164	2.44
Native American	39,974,322	1.42	41,085,506	1.49
MBE	565,676,645	20.06	562,826,603	20.40
Nonminority Female	257,662,850	9.14	261,220,046	9.47
M/WBE	823,339,495	29.20	824,046,649	29.87
Non-M/WBE	1,996,151,594	70.80	1,935,163,545	70.13
Total ($)	*2,819,491,089*	100.00	*2,759,210,194*	100.00

Source: Table 7.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

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Table B2 shows that nonminority female utilization on locally-funded construction contracts fell substantially—more than 50 percent—after the passage of Ordinance 2009-280 ("Final Settlement of Kossman vs City of Houston) on March 31, 2009. By contrast, minority utilization on locally-funded construction contracts saw no such decrease.

Table B2. Nonminority Female Utilization on Locally-Funded City of Houston Construction Contracts, Pre- and Post-Settlement

	Before March 31, 2009	On or After March 31, 2009
	(%)	(%)
Nonminority Female (Award Dollars)	10.14	5.01
Nonminority Female (Paid Dollars)	10.54	4.96
Minority (Award Dollars)	19.21	25.21
Minority (Paid Dollars)	19.56	26.46

Source and Notes: Table 7.2.

Moreover, Table B3 shows that the participation of nonminority women on federally-assisted construction contracts at the Houston Aviation System, which were not affected by the Kossman settlement, also saw no decrease after the settlement.

Table B3. Nonminority Female Utilization on Federally-Assisted City of Houston Construction Contracts, FFY 2005–2010

Federal Fiscal Year	DBE Utilization (Overall)	DBE Utilization (Nonminority Women Only)
	(%)	(%)
2005	20.73	10.35
2006	21.93	10.43
2007	23.21	9.90
2008	20.64	6.64
2009	23.14	12.88
2010	29.98	14.40

Source and Notes: Table 7.3.

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 market area. If M/WBE utilization is lower than measured availability in a given category, we report this result as a disparity. Table C provides a top-level summary of our disparity findings for the Study for City of Houston construction contracting.

As shown in Table C1, we find evidence of disparity in the City's construction contracting activity, despite the operation of the M/WBE Program.

Table C1. Disparity Results for City of Houston Construction Contracting, Fiscal Years 2005-2010

M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
AWARD DOLLARS			
African American	2.86	4.95	57.82 ***
Hispanic	13.66	13.12	
Asian	2.12	4.29	49.52 ***
Native American	1.42	1.04	
MBE	20.06	23.39	85.76 *
Nonminority female	9.14	11.34	80.61
M/WBE	29.20	34.73	84.08 ***
PAID DOLLARS			
African American	2.82	4.90	57.66 ***
Hispanic	13.64	13.22	
Asian	2.44	4.27	57.17 ***
Native American	1.49	1.03	
MBE	20.40	23.42	87.11
Nonminority female	9.47	11.32	83.61
M/WBE	29.87	34.74	85.97 **

Source: Table 7.6.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Utilization and Availability are expressed as percentages. (3) "*" indicates an adverse disparity that is statistically significant at the 10% level or better (90% confidence). "**" indicates significance at a 5% level or better (95% confidence). "***" indicates significance at a 1% level or better (99% confidence). (4) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

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Table C2 shows that disparities for nonminority women in construction worsened substantially subsequent to the passage of Ordinance 2009-280.

Table C2. Disparity Results for Locally-Funded City of Houston Construction Contracting, Pre- and Post-Settlement

	Utilization (%)	Availability (%)	Disparity Ratio
AWARD DOLLARS			
Nonminority female, pre March 31, 2009	10.14	11.34	89.41
Nonminority female, post March 31, 2009	5.01	11.34	44.17 **
PAID DOLLARS			
Nonminority female, pre March 31, 2009	10.54	11.32	93.05
Nonminority female, post March 31, 2009	4.96	11.32	43.82 **

Source: Table 7.7.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Excludes federally-assisted contracts. (3) "*" 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).

Finally, Chapter VII compares current levels of M/WBE availability in the Houston market area with what we would expect to observe in a race- and gender-neutral market area. If there is full parity in the relevant market area, then the expected M/WBE availability rate (that is, the M/WBE availability level that would be observed in a non-discriminatory market area) will be equal to the actual current M/WBE availability rate. If there are adverse disparities facing M/WBEs in the relevant market area, however, as documented in Chapters V, VI, VII, and VIII of this Study, then expected availability will *exceed* actual current availability. Expected availability percentages for the City's construction contracting are presented below in Table D. Expected availability exceeds actual current availability in 10 of the 14 cases examined.

Table D. Expected Availability and Actual Current Availability for City of Houston Construction Contracting

M/WBE Type	Current Availability	Expected Availability
AWARD DOLLAR WEIGHTS		
African American	4.95	8.68
Hispanic	13.12	11.80
Asian/Pacific	4.29	6.10
Native American	1.04	1.46
Minority total	23.39	20.90
Non-minority female	11.34	23.16
M/WBE total	34.73	35.67
PAID DOLLAR WEIGHTS		
African American	4.90	8.59
Hispanic	13.22	11.89
Asian/Pacific	4.27	6.07
Native American	1.03	1.45
Minority total	23.42	20.93
Non-minority female	11.32	23.12
M/WBE total	34.74	35.68

Source: Table 7.10.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

H. Anecdotal Evidence

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

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

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

Chapter VIII also presents the results from a series of in-depth personal interviews conducted with M/WBEs regarding their experiences with discrimination in the Houston market area. Similar to the survey responses, the interviews suggest that minorities and women continue to suffer discriminatory barriers to full and fair access to City of Houston, other public sector, and private sector contracts and associated subcontracts. Participants reported negative perceptions of M/WBE competence; exclusion from industry networks; jobsite harassment; and barriers to obtaining work in the public and private sectors on an equal basis.

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

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 of Houston would be a passive participant in a discriminatory local construction market area. It is also highly relevant for narrowly tailoring any M/WBE goals for its construction contracts.

I. City of Houston's Minority-Owned Business Enterprise Program for Construction Contracts Overview and Feedback Interviews

Chapter IX provides an overview of the City of Houston's Small/Minority Business Enterprise Program for Construction Contracts and a discussion of the operations of the current efforts. Houston's M/W/BE Program was first enacted in 1984, and has been revised over the years. The City has been in an ongoing lawsuit against the Program since 1996. A 2008 Settlement Agreement led to the adoption of a 14 percent goal for MBEs and an 8 percent goal for SBEs, and the elimination of WBEs from contract goals. The Settlement further adopted goals for various categories of civil construction contracts for MBEs and SBEs. It also committed the City to commission a new disparity study.

We interviewed over one hundred business owners and representatives to solicit their feedback regarding the construction Program. Chapter IX presents a summary of our interviews, which covered the following subjects:

- **Perceptions of the Program's overall effectiveness**

Overall, M/WBEs reported that the Program was essential to their survival. However, not all minorities and women found the Program to have increased their opportunities. Several general contractors believed that the Program should be rescinded.

- **Certification standards and processes**

In general, M/WBEs reported the certification process is usually rigorous. A few owners complained that the paperwork to prove their firms are legitimately minority-owned was so burdensome that they dropped out of the Program. Several participants questioned whether many

firms owned by nonminority women were really disadvantaged, or even legitimate. Some general contractors believed that competent minority-owned firms do not want or need to be certified.

- **Meeting M/WBE goals at contract award**

M/WBEs reported many obstacles to receiving fair treatment in seeking subcontracting work even in the operation of the Program, including the ability of a prime bidder to negotiate with M/WBEs after being named the apparent awardee. In contrast, general contractors reported that despite their best efforts, it was often difficult to meet goals. While MBEs' experiences often differed markedly from non-M/WBEs, one area of agreement was the prevalence of using "front" firms or "passthrough" firms to create the appearance of participation, at least in the past. General contractors suggested allowing more time for them to negotiate with M/WBEs after bids are opened; that the City rate or pre-qualify MBEs; that the City provide more bonding assistance; and that contracts be setaside for bidding solely by SBEs as prime contractors.

Some general contractors had received waivers of goals based on their good faith efforts to meet them. Others found the waiver process to be burdensome and capricious, and resulted in unacceptable delays and resulting higher prices.

Finally, concerns were raised about how the City monitors and enforces compliance with M/WBE requirements. M/WBEs were concerned about the strength of the post-award monitoring process, including being substituted on the project once the prime contractor began work. In contrast, some prime owners reported that it was difficult to substitute non-performing M/WBEs. The effects of change orders on meeting the contract goals were problematic for some general contractors.

J.   Conclusion

As summarized above, and based on the detailed findings below, we conclude that there is strong evidence of large, adverse, and frequently statistically significant disparities between minority and female participation in business enterprise activity in the City of Houston's relevant market area and the actual current availability of those businesses. We further conclude that these disparities cannot be explained solely, or even primarily, by differences between M/WBE and non-M/WBE business populations in factors untainted by discrimination, and that these differences therefore give rise to a strong inference of the continued presence of discrimination in the City's market area. There is also strong anecdotal evidence of continuing barriers to the full and fair participation of M/WBEs on City contracts and subcontracts, despite the implementation of the M/W/SBE Program, and in the wider Houston construction economy. Remedial efforts remain necessary to ensure that Houston does not function as a passive participant in discrimination.

I.   Introduction

To ensure compliance with constitutional mandates and M/WBE best practices and implement a Settlement Agreement in litigation against the M/WBE Program for construction, the City of Houston commissioned NERA Economic Consulting to examine the past and current status of M/WBEs in the City's geographic and product markets for construction contracting. The results of this Study provide the evidentiary record necessary for the City's consideration of whether to implement renewed race- or gender-conscious policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted M/WBEs to participate on a fair basis in the City's construction contracting activity.

The Study finds statistical evidence of business discrimination against M/WBEs in the private sector of the City of Houston's market area. These findings are presented in Chapters V and VI. Statistical analyses of the City of Houston's own construction contracting, which also document evidence consistent with business discrimination, are contained in Chapters III, IV and VII. As a check on our statistical findings, we surveyed the contracting experiences of M/WBEs and non-M/WBEs in the market area and also conducted a series of in-depth personal interviews with construction businesses operating in Houston, both M/WBE and non-M/WBE.

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

Chapter I: Introduction

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

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

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

Chapter V: Do minority and/or female wage and salary earners earn less than similarly situated nonminority males? Do minority and/or female business owners earn less from their businesses than similarly situated nonminority males? Are minorities and/or women in the Houston market area less likely to be self-employed than similarly situated nonminority males? How do the findings in the Houston market area 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 nonminority males? How, if at all, do findings locally differ from findings nationally?

Chapter VII: To what extent have M/WBEs been utilized by Houston between FY 2005 and the first half of FY 2010, and how does this utilization compare to the availability of M/WBEs in the relevant market area?

Chapter VIII: How many M/WBEs experienced disparate treatment during the study period? What types of discriminatory experiences are most frequently encountered by M/WBEs?

Chapter IX: What general policies and procedures govern the City's M/WBE Program for construction contracts? What were some of the most frequently encountered comments from M/WBEs and non-M/WBEs concerning the Program?

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

II. Legal Standards for Government Affirmative Action Contracting Programs

A. General Overview of Strict Scrutiny

1. Summary of Constitutional Standards

To be effective, enforceable, and legally defensible, a race-based program must meet the judicial test of constitutional "strict scrutiny." Strict scrutiny is the highest level of judicial review and consists of two elements:

- The government must establish its "compelling interest" in remedying race discrimination by showing current "strong evidence" of the persistence of discrimination. Such evidence may consist of the entity's "passive participation" in a system of racial exclusion.

- Any remedies adopted must be "narrowly tailored" to that discrimination, that is the program must be directed at the types and depth of discrimination identified.[5]

The compelling interest prong has been met through two types of proof:

- Statistical evidence of the underutilization of minority firms compared to their availability in the jurisdiction's market area, known as disparity indices or disparity ratios, comparable to the type of "disparate impact" analysis used in employment discrimination cases.

- Anecdotal evidence of race-based barriers to the full and fair participation of minority firms in the market area and in seeking contracts with the agency, comparable to the "disparate treatment" analysis used in employment discrimination cases.[6]

The narrow tailoring prong has been met through the satisfaction of five factors to ensure that the remedy "fits" the evidence:

- The efficacy of race-neutral remedies at overcoming identified discrimination.

- The relationship of numerical benchmarks for government spending to the availability of minority- and women-owned firms and to subcontracting goal setting procedures.

- The congruence between the remedies adopted and the beneficiaries of those remedies.

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[5] *City of Richmond v. J.A. Croson Co*., 488 U.S. 469 (1989); *W.H. Scott Construction Co., Inc. v. City of Jackson*, 199 F.3d 206, 217 (5th Cir. 1999).

[6] *Croson*, 488 U.S at 509; *Scott*, 199 F.3d at 218).

- Any adverse impact of the relief on third parties.

- The duration of the program.[7]

In *Adarand v. Peña,*[8] the Court extended the analysis of strict scrutiny to race-based federal enactments such as the DBE program for federally-assisted transportation contracts. Just as in the local government context, the national government must have a compelling interest for the use of race and the remedies adopted must be narrowly tailored to the evidence relied upon.

In general, courts have subjected preferences for WBEs to "intermediate scrutiny": gender-based classifications must be supported by an "exceedingly persuasive justification" and be "substantially related" to the objective.[9] However, appellate courts reviewing the constitutionality of the DBE program have applied strict scrutiny to the gender-based presumption of social disadvantage.[10] Therefore, Houston would be wise to meet the rigors of strict scrutiny for any gender preferences.

Below is a detailed discussion of the parameters for establishing Houston's compelling interest in remedying discrimination and evaluating whether the remedies adopted to address that discrimination are narrowly tailored. The following are the legal and program development issues the City should consider in evaluating its M/W/SBE Program for construction contracts and future race- and gender-conscious initiatives.

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

City of Richmond v. J.A. Croson Co.[11] 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

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[7] *United States v. Paradise*, 480 U.S. 149, 171 (1987); *see Scott*, 199 F.3d at 219 (the City should have adopted 'Particualrized findings" of discrimination and set goals accordingly) .

[8] 515 U.S. 200 (1995) (*Adarand III*).

[9] *Cf. United States v. Virginia*, 518 U.S. 515 (1996).

[10] *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715, 720 (7th Cir. 2007).

[11] 488 U.S. 469 (1989).

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

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.[12]

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.[13] 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.[14]

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

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

[13] *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.").

[14] 488 U.S. at 493.

> 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.[15]

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 market area 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.[16]

> 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."[17]

The foregoing analysis was applied only to Blacks. The Court then emphasized that there was "absolutely no evidence" against other minorities. "The random inclusion of racial groups that, as a practical matter, may have never suffered from discrimination in the construction industry in Richmond, suggests that perhaps the City's purpose was not in fact to remedy past discrimination."[18]

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,

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[15] *Id*. at 499.

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

[17] *Croson*, 488 U.S. at 510.

[18] *Id*.

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.[19] Further, Justice O'Connor rejected the argument that individualized consideration of Plan eligibility is too administratively burdensome.

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

> Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the City of Richmond had 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.[20]

While much has been written about *Croson*, it is worth stressing what evidence was and was not before the Court. First, Richmond presented *no* evidence regarding the availability of MBEs to perform as prime contractors or subcontractors and *no* evidence of the utilization of minority-owned subcontractors on City contracts.[21] Nor did Richmond attempt to link the remedy it imposed to any evidence specific to the Program; it used the general population of the City rather than any measure of business availability. The "city has not ascertained how many minority enterprises are present in the local construction industry 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."[22]

Some commentators have taken this dearth of any particularized proof and argued that only the most particularized proof can suffice in all cases. They leap from the Court's rejection of Richmond's reliance on only the percentage of Blacks in the City's population to a requirement that only firms that bid or have the "capacity" or "willingness" to bid on a particular contract at a

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

[20] *Croson*, 488 U.S. at 509 (citations omitted).

[21] *Id*. at 502.

[22] *Id*. at 510.

particular time can be considered in determining whether discrimination against Black businesses infects the local economy.[23]

This contention has been rejected explicitly by some courts. For example, in denying the plaintiff firm's summary judgment motion to enjoin the City of New York's M/WBE construction ordinance, the court stated that:

> [I]t is important to remember what the *Croson* plurality opinion did and did not decide. The Richmond program, which the *Croson* Court struck down, was insufficient because it was based on a comparison of the minority population in its entirety in Richmond, Virginia (50%) with the number of contracts awarded to minority businesses (.67%). There were no statistics presented regarding number of minority-owned contractors in the Richmond area, *Croson*, 488 U.S. at 499, and the Supreme Court was concerned with the gross generality of the statistics used in justifying the Richmond program. There is no indication that the statistical analysis performed by [the consultant] in the present case, which does contain statistics regarding minority contractors in New York City, is not sufficient as a matter of law under *Croson*.[24]

Further, Richmond made no attempt to narrowly tailor a goal for the procurement at issue that reflected the reality of the project. Arbitrary quotas, and the unyielding application of those quotas, did not support the stated objective of ensuring equal access to City contracting opportunities. The *Croson* Court said nothing about the constitutionality of flexible subcontracting goals based upon the availability of MBEs to perform the scopes of the contract in the government's local market area. The federal Disadvantaged Business Enterprise ("DBE") Program, as discussed below, avoids these pitfalls. Part 26 "provides for a flexible system of contracting goals that contrasts sharply with the rigid quotas invalidated in *Croson*."[25]

While strict scrutiny is designed to require clear articulation of the evidentiary basis for race-based decision-making and careful adoption of remedies to address discrimination, it does not, as Justice O'Connor stressed, have to be an impossible test that no proof can meet. Strict scrutiny need not be "fatal in fact."[26]

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[23] *See,* e.g.*, Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715, 723 (7th Cir. 2007) ("*Northern Contracting III*").

[24] *North Shore Concrete and Associates, Inc. v. City of New York,* 1998 U.S. Dist. Lexis 6785, *28-29 (E.D. N.Y. 1998); *see also Harrison & Burrowes Bridge Constructors, Inc. v. Cuomo,* 981 F.2d 50, 61-62 (2nd Cir. 1992) ("*Croson* made only broad pronouncements concerning the findings necessary to support a state's affirmative action plan"); *cf. Concrete Works of Colorado, Inc. v. City and County of Denver* 36 F.3d 1513, 1528 (10th Cir. 1994) ("*Concrete Works II")* (City may rely on "data reflecting the number of MBEs and WBEs in the marketplace to defeat the challenger's summary judgment motion").

[25] *Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983, 994 (9th Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006).

[26] *See Adarand III*, 515 U.S. at 237.

3. Establishing a "Strong Basis in Evidence" for Houston's Race-Conscious Contracting Program for Locally-Funded Contracts

The *Croson* Court's guidance regarding the type of evidence necessary to support a race-conscious contracting program gave rise to the "disparity study."[27] Dozens of cities, states and other local entities engaged consultants to conduct studies to provide statistical and anecdotal evidence of discrimination against MBEs and WBEs. These studies used various approaches to estimating the availability of "ready, willing and able" MBEs and WBEs; determining the entity's utilization of such firms as prime contractors and subcontractors on its projects; analyzing whether there was a large and statistically significant disparity between availability and utilization; and gathering anecdotal information about the experiences of MBEs and WBEs on public and private contracts.

Despite millions of dollars spent on such analyses, the results were often econometrically unsound,[28] politically motivated[29] and legally inadequate. For nearly 15 years after *Croson*, the federal courts had struck down almost every local M/WBE program for lacking sufficient evidence of discrimination and often adopting insufficiently narrowly tailored remedies.[30]

Whatever the weaknesses in the disparity studies, it became clear that absent government intervention, ready, willing and able minority- and women-owned firms were excluded from subcontracting opportunities on government projects, as evidenced by the dramatic declines in their participation on public contracts when programs were struck down or abandoned.[31] A different approach was necessary.

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[27]   *W.H. Scott Construction Co., Inc. v. City of Jackson*, 199 F.3d 206, 218-19 (5th Cir. 1999). The City's s failure to adopt a study was fatal to its defense of a decision not to award to the lowest bidder based upon the firm's failure to meet the contract goals. Because the City failed to establish its compelling interest, the court did not address whether the program was narrowly tailored.

[28]   "Econometrics is the field of economics that concerns itself with the application of statistical inference to the empirical measurement of relationships postulated by economic theory." (p. 1), Greene, William H. 1997. *Econometric Analysis*, 3rd ed. Upper Saddle River, New Jersey: Prentice Hall.

[29]   *See, e.g., Associated General Contractors of America v. City of Columbus*, 936 F. Supp. 1363, 1431-33 (S.D. Ohio 1996) ("political pressure played a role in the city's adoption" of the M/WBE program and the study consultants).

[30]   *See, e.g., Associated General Contractors of Ohio, Inc. v. Drabik,* 214 F.3d 730 (6th Cir. 2000); *Associated General Contractors of Maryland, Inc. v. Mayor of Baltimore*, 83 F.Supp.2d 613 (D. Md. 2000) ("*Baltimore I")*; *Contractors Association of Eastern Pennsylvania, Inc. v. City of Philadelphia*, 91 F.3d 586 (3d Cir. 1996) ("*Philadelphia III*"); *Engineering Contractors Association of South Florida, Inc.* v. *Metro. Dade County*, 122 F.3d 895 (11th Cir. 1997) ("*Engineering Contractors II*")*; O'Donnell Construction Co. v. District of Columbia*, 963 F.2d 420 (D.C. Cir. 1992); *W.H. Scott Construction Co. v. City of Jackson*, 199 F.3d 206 (5th Cir. 1999); *Webster v. Fulton County*, 51 F.Supp.2d 1354 (N.D. Ga. 1999), *aff'd,* 218 F.3d 1267 (11th Cir. 2000).

[31]   For example, see Tables 7.2 and 7.7, below, showing large declines in participation by nonminority women on City of Houston construction contracts after WBE goals were eliminated pursuant to the final *Kossman* settlement on March 31, 2009.

In 2003, the City and County of Denver's M/WBE Program was upheld using the "law and economics approach" to disparity studies (in addition to trial testimony of discrimination).[32] The defense relied primarily on expert reports and testimony derived from an economic model of business discrimination. The court of appeals recognized that the proper inquiry is not only whether disparities remain despite the operation of its affirmative action program (a statistical question to which many disparity studies, then and now, continue to limit themselves) but also whether disparities remain when remedial intervention is not present in the marketplace, as reflected by M/WBE participation on contracts without affirmative action goals, in the public sector, the private sector, or both.

The law and economics model applies accepted social science principles of data collection, statistical analyses and anecdotal inquiries within rigorous frameworks to the questions relevant to whether the agency has a strong basis in evidence of the continuing effects of discrimination, and if so, what responses are supportable, even where remedial efforts have been undertaken: Are there disparities in the overall market outside the agency's projects that support the inference of the market failure of discrimination, such that the agency needs to continue to take action to ensure that it does not passively participate in such discrimination? What additional market factors outside the agency's direct control affect the entrepreneurial opportunities of M/WBEs that perpetuate discrimination and disparate impacts?

The law and economics model's analysis of disparities in the rates at which M/WBEs in the government's markets form businesses compared to similar non-M/WBEs, their earnings from such businesses, and their access to capital markets has been held to be highly relevant to the determination whether the market functions properly for all firms regardless of the race or gender of their ownership. These analyses contributed to the successful defense of local race- and gender-conscious construction programs,[33] as well as the Disadvantaged Business Enterprise program for federally-assisted transportation contracts.[34] As explained by the Tenth Circuit, the evidence

> demonstrates the existence of two kinds of discriminatory barriers to minority subcontracting enterprises, both of which show a strong link between racial disparities in the federal government's disbursements of public funds for construction contracts and the

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

[33] *Builders Association of Greater Chicago v. City of Chicago*, 298 F.Supp.2d 725 (N.D. Ill. 2003) (holding that City of Chicago's M/WBE program for local construction contracts met compelling interest using this framework).

[34] *Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983, 992-93 (9th Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006); *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964, 970 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004) (in the face of evidence of "barriers to the formation of minority-owned construction businesses, and of barriers to entry… [plaintiffs] 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"); (*Northern Contracting, Inc. v. Illinois Department of Transportation*, 2004 U.S. Dist. LEXIS 3226 at *113, 122 (N.D. Ill., Mar. 3, 2004) ("*Northern Contracting I*").

channeling of those funds due to private discrimination. The first discriminatory barriers are to the formation of qualified minority subcontracting enterprises due to private discrimination, precluding from the outset competition for public construction contracts by minority enterprises. The second discriminatory barriers are to fair competition between minority and non-minority subcontracting enterprises, again due to private discrimination, precluding existing minority firms from effectively competing for public construction contracts. The government also presents further evidence in the form of local disparity studies of minority subcontracting and studies of local subcontracting markets after the removal of affirmative action programs.… The government's evidence is particularly striking in the area of the race-based denial of access to capital, without which the formation of minority subcontracting enterprises is stymied.[35]

The *Denver* and *Chicago* decisions provide the most detailed analysis of the evidence necessary to establish that Houston would be a passive participant in a discriminatory marketplace in the absence of race-based remedies.

a.   *Concrete Works, Inc. v. City and County of Denver*

Denver adopted an ordinance in 1990 that provided for annual goals of 16 percent for MBEs and 12 percent for WBEs in construction contracts, and 10 percent for both MBEs and WBEs in professional design and construction services contracts. Bidders were to meet contract specific goals or make good faith efforts to do so. To comply with *Croson*, the City commissioned a study to assess the propriety of the Program. The 1990 Study found large disparities between the availability and utilization of M/WBEs on City projects without goals. It likewise found large disparities on private sector projects without goals. Interviews and testimony revealed continuing efforts by white male contractors to circumvent the goals. A 1991 study of goods, services and remodeling industries also found large disparities for City contracts not subject to goals.

When the Tenth Circuit reversed and remanded for trial in *Concrete Works II*[36], the City commissioned another study. The 1995 Study used U.S. Census Bureau data to determine MBE and WBE availability and utilization in the construction and design industries in the Denver Metropolitan Statistical Area (MSA). It calculated separate disparity indices for firms with and without employees. Census data were also used to examine average revenues per employee and rates of self-employment. Disparities in self-employment rates persisted even after holding

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[35]   *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1168-69 (10th Cir. 2000) ("*Adarand VII*"), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941, 534 U.S. 103 (2001).

[36]   Concrete Works of Colorado, Inc., a construction firm owned by a white male, sued the City in 1992, alleging that it had been denied three contracts for failure to meet the goals or to make good faith efforts and seeking injunctive relief and money damages. The district court granted the City's motion for summary judgment. *Concrete Works of Colorado, Inc. v. City & County of Denver*, 823 F.Supp. 821 (D. Colo. 1993) ("*Concrete Works I*"). The Tenth Circuit reversed, holding that genuine issues of material fact precluded summary judgment. *Concrete Works of Colorado, Inc.* v. *City & County of Denver*, 36 F.3d 1513 (10th Cir. 1994) ("*Concrete Works II*). The district court, after a bench trial, held the ordinance to be unconstitutional. *Concrete Works of Colorado, Inc. v. City & County of Denver*, 86 F.Supp. 2d 1042 (D. Colo. 2000) ("*Concrete Works III*"). Denver appealed.

education and length of work experience constant. A telephone survey to determine the availability and utilization of M/WBEs in the Denver MSA showed large disparities in the construction and professional design industries. The 1995 Study included discussion of a 1993 Study for the Denver Housing Authority which found disparities for M/WBEs in some areas in some years, including those when it implemented an affirmative action program, and a 1992 Study for the Regional Transportation District that found large disparities for both prime and subcontracting in the Denver market area. Based upon this evidence, the City enacted the 1996 Ordinance.

In 1997, Denver commissioned another study of discrimination in construction projects of the type undertaken by the City. The court found this Study used a "more sophisticated" method[37] to calculate availability by: (1) specifically determining the City's geographic and procurement market area; (2) using Dun & Bradstreet data to obtain the total number of available firms and numerous directories to determine the number of M/WBEs; (3) conducting surveys to adjust for possible misclassification of the race and gender of firms; and (4) presenting a final result of weighted averages of availability for each racial group and women for both prime and subcontracts.

The 1997 Study then compared M/WBE availability and utilization in the Colorado construction industry. It also examined 1987 Census data from the Survey of Minority-Owned Business and the Survey of Women-Owned Businesses, the most current then available. All comparisons yielded large and statistically significant disparities. The 1997 Study also found that the potential availability of M/WBEs, as measured by the rates at which similarly situated white males form businesses, was significantly greater than their actual availability. The Study next examined whether minorities and women in the construction industry earned less than white males with similar characteristics. Large and statistically significant disparities were found for all groups except Asian-Americans. A mail survey was conducted to obtain anecdotal evidence of the experiences of MBEs and WBEs and non-M/WBEs in the construction industry. Again, with the exception of Asian-Americans, minorities and women with similar characteristics experienced much greater difficulties than did their white male counterparts. A follow up telephone survey indicated that the disparities were even greater than first indicated.

Based upon the 1997 Study, and additional surveys and hearings, the City enacted the 1998 Ordinance. It reduced the annual goals for both MBEs and WBEs in construction contracts to 10 percent and prohibited M/WBE prime contractors from counting self-performed work towards the goals.

Concrete Works' challenge finally came to trial in 1999. In addition to the statistical evidence in prior studies and expert reports prepared for the litigation, Denver introduced evidence of its contracting activities dating back to the early 1970s. This consisted of reports of federal investigations into the utilization and experiences of local MBEs and of the City's early affirmative action efforts. M/WBE participation dramatically increased when the City adopted its first MBE ordinance in 1984. The City also introduced additional, comprehensive anecdotal

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[37] *Concrete Works IV,* 321 F.3d at 966.

evidence. M/WBEs testified that they experienced difficulties in prequalifying for private sector jobs; their low bids were rejected; they were paid more slowly than non-M/WBEs; they were charged more for materials than non-M/WBEs; they were often required to do additional work not required of white males; and there were barriers to joining trade unions and associations. There was extensive testimony detailing the difficulties M/WBEs suffered in obtaining lines of credit. The "most poignant" testimony involved blatant harassment suffered at work sites, including physical assaults.

The trial court found for the plaintiff.

The Tenth Circuit reversed and directed the entry of judgment for Denver. The district court's legal framework "misstate[d] controlling precedent and Denver's burden at trial."[38]

First, the government need not prove that the statistical inferences of discrimination are "correct." Strong evidence supporting the government's determination that remedial action is necessary need not be "irrefutable or definitive" proof of discrimination. Statistical evidence creating inferences of discriminatory motivations is sufficient and therefore evidence of market area discrimination can be used to meet strict scrutiny.[39] It is the plaintiff who must prove by a preponderance of the evidence that such proof does not support those inferences.

Croson does not require that each group included in the ordinance suffer equally from discrimination. In contrast to Richmond, Denver introduced evidence of bias against each group; that is sufficient.[40]

Nor must Denver demonstrate that the "ordinances will *change* discriminatory practices and policies" in the local market area; such a test would be "illogical" because firms could defeat the remedial efforts simply by refusing to cease discriminating.[41]

Next, a municipality need not prove that:

> [P]rivate firms directly engaged in any discrimination in which Denver passively participates do so intentionally, with the purpose of disadvantaging minorities and women.… Denver's only burden was to introduce evidence which raised the inference of discriminatory exclusion in the local construction industry and link its spending to that discrimination.… Denver was under no burden to identify any specific practice or policy that resulted in discrimination. Neither was Denver required to demonstrate that the purpose of any such practice or policy was to disadvantage women or minorities. To impose such a burden on a municipality would be tantamount to requiring proof of

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[38] *Id.* at 970.

[39] *Id.* at 975.

[40] *Id.* at 976.

[41] *Id.* at 973 (emphasis in the original).

discrimination and would eviscerate any reliance the municipality could place on statistical studies and anecdotal evidence.[42]

Similarly, the trial court was wrong to reject the statistical evidence because such evidence cannot identify the individuals responsible for the discrimination.[43]

Contrary to the district court's conclusion, the burden of compliance need not be placed only upon those firms directly responsible for the discrimination. The proper focus is whether the burden on third parties is "too intrusive" or "unacceptable."[44]

Croson's admonition that "mere societal" discrimination is not enough to meet strict scrutiny[45] does not apply where the government presents evidence of discrimination in the industry targeted by the program. "If such evidence is presented, it is immaterial for constitutional purposes whether the industry discrimination springs from widespread discriminatory attitudes shared by society or is the product of policies, practices, and attitudes unique to the industry…. The genesis of the identified discrimination is irrelevant." The trial court was wrong to require Denver to "show the existence of specific discriminatory policies and that those policies were more than a reflection of societal discrimination."[46]

The Tenth Circuit further rejected the notion that a municipality must prove that it is itself guilty of discrimination to meet its burden. Denver can show its compelling interest by "evidence of private discrimination in the local construction industry coupled with evidence that it has become a passive participant in that discrimination…[by] linking its spending practices to the private discrimination."[47] Denver further linked its award of public dollars to discriminatory conduct through the testimony of M/WBEs that identified general contractors who used them on City projects with M/WBE goals but refused to use them on private projects without goals.

The court then turned to the evidence of discrimination against M/WBEs in the market for commercial credit. The lending discrimination studies and business formation studies are relevant and probative because they show a strong link between the disbursement of public funds and the channeling of those funds due to private discrimination. "Evidence that private discrimination results in barriers to business formation is relevant because it demonstrates that M/WBEs are precluded *at the outset* from competing for public construction contracts. Evidence of barriers to fair competition is also relevant because it again demonstrates that *existing* M/WBEs are precluded from competing for public contracts."[48] Plaintiff failed to present

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[42] *Id.* at 971.

[43] *Id.* at 973.

[44] *Id.*

[45] *See Croson*, 488 U.S. at 497.

[46] *Concrete Works IV,* 321 F.3d at 976.

[47] *Id.* at 977.

[48] *Id.*

evidence to rebut the lending discrimination data, instead resting on its belief that such evidence is irrelevant. Contrary to the trial court's ruling, the business formation studies were not flawed because they did not control for "quality of education," "culture" and "religion." Plaintiff failed not only to define such vague terms but also to conduct its own study controlling for these factors or to produce expert testimony that to do so would eliminate the disparities.[49]

The district court also erred in rejecting the disparity studies because they did not control for firm size, area of specialization, and whether the firm had bid on City projects. The circuit court agreed with Denver's experts that, while it may be true that M/WBEs are smaller in general than white male firms, most construction firms are small and can expand and contract to meet their bidding opportunities. Importantly, Denver established that size and experience are not race- and gender-neutral variables: "M/WBE construction firms are generally smaller and less experienced *because* of discrimination."[50] Further, plaintiff failed to conduct any study showing that the disparities disappear when such variables are held constant. Likewise, it presented no evidence that controlling for firm specialization explained the disparities. "Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract*."[51]

That M/WBEs were overutilized on City projects with goals goes only to the weight of the evidence because it reflects 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 the better indicator of discrimination in public contracting" and supports the position that discrimination existed before the enactment of the ordinances.[52]

There is no requirement that anecdotal testimony be verified. "Denver was not required to present corroborating evidence and CWC was free to present its own witnesses to either refute the incidents described by Denver's witnesses or to relate their own perceptions on discrimination in the Denver construction industry."[53] This "failure" of the legislative body to somehow verify testimony had been a favorite shibboleth of plaintiffs in other cases.[54]

Finally, as for the narrow tailoring requirement of strict scrutiny, the court held that because plaintiff had waived its claim that the ordinances were not narrowly tailored at an earlier stage in

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[49] *Id*. at 979.

[50] *Id*. at 983 (emphasis in the original).

[51] *Id*. at 987-88 (emphasis in the original).

[52] *Id*.

[53] *Id*. at 989.

[54] *See,* e.g*., Builders Association of Greater Chicago v. County of Cook*, 123 F.Supp.2d 1087 (N.D. Ill. 2000) ("*BAGC v. Cook*").

this litigation, the district court's holding in *Concrete Works I* that the ordinances satisfy the other prong of strict scrutiny was affirmed.

b. *Builders Association of Greater Chicago v. City of Chicago*

The City of Chicago employed economic analyses similar to those upheld in *Concrete Works* in its successful defense of its compelling interest in remedying discrimination against Black-, Hispanic- and women-owned construction firms.[55] However, the program as implemented in 2003, which had not been reviewed since its inception in 1990, was not sufficiently narrowly tailored to meet strict constitutional scrutiny. The court stayed the final order against operation of the Program for construction contracts for six months, to permit the City to review the ruling and adopt a new program.[56]

The opinion first reviews the historical proof of discrimination against minorities, particularly Blacks, in the Chicago construction industry. While not legally mandated, Chicago was a segregated city and "City government was implicated in that history." After the election of Harold Washington as the first Black mayor, several reports focused on the exclusion of minorities and women from City procurement opportunities as well as pervasive employment discrimination by City departments. Mayor Washington imposed an executive order mandating that at least 25 percent of City contracts be awarded to minority-owned businesses and 5 percent to women-owned businesses.

In response to *Croson*, Chicago commissioned a Blue Ribbon Panel to recommend an effective program that would survive constitutional challenge. Based upon the Panel's Report, and 18 days of hearings with over 40 witnesses and 170 exhibits, Chicago adopted a new program in 1990 that retained the 25 percent MBE and 5 percent WBE goals; added a Target Market, wherein contracts were limited to bidding only by M/WBEs; and provided that larger construction contracts could have higher goals.

The court held that the playing field for minorities and women in the Chicago area construction industry in 2003 was still not level. The City presented a great amount of statistical evidence. Despite the plaintiff's attacks about over-aggregation and disaggregation of data and which firms were included in the analyses, "a reasonably clear picture of the Chicago construction industry emerged.… While the size of the disparities was disputed, it is evident that minority firms, even after adjustment for size, earn less and work less, and have less sales compared to other businesses."

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

[56] A similar suit was filed against Cook County's Program, which was declared unconstitutional in 2000. *Builders Association of Greater Chicago v. County of Cook*, 123 F.Supp.2d 1087 (N.D. Ill. 2000); *aff'd*, 256 F.3d 642 (7th Cir. 2001) ("*BAGC v. Cook*"). In contrast to the City of Chicago, Cook County presented very little statistical evidence and none directed towards establishing M/WBE availability, utilization, economy-wide evidence of disparities, or other proof beyond anecdotal testimony. It also provided no evidence related to narrow tailoring.

That does not mean, however, that speculation about the greater number of M/WBEs that did exist in the absence of discrimination is sufficient to support a current race-based remedy. At the same time, that there was perhaps overutilization of M/WBEs on City projects was not sufficient to abandon remedial efforts, as that result is "skewed by the program itself."

Further, while it is somewhat unclear whether disparities for Asians and Hispanics result from discrimination or the language and cultural barriers common to immigrants, there were two areas "where societal explanations do not suffice." The first is the market failure of prime contractors to solicit M/WBEs for non-goals work. Chicago's evidence was consistent with that presented of the effects of the discontinuance or absence of race-conscious programs throughout the country. Not only did the plaintiff fail to present credible alternative explanations for this universal phenomenon but also this result "follows as a matter of economics.… [P]rime contractors, without any discriminatory intent or bias, are still likely to seek out the subcontractors with whom they have had a long and successful relationship.… [T]he vestiges of past discrimination linger on to skew the marketplace and adversely impact M/WBEs disproportionately as more recent entrants to the industry.… [T]he City has a compelling interest in preventing its tax dollars from perpetuating a market so flawed by past discrimination that it restricts existing M/WBEs from unfettered competition in that market."[57]

The judge also relied upon the City's evidence of discrimination against minorities in the market for commercial loans. Even the plaintiff's experts were forced to concede that, at least as to Blacks, credit availability appeared to be a problem. Plaintiff's expert also identified discrimination against white females in one data set.

After finding that Chicago met the compelling interest prong, the court held that the City's program was not narrowly tailored to address these market distortions and barriers because:

- There was no meaningful individualized review of M/WBEs' eligibility;

- There was no sunset date for the ordinance or any means to determine a date;

- The graduation threshold of $27.5M was very high and few firms have graduated;

- There was no personal net worth limit;

- The percentages operated as quotas unrelated to the number of available firms;

- Waivers were rarely granted;

- No efforts were made to impact private sector utilization of M/WBEs; and

- Race-neutral measures had not been promoted, such as linked deposit programs, quick pay, contract downsizing, restricting prime contractors' self-performance, reducing bonds

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[57] *BAGC v. Chicago*, 298 F. Supp.2d at 738.

and insurance requirements, local bid preferences for subcontractors and technical assistance.

Chicago is the only city ever to have received a stay to permit revision of its program to meet narrow tailoring. It amended its ordinance to meet the court's 2004 deadline and continues to implement M/WBE subcontracting goals without interruption.

4.   Narrowly Tailoring a Race-Conscious Program

Even if a jurisdiction has a strong basis in evidence to believe that race-based measures are needed to remedy identified discrimination, the program must be narrowly tailored to that evidence. The courts have repeatedly examined the following factors in determining whether race-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 minority- and women-owned firms 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.[58]

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.[59]

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[58]   *United States v. Paradise*, 480 U.S. 149, 171 (1987); *see also Sherbrooke*, 345 F.3d at 971-972; *Drabik II*, 214 F.3d at 737-738.

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

It is imperative that remedies not operate as fixed quotas.[60] Firms that fail to meet the subcontracting goals but make good faith efforts to do so must be eligible for contract awards.[61] Further, firms that meet the goals cannot be favored over those who made good faith efforts. In *Croson*, the Court refers approvingly to the contract-by-contract waivers used in the USDOT's DBE program.[62] This feature has been central to the holding that the DBE program meets the narrow tailoring requirement.[63]

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.[64] 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 determination of presumptive social disadvantage of each racial and ethnic group must be based upon the evidence.[65] In striking down the District of Columbia's MBE program, the court noted that there were no "findings with respect to discrimination in the construction industry against Hispanic Americans, Asian Americans, Pacific Islander Americans, or Native Americans, all of whom are included in the Act's definition of 'minority.'"[66] The "random inclusion" of groups that may never have experienced discrimination in the entity's marketplace may indicate impermissible "racial politics."[67] 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."[68]

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[60] *See* 49 C.F.R 26.43 (quotas are not permitted and setaside contracts may be used only in limited and extreme circumstances "when no other method could be reasonably expected to redress egregious instances of discrimination").

[61] *See,* e.g*., BAGC v. Chicago*, 298 F. Supp.2d at 740 ("Waivers are rarely or never granted…The City program is a rigid numerical quota…formulistic percentages cannot survive strict scrutiny.").

[62] 488 U.S. at 508; *see also Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1181 (10th Cir. 2000), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941, 534 U.S. 103 (2001) ("*Adarand VII*").

[63] *See, e.g., Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964, 972 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004).

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

[65] *Contractors Association of Eastern Pennsylvania v. City of Philadelphia*, 6 F.3d 990, 1007 (3rd Cir. 1993) ("*Philadelphia II*") (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).

[66] *O'Donnell, v. District of Columbia*, 963 F.2d at 427.

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

[68] *BAGC v. Cook County*, 256 F.3d at 646 (no evidence of discrimination against any group other than Blacks).

However, at least one court has held that 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.[69]

Next, the level of specificity at which to define beneficiaries must be addressed. Approaches range from a single goal like the DBE Program that includes all racial and ethnic minorities and White women,[70] to separate goals for each minority group and women.[71] The State of 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.[72]

Third, program remedies should be limited to those firms that have a nexus to the harms sought to be ameliorated. Some courts have held that state and local programs must provide proof that the individual owner of a firm seeking to benefit from the program has suffered discrimination.[73]

Failure to make "neutral" changes to contracting and procurement policies and procedures that disadvantage all small businesses may result in a finding that the program unduly burdens non-M/WBEs.[74] However, "innocent" parties can be made to share some of the burden of the remedy for eradicating racial discrimination.[75] To hold otherwise "would be to render strict scrutiny effectively fatal, in contravention of Justice O'Connor's clear statements to the contrary."[76]

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

[70] *See* 49 C.F.R. §26.45(h) (overall goal must not be subdivided into group-specific goals).

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

[72] *Drabik II*, 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 programs ostensibly designed to remedy the effects of discrimination.").

[73] *See,* e.g.*, Associated General Contractors of Ohio, Inc. v. Drabik,* 50 F.Supp.2d 741, 766 (S.D. Ohio 1999) ("*Drabik I*") (no "consideration given to whether the particular MBE seeking a racial preference has suffered from the effects of past discrimination by the state or prime contractors."); *Main Line Paving Co., Inc. v. Board of Education*, 725 F.Supp. 1349, 1362 (E.D. Penn. 1989) ("program contains no provisions to identify those who were victims of past discrimination and to limit the program's benefits to them").

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

[75] *Concrete Works IV*, 321 F.3d at 973; *Wygant v. Jackson Board of Education*, 476 U.S. 267, 280-281 (1986); *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, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868, *5 (Sept. 8, 2005) ("*Northern Contracting II*") ("Plaintiff has presented little evidence that it [sic] has suffered anything more than minimal revenue losses due to the program."); *Western States*, 407 F.3d at 995.

[76] *Adarand VII*, 228 F.3d at 1183 (citing *Adarand III*, 515 U.S. at 237).

Race-based programs must have duration limits.[77] A race-based remedy must "not last longer than the discriminatory effects it is designed to eliminate."[78] As held by the Sixth Circuit, "[n]arrow tailoring also implies some sensitivity to the possibility that a program might someday have satisfied its purposes."[79] 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.[80] In contrast, the USDOT DBE Program's periodic review by Congress has been repeatedly held to provide adequate durational limits.[81]

This means that affirmative action programs must be regularly reviewed to ensure that a strong basis in evidence remains to use the highly suspect tool of race in government decision making. Very old studies will not suffice to support current programs.[82] The City of Augusta, Georgia's program failed to meet strict scrutiny, because "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."[83] Likewise, Chicago's program was based on 14-year-old information, which while it supported the program adopted in 1990, no longer was sufficient standing alone to justify the City's efforts in 1994.[84] How old is too old is not definitively answered,[85] but governments would be wise to analyze data at least once every five or six years.

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77 *Drabik I,* 50 F.Supp.2d at 766 ("The 1980 MBE Act is unlimited in duration.… There is no evidence that, at any time during the nearly two decades the Act has been in effect, the General Assembly has ever reconsidered whether a compelling state interest exists which would justify the continuation of a race-based remedy.").

78 *Adarand*, 515 U.S. at 238.

79 *Drabik II*, 214 F.3d at 737.

80 *BAGC v. Chicago*, 298 F.Supp.2d at 739; *see also O'Donnell,* 963 F.2d at 428 (the District "reenacted the law in 1980 and deleted the sunset provision. Fifteen years have now passed since the District put its minority contracting program into effect. The District has not suggested that an end is in sight."). *Webster*, 51 F. Supp. 2d at 1382 (telling disqualifier was that the County had been implementing a "quota" program since 1979 with no contemplation of program expiration).

81 *See Western States*, 407 F.3d at 995.

82 *See,* e.g., *Baltimore I*, 83 F.Supp.2d at 620 (10-year-old evidence to justify 1999 goals is equivalent to no evidence).

83 *Thompson. v. Augusta,* at *9.

84 *BAGC v. Chicago*, 298 F.Supp.2d at 739.

85 *See,* e.g*., Drabik I,* 50 F.Supp.2d at 745, 750 ("A program of race-based benefits cannot be supported by evidence of discrimination which is now over twenty years old.… The state conceded that it had no additional evidence of discrimination against minority contractors, and admitted that during the nearly two decades the Act has been in effect, it has made no effort to determine whether there is a continuing need for a race-based remedy."); *Brunet City of Columbus*, 1 F.3d 390, 409 (6th Cir. 1993) (fourteen-year-old evidence of discrimination "too remote to support a compelling governmental interest.").

B.   Strict Scrutiny as Applied to Federal Enactments

In *Adarand v. Peña*,[86] 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.[87]

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

To comply with *Adarand*, Congress reviewed and revised the Disadvantaged Business Enterprise (DBE) Program statute[88] and implementing regulations[89] for federal-aid contracts in the transportation industry. To date, every court that has considered the issue has found the regulations to be constitutional on their face.[90] While binding strictly only upon the DBE Program, these cases provide important guidance to the City about the types of evidence necessary to establish its compelling interest in adopting a local affirmative action contracting program and how to narrowly tailor a program. They are also highly relevant to how Houston should meet its regulatory responsibilities in implementing its DBE program. For example, the Fourth Circuit noted with approval that North Carolina's M/WBE program for state-funded contracts largely mirrored Part 26.[91]

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[86]   515 U.S. 200 (1995) (*Adarand III*).

[87]   *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.

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

[89]   49 C.F.R. Part 26.

[90]   *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*").

[91]   *H.B. Rowe Co. v. Tippett*, 615 F.3d 233, 236 (4th Cir. 2010).

a.   Challenges to the Disadvantaged Business Enterprise Regulations

All courts have held that Congress had strong evidence of widespread race discrimination in the construction industry.[92] Relevant evidence before Congress included:

- Disparities between the earnings of minority-owned firms and similarly situated non-minority-owned firms;

- Disparities in commercial loan denial rates between Black business owners compared to similarly situated non-minority business owners;

- The large and rapid decline in minorities' participation in the construction industry when affirmative action programs were struck down or abandoned; and

- Various types of overt and institutional discrimination by prime contractors, trade unions, business networks, suppliers and sureties against minority contractors.[93]

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

[S]pent 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.[94]

Next, the regulations were facially narrowly tailored. Unlike the prior program,[95] 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.

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[92] *See also Western States*, 407 F.3d at 993 ("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.").

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

[94] *Sherbrooke*, 345 F.3d. at 970; *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.").

[95] 49 C.F.R. Part 23.

- 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."

- Exemptions and waivers from any or all Program requirements are available.[96]

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."[97]

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 recipient may terminate race-conscious contract goals 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 for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*…."[98]

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[96] *Sherbrooke*, 345 F.3d. at 973.

[97] *Id*. at 972.

[98] *Id.*

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."[99]

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

> [P]resented 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.[100]

Likewise, the Seventh Circuit Court of Appeals affirmed the district court's trial verdict that the Illinois Department of Transportation's application of Part 26 was narrowly tailored based in large part upon the report and expert trial testimony of NERA and Colette Holt & Associates.[101] IDOT had a compelling interest in remedying discrimination in the market area for federally-funded highway contracts, and its DBE Plan was narrowly tailored to that interest and in conformance with the regulations.

To determine whether IDOT met its constitutional and regulatory burdens, the court reviewed the evidence of discrimination against minority and women construction firms in the Illinois area. IDOT had commissioned a NERA Availability Study to meet Part 26's requirements. Similar to this Study for the District, the IDOT Study included a custom census of the availability of DBEs in IDOT's market area, weighted by the location of IDOT's contractors and the types of goods and services IDOT procures. NERA estimated that DBEs comprised 22.77 percent of IDOT's available firms.[102] The IDOT Study next examined whether and to what extent there are

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[99] *Id*. at 973.

[100] *Id*.

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

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

disparities between the rates at which DBEs form businesses relative to similarly situated non-minority men, and the relative earnings of those businesses. If disparities are large and statistically significant, then the inference of discrimination can be made. Controlling for numerous variables such as the owner's age, education, and the like, the Study found that in a race- and gender-neutral market area 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, the court also relied upon:

- A NERA Availability Study conducted for Metra, the Chicago-area commuter rail agency;

- Expert reports relied upon by an earlier trial court in holding that the City of Chicago had a compelling interest in its minority and women business program for construction contracts;[103]

- Expert reports and anecdotal testimony presented to the Chicago City Council in support of the City's revised M/WBE Procurement Program ordinance;

- Anecdotal evidence gathered at IDOT's public hearings on the DBE program;

- Data on DBE involvement in construction projects in markets without DBE goals;[104] 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.

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 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

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[103] *BAGC v. Chicago*, 298 F. Supp. 2d 725 (N.D. Ill. 2003).

[104] *Northern Contracting III,* 473 F.3d at 719 ("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.").

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.[105]

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

In 2008, the Federal Circuit Court of Appeals struck down the Department of Defense (DOD) program for Small Disadvantaged Businesses (SDBs) in *Rothe Development Corporation v. U.S. Department of Defense*.[106] The program set an overall annual goal of five percent for DOD contracting with SDBs and authorized various race-conscious measures to meet the goal.

In *Rothe VII*[107], the appeals court held that the DOD program violated strict scrutiny because Congress did not have a "strong basis in evidence" upon which to conclude that DOD was a passive participant in racial discrimination in relevant markets across the country. The six local disparity studies upon which the DOD primarily relied for evidence of discrimination did not meet the compelling interest requirement, and its other statistical and anecdotal evidence did not rise to meet the heavy constitutional burden.

Of particular relevance to this report for Houston, the primary focus of the court's analysis was the six disparity studies. The court reaffirmed that such studies are relevant to the compelling interest analysis.[108] It then rejected *Rothe's* argument that data more than five years old must be discarded, stating "We decline to adopt such a *per se* rule here…. [The government] should be able to rely on the most recently available data so long as that data is reasonably up-to-date."[109]

In the absence of expert testimony about accepted econometric models of discrimination, the court was troubled by the failure of five of the studies to account for size differences and

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

[106] *Rothe Development Corporation v. U.S. Department of Defense*, 545 F.3d 1023 (*Fed. Cir.* 2008) ("*Rothe VII*"). We note that the jurisdiction of the Court of Appeals for the Federal Circuit is limited to the jurisdiction described in 28 U.S.C. §§ 1292 (c) and (d) and 1295. Pursuant to 28 U.S.C. § 1295(a)(2), jurisdiction in *Rothe* was based upon the plaintiff's claim under the Tucker Act, 28 U.S.C. § 1346(a)(2), which governs contract claims against the United States.

[107] This opinion was the latest iteration of an 11-year-old challenge by a firm owned by a White female to the DOD's award of a contract to an Asian American–owned business despite the fact that plaintiff was the lowest bidder.

[108] *Rothe*, 545 F.3d at 1037-1038.

[109] *Id*. at 1038-1039.

"qualifications" of the minority firms in the denominator of the disparity analysis, or as the court labeled it, "relative capacity."[110] The court was concerned about the studies' inclusion of possibly "unqualified" minority firms and the failure to account for whether a firm can perform more than one project at a time in two of the studies.[111] In the court's view, the combination of these perceived deficits rendered the studies insufficiently probative to meet Congress' burden.

The appellate court ignored the analyses in the cases upholding the USDOT Disadvantaged Business Enterprise Program and the City of Denver's local affirmative action contracting program where the fallacy of "capacity" was debunked, all of which were cited extensively by the district court. It relied instead on a report from the USCCR, which adopts the views of anti-affirmative action writers, including those of Rothe's consultant.[112]

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

> To be clear, we do *not* hold that the defects in the availability and capacity analyses in these six disparity studies render the studies wholly unreliable for any purpose. Where the calculated disparity ratios are low enough, we do not foreclose the possibility that an inference of discrimination might still be permissible for *some* of the minority groups in *some* of the studied industries in *some* of the jurisdictions. And we recognize that a minority owned firm's capacity and qualifications may themselves be affected by discrimination. But we hold that the defects we have noted detract dramatically from the probative value of these six studies, and, in conjunction with their limited geographic coverage, render the studies insufficient to form the statistical core of the "strong basis in evidence" required to uphold the statute.[113]

The Federal Circuit concluded its analysis of compelling interest by "stress[ing] that [its] holding is grounded in the particular terms of evidence offered by DOD and relied on by the district court in this case, and should not be construed as stating blanket rules, for example, about the reliability of disparity studies."[114]

Given the holding that Congress lacked a strong basis in evidence for the DOD program, the court did not rule on whether its provisions were narrowly tailored. The court did note, however, in its prior rulings that the program is flexible, limited in duration, and not unduly burdensome to third parties, and that the program has tended to narrow the reach of its remedies over time.[115]

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[110] *Id*. at 1042.

[111] *Ibid.*

[112] U.S. Commission on Civil Rights, *Disparity Studies as Evidence of Discrimination in Federal Contracting* (May 2006): 79.

[113] *Rothe*, 545 F.3d at 1045.

[114] *Id*. at 1049.

[115] *Id*. at 1049.

3. Gender-Conscious Programs

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.[116] Most courts, including the Fifth Circuit,[117] have applied intermediate scrutiny to preferences for women and then upheld or struck down the female preference under that standard.[118] However, the Sixth Circuit has applied strict scrutiny to gender preferences.[119]

C. Burdens of Production and Proof

Unlike most legal challenges, the defendant has the initial burden of producing "strong evidence" in support of the program.[120] As noted by the Fifth Circuit, 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.[121] "[W]hen the proponent of an affirmative action plan produces sufficient evidence to support an inference of discrimination, the plaintiff must rebut that inference in order to prevail."[122] A plaintiff "cannot meet its burden of proof through conjecture and unsupported criticism of [the government's] evidence."[123]For example, in the challenge to the Minnesota and Nebraska DBE programs, "plaintiffs[124] presented evidence that the data was 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."[125]

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[116] *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).

[117] *Scott*, 199 F.3d at 215 n.9.

[118] *See, e.g.*, *Northern Contracting I*, at *44 (women's status as presumptively socially disadvantaged passes intermediate scrutiny); *Scott*, 199 F.3d at 215 n.9; *Engineering Contractors II*, 122 F.3d at 907-910; *Concrete Works II*, 36 F.3d at 1519; *Philadelphia II*, 6 F.3d at 1009; *Coral Construction Co. v. King County*, 941 F.2d 910, 930-931 (9th Cir. 1991); *Baltimore I*, 83 F.Supp 2d at 613.

[119] *Brunet,* 1 F.3d at 404.

[120] *Aiken v. City of Memphis*, 37 F.3d 1155, 1162 (6th Cir. 1994).

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

[122] *Engineering Contractors II*, 122 F3d at 916; *see also West Tennessee Chapter of Associated Builders and Contractors, Inc. v. City of Memphis*, 302 F.Supp.2d 860, 864 (W.D. Tenn. 2004).

[123] *Concrete Works IV*, 321 F.3d at 989; *see also H.B. Rowe*, 2008 U.S. Dist. Lexis at *27.

[124] The plaintiffs in both cases were represented by the same counsel and attempted to rely upon the same consultant.

[125] *Sherbrooke*, 345 F.3d at 970.

There is no need of formal legislative findings,[126] nor "an ultimate judicial finding of discrimination before [a local government] can take affirmative steps to eradicate discrimination."[127] When the statistical information is sufficient to support the inference of discrimination, the plaintiff must prove that the statistics are flawed.[128] 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.[129]

D. Houston's Compelling Interest in Remedying Identified Discrimination in Its Contracting Market Area

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 their 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.[130] 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.[131]

We first review cases applying strict scrutiny to a race- and gender-conscious program, and then turn to the specific elements of the evidentiary record Houston must consider to determine whether it has a strong basis in evidence to adopt a new M/WBE program and how it might narrowly tailor such an initiative.

1. Definition of Houston's Construction Market Area

Croson counsels that a state or local government may only remedy discrimination within its own contracting market area. Richmond was specifically faulted for including minority contractors from across the country in its program.[132] This Study empirically establishes the geographic and

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[126] *Webster*, 51 F.Supp.2d at 1364.

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

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

[129] *Adarand VII*, 228 F.3d at 1166; *Engineering Contractors II*, 122 F.3d at 916; *Philadelphia III*, 91 F.3d at 597; *Concrete Works II*, 36 F.3d at 1522-1523; *Webster*, 51 F. Supp. 2d at 1364; *see also Wygant,* 476 U.S. at 277-278.

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

[131] *Id*.

[132] *Croson*, 488 U.S. at 508.

product dimensions of the City's contracting and procurement market area in order to ensure that the evidence is narrowly tailored.[133]

2.   Examining Disparities between M/WBE Availability and Utilization

Next, statistical examination of the availability of minorities and women to participate in the City's projects and the history of utilizing M/WBEs as prime contractors and as subcontractors by the government and its prime contractors is required as part of a disparity study.[134] Simple disparities between an area's overall minority population and its prime contractors' utilization of minority- and women-owned firms are not enough.[135] 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.[136]

This is known as the "disparity ratio" or "disparity index." A disparity ratio measures the participation of a group in the City's contracting dollars by dividing that group's contract dollar percentage by the related bidder or awardee percentage, and multiplying that result by 100%. Courts, including the Fifth Circuit, have looked to disparity indices in determining whether *Croson's* evidentiary foundation is satisfied.[137] An index less than 100 percent indicates that a given group is being utilized less than would be expected based on its availability, and courts have adopted the Equal Employment Opportunity Commission's "80 percent" rule, that is, that a ratio less than 80 percent presents a *prima facie* case of discrimination.[138]

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

[134] An availability study is a subset of a disparity study, in that statistical evidence of disparities between the difference of availability of M/WBEs and their utilization as prime contractors and subcontractors is not included.

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

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

[137] *Scott*, 199 F.3d at 218; *see also Concrete Works II*, 36 F.3d at 1526-1527; *O'Donnell*, 963 F.2d at 426; *Cone Corp. v. Hillsborough County*, 908 F.2d 908, 916 (11th Cir. 1990), *cert. denied*, 498 U.S. 983 (1990).

[138] *Engineering Contractors II*, 122 F3d at 914; *see* 29 C.F.R. § 1607.4(D) ("A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact.").

Calculations of the availability of minority- and women-owned firms are therefore the crucial foundation for examining the government's compelling interest in pursuing affirmative action in contracting.[139] In addition to creating the disparity ratio, 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.[140]

The agency 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 market area discrimination was properly used to meet strict scrutiny. It is the plaintiff who must prove by a preponderance of the evidence that such proof does not support those inferences.[141]

It is also the case that if M/WBEs are "overutilized" because of the entity's 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.[142]

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"[143] 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

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[139] *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).

[140] *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 M/WBEs").

[141] *Concrete Works IV,* 321 F.3d at 971.

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

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

contract with M/WBEs.[144] As the Eleventh Circuit has acknowledged, "the program at issue may itself be masking discrimination that might otherwise be occurring in the relevant market."[145] The courts are clear that the government has a compelling interest in not financing the evil of private prejudice with public dollars.[146] If M/WBE utilization is below availability in unremediated markets, an inference of discrimination may be supportable. The virtual disappearance of M/WBE participation after programs have been enjoined or abandoned strongly indicates substantial barriers to minority subcontractors, "raising the specter of racial discrimination."[147] Unremediated markets analysis addresses whether the government has been and continues to be a "passive participant" in such discrimination, in the absence of affirmative action remedies.[148] The results of non-goals contracts can help to demonstrate that, but for the interposition of remedial affirmative action measures, discrimination would lead to disparities in government contracting. The "dramatic decline in the use of M/WBEs when an affirmative action program is terminated, and the paucity of use of such firms when no affirmative action program was ever initiated," has been held to be proof of the government's compelling interest in employing race- and gender-conscious measures.[149] Evidence of unremediated markets "sharpens the picture of local market conditions for MBEs and WBEs."[150]

4.   Anecdotal Evidence

Anecdotal evidence of experiences with discrimination in contracting opportunities is relevant because it goes to the question of whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes.[151] As observed by the Supreme Court, anecdotal evidence presented in a pattern or practice discrimination case can be persuasive because it "brought the cold [statistics] convincingly to life."[152] Testimony about discrimination by prime contractors, unions, bonding companies, suppliers, and lenders has been found relevant regarding barriers both to minority firms' business formation and to their success on governmental projects.[153] 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

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[144] *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).

[145] *Engineering Contractors II*, 122 F.3d at 912.

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

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

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

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

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

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

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

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

probative."[154] "[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."[155]

Most recently, the Fourth Circuit found anecdotal evidence from a telephone survey, personal interviews and focus groups to be relevant and probative of whether North Carolina met its burden. A telephone survey conducted by the consultant resulted in strong evidence of discriminatory treatment of both African American and Native American firms including: discriminatory "good old boy networks;" double standards applied to both qualifications and performance; changes in bids when not required to use minority firms; and dropping minority subcontractors after winning contracts. Focus group and interview results confirmed these findings. As the court summarized:

> The surveys in the 2004 study exposed an informal, racially exclusive network that systemically disadvantaged minority subcontractors. The State could conclude with good reason that such networks exert a chronic and pernicious influence on the marketplace that calls for remedial action.… [P]rime contractors have higher standards for minority subcontractors, view minority subcontractors as being less competent than nonminority businesses, change their bidding practices when not required to hire minority subcontractors, and drop minority subcontractors after winning contracts. Together, these responses suggest strongly that the underutilization of African American and Native American subcontractors is more than a mere byproduct of misguided yet color-blind cronyism. [156]

The *Rowe* court specifically rejected the notion that anecdotal testimony must be "verified" or corroborated, as befits the role of evidence in legislative decision-making as opposed to judicial proceedings. "Plaintiff offers no rationale as to why a fact finder could not rely on the State's 'unverified' anecdotal data. Indeed, a fact finder could very well conclude that anecdotal evidence need not– indeed cannot– be verified because it 'is nothing more than a witness' narrative of an incident told from the witness' perspective and including the witness' perception.'[157] Likewise, the Tenth Circuit held that "Denver was not required to present corroborating evidence and [plaintiff] was free to present its own witnesses to either refute the incidents described by Denver's witnesses or to relate their own perceptions on discrimination in the Denver construction industry."[158]

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

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

[156] *Rowe*, 615 F.3d at 251.

[157] *Id.* at 249.

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

E.   Narrowly Tailoring a Minority-Owned and Women-Owned Business Enterprise Procurement Program for the City of Houston

1.   Race- and Gender-Neutral Remedies

Race- and gender-neutral approaches have become a necessary component of a defensible and effective M/WBE program.[159] The failure to seriously consider race- and gender-neutral remedies has been fatal to M/WBE programs.[160] Such measures include unbundling of contracts into smaller units, providing technical support, and addressing issues of financing, bonding, and insurance important to all small and emerging businesses.[161] 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 resorting to the use of 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.[162] 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.[163]

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.[164] 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."[165]

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[159] *Croson*, 488 U.S. at 507 (Richmond considered no alternatives to race-based quota); *Drabik II*, 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); *cf. Aiken*, 37 F.3d at 1164 (failure to consider race-neutral method of promotions suggested a political rather than a remedial purpose).

[160] *See,* e.g., *Florida A.G.C. Council, Inc. v. State of Florida*, Case No.: 4:03-CV-59-SPM at 10 (N. Dist. Fla. 2004) ("There is absolutely no evidence in the record to suggest that the Defendants contemplated race-neutral means to accomplish the objectives" of the statute.); *Engineering Contractors II*, 122 F.3d at 928.

[161] *See* 49 CFR § 26.51.0.

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

[163] *See,* e.g., *Virdi*, at n.8.

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

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

2. Targeted Goal Setting

Numerical goals or benchmarks for M/WBE participation must be substantially related to their availability in the relevant market.[166] Goals can be set at various levels of particularity and participation. The entity may set an overall, aspirational goal for its annual, aggregate spending.

One unanswered question is whether goals or benchmarks for overall agency contracting may be set higher than estimates of actual current availability. To freeze the goals at current head counts would set the results of discrimination—depressed M/WBE availability—as the marker of the elimination of discrimination. It therefore should be reasonable for the government to seek to attempt to level the racial and gender playing field by setting targets somewhat higher than current headcount. In upholding the DBE regulations, the Tenth Circuit stated that:

> [B]ecause 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.).[167]

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.*"[168] "On the other hand, sheer speculation cannot form the basis for an enforceable measure."[169]

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[166] *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 Baltimore I*, 83 F.Supp.2d at 621.

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

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

[169] *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).

It is settled case law that goals for a particular solicitation should reflect the particulars of the contract, not reiterate annual aggregate targets; goals must be contract specific. Contract goals must be based upon availability of M/WBEs to perform the anticipated scopes of subcontracting. Not only is this legally mandated,[170] but this approach also 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. While this is more labor intensive than defaulting to the annual, overall goals, there is no option to avoid meeting narrow tailoring because to do so would be more burdensome. The detailed availability estimates in Chapter IV can form the starting point for the City's development of contract goals.

3. Flexibility of Goals and Requirements

It is imperative that remedies not operate as fixed quotas. An M/WBE program must provide for contract awards to firms who fail to meet the subcontracting goals but make good faith efforts to do so. Further, firms who meet the goals cannot be favored over those who made good faith efforts. In *Croson*, the Court refers approvingly to the contract-by-contract waivers used in the USDOT's DBE program.[171] This feature has been central to the holding that the DBE program is narrowly tailored.[172]

4. Program Over-inclusiveness and Under-inclusiveness

The over- or under-inclusiveness of those persons to be included in a program is an additional consideration, and goes to whether the remedies truly target the evil identified.[173] 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.

The groups to include must be based upon the evidence.[174] The "random inclusion" of ethnic or racial groups that may never have experienced discrimination in the entity's market area may indicate impermissible "racial politics."[175] 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."[176] However, at least one court has held some quantum of evidence of discrimination for

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

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

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

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

[174] *Philadelphia II*, 6 F.3d at 1007-1008 (strict scrutiny requires data for each minority group; data was insufficient to include Hispanics, Asians or Pacific Islanders or Native Americans).

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

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

each group is sufficient; *Croson* does not require that each group included in the ordinance suffer equally from discrimination.[177]

Therefore, remedies should be limited to those firms that have suffered actual harm. Goals should be set only for those groups shown to have suffered discrimination in the market area; a program that limits relief to the racial or ethnic groups that have suffered discrimination in the agency's market area and have been adversely affected in their ability to obtain agency contracts will meet this element of narrow tailoring.[178] Similarly, the DBE Program's rebuttable presumptions of social and economic disadvantage have been central to the courts' holdings that it is narrowly tailored,[179] and anyone can challenge the disadvantaged status of any firm.[180]

The level of specificity at which to define beneficiaries is a policy question. Approaches range from a single M/WBE or DBE goal that includes all racial and ethnic minorities and nonminority women,[181] to separate goals for each minority group and women.[182] We note, however, that Ohio's Program was specifically faulted for lumping together all "minorities," with the court questioning the legitimacy of forcing African American contractors to share relief with recent Asian immigrants.[183]

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.[184] However, "innocent" parties can be made to share some of the burden of the remedy for eradicating racial discrimination.[185] Burdens must be proven, and

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[177] *Concrete Work IV*, 321 F.3d at 971.

[178] *Rowe*, 615 F.3d at 254 ("[T]he statute contemplates participation goals only for those groups shown to have suffered discrimination. As such, North Carolina's statute differs from measures that have failed narrow tailoring for overinclusiveness.").

[179] *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).

[180] 49 C.F.R. §26.87.

[181] *See* 49 C.F.R. §26.45(h) (overall goal must not be subdivided into group-specific goals).

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

[183] *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 programs ostensibly designed to remedy the effects of discrimination.").

[184] *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).

[185] *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

cannot constitute mere speculation by a plaintiff.[186] "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."[187]

Narrow tailoring does permit certified firms acting as prime contractors to count their self-performance towards meeting contract goals. The DBE program regulations provide this remedy for discrimination against DBEs seeking prime work,[188] and the regulations do not limit the application of the program to only subcontracts.[189] The trial court explicitly recognized that barriers to subcontracting opportunities affect the ability of DBEs to compete for prime work on a fair basis in fining that Illinois' DBE program was narrowly tailored.

> This requirement that goals be applied to the value of the entire contract, not merely the subcontracted portion(s), is not altered by the fact that prime contracts are, by law, awarded to the lowest bidder. While it is true that prime contracts are awarded in a race- and gender-neutral manner, the Regulations nevertheless mandate application of goals based on the value of the entire contract. Strong policy reasons support this approach. Although laws mandating award of prime contracts to the lowest bidder remove concerns regarding direct discrimination at the level of prime contracts, [n30] the indirect effects of discrimination may linger. The ability of DBEs to compete successfully for prime contracts may be indirectly affected by discrimination in the subcontracting market, or in the bonding and financing markets. Such discrimination is particularly burdensome in the construction industry, a highly competitive industry with tight profit margins, considerable hazards, and strict bonding and insurance requirements.[190]

Scott v. City of Jackson is not to the contrary. In that opinion, the Fifth Circuit held that the plaintiff could pursue its claims because it was disadvantaged *vis-à-vis* non DBE prime contractors for purposes of whether it had standing to bring the lawsuit. Plaintiff met the "injury in fact" requirement of standing in equal protection cases challenging affirmative action programs, because the DBE bidder was able to use its self-performance to meet the City's goal and thus avoid the burden of making good faith efforts to do so. "[A]s long as DBE preferences are used in the Department's Special Notice, Scott is threatened with imminent injury. In this

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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.").

[186] *Rowe*, 615 F.3d at 254 (prime bidder had no need for additional employees to perform program compliance and need not subcontract work it can self-perform).

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

[188] 49 C.F.R. § 26.53(g) ("In determining whether a DBE bidder/offeror for a prime contract has met the contractog goal, count the work the DBE has committed to perform with its own forces as well as the work that it has committed to be performed by DBE subcontractors and suppliers.").

[189] 49 C.F.R. § 26.45(a)(1).

[190] *Northern Contracting II*, 2005 U.S. Dist. LEXIS 19868 at 74.

way, standing's other prerequisites, causation and redressability, are also established, for removing the preferences that cause Scott to compete on an unequal basis will alleviate that "injury in fact."[191] Following the Supreme Court's analysis,[192] the court was careful to distinguish between the constitutional analysis under Equal Protection and the Article III "case or controversy" requirement to bring the challenge in the first instance. "[W]e presume no such racial classification in our standing analysis and address only the differing obligations of DBEs and non-DBEs, whether race-based or not."[193] Therefore, the ability of a DBE prime firm to count its self-performance towards meting contract goal confers a sufficient injury to permit a non-DBE to challenge the program; it does not address the question whether the program runs foul of strict scrutiny.

6.   Duration and Review of Programs

"Narrow tailoring also implies some sensitivity to the possibility that a program might someday have satisfied its purposes."[194] The USDOT DBE Program's periodic review by Congress has been repeatedly held to provide adequate durational limits.[195] "[T]wo facts [were] particularly compelling in establishing that [North Carolina's M/WBE program] was narrowly tailored: the statute's provisions (1) setting a specific expiration date and (2) requiring a new disparity study every 5 years."[196]

Conversely, it was the unlimited duration and lack of review that led to the City of Augusta, Georgia's DBE program being enjoined,[197] as well as one factor in the court's holding that the City of Chicago's M/WBE Program was no longer narrowly tailored.[198]

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[191] *Scott,* 199 F.3d at 215.

[192] *Adarand III,* 515 U.S. at 211 (noting that the injury in fact requirement of standing is met by the existence of a discriminatory classification that prevents the plaintiff from competing on an equal footing).

[193] *Id*. at 214, n.5 (constitutional analysis is not relevant to an Article III analysis); *see also Jacksonville*, 508 U.S. at 664.

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

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

[196] *Rowe*, 615 F.3d at 253.

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

[198] *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); *see also Virdi*, at *18 ("unlimited duration of the [District's] racial goals also demonstrates a lack of narrow tailoring.… While the District's effort to avoid unintentional discrimination should certainly be ongoing, its reliance on racial classifications should not.").

F. Table of Authorities

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III.   Defining the Relevant Markets

A.   Introduction

The U.S. Supreme Court in *Croson* indicated that the U.S. Congress' national findings of minority business discrimination in construction and related industries were not geographically specific enough, or "narrowly tailored" enough, standing alone, to support an MBE program in the City of Richmond. The first step in our evaluation of M/WBE availability and participation for the City of Houston must therefore be to define the relevant market area for its Construction contracts. Markets have both a geographic and a product, or industry, dimension, both of which are considered.[199] For this Study, we define the City's market area based on its own historical contracting and subcontracting records. We define the geographic market dimension by calculating from zip code data where the majority of the City's contractors and subcontractors are located.

Narrow tailoring also applies to product markets. The extent of disparity may differ from industry to industry just as among geographic locations.[200] Documenting the specific industries that comprise the City's contracting activities and the relative importance of each to contract and subcontract spending is important. A careful product market definition allows for (1) implementation of more narrowly tailored availability estimation methods, (2) contract-level goal-setting, and (3) overall M/WBE availability estimates and annual goals that are a weighted average of underlying industry-level availability estimates, rather than a simple average. The weights used are the proportion of dollars spent within each industry and allow the overall availability measure to be influenced more heavily by availability in those industries where more contracting dollars are spent, and less heavily by availability in those industries where relatively few contracting dollars are spent.

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.[201] In both cases, the definitions are weighted according to how many dollars were spent with firms from each zip code or NAICS code, respectively, so that locations and industries, respectively, receiving relatively more contracting dollars receive relatively more weight in the estimation of M/WBE availability. Once the geographic and industry parameters of the City's market area have been defined, we can restrict our subsequent analyses to business enterprises and other phenomena within this market area. Restricting our analyses in this manner narrowly tailors our findings to the City's specific market area and contracting circumstances.

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[199] *See*, for example, Areeda, P., L. Kaplow, and A. Edlin (2004).

[200] *See* Wainwright (2000), documenting that, in general, the similarities in the amount of discrimination present in different industries and geographic locations significantly outweighs the differences.

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

1.   Preparing the Master Contract/Subcontract Database

With assistance from the Mayor's Office of Business Opportunity, which compiled information collected by the City during its ordinary course of business into an electronic contract compliance database, NERA obtained records for City construction contracts that were awarded during the period from July 2004 through December 2009 (City Fiscal Years 2005-2009 and the first half of Fiscal Year 2010).

For each construction contract from the study period, we obtained available electronic records from the City including the prime contractor name and address, contract description, contract number, contractor race and gender, contract start date, initial contract award amount, and total current paid amount. Additionally, available data was obtained for associated subcontractors, subconsultants, suppliers, and truckers (collectively "subcontractors" or "subcontracts"), including name and address, work description, race and gender, award amount, and current paid amount.

The City and NERA conducted a careful contract-by-contract review of the available electronic records, including a process for cross-referencing electronic records with original documents generated during the bid, award, and contract closeout processes. As a result of this review, the City and NERA jointly determined that the associated electronic subcontract records were not always complete. In conjunction with the City, a plan was developed to directly contact prime contractors, in approximately three out of every four cases, in order to verify the data and supplement it where appropriate. Cases where prime contractors were not contacted involved records where confidence was high that existing City records were complete, for example at the Houston Airport System and the Housing & Community Development Department.

A total of 1,163 prime construction contracts were identified from City records during the study period. Of these, 155 were open contracts that were not substantially complete.[202] It is NERA's general practice to exclude such contracts so that their associated subcontract data does not skew the study results.

The remaining 1,008 prime contracts had a total award value of approximately $3.25 billion. Of these 1,008 prime contracts, 223, with a total award value of approximately $1.14 billion, were deemed to be complete as a result of the verification process. The remaining 785 contracts, with a total award value of approximately $2.11 billion, were selected for verification by the prime contractor. With assistance from the City, we successfully collected data for 533 (68 percent) of these 785 contracts, accounting for approximately 80 percent of their total dollar value.

Therefore, the ultimate contract and subcontract database employed for the Study, which we refer to as the Master Contract/Subcontract Database, contains 756 prime construction contracts and 7,440 associated subcontracts. The total award value for these contracts is $2.82 billion and the total paid value is $2.76 billion.

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[202] For this study a contract was considered not substantially complete if less than 85 percent of the contract award amount had been paid.

Tables 3.1–3.4, below, provide various descriptive statistics from the Master Contract/Subcontract Database. Table 3.1 shows total number of prime contracts, subcontracts, dollars awarded, and dollars paid for construction. Table 3.2 shows the total number of prime contracts awarded during each fiscal year of the study period and total dollar awards associated with those contracts. Tables 3.3 and 3.4 show the distribution of City construction contract dollars by contracting categories and administrative department.

Table 3.1. Summary of Master Contract/Subcontract Database: Prime Construction Contracts and Subcontracts by Procurement Category, 2003-2007

CONTRACT CATEGORY	NUMBER OF CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
		2,819,491,089	**2,759,210,194**
Prime Contracts	756	1,558,099,837	1,480,194,261
Subcontracts	7,440	1,261,391,252	1,279,015,933

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

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

FISCAL YEAR OF AWARD	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
2005	165	528,519,876	518,582,849
2006	145	538,651,150	526,679,720
2007	129	374,784,590	367,418,388
2008	142	790,322,000	764,516,085
2009	123	446,545,811	443,439,496
2010[203]	52	140,667,662	138,573,656
TOTAL	**756**	**2,819,491,089**	**2,759,210,194**

Source: See Table 3.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

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[203] Figures are for the first half of Fiscal Year 2010.

Table 3.3. Summary of Master Contract/Subcontract Database: Prime Construction Contracts by Contract Category

CONTRACT CATEGORY	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
AVIATION	49	691,038,521	687,804,260
CIVIC CENTER	7	5,570,295	5,740,165
FIRE	14	24,307,742	24,298,578
GENERAL GOVERNMENT	24	68,479,543	64,927,321
HEALTH	9	24,952,571	26,314,164
HOUSING	43	148,691,248	146,143,665
LIBRARY	15	65,573,467	67,674,969
MATERIALS	28	16,298,108	16,650,266
OTHER	2	19,845,482	19,784,132
OVERLAY	4	16,162,904	15,350,364
PARKS	52	50,745,860	51,134,784
PAVING	66	298,963,256	286,927,966
POLICE	15	36,791,517	37,039,874
SIDEWALKS	22	19,121,687	17,760,027
SOLID WASTE	9	15,691,115	15,419,762
STORM SEWER	33	194,515,531	189,841,362
WASTEWATER	190	575,598,606	561,528,331
WATER	135	528,534,656	506,306,958
WATER/WW	39	18,608,981	18,563,246
TOTAL	**756**	**2,819,491,089**	**2,759,210,194**

Source: See Table 3.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Table 3.4. Summary of Master Contract/Subcontract Database: Prime Construction Contracts by Administrative Department

DEPARTMENT	NUMBER OF PRIME CONTRACTS	DOLLARS AWARDED	DOLLARS PAID
Houston Airport Systems	49	691,038,521	687,804,260
General Services	143	308,460,276	305,510,118
Housing & Community Development	75	185,164,569	183,666,059
Public Works & Engineering	487	1,633,676,113	1,581,132,026
Other	2	1,151,610	1,097,731
TOTAL	**756**	**2,819,491,089**	**2,759,210,194**

Source: See Table 3.1. "Other" includes Parks & Recreation and the Strategic Purchasing Division.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

B.   Geographic Market Definition for Construction Contracting

To determine the geographic dimension of the City's construction contracting market, we used the Master Contract/Subcontract Database, as described in the previous section, to obtain the zip codes and thereby the county and state for each contractor and subcontractor identified in our sample. Using this location information, we then calculated the percentage of City construction 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 dollars awarded by a given government entity. There is one Core Based Statistical Area (CBSA) that encompasses the City of Houston. It is the Houston-Sugar Land-Baytown, TX Metropolitan Statistical Area. The Houston CBSA is comprised of the following Texas counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, San Jacinto, and Waller. Contractors located within this CBSA account for the vast majority of construction contract and subcontract awards by the City of Houston and its prime contractors, respectively, during the study period.

As shown in Table 3.5, the overall share of expenditures inside this market area is 88.0 percent of dollars awarded and 87.8 percent of dollars paid. For purposes of this Study, we therefore define the primary geographic market area to be the Houston-Sugar Land-Baytown, TX Metropolitan Statistical Area as identified above, and hereafter referred to as the "Houston market area" or "City of Houston market area."

Moreover, more than 95 percent of construction contract dollars went to establishments located in Texas. Inside Texas, but outside the Houston market area, counties with a significant amount of spending activity (in decreasing order of importance) included the counties of Dallas, Travis, Tarrant, Denton, and Bexar. Outside Texas, the only county with a significant amount of spending activity was Cobb County, Georgia.[204]

Table 3.5 Distribution of Construction Contracting Dollars by Geographic Location

Location	Dollars Awarded (%)	Dollars Paid (%)
Inside Houston Market Area	88.0	87.8
Outside Houston Market Area	12.0	12.2
Inside Texas	95.5	95.3
Outside Texas	4.5	4.7

Source: See Table 3.1.

C.   Product Market Definition for Construction Contracting

Using 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 Groups for City of Houston construction contracting, as measured by total dollars awarded and paid.

The relevant NAICS codes and their associated dollar weights appear below in Tables 3.6 and 3.7. It is clear from these two tables that, although numerous Industry Groups play a role in the City's construction contracting activities, actual contracting and subcontracting opportunities are not distributed evenly among them. The distribution of contract expenditures is, in fact, highly skewed.

For example, one Industry Group (NAICS 2371) alone accounts for one-fourth of all construction dollars, while three Industry Groups (NAICS 2371, 2373, and 2362) collectively account for more than half. Nine Industry Groups collectively account for four-fifths of all construction dollars, and 19 Industry Groups collectively account for 95 percent. The remaining 5 percent is distributed among 114 additional Industry Groups.

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[204] We define "significant" here, somewhat arbitrarily, as counties that accounted for more than 0.25 percent of total award and paid dollars among three or more establishments.

Each Industry Group (four-digit NAICS) identified in Tables 3.6 and 3.7 consist of more detailed Industries (five-digit and six-digit NAICS). The resulting percentage weights from these NAICS Industries are used below in Chapter IV to calculate weighted average M/WBE availability figures for City of Houston Construction.[205]

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

Table 3.6. Distribution of Construction Contract and Subcontract Dollars Awarded by Industry Group: Construction

NAICS Group	NAICS Description	Percentage	Cumulative Percentage
2371	Utility System Construction	25.24	25.24
2373	Highway, Street, and Bridge Construction	16.58	41.82
2362	Nonresidential Building Construction	11.93	53.75
2382	Building Equipment Contractors	8.93	62.69
2381	Foundation, Structure, and Building Exterior Contractors	5.13	67.82
2389	Other Specialty Trade Contractors	4.60	72.42
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	4.11	76.53
3339	Other General Purpose Machinery Manufacturing	3.37	79.90
2361	Residential Building Construction	2.91	82.81
2383	Building Finishing Contractors	2.07	84.87
4236	Electrical and Electronic Goods Merchant Wholesalers	1.85	86.72
4233	Lumber and Other Construction Materials Merchant Wholesalers	1.81	88.53
3273	Cement and Concrete Product Manufacturing	1.76	90.29
4842	Specialized Freight Trucking	1.40	91.69
3323	Architectural and Structural Metals Manufacturing	1.10	92.78
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	0.83	93.62
5413	Architectural, Engineering, and Related Services	0.62	94.24
2379	Other Heavy and Civil Engineering Construction	0.60	94.83

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

Defining the Relevant Markets

NAICS Group	NAICS Description	Percentage	Cumulative Percentage
5619	Other Support Services	0.57	95.41
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	0.51	95.91
5617	Services to Buildings and Dwellings	0.45	96.36
3329	Other Fabricated Metal Product Manufacturing	0.23	96.59
5616	Investigation and Security Services	0.23	96.81
5416	Management, Scientific, and Technical Consulting Services	0.21	97.03
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	0.20	97.23
3333	Commercial and Service Industry Machinery Manufacturing	0.19	97.42
4232	Furniture and Home Furnishing Merchant Wholesalers	0.16	97.58
4441	Building Material and Supplies Dealers	0.16	97.75
3312	Steel Product Manufacturing from Purchased Steel	0.16	97.91
5629	Remediation and Other Waste Management Services	0.14	98.04
2372	Land Subdivision	0.13	98.18
8114	Personal and Household Goods Repair and Maintenance	0.11	98.29
4246	Chemical and Allied Products Merchant Wholesalers	0.11	98.40
3241	Petroleum and Coal Products Manufacturing	0.09	98.49
4422	Home Furnishings Stores	0.09	98.58
3399	Other Miscellaneous Manufacturing	0.09	98.67
4239	Miscellaneous Durable Goods Merchant Wholesalers	0.09	98.76
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	0.09	98.85
5613	Employment Services	0.09	98.93
3219	Other Wood Product Manufacturing	0.08	99.01
	Balance (94 industry groups)	0.99	100.00
	TOTAL - $2,819,491,089		

Source: See Table 3.1.

Table 3.7. Distribution of Construction Contract and Subcontract Dollars Paid by Industry Group: Construction

NAICS Group	NAICS Description	Percentage	Cumulative Percentage
2371	Utility System Construction	24.26	24.26
2373	Highway, Street, and Bridge Construction	16.44	40.70
2362	Nonresidential Building Construction	11.12	51.82
2382	Building Equipment Contractors	9.43	61.25
2381	Foundation, Structure, and Building Exterior Contractors	5.74	66.99
2389	Other Specialty Trade Contractors	4.59	71.57
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	4.17	75.75
3339	Other General Purpose Machinery Manufacturing	3.70	79.45
2361	Residential Building Construction	2.98	82.43
2383	Building Finishing Contractors	2.25	84.68
4233	Lumber and Other Construction Materials Merchant Wholesalers	1.92	86.60
4236	Electrical and Electronic Goods Merchant Wholesalers	1.90	88.50
3273	Cement and Concrete Product Manufacturing	1.72	90.22
4842	Specialized Freight Trucking	1.32	91.54
3323	Architectural and Structural Metals Manufacturing	1.08	92.62
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	0.92	93.53
2379	Other Heavy and Civil Engineering Construction	0.63	94.16
5413	Architectural, Engineering, and Related Services	0.59	94.75
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	0.52	95.27
5619	Other Support Services	0.49	95.76
5617	Services to Buildings and Dwellings	0.44	96.20
5416	Management, Scientific, and Technical Consulting Services	0.23	96.43
3329	Other Fabricated Metal Product Manufacturing	0.23	96.65
5616	Investigation and Security Services	0.21	96.86
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	0.21	97.07
3312	Steel Product Manufacturing from Purchased Steel	0.19	97.26
3333	Commercial and Service Industry Machinery Manufacturing	0.19	97.45

Defining the Relevant Markets

NAICS Group	NAICS Description	Percentage	Cumulative Percentage
4232	Furniture and Home Furnishing Merchant Wholesalers	0.17	97.62
3219	Other Wood Product Manufacturing	0.15	97.77
4441	Building Material and Supplies Dealers	0.14	97.92
5629	Remediation and Other Waste Management Services	0.14	98.06
3241	Petroleum and Coal Products Manufacturing	0.13	98.19
4422	Home Furnishings Stores	0.12	98.31
8114	Personal and Household Goods Repair and Maintenance	0.12	98.42
2372	Land Subdivision	0.11	98.54
3399	Other Miscellaneous Manufacturing	0.11	98.65
4246	Chemical and Allied Products Merchant Wholesalers	0.10	98.75
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	0.09	98.84
4239	Miscellaneous Durable Goods Merchant Wholesalers	0.09	98.93
5419	Other Professional, Scientific, and Technical Services	0.08	99.01
	Balance (94 industry groups)	0.99	100.00
	TOTAL - $2,759,210,194		

Source: See Table 3.1.

IV.   M/WBE Availability in the City of Houston Market Area

A.   Introduction

Estimates of M/WBE availability are an important element of the City of Houston's disparity study since they provide benchmarks for assessing the effectiveness of the City's efforts to encourage M/WBE participation in public construction contracting. Furthermore, they provide a means by which to establish goals for M/WBE participation that are tailored to the City's relevant market area.

Some approaches to estimating M/WBE availability suffer from internal inconsistency since the data employed to construct the availability numerator (i.e., the total number of M/WBE establishments in the market area) are measured differently than the data employed to construct the availability denominator (i.e., the total number of establishments in the market area). For example, the numerator might be drawn from an agency's internal list of certified M/WBEs while the denominator might be drawn from Census data. Since the methods used to identify and certify firms as M/WBEs are entirely different from the methods used by the Census Bureau to count businesses establishments, such approaches inevitably compare "apples to oranges."

In this Study, we employ the "Custom Census" method for measuring availability. The Custom Census method was pioneered by NERA and has been favorably reviewed by each court that has examined it. The Tenth Circuit found the custom census approach to be "a more sophisticated method to calculate availability than the earlier studies."[206] Likewise, this method was successful in the defense of the DBE programs for Minnesota DOT[207] and Illinois DOT,[208] as well as the M/WBE construction program for the City of Chicago.[209]

In addition to its favorable reception in the courts, when properly executed, the Custom Census method is superior to other approaches for at least three reasons. First, it provides an internally consistent and rigorous "apples to apples" comparison between establishments in the availability numerator and those in the denominator. Second, it comports with the remedial nature of most M/WBE policies by measuring overall M/WBE availability in the relevant market area as

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[206] *Concrete Works of Colorado, Inc. v. City and County of Denver*, 321 F.3d 950, 966 (10th Cir. 2003) ("*Concrete Works IV*"), *cert. denied*, 540 U.S. 1027 (2003).

[207] *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004).

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

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

opposed to only those businesses currently certified by an agency.[210] Third, the Custom Census is less likely to be tainted by the effects of past and present discrimination than other methods.[211]

The Custom Census method has seven steps. These are:

1. Create a database of representative, recent, and complete City of Houston construction projects;

2. Identify the City's relevant geographic market for construction contracting activity;

3. Identify the City's relevant product market for construction contracting activity;

4. Count all business establishments in the relevant market area;

5. Identify listed M/WBE establishments in the relevant market area;

6. Verify the ownership status of listed M/WBEs; and

7. Verify the ownership status of all other firms in the relevant market area.

The first three steps were described in Chapter III. Steps 4 through 7 are described in more detail below.

B.   Identifying Business Establishments in the Relevant Markets

M/WBE availability (unweighted) is defined as the number of M/WBEs divided by the total number of business establishments in the City's contracting market area—what we will refer to as the Baseline Business Universe.[212] Determining the total number of business establishments in the market area, however, is more straightforward than determining the number of minority- or women-owned establishments 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 Houston.

It is important to note that NERA's availability analysis is free from variables tainted by discrimination. Our approach recognizes that discrimination may impact many of the variables that contribute to a firm's success in obtaining work as a prime or a subcontractor. Factors such as firm size, time in business, qualifications, and experience are all adversely affected by discrimination if it is present in the market area. Despite the obvious relationship, some

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[210] *See Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 at 723 (7th Cir. 2007) ("We agree with the district court that the remedial nature of the federal scheme militates in favor of a method of DBE availability calculation that casts a broader net").

[211] *See* Section B.5., below, for further discussion of this point.

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

commentators argue that disparities should only be assessed between firms with similar "capacities."[213] However, most courts in our view have properly refused to make the results of discrimination the benchmark for non-discrimination.[214] They have acknowledged that M/WBEs may be smaller, newer, and otherwise less competitive than non-M/WBEs because of the very discrimination sought to be remedied by race-conscious contracting programs. Racial and gender differences in these "capacity" factors are the *outcomes* of discrimination and it is therefore inappropriate as a matter of economics and statistics to use them as "control" variables in a disparity study.[215]

1. Estimate the Total Number of Business Establishments in the Market

We used data supplied by Dun & Bradstreet's Hoovers subsidiary to determine the total number of business establishments operating in the relevant geographic and product markets (these markets were discussed in the previous chapter). Dun & Bradstreet produces the most comprehensive publicly available database of business establishments in the U.S. This database contains over 15 million records and is updated continuously. Each record in Dun & Bradstreet represents a business establishment and includes the business name, address, telephone number, NAICS code, SIC code, business type, DUNS Number (a unique number assigned to each establishment by Dun & Bradstreet) and other descriptive information. Dun & Bradstreet gathers and verifies information from many different sources. These sources include, among others, annual management interviews, payment experiences, bank account information, filings for suits, liens, judgments and bankruptcies, news items, the U. S. Postal Service, utility and telephone service, business registrations, corporate charters, Uniform Commercial Code filings, and records of the Small Business Administration and other governmental agencies.

We used the Dun & Bradstreet database to identify the total number of business establishments in each six-digit NAICS code to which we assigned a product market weight. Table 4.1 shows the number of business establishments identified in each NAICS industry group within the Construction category, along with the associated industry weight according to dollars awarded. Table 4.2 shows the same information using industry weights according to dollars paid. Although numerous industries play a role in the City's Baseline Business Universe, contracting and subcontracting opportunities are not distributed evenly among them. The distribution of contract expenditures is, in fact, highly skewed, as documented above in Chapter III.

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[213] *See,* e.g.*,* La Noue (2006). Most of La Noue's expert report in *Gross Seed Company v. Nebraska Department of Roads*, No. 02-3016 (D. Neb. 2002), including his views on "capacity," was rejected by the court on the basis that it was legal opinion and not expert analysis. According to the court, "[legal analysis] is an issue solely for the Court and not for the presentation of expert testimony…." (*see* Defendants-Appellees' Brief, *Gross Seed Company v. Nebraska Department of Roads*, on appeal to the Eight Circuit Court of Appeals).

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

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

M/WBE Availability in the City of Houston Market Area

Table 4.1. Construction—Number of Business Establishments and Industry Weight (Dollars Awarded), by NAICS Code, 2011

NAICS Industry Group	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
2371	Utility System Construction	594	25.24	25.24
2373	Highway, Street, and Bridge Construction	331	16.58	41.82
2362	Nonresidential Building Construction	1,554	11.93	53.75
2382	Building Equipment Contractors	4,746	8.93	62.69
2381	Foundation, Structure, and Building Exterior Contractors	2,361	5.13	67.82
2389	Other Specialty Trade Contractors	2,794	4.60	72.42
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	3,487	4.11	76.53
3339	Other General Purpose Machinery Manufacturing	287	3.37	79.90
2361	Residential Building Construction	9,063	2.91	82.81
2383	Building Finishing Contractors	2,849	2.07	84.87
4236	Electrical and Electronic Goods Merchant Wholesalers	1,044	1.85	86.72
4233	Lumber and Other Construction Materials Merchant Wholesalers	971	1.81	88.53
3273	Cement and Concrete Product Manufacturing	235	1.76	90.29
4842	Specialized Freight Trucking	312	1.40	91.69
3323	Architectural and Structural Metals Manufacturing	618	1.10	92.78
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	675	0.83	93.62
5413	Architectural, Engineering, and Related Services	4,946	0.62	94.24
2379	Other Heavy and Civil Engineering Construction	141	0.60	94.83
5619	Other Support Services	694	0.57	95.41
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	668	0.51	95.91
5617	Services to Buildings and Dwellings	6,519	0.45	96.36
3329	Other Fabricated Metal Product Manufacturing	131	0.23	96.59
5616	Investigation and Security Services	735	0.23	96.81
5416	Management, Scientific, and Technical Consulting Services	11,594	0.21	97.03
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	265	0.20	97.23
3333	Commercial and Service Industry Machinery Manufacturing	121	0.19	97.42
4232	Furniture and Home Furnishing Merchant Wholesalers	714	0.16	97.58
4441	Building Material and Supplies Dealers	1,625	0.16	97.75
3312	Steel Product Manufacturing from Purchased Steel	54	0.16	97.91
5629	Remediation and Other Waste Management Services	379	0.14	98.04
2372	Land Subdivision	776	0.13	98.18
8114	Personal and Household Goods Repair and Maintenance	2,664	0.11	98.29
4246	Chemical and Allied Products Merchant Wholesalers	635	0.11	98.40
3241	Petroleum and Coal Products Manufacturing	176	0.09	98.49
4422	Home Furnishings Stores	868	0.09	98.58
3399	Other Miscellaneous Manufacturing	1,181	0.09	98.67

NAICS Industry Group	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
4239	Miscellaneous Durable Goods Merchant Wholesalers	1,498	0.09	98.76
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	260	0.09	98.85
5613	Employment Services	1,447	0.09	98.93
3219	Other Wood Product Manufacturing	221	0.08	99.01
	Balance (94 industry groups)	94,078	0.99	100.00

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

Table 4.2. Construction—Number of Business Establishments and Industry Weight (Dollars Paid), by NAICS Code, 2011

NAICS Industry Group	NAICS Description	Number of Estab-lishments	Industry Weight	Industry Weight (Cumu-lative)
2371	Utility System Construction	594	24.26	24.26
2373	Highway, Street, and Bridge Construction	331	16.44	40.70
2362	Nonresidential Building Construction	1,554	11.12	51.82
2382	Building Equipment Contractors	4,746	9.43	61.25
2381	Foundation, Structure, and Building Exterior Contractors	2,361	5.74	66.99
2389	Other Specialty Trade Contractors	2,794	4.59	71.57
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	3,487	4.17	75.75
3339	Other General Purpose Machinery Manufacturing	287	3.70	79.45
2361	Residential Building Construction	9,063	2.98	82.43
2383	Building Finishing Contractors	2,849	2.25	84.68
4233	Lumber and Other Construction Materials Merchant Wholesalers	971	1.92	86.60
4236	Electrical and Electronic Goods Merchant Wholesalers	1,044	1.90	88.50
3273	Cement and Concrete Product Manufacturing	235	1.72	90.22
4842	Specialized Freight Trucking	312	1.32	91.54
3323	Architectural and Structural Metals Manufacturing	618	1.08	92.62
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	675	0.92	93.53
2379	Other Heavy and Civil Engineering Construction	141	0.63	94.16
5413	Architectural, Engineering, and Related Services	4,946	0.59	94.75
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	668	0.52	95.27
5619	Other Support Services	694	0.49	95.76
5617	Services to Buildings and Dwellings	6,519	0.44	96.20
5416	Management, Scientific, and Technical Consulting Services	11,594	0.23	96.43
3329	Other Fabricated Metal Product Manufacturing	131	0.23	96.65
5616	Investigation and Security Services	735	0.21	96.86
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	265	0.21	97.07
3312	Steel Product Manufacturing from Purchased Steel	54	0.19	97.26
3333	Commercial and Service Industry Machinery Manufacturing	121	0.19	97.45
4232	Furniture and Home Furnishing Merchant Wholesalers	714	0.17	97.62
3219	Other Wood Product Manufacturing	221	0.15	97.77
4441	Building Material and Supplies Dealers	1,625	0.14	97.92
5629	Remediation and Other Waste Management Services	379	0.14	98.06
3241	Petroleum and Coal Products Manufacturing	176	0.13	98.19
4422	Home Furnishings Stores	868	0.12	98.31
8114	Personal and Household Goods Repair and Maintenance	2,664	0.12	98.42
2372	Land Subdivision	776	0.11	98.54
3399	Other Miscellaneous Manufacturing	1,181	0.11	98.65

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
4246	Chemical and Allied Products Merchant Wholesalers	635	0.10	98.75
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	260	0.09	98.84
4239	Miscellaneous Durable Goods Merchant Wholesalers	1,498	0.09	98.93
5419	Other Professional, Scientific, and Technical Services	3,695	0.08	99.01
	Balance (94 industry groups)	91,830	0.99	100.00

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

2.   Identify Listed M/WBEs

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

First, NERA completed an intensive regional search for information on minority-owned and woman-owned businesses in Texas and surrounding states. Beyond the information already in Dun & Bradstreet/Hoovers, NERA collected lists of M/WBEs from other public and private entities. Specifically, directories were included from: American Indian Chamber of Commerce of Texas, American Indian Search, Business Research Services, Inc., Texas Centralized Master Bidders List, City of Austin, City of El Paso, City of Houston, Dallas Independent School District, Dallas/Fort Worth Minority Supplier Development Council, Diversity Information Resources National Minority and Women-Owned Business Database 2006, DiversityBusiness.com, Greater Austin Chamber of Commerce, Greater Houston Women's Chamber of Commerce, Hispanic Contractors Association of Texas, Texas Historically Underutilized Business Program, Houston Minority Supplier Development Council, Indo-American Chamber of Commerce of Greater Houston, Metropolitan Transit Authority of Houston, Minority Business Development Agency, MWBE.com, National Association of Women Business Owners, National Association of Women in Construction-Texas Chapter, National Native American Business Directory, Native Edge, North Central Texas Regional Certification Agency, Small Business Administration/Central Contractor Registry, South Central Texas Regional Certification Authority, South Texas Women's Business Center, Texas Unified Certification Program, Women Contractors Association, and Women's Business Enterprise

Alliance. Also included were Texas businesses from the City's market area that were identified on other recent disparity studies performed by NERA.[216]

Records for establishments located in Houston's market area were then culled from these sources and cross-referenced to Dun & Bradstreet/Hoovers to improve the identification of the race and gender of business owners. The M/WBEs identified in this manner are referred to as "listed" M/WBEs. Table 4.3 shows the number of listed M/WBEs identified in each NAICS industry group within the Construction category, along with the associated industry weight according to dollars awarded. Table 4.4 shows comparable information using industry weight according to dollars paid. If the listed M/WBEs identified in Tables 4.3 or 4.4 are in fact *all* M/WBEs and are the *only* M/WBEs among all the business establishments identified in Tables 4.1 or 4.2, then an estimate of "listed" M/WBE availability is simply the number of listed M/WBEs (taken from Tables 4.3 or 4.4) divided by the total number of business establishments in the relevant market (taken from Tables 4.1 or 4.2). However, as we shall see below, neither of these two conditions holds true in practice, and this is therefore *not* an appropriate method for measuring M/WBE availability.

There are two reasons for this. First, it is likely that some of the M/WBEs listed in Tables 4.3 and 4.4 are not actually minority-owned or woman-owned. Second, it is likely that there are additional "unlisted" M/WBEs among all the business establishments included in Tables 4.1 and 4.2. Such businesses may not appear in any of the directories we gathered and are therefore not included as M/WBEs in Tables 4.3 and 4.4. 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 and 4 below.

Table 4.3. Construction—Number of Listed M/WBEs and Industry Weight (Dollars Awarded), by NAICS Code, 2011

NAICS Industry Group	NAICS Description	Number of Listed M/WBEs	Industry Weight	Industry Weight (Cumulative)
2371	Utility System Construction	64	25.24	25.24
2373	Highway, Street, and Bridge Construction	40	16.58	41.82
2362	Nonresidential Building Construction	228	11.93	53.75
2382	Building Equipment Contractors	369	8.93	62.69
2381	Foundation, Structure, and Building Exterior Contractors	202	5.13	67.82
2389	Other Specialty Trade Contractors	225	4.60	72.42

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

NAICS Industry Group	NAICS Description	Number of Listed M/WBEs	Industry Weight	Industry Weight (Cumulative)
4238	Machinery, Equipment, and Supplies Wholesalers	400	4.11	76.53
3339	Other General Purpose Machinery Manufacturing	19	3.37	79.90
2361	Residential Building Construction	453	2.91	82.81
2383	Building Finishing Contractors	268	2.07	84.87
4236	Electrical and Electronic Goods Merchant Wholesalers	123	1.85	86.72
4233	Lumber and Other Construction Materials Merchant Wholesalers	89	1.81	88.53
3273	Cement and Concrete Product Manufacturing	12	1.76	90.29
4842	Specialized Freight Trucking	53	1.40	91.69
3323	Architectural and Structural Metals Manufacturing	80	1.10	92.78
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	51	0.83	93.62
5413	Architectural, Engineering, and Related Services	641	0.62	94.24
2379	Other Heavy and Civil Engineering Construction	16	0.60	94.83
5619	Other Support Services	146	0.57	95.41
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	74	0.51	95.91
5617	Services to Buildings and Dwellings	748	0.45	96.36
3329	Other Fabricated Metal Product Manufacturing	16	0.23	96.59
5616	Investigation and Security Services	96	0.23	96.81
5416	Management, Scientific, and Technical Consulting Services	1,472	0.21	97.03
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	31	0.20	97.23
3333	Commercial and Service Industry Machinery Manufacturing	13	0.19	97.42
4232	Furniture and Home Furnishing Merchant Wholesalers	118	0.16	97.58
4441	Building Material and Supplies Dealers	126	0.16	97.75
3312	Steel Product Manufacturing from Purchased Steel	7	0.16	97.91
5629	Remediation and Other Waste Management Services	36	0.14	98.04
2372	Land Subdivision	28	0.13	98.18
8114	Personal and Household Goods Repair and Maintenance	276	0.11	98.29
4246	Chemical and Allied Products Merchant Wholesalers	95	0.11	98.40
3241	Petroleum and Coal Products Manufacturing	6	0.09	98.49
4422	Home Furnishings Stores	101	0.09	98.58
3399	Other Miscellaneous Manufacturing	182	0.09	98.67
4239	Miscellaneous Durable Goods Merchant Wholesalers	159	0.09	98.76
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	25	0.09	98.85
5613	Employment Services	352	0.09	98.93
3219	Other Wood Product Manufacturing	11	0.08	99.01
	Balance (94 industry groups)	9,012	0.99	100.00

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

Table 4.4. Construction—Number of Listed M/WBEs and Industry Weight (Dollars Paid), by NAICS Code, 2011

NAICS Industry Group	NAICS Description	Number of Listed M/WBEs	Industry Weight	Industry Weight (Cumulative)
2371	Utility System Construction	64	24.26	24.26
2373	Highway, Street, and Bridge Construction	40	16.44	40.70
2362	Nonresidential Building Construction	228	11.12	51.82
2382	Building Equipment Contractors	369	9.43	61.25
2381	Foundation, Structure, and Building Exterior Contractors	202	5.74	66.99
2389	Other Specialty Trade Contractors	225	4.59	71.57
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	400	4.17	75.75
3339	Other General Purpose Machinery Manufacturing	19	3.70	79.45
2361	Residential Building Construction	453	2.98	82.43
2383	Building Finishing Contractors	268	2.25	84.68
4233	Lumber and Other Construction Materials Merchant Wholesalers	89	1.92	86.60
4236	Electrical and Electronic Goods Merchant Wholesalers	123	1.90	88.50
3273	Cement and Concrete Product Manufacturing	12	1.72	90.22
4842	Specialized Freight Trucking	53	1.32	91.54
3323	Architectural and Structural Metals Manufacturing	80	1.08	92.62
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	51	0.92	93.53
2379	Other Heavy and Civil Engineering Construction	16	0.63	94.16
5413	Architectural, Engineering, and Related Services	641	0.59	94.75
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	74	0.52	95.27
5619	Other Support Services	146	0.49	95.76
5617	Services to Buildings and Dwellings	748	0.44	96.20
5416	Management, Scientific, and Technical Consulting Services	1472	0.23	96.43
3329	Other Fabricated Metal Product Manufacturing	16	0.23	96.65
5616	Investigation and Security Services	96	0.21	96.86
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	31	0.21	97.07
3312	Steel Product Manufacturing from Purchased Steel	7	0.19	97.26
3333	Commercial and Service Industry Machinery Manufacturing	13	0.19	97.45
4232	Furniture and Home Furnishing Merchant Wholesalers	118	0.17	97.62
3219	Other Wood Product Manufacturing	11	0.15	97.77
4441	Building Material and Supplies Dealers	126	0.14	97.92
5629	Remediation and Other Waste Management Services	36	0.14	98.06
3241	Petroleum and Coal Products Manufacturing	6	0.13	98.19
4422	Home Furnishings Stores	101	0.12	98.31
8114	Personal and Household Goods Repair and Maintenance	276	0.12	98.42
2372	Land Subdivision	28	0.11	98.54
3399	Other Miscellaneous Manufacturing	182	0.11	98.65

NAICS Industry Group	NAICS Description	Number of Listed M/WBEs	Industry Weight	Industry Weight (Cumu-lative)
4246	Chemical and Allied Products Merchant Wholesalers	95	0.10	98.75
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	25	0.09	98.84
4239	Miscellaneous Durable Goods Merchant Wholesalers	159	0.09	98.93
5419	Other Professional, Scientific, and Technical Services	280	0.08	99.01
	Balance (94 industry groups)	9,084	0.99	100.00

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

3.   Verify Listed M/WBEs

a.   Introduction

It is likely that information on M/WBEs from Dun & Bradstreet/Hoovers 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, will lead to businesses being listed as M/WBEs in a particular directory even though they may actually be owned by non-minority males. Other things equal, this type of error would cause our availability estimate to be biased upward from the actual availability number.

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

In our experience, we have found that both types of bias are not uncommon. For this Study, we corrected for the effect of these biases using statistical sampling procedures. We surveyed a large, stratified random sample of 4,948 establishments drawn from the Baseline Business Universe and measured how often they were misclassified (or unclassified) by race and/or gender.[217]

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[217] A similar method was 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.

Strata were defined according to NAICS sectors and listed M/WBE status.[218] In the phone survey, up to 10 attempts were made to reach each business and speak with an appropriate respondent. Attempts were scheduled for a mix of day and evening, weekdays and weekends, and appointments were scheduled for callbacks when necessary. Of the 4,948 firms in our sample, 1,976 (39.9%) were listed M/WBEs and 2,972 (60.1%) were unclassified by race or gender. Of these 4,948 firms, however, 346 (6.99%) were excluded as "unable to contact." Exclusions resulted primarily from firms that were no longer in business.[219] Of the remaining 4,602 firms, 1,860 (40.4%) were listed M/WBEs and the remaining 2,742 establishments (59.6%) were unclassified.

The first part of the survey tested whether our sample of listed M/WBEs was correctly classified by race and/or gender. The second part of the survey tested whether the unclassified firms (that is, firms putatively owned by nonminority males) could all be properly classified as non-M/WBEs. Both elements of the survey are described in more detail below.[220]

b.   Survey of Listed M/WBEs

We selected a stratified random sample of 1,976 listed M/WBEs to verify the race and gender status of their owner(s). Of these, 116 (5.9%) were excluded as "unable to contact." Of the 1,860 remaining establishments, we obtained complete interviews from 796, for a response rate of 42.8 percent.

Of the 796 establishments interviewed, 107 (13.4 percent) were owned by nonminority males. Misclassification was observed in every NAICS stratum, ranging from a high of 31.6 percent in NAICS 237 (Heavy and Civil Engineering Construction) to a low of 0.0 percent in NAICS 6-7 (Education, Health, and Recreation Services) as shown in Table 4.5. As shown in Table 4.6, misclassification varied by putative race and gender as well. It was highest among putative nonminority female firms, followed by Native American firms, Asian firms, Hispanic firms, and finally African American firms.[221]

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 African American-owned was actually nonminority male-owned, then that business was counted as

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[218] Ten separate industry strata were created based on NAICS code. All ten strata were then split according to listed M/WBE status to create a total of 20 strata. Generally, listed M/WBEs were sampled at a higher rate than unclassified establishments.

[219] Putative M/WBEs were not more likely to be affected by this than putative non-M/WBEs.

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

[221] For this study, "Black" or "African American" refers to an individual having origins in any of the Black racial groups of Africa; "Hispanic" refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; "Asian" refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islanders; "Native American" refers to an individual having origins in any of the original peoples of North America other than Eskimos or Aleuts.

nonminority male-owned for purposes of calculating M/WBE availability. But what about the remaining putatively African American-owned establishments that we did not interview? For these businesses, we estimate the race and gender of their ownership based on the amount of misclassification we observed among the putatively African American-owned firms that we did interview. In this example, our interviews show that 90.6 percent of these firms are indeed actually African American-owned, 5.0 percent are actually nonminority male-owned, and 4.4 percent are actually owned by Hispanics, Asians, or Native Americans (see Table 4.6). Therefore, we assign each of the remaining putative African American-owned firms a 90.6 percent probability of actually being African American-owned, a 5.0 percent probability of actually being nonminority male-owned, and a 4.4 percent probability of being owned by some persons from another minority group. We repeated this procedure within each sample stratum and for all putative race and gender categories.

Table 4.5. Listed M/WBE Survey—Amount of Misclassification, by Industry Grouping

Listed M/WBE By NAICS Code Grouping	Misclassification (Percentage Nonminority Male)	Percentage Actually M/WBE-owned	Number of Businesses Interviewed
NAICS 236	11.3	88.7	204
NAICS 237	31.6	68.4	57
NAICS 238	12.4	87.6	315
NAICS 3 or 42	17.2	82.8	58
NAICS 48-49	12.5	87.5	40
NAICS 44-45	7.1	92.9	42
NAICS 5	10.0	90.0	40
NAICS 6-7	0.0	100.0	6
NAICS 8	12.5	87.5	24
NAICS 11 or 22	20.0	80.0	10
NAICS 1 or 2, except 236, 237, 238	11.3	88.7	204
All NAICS Codes	13.4	86.6	796

Source: NERA telephone surveys.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Table 4.6. Listed M/WBE Survey—Amount of Misclassification, by Putative M/WBE Type

Putative Race/Gender	Misclassi- fication (Percentage Nonminority Male)	Misclassification (Percentage Other M/WBE Type)	Percentage Correctly Classified	Number of Businesses Interviewed
African American (either gender)	5.0	4.4	90.6	159
Hispanic (either gender)	6.6	4.3	89.1	274
Asian (either gender)	6.7	18.3	75.0	60
Native American (either gender)	10.5	26.3	63.2	19
Nonminority Female	26.4	32.1	58.5	284
All M/WBE Types	13.4	9.8	76.8	796

Source: See Table 4.5.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Similar calculations, not shown here, were performed for each stratum.

4. Verify Listed M/WBEs

a. 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 an M/WBE, either in Dun & Bradstreet/Hoovers or in one or more of the other directories, and that would otherwise appear to be a non-M/WBE.

We selected a stratified random sample of 2,972 unclassified businesses from the Baseline Business Universe to verify the race and gender status of their owner(s). Of these, 230 (7.7%) were excluded as "unable to contact." Of the 2,742 remaining establishments, we obtained 860 complete interviews, for a response rate of 31.4 percent.

Of the 860 establishments interviewed, 588 (68.4%) were owned by nonminority males, 88 (10.2%) by nonminority females, and 184 (21.4%) by minorities, as shown in Table 4.8. A similar phenomenon was observed within each industry stratum, as shown in Table 4.7. By industry grouping, NAICS 6-7 (Education, Health, and Recreation Services) had the lowest share of actual nonminority male-owned firms, while NAICS 3 or 42 (Manufacturing and Wholesale Trade) had the highest.

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 nonminority male-owned, then that business was counted as nonminority male-owned for purposes of the M/WBE availability calculation. If it indicated it was nonminority female-owned, it was counted as nonminority female, and so on. For unclassified businesses that were not interviewed, we assigned probability values (probability actually nonminority male-owned, probability actually nonminority female-owned, probability actually African American-owned, *etc*.) based on the interview responses. We again carried out the probability assignment procedure within each stratum.

Clearly, a large majority of unclassified businesses in the Baseline Business Universe (68.4 percent overall) are nonminority male-owned. Nevertheless, this means that 31.6 percent are *not* nonminority male-owned. Among the latter, the largest group was Hispanic-owned, with descending size shares accounted for by nonminority female-owned, African American-owned, Asian-owned, and finally Native American-owned. Table 4.8 shows the unclassified business survey results by race and gender.

Table 4.7. Unclassified Businesses Survey—By Industry Grouping

Listed M/WBE By NAICS Grouping	Percentage Actually Nonminority Male-owned	Percentage M/WBE	Number of Businesses Interviewed
NAICS 236	69.3	30.7	127
NAICS 237	79.3	20.7	135
NAICS 238	65.5	34.5	232
NAICS 3 or 42	81.0	19.0	58
NAICS 48-49	64.1	35.9	39
NAICS 44-45	64.1	35.9	64
NAICS 5	62.3	37.7	53
NAICS 6-7	31.0	69.0	42
NAICS 8	70.8	29.2	48
NAICS 11 or 22	77.4	22.6	62
All NAICS Codes	68.4	31.6	860

Source: See Table 4.5.

Table 4.8. Unclassified Businesses Survey—By Race and Gender

Verified Race/Gender	Number of Businesses Interviewed	Percentage of Total
Nonminority male	588	68.4
Nonminority female	88	10.2
African American (either gender)	51	5.9
Hispanic (either gender)	94	10.9
Asian (either gender)	31	3.6
Native American (either gender)	8	0.9
TOTAL	860	100.0

Source: See Table 4.5.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Similar calculations, not shown here, were performed within each stratum.

5. Understanding "Capacity"

As noted in the beginning of this chapter, some observers, primarily opponents of efforts to address discrimination in contracting, have argued that, in order to be accurate, availability estimates must be adjusted for "capacity." These assertions are rarely accompanied by specific suggestions about how such adjustments could be made consistent with professional social science standards. This Study does adjust for certain appropriate characteristics of firms related to capacity (such as industry affiliation, geographic location, owner labor market experience, and educational attainment), however, we are careful not adjust for capacity factors that are themselves likely to be influenced by discrimination. In our view, all of the "capacity" indicators recommended by program opponents (e.g., firm age, annual individual firm revenues, number of employees, largest contract received, bonding limits) are subject to the impact of discrimination.

Further, the reality is that large, adverse statistical disparities between minority-owned or women-owned businesses and nonminority male-owned businesses have been documented in numerous research studies and reports since *Croson*.[222] Business outcomes, however, can be influenced by multiple factors, and it is important that disparity studies examine the likelihood of whether discrimination is an important contributing factor to observed disparities.

Moreover, terms such as "capacity," "qualifications," and "ability," are not well defined in any statistical sense. Does "capacity" mean the level of annual individual firm revenues, employment size, bonding limits, or number of contracts bid or awarded? Does "qualified" or "able" mean possession of a business license, certain amounts of training, types of work experience, or the

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

number of contracts a firm can perform at a given moment? What mix of business attributes properly reflects "capacity"? Does the meaning of such terms differ from industry to industry, locality to locality, or through time? Where and how might such data be reliably gathered? Even if capacity is well-defined and adequate data are gathered, when measuring the existence of discrimination, the statistical method used should not improperly limit the availability measure by incorporating factors that are themselves impacted by discrimination, such as firm age, annual individual firm revenues, bonding limits, or numbers of employees.

Consider an extreme example where discrimination has prevented the emergence of any minority owned firms. Suppose that racial discrimination was ingrained in a city's construction market. As a result, few minority construction employees are given the opportunity to gain managerial experience in the business; minorities who do end up starting construction firms are denied the opportunity to work as subcontractors for nonminority prime contractors; and nonminority prime contractors refuse to work with minority firms and put pressure on bonding companies and banks to prevent minority owned construction firms from securing bonding and capital. In this example, discrimination has prevented the emergence of a minority highway construction industry with "capacity." Those M/WBEs that exist at all will be smaller and less experienced and have lower annual individual firm revenues, bonding limits, and employees (i.e. "capacity") because of discrimination than firms that have benefited from the exclusionary system.

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

Therefore, focusing on the "capacity" of businesses in terms of employment, annual individual firm revenues, bonding limits, number of trucks, and so forth is simply wrong as a matter of economics because it can obscure the existence of discrimination. A truly "effective" discriminatory system would lead to a finding of no "capacity," and under the "capacity" approach, a finding of no discrimination. Excluding firms from an availability measure based on their "capacity" in a discriminatory market merely affirms the results of discrimination rather than ameliorating them. A capacity requirement could preclude the City of Houston from doing anything to rectify its passive participation through public dollars in a clearly discriminatory system. The capacity argument fails to acknowledge that discrimination has obstructed the emergence of "qualified, willing, and able" minority firms. Without such firms, there can be no statistical disparity.

Further, in dynamic business environments, and especially in the construction sector, such "qualifications" or "capacity" can be obtained relatively easily. It is well known that small construction companies can expand rapidly as needs arise by hiring workers and renting equipment, and many general contractors subcontract the majority of a project. Firms grow

quickly when demand increases and shrink quickly when demand decreases. Subcontracting is one important source of this elasticity, as has been noted by several academic studies.[223] Other industry sectors, especially in this era of Internet commerce and independent contractors, can also quickly grow or shrink in response to demand.

Finally, even where "capacity"-type factors have been controlled for in statistical analyses, results consistent with business discrimination are still typically observed. For example, large and statistically significant differences in commercial loan denial rates between minority and nonminority firms are evident throughout the country, even when detailed balance sheet and creditworthiness measures are held constant.[224] Similarly, economists using decennial census data have demonstrated that statistically significant disparities in business formation and business owner earnings between minorities and non-minorities remain even after controlling for a host of additional relevant factors, including educational achievement, labor market experience, marital status, disability status, veteran status, interest and dividend income, labor market attachment, industry, geographic location, and local labor market variables such as the unemployment rate, population growth rate, government employment rate, or per capita income.[225]

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

- "Capacity" has been ill-defined; and reliable data for measurement are generally unavailable;

- Small firms, particularly in the construction industry, are highly elastic with regard to ability to perform;

- Many disparity studies have shown that even when "capacity" and "qualifications"-type factors are held constant in statistical analyses, evidence of disparate impact against DBE and M/WBE firms persists; and

- Most important, identifiable indicators of "capacity" are themselves impacted by discrimination.

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

Table 4.9 presents detailed estimates of M/WBE availability by race, sex, M/WBE status, and NAICS industry group.[226] These estimates have been statistically corrected to adjust for

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[223] Bourdon and Levitt (1980); *see also* Eccles (1981); *and* Gould (1980).

[224] *See* Wainwright (2008).

[225] Wainwright (2000).

[226] Estimates are shown for those NAICS categories comprising the top 99.0 percent of City of Houston construction award dollars and paid dollars.

misclassification and non-classification bias in the Baseline Business Universe, as described above in this Chapter. Summary level estimates are weighted averages with weights based on industry-level contract award dollars, as described in Chapter III, Section C.

Table 4.10 shows overall M/WBE availability in the Construction sector in the City's relevant market area. Two sets of weighted availability measures are provided, one based on award dollars and another based on paid dollars. Both yield similar results. Overall, M/WBE availability in the Construction sector is between 34.73 and 34.74 percent. Non-M/WBE availability is between 65.26 and 65.27 percent. Among M/WBEs, availability of Hispanic-owned businesses is between 13.12 and 13.22 percent, availability of African American-owned businesses is between 4.90 and 4.95 percent, availability of Asian-owned businesses is between 4.27 and 4.29 percent, availability of Native American-owned businesses is between 1.03 and 1.04 percent, and availability of nonminority female-owned businesses is between 11.32 and 11.34 percent.

Table 4.9. Detailed M/WBE Availability—Construction, 2011

Detailed Industry Group	African American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Utility System Construction (NAICS 2371)	3.84	7.21	3.74	1.11	10.22	26.11	73.89
Highway, Street, and Bridge Construction (NAICS 2373)	4.19	10.64	3.66	0.59	9.03	28.12	71.88
Nonresidential Building Construction (NAICS 2362)	7.76	11.89	5.14	1.58	13.14	39.51	60.49
Building Equipment Contractors (NAICS 2382)	4.35	17.31	3.68	1.07	11.94	38.35	61.65
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	3.80	18.54	3.31	1.11	12.61	39.37	60.63
Other Specialty Trade Contractors (NAICS 2389)	3.95	18.71	3.15	1.06	12.95	39.82	60.18
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	2.40	8.03	5.82	0.13	8.83	25.20	74.80
Other General Purpose Machinery Manufacturing (NAICS 3339)	1.75	6.96	5.16	0.00	5.30	19.18	80.82
Residential Building Construction (NAICS 2361)	6.79	8.65	4.09	1.30	13.34	34.18	65.82
Building Finishing Contractors (NAICS 2383)	3.83	19.60	3.31	0.97	12.34	40.05	59.95
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	2.50	8.38	6.38	0.02	8.99	26.26	73.74
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	2.64	9.19	6.11	0.01	7.95	25.89	74.11
Cement and Concrete Product Manufacturing (NAICS 3273)	1.95	7.95	5.03	0.62	5.49	21.04	78.96

M/WBE Availability in the City of Houston Market Area

Detailed Industry Group	African American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Specialized Freight Trucking (NAICS 4842)	14.40	11.16	1.16	2.03	16.52	45.28	54.72
Architectural and Structural Metals Manufacturing (NAICS 3323)	2.50	10.28	5.89	0.02	9.61	28.29	71.71
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	1.82	7.46	6.45	0.15	7.61	23.48	76.52
Architectural, Engineering, and Related Services (NAICS 5413)	6.79	20.96	6.28	0.48	10.56	45.07	54.93
Other Heavy and Civil Engineering Construction (NAICS 2379)	4.03	6.32	3.81	0.64	10.09	24.90	75.10
Other Support Services (NAICS 5619)	6.47	21.74	3.82	0.32	15.08	47.42	52.58
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	1.94	8.01	6.32	0.00	8.97	25.23	74.77
Services to Buildings and Dwellings (NAICS 5617)	6.20	20.91	3.57	0.00	10.80	41.49	58.51
Other Fabricated Metal Product Manufacturing (NAICS 3329)	2.79	6.40	8.24	0.00	8.21	25.62	74.38
Investigation and Security Services (NAICS 5616)	7.90	21.24	4.27	0.72	10.25	44.38	55.62
Management, Scientific, and Technical Consulting Services (NAICS 5416)	7.44	20.72	4.59	0.63	11.79	45.16	54.84
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	1.65	6.57	7.47	0.00	9.17	24.86	75.14
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	1.95	6.41	7.81	0.83	8.55	25.54	74.46
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)	1.98	7.41	6.40	0.05	11.58	27.43	72.57
Building Material and Supplies Dealers (NAICS 4441)	4.54	15.34	5.85	0.09	13.54	39.37	60.63
Steel Product Manufacturing from Purchased Steel (NAICS 3312)	3.89	11.41	6.57	0.00	7.22	29.10	70.90
Remediation and Other Waste Management Services (NAICS 5629)	6.48	23.66	3.12	0.25	12.00	45.52	54.48
Land Subdivision (NAICS 2372)	2.75	6.15	5.10	0.66	8.15	22.81	77.19
Personal and Household Goods Repair and Maintenance (NAICS 8114)	8.79	10.63	0.92	2.57	11.98	34.88	65.12

Detailed Industry Group	African American	Hispanic	Asian	Native American	Non-minority Female	M/WBE	Non-M/WBE
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)	2.39	7.28	8.68	0.00	10.08	28.43	71.57
Petroleum and Coal Products Manufacturing (NAICS 3241)	1.73	6.90	5.17	0.00	5.17	18.97	81.03
Home Furnishings Stores (NAICS 4422)	5.07	14.99	6.20	0.00	13.76	40.02	59.98
Other Miscellaneous Manufacturing (NAICS 3399)	2.20	7.34	5.56	0.00	11.76	26.85	73.15
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	2.34	7.20	6.55	0.47	9.51	26.06	73.94
Household and Institutional Furniture and Kitchen Cabinet Manufacturing (NAICS 3371)	1.89	9.03	5.54	0.00	6.44	22.91	77.09
Employment Services (NAICS 5613)	8.25	21.28	3.71	0.58	14.17	47.98	52.02
Other Wood Product Manufacturing (NAICS 3219)	1.58	6.83	6.32	0.00	8.79	23.52	76.48
Other Professional, Scientific, and Technical Services (NAICS 5419)	6.28	20.08	3.71	0.09	11.34	41.50	58.50
CONSTRUCTION (AWARD DOLLAR WEIGHTED)	*4.95*	*13.12*	*4.29*	*1.04*	*23.39*	*11.34*	*34.73*
CONSTRUCTION (PAID DOLLAR WEIGHTED)	*4.90*	*13.22*	*4.27*	*1.03*	*23.42*	*11.32*	*34.74*

Source: See Table 4.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Table 4.10. Estimated Construction Availability, 2011

	African American	Hispanic	Asian	Native American	MBE	Non-minority Female	M/WBE	Non-M/WBE
CONSTRUCTION (AWARD DOLLAR WEIGHTED)	4.95	13.12	4.29	1.04	23.39	11.34	34.73	65.27
CONSTRUCTION (PAID DOLLAR WEIGHTED)	4.90	13.22	4.27	1.03	23.42	11.32	34.74	65.26

Source: See Table 4.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

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

A. Introduction

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

After years of comparative neglect, research on the economics of entrepreneurship—especially upon self-employment—has expanded in the last 20 years.[227] As a result, there is now a good deal of agreement in the literature on the microeconomic correlates of self-employment.[228] In the U.S., it appears that self-employment rises with age, is higher among men than women and higher among non-minorities than minorities. The least educated have the highest probability of being self-employed. However, evidence is also found in the U.S. that the most highly educated also have relatively high probabilities. On average, however, increases in educational attainment are generally found to lead to increases in the probability of being self-employed. A higher number of children in the family increases the likelihood of (male) self-employment. Workers in agriculture and construction are also especially likely to be self-employed.

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

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

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

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1987), immigration (Fairlie and Meyer, 1998; 2003; Olson, Zuiker and Montalto, 2000; Mora and Davila 2006, Robles and Cordero-Gúzman, 2007),[229] immigration policy (Borjas and Bronars, 1989), and retirement policies (Quinn, 1980). Studies by Long (1982), Blau (1987), and more recently by Schuetze (1998), have considered the role of taxes.[230] 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.[231]

Blanchflower, Oswald and Stutzer (2001) found that there is a strikingly large latent desire to own a business. There exists frustrated entrepreneurship on a huge scale in the U.S. and other Organization for Economic Co-operation and Development (OECD) countries.[232] In the U.S., 7 out of 10 people say they would prefer to be self-employed. This compares to an actual proportion of self-employed people in 2001 of 7.3 percent of the civilian labor force, which also shows that the proportion of the labor force that is self-employed has declined steadily since 1990 following a small increase in the rate from 1980 to 1990. This raises an important question. Why do so few individuals in the U.S. and OECD countries manage to translate their preferences

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[229] Fairlie and Meyer (1998) found that immigration had no statistically significant impact at all on African American self-employment. In a subsequent paper, Fairlie and Meyer (2003) found that self-employed immigrants did displace self-employed native non-African Americans. They found that immigration has a large negative effect on the probability of self-employment among native non-African Americans, although, surprisingly, they found that immigrants increase native self-employment earnings.

[230] In an interesting study pooling individual level data for the U.S. and Canada from the Current Population Survey 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.

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

[232] 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.

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 Jovanovic (1989), have argued formally that entrepreneurs face liquidity constraints. The authors use the National Longitudinal Survey of Young Men for 1966-1981, and the Current Population Surveys for 1968-1987. The key test shows that, all else remaining equal, people with greater family assets are more likely to switch to self-employment from employment. This asset variable enters econometric equations significantly and with a quadratic form. Although Evans and his collaborators draw the conclusion that capital and liquidity constraints bind, this claim is open to the objection that other interpretations of their correlation are feasible. One possibility, for example, is that inherently acquisitive individuals both start their own businesses and forego leisure to build up family assets. In this case, there would be a correlation between family assets and movement into self-employment even if capital constraints did not exist. A second possibility is that the correlation between family assets and the movement to self-employment arises because children tend to inherit family firms. Blanchflower and Oswald (1998), however, find that the probability of self-employment depends positively upon whether the individual ever received an inheritance or gift.[233] Moreover, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Work by Holtz-Eakin, Joulfaian and Harvey (1994a, 1994b), drew similar conclusions using different methods on U.S. data, examining flows into and out of self-employment and finding that inheritances both raise entry and slow exit. In contrast, Hurst and Lusardi (2004), citing evidence from the U.S. *Panel Study of Income Dynamics*, claim to show that wealth is not a significant determinant of entry into self-employment. In response, however, Fairlie and Krashinsky (2006) have demonstrated that when the sample is split into two segments—those who enter self-employment after job loss and those who do not—the strong correlation between assets and rate of entry business formation is evident in both segments.

The work of Black, *et al.* (1996) for the United Kingdom discovers an apparently powerful role for house prices (through its impact on equity withdrawal) in affecting the supply of small new firms. Cowling and Mitchell (1997), find a similar result. Again these are both 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

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[233] 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.

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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 non-minorities. Analogously, Hout and Rosen (2000) and Fairlie and Robb (2007a) found that the offspring of self-employed parents are more likely than others to become self-employed and argued that the historically low rates of self-employment among African Americans and Latinos may contribute to their low contemporary rates. Fairlie and Robb (2007b), using data from the U.S. *Characteristics of Business Owners* survey, and Dunn and Holtz-Eakin (2000), using data from the U.S. *National Longitudinal Surveys*, show that the transmission of positive effects of family on self-employment operates through two channels, intergenerational transmission of entrepreneurial preferences and wealth, and the acquisition of general and specific human capital.

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

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

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

rates from the two baths are different. Bath A (the African American firms) has a much larger drain and hence the water flows out more quickly than it does from bath B (the nonminority 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 nonminority-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 nonminority-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 Gender Disparities in Earnings

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

Below, we first examine earnings disparities among wage and salary employees, that is, non-business owners. It is helpful to examine this segment of the labor force since a key source of new entrepreneurs in any given industry is the pool of experienced wage and salary workers in similar or related industries (Blanchflower, 2000; 2004). Employment discrimination that adversely impacts the ability of minorities or women to succeed in the labor force directly shrinks the available pool of potential M/WBEs. In almost every instance examined, a statistically significant adverse impact on wage and salary earnings is observed—in both the economy at large and also in the construction and construction-related professional services sector.[234]

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

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

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[234] There is a growing body of evidence that discriminatory constraints in the capital market prevent minority-owned businesses from obtaining business loans. Furthermore, even when they are able to obtain them there is evidence that these loans are not obtained on equal terms: minority-owned firms have to pay higher interest rates, other things being equal. This is another form of discrimination with an obvious and direct impact on the ability of racial minorities to form businesses and to expand or grow previously formed businesses. *See* Chapter VI, *infra*.

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

1. Methods

We used the statistical technique of linear regression analysis to estimate the effect of each of a set of observable characteristics, such as education and age, on an outcome variable of interest. In this case, the outcome variable of interest is earnings and we used regression to compare 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 gender differences remain. In a discrimination free market area, one would not expect to observe significant differences in earnings by race or gender among such similarly situated observations.

Regression also allows us to narrowly tailor our statistical tests to the City's relevant geographic market, and assess whether disparities in that market are statistically significantly different from those observed elsewhere in the nation. Starting from an economy-wide data set, we first estimated the basic model of earnings differences just described and also included an indicator variable for the City of Houston Market Area (COHMA), which is comprised of the Houston-Sugar Land-Baytown, TX Metropolitan Statistical Area. This variable estimates the differential effect of location in the COHMA relevant to the rest of the country. This model appears as Specification 1 in Tables 5.1 through 5.6. Next, we estimated Specification 2, which is the same model as Specification 1 but with the addition of indicator variables that interact race and gender with the COHMA indicator. These variables estimate the differential effect of location in the COHMA *and* membership in the given race or gender group. 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.[235]

Any negative and statistically significant differences by race or gender that remain in Specification 3 after holding all of these other factors constant—time, age, education, geography, and industry—are consistent with what would be observed in a market suffering from business-related discrimination.[236]

2. Data

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

The data source used is the American Community Survey (ACS) Public Use Microdata Sample (PUMS) for 2006–2008. The Census Bureau's ACS is an ongoing survey covering the same type of information collected in the decennial census. The ACS is sent to approximately 3 million addresses annually, including housing units in all counties in the 50 states and the District of

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

[236] 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. Unless otherwise indicated, in this and subsequent chapters, we employ three levels of statistical significance, corresponding to 10 percent, 5 percent, and 1 percent probabilities that results were the result of random chance.

Columbia. The PUMS file from the ACS contains records for a subsample of the full ACS. The data used here are the multi-year estimates combining the 2006, 2007, and 2008 ACS PUMS records. The combined file contains over 3.6 million person-level records. Released in early 2010, the ACS PUMS provides the full range of population and housing information collected in the annual ACS and in the decennial census. Business ownership status is identified in the ACS PUMS through the "class of worker" variable, which distinguishes the unincorporated and incorporated self-employed from others in the labor force. The presence of the class of worker variable allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings.

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

Tables 5.1, 5.2, and 5.3 report results from our regression analyses of annual earnings among wage and salary workers. Table 5.1 focuses on the economy as a whole, Table 5.2 on the construction sector, and Table 5.3 on the goods and services sector. The numbers shown in each table indicate the percentage difference in that sector between the average annual wages of a given race/gender group and comparable nonminority males.

a.   Specification 1 - the Basic Model

For example, in Table 5.1 Specification 1 the estimated percentage difference in average annual wages between African Americans (both genders) and nonminority males in 2006–2008 was -32.7 percent. That is, average annual wages among African Americans were 32.7 percent lower than for nonminority 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.[237] In the example just used, the t-statistic of 172.72 indicates that the result is statistically significant.

Specification 1 in Table 5.1 shows adverse and statistically significant wage disparities for African Americans, Hispanics, Asians, Native Americans, persons reporting in multiple race categories, and nonminority women consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from a low of -22.6 percent for Hispanics to a high of -32.7 percent for African Americans.

Specification 1 in Table 5.2 shows similar results when the basic analysis is restricted to the construction sector. In this sector, large, adverse, and statistically significant wage disparities are once again observed for African Americans, Hispanics, Asians, Native Americans, persons reporting in multiple race categories, and nonminority women consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from a low of -19.7 percent for Hispanics to a high of -36.1 percent for nonminority women.

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[237] From a two-tailed test.

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

Similarly, Specification 1 in Table 5.3 for the goods and services sector also shows large, adverse, and statistically significant wage disparities for African Americans, Hispanics, Asians, Native Americans, persons reporting in multiple race categories, and nonminority women consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from a low of -28.5 percent for Hispanics to a high of -39.4 percent for nonminority women.

A comparison of Tables 5.1 and 5.2 shows that for Hispanics and Asians, the disparities in the construction sector are somewhat smaller than those observed in the economy as a whole. For African Americans and nonminority women, they are somewhat larger. Disparities for Native Americans are about the same in both sectors. A comparison of Tables 5.1 and 5.3 shows that for African Americans, Hispanics, Asians, Native Americans, persons reporting in multiple race categories, and nonminority women, the disparities in the goods and services sector are all larger than those observed in the economy as a whole.

b.   Specifications 2 and 3 - the Full Model Including COHMA-Specific Interaction Terms

Next, we turn to Specifications 2 and 3 in Tables 5.1–5.3. In each of these Tables, Specification 2 is the basic regression model with a set of interaction terms added to test whether minorities and women in the COHMA differ significantly from those elsewhere in the U.S. economy. Specification 2 in Table 5.1, for example, shows a -32.5 percent wage difference that estimates the direct effect of being African American in 2006–2008, as well as a statistically significant 11.9 percent wage decrement that captures the indirect effect of residing in the COHMA and being African American. That is, wages for African Americans in the COHMA, on average, were 11.9 percent lower than for African Americans in the nation as a whole and 44.4 percent lower (-32.5 percent minus 11.9 percent) than for nonminority males in the COHMA.

Specification 3 simply repeats Specification 2, dropping any COHMA interactions that are not statistically significant. In Table 5.1, for example, interaction terms were included in the final specification for African Americans, Hispanics and Asians/Pacific Islanders, and nonminority women. The net result of Specification 3 in Table 5.1 is evidence of large, adverse, and statistically significant wage disparities for all minority groups and for nonminority women consistent with the presence of discrimination in these markets. The same is true for the construction sector (Table 5.2) as well as for the goods and services sector (Table 5.3).

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

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

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.327	-0.325	-0.325
	(172.72)	(169.42)	(169.43)
Hispanic	-0.226	-0.225	-0.225
	(122.51)	(120.33)	(120.35)
Asian/Pacific Islander	-0.267	-0.264	-0.264
	(110.81)	(107.98)	(107.99)
Native American	-0.308	-0.308	-0.308
	(47.66)	(47.44)	(47.64)
Two or more races	-0.262	-0.262	-0.262
	(62.77)	(62.15)	(62.74)
Nonminority Female	-0.326	-0.325	-0.325
	(293.84)	(291.89)	(291.94)
Age	0.182	0.182	0.182
	(572.78)	(572.79)	(572.79)
Age^2	-0.002	-0.002	-0.002
	(498.99)	(499.00)	(499.00)
COHMA	0.208	0.274	0.271
	(30.85)	(28.06)	(28.19)
COHMA*African American		-0.119	-0.117
		(8.81)	(8.70)
COHMA*Hispanic		-0.057	-0.055
		(5.23)	(5.08)
COHMA*Asian/Pacific Islander		-0.175	-0.173
		(10.66)	(10.57)
COHMA*Native American		0.008	na
		(0.09)	
COHMA*Two or more races		-0.072	na
		(1.73)	
COHMA*Nonminority female		-0.044	-0.042
		(3.94)	(3.79)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	2548959	2548959	2548959
Adj. R^2	.4594	.4595	.4594

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

Notes: (1) See above, section B.3.(a)-(b) for a description of Specifications 1 through 3; (2) Universe is all private sector wage and salary workers between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number is the percentage difference in annual wages between a given group and nonminority men; (4) 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; (5) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (6) Geography is defined based on place of residence; (7) "COHMA" is shorthand for "City of Houston Market Area," which is the Houston-Sugar Land-Baytown, TX CBSA; (8) "na" in Specification 3 means that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section B.3.b.

Table 5.2. Annual Wage Earnings Regressions, Construction and Related Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.352	-0.349	-0.349
	(44.48)	(43.27)	(43.27)
Hispanic	-0.197	-0.191	-0.191
	(37.02)	(35.26)	(35.26)
Asian/Pacific Islander	-0.223	-0.226	-0.224
	(19.74)	(19.62)	(19.86)
Native American	-0.309	-0.309	-0.309
	(17.16)	(17.07)	(17.13)
Two or more races	-0.227	-0.227	-0.228
	(15.93)	(15.71)	(15.96)
Nonminority Female	-0.361	-0.361	-0.361
	(81.57)	(80.80)	(81.63)
Age	0.149	0.149	0.149
	(139.60)	(139.64)	(139.64)
Age^2	-0.001	-0.001	-0.001
	(119.64)	(119.69)	(119.69)
COHMA	0.308	0.410	0.413
	(14.73)	(14.98)	(16.64)
COHMA*African American		-0.182	-0.184
		(3.55)	(3.64)
COHMA*Hispanic		-0.161	-0.162
		(6.74)	(7.36)
COHMA*Asian/Pacific Islander		0.056	
		(0.89)	
COHMA*Native American		0.043	
		(0.19)	
COHMA*Two or more races		-0.074	
		(0.65)	
COHMA*Nonminority female		-0.002	
		(0.06)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	221546	221546	221546
Adj. R^2	.2768	.2770	.2770

Source and Notes: See Table 5.1.

Table 5.3. Annual Wage Earnings Regressions, Goods and Services Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.379	-0.377	-0.377
	(194.41)	(190.65)	(190.65)
Hispanic	-0.285	-0.284	-0.284
	(144.09)	(141.51)	(141.51)
Asian/Pacific Islander	-0.293	-0.288	-0.288
	(114.93)	(111.72)	(111.72)
Native American	-0.374	-0.374	-0.374
	(53.83)	(53.59)	(53.79)
Two or more races	-0.318	-0.317	-0.317
	(71.65)	(70.91)	(70.91)
Nonminority Female	-0.394	-0.393	-0.393
	(367.91)	(365.07)	(365.08)
Age	0.218	0.218	0.218
	(624.96)	(624.98)	(624.98)
Age^2	-0.002	-0.002	-0.002
	(542.68)	(542.70)	(542.70)
COHMA	0.231	0.329	0.329
	(30.36)	(29.06)	(29.17)
COHMA*African American		-0.146	-0.146
		(9.91)	(9.94)
COHMA*Hispanic		-0.080	-0.081
		(6.44)	(6.47)
COHMA*Asian/Pacific Islander		-0.230	-0.230
		(13.11)	(13.13)
COHMA*Native American		0.027	
		(0.28)	
COHMA*Two or more races		-0.106	-0.107
		(2.31)	(2.31)
COHMA*Nonminority female		-0.072	-0.073
		(5.95)	(5.98)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	2327413	2327413	2327413
Adj. R^2	.4102	.4103	.4103

Source and Notes: See Table 5.1.

c. Conclusions

Clearly, minorities and women earn substantially and significantly less from their labor than do their similarly situated nonminority male counterparts—in the Houston market area just as in the nation as a whole. Such disparities are symptoms of discrimination in the labor force that, in addition to its direct effect on workers, reduces the future availability of M/WBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are most likely to lead to acquiring the skills, experience and contacts necessary to take advantage of entrepreneurial opportunities. They also demonstrate that discrimination results in less opportunity for minorities and women to accumulate and save business start-up capital through their work as employees. 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 market area.

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

The patterns of discrimination that affect minority and female wage earners affect minority and female entrepreneurs as well. We turn next to the analysis of race and gender disparities in business owner earnings. Table 5.4 focuses on the economy as a whole, Table 5.5 on the construction sector, and Table 5.6 on the goods and services sector. The numbers shown in each table indicate the percentage difference in that sector between the average annual self-employment earnings of a given race/gender group and comparable nonminority males.

a. Specification 1 - the Basic Model[238]

Specification 1 in Table 5.4 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians, Native Americans, persons reporting multiple races, and nonminority women consistent with the presence of discrimination in these markets. The measured difference for African Americans is 40.1 percent lower than for comparable nonminority males; for Hispanics, 23.1 percent lower; for Asians, 9.4 percent lower; for Native Americans, 35.8 percent lower; and for nonminority women, 40.7 percent lower.

Turning to the construction sector, Specification 1 in Table 5.5 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians, Native Americans, persons reporting multiple races, and nonminority women consistent with the presence of discrimination in these markets. The measured difference for African Americans is 43.3 percent lower than for comparable nonminority males; for Hispanics, 16.0 percent lower; for Asians, 17.5 percent lower; for Native Americans, 31.2 percent lower; and for nonminority women, 45.9 percent lower.

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[238] See above, section B.3.a., for a detailed description of Specification 1.

For the Goods and Services sector, Specification 1 in Table 5.6 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians, Native Americans, persons reporting multiple races, and nonminority women consistent with the presence of discrimination in these markets. The measured difference for African Americans is 43.6 percent lower than for comparable nonminority males; for Hispanics, 29.6 percent lower; for Asians, 12.1 percent lower; for Native Americans, 40.2 percent lower; and for nonminority women, 43.1 percent lower.

b.   Specifications 2 and 3 - the Full Model Including COHMA-Specific Interaction Terms[239]

Next, we turn to Specifications 2 and 3 in Tables 5.4–5.6. Specification 2 is the basic regression model enhanced by a set of interaction terms to test whether minorities and women in the COHMA differ significantly from those elsewhere in the U.S. economy. Specification 3 drops any COHMA interaction terms that are not statistically significant.

For the economy as a whole in 2006-2008, Table 5.4 shows that only the COHMA interaction term for nonminority women is statistically significant, indicating that disparities for nonminority women are worse in the COHMA than in the nation as a whole, while disparities for minorities in the COHMA are no better or worse than in the nation as a whole.

For the construction sector in 2006–2008, Table 5.5 shows that the estimates for the COHMA are in agreement with results for the nation as a whole.

For the goods and services sector in 2006–2008, Table 5.6 shows that only the COHMA interaction term for nonminority women is statistically significant, indicating that disparities for nonminority women in the goods and services sector are worse in the COHMA than in the nation as a whole, while disparities for minorities in the COHMA are no better or worse than in the nation as a whole.

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[239] See above, section B.3.b., for a detailed description of Specifications 2 and 3.

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

Table 5.4. Annual Business Owner Earnings Regressions, All Industries, 2006–2008

Independent Variables	Specification		
	(1)	**(2)**	**(3)**
African American	-0.401	-0.398	-0.401
	(32.13)	(31.42)	(32.17)
Hispanic	-0.231	-0.233	-0.232
	(20.72)	(20.68)	(20.82)
Asian/Pacific Islander	-0.094	-0.092	-0.095
	(5.84)	(5.63)	(5.88)
Native American	-0.358	-0.359	-0.358
	(10.17)	(10.15)	(10.17)
Two or more races	-0.363	-0.362	-0.363
	(16.21)	(16.07)	(16.21)
Nonminority Female	-0.407	-0.405	-0.405
	(67.41)	(66.76)	(66.86)
Age	0.163	0.163	0.163
	(79.12)	(79.13)	(79.13)
Age^2	-0.002	-0.002	-0.002
	(69.62)	(69.63)	(69.62)
COHMA	0.126	0.193	0.175
	(3.35)	(3.78)	(4.28)
COHMA*African American		-0.137	
		(1.59)	
COHMA*Hispanic		0.032	
		(0.51)	
COHMA*Asian/Pacific Islander		-0.112	
		(1.14)	
COHMA*Native American		0.164	
		(0.39)	
COHMA*Two or more races		-0.041	
		(0.18)	
COHMA*Nonminority female		-0.186	-0.174
		(3.22)	(3.31)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	284365	284365	284365
Adj. R^2	.1673	.1674	.1673

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

Notes: (1) See above, section B.4.(a)-(b) for a description of specifications 1 through 3; (2) Universe is all persons in the private sector with positive business earnings between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number is the percentage difference in annual business earnings between a given group and nonminority men; (4) 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; (5) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (6) Geography is defined based on place of residence; (7) "COHMA" is shorthand for "City of Houston Market Area," which is the Houston-Sugar Land-Baytown, TX CBSA; (8) "na" indicates coefficient could not be estimated due to sample size limitations; (8) "na" in Specification 3 means that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section B.4.b.

Table 5.5. Business Owner Earnings Regressions, Construction and Related Industries, 2006–2008

Independent Variables	Specification		
	(1)	**(2)**	**(3)**
African American	-0.433	-0.430	-0.433
	(14.10)	(13.76)	(14.10)
Hispanic	-0.160	-0.166	-0.160
	(7.01)	(7.17)	(7.01)
Asian/Pacific Islander	-0.175	-0.185	-0.175
	(3.59)	(3.73)	(3.59)
Native American	-0.312	-0.314	-0.312
	(4.48)	(4.51)	(4.48)
Two or more races	-0.281	-0.284	-0.281
	(5.43)	(5.44)	(5.43)
Nonminority female	-0.459	-0.456	-0.459
	(22.95)	(22.64)	(22.95)
Age	0.126	0.126	0.126
	(27.42)	(27.41)	(27.42)
Age^2	-0.001	-0.001	-0.001
	(24.70)	(24.69)	(24.70)
COHMA	0.028	-0.012	0.028
	(0.38)	(0.14)	(0.38)
COHMA*African American		-0.181	
		(0.79)	
COHMA*Hispanic		0.150	
		(1.27)	
COHMA*Asian/Pacific Islanders		0.394	
		(1.14)	
COHMA*Native American		1.681	
		(0.71)	
COHMA*Two or more races		0.242	
		(0.50)	
COHMA*Nonminority Female		-0.318	
		(1.58)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	47414	47414	47414
Adj. R^2	.0525	.0525	.0525

Source and Notes: See Table 5.4.

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

Table 5.6. Business Owner Earnings Regressions, Goods and Services Industries, 2006–2008

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.436	-0.435	-0.436
	(32.21)	(31.64)	(32.25)
Hispanic	-0.296	-0.297	-0.297
	(23.89)	(23.64)	(23.96)
Asian/Pacific Islander	-0.121	-0.119	-0.121
	(6.96)	(6.75)	(7.00)
Native American	-0.402	-0.402	-0.402
	(9.88)	(9.83)	(9.88)
Two or more races	-0.412	-0.412	-0.412
	(16.51)	(16.39)	(16.51)
Nonminority female	-0.431	-0.430	-0.430
	(72.87)	(72.16)	(72.30)
Age	0.181	0.181	0.181
	(76.15)	(76.15)	(76.15)
Age^2	-0.002	-0.002	-0.002
	(66.12)	(66.13)	(66.13)
COHMA	0.177	0.260	0.229
	(3.90)	(4.14)	(4.59)
COHMA*African American		-0.076	
		(0.76)	
COHMA*Hispanic		-0.014	
		(0.19)	
COHMA*Asian/Pacific Islanders		-0.114	
		(1.04)	
COHMA*Native American		0.081	
		(0.18)	
COHMA*Two or more races		-0.023	
		(0.08)	
COHMA*Nonminority Female		-0.174	-0.154
		(2.67)	(2.63)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	236951	236951	236951
Adj. R^2	.1134	.1134	.1134

Source and Notes: See Table 5.4.

c.   Conclusions

As was the case for wage and salary earners, minority and female entrepreneurs earn substantially and significantly less from their efforts than similarly situated nonminority male entrepreneurs. The situation, in general, differs little in the Houston market area than in the nation as a whole. These disparities are a symptom of discrimination in commercial markets that directly and adversely affect M/WBEs. Other things equal, if minorities and women are prevented by discrimination from earning remuneration from their entrepreneurial efforts comparable to that of similarly situated nonminority males, then capital reinvestment and growth rates may slow, business failure rates may increase and, as demonstrated in the next section, business formation rates may decrease. Combined, these phenomena result in lower M/WBE availability levels than would be observed in a race- and gender-neutral market area. As this chapter demonstrates, discrimination depresses business owner earnings for women and minority entrepreneurs. Business owner earnings, however, are often directly related to whether an owner has the capital to reinvest (firm size), how long a firm survives (firm age) and how much money a firm takes in (individual firm revenues). These observations illustrate why employment size, years in business, and individual firm revenues are especially inappropriate factors to consider in any sort of "capacity" type analysis.

C.   Race and Gender Disparities in Business Formation

As discussed in the two previous sections, discrimination that affects the wages and entrepreneurial earnings of minorities and women will ultimately affect the number of businesses formed by these groups as well. In the final section of this chapter, we turn to the analysis of race and gender disparities in business formation.[240] We compare self-employment rates by race and gender to determine whether minorities or women are as likely to enter the ranks of entrepreneurs as similarly-situated nonminority males. We find that in most cases they are not as likely to do so and that minority and female business formation rates in most cases would likely be substantially and significantly higher if markets operated in a race- and gender-neutral manner.

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

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 individuals who were once employed as foremen for

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[240] We use the phrases "business formation rates" and "self-employment rates" interchangeably in this Study.

other contractors, fewer by those who were employed instead as laborers. Similarly, discrimination in commercial capital and credit markets, as well as asset and wealth distribution, prevents minorities and women from acquiring the financial credit and capital that are so often prerequisite to starting or expanding a business. Other things being equal, these phenomena would lead minority and female business formation rates to be lower than otherwise would be expected.

Further, discrimination by commercial customers and suppliers against M/WBEs, symptoms of which are evidenced in Section B.4 above and elsewhere, operates to increase input prices and lower output prices for M/WBEs. This discrimination leads to higher rates of failure for some minority- and women-owned firms, lower rates of profitability and growth for others, and prevents some minorities and women from ever starting businesses at all.[241] All of these phenomena, other things equal, would contribute directly to relatively lower observed rates of minority and female self-employment.

1. Methods and Data

To see if minorities or nonminority women are as likely to be business owners as are comparable nonminority males, we use a statistical technique known as Probit regression. Probit regression is used to determine the relationship between a categorical variable—one that can be characterized in terms of a "yes" or a "no" response as opposed to a continuous number—and a set of characteristics that are related to the outcome of the categorical variable. Probit regression produces estimates of the extent to which each characteristic is positively or negatively related to the likelihood that the categorical variable will be a yes or no. For example, Probit regression is used by statisticians to estimate the likelihood that an individual participates in the labor force, retires this year, or contracts a particular disease—these are all variables that can be categorized by a response of "yes" (for example, she is in the labor force) or "no" (for example, she is not in the labor force)—and the extent to which certain factors are positively or negatively related to the likelihood (for example, the more education she has, the more likely that she is in the labor force). Probit regression is one of several techniques that can be used to examine qualitative outcomes. Generally, other techniques such as Logit regression yield similar results.[242] In the present case, Probit regression is used to examine the relationship between the choice to own a business (yes or no) and the other demographic and socioeconomic characteristics in our basic model. The underlying data for this section is once again the 2006–2008 ACS PUMS.

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[241] See also the materials cited at fn. 227 *supra*.

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

2.   Findings: Race and Gender Disparities in Business Formation

As a point of reference for what follows, Tables 5.7 and 5.8 provide a summary of business ownership rates in 2006–2008 by race and gender. A striking feature of both tables is how much higher business ownership rates are for nonminority males than for other groups.[243]

Table 5.7, for example, shows a 6.12 percentage point difference between the overall self-employment rate of African Americans and nonminority males in the COHMA (12.19 – 6.07 = 6.12). As shown in the rightmost column, this 6.12 percentage point gap translates into an African American business formation rate in the COHMA that is 50.2 percent lower than the nonminority male business formation rate (i.e., (6.07 – 12.19) ÷ 12.19 ≈ -50.2%).

Table 5.8 provides similar information for the construction sector and the goods and services sector. Except for Native Americans, large deficits are observed for all minority groups as well as nonminority women.

There is little doubt that part of the group differences documented in Tables 5.7 and 5.8 are associated with differences in the distribution of individual characteristics and preferences between minorities, women, and nonminority males. It is well known, for example, that earnings tend to increase with age (i.e., labor market experience). It is also true that the propensity toward self-employment increases with experience.[244] Since most minority populations in the United States have a lower median age than the nonminority population, we must examine whether the disparities in business ownership evidenced in Tables 5.7 and 5.8 are largely—or even entirely—due to differences in the age distribution or other factors such as education, geographic location, or industry preferences of minorities and nonminority women compared to nonminority males.

To do this, the remainder of this section presents a series of regression analyses that test whether large, adverse, and statistically significant race and gender disparities for minorities and women remain when these other factors are held constant. Table 5.9 focuses on the economy as a whole and Tables 5.10 and 5.11 focus on the construction sector and the goods and services sector, respectively. The numbers shown in each of these tables indicate the percentage point difference between the probability of self-employment for a given race/gender group compared to similarly-situated nonminority males.

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[243] The only exception observed is Native American self-employment rates in the Houston market area.

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

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

Table 5.7. Self-Employment Rates in 2006–2008 for Selected Race and Sex Groups: United States and the City of Houston Market Area, All Industries

Race/Sex	U.S. (%)	City of Houston Market Area (%)	Percent Difference from Nonminority male (City of Houston Market Area)
African American	5.38	6.07	-50.2
Hispanic	8.65	9.84	-19.3
Asian/Pacific Islander	10.58	10.57	-13.3
Native American	8.65	15.11	24.0
Two or more races	8.96	10.98	-9.9
Minority	7.95	9.01	-26.1
Nonminority female	8.76	8.87	-27.2
M/WBE	8.38	8.97	-26.4
Nonminority male	14.22	12.19	

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

Table 5.8. Self-Employment Rates in 2006–2008 for Selected Race and Sex Groups: United States and the City of Houston Market Area, Construction Sector and Goods and Services Sectors

Race/Sex	U.S. (%)	City of Houston Market Area (%)	Percent Difference from Nonminority male (City of Houston Market Area)
Construction Sector			
African American	16.61	12.08	-33.0
Hispanic	14.60	15.91	-11.7
Asian/Pacific Islander	17.68	14.20	-21.2
Native American	18.06	19.60	8.8
Two or more races	18.93	18.13	0.6
Minority	15.40	15.53	-13.8
Nonminority female	15.34	9.21	-48.9
M/WBE	15.39	14.74	-18.2
Nonminority male	26.17	18.02	
Goods and Services Sectors			
African American	4.81	5.73	-48.4
Hispanic	7.65	8.17	-26.5
Asian/Pacific Islander	10.26	10.30	-7.3
Native American	7.37	14.53	30.8
Two or more races	8.01	9.94	-10.5
Minority	7.17	7.81	-29.7
Nonminority female	8.56	8.85	-20.3
M/WBE	7.93	8.13	-26.8
Nonminority male	11.99	11.11	

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

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

a.   Specification 1 - the Basic Model[245]

Specification 1 in Table 5.9 shows large, adverse, and statistically significant business formation disparities for African Americans, Hispanics, Asians, Native Americans, persons reporting multiple races, and nonminority women consistent with the presence of discrimination in these markets. Specification 1 in Tables 5.10 and 5.11 shows large, negative, and statistically significant business formation disparities for every group in the construction sectors as well as in the goods and services sector.

b.   Specifications 2 and 3 - the Full Model Including COHMA-Specific Interaction Terms[246]

Many of the COHMA interaction terms included in Specification 2 were significant, however. The final results are in Specification 3 for Tables 5.9-5.11.

To summarize for the economy-wide results (Table 5.9):

- For African Americans, business formation rates are 1.4 percentage points lower than what would be expected in a race- and gender-neutral market area.[247]

- For Hispanics, business formation rates are 0.1 percentage points lower than what would be expected in a race- and gender-neutral market area.

- For Asians, business formation rates are the same as what would be expected in a race- and gender-neutral market area.

- For Native Americans, business formation rates are 5.8 percentage points higher than what would be expected in a race- and gender-neutral market area.

- For nonminority women, business formation rates are 2.0 percentage points lower than what would be expected in a race- and gender-neutral market area.

To summarize for the construction sector results (Table 5.10):

- For African Americans, business formation rates are 9.1 percentage points lower than what would be expected in a race- and gender-neutral market area.

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[245] See above, section C.2.a., for a detailed description of Specification 1.

[246] See above, section C.2.b., for a detailed description of Specifications 2 and 3.

[247] Recall that the net business formation rate is equal to the value direct coefficient (on the African American indicator variable in this case) plus the value of the statistically significant coefficient on the COHMA*African American interaction term.

- For Hispanics, business formation rates are 1.6 percentage points higher than what would be expected in a race- and gender-neutral market area.

- For Asians, business formation rates are 6.0 percentage points lower than what would be expected in a race- and gender-neutral market area.

- For Native Americans, business formation rates are 7.9 percentage points lower than what would be expected in a race- and gender-neutral market area.

- For nonminority women, business formation rates are 9.6 percentage points lower than what would be expected in a race- and gender-neutral market area.

To summarize for the Goods and Services sector results (Table 5.11):

- For African Americans, business formation rates are 1.6 percentage points lower than what would be expected in a race- and gender-neutral market area.

- For Hispanics, business formation rates are 1.0 percentage points higher than what would be expected in a race- and gender-neutral market area.

- For Asians, business formation rates are 1.1 percentage points higher than what would be expected in a race- and gender-neutral market area.

- For Native Americans, business formation rates are 6.5 percentage points higher than what would be expected in a race- and gender-neutral market area.

- For nonminority women, business formation rates are 1.2 percentage points lower than what would be expected in a race- and gender-neutral market area.

Table 5.9. Business Formation Regressions, All Industries, 2006–2008

Independent Variables	Specification		
	(1)	**(2)**	**(3)**
African American	-0.042	-0.042	-0.042
	(74.22)	(73.85)	(73.85)
Hispanic	-0.032	-0.033	-0.033
	(64.75)	(65.16)	(65.16)
Asian/Pacific Islander	-0.018	-0.019	-0.019
	(26.86)	(27.00)	(27.00)
Native American	-0.027	-0.027	-0.027
	(15.06)	(15.26)	(15.26)
Two or more races	-0.020	-0.020	-0.020
	(16.40)	(16.57)	(16.57)
Nonminority Female	-0.028	-0.028	-0.028
	(80.30)	(80.18)	(80.18)
Age	0.010	0.010	0.010
	(115.65)	(115.66)	(115.66)
Age^2	-0.000	-0.000	-0.000
	(80.53)	(80.53)	(80.53)
COHMA	-0.001	-0.012	-0.012
	(0.72)	(5.63)	(5.63)
COHMA*African American		0.028	0.028
		(5.45)	(5.45)
COHMA*Hispanic		0.032	0.032
		(8.87)	(8.87)
COHMA*Asian/Pacific Islander		0.019	0.019
		(3.61)	(3.61)
COHMA*Native American		0.085	0.085
		(2.89)	(2.89)
COHMA*Two or more races		0.034	0.034
		(2.47)	(2.47)
COHMA*Nonminority Female		0.008	0.008
		(2.56)	(2.56)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	2695435	2695435	2695435
Pseudo R^2	.2195	.2195	.2195

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

Notes: (1) See above, section C.2.(a)-(b) for a description of specifications 1 through 3; (2) Universe is all private sector labor force participants between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number represents the percentage point probability difference in business ownership rates between a given group and nonminority men, evaluated at the mean business ownership rate for the estimation sample; (4) 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; (5) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (6) Geography is defined based on place of residence; (7) "COHMA" is shorthand for "City of Houston Market Area," which is the Houston-Sugar Land-Baytown, TX CBSA; (8) "na" in Specification 3 indicates that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section C.2.b.

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

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.092	-0.092	-0.091
	(21.45)	(21.32)	(21.35)
Hispanic	-0.077	-0.081	-0.080
	(27.81)	(28.57)	(28.52)
Asian/Pacific Islander	-0.061	-0.062	-0.060
	(9.92)	(9.92)	(9.84)
Native American	-0.079	-0.080	-0.079
	(8.27)	(8.32)	(8.29)
Two or more races	-0.041	-0.042	-0.041
	(5.41)	(5.52)	(5.39)
Nonminority Female	-0.096	-0.096	-0.096
	(37.22)	(36.98)	(37.21)
Age	0.025	0.025	0.025
	(46.76)	(46.75)	(46.74)
Age^2	-0.000	-0.000	-0.000
	(32.49)	(32.48)	(32.47)
COHMA	-0.048	-0.081	-0.074
	(5.61)	(8.09)	(8.01)
COHMA*African American		0.055	
		(1.65)	
COHMA*Hispanic		0.107	0.096
		(7.06)	(6.80)
COHMA*Asian/Pacific Islanders		0.055	
		(1.51)	
COHMA*Native American		0.103	
		(0.73)	
COHMA*Two or more races		0.089	
		(1.37)	
COHMA*Nonminority female		0.013	
		(0.54)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	259606	259606	259606
Pseudo R^2	.0818	.0820	.0819

Source and Notes: See Table 5.9.

Table 5.11. Business Formation Regressions, Goods and Services Industries, 2006–2008

Independent Variables	Specification		
	(1)	**(2)**	**(3)**
African American	-0.053	-0.053	-0.053
	(78.04)	(77.67)	(77.67)
Hispanic	-0.031	-0.031	-0.031
	(46.90)	(47.52)	(47.52)
Asian/Pacific Islander	-0.027	-0.027	-0.027
	(33.50)	(33.85)	(33.85)
Native American	-0.028	-0.029	-0.029
	(12.03)	(12.25)	(12.25)
Two or more races	-0.022	-0.023	-0.023
	(14.61)	(14.82)	(14.82)
Nonminority Female	-0.027	-0.027	-0.027
	(68.13)	(68.20)	(68.20)
Age	0.010	0.010	0.010
	(92.15)	(92.16)	(92.16)
Age^2	-0.000	-0.000	-0.000
	(61.66)	(61.66)	(61.66)
COHMA	0.005	-0.011	-0.011
	(2.39)	(4.10)	(4.10)
COHMA*African American		0.037	0.037
		(6.11)	(6.11)
COHMA*Hispanic		0.041	0.041
		(8.93)	(8.93)
COHMA*Asian/Pacific Islander		0.038	0.038
		(5.69)	(5.69)
COHMA*Native American		0.094	0.094
		(2.81)	(2.81)
COHMA*Two or more races		0.044	0.044
		(2.59)	(2.59)
COHMA*Nonminority female		0.015	0.015
		(3.85)	(3.85)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	2504250	2504250	2504250
Pseudo R^2	.0663	.0664	.0664

Source and Notes: See Table 5.9.

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

Conclusions

This section has demonstrated that, for every M/WBE group except Hispanics, observed M/WBE availability levels in the construction sector of the Houston market area are substantially and statistically significantly lower than those that would be expected to be observed if commercial markets operated in a race- and gender-neutral manner. Minorities and women generally 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, industry, and trends over time. Moreover, as demonstrated in previous sections, these groups, as well as Hispanics, also suffer substantial and significant earnings disadvantages relative to comparable nonminority males whether they work as employees or as entrepreneurs. These findings are consistent with results expected to be observed in a discriminatory market area.

D.   Expected Business Formation Rates—Implications for Current M/WBE Availability[248]

In Table 5.12, the Probit regression results from Tables 5.9, 5.10, and 5.11 for the overall Houston market area economy, the construction sector, and the goods and services sector, respectively, are combined with weighted average self-employment rates by race and gender from the 2006–2008 ACS PUMS (Tables 5.7 and 5.8) to determine the disparity between baseline availability and expected availability in a race- and gender-neutral market area. These figures appear in column (3) of each panel in Table 5.12.

The business formation rate in the COHMA for African Americans in the construction sector is 12.08 percent (*see* middle panel of Table 5.12, top row). According to the regression specification underlying Table 5.10, however, that rate would be 21.18 percent, or 75.3 percent higher, in a race- and gender-neutral market area. Put differently, the disparity ratio of the actual business formation rate to the expected business formation rate for African Americans is 57.03. Disparity indices are adverse and statistically significant in construction for African Americans, Asian/Pacific Islanders, Native Americans, and nonminority women.

In construction, the largest disparities observed are for nonminority women (48.96), followed in descending order by African Americans (57.03), Asian/Pacific Islanders (70.30), and Native Americans (71.27).

Given the large disparities observed in the construction sector for most presumptive groups, goal-setters might consider adjusting baseline estimates of M/WBE availability upward to account for the continuing effects of discrimination. The business formation rate disparities documented for the construction sector in Table 5.12 can be combined with the estimates of current M/WBE availability documented in Table 4.8 and elsewhere to provide estimates of expected availability. These estimates appear below in Table 7.10. Expected M/WBE availability exceeds actual current M/WBE availability in ten of the fourteen cases observed.

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

Table 5.12. Actual and Potential Business Formation Rates in the City of Houston Market Area

Race/Sex	Business Formation Rate (%)	Expected Business Formation Rate (%)	Disparity Index
All Industries	(1)	(2)	(3)
African American	6.07	7.47	81.26
Hispanic	9.84	9.94	98.99
Asian/Pacific Islander	10.57	10.57	100.00
Native American	15.11	9.31	162.30
Two or more races	10.98	9.58	114.61
Minority	9.01	9.64	93.46
Nonminority female	8.87	10.87	81.60
M/WBE	8.97	10.56	84.94
Construction Sector	*(1)*	*(2)*	*(3)*
African American	12.08	21.18	57.03
Hispanic	15.91	14.31	111.18
Asian/Pacific Islander	14.20	20.20	70.30
Native American	19.60	27.50	71.27
Two or more races	18.13	22.23	81.56
Minority	15.53	13.88	111.89
Nonminority female	9.21	18.81	48.96
M/WBE	14.74	15.14	97.36
Goods and Services Sectors	(1)	(2)	(3)
African American	5.73	7.33	78.17
Hispanic	8.17	7.17	113.95
Asian/Pacific Islander	10.30	9.20	111.96
Native American	14.53	8.03	180.95
Two or more races	9.94	7.84	126.79
Minority	7.81	8.91	87.65
Nonminority female	8.85	10.05	88.06
M/WBE	8.13	10.08	80.65

Source: 2006–2008 ACS Public Use Microdata Sample. *See* Tables 5.7-5.11. MBE and M/WBE results are from similar regression analyses, not reported here.

Notes: (A) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (B) Figures in column (1) are average self-employment rates weighted using ACS population-based person weights, as also shown in Tables 5.7 and 5.8. (C) Figures in column (2), top, middle, and bottom panels, are derived by combining the figure in column (1) with the corresponding result from the regression reported in Table 5.9, 5.10, or 5.11, respectively. MBE and M/WBE figures were derived from similar regression analyses, not reported separately. (D) Column (3) is the figure in column (1) divided by the figure in column (2), with the result multiplied by 100.

E. Evidence from the Survey of Business Owners

As a final check on the statistical findings in this Chapter, we present evidence from a Census Bureau data collection effort dedicated to M/WBEs. The Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO), formerly known as the *Survey of Minority- and Women-Owned Business Enterprises* (SMWOBE), collects and disseminates data on the number, sales, employment, and payrolls of businesses owned by women and members of racial and ethnic minority groups. This survey has been conducted every five years since 1972 as part of the *Economic Census* program. Data from the 2007 SBO, the most recent, were released in 2011.

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.[249]

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 2007 SBO also includes comparative information for nonminority-owned, non-women-owned firms.[250]

The SBO provides aggregate estimates of the number of minority-owned and women-owned firms and their annual sales and receipts. The SBO distinguishes employer firms (i.e., firms with one or more paid employees) from nonemployer firms, and for the former also includes estimates of aggregate annual employment and payroll.

Compared to the ACS PUMS, the SBO is more limited in the scope of industrial and geographic detail it provides. Nonetheless, 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.[251] In the remainder of this section, we present SBO statistics for the United States as a whole and in Texas and calculate disparity indices from them. We find that results in the SBO regarding disparities are consistent with our findings above using the ACS PUMS.

Tables 5.13 and 5.14 contain data for all industries combined. Table 5.13 is for the U.S. as a whole, Table 5.14 is for the State of Texas. Panel A in these two tables summarizes the SBO results for each grouping. Panel A of Table 5.13, for example, shows a total of 26.29 million

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

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

[251] It is, in general, not possible with the SBO dataset to examine geographic divisions below the state level.

firms in the U.S. (column 1) with overall sales and receipts of $10.949 trillion (column 2). Of these 26.29 million firms, 5.19 million had one or more employees (column 3) and these 5.19 million firms had overall sales and receipts of $10.015 trillion (column 4). Column (5) shows a total of 56.63 million employees on the payroll of these 5.19 million firms and a total annual payroll expense of $1.941 trillion (column 6).

The remaining rows in Panel A provide comparable statistics for women-owned and minority-owned firms. For example, Table 5.13 shows that there were 1.9 million African American-owned firms counted in the SBO, and that these 1.9 million firms registered $135.7 billion in sales and receipts. It also shows that 106,566 of these African American-owned firms had one or more employees, and that they employed a total of 909,552 workers with an annual payroll total of $23.33 billion.

Panel A of Table 5.14 provides comparable information for Texas. The SBO counted 2,111,601 firms in Texas, of which 609,947 were female-owned; 154,283 were African American-owned; 447,589 were Hispanic-owned; 114,297 were Asian-owned; 18,997 were Native American-owned; and 1,196 were Native Hawaiian- or Pacific Islander-owned.

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 5.14 shows that African American-owned firms were 7.31 percent of all firms in Texas and female-owned firms were 28.89 percent. Additionally, 21.20 percent of firms were Hispanic-owned, 5.41 percent were Asian-owned, 0.90 percent were Native American-owned, and 0.06 percent were Native Hawaiian- or Pacific Islander-owned.

Column (2) in Panel B provides the same percentage distribution for overall sales and receipts. Table 5.14, for example, shows that although African American-owned firms were 7.31 percent of all firms in Texas, they accounted for only 1.08 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 5.14 shows that African American-owned employer firms accounted for 2.13 percent of all employer firms but only 0.79 percent of all sales and receipts.

Large disparities between the fraction of firms that are minority or women-owned and their fraction of sales and receipts in Texas are observed not only for African Americans, but also for female-owned firms, Hispanic-owned firms, Asian-owned firms, Native American-owned firms, and Native Hawaiian- or Pacific Islander-owned firms.

The disparity indices are presented in Panel C of each table. Disparity indices of 80 percent or less indicate disparate impact consistent with business discrimination (0 percent being complete disparity and 100 percent being full parity). In Texas (Table 5.14), the sales and receipts disparity indices fall beneath the 80 percent threshold in nine out of 12 cases in columns (2) and (4). All of these disparity indices are statistically significant within a 95 percent confidence interval.

Table 5.16 shows comparable SBO data for the construction sector in Texas. The sales and receipts disparity indices in columns (2) and (4) fall beneath the 80 percent threshold for all but

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women-owned firms. The disparity indices for African Americans, Hispanics, Asians, and Native Americans are statistically significant within a 95 percent confidence interval.

Table 5.13. Disparity Ratios from the 2007 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	26,294,860	10,949,461,874	5,189,968	10,015,142,962	56,626,554	1,940,572,944
Female	7,792,115	1,196,608,004	909,661	1,014,366,348	7,520,121	214,673,400
African-American	1,921,864	135,739,834	106,566	97,144,898	909,552	23,334,792
Hispanic	2,260,269	350,661,243	248,852	279,920,707	1,908,161	54,295,508
Asian	1,549,559	506,047,751	397,426	453,574,194	2,807,771	79,230,459
Native Hawaiian/Pac. Islander	37,687	6,319,357	4,151	5,250,301	37,801	1,217,138
Am. Indian & Alaska Native	236,691	34,353,842	23,662	27,494,075	185,037	5,930,247
Panel B. Column Percentages						
United States	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	29.63%	10.93%	17.53%	10.13%	13.28%	11.06%
African-American	7.31%	1.24%	2.05%	0.97%	1.61%	1.20%
Hispanic	8.60%	3.20%	4.79%	2.79%	3.37%	2.80%
Asian	5.89%	4.62%	7.66%	4.53%	4.96%	4.08%
Native Hawaiian/Pac. Islander	0.14%	0.06%	0.08%	0.05%	0.07%	0.06%
Am. Indian & Alaska Native	0.90%	0.31%	0.46%	0.27%	0.33%	0.31%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		36.88%		57.79%	75.77%	63.12%
African-American		16.96%		47.24%	78.23%	58.56%
Hispanic		37.26%		58.29%	70.28%	58.35%
Asian		78.43%		59.14%	64.75%	53.32%
Native Hawaiian/Pac. Islander		40.27%		65.54%	83.46%	78.42%
Am. Indian & Alaska Native		34.86%		60.21%	71.67%	67.03%

Source: NERA calculations using 2007 SBO.

Note: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Excludes publicly-owned, foreign-owned, and not-for-profit firms.

Table 5.14. Disparity Ratios from the 2007 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	2,111,601	858,627,169	338,463	775,650,085	4,159,621	138,975,158
Female	609,947	96,803,111	61,546	82,099,584	588,474	16,826,122
African-American	154,283	9,280,648	7,205	6,147,658	72,652	1,646,570
Hispanic	447,589	61,895,886	41,283	45,672,015	395,673	9,929,303
Asian	114,297	40,209,344	29,162	36,222,156	206,545	5,311,859
Native Hawaiian/Pac. Islander	1,196	376,969	161	333,851	1,106	41,064
Am. Indian & Alaska Native	18,997	3,683,877	1,478	2,984,437	13,168	494,351
Panel B. Column Percentages						
Texas	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	28.89%	11.27%	18.18%	10.58%	14.15%	12.11%
African-American	7.31%	1.08%	2.13%	0.79%	1.75%	1.18%
Hispanic	21.20%	7.21%	12.20%	5.89%	9.51%	7.14%
Asian	5.41%	4.68%	8.62%	4.67%	4.97%	3.82%
Native Hawaiian/Pac. Islander	0.06%	0.04%	0.05%	0.04%	0.03%	0.03%
Am. Indian & Alaska Native	0.90%	0.43%	0.44%	0.38%	0.32%	0.36%
Panel C. Disparity Ratios	(2) vs. (1)			(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female	39.03%			58.21%	77.80%	66.58%
African-American	14.79%			37.23%	82.05%	55.66%
Hispanic	34.01%			48.28%	77.99%	58.58%
Asian	86.52%			54.20%	57.63%	44.36%
Native Hawaiian/Pac. Islander	77.51%			90.48%	55.90%	62.12%
Am. Indian & Alaska Native	47.69%			88.11%	72.49%	81.46%

Source and Notes: See Table 5.13.

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Table 5.15. Disparity Ratios from the 2007 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	3,353,169	1,499,596,401	752,350	1,345,891,690	6,250,139	272,620,302
Female	268,668	96,889,179	54,067	87,883,713	492,327	21,126,808
African-American	125,818	13,188,433	9,605	9,808,001	56,088	1,976,639
Hispanic	340,770	56,769,929	38,319	41,512,416	260,420	8,918,859
Asian	70,722	18,664,077	10,542	16,005,420	77,302	3,353,304
Native Hawaiian/Pac. Islander	4,991	1,555,430	847	1,354,435	5,993	284,022
Am. Indian & Alaska Native	37,693	8,449,654	5,178	7,026,449	37,722	1,529,180
Panel B. Column Percentages						
United States	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	8.01%	6.46%	7.19%	6.53%	7.88%	7.75%
African-American	3.75%	0.88%	1.28%	0.73%	0.90%	0.73%
Hispanic	10.16%	3.79%	5.09%	3.08%	4.17%	3.27%
Asian	2.11%	1.24%	1.40%	1.19%	1.24%	1.23%
Native Hawaiian/Pac. Islander	0.15%	0.10%	0.11%	0.10%	0.10%	0.10%
Am. Indian & Alaska Native	1.12%	0.56%	0.69%	0.52%	0.60%	0.56%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		80.64%		90.86%	109.61%	107.84%
African-American		23.44%		57.08%	70.29%	56.79%
Hispanic		37.25%		60.56%	81.81%	64.23%
Asian		59.01%		84.87%	88.27%	87.78%
Native Hawaiian/Pac. Islander		69.69%		89.39%	85.17%	92.54%
Am. Indian & Alaska Native		50.13%		75.85%	87.69%	81.50%

Source and Notes: See Table 5.13.

Table 5.16. Disparity Ratios from the 2007 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	303,673	111,534,767	38,951	95,009,174	443,562	18,646,429
Female	28,934	8,669,758	3,500	7,440,095	42,641	1,633,365
African-American	8,963	763,425	392	510,238	3,827	126,932
Hispanic	98,096	11,892,337	5,926	6,499,800	41,306	1,272,122
Asian	3,570	1,033,177				
Native Hawaiian/Pac. Islander						
Am. Indian & Alaska Native	5,073	974,477	421	722,619	4,621	183,494
Panel B. Column Percentages						
Texas	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	9.53%	7.77%	8.99%	7.83%	9.61%	8.76%
African-American	2.95%	0.68%	1.01%	0.54%	0.86%	0.68%
Hispanic	32.30%	10.66%	15.21%	6.84%	9.31%	6.82%
Asian	1.18%	0.93%	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	1.67%	0.87%	1.08%	0.76%	1.04%	0.98%
Panel C. Disparity Ratios		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		81.58%		87.15%	106.99%	97.49%
African-American		23.19%		53.36%	85.73%	67.64%
Hispanic		33.01%		44.97%	61.21%	44.84%
Asian		78.80%				
Native Hawaiian/Pac. Islander						
Am. Indian & Alaska Native		52.30%		70.37%	96.39%	91.05%

Source and Notes: See Table 5.13.

VI. Statistical Disparities in Capital Markets

A. Introduction

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, might negatively impact the size a firm could obtain, and/or shorten its longevity in the market.[252]

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.[253]

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 nonminority-owned firms. We find some evidence that women are discriminated against in this market as well. The principal results are as follows:

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[252] Again, as noted in Chapter V, these factors also illustrate why, in a disparity study intended to answer the question of whether discrimination is present in business enterprise, adjusting availability for "capacity" factors such as firm age, firm size or firm revenues, is not a legitimate practice when there is evidence that suggests that these factors themselves are tainted by discrimination. To do so would be to inappropriately introduce one or more endogenous variables into the analysis.

[253] 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.

- 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 (*See* Tables 6.15, 6.22, 6.29).

- When minority-owned firms applied for a loan, their loan requests were substantially more likely to be denied than non-minorities, even after accounting for differences like firm size and credit history (*See* Tables 6.8, 6.9, 6.18, 6.19, 6.25, 6.26).

- When minority-owned firms *did* receive a loan they were obligated to pay higher interest rates on the loans than comparable nonminority-owned firms (*See* Tables 6.13, 6.14, 6.21, 6.27).

- A larger proportion of minority-owned firms than nonminority-owned firms report that credit market conditions are a serious concern (See Tables 6.3, 6.4, 6.5, 6.6, 6.7, 6.17, 6.24).

- A larger share of minority-owned firms than nonminority-owned firms believes that the availability of credit is the most important issue likely to confront them in the upcoming year (*See* Tables 6.5, 6.6).

- There is no evidence that discrimination in the market for credit is significantly different in the West South Central census division or in the construction and construction-related professional services industries than it is in the nation or the economy as a whole (various tables).

- There is no evidence that the level of discrimination in the market for credit has diminished between 1993 and 2003 (various tables).

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

We begin with the 1993 dataset and continue chronologically through the 2003 dataset and then to evidence from NERA's own comparable surveys conducted in various geographies between 1999 and 2007. This chronological progression allows the reader to see the consistency of the main findings over time. This approach serves as well to demonstrate the value of over-sampling minority and female small business owners, as was the case in the 1993 and 1998 surveys, but not the 2003 survey. Unfortunately, the much anticipated 2008 survey results never materialized due to the Federal Reserve's cancellation of this data collection program.[254]

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[254] For more on this, see below, section I.

B.   Theoretical Framework and Review of the Literature

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

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

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

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

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

Another relevant literature is concerned with the severity of liquidity constraints affecting consumers in non-mortgage credit markets. A consumer is said to be liquidity-constrained when lenders refuse to make the household a loan or offer the household less than they wished to borrow (Ferri and Simon, 1997). Many studies have suggested that roughly twenty percent of U.S. families are liquidity-constrained (*c.f.* 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 minority households to be substantially more likely to be liquidity-constrained even when a variety of financial characteristics of households are controlled for (Jappelli, 1990; and Ferri and Simon, 1997).

We now turn to the more directly relevant evidence on liquidity constraints facing small businesses. Just like individuals and households, businesses can also face liquidity constraints.[255] 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.[256]

In his 2003 report for *Builders Association of Greater Chicago v. the City of Chicago*,[257] 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 nonminority stereotypes

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[255] 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. 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.

[256] *See* Chapter V, above.

[257] 298 F.Supp.2d 725 (N.D. Ill. 2003).

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

Additional evidence indicates that capital constraints for African American-owned businesses are particularly large. For instance, Bates (1989) finds that racial differences in levels of financial capital do have a significant effect upon racial patterns in business failure rates. Fairlie and Meyer (1996) find that racial groups with higher levels of unearned income have higher levels of self-employment. In an important paper, Fairlie (1999) uses data from the 1968-1989 Panel Study of Income Dynamics to examine why African American men are one-third as likely to be self-employed as nonminority 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 nonminority rate and an African American transition rate out of self-employment that is twice the nonminority 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 seven times larger for self-employed African Americans than for nonminority self-employed persons. Fairlie then attempts to decompose the racial gap in the transition rate into self-employment into a part due to differences in the distributions of individual characteristics and a part due to differences in the processes generating the transitions. He finds that differences in the distributions of characteristics between African Americans and non-minorities explain only a part of the racial gap in the transition rate into self-employment. In addition, racial differences in specific variables, such as levels of assets and the likelihood of having a self-employed father provide important contributions to the gap. He concludes, however, that "the remaining part of the gap is large and is due to racial differences in the coefficients. Unfortunately, we know much less about the causes of these differences. They may be partly caused by lending or consumer discrimination against blacks" (1998, p. 14).

There is also research into racial differences in access to credit among small businesses. Cavalluzzo and Cavalluzzo (1998) use data from the 1988-1989 National Survey of Small Business Finances (NSSBF), conducted by the Board of Governors of the Federal Reserve System, to analyze differences in application rates, denial rates, and other outcomes by race, ethnicity and gender in a manner similar to the econometric models reported in this Study. This paper documents that a large discrepancy exists in credit access between non-minorities and minority-owned firms that cannot be explained by a handful of firm characteristics. Unfortunately, the earlier NSSBF data did not over-sample minority-owned firms and included

limited information on a firm's credit history and that of its owner, reducing the ability to provide a powerful test of the causal impact of race, ethnicity or gender on loan decisions. In an unpublished paper, Cole (1998) uses the 1993 NSSBF and estimates models of loan denials similar in nature to those discussed in this Study.

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

C.   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 nonminority-owned firms is consistent with discrimination, it is necessary to compare African American- and nonminority-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 nonminority-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 nonminority-owned firms are less likely to be approved, then it is appropriate to attribute such a difference to discrimination.

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

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

where D_i represents an indicator variable for loan denial for firm i (that is, 1 if the loan is denied and 0 if accepted), CW represents measures of creditworthiness, X represents other firm characteristics, R represents the race, ethnicity or gender of the firm's ownership, and Φ is the cumulative normal probability distribution.[258] 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.[259] Within the

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

[259] Maddala and Trost (1994) describe two variants of such a model, one in which the interest rate is exogenous and another in which the interest rate is endogenously determined, but is capped so that some firms' loan applications are approved and others are rejected. If the interest rate is exogenous, they show that a reduced form model which controls for the loan amount, such as we report below, uniquely identifies supply-side differences in the treatment of African American-owned firms. If the interest rate is endogenous, a reduced form approach requires an assumption that the determinants of demand for non-minority and African American-owned firms are identical, other things being equal. The main alternative empirical strategy is to estimate a structural supply and

framework of this model, a positive estimate of β_3 is consistent with the presence of discrimination.[260]

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.[261] 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).[262]

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 "nonminority") (65.9 percent versus 26.9 percent).[263] Other minority groups are denied at rates higher than non-minorities as well, but the magnitude of the African American/ nonminority differential is especially striking.

Minority-owned firms, however, do have characteristics that are different from those of nonminority-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 nonminority counterparts. Minority firms were also less

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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.

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

[261] 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.

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

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

creditworthy, on average, than their nonminority counterparts, as measured by whether (a) the owner had legal judgments against him or her over the previous three years, (b) the firm had been delinquent for more than 60 days on business obligations over the preceding three years, or (c) the owner had been delinquent for more than 60 days on personal obligations over the prior three years. Additionally, compared to nonminority-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 nonminority-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 nonminority-owned firms, and Hispanic-owned firms, who requested loans about 42 percent smaller than those requested by nonminority-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 Houston, the balance of the State of Texas and three surrounding states.[264] 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 nonminority-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.

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

Statistical Disparities in Capital Markets

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

	All	Non-minority	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
% <= 8th Grade Education	0.8	0.7	0.0	3.4	1.0
% 9th-11th 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: (1) Sample weights are used to provide statistics that are nationally representative of all small businesses. (2) 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: (1) Sample weights are used to provide statistics that are nationally representative of all small businesses. (2) Some variable means are computed from slightly smaller samples because of missing values. (3) "Other Races" are not reported separately due to small sample size.

D.   Qualitative Evidence

Before moving on to the results of our multivariate analysis, we first report on what business owners themselves say are their main problems. While this evidence is not conclusive in determining whether discrimination exists, it highlights firms' perceptions regarding discrimination in obtaining credit. That African-American-owned firms and other minorities report greater difficulty in obtaining credit than do nonminority-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 nonminorities (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.[265] The finding that African-American-owned and Hispanic-owned firms are largely indistinguishable from nonminority-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 nonminority-owned firms to say that credit market conditions had been a serious problem in the preceding 12 months.

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[265] 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.

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

	All	Non-minority	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.

Notes: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

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

	All	Non-minority	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.

Notes: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

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 nonominority-owned firms. Nonminority-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 nonminority-owned firms. Almost six times as many African-American-owned firms reported credit availability as the most important issue than nonminority-owned firms. In contrast, in the WSC health care costs were a large concern for all types of firms.

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

	All	Non-minority	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	Non-minority	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.

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 percent among nonminority male-owned firms. Hispanic-owned firms and other minority-owned firms also reported higher percentages than nonminority 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 nonminority 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 nonminority 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 nonminority 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 for Other minorities, and 3.3 percent for women.[266]

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.[267] 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 nonminority men and women was availability of credit: 19 percent of nonminority 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 nonminority women. In no other category is there more than a 10 percentage point difference for men or women.

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

[267] 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.

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

	Non-minority male (%)	Non-minority 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 of 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 20 December 2011).

Notes: (1) Percentages may total to more than 100% because respondents had the option to select multiple choices. (2) "Minority" also includes 14 firms owned by Native Americans.

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.

E.   Differences in Loan Denial Rates by Race, Ethnicity or Gender

Evidence presented to this point indicates that minority-owned firms are more likely to be denied loans and report that their lack of access to credit significantly impairs their business. Can these differences be explained by such things as differences in size, creditworthiness, location, or other factors as some have suggested in the literature on discrimination in mortgage lending (Horne, 1994; Bauer and Cromwell, 1994; and Yezer, Phillips, and Trost, 1994)? To address this question, we turn to an econometric examination of whether the loan requests made by minority-owned firms are more likely to be denied, holding constant important differences among firms.

In Table 6.8 and Table 6.9, we report the results from a series of loan denial Probit regressions of the form specified in Equation (1) using data from the 1993 NSSBF for the U.S. and the WSC region.[268] 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.[269] 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 nonminority male-owned firms.[270]

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.[271] 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 nonminority-owned firms to have their loan request denied.

The models reported in Columns (3) through (5) of Table 6.8 control for an array of additional characteristics of firms. Column (3) adds 39 additional characteristics of the firm and the loan

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[268] 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.

[269] 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.

[270] 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.

[271] 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.

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.[272] In total, these three columns add 176 variables to the more parsimonious specification reported in Column (2).[273] 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 nonminority 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 nonminority 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 nonminorities; or that denial rates for firms owned by nonminority women were significantly different from those for firms owned by nonminority men.[274]

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 Houston, 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

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[272] 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 institutions 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%).

[273] 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).

[274] It would be a mistake to interpret a lack of statistical significance (as opposed to substantive significance) in any of the Tables in Chapter 6 as a lack of adverse disparity. While tests for statistical significance are very useful for assessing whether chance can explain disparities that we observe, they do have important limitations. First, the fact that a disparity is not statistically significant does not mean that it *is* due to chance. It merely means that we cannot rule out chance. Second, there are circumstances under which tests for statistical significance are not helpful for distinguishing disparities due to chance from disparities due to other reasons (e.g., discrimination). In the particular statistical application presented in this chapter, the chance that a test for statistical significance will incorrectly attribute to chance disparities that are due to discrimination becomes greater when relatively small sample sizes are present for an affected group.

for the WSC region is insignificantly different from zero, as are the interaction terms between race/ethnicity/gender and the WSC region.[275]

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[275] The number of Native Americans in the WSC sample was too small to yield statistical results.

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)
Native American	-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)
Nonminority 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 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: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) "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. (3) "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)
Nonminority 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)
Nonminority 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 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.

Although the results provided so far strongly indicate that financial institutions treat African-American-owned and nonminority 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, if financial institutions discriminate against African-American-owned firms, then the greater likelihood of denial for African-Americans in earlier years is likely to hurt the performance of these firms and appear to make them look less creditworthy. Therefore, controlling for creditworthiness will likely understate the presence of discrimination.

As a check on the foregoing results, therefore, our first approach was to identify the types of information that financial institutions collect in order to evaluate a loan application and compare that with the information available to us in the NSSBF. First, a selection of small business loan applications was collected from various banks. An Internet search of web sites that provide general business advice to small firms was also conducted. Such sites typically include descriptions of the loan application process and list the kinds of information typically requested of applicants.[276]

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 the 1993 NSSBF data is that less detail is available on the finances of the owner of the firm, as opposed to the firm itself.[277] 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—as opposed to those of the firm itself. These factors would be necessary

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

[277] 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.

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 in the 1993 NSSBF dataset may introduce a bias into our analysis if African-American business owners have fewer resources than nonminority business owners. As we will see below, however, and as noted in the previous footnote, this deficiency is rectified in the 1998 and 2003 SSBF datasets, with little change in the main findings.

To assess the potential impact of this problem on our results, we separately examined groups of firms who differ in the degree to which personal finances should influence the loan decision and compare the estimated disadvantage experienced by African-American-owned firms in different groups. First, we examine proprietorships and partnerships separately from corporations since owners of incorporated businesses are at least somewhat shielded from incurring the costs of a failed business. Second, we divide firms according to size.[278] 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.[279]

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 are also representative for the WSC.

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

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[278] 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.

[279] 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.

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 nonminority-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 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.[280]

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 market area. 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

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[280] A strong test to distinguish between statistical discrimination and "Becker-Type" discrimination (referring to the standard economic model of discrimination first expounded by University of Chicago economist Gary Becker) 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.

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

Table 6.10. Alternative Models of Loan Denials

Specification	African-American	African American* WSC	Asian	Hispanic	Non-minority 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: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) Each line of this table represents a separate regression with the same control variables as Column 3 of Table 6.8. (3) The dependent variable in all specifications represents an indicator for whether or not a loan application was denied. (4) Control for WSC also included.

Finally, we considered whether African-American-owned firms are treated differently from nonminority-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 nonminority-owned small businesses are equally likely to use credit cards may still provide evidence supporting discrimination in small-business lending. In fact, if financial institutions discriminate against African-Americans in providing small business loans, we may even expect to see African-Americans use credit cards more often than nonminorities 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.[281]

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.[282] 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.

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[281] 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.

[282] 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.

Table 6.11. Models of Credit Card Use

Specification	African-American	Asian	Native American	Hispanic	Non-minority 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: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) 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. (3) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (4) In all specifications, the sample size is all firms. (5) 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	Non-minority 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.

F. Differences in Interest Rates Charged on Approved Loans

Although most of our analysis has addressed whether minority- and nonminority-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 nonminority-owned firms, but charge the minority-owned firms a higher interest rate. Therefore, we estimated model specifications analogous to those reported previously for loan denials, but now the dependent variable represents the interest rate charged for firms whose loans were approved and the set of explanatory variables includes characteristics of the loan. More formally, the model we estimated takes the form:

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

where I represents the interest rate charged on the loan, LC represents characteristics of the loan (see the notes to Table 6.8 for a full list of the variables included in this set), ε_i is a term capturing random factors, and all other notations are the same as in equation (1).

An important consideration is whether the interest rate may be treated as exogenous, as our reduced form model assumes. In the context of small business loans, in which it is possible that the loan terms may be negotiated in the determination process, this assumption may not be valid. As such, a model that simultaneously estimates the interest rate and the loan decision might be appropriate, except that the interest rate that would be charged to firms whose loans were denied is not available in our data. Alternatively, one could estimate an interest rate model alone for those firms whose loan was approved, adjusting for the potential bias brought about by sample selection. To properly identify such a model, however, a variable is required that is linked to the loan denial decision, but unrelated to the level of interest charged on approved loans; no such variable exists in the data.

Nevertheless, one would expect these considerations to impose a downward bias on the estimated differential in interest rates charged on loans to African-American-owned firms. Those firms whose loans were rejected would have been charged higher interest rates than those approved. Since African-American-owned businesses were considerably more likely to be rejected holding constant differences in creditworthiness, one would expect any differential in interest rate to be even greater if those firms were included in the sample. We overlook this implication in the results reported below, but its impact should be kept in mind.

The results obtained from estimating equation (2) are reported in Row 1 of Table 6.13, which includes the complete set of control variables comparable to those in Column 5 of Table 6.8. Estimates indicated that African-American-owned firms pay rates of interest that are roughly 100 basis points higher than similarly situated nonminority-owned firms. Row 2 shows that even African-American-owned firms with good credit histories are charged higher interest rates relative to nonminority-owned firms.[283]

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.

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[283] 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.

Table 6.13. Models of Interest Rate Charged —USA

Specification	African-American	Asian	Native American	Hispanic	Non-minority 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: (1) Reported estimates are Ordinary Least Squares (OLS) coefficients, t-statistics in parentheses. (2) 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. (3) The sample consists of firms who had applied for a loan and had their application approved. (4) "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	Non-minority 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 and Notes: See Table 6.13.

G.   Loan Approval Rates and Access to Credit

The results presented so far may be biased toward finding too small a disparity between nonminority- 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 nonminorities 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 nonminority-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 nonminority-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 nonminority-owned firms).[284] 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.[285]

If these minority-owned firms had applied for credit and were rejected because of discrimination, estimates of racial disparities based only upon loan applicants (as in Tables 6.8 and 6.9) would be understated. The perception of prejudice among these firms, however, does not necessarily imply that selection bias is present. Those firms that failed to apply because they feared rejection may have had similar loan denial rates as other minority-owned firms with comparable levels of creditworthiness that did apply. If those firms chose to apply for a loan, differences by race in the combined denial rate of the actual and potential applicants would be the same as what we have estimated for the observed sample of applicants.

More formally, suppose that loan denial rates for equally creditworthy nonminority- 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 nonminority- and minority-owned firms, respectively. Among the nonminority-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 $[\eta\theta^m + (1-\eta)\,\psi^m]$ -

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[284] 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.

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

θ^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.

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

Specification	African-American	Asian	Native American	Hispanic	Non-minority 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: (1) Reported estimates are Probit derivatives, t-statistics in parentheses. (2) Sample consists of all firms. (3) Dependent variable equals one if the firm said they did not apply for a loan fearing denial, zero otherwise.

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.[286]

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[286] 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.

As an alternative that answers a different, but related, question we consider the ability of firms to get credit among those who desired it, regardless of whether or not they applied. This amounts to analyzing access to credit rather than loan approval and includes in the denominator those firms that needed credit but did not apply because they feared rejection. If differences by race in this rate among all firms who needed credit are greater than differences by race in the rate of denial among loan applicants, then this would indicate that African-American- and other minority-owned firms have even less access to credit than an analysis of loan applicants would indicate.

To test this proposition, we estimate a regression model comparable to the one reported in Table 6.10 for the sample of firms that applied for a loan, except that this analysis considers all firms seeking credit and treats those who did not apply for fear of rejection as denials. The sample excludes firms that did not need additional credit in the preceding three years. The results, reported in Table 6.16, are consistent with the previous analysis; we find that selection is not much of an issue for African-American-owned firms nationally, in the 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.

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

Specification	African-American	Asian	Native American	Hispanic	Non-minority 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: (1) Reported estimates are Probit derivatives, t-statistics in parentheses. (2) The sample consists of all firms that applied for loans along with those who needed credit, but did not apply for fear of refusal. (3) Failure to obtain credit includes those firms that were denied and those that did not apply for fear of refusal. (4) Dependent variable is set to one if the firm failed to obtain credit and to zero if the firm applied for credit and had their loan application approved.

H.   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.[287] This section updates the several estimates obtained above using the

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[287] 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.

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". (Table 6.17). 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.

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

	Non-minority male	African-American	Other	Hispanic	Non-minority 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=3,561).

Note: Results are weighted.

2. Differences in Loan Denial Rates by Race/Ethnicity

In 1998 as in 1993, in comparison with firms owned by nonminority 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.[288]

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
Nonminority males	26.2%	24.4%
African-Americans	65.9%	62.3%
Asians, Native Americans, etc.	39.9%	47.0%
Hispanics	35.9%	49.9%
Nonminority 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 nonminority males.

Percentage Not Applying for Fear of Denial

	1993	1998
Nonminority males	22.5%	20.2%
African-Americans	60.7%	53.9%
Asians, Native Americans, etc.	27.5%	23.1%
Hispanics	41.5%	34.3%
Nonminority females	22.7%	24.2%
Overall	24.7%	23.3%

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[288] 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 nonminorities, 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 nonminorities 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 nonminority 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 nonminority 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 nonminority 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 nonminority male-owned firms. In Table 6.8, by contrast, denial probabilities for Hispanic-owned firms were *not* significantly different from those of nonminority male-owned firms. If anything, discrimination in the small business credit market appears to have expanded during the late 1990s.

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)
Nonminority 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)
Owner 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 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: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) "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. (3) "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)
Nonminority 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)
Nonminority 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: (1) t-statistics in parentheses. (2) Other creditworthiness controls are the four other variables included in Column 2 of Table 6.18.

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 nonminority 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.[289]

Despite the fact that these new variables do help to predict loan denials,[290] the estimated race differences including these variables are unchanged from those reported above.[291] 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 in Tables 6.18 and 6.19 was set to one if the loan application was always denied and was set to zero if the application was always approved or sometimes approved/sometimes denied. An alternative dependent variable – *denylast* – is set to one if the application is always denied, set to zero if always approved. Those responding "sometimes approved/sometimes denied" are excluded from the analysis. Column (1) of Table 6.20 replicates column 1 of Table 6.18 using *denylast* as the dependent variable with the smaller sub-sample. African-Americans, Hispanics, Asians, and Nonminority females are all confirmed to face higher denial rates than nonminority males using this specification. For African-Americans and

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[289] 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.

[290] 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.

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

Hispanics, the difference is 46 and 36 percentage points, respectively. For Asians, the difference is 19 percentage points, and for Nonminority 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.

Table 6.20. More Loan Denial Probabilities

	(1)	(2)	(3)	(4)
	Denylast	*Denylast*	*Denylast*	*Denylast*
African-American	0.457 (8.00)	0.246 (4.76)	0.439 (6.82)	0.220 (3.91)
Asian	0.185 (2.81)	0.027 (0.65)	0.183 (2.67)	0.037 (0.81)
Hispanic	0.360 (6.28)	0.171 (3.67)	0.342 (5.15)	0.167 (3.21)
Nonminority female	0.083 (2.00)	0.005 (0.20)	0.087 (1.98)	0.015 (0.50)
African-American* WSC			0.066 (0.57)	0.054 (0.61)
Asian* WSC			0.006 (0.03)	-0.041 (0.50)
Hispanic* WSC			0.056 (0.50)	0.005 (0.07)
Nonminority female* WSC			-0.032 (0.27)	-0.043 (0.81)
WSC			-0.015 (0.26)	0.021 (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.

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.[292]

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 nonminority 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.[293]

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).

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 Houston cannot simply ignore if they are to avoid passive participation in a discriminatory market area.

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[292] 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.

[293] 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.

Table 6.21. Models of Interest Rate Charged

Specification	African-American	African-American * WSC	African-American * Construc-tion	Asian	Hispanic	Non-minority 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: (1) Each line of this table represents a separate regression with all of the control variables. (2) 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	Nonminority 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: (1) Reported estimates are Probit derivatives with t-statistics in parentheses. (2) 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	Nonminority 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: (1) 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. (2) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (3) In all specifications, the sample size includes all firms. (4) Reported estimates are Probit derivatives with t-statistics in parentheses.

I.   Analysis of Credit Market Discrimination in the U.S. in 2003

The most recent wave of the Survey of Small Business Finances was made available by the Board of Governors of the Federal Reserve System in 2007.[294] This is the fourth and final survey of US small businesses conducted by the Board of Governors since 1987.[295] The survey gathered data from 4,072 firms selected to be representative of small businesses operating in the US 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 number of employees varied from zero to 486 with a weighted median of 3.0 and weighted mean of 8.6.

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[294]   *See* www.federalreserve.gov/pubs/oss/oss3/ssbf03/ssbf03home.html.

[295]   The Federal Reserve Board cancelled the SSBF subsequent to the completion of the 2003 wave, ostensibly for financial reasons. *See* Robb (2010).

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.[296]

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.[297] Although the population weights were adjusted to accommodate these changes, even these weighted percentages are significantly smaller for minorities in 2003 than in 1998.[298]

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 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.[299]

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 nonminority male business owners reported this as their major problem compared to almost 21 percent of African-American business owners.

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[296] *See* footnote 253, above.

[297] 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.

[298] 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.

[299] 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.

Statistical Disparities in Capital Markets

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

	Non-minority male	African-American	Other	Hispanic	Non-minority 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=4,072).

Note: Results are weighted.

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.[300]

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 nonminority 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 Nonminority 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 nonminority 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.

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[300] In 2003, the credit application question was changed from 1998 to once again include requests for renewals as well as new loans, making it comparable to the 1993 version.

Table 6.25. 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)
Nonminority 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 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: (1) "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. (2) "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 American and Other	0.129	0.042	0.016	0.006	0.007
	(1.53)	(1.51)	(0.95)	(0.64)	(0.81)
Nonminority 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 American and Other*WSC	0.367	0.142	0.187	0.198	0.134
	(1.46)	(1.23)	(1.45)	(1.61)	(1.43)
Nonminority 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: (1) t-statistics in parentheses. (2) Other creditworthiness controls are the four other variables included in Column 2 of Table 6.18.

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 Nonminority 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 nonminority male business owners with identical characteristics. Hispanic business owners, as well, pay 100 more basis points than their nonminority male counterparts.

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 nonminority 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.

Table 6.27. Models of Interest Rate Charged

Specification	African-American	African-American * WSC	African-American * Construc-tion	Asian	Hispanic	Native American and Other	Non-minority female
1a) All Loans (as in column 5 of Table 6.25) 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 6.26) 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: (1) Each line of this table represents a separate regression with all of the control variables as indicated. (2) 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. (3) 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	Non-minority 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: (1) 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. (2) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (3) In all specifications, the sample size is all firms. (4) Reported estimates are Probit derivatives with t-statistics in parentheses.

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 Nonminority female business owners as well.

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

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

Source: NERA calculations from 2003 SSBF.

Notes: (1) Reported estimates are Probit derivatives with t-statistics in parentheses. (2) Full set of control variables as in Column 5 of Table 6.27, except for loan amount, year of application, and type of lender. (3) In Panel (b), interaction terms between race, sex, and WSC were all insignificant.

J.   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 nonminority 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 Nonminority female-owned firms as well. Denial rates were 18-24 percentage points higher for Hispanic-owned firms and 5-9 percentage points higher for Nonminority female-owned firms than for their nonminority male-owned counterparts. Significant loan denial disparities were also observed for Native American-owned firms in some cases (9-19 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 nonminority 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.

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)
Nonminority 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: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) 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)
Nonminority 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: (1) Reported estimates are OLS regression models, t-statistics are in parentheses. (2) 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 were included. (3) Seven additional indicators for jurisdiction were also included.

K.   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 Nonminority female-owned firms.

As in any regression-based study, our analysis hinges upon the proposition that all of 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 nonminority applicants meeting the acceptance standard used for nonminority 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 nonminority- 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.[301]

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

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[301] 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).

found in the analysis of discrimination in mortgage markets. Why do the results for small business loans differ so markedly from those obtained from mortgage loans? First, many mortgages are sold in the secondary market and a substantial fraction of mortgage lenders have little intention of keeping the loans they make. This added "distance" in the transaction might reduce the likelihood of discrimination. As Day and Liebowitz (1998, p. 6) point out, "economic self-interest, therefore, should reduce racial discrimination in this market more completely than in many others." A highly sophisticated secondary market for loans to small firms does not exist. Second, the presence of special programs and regulatory incentives to encourage banks and others to increase their mortgage lending to minorities gives these groups some advantages in obtaining a mortgage.

Clearly, a portion of the difference in denial rates between nonminority 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.[302]

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 nonminority 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 nonminority 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 M/WBE 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.

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[302] 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.

VII. M/WBE Utilization and Disparity in the City of Houston's Market Area

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. Chapters V and VI documented the extent of disparity facing minority- and women-owned firms in the private sector of the City's market area, where contracting and procurement activity is typically *not* subject to such requirements. In this Chapter, we combined the evidence from Chapter IV, which estimates M/WBE availability in the City of Houston Market Area, with the database of City construction contracts and subcontracts described in Chapter III in order to examine whether there is statistical evidence of disparities in the public sector construction contracting activities supported by the City of Houston.

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 has had a longstanding policy of pursuing affirmative action programs in contracting.[303]

Given the history of the City's M/WBE policy, its own data may not show evidence of underutilization, even if such underutilization exists in the private sector of the relevant market area. The City's data is most useful for examining the effectiveness of its M/WBE policies during the study period. This is why it will usually be counterproductive to suspend or significantly curtail M/WBE programs at the first sign of the elimination of public sector disparities. Given the presence of proactive efforts to remedy discrimination, we would expect public sector disparities to lessen or even disappear. This is especially true since the benchmark used to assess disparities is current availability, which has been demonstrated to be lower than would be observed in a race- and gender-neutral market area (*see* Chapter V above). But as long as private sector disparities remain, and private sector efforts to increase utilization of M/WBEs remain limited or non-existent, public sector disparities are likely to reemerge if M/WBE programs are weakened or suspended. Of course, if actual City of Houston M/WBE utilization still turns out to be significantly less than M/WBE availability in certain contracting categories, even in the presence of a robust M/WBE program, then the City's data will still provide strong evidence of adverse disparities.

The statistical evidence reported in Chapter III has already established from which specific industries the City of Houston buys from with respect to construction contracting, as well as from which geographic areas it draws the majority of its prime contractors and subcontractors for construction contracting. In addition, the statistical evidence reported in Chapter IV has established the fraction of firms in the City's geographic and product markets that are M/WBEs.

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[303] *See* Chapter IX for a historical summary of the City's M/WBE policies.

This Chapter will document:

- To what extent the City of Houston has utilized M/WBEs in its construction contracting opportunities during the study period;

- Whether M/WBEs have been utilized to the extent that they are available in the relevant market area.

All results are reported by race and gender as well as for all M/WBEs combined.

B.   M/WBE Utilization

For this Study, we examined 756 prime construction contracts and 7,440 associated subcontracts, covering five and one-half City fiscal years, with a total value of approximately $2.8B.[304] NAICS codes, M/WBE status, and detailed race and gender 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 that database with firms in (a) the master directory of M/WBEs assembled for this Study,[305] (b) Dun & Bradstreet/Hoovers[306] (c) company profiles drawn from American Business Information, Standard & Poor's, and other sources, and (d) the results of our race/gender misclassification/non-classification surveys.[307]

During the study period, M/WBEs as a group earned 29.20 percent of all construction contract and subcontract dollars awarded and 29.87 percent of all dollars paid.[308] Table 7.1 details the key results of our analysis of M/WBE participation in City of Houston construction contracting. For minority-owned M/WBEs (i.e., M/WBEs other than nonminority women), utilization was 20.06 percent measured by dollars awarded and 20.40 percent measured by dollars paid.

Overall, among minority-owned firms, firms owned by Hispanics earned the largest fraction of City of Houston contracting and subcontracting dollars with 13.66 percent of dollars awarded and 13.64 percent of dollars paid. They were followed by African Americans with 2.86 percent of dollars awarded and 2.82 percent of dollars paid. Firms owned by Asians or Pacific Islanders received 2.12 percent of dollars awarded and 2.44 percent of dollars paid. Firms owned by Native Americans received 1.42 percent of dollars awarded and 1.49 percent of dollars paid. For nonminority women, utilization during the overall study period was 9.14 percent of dollars awarded and 9.47 percent of dollars paid.

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[304] Measured by dollars awarded, the total value is approximately $2.82 billion. Measured by dollars paid, the total value is approximately $2.76 billion. Details of the contract universe ("the Master Contract/Subcontract database") are provided above in Chapter III.

[305] *See* Chapter IV.

[306] *Ibid.*

[307] *Ibid.*

[308] These totals also include dollars awarded and paid on federally-assisted construction contracts at the Houston Airport System and the Public Works & Engineering Department.

Table 7.1. M/WBE Utilization on City of Houston Construction Contracts, FY 2005-2010

M/WBE Type	Dollars Awarded		Dollars Paid	
	($)	(%)	(S)	(%)
African American	80,762,648	2.86	77,913,191	2.82
Hispanic	385,093,241	13.66	376,485,742	13.64
Asian	59,846,434	2.12	67,342,164	2.44
Native American	39,974,322	1.42	41,085,506	1.49
MBE	565,676,645	20.06	562,826,603	20.40
Nonminority Female	257,662,850	9.14	261,220,046	9.47
M/WBE Total	823,339,495	29.20	824,046,649	29.87
Non-M/WBE Total	1,996,151,594	70.80	1,935,163,545	70.13
Total ($)	2,819,491,089	100.00	2,759,210,194	100.00

Source: NERA Master Contract/Subcontract Database.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations..

Pursuant to Ordinance 2009-280, entitled "Final Settlement of Kossman vs City of Houston", the City ceased placing WBE goals on construction contracts after March 31, 2009. Table 7.2 shows the impact of this change on participation of nonminority women in City construction contracts. As shown in Table 7.2, for awards made prior to the settlement, utilization of nonminority women in construction was 10.14 percent measured by dollars awarded and 10.54 percent measured by dollars paid. For the portion of the study period after the settlement, utilization of nonminority women fell substantially—to 5.01 percent of dollars awarded and 4.96 percent of dollars paid. This is a decrease of more than 50 percent. Utilization of minority-owned firms, by contrast, showed no such decrease.

Table 7.2. Nonminority Female Utilization on Locally-Funded City of Houston Construction Contracts, Pre- and Post-Settlement

	Before March 31, 2009	On or After March 31, 2009
	(%)	(%)
Nonminority Female (Award Dollars)	10.14	5.01
Nonminority Female (Paid Dollars)	10.54	4.96
Minorities (Award Dollars)	19.21	25.21
Minorities American (Paid Dollars)	19.57	26.46

Source: NERA Master Contract/Subcontract Database.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Excludes federally-assisted contracts.

Moreover, Table 7.3 shows that the participation of nonminority women on federally-assisted construction contracts at the Houston Aviation System, which were not affected by the Kossman settlement, also saw no decrease after the settlement.

Table 7.3. Nonminority Female Utilization on Federally-Assisted City of Houston Construction Contracts, FFY 2005–2010

Federal Fiscal Year	DBE Utilization (Overall)	DBE Utilization (Nonminority Women Only)
	(%)	(%)
2005	20.73	10.35
2006	21.93	10.43
2007	23.21	9.90
2008	20.64	6.64
2009	23.14	12.88
2010	29.98	14.40

Source: City of Houston – Houston Airport System Uniform Report of DBE Commitments/Awards and Payments. Annual reports for FFY 2005 through 2010.

Note: Since the Federal Fiscal Year runs from October through September, the percentages for FFY 2009 include both pre- and post-settlement participation. Specifically, October 1, 2008 through March 31, 2009 and April 1, 2009 through September 30, 2009, respectively.

Tables 7.4 and 7.5 provide utilization statistics by NAICS Industry Group (four-digit NAICS code) for each race and gender classification in the Study. The NAICS codes in the table are listed in descending order of dollar size. That is, the NAICS codes with the highest overall percentage of City construction spending appear first while those with the lowest appear last. The specific fraction of dollars awarded or paid for any given NAICS Industry Group appears in the column labeled "Percentage Weight." The cumulative total fraction of dollars awarded or paid up through any given row in the table appears in the column labeled "Cumulative Percentage." Additionally, the total number of contracts and subcontracts in each NAICS Industry Group appears in the column labeled "Number of Contracts and Subcontracts."

For example, we can see from the first row of Table 7.4 that NAICS 2371 accounts for one-fourth of all City construction dollars awarded (25.24%), and the first five NAICS codes in Table 7.4 collectively account for two-thirds of all dollars awarded (67.82%).[309]

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[309] Comparable statistics were calculated at the NAICS Industry level (five-digit and six-digit NAICS). Results are generally similar to those presented above and are not reported here in the interest of space. 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.

Table 7.4. Construction—M/WBE Utilization by Industry Group (Dollars Awarded) (Percentages), FY 2005-2010

Industry Group	African American	Hispanic	Asian Pacific	Native American	Non-minority female	M/WBE	Non-M/WBE	Percent-age of Dollars	Cumu-lative Percent-age	Number of Contracts and Sub-contracts
Utility System Construction (NAICS 2371)	0.93	6.74	1.00	3.22	13.01	24.90	75.10	25.24	25.24	789
Highway, Street, and Bridge Construction (NAICS 2373)	0.93	23.19	0.00	0.00	2.69	26.80	73.20	16.58	41.82	330
Nonresidential Building Construction (NAICS 2362)	0.70	7.95	2.06	0.00	1.22	11.93	88.07	11.93	53.75	226
Building Equipment Contractors (NAICS 2382)	4.89	20.45	0.57	3.94	8.15	38.00	62.00	8.93	62.69	620
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	2.00	24.24	6.27	0.00	2.87	35.38	64.62	5.13	67.82	649
Other Specialty Trade Contractors (NAICS 2389)	1.21	21.50	1.53	0.00	3.92	28.16	71.84	4.60	72.42	635
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	0.02	8.79	12.45	0.05	30.70	52.01	47.99	4.11	76.53	392
Other General Purpose Machinery Manufacturing (NAICS 3339)	0.00	0.00	0.00	0.59	0.00	0.59	99.41	3.37	79.90	41
Residential Building Construction (NAICS 2361)	6.35	3.07	11.78	0.00	3.81	25.01	74.99	2.91	82.81	116
Building Finishing Contractors (NAICS 2383)	14.46	15.47	1.72	0.00	12.62	44.27	55.73	2.07	84.87	461
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	1.21	31.79	0.10	0.00	28.26	61.36	38.64	1.85	86.72	128
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	18.38	4.31	0.17	0.00	33.41	56.27	43.73	1.81	88.53	546
Cement and Concrete Product Manufacturing (NAICS 3273)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	1.76	90.29	266
Specialized Freight Trucking (NAICS 4842)	3.66	63.66	0.00	0.00	26.81	94.12	5.88	1.40	91.69	356

M/WBE Utilization and Disparity in the City of Houston's Market Area

Industry Group	African American	Hispanic	Asian Pacific	Native American	Non-minority female	M/WBE	Non-M/WBE	Percent-age of Dollars	Cumu-lative Percent-age	Number of Contracts and Sub-contracts
Architectural and Structural Metals Manufacturing (NAICS 3323)	1.30	16.90	0.00	20.25	2.04	40.49	59.51	1.10	92.78	197
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	0.00	2.03	13.82	0.00	38.22	54.07	45.93	0.83	93.62	217
Architectural, Engineering, and Related Services (NAICS 5413)	12.87	26.39	8.19	0.27	7.10	54.83	45.17	0.62	94.24	217
Other Heavy and Civil Engineering Construction (NAICS 2379)	9.56	0.00	0.00	0.00	10.57	20.13	79.87	0.60	94.83	48
Other Support Services (NAICS 5619)	56.24	13.29	9.22	0.03	13.59	92.38	7.62	0.57	95.41	198
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	0.00	11.78	0.00	0.73	1.91	14.43	85.57	0.51	95.91	117
Services to Buildings and Dwellings (NAICS 5617)	42.78	17.92	0.02	0.00	9.27	69.99	30.01	0.45	96.36	211
Other Fabricated Metal Product Manufacturing (NAICS 3329)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.23	96.59	30
Investigation and Security Services (NAICS 5616)	16.58	18.85	0.00	0.00	5.55	40.99	59.01	0.23	96.81	66
Management, Scientific, and Technical Consulting Services (NAICS 5416)	8.09	15.12	0.79	0.00	31.15	55.15	44.85	0.21	97.03	62
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	0.00	0.00	0.56	0.00	0.00	0.56	99.44	0.20	97.23	14
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.19	97.42	6
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)	5.66	9.61	0.28	0.00	11.77	27.31	72.69	0.16	97.58	39
Building Material and Supplies Dealers (NAICS 4441)	0.57	2.09	0.00	0.00	0.00	2.66	97.34	0.16	97.75	74

M/WBE Utilization and Disparity in the City of Houston's Market Area

Industry Group	African American	Hispanic	Asian Pacific	Native American	Non-minority female	M/WBE	Non-M/WBE	Percent-age of Dollars	Cumu-lative Percent-age	Number of Contracts and Sub-contracts
Steel Product Manufacturing from Purchased Steel (NAICS 3312)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.16	97.91	7
Remediation and Other Waste Management Services (NAICS 5629)	0.00	9.03	0.00	0.00	8.88	17.91	82.09	0.14	98.04	116
Land Subdivision (NAICS 2372)	23.77	0.00	10.41	0.00	1.32	35.50	64.50	0.13	98.18	19
Personal and Household Goods Repair and Maintenance (NAICS 8114)	12.05	26.61	5.71	0.00	0.40	44.78	55.22	0.11	98.29	28
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)	0.00	0.00	0.00	0.00	93.13	93.13	6.87	0.11	98.40	18
Petroleum and Coal Products Manufacturing (NAICS 3241)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.09	98.49	3
Home Furnishings Stores (NAICS 4422)	53.66	0.00	0.00	0.00	4.73	58.39	41.61	0.09	98.58	27
Other Miscellaneous Manufacturing (NAICS 3399)	8.06	1.44	0.00	0.00	1.11	10.60	89.40	0.09	98.67	62
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	0.08	2.25	0.00	0.00	1.19	3.52	96.48	0.09	98.76	75
Household and Institutional Furniture and Kitchen Cabinet Manufacturing (NAICS 3371)	0.00	1.22	22.88	0.00	60.49	84.59	15.41	0.09	98.85	23
Employment Services (NAICS 5613)	3.23	22.01	0.00	0.00	64.86	90.10	9.90	0.09	98.93	42
Other Wood Product Manufacturing (NAICS 3219)	0.00	0.00	9.65	0.00	11.15	20.80	79.20	0.08	99.01	21

Source: See Table 7.1.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Results are shown for NAICS Industry Groups comprising the top 99 percent of City construction contract dollars awarded, listed in descending order of each category's dollar size. (3) The fraction of dollars awarded for any given NAICS Industry Group appears in the column labeled "Percentage Weight." (4) The cumulative total fraction of dollars awarded through any given NAICS Industry Group appears in the column labeled "Cumulative Percentage." (5) The total number of contracts and subcontracts in each NAICS Industry Group appears in the column labeled "Number of Contracts and Subcontracts."

Table 7.5. Construction—M/WBE Utilization by Industry Group (Dollars Paid) (Percentages), FY 2005-2010

Industry Group	African American	Hispanic	Asian Pacific	Native American	Non-minority female	M/WBE	Non-M/WBE	Percent-age of Dollars	Cumu-lative Percent-age	Number of Contracts and Sub-contracts
Utility System Construction (NAICS 2371)	1.02	7.48	0.82	3.27	13.76	26.35	73.65	24.26	24.26	789
Highway, Street, and Bridge Construction (NAICS 2373)	0.81	23.29	0.00	0.00	2.48	26.58	73.42	16.44	40.70	330
Nonresidential Building Construction (NAICS 2362)	0.79	7.20	2.18	0.00	1.34	11.51	88.49	11.12	51.82	226
Building Equipment Contractors (NAICS 2382)	4.73	19.51	0.50	4.70	7.48	36.92	63.08	9.43	61.25	620
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	1.59	23.20	10.50	0.00	2.90	38.19	61.81	5.74	66.99	649
Other Specialty Trade Contractors (NAICS 2389)	1.25	20.69	1.29	0.00	3.88	27.11	72.89	4.59	71.57	635
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	0.02	8.87	11.85	0.05	32.62	53.41	46.59	4.17	75.75	392
Other General Purpose Machinery Manufacturing (NAICS 3339)	0.00	0.00	0.00	0.23	0.00	0.23	99.77	3.70	79.45	41
Residential Building Construction (NAICS 2361)	7.17	3.36	12.54	0.00	3.45	26.52	73.48	2.98	82.43	116
Building Finishing Contractors (NAICS 2383)	13.23	13.55	1.61	0.00	18.28	46.67	53.33	2.25	84.68	461
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	18.08	3.53	0.11	0.00	34.25	55.97	44.03	1.92	86.60	546
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	1.12	32.61	0.10	0.00	30.38	64.21	35.79	1.90	88.50	128
Cement and Concrete Product Manufacturing (NAICS 3273)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	1.72	90.22	266
Specialized Freight Trucking (NAICS 4842)	3.73	65.37	0.00	0.00	27.24	96.33	3.67	1.32	91.54	356

M/WBE Utilization and Disparity in the City of Houston's Market Area

Industry Group	African American	Hispanic	Asian Pacific	Native American	Non-minority female	M/WBE	Non-M/WBE	Percent-age of Dollars	Cumu-lative Percent-age	Number of Contracts and Sub-contracts
Architectural and Structural Metals Manufacturing (NAICS 3323)	1.81	16.87	0.00	21.68	2.08	42.44	57.56	1.08	92.62	197
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	0.00	2.95	15.63	0.00	35.79	54.38	45.62	0.92	93.53	217
Other Heavy and Civil Engineering Construction (NAICS 2379)	10.64	0.00	0.00	0.00	8.59	19.23	80.77	0.63	94.16	48
Architectural, Engineering, and Related Services (NAICS 5413)	10.29	26.94	7.38	0.34	5.92	50.87	49.13	0.59	94.75	217
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	0.00	12.35	0.00	0.79	1.89	15.03	84.97	0.52	95.27	117
Other Support Services (NAICS 5619)	51.10	12.16	11.94	0.04	15.17	90.41	9.59	0.49	95.76	198
Services to Buildings and Dwellings (NAICS 5617)	38.92	19.72	0.02	0.00	9.64	68.31	31.69	0.44	96.20	211
Management, Scientific, and Technical Consulting Services (NAICS 5416)	9.22	15.42	0.84	0.00	29.52	55.00	45.00	0.23	96.43	62
Other Fabricated Metal Product Manufacturing (NAICS 3329)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.23	96.65	30
Investigation and Security Services (NAICS 5616)	18.89	9.39	0.00	0.00	8.01	36.29	63.71	0.21	96.86	66
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	0.00	0.00	0.56	0.00	0.00	0.56	99.44	0.21	97.07	14
Steel Product Manufacturing from Purchased Steel (NAICS 3312)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.19	97.26	7
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.19	97.45	6
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)	5.64	9.28	0.27	0.00	11.61	26.80	73.20	0.17	97.62	39

Industry Group	African American	Hispanic	Asian Pacific	Native American	Non-minority female	M/WBE	Non-M/WBE	Percent-age of Dollars	Cumu-lative Percent-age	Number of Contracts and Sub-contracts
Other Wood Product Manufacturing (NAICS 3219)	0.00	0.00	51.79	0.00	5.98	57.77	42.23	0.15	97.77	21
Building Material and Supplies Dealers (NAICS 4441)	0.66	2.42	0.00	0.00	0.00	3.07	96.93	0.14	97.92	74
Remediation and Other Waste Management Services (NAICS 5629)	0.00	8.93	0.00	0.00	10.25	19.18	80.82	0.14	98.06	116
Petroleum and Coal Products Manufacturing (NAICS 3241)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.13	98.19	3
Home Furnishings Stores (NAICS 4422)	64.57	0.00	0.00	0.00	3.62	68.19	31.81	0.12	98.31	27
Personal and Household Goods Repair and Maintenance (NAICS 8114)	13.12	25.79	5.81	0.00	0.41	45.13	54.87	0.12	98.42	28
Land Subdivision (NAICS 2372)	15.11	0.00	12.41	0.00	1.58	29.10	70.90	0.11	98.54	19
Other Miscellaneous Manufacturing (NAICS 3399)	6.78	2.47	0.00	0.00	0.94	10.19	89.81	0.11	98.65	62
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)	0.00	0.00	0.00	0.00	92.74	92.74	7.26	0.10	98.75	18
Household and Institutional Furniture and Kitchen Cabinet Manufacturing (NAICS 3371)	0.00	1.20	23.49	0.00	59.69	84.39	15.61	0.09	98.84	23
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	0.09	2.28	0.00	0.00	1.21	3.57	96.43	0.09	98.93	75
Other Professional, Scientific, and Technical Services (NAICS 5419)	1.52	0.25	0.00	0.00	18.19	19.96	80.04	0.08	99.01	46

Source and Notes: See Table 7.1.

C. Disparity Analysis

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

Table 7.6 presents the results of this comparison for the City's construction contracting and subcontracting. The figures in the utilization column in this table are the same as those from Table 7.1, and include both prime contract and subcontract dollars. The figures in the availability column are the same as those in Table 4.10.

The disparity ratio, in the final column of Table 7.6, is derived by dividing utilization by availability and multiplying the result by 100. A disparity ratio below 100 indicates that M/WBEs are participating in City of Houston contracting and subcontracting at a level that is less than their current estimated availability in the relevant market area. A disparity ratio of 80 or lower is considered to be large. A disparity ratio is statistically significant if it is unlikely to be caused by chance alone.[310]

In Construction, adverse disparities are observed for African Americans, Asians, MBEs as a group, and M/WBEs as a group. The adverse disparities are large for African Americans and Asians. Disparities are statistically significant for African Americans, Asians, MBEs as a group, and M/WBEs as a group.

The results for Native Americans in Table 7.6 should be interpreted with caution. Native American utilization in Construction of 1.42 percent of dollars awarded and 1.49 percent of dollars paid is largely due to work by two Native American-owned firms. Without these two firms, utilization of Native Americans in Construction would have been 0.39 percent of award dollars and 0.47 percent of paid dollars, yielding statistically significant disparity ratios of 37.50 and 45.63, respectively.

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[310] In Tables 7.6 through 7.9, statistical significance was determined using simulation studies. Starting from the project database of contracts and subcontracts, all with differing dollar sizes, these studies simulate the award process by programming a computer to randomly assign contract and subcontract awards to the several types of M/WBEs as well as to non-M/WBEs, based on their estimated availability. For example, if African American-owned firms in a particular category had estimated availability of 10.0 percent, then the computer would randomly pick 10.0 percent of the contracts and subcontracts and assign them to African American-owned firms. The value of the randomly-assigned awards would then be totaled and compared to availability to assess whether there was a disparity. The simulation exercise is then repeated a large number of times. If utilization fell below availability in 95 percent or more of the runs (or 99 percent, or 90 percent, depending on the significance level chosen), then that disparity is deemed statistically significant. For additional discussion of simulation analysis, *see* Wainwright and Holt (2010, p. 50).

Table 7.6. Overall Disparity Results for City of Houston Construction Contracting, FY 2005-2010

M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
AWARD DOLLARS			
African American	2.86	4.95	57.82 ***
Hispanic	13.66	13.12	
Asian	2.12	4.29	49.52 ***
Native American	1.42	1.04	
Minority	20.06	23.39	85.76 *
Nonminority female	9.14	11.34	80.61
M/WBE	29.20	34.73	84.08 ***
PAID DOLLARS			
African American	2.82	4.90	57.66 ***
Hispanic	13.64	13.22	
Asian	2.44	4.27	57.17 ***
Native American	1.49	1.03	
Minority	20.40	23.42	87.11
Nonminority female	9.47	11.32	83.61
M/WBE	29.87	34.74	85.97 **

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

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) "*" 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). (3) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category. (4) To calculate a disparity ratio for non-M/WBEs, first subtract the M/WBE utilization percentage from 100. Second, subtract the M/WBE availability percentage from 100. Finally, divide the non-MWBE utilization percentage by the non-M/WBE availability percentage to obtain the disparity ratio. In Table 7.6, the non-M/WBE disparity ratio for award dollars is 108.47 and for paid dollars is 107.46.

As shown in Table 7.7, for construction contracts awarded prior to the passage of Ordinance 2009-280 ("Final Settlement of Kossman vs. City of Houston") on March 31, 2009, utilization of nonminority women in construction was 10.14 percent measured by dollars awarded and 10.54 percent measured by dollars paid. For the portion of the study period after the settlement, utilization of nonminority women fell to 5.01 percent measured by dollars awarded and 4.96 percent measured by dollars paid. Compared to estimated availability of between 11.34 and 11.32 percent, these yield statistically significant disparity ratios of 44.17 and 43.82, respectively. This is a significantly more adverse disparity ratio than observed for nonminority women in prior to the settlement.

Table 7.7. Nonminority Female Disparities in City of Houston Construction Contracts, Pre- and Post-Settlement

	Utilization (%)	Availability (%)	Disparity Ratio
AWARD DOLLARS			
Nonminority female, pre March 31, 2009	10.14	11.34	89.41
Nonminority female, post March 31, 2009	5.01	11.34	44.17 **
PAID DOLLARS			
Nonminority female, pre March 31, 2009	10.54	11.32	93.05
Nonminority female, post March 31, 2009	4.96	11.32	43.82 **

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

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Excludes federally-assisted contracts; (3) "*" 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).

Tables 7.8 and 7.9 present disaggregated disparity results by NAICS Industry Group. Utilization is measured by dollars awarded in Table 7.8 and by dollars paid in Table 7.9. Adverse disparities are observed among all minority and gender groups and in a wide variety of industry categories.[311] In many cases these disparities are statistically significant as well. There are other cases in Tables 7.8 and 7.9 where M/WBE utilization exceeds current estimated availability in a given NAICS category. However, none of these disparity ratios is statistically significant.

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

Table 7.8. Industry Group Disparity Results for City of Houston Construction Contracting (Dollars Awarded), FY 2005-2010

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Utility System Construction (NAICS 2371)			
African American	0.93	3.84	24.15 ***
Hispanic	6.74	7.21	93.48
Asian	1.00	3.74	26.82 ***
Native American	3.22	1.11	
Minority	11.89	15.89	74.83
Nonminority female	13.01	10.22	
M/WBE total	24.90	26.11	95.34
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.93	4.19	22.10 **
Hispanic	23.19	10.64	
Asian	0.00	3.66	0.00 ***
Native American	0.00	0.59	0.00 ***
Minority	24.11	19.08	
Nonminority female	2.69	9.03	29.73 ***
M/WBE total	26.80	28.12	95.31
Nonresidential Building Construction (NAICS 2362)			
African American	0.70	7.76	9.06 ***
Hispanic	7.95	11.89	66.89
Asian	2.06	5.14	40.03
Native American	0.00	1.58	0.00 ***
Minority	10.71	26.37	40.62 *
Nonminority female	1.22	13.14	9.30 ***
M/WBE total	11.93	39.51	30.21 ***
Building Equipment Contractors (NAICS 2382)			
African American	4.89	4.35	
Hispanic	20.45	17.31	
Asian	0.57	3.68	15.48 ***
Native American	3.94	1.07	
Minority	29.85	26.41	
Nonminority female	8.15	11.94	68.20
M/WBE total	38.00	38.35	99.08

M/WBE Utilization and Disparity in the City of Houston's Market Area

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	2.00	3.80	52.69
Hispanic	24.24	18.54	
Asian	6.27	3.31	
Native American	0.00	1.11	0.00 ***
Minority	32.51	26.76	
Nonminority female	2.87	12.61	22.75 ***
M/WBE total	35.38	39.37	89.88
Other Specialty Trade Contractors (NAICS 2389)			
African American	1.21	3.95	30.65
Hispanic	21.50	18.71	
Asian	1.53	3.15	48.73
Native American	0.00	1.06	0.00 ***
Minority	24.25	26.87	90.24
Nonminority female	3.92	12.95	30.27 ***
M/WBE total	28.16	39.82	70.74
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.02	2.40	0.72 ***
Hispanic	8.79	8.03	
Asian	12.45	5.82	
Native American	0.05	0.13	36.70
Minority	21.31	16.37	
Nonminority female	30.70	8.83	
M/WBE total	52.01	25.20	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	1.75	0.00 ***
Hispanic	0.00	6.96	0.00 ***
Asian	0.00	5.16	0.00 ***
Native American	0.59	0.00	.
Minority	0.59	13.88	4.23 **
Nonminority female	0.00	5.30	0.00 ***
M/WBE total	0.59	19.18	3.06 ***
Residential Building Construction (NAICS 2361)			
African American	6.35	6.79	93.59
Hispanic	3.07	8.65	35.48
Asian	11.78	4.09	
Native American	0.00	1.30	0.00 ***
Minority	21.21	20.83	
Nonminority female	3.81	13.34	28.53 **
M/WBE total	25.01	34.18	73.19

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Building Finishing Contractors (NAICS 2383)			
African American	14.46	3.83	
Hispanic	15.47	19.60	78.91
Asian	1.72	3.31	51.94
Native American	0.00	0.97	0.00 ***
Minority	31.65	27.71	
Nonminority female	12.62	12.34	
M/WBE total	44.27	40.05	
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	1.21	2.50	48.33
Hispanic	31.79	8.38	
Asian	0.10	6.38	1.56 ***
Native American	0.00	0.02	0.00
Minority	33.10	17.28	
Nonminority female	28.26	8.99	
M/WBE total	61.36	26.26	
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	18.38	2.64	
Hispanic	4.31	9.19	46.84 **
Asian	0.17	6.11	2.79 ***
Native American	0.00	0.01	0.00
Minority	22.86	17.95	
Nonminority female	33.41	7.95	
M/WBE total	56.27	25.89	
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	1.95	0.00 ***
Hispanic	0.00	7.95	0.00 ***
Asian	0.00	5.03	0.00 ***
Native American	0.00	0.62	0.00 ***
Minority	0.00	15.55	0.00 ***
Nonminority female	0.00	5.49	0.00 ***
M/WBE total	0.00	21.04	0.00 ***
Specialized Freight Trucking (NAICS 4842)			
African American	3.66	14.40	25.40 ***
Hispanic	63.66	11.16	
Asian	0.00	1.16	0.00 ***
Native American	0.00	2.03	0.00 ***
Minority	67.32	28.76	
Nonminority female	26.81	16.52	
M/WBE total	94.12	45.28	

M/WBE Utilization and Disparity in the City of Houston's Market Area

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	1.30	2.50	51.85
Hispanic	16.90	10.28	
Asian	0.00	5.89	0.00 ***
Native American	20.25	0.02	
Minority	38.45	18.69	
Nonminority female	2.04	9.61	21.25 ***
M/WBE total	40.49	28.29	
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	1.82	0.00 ***
Hispanic	2.03	7.46	27.20 ***
Asian	13.82	6.45	
Native American	0.00	0.15	0.00
Minority	15.85	15.87	99.86
Nonminority female	38.22	7.61	
M/WBE total	54.07	23.48	
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	12.87	6.79	
Hispanic	26.39	20.96	
Asian	8.19	6.28	
Native American	0.27	0.48	56.11
Minority	47.73	34.51	
Nonminority female	7.10	10.56	67.25
M/WBE total	54.83	45.07	
Other Heavy and Civil Engineering Construction (NAICS 2379)			
African American	9.56	4.03	
Hispanic	0.00	6.32	0.00 ***
Asian	0.00	3.81	0.00 ***
Native American	0.00	0.64	0.00
Minority	9.56	14.80	64.60
Nonminority female	10.57	10.09	
M/WBE total	20.13	24.90	80.84
Other Support Services (NAICS 5619)			
African American	56.24	6.47	
Hispanic	13.29	21.74	61.15 **
Asian	9.22	3.82	
Native American	0.03	0.32	10.08
Minority	78.79	32.34	
Nonminority female	13.59	15.08	90.13
M/WBE total	92.38	47.42	

M/WBE Utilization and Disparity in the City of Houston's Market Area

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	1.94	0.00 ***
Hispanic	11.78	8.01	
Asian	0.00	6.32	0.00 ***
Native American	0.73	0.00	.
Minority	12.52	16.27	76.93
Nonminority female	1.91	8.97	21.33 **
M/WBE total	14.43	25.23	57.17 *
Services to Buildings and Dwellings (NAICS 5617)			
African American	42.78	6.20	
Hispanic	17.92	20.91	85.69
Asian	0.02	3.57	0.65 ***
Native American	0.00	0.00	
Minority	60.72	30.68	
Nonminority female	9.27	10.80	85.82
M/WBE total	69.99	41.49	
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	2.79	0.00 ***
Hispanic	0.00	6.40	0.00 ***
Asian	0.00	8.24	0.00 ***
Native American	0.00	0.00	.
Minority	0.00	17.42	0.00 ***
Nonminority female	0.00	8.21	0.00 ***
M/WBE total	0.00	25.62	0.00 ***
Investigation and Security Services (NAICS 5616)			
African American	16.58	7.90	
Hispanic	18.85	21.24	88.75
Asian	0.00	4.27	0.00 ***
Native American	0.00	0.72	0.00
Minority	35.43	34.13	
Nonminority female	5.55	10.25	54.18
M/WBE total	40.99	44.38	92.35
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	8.09	7.44	
Hispanic	15.12	20.72	72.96
Asian	0.79	4.59	17.30
Native American	0.00	0.63	0.00
Minority	24.00	33.37	71.92
Nonminority female	31.15	11.79	
M/WBE total	55.15	45.16	

M/WBE Utilization and Disparity in the City of Houston's Market Area

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	1.65	0.00
Hispanic	0.00	6.57	0.00 ***
Asian	0.56	7.47	7.43
Native American	0.00	0.00	.
Minority	0.56	15.69	3.54 ***
Nonminority female	0.00	9.17	0.00 ***
M/WBE total	0.56	24.86	2.23 ***
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	1.95	0.00
Hispanic	0.00	6.41	0.00
Asian	0.00	7.81	0.00
Native American	0.00	0.83	0.00
Minority	0.00	16.99	0.00 ***
Nonminority female	0.00	8.55	0.00 ***
M/WBE total	0.00	25.54	0.00 ***
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)			
African American	5.66	1.98	
Hispanic	9.61	7.41	
Asian	0.28	6.40	4.36
Native American	0.00	0.05	0.00
Minority	15.54	15.85	98.07
Nonminority female	11.77	11.58	
M/WBE total	27.31	27.43	99.58
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.57	4.54	12.47
Hispanic	2.09	15.34	13.61 **
Asian	0.00	5.85	0.00 ***
Native American	0.00	0.09	0.00
Minority	2.66	25.83	10.28 ***
Nonminority female	0.00	13.54	0.00 ***
M/WBE total	2.66	39.37	6.74 ***

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Steel Product Manufacturing from Purchased Steel (NAICS 3312)			
African American	0.00	3.89	0.00
Hispanic	0.00	11.41	0.00 ***
Asian	0.00	6.57	0.00
Native American	0.00	0.00	.
Minority	0.00	21.88	0.00 ***
Nonminority female	0.00	7.22	0.00 ***
M/WBE total	0.00	29.10	0.00 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	6.48	0.00 ***
Hispanic	9.03	23.66	38.16 **
Asian	0.00	3.12	0.00 ***
Native American	0.00	0.25	0.00
Minority	9.03	33.52	26.94 ***
Nonminority female	8.88	12.00	73.95
M/WBE total	17.91	45.52	39.34 ***
Land Subdivision (NAICS 2372)			
African American	23.77	2.75	
Hispanic	0.00	6.15	0.00
Asian	10.41	5.10	
Native American	0.00	0.66	0.00
Minority	34.18	14.66	
Nonminority female	1.32	8.15	16.22
M/WBE total	35.50	22.81	
Personal and Household Goods Repair and Maintenance (NAICS 8114)			
African American	12.05	8.79	
Hispanic	26.61	10.63	
Asian	5.71	0.92	
Native American	0.00	2.57	0.00 ***
Minority	44.38	22.90	
Nonminority female	0.40	11.98	3.35 **
M/WBE total	44.78	34.88	
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	2.39	0.00
Hispanic	0.00	7.28	0.00 ***
Asian	0.00	8.68	0.00 ***
Native American	0.00	0.00	.
Minority	0.00	18.35	0.00 ***
Nonminority female	93.13	10.08	
M/WBE total	93.13	28.43	

M/WBE Utilization and Disparity in the City of Houston's Market Area

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Petroleum and Coal Products Manufacturing (NAICS 3241)			
African American	0.00	1.73	0.00
Hispanic	0.00	6.90	0.00
Asian	0.00	5.17	0.00
Native American	0.00	0.00	.
Minority	0.00	13.79	0.00
Nonminority female	0.00	5.17	0.00
M/WBE total	0.00	18.97	0.00 ***
Home Furnishings Stores (NAICS 4422)			
African American	53.66	5.07	
Hispanic	0.00	14.99	0.00 ***
Asian	0.00	6.20	0.00 ***
Native American	0.00	0.00	.
Minority	53.66	26.26	
Nonminority female	4.73	13.76	34.35
M/WBE total	58.39	40.02	
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	8.06	2.20	
Hispanic	1.44	7.34	19.59
Asian	0.00	5.56	0.00 ***
Native American	0.00	0.00	.
Minority	9.50	15.10	62.90
Nonminority female	1.11	11.76	9.42 ***
M/WBE total	10.60	26.85	39.49 *
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.08	2.34	3.62 **
Hispanic	2.25	7.20	31.27
Asian	0.00	6.55	0.00 ***
Native American	0.00	0.47	0.00
Minority	2.34	16.56	14.11 ***
Nonminority female	1.19	9.51	12.51 **
M/WBE total	3.52	26.06	13.52 ***
Household and Institutional Furniture and Kitchen Cabinet Manufacturing (NAICS 3371)			
African American	0.00	1.89	0.00
Hispanic	1.22	9.03	13.47
Asian	22.88	5.54	
Native American	0.00	0.00	.
Minority	24.10	16.47	
Nonminority female	60.49	6.44	
M/WBE total	84.59	22.91	

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Employment Services (NAICS 5613)			
African American	3.23	8.25	39.13
Hispanic	22.01	21.28	
Asian	0.00	3.71	0.00 ***
Native American	0.00	0.58	0.00
Minority	25.24	33.81	74.64
Nonminority female	64.86	14.17	
M/WBE total	90.10	47.98	
Other Wood Product Manufacturing (NAICS 3219)			
African American	0.00	1.58	0.00
Hispanic	0.00	6.83	0.00 ***
Asian	9.65	6.32	
Native American	0.00	0.00	.
Minority	9.65	14.73	65.48
Nonminority female	11.15	8.79	
M/WBE total	20.80	23.52	88.42

Source and Notes: See Table 7.6.

Table 7.9. Industry Group Disparity Results for City of Houston Construction Contracting (Dollars Paid), FY 2005-2010

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Utility System Construction (NAICS 2371)			
African American	1.02	3.83	26.68 ***
Hispanic	7.48	7.22	
Asian	0.82	3.74	21.84 ***
Native American	3.27	1.10	
Minority	12.59	15.89	79.22
Nonminority female	13.76	10.23	
M/WBE total	26.35	26.12	
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.81	4.19	19.39 **
Hispanic	23.29	10.64	
Asian	0.00	3.66	0.00 ***
Native American	0.00	0.59	0.00 ***
Minority	24.11	19.08	
Nonminority female	2.48	9.03	27.42 ***
M/WBE total	26.58	28.12	94.54
Nonresidential Building Construction (NAICS 2362)			
African American	0.79	7.76	10.24 ***
Hispanic	7.20	11.89	60.54
Asian	2.18	5.14	42.44
Native American	0.00	1.58	0.00 ***
Minority	10.17	26.37	38.58 **
Nonminority female	1.34	13.14	10.20 ***
M/WBE total	11.51	39.50	29.14 ***
Building Equipment Contractors (NAICS 2382)			
African American	4.73	4.35	
Hispanic	19.51	17.31	
Asian	0.50	3.68	13.65 ***
Native American	4.70	1.07	
Minority	29.44	26.41	
Nonminority female	7.48	11.94	62.62
M/WBE total	36.92	38.36	96.27

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	1.59	3.81	41.68 **
Hispanic	23.20	18.58	
Asian	10.50	3.31	
Native American	0.00	1.11	0.00 ***
Minority	35.29	26.80	
Nonminority female	2.90	12.60	23.02 ***
M/WBE total	38.19	39.40	96.93
Other Specialty Trade Contractors (NAICS 2389)			
African American	1.25	3.96	31.54
Hispanic	20.69	18.70	
Asian	1.29	3.15	41.01
Native American	0.00	1.06	0.00 ***
Minority	23.23	26.86	86.50
Nonminority female	3.88	12.94	29.97 ***
M/WBE total	27.11	39.80	68.12 *
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.02	2.40	0.93 ***
Hispanic	8.87	8.03	
Asian	11.85	5.82	
Native American	0.05	0.13	36.62
Minority	20.79	16.37	
Nonminority female	32.62	8.83	
M/WBE total	53.41	25.21	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	1.76	0.00 ***
Hispanic	0.00	6.97	0.00 ***
Asian	0.00	5.16	0.00 ***
Native American	0.23	0.00	.
Minority	0.23	13.89	1.68 ***
Nonminority female	0.00	5.31	0.00 ***
M/WBE total	0.23	19.20	1.22 ***
Residential Building Construction (NAICS 2361)			
African American	7.17	6.82	
Hispanic	3.36	8.60	39.08
Asian	12.54	4.07	
Native American	0.00	1.29	0.00 ***
Minority	23.08	20.78	
Nonminority female	3.45	13.42	25.68 **
M/WBE total	26.52	34.20	77.55

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Building Finishing Contractors (NAICS 2383)			
African American	13.23	3.82	
Hispanic	13.55	19.52	69.41
Asian	1.61	3.38	47.72
Native American	0.00	1.02	0.00 ***
Minority	28.39	27.73	
Nonminority female	18.28	12.35	
M/WBE total	46.67	40.08	
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	18.08	2.64	
Hispanic	3.53	9.21	38.30 ***
Asian	0.11	6.12	1.73 ***
Native American	0.00	0.01	0.00
Minority	21.71	17.98	
Nonminority female	34.25	7.95	
M/WBE total	55.97	25.93	
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	1.12	2.50	44.58
Hispanic	32.61	8.38	
Asian	0.10	6.38	1.55 ***
Native American	0.00	0.02	0.00
Minority	33.83	17.28	
Nonminority female	30.38	8.98	
M/WBE total	64.21	26.26	
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	1.98	0.00 ***
Hispanic	0.00	8.07	0.00 ***
Asian	0.00	5.02	0.00 ***
Native American	0.00	0.59	0.00 ***
Minority	0.00	15.66	0.00 ***
Nonminority female	0.00	5.53	0.00 ***
M/WBE total	0.00	21.18	0.00 ***
Specialized Freight Trucking (NAICS 4842)			
African American	3.73	14.40	25.89 ***
Hispanic	65.37	11.16	
Asian	0.00	1.16	0.00 ***
Native American	0.00	2.03	0.00 ***
Minority	69.10	28.76	
Nonminority female	27.24	16.52	
M/WBE total	96.33	45.28	

M/WBE Utilization and Disparity in the City of Houston's Market Area

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	1.81	2.49	72.53
Hispanic	16.87	10.27	
Asian	0.00	5.86	0.00 ***
Native American	21.68	0.02	
Minority	40.36	18.63	
Nonminority female	2.08	9.61	21.59 ***
M/WBE total	42.44	28.25	
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	1.82	0.00 ***
Hispanic	2.95	7.46	39.62 **
Asian	15.63	6.45	
Native American	0.00	0.15	0.00
Minority	18.59	15.87	
Nonminority female	35.79	7.61	
M/WBE total	54.38	23.48	
Other Heavy and Civil Engineering Construction (NAICS 2379)			
African American	10.64	4.03	
Hispanic	0.00	6.32	0.00 ***
Asian	0.00	3.81	0.00 ***
Native American	0.00	0.64	0.00
Minority	10.64	14.80	71.87
Nonminority female	8.59	10.09	85.14
M/WBE total	19.23	24.90	77.25
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	10.29	6.78	
Hispanic	26.94	20.97	
Asian	7.38	6.25	
Native American	0.34	0.49	69.69
Minority	44.95	34.49	
Nonminority female	5.92	10.54	56.14
M/WBE total	50.87	45.03	

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	1.94	0.00 ***
Hispanic	12.35	8.01	
Asian	0.00	6.32	0.00 ***
Native American	0.79	0.00	.
Minority	13.14	16.27	80.75
Nonminority female	1.89	8.97	21.12 **
M/WBE total	15.03	25.24	59.56
Other Support Services (NAICS 5619)			
African American	51.10	6.47	
Hispanic	12.16	21.74	55.91 ***
Asian	11.94	3.82	
Native American	0.04	0.32	12.04
Minority	75.24	32.34	
Nonminority female	15.17	15.08	
M/WBE total	90.41	47.42	
Services to Buildings and Dwellings (NAICS 5617)			
African American	38.92	6.20	
Hispanic	19.72	20.89	94.40
Asian	0.02	3.57	0.64 ***
Native American	0.00	0.00	
Minority	58.67	30.67	
Nonminority female	9.64	10.81	89.25
M/WBE total	68.31	41.47	
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	9.22	7.44	
Hispanic	15.42	20.72	74.44
Asian	0.84	4.58	18.26
Native American	0.00	0.63	0.00
Minority	25.48	33.37	76.35
Nonminority female	29.52	11.78	
M/WBE total	55.00	45.15	
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	2.79	0.00 ***
Hispanic	0.00	6.40	0.00 ***
Asian	0.00	8.24	0.00 ***
Native American	0.00	0.00	.
Minority	0.00	17.42	0.00 ***
Nonminority female	0.00	8.21	0.00 ***
M/WBE total	0.00	25.63	0.00 ***

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Investigation and Security Services (NAICS 5616)			
African American	18.89	8.04	
Hispanic	9.39	21.26	44.18 **
Asian	0.00	4.25	0.00 ***
Native American	0.00	0.67	0.00
Minority	28.28	34.22	82.64
Nonminority female	8.01	10.23	78.30
M/WBE total	36.29	44.45	81.64
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	1.65	0.00
Hispanic	0.00	6.57	0.00 ***
Asian	0.56	7.47	7.51
Native American	0.00	0.00	.
Minority	0.56	15.69	3.57 ***
Nonminority female	0.00	9.17	0.00 ***
M/WBE total	0.56	24.86	2.26 ***
Steel Product Manufacturing from Purchased Steel (NAICS 3312)			
African American	0.00	3.89	0.00
Hispanic	0.00	11.41	0.00 ***
Asian	0.00	6.57	0.00
Native American	0.00	0.00	.
Minority	0.00	21.88	0.00 ***
Nonminority female	0.00	7.22	0.00 ***
M/WBE total	0.00	29.10	0.00 ***
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	1.95	0.00
Hispanic	0.00	6.41	0.00
Asian	0.00	7.81	0.00
Native American	0.00	0.83	0.00
Minority	0.00	16.99	0.00 ***
Nonminority female	0.00	8.55	0.00 ***
M/WBE total	0.00	25.54	0.00 ***

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)			
African American	5.64	1.99	
Hispanic	9.28	7.41	
Asian	0.27	6.40	4.25
Native American	0.00	0.05	0.00
Minority	15.19	15.86	95.82
Nonminority female	11.61	11.56	
M/WBE total	26.80	27.42	97.74
Other Wood Product Manufacturing (NAICS 3219)			
African American	0.00	1.62	0.00
Hispanic	0.00	6.99	0.00 ***
Asian	51.79	5.75	
Native American	0.00	0.00	.
Minority	51.79	14.36	
Nonminority female	5.98	7.70	77.70
M/WBE total	57.77	22.06	
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.66	4.53	14.49
Hispanic	2.42	15.30	15.80 **
Asian	0.00	5.87	0.00 ***
Native American	0.00	0.09	0.00
Minority	3.07	25.79	11.92 ***
Nonminority female	0.00	13.41	0.00 ***
M/WBE total	3.07	39.20	7.84 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	6.48	0.00 ***
Hispanic	8.93	23.67	37.72 ***
Asian	0.00	3.12	0.00 ***
Native American	0.00	0.25	0.00
Minority	8.93	33.52	26.64 ***
Nonminority female	10.25	12.01	85.40
M/WBE total	19.18	45.53	42.13 ***
Petroleum and Coal Products Manufacturing (NAICS 3241)			
African American	0.00	1.73	0.00
Hispanic	0.00	6.90	0.00
Asian	0.00	5.17	0.00
Native American	0.00	0.00	.
Minority	0.00	13.80	0.00
Nonminority female	0.00	5.17	0.00
M/WBE total	0.00	18.97	0.00 ***

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Home Furnishings Stores (NAICS 4422)			
African American	64.57	5.08	
Hispanic	0.00	15.02	0.00 ***
Asian	0.00	6.22	0.00 ***
Native American	0.00	0.00	.
Minority	64.57	26.32	
Nonminority female	3.62	13.62	26.55
M/WBE total	68.19	39.94	
Personal and Household Goods Repair and Maintenance (NAICS 8114)			
African American	13.12	8.79	
Hispanic	25.79	10.62	
Asian	5.81	0.93	
Native American	0.00	2.57	0.00 ***
Minority	44.72	22.91	
Nonminority female	0.41	12.01	3.40 **
M/WBE total	45.13	34.92	
Land Subdivision (NAICS 2372)			
African American	15.11	2.75	
Hispanic	0.00	6.15	0.00
Asian	12.41	5.10	
Native American	0.00	0.66	0.00
Minority	27.52	14.66	
Nonminority female	1.58	8.15	19.34
M/WBE total	29.10	22.81	
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	6.78	2.20	
Hispanic	2.47	7.30	33.79
Asian	0.00	5.50	0.00 ***
Native American	0.00	0.00	.
Minority	9.25	15.00	61.65
Nonminority female	0.94	12.01	7.81 ***
M/WBE total	10.19	27.01	37.71 *
Chemical and Allied Products Merchant Wholesalers (NAICS 4246)			
African American	0.00	2.38	0.00
Hispanic	0.00	7.29	0.00 ***
Asian	0.00	8.68	0.00 ***
Native American	0.00	0.00	.
Minority	0.00	18.35	0.00 ***
Nonminority female	92.74	10.08	
M/WBE total	92.74	28.43	

NAICS Industry Group / M/WBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Household and Institutional Furniture and Kitchen Cabinet Manufacturing (NAICS 3371)			
African American	0.00	1.90	0.00
Hispanic	1.20	9.03	13.29
Asian	23.49	5.54	
Native American	0.00	0.00	.
Minority	24.69	16.47	
Nonminority female	59.69	6.44	
M/WBE total	84.39	22.91	
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.09	2.34	3.68 **
Hispanic	2.28	7.20	31.66
Asian	0.00	6.55	0.00 ***
Native American	0.00	0.47	0.00
Minority	2.36	16.55	14.29 ***
Nonminority female	1.21	9.51	12.70 ***
M/WBE total	3.57	26.06	13.71 ***
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	1.52	6.31	24.07
Hispanic	0.25	20.11	1.25 ***
Asian	0.00	3.72	0.00 ***
Native American	0.00	0.09	0.00
Minority	1.77	30.22	5.85 ***
Nonminority female	18.19	11.44	
M/WBE total	19.96	41.66	47.90

Source and Notes: See Table 7.6.

D.   Current versus Expected Availability

Finally, Table 7.10 provides a comparison between current levels of M/WBE availability for the City of Houston and levels that we would expect to observe in a race- and gender-neutral market area. The latter, referred to as "expected availability," is derived by dividing the current availability figures, as documented in Table 4.10, by the disparity ratios documented in column (3) of Table 5.12. If no disparity is present in the relevant market area, 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 market area, the disparity ratio will be less than 100 and, consequently, expected availability will exceed current availability. For African Americans, Asians and Pacific Islanders, Native Americans, nonminority females, and M/WBEs as a group, expected M/WBE availability in the City's market area exceeds current M/WBE availability by substantial margins.

Table 7.10. Current Availability and Expected Availability for City of Houston Construction

M/WBE Type	Current Availability	Expected Availability
AWARD DOLLAR WEIGHTS		
African American	4.95	8.68
Hispanic	13.12	11.80
Asian	4.29	6.10
Native American	1.04	1.46
Minority	23.39	20.90
Non-minority female	11.34	23.16
M/WBE total	34.73	35.67
PAID DOLLAR WEIGHTS		
African American	4.90	8.59
Hispanic	13.22	11.89
Asian	4.27	6.07
Native American	1.03	1.45
Minority	23.42	20.93
Non-minority female	11.32	23.12
M/WBE total	34.74	35.68

Source: See Tables 4.10 and 5.12.

VIII. Anecdotal Evidence of Disparities in the City's Market Area

A. Introduction

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's construction contracting 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. In many instances, 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.

As a further check on these findings, we investigated anecdotal evidence of disparities in the City's market area. First, we conducted a large scale survey of business establishments in the market area—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 the City's markets report suffering business-related discrimination in large numbers and with statistically significantly greater frequency than non-M/WBEs (see Tables 8.3 and 8.4). These differences remain statistically significant when firm size and owner characteristics are held constant (See Tables 8.5 and 8.6). 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 not often hired—or even solicited—by these prime contractors to work on projects without M/WBE goals (See Tables 8.8 and 8.9). 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 Houston and other public entities in the Houston market area shows that business discrimination continues to fetter M/WBE business opportunities in the City's relevant markets. We conclude that the statistical evidence presented in this report is consistent with these anecdotal accounts of contemporary business discrimination.

The remainder of this Chapter is organized as follows. We first discuss the mail survey results in Section B. In Section B.1, we discuss the survey questionnaire, sample frame, and response rate. Section B.2 presents evidence on willingness of firms to do business with the public sector. Section B.3 presents the key findings from the M/WBE and non-M/WBE respondents concerning disparate treatment. Section B.4 presents the key findings concerning the impact of the regular business environment on M/WBEs' ability to conduct their businesses. Section B.5 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 B.6 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 C describes the results of the business experience group interviews. Responses are grouped under the headings of the most common cited barriers and issues facing businesses in the Houston construction market area.

B. Business Experience Surveys

1. Survey Questionnaire, Sample, and Responses

The survey questionnaire 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 as bonding and insurance requirements, on each firm's ability to do business in the City'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 Master M/WBE Directory and 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.[312] Of 8,956 businesses that received the questionnaire,[313] 839 (9.4 percent) provided usable responses.[314] The distribution of total responses according to the race and sex of the business owner, by major procurement category, appears in Table 8.1.

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[312] *See* Chapter III for a discussion of how the product and geographic markets were defined. See Chapter IV for discussion of how the Master M/WBE Directory and the Baseline Business Universe were assembled.

[313] These figures exclude surveys that were returned undelivered or were otherwise undeliverable.

[314] The total number of valid responses to any particular survey question, however, was sometimes lower than this due to item non-response.

Anecdotal Evidence of Disparities in the City's Market Area

Table 8.1. Race, Sex and Procurement Category of Mail Survey Respondents

Group	Construction	AE-CRS	Services	Commodities	Total
African American	41	3	47	7	98
Hispanic	111	6	36	31	184
Asian/Pacific	10	3	18	22	53
Native American	6	1	1	3	11
Minorities with unknown Race/Ethnicity	1	0	2	4	7
Nonminority women	75	9	39	60	183
Total M/WBE	244	22	143	127	536
Nonminority Men	133	15	65	90	303
Total	377	37	208	217	839

Source: NERA Houston mail surveys.

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. 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. Such is the present case.

As shown below in Table 8.2, there is an observable linkage between the firms responding to our mail survey and the public sector of the Houston economy. All respondents operate establishments in the relevant geographic and product markets. Moreover, significant numbers of survey respondents have worked or attempted to do work for Houston or other public entities in the market area in the last five years. This is observed for virtually all types of M/WBEs and non-M/WBEs in all procurement categories. Overall, over 40 percent of non-M/WBEs and over 50 percent of M/WBEs have worked or attempted to work for Houston or some other public entity in the market area in the previous five years.

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/ Pacific	Native American	Total Minority	Non-minority Female	Total M/WBEs	Non-minority Male
ALL INDUSTRIES								
With Houston	42.9%	39.3%	30.2%	36.4%	38.8%	40.0%	39.2%	32.8%
	(98)	(183)	(53)	(11)	(345)	(180)	(525)	(302)
With Other Public Entity in Market Area	51.5%	42.0%	37.7%	50.0%	44.3%	51.7%	46.8%	37.1%
	(97)	(181)	(53)	(10)	(341)	(176)	(517)	(299)
With any Public Entity in Market Area	56.7%	47.8%	39.6%	54.5%	49.3%	55.9%	51.5%	42.9%
	(97)	(182)	(53)	(11)	(343)	(177)	(520)	(301)
CONSTRUCTION								
With Houston	43.9%	43.2%	30.0%	16.7%	41.7%	43.2%	42.1%	34.8%
	(41)	(111)	(10)	(6)	(168)	(74)	(242)	(132)
With Other Public Entity in Market Area	55.0%	47.7%	40.0%	33.3%	48.5%	57.7%	51.3%	38.9%
	(40)	(109)	(10)	(6)	(165)	(71)	(236)	(131)
With any Public Entity in Market Area	57.5%	52.7%	40.0%	33.3%	52.4%	62.5%	55.5%	45.0%
	(40)	(110)	(10)	(6)	(166)	(72)	(238)	(131)
AE-CRS								
With Houston	33.3%	16.7%	66.7%	0.0%	30.8%	33.3%	31.8%	26.7%
	(3)	(6)	(3)	(1)	(13)	(9)	(22)	(15)
With Other Public Entity in Market Area	33.3%	33.3%	66.7%	0.0%	38.5%	44.4%	40.9%	53.3%
	(3)	(6)	(3)	(1)	(13)	(9)	(22)	(15)
With any Public Entity in Market Area	33.3%	33.3%	66.7%	0.0%	38.5%	44.4%	40.9%	53.3%
	(3)	(6)	(3)	(1)	(13)	(9)	(22)	(15)

Source: See Table 8.1

Note: Total number of valid responses in parentheses.

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, 40 percent of M/WBE firms said they had experienced at least one instance of disparate treatment in one or more areas of business dealings identified on the survey. Reports of disparate treatment were substantially and statistically significantly higher for minorities and nonminority women than for nonminority males, casting doubt on claims of widespread "reverse discrimination." Reports were highest among African Americans, with an overall rate of almost 55 percent. The rates for Hispanics, Asians/Pacific Islanders, and Native Americans were approximately 37 percent, 29 percent, and 20 percent, respectively. For nonminority women the rate was 41 percent. Similar patterns were observed when the results were disaggregated by procurement category.

The balance of Table 8.3 shows results for each of 14 distinct types of disparate treatment inquired about in the survey. In all categories, the difference in reported amounts of disparate treatment between M/WBEs and non-M/WBEs is large. In applying for commercial loans, for example, M/WBEs reported disparate treatment over four times more frequently than nonminority males. In applying for surety bonds, it was almost 10 times more frequent. In functioning without hindrance or harassment on the work site it was almost seven times more frequent. For African Americans in these three categories, the incidence of reported disparate treatment was approximately 8, 23, and 10 times higher, respectively.[315]

The figures for M/WBEs are approximately 3 to 5 times higher than for non-M/WBEs in applying for commercial or professional insurance; hiring workers from union hiring halls; obtaining price quotes from suppliers or subcontractors; working or attempting to work on private sector prime contracts; working or attempting to work on private sector subcontracts; joining or dealing with construction trade associations; having to do inappropriate or extra work not required of comparable non-M/WBEs; and having to meet quality, inspection or performance standards not required of comparable M/WBEs.

Evidence of the impact of public sector M/WBE programs is seen in that some of the smallest differences between M/WBEs and non-M/WBEs appear in the categories of working or attempting to work on public sector prime contracts and subcontracts and in receiving timely payment for work performed—although even here the figures are still 1.47, 1.73, and 2.4 times higher, respectively, for M/WBEs than for non-M/WBES.

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[315] 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 analysis of the evidence behind this phenomenon.

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/ Pacific	Native American	Total Minority	Non-minority Female	Total M/WBE	Non-minority Male
Applying for commercial loans	**36.2%**	**14.2%**	6.3%	12.5%	**18.8%**	**19.6%**	**19.1%**	**4.5%**
	(58)	**(120)**	(32)	(8)	**(218)**	**(107)**	**(325)**	**(179)**
Applying for surety bonds	**30.9%**	**9.4%**	3.8%	0.0%	**14.7%**	**10.1%**	**13.1%**	**1.3%**
	(55)	**(96)**	(26)	(7)	**(184)**	**(99)**	**(283)**	**(150)**
Applying for commercial or professional insurance	**18.5%**	6.6%	2.8%	11.1%	**9.3%**	6.0%	**8.2%**	**3.0%**
	(65)	(136)	(36)	(9)	**(246)**	(133)	**(379)**	**(201)**
Hiring workers from union hiring halls	**8.7%**	0.0%	0.0%	0.0%	3.0%	**7.8%**	4.3%	0.9%
	(46)	(62)	(21)	(6)	(135)	**(51)**	(186)	(106)
Obtaining price quotes from suppliers or subcontracts	**30.3%**	**9.0%**	**14.3%**	**28.6%**	**16.2%**	**11.9%**	**14.6%**	**3.4%**
	(66)	**(133)**	**(35)**	**(7)**	**(241)**	**(135)**	**(376)**	**(204)**
Working or attempting to obtain work on public sector prime contracts	**34.9%**	18.6%	14.3%	12.5%	**22.6%**	15.0%	*20.2%*	*13.8%*
	(63)	(118)	(28)	(8)	**(217)**	(100)	*(317)*	*(160)*
Working or attempting to obtain work on Public sector subcontracts	**37.9%**	18.5%	11.1%	11.1%	**23.0%**	**26.3%**	**24.1%**	**13.9%**
	(66)	(124)	(27)	(9)	**(226)**	**(114)**	**(340)**	**(158)**
Working or attempting to obtain work on private sector prime contracts	**33.3%**	**20.5%**	10.0%	12.5%	**22.5%**	**20.7%**	**21.9%**	**8.0%**
	(66)	**(127)**	(30)	(8)	**(231)**	**(121)**	**(352)**	**(187)**
Working or attempting to obtain work on private sector subcontracts	**36.2%**	**21.6%**	9.4%	11.1%	**23.8%**	**22.9%**	**23.5%**	**8.6%**
	(69)	**(134)**	(32)	(9)	**(244)**	**(118)**	**(362)**	**(185)**
Receiving timely payment for work performed	**41.5%**	**22.3%**	16.1%	25.0%	**26.7%**	**23.4%**	**25.5%**	**10.6%**
	(65)	**(139)**	(31)	(8)	**(243)**	**(137)**	**(380)**	**(207)**
Functioning without hindrance or harassment on the work site	**20.6%**	**10.8%**	3.6%	**28.6%**	**13.2%**	**16.5%**	**14.4%**	**2.1%**
	(63)	**(130)**	(28)	**(7)**	**(228)**	**(127)**	**(355)**	**(190)**
Joining or dealing with construction trade associations	**14.5%**	**7.3%**	0.0%	0.0%	**8.1%**	**9.4%**	**8.5%**	**1.8%**
	(55)	**(123)**	(25)	(7)	**(210)**	**(106)**	**(316)**	**(169)**
Having to do inappropriate or extra work not required of comparable non-M/WBEs	**26.7%**	**16.4%**	7.7%	12.5%	**18.0%**	**14.2%**	**16.6%**	**3.3%**
	(60)	**(134)**	(26)	(8)	**(228)**	**(127)**	**(355)**	**(184)**
Double standards not required of comparable non-M/WBEs	**26.2%**	**11.5%**	3.6%	0.0%	**14.1%**	**12.7%**	**13.6%**	**3.6%**
	(61)	**(131)**	(28)	(7)	**(227)**	**(134)**	**(361)**	**(196)**
In any one of the business dealings listed above	**54.9%**	**36.5%**	28.6%	20.0%	**39.9%**	**41.0%**	**40.3%**	**20.9%**
	(82)	**(159)**	(42)	(10)	**(293)**	**(161)**	**(454)**	**(234)**

Source: See Table 8.1. Notes: 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 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 by each group according to the frequency with which disparate treatment was reported, with "1" representing the most frequent and "14" representing the least frequent.[316]

The most frequently reported problem overall for M/WBEs—as opposed to the one with the most relative difference from non-M/WBEs—was receiving timely payment for work performed. This was followed by working or attempting to work on public sector subcontracts, working or attempting to work on private sector subcontracts, working or attempting to work on private sector prime contracts, and working or attempting to work on public sector prime contracts.

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 and Holt, 2010, 65-67; Wainwright, 2000, 86-87). Nevertheless, 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, measures of disparate treatment of African American-, Hispanic-, Asian-, nonminority women-owned businesses, MBEs as a group, and M/WBEs as a group, are still large, adverse, and statistically significant.

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[316] In the case of ties, not all 14 ranks will be present.

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/ Pacific	Native American	Total Minority	Non- minority Female	Total M/WBEs
Applying for commercial loans	4	7	7	3	6	5	6
Applying for surety bonds	7	10	8	5	9	11	11
Applying for commercial or professional insurance	12	13	10	4	12	14	13
Hiring workers from union hiring halls	14	14	12	5	14	13	14
Obtaining price quotes from suppliers or subs	8	11	2	1	8	10	8
Working or attempting to obtain work on public sector prime contracts	5	4	2	3	4	7	5
Working or attempting to obtain work on public sector subcontracts	2	5	3	4	3	1	2
Working or attempting to obtain work on private sector prime contracts	6	3	4	3	5	4	4
Working or attempting to obtain work on private sector subcontracts	3	2	5	4	2	3	3
Receiving timely payment for work performed	1	1	1	2	1	2	1
Functioning without hindrance or harassment on the work site	11	9	9	1	11	6	9
Joining or dealing with trade associations	13	12	11	5	13	12	12
Having to do extra work not required of others	9	6	6	3	7	8	7
Having to meet quality or performance standards not required of others	10	8	9	5	10	9	10

Source: See Table 8.2.

In Table 8.5, we report the results from a series of Probit regressions using the mail survey data on disparate treatment.[317] 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. The estimates in the table show large differences in disparate treatment probabilities between M/WBEs and non-M/WBEs. In column (1) of Table 8.5 (in which the regression model contains only M/WBE status and procurement category indicators), the estimated coefficient of 0.186 on the M/WBE indicator indicates that the likelihood of experiencing disparate treatment for M/WBE firms is 18.6 percentage points higher than that for non-M/WBE firms.[318] This difference is statistically significant within a 99 percent confidence interval or better. Column (2) of Table 8.5 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race or sex, including the owner's education, the age of the firm, and the size of the firm measured by employment and by sales. Even after controlling for these differences, however, M/WBE firms remain 15.7 percentage points more likely than non-M/WBE firms to experience disparate treatment. This difference is also statistically significant within a 99 percent confidence interval. Firm size and other characteristics account for little of the disparate treatment reported by M/WBEs in the Houston market area.

The exercise is repeated in columns (3) and (4). The only difference is that the M/WBE indicator is separated into two components—one for minority-owned firms and one for nonminority-female owned firms. The results in column (3) indicate that minority-owned firms in the City's market area are 18.7 percentage points more likely to experience disparate treatment than non-M/WBE firms. When controls are added in column (4), this difference decreases slightly to 15.3 percentage points, indicating that disparate treatment is occurring even when accounting for other capacity-type factors. Nonminority female-owned firms are 22.5 and 18.8 percentage points more likely to experience disparate treatment, respectively, and these differences are statistically significant as well.

The exercise is repeated again in columns (5) and (6) with separate indicators for each type of M/WBE. The results for nonminority females are nearly identical to those in columns (3) and (4). For African American-owned firms, the differential is 33.9 percentage points in column (5), falling to 29.5 percentage points once controls are added. For Hispanic-owned firms, the differentials are 15.1 and 12.0 percentage points, respectively. For Asian and Pacific Islander-owned firms, the differentials are 12.9 and 8.7 percentage points, respectively. For Native American-owned firms, the differentials were -1.3 percentage points and -3.5 percentage points, respectively. The results for Asians/Pacific Islanders and Native Americans were not statistically significant.

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[317] *See* Chapter V for a description of Probit regression.

[318] This estimate largely replicates the raw difference in disparate treatment rates between M/WBE and non-M/WBE firms reported in the last row of Table 8.3. The raw differential observed there (40.3% − 20.9% = 19.4%) differs slightly from the 18.6% differential reported here since the regression specification also controls for industry category.

Table 8.5. Prevalence of Disparate Treatment Facing M/WBEs

	(1)	(2)	(3)	(4)	(5)	(6)
M/WBE	0.186	0.157				
	(4.90)	(3.80)				
Minority			0.187	0.153		
			(4.31)	(3.18)		
Nonminority Female			0.225	0.188	0.224	0.185
			(4.34)	(3.46)	(4.33)	(3.42)
African American					0.339	0.295
					(5.17)	(4.05)
Hispanic					0.151	0.120
					(2.89)	(2.07)
Asian/Pacific					0.129	0.087
					(1.49)	(0.96)
Native American					(0.013)	(0.035)
					(-0.08)	(-0.21)
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	694.00	644.00	694.00	644.00	694.00	644.00
Pseudo R^2	0.05	0.06	0.05	0.06	0.06	0.07
Chi^2	44.02	45.12	44.42	45.43	54.63	53.62
Log likelihood	(421.56)	(386.89)	(421.35)	(386.74)	(416.25)	(382.64)

Source: See Table 8.2.

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. A t-statistic of 2.58 (1.96) (1.64) or larger indicate that the result is significant within a 99 (95) (90) percent confidence interval.

The regression models reported in Table 8.5 used as their dependent variable an indicator of whether or not a survey respondent reported having been treated less favorably in *any* of the 14 different types of business dealings described in the first column of Table 8.3.[319] We re-estimated the regression model reported in Column (2) of Table 8.5 separately using as the dependent variable, in turn, each of the 14 types of business dealings and report those results in Table 8.6. As Table 8.6 shows, African American-owned firms in particular experience a wide variety of disparate treatment compared to non-M/WBEs. In 12 of 14 categories the differences for African

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[319] 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.

American-owned firms are both large and statistically significant. For Hispanic-owned firms, this is true in 9 of 14 cases. For Asian and Pacific Islander-owned firms, this is true in 1 of 14 cases. For Native American-owned firms, this is true in 1 of 14 cases. For nonminority female-owned firms, this is true in 11 of 14 cases. For M/WBEs as a group it is true in 11 of 14 cases.

Table 8.6. Prevalence of Disparate Treatment Facing M/WBEs, by Type of Business Dealing

Business Dealings	African American	Hispanic	Asian/ Pacific	Native American	Total Minority	Non- minority Female	Total M/WBEs
Applying for commercial loans	**31.7%** **(4.16)**	**11.2%** **(2.17)**	2.7% (0.35)	14.4% (1.01)	**12.8%** **(3.15)**	**17.8%** **(3.17)**	**11.1%** **(3.48)**
Applying for surety bonds	**40.0%** **(4.43)**	**15.8%** **(2.72)**	5.3% (0.66)	0.0% (0.00)	**14.7%** **(3.51)**	**16.7%** **(2.71)**	**9.1%** **(3.45)**
Applying for commercial or professional insurance	7.1% (1.90)	1.7% (0.66)	-2.3% (-0.76)	4.2% (0.60)	2.5% (1.14)	1.0% (0.37)	1.9% (0.98)
Hiring workers from union hiring halls	3.4% (1.27)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	1.3% (0.26)	15.4% (1.63)	3.5% (0.77)
Obtaining price quotes from suppliers or subcontracts	**30.3%** **(4.35)**	6.4% (1.40)	*12.4%* *(1.75)*	33.9% (2.11)	**11.7%** **(3.17)**	**9.4%** **(1.99)**	**8.7%** **(3.01)**
Working or attempting to obtain work on public sector prime contracts	*12.7%* *(1.74)*	3.9% (0.70)	-5.6% (-0.67)	-1.2% (-0.08)	4.9% (1.02)	-1.7% (-0.30)	2.5% (0.57)
Working or attempting to obtain work on public sector subcontracts	**20.1%** **(2.65)**	0.7% (0.12)	-5.4% (-0.57)	-0.7% (-0.05)	6.1% (1.25)	**11.9%** **(2.05)**	*7.6%* *(1.80)*
Working or attempting to obtain work on private sector prime contract	**21.3%** **(3.12)**	**10.2%** **(1.95)**	-1.1% (-0.14)	1.5% (0.11)	**10.6%** **(2.52)**	**11.8%** **(2.31)**	**9.4%** **(2.76)**
Working or attempting to obtain work on private sector subcontracts	**27.9%** **(3.82)**	**11.4%** **(2.09)**	-1.9% (-0.23)	3.2% (0.22)	**12.6%** **(2.85)**	**14.0%** **(2.53)**	**11.3%** **(3.07)**
Receiving timely payment for work performed	**30.8%** **(4.14)**	*9.6%* *(1.81)*	8.0% (0.89)	13.4% (0.83)	**13.1%** **(2.98)**	**12.2%** **(2.37)**	**11.2%** **(3.12)**
Functioning without hindrance or harassment on the work site	**27.5%** **(3.79)**	**14.7%** **(2.81)**	6.7% (0.74)	**53.7%** **(3.02)**	**14.8%** **(3.68)**	**24.0%** **(4.15)**	**11.3%** **(4.18)**
Joining or dealing with construction trade associations	**21.8%** **(3.05)**	**8.7%** **(1.99)**	0.0% (0.00)	0.0% (0.00)	**9.0%** **(2.59)**	**12.8%** **(2.65)**	**7.1%** **(2.84)**
Having to do inappropriate or extra work not required of comparable non-M/WBEs	**29.8%** **(4.05)**	**13.7%** **(2.80)**	11.8% (1.29)	18.9% (1.31)	**14.6%** **(3.70)**	**14.3%** **(2.89)**	**10.4%** **(3.68)**
Having to meet quality, inspection, or performance standards not required of comparable non-M/WBEs	**27.8%** **(3.97)**	*7.7%* *(1.86)*	-0.9% (-0.14)	0.0% (0.00)	**9.1%** **(2.62)**	**10.8%** **(2.60)**	**7.5%** **(2.90)**
In any one of the business dealings listed above	**29.5%** **(4.05)**	**12.0%** **(2.07)**	8.7% (0.96)	-3.5% (-0.21)	**15.3%** **(3.18)**	**18.8%** **(3.46)**	**15.7%** **(3.80)**

Source: See Table 8.2.

Notes: Reported estimates are derivatives from Probit models with specification such as in Table 8.5, column (2). The t-statistics are in parentheses. A t-statistic of 1.96 (1.64) or larger indicate that the result is significant within a 95 (90) percent confidence interval. Results with t-statistics of 1.96 or higher are **boldfaced**. Results with t-statistics of 1.64 or higher are ***boldfaced italicized***.

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

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.

As Table 8.7 makes clear, substantial percentages of both M/WBEs and non-M/WBEs report that certain factors, such as "Obtaining working capital" and "Large project sizes," make it harder or impossible for firms to obtain contracts. Among non-M/WBEs, for example, 28.0 percent reported that obtaining working capital made it harder or impossible for them to win contracts, and 42.8 percent reported that late notice of bid/proposal deadlines made it harder or impossible for them to win contracts. The figures for M/WBEs in these two categories, however, at 43.8 percent and 50.0 percent, respectively, are even greater than for non-M/WBEs. Indeed, as Table 8.7 shows, M/WBEs reported more difficulty with all nine factors about which they were polled.

Table 8.7. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts--Sample Differences

Business Environment	African American	Hispanic	Asian/ Pacific	Native American	Total Minority	Non-minority Female	Total M/WBEs	Non-M/WBEs
Bonding Requirements	**62.0%** (50)	51.3% (78)	37.5% (16)	50.0% (2)	**53.4%** (146)	36.8% (87)	**47.2%** (233)	**27.1%** (129)
Insurance Requirements	**37.5%** (64)	*23.3%* *(103)*	*33.3%* *(21)*	28.6% (7)	**29.2%** (195)	12.8% (109)	**23.4%** (304)	**14.1%** (170)
Previous Experience Requirements	**34.9%** (63)	11.2% (98)	4.8% (21)	14.3% (7)	**18.5%** (189)	13.2% (114)	**16.5%** (303)	**8.3%** (181)
Cost of Bidding or Proposing	**39.0%** (59)	*31.9%* *(94)*	9.5% (21)	28.6% (7)	**31.5%** (181)	28.8% (111)	**30.5%** (292)	**21.2%** (170)
Large Project Sizes	**57.9%** (57)	**36.6%** (93)	23.8% (21)	14.3% (7)	**41.0%** (178)	*33.0%* *(115)*	**37.9%** (293)	**22.3%** (166)
Price of Supplies or Materials	**39.3%** (61)	26.6% (94)	13.0% (23)	28.6% (7)	*29.2%* *(185)*	27.6% (116)	*28.6%* *(301)*	*20.5%* *(176)*
Obtaining Work-ing Capital	**67.2%** (61)	**45.2%** (93)	**4.5%** (22)	57.1% (7)	**48.1%** (183)	36.7% (109)	**43.8%** (292)	**28.0%** (161)
Late Notice of Bid/Proposal Deadlines	52.8% (53)	49.4% (89)	*21.1%* *(19)*	57.1% (7)	47.6% (168)	*53.7%* *(108)*	50.0% (276)	42.8% (152)
Prior Dealings with Owner	**25.9%** (58)	**15.1%** (93)	0.0% (22)	0.0% (8)	**16.0%** (181)	11.4% (114)	**14.2%** (295)	**6.3%** (160)

Source: See Table 8.2.

Notes: Total number of valid responses in parentheses. Figures in **boldface** type are adverse and 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 adverse and significant within a 90% confidence interval.

4.   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 Table 8.8 shows, 83 percent of African American-owned firms, 63 percent of Hispanic-owned firms, 65 percent of Asian-owned firms, 60 percent of Native American-owned firms, and 59 percent of nonminority female-owned firms responded that this seldom or never occurs. Similar results were observed in each major procurement category as well.

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 serves to establish a government's compelling interest in remedying that failure.[320] Among the evidence relied upon for this holding was a NERA survey similar to the current one in which approximately 50 percent of the respondents reported that they were seldom or never solicited for non-goals work.[321]

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

[321] *Id.*

Table 8.8. Percent 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	AE-CRS	Services	Commodities
African American	82.9% (70)	83.3% (30)	100.0% (3)	84.4% (32)	60.0% (5)
Hispanic	62.7% (118)	61.3% (75)	50.0% (4)	55.0% (20)	78.9% (19)
Asian/Pacific	65.4% (26)	50.0% (6)	100.0% (2)	44.4% (9)	88.9% (9)
Native American	60.0% (5)	100.0% (3)	0.0% (1)	- (0)	0.0% (1)
Total Minority	69.6% (224)	67.8% (115)	70.0% (10)	69.4% (62)	75.7% (37)
Nonminority female	59.4% (128)	47.5% (61)	50.0% (4)	72.7% (22)	70.7% (41)
Total M/WBE	65.9% (352)	60.8% (176)	64.3% (14)	70.2% (84)	73.1% (78)

Source: See Table 8.2.

Note: Total number of valid responses in parentheses.

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 8.9, which shows the same pattern as in Table 8.8. In Table 8.9, 71 percent of African American-owned firms, 63 percent of Hispanic-owned firms, 65 percent of Asian-owned firms, 50 percent of Native American-owned firms, and 59 percent of nonminority female-owned firms responded that this seldom or never occurs. Similar results were also observed in each major procurement category.

Table 8.9. 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	AE-CRS	Services	Commodities
African American	70.8% (72)	59.4% (32)	100.0% (3)	78.1% (32)	80.0% (5)
Hispanic	62.6% (107)	59.4% (69)	25.0% (4)	68.8% (16)	77.8% (18)
Asian/Pacific	65.2% (23)	33.3% (6)	100.0% (1)	62.5% (8)	87.5% (8)
Native American	50.0% (4)	100.0% (2)	0.0% (1)	- (0)	0.0% (1)
Total Minority	65.4% (211)	58.2% (110)	55.6% (9)	73.7% (57)	77.1% (35)
Nonminority female	59.0% (122)	47.5% (59)	40.0% (5)	68.2% (22)	75.0% (36)
Total M/WBE	63.1% (333)	54.4% (169)	50.0% (14)	72.2% (79)	76.1% (71)

Source: See Table 8.2.

Note: Total number of valid responses in parentheses.

5. Impact of Survey Non-Response

Since the mail survey was voluntary it is important to account for the fact that a majority of those who received it did not respond. As a check on the usefulness of the information obtained from our mail survey respondents, we conducted telephone surveys of 1,500 randomly selected M/WBEs and non-M/WBEs that did not respond to our mail survey. The purpose of this "non-response" survey is to test whether their answers to key survey questions were different from the answers of respondents in ways that would call into question the relevance of the information obtained from our mail survey respondents.

We obtained responses from 481 firms, for a raw response rate of 30.1 percent. After removing duplicate records, records where the firm was no longer in business, and records where the telephone number was disconnected, the effective response rate increased to 49.6 percent.

Of the firms with which we completed interviews, 43.0 percent were minority-owned, compared with a rate of 41.8 percent in the mail survey. The percentage of women-owned firms was 36.5 percent, compared to 34.7 percent in the mail survey. Neither difference is statistically significant.

In addition to determining minority-owned and women-owned status, we selected three questions from the mail survey to pose to non-respondents. The first question asked whether late notice of bid/proposal deadlines helped or harmed the firm's ability to obtain public or private sector contracts. The second question asked whether and how frequently the firm had experienced discrimination in attempting to apply for commercial loans. The final question asked whether and how frequently the firm had experienced discrimination in working or attempting to work on private sector prime contracts.

Not surprisingly, one difference that we observed between respondents and non-respondents was a somewhat greater general interest in the questions being asked. Among survey respondents, only 27.6 percent indicated that the question about late notice of bid/proposal deadlines was "not applicable." Among non-respondents, the figure was 59.8 percent. Approximately 91.3 percent of survey respondents indicated that discrimination in applying for commercial loans never occurred or that the question was not applicable, compared to 92.8 percent among non-respondents. Approximately 88.6 percent of survey respondents indicated that discrimination in working or attempting to work on private sector prime contracts never occurred or was not applicable, compared to 91.4 percent among non-respondents. This phenomenon was observed regardless of whether the firm was minority-owned, women-owned, or nonminority male-owned.

Among those firms to which the question was applicable, 52.6 percent of M/WBE firms who did not respond to the mail survey indicated that late notice of bid/proposal deadlines made it harder or impossible to obtain contract awards. Among those who did respond to the survey, the figure was 50.0 percent. This difference is not statistically significant. The comparable figures for non-M/WBE firms were 33.3 percent and 42.5 percent, respectively. This difference, as well, is not statistically significant. This result implies that the estimate of adverse disparity for M/WBE firms with regard to late notice of bid/proposal deadlines that was reported from the mail survey (*see* Table 8.5) is representative of that in the universe as a whole, since the ratio of M/WBE firms to non-M/WBE firms reporting that late notice of bid/proposal deadlines make it hard or

impossible for them to obtain contracts is comparable between non-respondents and respondents. In fact, the disparity between M/WBEs and non-M/WBEs was slightly more pronounced among the non-respondents than among the respondents, indicating that the disparities reported above in this Chapter may be somewhat conservatively estimated.

Among those firms to which the question was applicable, 24.1 percent of M/WBE-owned firms who did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in applying for commercial loans. Among those who did respond to the survey, the figure was 19.4 percent. This difference is not statistically significant. The comparable figures for non-M/WBE firms were 0 percent and 4.3 percent, respectively. This difference is not statistically significant (because few non-M/WBE firms considered this question to be applicable to them at all).[322]

Among those firms to which the question was applicable, 43.8 percent of M/WBE-owned firms who did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in working or attempting to work on private sector prime contracts. Among those who did respond to the survey, the figure was 22.1 percent. This difference is statistically significant. The comparable figures for non-M/WBE firms were 0 percent and 8.3 percent, respectively. This difference is also statistically significant. This result documents that the disparity between M/WBEs and non-M/WBEs was actually more pronounced among the non-respondents than among the respondents, indicating that the disparities reported above in this Chapter are likely to be conservatively estimated.

The results of our non-respondent survey, in general, indicate that both M/WBEs and non-M/WBEs are more likely to have responded to the mail survey if they had experienced the difficulties identified in the mail survey. In some cases, this means the actual disparities facing M/WBEs may be somewhat larger than what we have estimated in our mail survey. 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.

6.   Conclusion

Consistent with other evidence reported in this Study, the survey information strongly suggests that M/WBEs continue to suffer discriminatory barriers to full and fair access to public and private sector contracts. This evidence includes stereotypes, perceptions of M/WBE incompetence and being subject to higher performance standards; discrimination in access to commercial loans; difficulties in receiving fair treatment in obtaining public sector subcontracts; and exclusion from private sector opportunities to perform as either prime contractors or as subcontractors. While not definitive proof that the City of Houston has a compelling interest in implementing race- and gender-conscious remedies for these impediments, the survey results provide the types of evidence that, especially when considered along side the numerous pieces of

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[322] The percentages reported in this section may differ slightly from comparable figures reported elsewhere in Chapter 8, since minorities of unknown race or ethnicity were excluded from the tallies in the mail survey.

statistical evidence assembled, the courts have found to be highly probative of whether the City would be a passive participant in a discriminatory market area without affirmative interventions.

C.   Business Owner Interviews

To explore additional anecdotal evidence of possible discrimination against minorities and women in Houston's market area, we conducted five group interviews. We met with 103 business owners from a broad cross section of the industries from which the City purchases construction services and goods. Firms ranged in size from large national businesses to decades-old family-owned firms to new start-ups. Owners' backgrounds included individuals with decades of experience in their fields and entrepreneurs beginning their careers. We sought to explore their experiences in seeking and performing public and private sector construction prime contracts and subcontracts, both with the City and in the private sector.

This effort gathered individual perspectives to augment the statistical information from the business experience surveys. In general, interviewees' individual experiences mirrored the responses to the business experience surveys. We also elicited recommendations for improvements to Houston's current race- and gender-neutral procurement policies and possible race- and gender-conscious remedies, reported below in Chapter IX.

The following are summaries of the issues discussed. Quotations are indented, and are representative of the views expressed over the many sessions by many participants.

1.   Negative Perceptions of Competence

Many minority and women owners reported that while progress has been made in integrating minorities and women into public and private sector contracting activities in the Houston construction market area through affirmative action contracting programs, many barriers remain. Perhaps the most subtle and difficult to address is that of perceptions and stereotypes. These stereotypes about minorities' and women's of lack of competence infect all aspects of their attempts to obtain contracts and to be treated equally in performing contract work. Minorities and women repeatedly discussed their struggles with negative perceptions and attitudes of their capabilities in the construction industry. Some interviewees reported that there is a stigma amongst prime contractors to being a minority- or woman-owned firm.

> There is a stigma attached to minority owned businesses. We've been in business five and a half years and our actual initial business proposition, part of our business plan, was that we were going to be a minority company that actually adds value. Because the stigma around town, especially large general contractors, was that we're getting forced to use minority contractors, women owned contractors, subcontractors I should say, to fulfill these percentages, and all I'm doing is buying materials so they're not adding any value to my project. So, we actually in our sales process now, we don't even announce that we have certifications. We win the project based on our qualifications. And that general contractor or customer wanting us, and then it's you know, kind of icing on the cake. Oh by the way, you're going to get a better percentage. But, you know, that's hard to do

especially as a new company. Without a lot of references it would be almost impossible to do. But there is, there is definitely a stigma.

Some of the G[eneral] C[ontractors]s, especially the large ones,…just assume that a minority owner is ignorant. Okay? And you have to tell them that you're not. Whether you are an engineer and you have a master's or whatever you need to let them know.

The stigma is because of both [being a minority-owned firm and being a small firm].… The problem is the perception.

[As a man,] I think being a woman I think is an advantage to be honest with you.… But I think, I think there's a little bit of a stigma there as well.… That they're ignorant, less educated than we are.

Women in particular related the continuing effects of stereotypes about gender roles and sexist behavior from male colleagues and clients.

I think geographically we are actually in a very unfriendly environment currently with regards to female and minorities in the construction industry. And in our office… sometimes there would be people, I want to talk to a man.… They weren't going to deal with a female.… I'd just said hey, you know, they're not in right now. I mean, I never argued with it. Because it is the flavor, it is the environment in some people. Not everyone. Not everyone is like that and it has improved so I don't want to say everybody that's called it was like that. But it still exists.

I was recently presenting a large Texas state job.…My junior employee, who is two years out of college, was sitting next to me and I would state, make a statement that you need to have a certain type of [equipment] and the gentleman across the table would say, [name], is that correct?… There were times that I would say, meetings would be scheduled and it would be stated, well it's okay if only [name] comes, as my male employee.… [For another contract, I was told by the client] if we go down this path and we implement this [project], and you get pregnant and you can't carry it through to fruition, what are we going to do? As if as a woman, my being pregnant would interfere with the ability to complete the job. That's not mentioning any of the, you know, okay, how are you going to climb this ladder? You're in a skirt suit.… They give you a level of discomfort to make you hesitate.

There was near universal agreement that race- and gender-conscious programs were necessary to reduce barriers to equal contracting opportunities.

Ninety percent of the work we do, the door's been opened because of the set aside programs.

If the Program didn't say I had to have a certain percent, they would care less. Now I don't know if it's because they've got, they've been in business for years and they've got friends who they fish, hunt with or whatever and they could care less.… If we let it go, they would never bring us in at all.

It's opened the doors up.

2.   Exclusion from Industry Networks

Many minorities and women recounted their exclusion from the industry networks necessary for success. Relationships are key to obtaining work as subcontractors.

> [Houston] still has the good old boy [network].… It has improved. I want to say that because 25 years ago I could not have even gone to certain meetings. I'd have to send a man just to keep credibility with the company.

> The meeting's going on. You get to that first restroom break. And three fourths of the team go into the men's bathroom.… Maybe the other person that's in the room, they're not an engineer. They're not in construction. They're the administrative person that's been scheduling the meeting and handling the coffee. And you walk out and deals have been made… And you're left out of the loop.… It happens today and it certainly still happens here in Texas.… There is a very strong good old boy network here. And, I would find that there is a significant amount of racism in Texas.

3.   Jobsite Harassment

Women and minorities still reported harassment on the basis of gender or race.

> You walk on a job site and they're asking you, you know, what are you doing tonight? You know, are you married? Things that you normally wouldn't ask if it was a business environment. And other things that I really don't want to say.… [For example], going to a prebid and hearing, you know, the men say, if you get the job it's cause you showed your legs.… I went to [a pre-bid conference] with U[niversity of] T[exas] M[edical] B[ranch] and the guy said that you need to leave, you're not welcome here.… That was within maybe a year and a half ago.

> I've been cursed out [as a Black male] in front of my people by [prime contractor] personnel].

4.   Obtaining Work on an Equal Basis

M/WBEs reported that while it is easier to obtain subcontracts than prime contracts on public projects because of affirmative action goals, it is still difficult to get work, receive fair treatment, and be paid on time. Many believed that majority prime firms use them only if forced to do so.

> Every one of our primes has told us that they would not utilize [our firm] if it weren't for the Program.

> The only time I get calls is when they're on the particular jobs [with MBE goals].

[The general contractors] love to send you the paperwork saying that they asked you to be [on the team]. But, you, it's hard as heck to actually get a job.… They have to get you to bid so that they can say you submitted a bid.

The challenges faced by all small businesses were even greater for MBEs.

A perception that small businesses don't have the infrastructure or funds to support certain efforts…[is] amplified because I am both a woman owned business and a minority owned business in addition to being considered a small business. I will speak to a particular situation that happened to us recently. It was with Harris County. We sent in a bid for a particular opportunity. Our pricing was on point, it was good. The response that we got back was, our firm was too small to support their effort.

Many MBEs had experienced hostility from prime contractors about doing outreach to minorities and women

So one particular owner, he pretty much told me, you know, I'm tired of giving my money away. And my response was, I would like to do the job. I'm not asking you to give me anything and, just to give me the opportunity to bid your work.… He would rather hire somebody else [for work the firm will subcontract].… [White male prime contractors are] pretty open [about their hostility to the MBE program].

Several MBEs reported that firms that use them on projects with affirmative action goals do not even solicit them when good faith efforts are not required.

After you've proven yourself and you've built up enough of a resume that you should, like I say, at least get a call from some of these people [who use you on City contracts with goals] every now and then. But it just doesn't happen.

Obtaining work as a prime contractor was especially difficult to achieve.

I don't want to be a sub anymore. I'm tired of being a sub. My main idea is to be the prime.

We were told [by the City] to go under these large companies. Which then becomes filtered down. So, these companies have their own policies, their own ways of doing things, and their own certification processes. So it just was so much paperwork to just even trying to put a bid in that after attempting it for about five or six of these, we said forget it. We have all the city certifications but it comes to naught if you cannot even bid for them.… I think all small firms may experience this. However, being from the minority sector it's harder to buddy up with the big boys.

5.   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 Houston and private sector construction prime contracts and subcontracts. This evidence includes

perceptions of M/WBE incompetence; exclusion from industry networks; jobsite harassment; and obtaining work on an equal basis. While not definitive proof that the City 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 Houston would be a passive participant in a discriminatory market area without affirmative interventions.

IX. The City of Houston's Small/Minority Business Enterprise Program for Construction Contracts: Overview and Feedback Interviews

This Chapter describes the City of Houston's Small/Minority Business Enterprise Program for Construction Contracts, followed by a summary of business owner experiences with these policies and procedures.

A. Minority-Owned Business Enterprise Program Overview

1. Houston's M/WBE Construction Program Litigation

The City of Houston has implemented a remedial program for construction contracts since 1984. The current policy governing the administration of the Minority/Women Business Enterprise Program is contained in Chapter 15 of the City Code, Article V.

The ordinance was first challenged in 1996.[323] To settle that case, Houston agreed in 2006 to conduct a disparity study, and to amend its ordinance to conform to the study's results. The City complied with this agreement by conducting a study and amending the Program based on its results in 2007.

The plaintiff petitioned the federal court to reopen the litigation in 2008, contending that the City had breached the 2006 Settlement Agreement. The City entered into a new settlement agreement (2008 Settlement Agreement), effective April 2009, to establish an overall, annual goal for construction contracts of 14 percent to be spent with MBEs and 8 percent to be spent with Small Business Enterprises (SBE).[324] The goal for WBEs was eliminated from the construction goals and added to the percentage for SBEs. In addition, the 2008 Settlement adopted MBE and SBE goals for specified categories of civil construction goals as follows:

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[323] *Kossman Contracting Co., Inc. v. City of Houston*, Civil Action No. H-96-3100 (S.D. Tex.).

[324] "Small Business Enterprise" means a firm whose size does not exceed the standards established by the U.S. Small Business Administration, pursuant to 13 C.F.R. Part 121, as amended. Certified minority- and women-owned firms are included. City Code, Chap. 15, Art. V, sec. 15-82.

PROJECT DESCRIPTION	MBE GOAL	SBE GOAL
Thoroughfare and Storm Sewer Relief	7%	10%
Neighborhood Street Reconstruction	9%	7%
Sidewalks	4%	9%
Overlays	13%	5%
Lift Stations	10%	8%
Treatment Plants	10%	8%
Line Work	10%	8%
Water Line Replacements	11%	9%
Large Water Line	10%	8%
Water Tanks	8%	3%
Plant Work	12%	6%
Rehab Work	12%	9%

The civil construction goals can be varied as provided in the overall Program ordinance.

In addition to the new goals, Houston agreed to maintain and implement current practices and procedures for establishing a bidder's good faith efforts to meet the goals, and to conduct a new disparity study. This Report was commissioned to meet this commitment.

2. Implementation of the M/WBE Program

a. Program elements

The ordinance provides that the policy of the City is to stimulate the growth of local majority, women and small business enterprises by encouraging full participation of these businesses in City contracting. The purposes and objectives of the Article are:

1. To increase the utilization of such local firms in providing for goods and services;

2. To provide opportunities to broaden and enhance their range of capacities; and

3. To increase opportunities for such local firms to serve as contractors, in addition to acting as subcontractors to others, where applicable.[325]

Article V establishes policies and procedures to govern program compliance, reporting of certified subcontractor participation, methods for determining participation by prime contractors and others in the Program, guidelines for imposition of sanctions, procedures for grievances,

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[325] *Id.*, § 15-81.

arbitrations and administrative appeals, geographic scope of certification, and common certification of firms in cooperation with other entities.

The policy is intended to be remedial and to continue only until its purposes and objectives are met as determined by regular periodic reviews.

The ordinance defines a MBE or a WBE as a business:

1. Which is 51 percent owned, managed and independently controlled by one or more minorities[326] or one or more women, who are citizens or legal resident aliens;

2. Which is an existing for-profit business with a significant business presence in the counties of Harris, Fort Bend, Montgomery, Liberty, Waller, Chambers, Galveston or Brazoria, Texas, and where one or more of its employees is regularly based and the firm performs a Commercially Acceptable Function.

3. Which has suffered from historical discriminatory practices resulting in impairment of its competitive position;

4. Which is a Small Business Enterprise, as defined in 13 C.F.R. Part 121, as amended; and

5. Whose owner has the skills and expertise to perform in the industry and scopes of work for which certification is sought.[327]

Certification is valid for three years, and the certified firm must provide an affidavit on an annual basis that its circumstances have not changed. If the City determines that a certified firm has become an "Established Business," it graduates from the Program in 12 months. It may appeal that determination or seek a waiver based upon its profitability, sales, ability to obtain bonding, and comparison with other firms in the same industry. A firm that graduates from the program may reapply in one year, provided that it meets the size standard (and all other criteria). A firm denied certification or recertification cannot apply for one year following the date of denial. A firm whose certification is revoked may be denied reapplication for up to five years.

Recently, the Mayor has appointed a Procurement Task Force. This group reviews the Program and provides advice about issues and program enhancements.

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[326] A minority person means a citizen or legal resident alien who is Black, Spanish/Hispanic, Asian Pacific-American (including the Indian subcontinent), or Native American. *Id*., § 15-82(6)

[327] *Id*., §§ 15-82(5) and (12).

b. Program administration

i. Affirmative Action and Contract Compliance Division

The ordinance establishes that the Program is to be administered by the Mayor's Office of Business Opportunity (OBO).

OBO has responsibility for:

(1) Establishing procedures for the implementation of this article, and reviewing and approving procedures established by City departments, such procedures to be narrowly designed to attain the purposes and objectives specified herein without unduly limiting non-minority-owned or non-woman-owned or established business enterprises. Such procedures shall be reviewed and approved by the Mayor and by the City attorney prior to implementation;

(2) Certifying businesses as minority, small or women business enterprises and maintaining an on-line S/M/W/DBE Directory, updated in real time, of such businesses, specifying the categories of City contracting represented by the certified MBEs, SBEs and WBEs;

(3) Developing educational programs for and otherwise assisting (without offering favoritism in relation to the competitive bidding system) minority, small and women business enterprises to compete effectively for City contracts;

(4) Making recommendations to the Mayor, City Council and City departments to further the policies and objectives of this article;

(5) Reviewing documentation from potential contractors and from contractors concerning good faith efforts made to meet or exceed the participation level for contracts. The final recommendation to City Council for award or for acceptance of work shall be the City department's, although the affirmative action division may take exception;

(6) Compiling, bimonthly, a report of the progress of City departments, by Department, in attaining the City-wide goals set by City Council. This report shall be based upon MBE, SBE and WBE contractor and subcontractor information, to be specified by the affirmative action division, which each department is to submit to the affirmative action division monthly. The report is to be submitted bimonthly to city council members, the mayor and all affected City department directors for their information;

(7) Receiving and reviewing complaints and suggestions concerning the MBE/SBE/WBE program from contractors, MBEs, SBEs, WBEs and City departments; and

(8) Without limiting the authority of the affirmative action division to establish procedures that are consistent with the terms of this article, the division is specifically directed to promulgate and implement procedures as follows:

a. Grievance procedures for any person aggrieved by any decision of the division under this article. The procedures shall include notice and a hearing before an impartial hearing officer who shall be appointed by the Mayor;

b. Arbitration/mediation procedures for the resolution of disputes between contractors or bidders and MBE/SBE/WBE participants or potential participants with respect to any aspect of compliance with this article, including, without limitation, any assertion that a contractor, subcontractor, or MBE/SBE/WBE has failed to make good faith efforts to comply with this article;

c. Procedures to implement and enforce any sanctions provided under this article;

d. Procedures to ensure performance of work by MBE/SBE/WBEs, which procedures shall include: (i) a requirement that no more than 50 percent of their work may be subcontracted, without a specific waiver from the division for cause; (ii) a requirement that the minority person, small business or woman owner of an MBE/SBE/WBE have the necessary experience, expertise, credentials and regulatory authority to conduct the type of business for which the business is certified; (iii) a requirement that bidders and contractors make good faith efforts to meet or exceed contract MBE/SBE/WBE goals; and (iv) a requirement that MBE/SBE/WBEs accurately represent all material information required for certification and truly perform the work they are represented to have performed;

e. Procedures for counting participation by MBE/SBE/WBEs as prime contractors, subcontractors, suppliers and joint venturers on City contracts, which procedures shall ensure that all work performed by MBE/SBE/WBEs as prime contractors is included in the computation of the progress made toward meeting the annual City-wide goals;

f. Procedures to ensure that this article is limited in its application to the certification of locally based MBEs, SBEs and WBEs;

g. Procedures to coordinate the operation of this article with other local MBE/SBE/WBE programs, which may include reliance upon certification procedures of other entities that are determined to be reliable and equivalent to this article; and

h. Procedures to ensure access to necessary records of prime contractors and subcontractors on City contracts.[328]

The Division has two operational sections: Certification and Business Development and Contract Compliance.

Of relevance to this report, the Certification and Business Development Section:

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[328] *Id.*, § 15-84.

- Provides management and technical assistance and other support services for M/W/DBEs and other small firms.

- Administers the One Stop Business Center, which provides permitting, licensing and regulatory information, SCORE counseling and small business workshops.

- Initiates and participates in community outreach and networking initiatives.

- Conducts weekly pre-certification workshops.

- Administers the City's Small/Minority/Women/Disadvantaged Business Enterprise (S/M/WBE) and Persons with Disabilities Enterprise (PDBE) programs, including the production of the online S/M/WBE Directory.

- Investigates companies applying for certification.

- Maintains files of applicants seeking certification.

The Contract Compliance Section's responsibilities include:

- Conducting workshops to educate contractors on labor compliance standards and requirements.

- Training contractors on on-line reporting systems.

- Auditing certified payrolls to verify payment of prevailing wages on City construction contracts.

- Attending construction pre-bid and kick-off meetings to inform prime contractors of their prevailing wage and S/M/WBE (if applicable) responsibilities.

- Conducting job site visits to interview and observe workers.

- Investigating wage underpayment and EEOC allegations.

- Monitoring contractors' S/M/WBE utilization.

- Processing S/M/W/DBE deviation requests.

- Processing contractor underpayments and penalties.

- Evaluating and rating construction contractors on prevailing wage compliance and S/M/WBE utilization.

- Implementing close-out and evaluation.

- Conducting spot audits.

In addition to the two operational sections, the Senior Community Liaison and the Staff Analyst are assigned to the Assistant Director. This team is responsible for:

- Providing Ombudsman services for S/M/W/DBEs.

- Providing contractor dispute resolution services, including mediation and referral to binding arbitration.

- Initiating and participating in Community Outreach and networking initiatives.

- Processing requests for zero percent M/WBE goals, and assisting departments with goal setting.

- Reviewing contractor good faith efforts submissions.

- Working as a liaison between prime contractors and S/M/WBEs.

- Serving as on-site consultants for business planning, etc.

- Administering the Guiding Protégés to Success Program.

- Implementing special projects.

- Monitoring compliance with the Pay or Play program.

To carry out its responsibilities to review certification applications and maintain program integrity, OBO provides extensive information on eligibility and application procedures and standards online. OBO also hosts certification workshops to assist firms in understanding the requirements and filling out the paperwork.

OBO maintains the Directory of certified firms, including all contact information and the categories of contracting capability in which the firm is certified. The Directory is available online and is updated on an ongoing basis.

An applicant may appeal a denial of eligibility. A firm denied recertification may not apply for one year following the date of denial. A firm whose certification is revoked may be denied reapplication for up to five years.

When OBO receives a complaint alleging that a certified firm is ineligible, it will:

1. Send a written notice to the firm outlining the complaint, and summarizing the grounds on which the firm's eligibility is being questioned.

2. Institute an investigation based on the complaint, reviewing all available information. The OBO has the right to request additional documents and conduct a field investigation.

3. Send a letter specifying the outcome of the investigation.

OBO provides programs and services on a race- and gender-neutral basis to increase the capacity of all small businesses. Services include:

- Providing management and technical assistance and other support services for small firms.

- Weekly pre-certification workshops for all prospective registrants.

- Informational documents for bidders and subcontractors.

- Quarterly newsletters.

- Ombudsman services for assistance, information and dispute resolution.

- Periodic seminars/workshops on financial planning, construction management, grant writing, the bidding process, marketing, bonding, business planning, and insurance. Several of the seminars/workshops may highlight majority firm representatives and/or certified firms as participant-leaders.

- Programs to assist M/WBEs and others to increase capacity and bidding opportunities, such as the annual Government Procurement Connections conference and the Guiding Protégés to Success Program.

- Administering the One Stop Business Center, which provides permitting, licensing and regulatory information; SCORE Counseling; comprehensive regulatory assistance and counseling for new and existing businesses; and small business workshops.

- Initiating and participating in community outreach and networking initiatives.

- Hosting and supporting outreach functions and programs that enhance small businesses' abilities to do business with the City.

- Partnering with other agencies to provide programs and services that foster the growth and development of small firms.

- Providing surety bond support and other business development assistance to small firms.

ii.   User Departments

Goals on individual solicitations are set by the user Departments and they are responsible for monitoring contractors' compliance with the goals. Goals are set by user Departments, with assistance available from OBO upon request. Low percentage and zero goals must be approved

by OBO. By City ordinance, goals on construction contracts are set only if the cost is estimated to be greater than $1 million.[329]

PWE has set up a Small Business Development Group to assist M/WBEs and SBEs. The group seeks to provide contracting information to M/W/SBEs; provide education and outreach and serve as an advocate for M/W/SBEs; assist prime contractors identifying certified firms; and setting realistic goals for PWE contracts.

Goals on construction contracts are based upon the agreed percentages in the 2008 settlement. Goals are not required to be set if:

1. The Department Director determines that there is an emergency;

2. The service or goods requested are of such a specialized, technical or unique nature as to require the City Department to be able to select its Contractor without application of affirmative action provisions;

3. Setting goals would impose an unwarranted economic burden or risk on the City or unduly delay acquisition of the goods or services, or would otherwise not be in the best interest of the City; or

4. There is little M/WBE availability for the scopes of work of the contract.

These standards provide administrative flexibility on a contract-by-contract-basis so as not to limit access to City contracting by nonminority male-owned businesses to a greater degree than necessary to meet the City-wide annual goals and the policies and objectives of the Ordinance.

iii. Meeting goals

Prime bidders can receive credit towards contract goals only in those scopes of work in which the MBE or SBE is certified. However, a blanket cap of 10 percent of the subcontract value is imposed for services for which a commission is paid (*e.g.*, procuring travel services).

Only 50 percent of the overall goal can be met using suppliers. If the overall goal is 20 percent or less, then no more than 10 percent of the goal can be met using suppliers.

A contractor may receive credit for participating in a joint venture agreement with a certified firm. In determining credit, the Director of OBO shall review all contractual agreements regarding:

1. The initial capital investment of each venture partner;

2. The proportional allocation of profits and losses to each venture partner;

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[329] Id., § 15-82.

3. The sharing of the right to control the ownership and management of the joint venture;

4. The actual participation of the venture partners in the performance of the contract;

5. The method of and responsibility for accounting;

6. The methods by which disputes are resolved; and

7. Other pertinent factors of the Joint Venture.

Based on these factors, the OBO Director determines the amount of joint venture participation, if any, that will be credited towards the applicable goals of the project.

Where a certified firm is the prime contractor, the City counts 100 percent of the amount of the contract toward the applicable annual, City-wide goal, but the certified prime contractor is required to meet any applicable contract goal, *i.e.*, it cannot count its self-performance towards meeting the goal.

A prime bidder must submit a Participation Plan to be considered "responsive" to the invitation for bids. While a contractor need not meet the goals, it must demonstrate it made good faith efforts to do so. For most construction contracts, the apparent low bidder has 10 days to submit the MWBE participation schedule, letters of intent, and other relevant forms. Approvals of Good Faith Efforts are granted when bidders properly document the request. Documents that must be submitted for a bid to be deemed "responsive" include:

1. A list of proposed certified and non-certified companies for subcontracts (the Participation Plan). All firms proposed for goal credit must be certified prior to bid date.

2. A Utilization Schedule and/or good faith efforts documentation, if the goal is not met.

3. Letters of Intent signed by the prime contractor and the subcontractor(s).

4. Proposed M/WBE Utilization Timeline.

The bidder must designate a M/SBE Liaison officer who will administer the Plan and be responsible for the maintenance of records to establish good faith efforts.

iv.   Contract performance

After execution of contract or receipt of a purchase order, the contractor must comply with the submitted Participation Plan unless it has received approval from the Director of OBO to deviate from the original plan approved on the Request for City Council Action. To make changes to the Plan, either by substituting a listed subcontractor or adding new M/WBEs, the prime contractor must make the request in writing to the OBO Director. The City then requests specifics from the prime contractor, and contacts the subcontractor. If the latter does not agree to the substitution, the City will attempt to reach agreement between the parties.

The user department is responsible for monitoring progress towards meeting the contract goals. Historically, the OBO was primarily responsible for monitoring M/W/SBE participation. However, in recent years, the Departments have assumed more responsibility for this function.

The contractor is responsible for maintaining and submitting certain records, including:

1. Monthly Invoice Reports by the 15th day of each month to the contracting Department's contract administrator/project manager, with the total amount invoiced and allocated for each M/WBE subcontractor. This document must be submitted with monthly pay applications/invoices; and

2. Monthly subcontractor expenditure reports by the 15th of each month, online, into the system, on actual payments to subcontractors.

The prime contractor is responsible for reporting payments into the monitoring system within 10 days after payment from the City is made for work performed by any subcontractor.

Subcontractors who have not received payment may contact the OBO Ombudsman for assistance, or file a written claim with the prime contractor's surety company.

The prime contractor must submit all disputes that cannot be resolved through informal means to binding arbitration as set forth in City procedures and the Letter of Intent with subcontractors.

OBO maintains records to identify and assess contract awards to certified firms, and prime contractors' and Departments' progress in achieving contract goals and annual goals. AAD submits bi-monthly reports on certified firm contract activity for all construction, purchasing, and professional services awards to the Mayor, City Council, and Department Directors.

v.   Sanctions

The Director of OBO is authorized to suspend any contractor who has failed to make good faith efforts to meet any goal from engaging in any contract with the City for a period up to, but not to exceed, five years. The Director is also authorized to suspend any certified firm who has failed to make Good faith efforts to meet all requirements necessary for participation in the Program from engaging in any contract for a period of up to, but not to exceed, five years. The suspension must be based on specific conduct that is inconsistent with or in direct contravention of specific applicable requirements for good faith efforts. In determining the length of any suspension, the Director shall consider the following factors:

1. Whether the failure to comply involved intentional conduct or may be reasonably concluded to have resulted from a misunderstanding on the part of the firm of the duties imposed by the Ordinance and Program procedures;

2. The number of specific incidences of failure to comply;

3. Whether the firm has been previously suspended;

4. Whether the firm has failed or refused to provide the Director with requested information;

5. Whether the firm has materially misrepresented any applicable facts in any filing or communication to the Director; and

6. Whether any subsequent restructuring of the subject business or other action has been undertaken to cure the deficiencies in meeting applicable requirements.

Suspensions may be for any length of time not to exceed five years. Suspensions in excess of one year are reserved for cases involving intentional or fraudulent misrepresentation or concealment of material facts, multiple acts in contravention of applicable requirements, cases where the firm has been previously suspended, or other similarly egregious conduct. Decisions may be appealed to a hearing officer or to the City Council, whose decision shall be final.

B.   Business Owner Interviews

To gather anecdotal evidence of the effectiveness of the City's current and past M/WBE policies and procedures in opening up opportunities for all construction firms, we interviewed 103 firm owners or representatives. The following are summaries of the issues discussed. Quotations are indented and are representative of the views expressed by multiple participants. Highly repetitive or idiosyncratic comments were not included.

1.   Perceptions of the Program's Overall Effectiveness

In general, minorities and women reported that race- and gender-conscious contracting programs are needed to ensure full and fair access to government contracts. Being certified created opportunities that otherwise would not have presented themselves. M/WBE requirements were seen as vital to the continuing viability of their companies.

> This Program has helped me quite a bit.… The City is doing a good job.… [A large contractor] approached me…said hey, we'd like for you to be a part of this team. We're going for a City contract. They won the bid.… I got involved in the contract and [am] getting paid in a timely manner. I have zero complaints.… That company has approached me for continuing on and doing other business with them because of the quality of the service that we have been providing. So, all I wanted was the opportunity.

> I think our company, in particular, is a testament to the Program that it works.

> It's been fabulous.

> I've been fortunate enough to been helped by the City, by the minority participation, and by a lot of the general contractors.

Some general contractors were candid that they usually use M/WBEs only on goals jobs.

> The only reason that I subcontracted with people in half the cases is because I had a goal that I had to meet.

Not all M/WBEs had found the Program to be helpful.

> The City has these programs and these meetings. Come out, meet the contractors, blah, blah, blah. If you don't know Mike Smith who's in the estimating department for some type of reason…there's not going to be any work. So, I kind of feel like it's this dog and pony show that goes on.

> I can tell you, don't even try this WBE, MBE, DBE stuff. It doesn't work.

One contractor cautioned that the Program provides access, not contracts.

> Because you're certified with the City of Houston…that don't guarantee you no work. The only thing it does guarantee you is the opportunity to talk to the prime.

White female owners had received much less work since they were removed from the Program in 2009. The SBE Program was not an adequate substitute.

> Integrating this SBE totally discounts what the initiative was in the Program. And so it's confusing a lot of people and there's a lot of, I guess, animosity going on.

> There was this mad rush to create new companies. All these new companies were formed with the same people that were with the larger companies and they…met the financial criteria. Now, all of a sudden, they're participating in the SBE program. The level of competition became really fierce. Not just because the economic times had reduced [opportunities]. It's because a lot of new companies were formed

Some general contractors also complained that WBEs were dropped from the Program.

> There are some very good WBE contractors out there that are no longer counted on the MBE side.

> When the judge threw the women out the last time, well, that just killed us. Because, like, all my trucking [was with WBEs]

Many minority and women owners who want to do prime contract work were frustrated at not being permitted to count their own participation towards meeting contract goals.

> [Permitting MBE prime firms to count their self-performance towards meeting the goal] would be a blessing.

> We don't have a problem hiring and subbing out because we do all the time, but not to get credit for the work that we're doing ourselves is something that's just not fair.

The City of Houston's Small/Minority Business Enterprise Program for Construction Contracts: Overview and Feedback Interviews

One large general contractor agreed that it is important to count MBE prime participation to grow firms' capacities.

> Count everybody always. And you need to count whether they're a prime or whether they're a sub.

Some prime consultants reported that they use M/WBEs who are good in non-goals projects.

> We've used him three or four times since [using the firm to meet a goal]. Never knew the person, never knew the company before that. Did us a great job.

> We have good subcontractors that are M/WBE or non-M/WBE, we let them do the work.… We have two asphalt people do work for us and both of them are M/WBEs.… What this business is about is building relationships and trust between contractors and subcontractors.

> I was using the same minority subcontractors before they even had the Program. But they're good people and they do good work. And I never looked at them, you're a minority. Some of them when they told me they were minorities, [I] said how did you get that [MBE certification]? Oh, my mother was an Indian

Several general contractors, on the other hand, believed that the Program should be rescinded.

> I think this entire Program should be scrapped. I think it's a huge waste of time and money.… The Affirmative Action department…[is] just like standing around.… All it is, is oversight and government intervention in free enterprise. And it's cost our company a lot of money.… They are coddling minorities. They are not helping the minorities to stand on their own two feet, which they need to learn to do. They need to improve their business practices. They need to get out there, bid on jobs. They need to develop relationships with contractors. They need to perform. And I don't really think there is prejudice… if you do a good job. We have some Black subcontractors that we love, we love using them.… [Blacks] need to get out there and compete in the free enterprise market, which is what America is all about. They've had the educational opportunities. They need to better their families. They need to better their morals, values, and goals in life. They, their whole society is falling apart. They're…having kids all over the place and not supporting them. Only twenty percent of Black families have a man, father in the house.… It's a social problem and I don't think you can fix that or I don't think you should fix it by forcing businesses to interact with…firms that aren't really interested in doing much.

> How much is enough? How successful a program do you have, 26 years, 2½ billion dollars [subcontracted to M/WBEs], ten people graduate?… We're tired of working with a system that is never going to work the way it is right now. If it goes forward, the same old, same old, same old going forward it'll never work.

> If we're not going to fix it…let's scrap it. I'm tired of it.

Some problems were common to all firms, regardless of the race or gender of the ownership. Large contracts were one example.

> If we can unbundle, that [will] make it better in this area for our folks here in Houston.

> Our experience has been that at one time we got quite a few contracts as just a contractor, the general contractor. Then, all of a sudden, they started lumping these all together and making them multiyear so you have to have this bond, you have to have. So, it really just kicked out a lot of small businesses.

Another universal challenge was slow payments. Subcontractors felt that prime contractors hold their payments and general contractors felt that the City pays too slowly and creates unnecessary and burdensome paperwork.

> It just takes enormous time, you know, to get answers from [the City] to find out, where's my money?

> Payment is an issue for every subcontractor. It's the number one issue when we survey members [of the MBE association] across the country, the same thing, payment, payment, payment.… It's not, it's not specific [to minority- and women-owned firms]. It's just across the board.

> When I have given [work] out [to subcontractors] I have actually come out of my pocket trying to cover the sub because of a lack or the slow pace the City has paid us and some of these little guys just can't float it.

Obtaining surety bonding was a major impediment to all small firms.

> [As a white male,] I worked for a M/WBE. It was woman owned, minority. And we never got any work because we were a minority company. We got work because of our effort and our quality of service. One of the ways we didn't get work because it was such a small company was because we couldn't bond. Finances were there, just not enough finances. I mean, they were making money.… The biggest help [to M/WBEs would be] first, the city [should] contract direct[ly with them as prime contractors]. Second, the city [should] help them with their bonding. Because what we're finding out now is…a lot of the larger contractors…are requiring me to bond.

2. Certification Standards and Processes

Overall, most M/WBEs found the system to be rigorous but tolerable.

> I commend the City of Houston because if…you weren't actively participating in that job or in that, that company, you couldn't get the certification. Or either you would get the certification as a woman-owned business broker.

> They make it difficult [to get certified].

A few owners complained that the paperwork to prove their firms are legitimately minority-owned was so burdensome that they dropped out of the Program.

> I dropped out of the program [after five or six years] because it just got too draconian in terms of paperwork. Every year you had to submit paperwork, and tax returns and I didn't think they needed to know all that.

> We went through so much that we just got discouraged.

Some women argued that the woman or minority owner should not be required to hold the firm's professional or trade license.

> [The] requirement [that the minority or woman owner hold the professional or industry license] is irrelevant.

> I have that same issue. I don't hold a [industry] license. I employ [trade]. I know women who…have been actually turned down by the City because they don't hold an [industry] contractor's license. And I truly believe that most restaurant owners are not chefs. But, I think that it goes to the heart of race and gender bias that they hold it against the owner because I know lots of men that own [industry] companies that have never been a [trade]..

Several non-M/WBEs questioned whether many City-certified firms in fact are disadvantaged, and therefore are either ineligible or are "fronts.

> Some of the largest minority contractors with the City of Houston have been doing business with the City and very successfully for many, many years.… It's actually defeating the purpose as far as I'm concerned to take a successful business and list them as a minority, as a disadvantaged business.

> Contractors get around it by putting their names, their wife's name on the [business].… I know the guy forever and he's like, oh yea, we're a woman-owned business. I'm like, I've never even seen your wife in the building.

Accepting only the DBE certification issued under the U.S. Department of Transportation's DBE regulations was one suggestion to ease the confusion about what certifications would be accepted by the City and ensure that owners are truly disadvantaged.

> We get companies that don't know what classifications they are.… It's amazing the number of certifications that are out there by the different government agencies that are producing work.… Follow the federal specifications. Then everybody falls under one goal, no matter if it's federal work, state work, or city work.… We're following thirteen certifications.

> When you do talk to a sub to know that they've got the right certification because they've gone to that one agency to get certified [would be helpful].

> I know guys that have got 50 and 100 million dollar net worths that have M/WBE, SBE certifications.… I think what they should do…is uniformly apply the qualification standards. Follow the federal regs.… The teams that the City of Houston have that are currently certifying M/WBE, SBE subcontractors are politically motivated.

Some general contractors believed that competent minority-owned firms do not want or need to be certified.

> You'd be surprised at the minority or so called minorities that are out there that absolutely refuse to get in the Affirmative Action program. I have, I have one guy, a Black gentleman that does a lot of my trucking that I have known for 28 years. And try to use him wherever I can. I cannot get him to go down there.

> I asked [a general contractor] why he never got on the minority. He said, what do I need that for? I was successful enough. I didn't need to be a minority.

> A lot of the people that are not M/WBE [certified] are not there because they don't want to. They don't want to fill out the paperwork.

> There are certain companies out there that are very good companies and I think that they do very good work. There's confidence in the companies that they can perform and produce the work at a very good price. They don't want the certifications. They want to stand on their own two legs and produce the work that they can, that they're, the way they're running the business.

One non-M/WBE participant said minority-owned businesses are stigmatized by being certified.

> There are a lot of GCs that will attach a lazy title to the M/WBEs. Because they…automatically say that if you're an M/WBE, you just want us to give you the work. So, a lot of times some of the stronger small businesses, minority owned businesses, they're like, well I'm just going to do it on my own. Because I don't want them to think I'm asking them to give me anything.

3. Meeting MBE Goals at Contract Award

The goal setting process and meeting contract goals elicited many comments. M/WBEs reported many obstacles to receiving fair treatment in seeking subcontracting work.

For example, although construction invitations to bid are usually open for a minimum of one month, with extensions up to two months or more at the discretion of the project manager (for example, when bid specs are changed), one practice mentioned by M/WBEs is prime bidders wait until very close to the submission deadline to solicit bids so as to create the appearance of making good faith efforts while ensuring that subcontractors cannot adequately respond.

> [Prime contractors finally solicit MBEs] with three days to turn [the quote] around.

> By the time you get there to get the plans to estimate it, you don't have the time [to properly prepare a quote].

The ability of a prime bidder to negotiate with MBEs after being named the apparent awardee puts the subcontractors at a major disadvantage.

> [The prime firms tells the MBE] you're on the contract, but…really need you to get lower. Well, I thought my bid was part of the winning bid.… They beg you down in effect to where you say…let me get off this contract because I can't go down that low. I won't make any money..… Then, that contractor could come back and say, well we gave them the opportunity, but they decided they didn't want it. So, therefore we self perform or we gave it to somebody else that they had probably had all along.

In contrast, general contractors reported that despite their best efforts, it was often difficult to meet goals. This problem was reported to stem from several sources.

First, many non-M/WBE prime contractors stated that they believe the goals are too high.

> The percentages are very high on projects where, you know, we have bid items that can range up to 60 percent of the project. It's very tough to get participation for the remainder especially if you sub some of that portion out.… I'm pretty sure that we didn't meet the goal.

> It's impossible to get 20 or 30 million dollars' worth of M/WBE [or] SBE participation on a project.

> There's just too thin a group in our civil work that can do our kind of work that are ready, willing, and able.

> Why would the City say you have to bring in 15 percent participation on a build where the project is obviously not a minority or woman owned supplier and there's no way to meet a goal?

Next, prime bidders often received an insufficient number of quotes from M/WBE subcontractors.

> It's doing that good faith estimate because it takes days and days and you're faxing and e-mailing and keeping records and calling and, and like a 150 people you might contact and maybe five will even call you back. And then you're required to follow up so you got to go, did you get my fax? No, no, we didn't get it. You know, well may I have an e-mail address? Okay. And then you never hear from them or they might call the day after the bid.… Step up to the plate people.

> It really got crazy because what end up happening is that you put so much effort and time in trying to meet their goal, you're really losing perspective of what you're trying to do. You're trying to build a project. You know, you're out there. And, and to me, what I have experienced is that, the fact that we try. It wasn't for lack of trying. We hosted meetings.

We even had prebid meetings. We invited the subcontractors out. We did everything that we thought was right. But because we were way low with that one we had to do a second pass through. And when we still, all throughout the project we did things to try to get the goal up. Whenever there was a change order in one of the things we did, we went back out and tried to get, once again, more city participation. It's just not as easy as it seems. I don't know if the subcontractors are intimidated by bid, building or bidding such a large GC. I don't know what the situation is.

You sit down, you write the notes, you fax to everybody. And if you're lucky, you get a phone call back.

I can send out an e-mail to all two thousand people. I might get five people to respond. And their response, we don't do this type of work.… We're buying from major corporations and they're not on the list.

We have what's called meet and greets where we invite the small businesses in to introduce themselves to our company. And in hosting a meet and greet, I can send off over a hundred invites. I give one specifically for the City of Houston subcontractors. And after sending out over a hundred and some invites, I have probably five or six firms to show up.… I know what we're doing to try to get their participation. I don't know what the disconnect is. I wish I had an answer for that.

There's not enough MBE WBE people out there to do our work.

Why don't the City at least contact [MBEs] and say, why didn't you price that project? We're out here fighting for you and we've got these major GCs saying that you're not pricing the work. What's the problem? Because you're coming back and crying to us saying that they're not giving you the job.… What we have to do is find a way to eradicate some of the excuses. You know, there's going to be excuses on the major GC part because they're tired of going after these subcontractors. They're tired of doing the same thing. And it takes time and effort to solicit it. Especially not to get a response.

One explanation offered for the dearth of bids was that M/WBEs lack the skills to prepare proper quotes.

We ask a lot of information, we ask about their financials and everything. We're trying to see how strong they are. The last thing we want to be associated with is causing a small contractor to go under due to a project that we have awarded to them that was much more than they could handle.… We offer our preconstruction department to help you if you have an issue when you're there doing the takeoff. What we just, what we have to do is to let the small business minority owned woman-owned businesses know, is that at least start [to quote].… Sit down with the estimator, go through the plans and specs. If you have a question, ask them. We can't even get them to do that in a lot of situations.

For all the subcontractors, be it women owned, minority owned or whatsoever, a lot of it is for lack of knowledge. You know, a lot of them are just getting in the business or they haven't been in the business that long and so a lot of times they don't even know how to

> properly do a takeoff. One of the things that the association that I'm a member of does is offer them assistance in that. You cannot go to a GC and just because you're a small subcontractor expect them to give you the square footage or the takeoff.

> A lot of the people that we use, the problem may be education. That they don't know how to put a bid together.

Another problem was that many M/WBEs claimed to have expertise they in fact lacked or could not fully perform at the levels required.

> We've bid a lot of jobs where we've done, try to do good faith efforts. And when you get five, eight responses out of 180. That tells you that ready, willing, and able is really not there.… There's a lot of people in that directory that can do laying carpet, building bridges, laying sanitary storm sewer, and put ceiling tiles in. They check every box in the world.

> I hear complaints from my [contacts] fairly regularly that well, I can't get the job done because so-and-so's left my job to go work over here because that's a bigger portion and they're paying more so now I'm hung out to dry or I didn't hit my goal because you know, this guy walked off the job or we can't get him to reply.

> The same subcontractors work for all of us of a certain capacity and if your job starts kind of falling behind and you happen to know that he's over on another one of the primes that you know very well, you pick up the phone, you call the prime and say, hey I need a little, I need you to cut a little slack. I need to finish some work on my job and generally just sort of self police ourselves.

> If you can pamper them on a little bit and get them through that project then you meet that goal and then you don't get scolded from the seventh floor.

> Sometimes with the smaller minorities with the way things are, it's really tough to get them to perform…as much as you need them to perform. But, you know, we work closely with subcontractors.

> A subcontractor signs up for every possible scope that's out there when they're not qualified. A perfect example would be I had a subcontractor come in the other day, young lady, M/WBE, told me that, she was 21 years old, she told me she was a general contractor. A mechanical contractor.… I believe as a rule in the City of Houston [the Program is] a scam.

> If you have a guy in the construction business that can operate a backhoe, and he decides to go into business because he can run a backhoe and he can supervise a crew, but he doesn't know anything about putting a bid together, he doesn't know anything about bonding, he doesn't know anything. Well he's got to work a little bit longer to get a little bit higher up in a company to learn a little bit more. He doesn't, shouldn't be allowed to just go out and say, okay, I've set up a company.…And now if I screw it all up, contractor, you come fix it.… We got to have a program that, that maybe even requires

them to have some legitimate experience before they get to set up a business and be
qualified.

Well guess what? [The goal is] mostly being met by the entrepreneurs that have come up
in the non-Black and Hispanic communities. The Asians are the ones that can do math
and arithmetic.

Several general contractors stated that the problem is an "entitlement" attitude by minority
contractors.

Subcontractors especially in the African-American community consider subcontracting
work an entitlement. They don't need to put in the bids.… At the end of the day, they'll
wait and see who wins the bid, which prime's going to get it, and then come back behind
and say, hey, I'd like to do this for you and here's my price.

There needs to be more responsibility placed upon the subcontractors to perform as a
legitimate company… You're lucky to have me here is kind of the attitude that I hear
from a lot of my [contacts] that is put forward by some of the [MBE] contractors.
Especially some of the better ones that know…the pool is incredibly thin in the market
right now.… They know that they're the best qualified people to do the work, and they
have you over a barrel.

A lot of people want to have work given to them as opposed to bidding the work to us.
We all have to hard bid our jobs. You know, I'll get some calls after the fact, well can we
do that for you? Well yea, you know, if you're interested, quote it. And sometimes they
don't want to put the effort, the work effort in. Or they don't know how sometimes.…
The last three years we've bid 15 City jobs and I get 8 to 15 responses for 180 e-mails.

They're the guy on the back hoe who said…I'm tired of working for this white guy. I'm
going to go do it on my own. And somebody said, hey, you know, we can get you an
M/WBE and people just call you and give you all kinds of work. That sounds good as
long as I don't have to do anything [to get work].… They're okay with doing the work.

We'll get the calls [from M/WBEs] and they'll say, what are you going to give me? And
we don't give anything. You earn it.

Increased prices were reported by some prime bidders to meet goals.

Sometimes we have to inflate our bids to cover some of the minority goals.

While MBEs' experiences often differed markedly from non-M/WBEs, one area of agreement
was the prevalence of the use of "front" firms or "passthrough" firms to create the appearance of
participation, at least in the past.

I was a member [as a WBE] for about twelve years for a national general contracting
network group and I was at roundtable focus groups and, talking about Affirmative
Action. And it was very explicitly expressed, a lot of the southern companies would say,

you know, we only use women or minorities because of the percentage we get. And if we can create a passthrough, we will do so. However, they did elaborate that there's a lot of minority companies who don't want the work. They just want to be a passthrough to get a percentage.

Every single one of those clients has told us over and over again, we'd like you to do less work. How about if we take some of the work back and we run it through your company? And I refuse to do it. So we get work because of the set aside program and then they don't want us to do the business. They want us to be a passthrough.… they say, if you won't do it this way you won't get to be a sub on our contract. And oh, by the way, we're the ones with the existing relationship therefore you can't get any work unless you play our way.

People have asked to do the pass through. Don't care to do that.

There are fronts. I have had GCs come up to me and say, well, all we need is your license, your [MBE] certifications, and you'll be able to sit back and relax.… We'll get you a office and everything else.

A sheet rocker gets a contract for the steel because they're minority, that's the problems that I've been seeing.… A trucking company gets a bid for a steel project.

Several general contractors agreed that they have used pass through firms to meet goals.

You cannot meet goals with legitimate M/WBE certified contractors in Houston. And if you do, how many times have you bought concrete where you had a minority selling the concrete to the general contractor, making 50 cents a yard?… That's not the goal of the M/WBE program. And that's what you're talking about when you got a guy that does carpet, heavy highway, you know, mechanical and every other type of construction.

These goals we have with the size jobs we're doing, you can't make it. You're going to be…hiring, buying concrete from a minority going through a major concrete supplier, you're going to be buying side work from a sponsored person, a guy that's getting paid ten thousand dollars a month that's doing nothing.

There is a great deal of political pressure that's placed on the contractors through the M/WBE program.… The City got spoiled. For years…we built the pass through system that's in place today, the contractors did. We agreed. And the City supported it.… For years that worked until the…City said, oh you're hitting the goals so we moved them up.… Well, it got to the point where that broke and we finally had to fess up and say, this is how they've hit the goals all these years.

You would get 50 percent of your goal with materials. Those material suppliers that you bought from have no inventory, have no trucking capabilities, have no nothing. They pick up the phone, and they call and say, deliver this to XYZ Contractor at this location and send me a bill.… Business has fallen on hard times. Where they used to ask you for three percent [for brokering materials, now] it's two and sometimes down to one [percent].

> [As a supplier of construction materials,] we give [the MBE] two percent….And it's just a pass through, basically.

> If this Program had a commercially useful function tag to it, it would be a disaster. And I bet you that the majority of the dollars have been misspent with people who do not have a commercially useful function.

> We can get shams…. But that's not how I thought that this was supposed to help people. Pick people up by the bootstraps and give them a helping hand to get started in business.

> Some of our larger contractors got a wife that's in the business…. So, we do a passthrough with her.

Several prime bidders urged the City to allow them more time to negotiate with M/WBEs after the bids are opened.

> We think it'd be a lot easier if we could name those participants on the award, you know, at the time of award instead of trying to structure everything in the bid to conform to the goal.

> You've got two hours, whatever the case comes to be and you're still required to make a goal and you don't have, you don't have any idea. You get commitments from people to do the job but by two o'clock that commitment never comes. And so now you're stuck trying to meet the particular goal and, and within 24 hours you can't hardly determine what the scope is, what the price is, and what your participation is going to be.

Another recommendation to address the problem of obtaining subcontractor participation was for the City to rate or pre-qualify MBEs.

> We have suggested in the past that…there be a subcontractor rating system that the prime contractors can file with the city to grade performance of the subcontractors to actually put them on task,… make [the City] responsible for something. Because as it stands right now…the subcontractor is not responsible. They can do a terrible job and walk off and still say pay me.

> A recommendation to correct that problem would be to have the City prequalify the DBE participants [for a particular contract] prior to the job going out.… It would allow us to stretch the time out [after bid opening to solicit MBEs]. It would also address the capacity issue.

> What I'm looking for is more of a historical rating.… In other words, this M/WBE has got one star but this guy's got four stars.

Bonding assistance from the City was another idea mentioned by some general contractors.

> It's really not about the minority any more. It's not about that. It really is about small business getting ahead. And if we can get this small business ahead and that includes

financial incentives. TxDOT has a bonding ability. If you're doing TxDOT roads. Why doesn't Metro have that ability to set it up somehow out there where they help people. Why doesn't the city have that for the small people?

However, there was not much support among general contractors for mentor-protégé initiatives.

Probably all the contractors and all the engineers and everybody else in this room does that and it doesn't, we don't call it mentor, we don't call it any, it's just, we call it working together, we call it partner. You know, we don't call it anything it's just business.… We do it and then it gets just thrown in our face.… It hasn't helped.

The Program's artificial.… If you go out into the private sector, normally, and somebody goes into business, about 85 percent of the people that go into business go out of business.… Because of the M/WBE program, we have people that we're shoring up, that we're keeping in business who are not good business people. And I can sit down with them forever.… I'm not going to teach them how to run a business. They've got to be able to do the business first. And what happens now is we have a large number of young minorities, all races, who get their license, are out for a couple of years and say, I'm going to go start a business and I'm qualified to run a business.… They can't sustain themselves outside of the public sector. And any time you put an artificial program together you cause that.

A few general contractors urged the City to set aside prime contracts solely for bidding by M/WBEs as a way to alleviate the problem of meeting contract goals.

What they really need to do is…set asides. Jobs for [M/WBEs]. The City needs to be their coach, their monitor and know all about them and then move them up and say, okay, you're ready to be out of the setaside group. You go out and bid your work on your own now.… Then, they graduate into a group where the general contractors are comfortable that they've gone through this program and they are capable of doing what they say they can do [as subcontractors].… What that would do is let them immediately let their light shine, and they would be dependent on their selves. They would learn the skills of running a business, the skills of bookkeeping.

In response to these issues, several participants stated that they had been able to obtain waivers of goals based upon having made good faith efforts to meet them.

We have done a job recently where we did obtain a waiver. We did a good faith effort. It was fairly exhaustive but we did get it approved. I think that was a big step for the City. But it does take a lot of work and it does take a lot of, a lot of, a lot of time.… We sent e-mails and faxes to all those people. And we got seven responses.

We have had to have goals reduced. Like they would originally say like 20 to 25 percent and we can say look, we did this good faith estimate. All we can get is like 9.5 percent.

More flexibility and assistance regarding waivers has been forthcoming recently from the City.

Now they will [grant waivers]. Used to be there was no good faith effort.

Now I have had situations where asked when I was trying to meet a particular goal on a City of Houston project. I've contacted the Affirmative Action department and they have reached out to their subcontractors themselves to ask them, or to tell them, you need to contact [my firm] and price their project.… If you reach out to [the City] and tell them, okay, we've reached out to all of these subs that's on your list and we're not getting any feedback. Do you have any subs that you've used before in this capacity that we can probably reach out to? They will provide you with some information.

Others found the waiver process to be burdensome and capricious.

They don't like you turning in the good faith efforts. They don't like being shown that the pool's thin. They don't like you pointing out that they haven't done their job. And it makes them look bad.

There's no value given, not much value given to good faith effort.

They need to clean up their list.… I'll show them the quotes I got and I'll show them who I used and my percent. And I'm way below what they say but I'll do my good faith effort. I turn over my package. And then I get a call and said, you didn't meet your goal. Well, they never give that package to the people that make the decision. So then, I have to print it again, bring it down there, sit with them. And then they [say], oh, this looks great. They don't do a very good job

Reviewing bidders' good faith effort resulted in unacceptable delays and resulting higher prices for some prime contractors.

We advertise. Sometimes we get one response, sometimes we get three. We get responses out of the groups that we work with all the time because they're very dependent and loyal to us. And we turn in the bid and we list those people that bid with us. It goes to Affirmative Action and it sits. And it sits and it sits and it sits. And it jeopardizes the job because the City will come back to you after sixty days and say, will you extend your bid? Well it's tough to get work. So sure, you extend your bid. So finally, after you extended one time you got up the telephone and say, how come this job's not moving forward? Well it's held up in minority.… [The City] will say, can you find somebody else? Now, my price is set. My prices are all on the street.… What they could have probably have done the work for at bid time is…[h]igher now because I'm the only target.

One general contractor stated that his firm will not contest the imposition of sanctions where it would have been more expensive to use the MBE.

A good general contractor doesn't [lose money on the job]. He goes ahead and takes the sanction from M/WBE, completes the work himself, doesn't jeopardize his job or his profitability. In good times, the numbers would be a little different. But in today's

market, they have to say to their selves, hey, these guys are working on very thin markets, margins.

4. Contract Performance Monitoring and Enforcement

Finally, concerns were raised about how the City monitors and enforces compliance with M/WBE requirements. M/WBE were concerned about the strength of the post-award monitoring process.

> [The City] could do a lot more better job if they'd pay attention to what's going on.

> The policing of the Program [is] the biggest obstacle that I've had.

> [The City] turn their head once you get on a job…. they don't police or they don't check…. No monitoring whatever. You're on your own. And if you come in and talk, there's nothing…. It's going to take a month or two to see somebody.

> [The City is] way understaffed.

Many MBEs recounted how they had been substituted on the project once the prime contractor began work.

> What a lot of contractors do here is they go out and upfront they say, we're going to use this, these amount of minorities…. Once they get all those numbers in and then you get on the job, then they find ways to get you off the job. And then they bring in a Anglo firm or somebody of no minority work and do the job. And, I've had this happen a whole lot…. I have went out and purchased all the supplies and equipment and then come back and they take the job from under you which leave you with a big deficit.

> A few years ago a company that we have a relationship with bid on a City contract. They listed us in their bid and they won. But, we were notified that we were a part of the contract by way of receiving the letter from the City of Houston indicating that we were listed as a part of this award but that company never had any communication with us. In turn, I contact the company and say, hey, we won. So, what am I doing? Since you didn't talk to me about what I was going to be doing when you bid on the program. I actually had to press that company…. It was my impression that they wanted to self perform. But in order for them to win the contract, they had to have a small business a part of it and I kind of really just pressed and pressed them to meet that obligation and meet those goals with us.

> [Prime contractors] put you on the team and then later they dump you…. They're dumping for self-performance and they're hiring their old buddies…. After the job is won, the prime doesn't call you. You call the prime, they don't answer you. And I imagine from all these nodding of heads it's happened to you before. It's happened to me lots of times…. The City is reluctant to follow the course of trying to get to the bottom of this.

> I guess I'm one of the lucky ones because I've gotten notices [from the City] that, yes you won this and there's your twenty percent. Okay, what happens two, three years later? Oh, the job is long gone and, you know, the City can't do anything about it.
>
> [The prime contractor] had a 15 percent goal over a two-year period. We had a very fair contract. I could have easily done 15 [percent but I got two prevent].… Affirmative Action in reality is a paper tiger.… They called me in the other week ago, talked to me about it and said…this is terrible and when he comes up again we'll show that he only gave you 1.5 percent. But basically there's nothing they can do about it. They're not going to get me the other 13 percent.
>
> They kick me off the job and then they still want to buy materials in my name.… They'll hold my money out 45, 60 days and then they say, well we'll give you your money but you have to sign a release that, you know, you can't do any legal things to me.
>
> There's not enough people out there making sure that we are working and that we are paying the right amount of money.… [The general contractors] take advantage of the weakness of the system. They take your name, your sub, you're never utilized.

In contrast, some prime owners reported that it was difficult to substitute non-performing M/WBEs.

> A lot of times on a City contract they'll delete bid items, certain bid items, out of the contract, and we have no control over that. If those bid items are M/WBEs, we may be so far along in the contract that we can't change gears to substitute those for somebody else. Or we have to take work away from somebody who we've already got a subcontract with or may not be an M/WBE.… Then what happens you go to [the City] Council and they try to close out the job and they give you a bad recommendation because you haven't met your goal. Council doesn't know all the details. There's times when there's a disconnect between the construction, the M/WBE, and the Council.

Another contractor was permitted to substitute.

> I was successful substituting.

The effects of change orders on meeting the contract goals were problematic for some general contractors.

> Let's go ahead and reevaluate what the goal is that's out there and we can go ahead and assess your goal too. They didn't do that. And we, we fought with them and we're fighting with them right now because we have constantly throughout the whole contract tried to increase the goal. And we did tremendously. But we're still, we're still not where they wanted us to be.

One participant suggested the City provide more training to prime contractors on how to meet the monitoring requirements.

> The issue we've had, there was no training as to how that monitoring system works. And what we're supposed to do. We knew that we were supposed to do one thing, but then I find out months later there was another system that we're supposed to be documenting in. So, we started getting these noncompliance letters. That we're not in compliance with our contract. So I had to go back in and do a crash course on how this system works, what we need to do, work with the compliance officer, and clean up all those audits.

C.   Conclusion

The interviews strongly suggest that the City has implemented a critical Program that seeks to level the playing field and to some extent address the barriers faced by minorities and women in doing business on City prime contracts and associated subcontracts. Most M/WBEs reported that contracting programs are necessary to ensure full and fair access to opportunities; without outreach and contract goals, they would receive little or no work, and some general contractors agreed that they only use M/WBEs if there are goals. White female owners had received much less work since they were removed from the Program in 2009. The SBE Program was not an adequate substitute.

While some general contractors supported the Program, several believed it should be eliminated because it coddles minorities; does not address minorities' personal, educational and familial deficiencies; interferes with their business decisions; and does not graduate certified firms.

Some challenges were common to all firms, regardless of race or gender: large contracts; slow payments by the City to prime firms and by prime firms to subcontractors; obtaining bonding, etc.

Regarding certification, most M/WBEs found the system to be rigorous but tolerable. Several non-M/WBEs questioned whether many City-certified firms in fact are disadvantaged, and therefore are either ineligible or are "fronts," and some general contractors believed that competent minority-owned firms do not want or need to be certified.

Some problems with fair treatment in seeking subcontracting work were reported by M/WBEs, despite the operation of the program, including inadequate solicitation times by prime contractors and permitting a prime bidder to negotiate with M/WBEs after being named the apparent awardee.

Prime firms reported difficulties in meeting contract goals because the goals are too high; they receive insufficient numbers of quotes from M/WBEs; M/WBEs lack the skill to prepare quotes; and M/WBEs cannot adequately perform at the required levels. Some believed that the problem is an "entitlement" attitude by minority contractors.

Several prime contractors obtained waivers of goals based upon having made good faith efforts to meet them, but some found the waiver process to be burdensome and capricious. Reviewing bidders' good faith efforts resulted in unacceptable delays and resulting higher prices for some prime contractors.

While MBEs' experiences often differed markedly from non-M/WBEs, one area of agreement was the prevalence of the use of "front" firms or "passthrough" firms to create the appearance of participation, at least in the past.

Prime contractors offered several suggestions for Program revisions, including allowing more time to negotiate with M/WBEs after the bids are opened; City pre-qualification or rating of M/WBEs; and bonding assistance to subcontractors. There was little enthusiasm for mentor-protégé type initiatives.

Finally, concerns were raised about how the City monitors and enforces compliance with M/WBE requirements. M/WBEs were concerned about the strength of the post-award monitoring process. Many MBEs recounted how they had been substituted on the project once the prime contractor began work.

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Appendix. Master Directory Sources

A.   Entities whose lists of M/WBE firms that were duplicative of previously collected lists

Asian Construction Trades Association
Austin Black Contractors Association
Austin Business Journal
Austin Community College
Austin Water & Wastewater Utility
Beaumont Municipal Transit
Bexar County
BIG Austin
BIG Austin Women's Business Center
Brownsville Urban System
Capital Metropolitan Transportation Authority
Center Point Energy
City of Dallas
City of Laredo
City of Leander
City of Round Rock
City of San Antonio
City of Temple
City of Tyler
Community Mentor Protégé Initiative
Dallas Area Rapid Transit
Del Rio International Airport
Denton County
DFW International Airport
Eanes Independent School District
Edwards Aquifer Authority
Fort Worth Transit Authority
George Bush Intercontinental Airport
Harris County
Hays County
Houston Independent School District
Houston Minority Business Development Center
National Association of Women in Construction-Houston Chapter
Seton Family of Hospitals
Southeast Texas Regional Airport
Texas A&M
Texas Building and Procurement Commission
Texas Woman's University
The Mass Transit Authority of the City of El Paso (Sun Metro)
The National Center for American Indian Enterprise Development
The University of Houston System

Travis County
University of Texas
USDOT Office of Small and Disadvantaged Business Utilization
VIA Metropolitan Transit Authority-San Antonio
William B. Hobby Airport
Women's Business Enterprise National Council

B.   Entities from which lists or directories were not obtained

Abilene City Hall Purchasing Department
Abilene Regional Airport
African American Chamber of Commerce of Greater Houston
Aldine Independent School District (ISD)
Asian American Business Council
Austin County
Austin Independent School District
Bastrop County
Bastrop Economic Development Corporation
Bastrop Independent School District
Brazoria County
Business Resource Consultants
Caldwell County
Central Texas Council of Governments-Transit-Belton
Chambers County
City of Arlington
City of Bastrop
City of Beaumont
City of Cedar Park
City of College Station
City of Corpus Christi
City of Galveston
City of Galveston Island Transit
City of Lakeway
City of Lockhart
City of Lubbock
City of Pflugerville
City of San Marcos
Clear Creek ISD
Concordia University
Cypress Fairbanks ISD
Edison Electric Institute
Ellis County
Fort Bend County
Galveston County
Galveston ISD

Goose Creek ISD
Hill Country Transit District-San Saba
Houston Area Urban League
Humble ISD
Hunt County
Katy ISD
Klein ISD
La Porte ISD
Lone Star College System-The University Center
Lower Rio Grande Valley Development Council-Transit-McAllen
Montgomery County
National Indian Business Association
PAL Enterprises, LLC
Reliant Energy
Rice University
Roane State Community College
Round Rock Chamber of Commerce
Service Corps of Retired Executives
Society of Women Engineers Houston Area Section
Society of Women Engineers-Austin
South Asian Chamber of Commerce–Texas
Southeast Texas Economic Development Foundation
Spring Branch ISD
Spring ISD
St. Edward's University
Tarrant County Asian American Chamber of Commerce
Texas Association of Mexican-American Chambers of Commerce
Texas Association of Minority Business Enterprises
US Hispanic Contractors Association
Waller County
Williamson County
Wimberley Chamber of Commerce
Women Construction Owners & Executives
Women's Business Council Southwest
Alief ISD
Alliance of Minority Contractors of Houston
Austin Asian American Chamber of Commerce
Bastrop Chamber of Commerce
Central Texas Business Resource Center
City of McAllen
Corpus Christi Regional Transportation Authority
Deer Park ISD
Dripping Springs Chamber of Commerce
Galena Park ISD
Greater Austin Hispanic Chamber of Commerce
Heights Chamber of Commerce

Hispanic Contractors Association-Dallas Chapter
Houston Community College System
Houston Hispanic Chamber of Commerce
Huffman ISD
Lake Travis Chamber of Commerce
Leander Chamber of Commerce
Lockhart School District
National Association of Minority Contractors
National Minority Business Council Inc.
Thai Commerce Association
Tri-County Black Chamber

Capital City African American Chamber of Commerce
City of Amarillo
City of Brownsville
City of Waco
Dallas Black Contractors
Entergy Texas Economic Development
Greater Dallas Asian American Chamber of Commerce
Houston Citizens Chamber of Commerce
Huston-Tillotson University
Lubbock City Bus System
National Association of Women Business Owners
Native American Chamber of Commerce
Round Rock Independent School District
Texas Asian Chamber of Commerce
Texas City ISD
Texas Women Ventures Fund
U.S. Pan Asian American Chamber of Commerce
Waco Transit System

Asian Chamber of Commerce-Houston
Dallas County
Lamar University Small Business Development Center
MWBE Enterprises
National Minority Development Council – Dallas
National Minority Supplier Development Council, Inc.
Small Business Development Center Network – North Texas
Small Business Development Center Network – University of Houston Network
Small Business Development Center Network – Northwest Texas
Small Business Development Center Network – University of Texas
Southwest Minority Supplier Development Council
Texas State University Small Business Development Center
TXU Energy
Women's Business Enterprise National Council
Women's Chamber of Commerce

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