6.0 STATISTICAL DISPARITY IN SMALL BUSINESS CREDIT MARKETS

6.1 Introduction

This chapter provides evidence on statistical disparities in the market for small business credit using data from the National Survey Of Small Business Finance (NSSBF). The chapter begins with a brief legal discussion of the case law on the use of credit discrimination in the factual predicate for an M/WBE program. The next section provides an overview of the economic literature on discrimination in small business lending. The last section presents the results of the statistical analysis of disparities in loan denials and interest rates by race and gender in the NSSBF data. This chapter is organized into the following sections:

6.2 Lending Discrimination and the Factual Predicate for M/WBE Programs

There is case law supporting the contention that lending discrimination can serve as part of the factual predicate for a remedial procurement program. Although there has been no discussion of lending discrimination and compelling interest test in the Ninth Circuit, the issue has arisen in other circuits. In *Adarand v. Slater* the 10th Circuit took "judicial notice of the obvious causal connection between access to capital and ability to implement public works construction projects."[1] The Tenth Circuit went on to state, "Lending discrimination alone of course does not justify action in the construction market. However, the persistence of such discrimination. . .supports the assertion that

[1] *Adarand v. Slater*, 228 F.3d 1147, 1170 (10th Cir 2000).

the formation, as well as utilization, of minority-owned construction enterprises has been impeded."[2] The Tenth Circuit further stated that, "evidence of discriminatory barriers to the formation of businesses by minorities and women and fair competition between M/WBEs and majority-owned construction firms shows a 'strong link' between a government's 'disbursements of public funds for construction contracts and the channeling of those funds due to private discrimination.'"[3] The district court in *Concrete Works v. Denver IV* cited this language from *Adarand v. Slater* in using the lending discrimination evidence to support the factual predicate for the Denver M/WBE program.[4] Similarly, in the Seventh Circuit the district court in *Northern Contracting v. Illinois* noted:

> *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 in to 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.*[5]

Evidence from NSSBF was entered into evidence in the *Builders Association* and *Concrete Works* cases. The statistical analysis of NSSBF data was criticized in both cases by the plaintiff's expert for incorrect specifications and covering too broad a region. However, in *Builders Association* after weighing the criticism by the plaintiff's expert the district court concluded:

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[2] *Id.*
[3] *Adarand v. Slater*, 228 F.3d 1147, 1167-68.
[4] *Concrete Works v. City and County of Denver*, 321 F.3 950 (10th Cir 2003).
[5] *Northern Contracting v. Illinois*, Mo 00 C 4515 (ND Il 2005), at 47. See also *Builders Association of Greater Chicago v. City of Chicago*, 298 F.Supp.2d 725 (N.D. Ill. 2003) ("A higher interest rate may make it impossible to submit the lowest bid in this highly competitive industry, or, indeed, to survive"). The issue of credit market barriers was not addressed on appeal to the 7th Circuit in the *Northern Contracting* case. *Northern Contracting v. Illinois DOT,* Case No. 05-3981 (7th Cir 2007). No evidence of credit market barriers was before the Ninth Circuit in *Western States Paving v. Washington DOT ,* 407 F. 3d 983 (9th Cir. 2005).

> *Out of the welter of statistics and other information, a strong basis in evidence emerged that African-American construction firms in the Chicago area are victims of discrimination in the credit market, that Asian and Hispanic firms probably encounter some discrimination in that market, and that women may possibly encounter some discrimination there.*[6]

The district court in *Builders Association* did find a factual predicate for remedial procurement program in lending disparities and other evidence, but the court ruled that the Chicago M/WBE program was not narrowly tailored and had to be revised.

Courts have also permitted anecdotal data on loan denials to supplement the econometric research in this area of lending discrimination. In reviewing a small survey of loans in the Denver area by the Denver Community Reinvestment Alliance, Colorado Capital Initiatives, and the City, the Tenth Circuit concluded that "this very study, among other evidence, strongly support[ed] an initial showing of discrimination in lending."[7] The City also introduced anecdotal evidence of lending discrimination in the Denver construction industry.[8] Similarly, the district court in *Builders Association v. Chicago* noted, "[The court has] not mentioned before evidence of perceptions of minorities and women of discrimination in lending, African-Americans particularly, because perceptions can be faulty. But here the perceptions have a basis in reality."[9]

6.3 Review of the Economic Literature

Evidence from national databases and surveys does exist on disparity and discrimination in small business lending. The academic literature is not as extensive as the evidence on home mortgage lending.[10] Most of the research has relied on surveys, data from the Characteristics of Business Owners (CBO), NSSBF, and Community

[6] *Id.*
[7] *Adarand v. Slater*, 228 F.3d 1147, 1170.
[8] See *Concrete Works* III, 86 F.Supp.2d at 1072-73.
[9] *Builders Association*, 298 F.Supp.2d 725 (N.D. Ill. 2003).
[10] See, e.g., Alicia Munnell et al., "Mortgage Lending in Boston: Interpreting the HMDA Data," 86 *American Economic Review* 25 (1996).

Reinvestment Act (CRA) data. Highlights of this literature are summarized below. Most of the papers have relied on the 1993 and 1998 NSSBF data. There has been little analysis of the 2003 NSSBF data thus far.[11]

6.3.1 Survey Evidence

There have been national and local surveys supporting the findings of discrimination in lending. As noted above, the Tenth Circuit took judicial notice of the Denver study of lending discrimination. The Denver survey found that, controlling for sales, age of business, and net worth, denial rates were three times higher for African American firms than for nonminority firms.[12] The survey was, however, of a small sample.

A 1988 survey by Faith Ando found that 61.7 percent of African American commercial loan applications were accepted versus 89.9 percent of applications from nonminorities.[13] A U.S. Department of Commerce 1983 survey of 1,300 firms found that, after controlling for education, debt ratio, industry, experience, and credit rating for businesses with sales in excess of $500,000, African American businesses had a 17 percent lower success rate of obtaining loans than nonminorities did.[14]

6.3.2 Characteristics of Business Owners (CBO) Database

In a series of studies using CBO data, Timothy Bates studied disparities in loans received by African American firms. In a 1991 study using 1982 CBO data, Bates found that nonminority firms received larger loans on average than African American firms after

[11] One paper using the 2003 NSSBF data is Blaise Roncagli and Chenchu Bathala, "Determinants of the Use of Trade Credit Discounts by Small Firms," paper submitted to Financial Management Association conference, January 2007. See in particular their adjustments of the survey data based on the sample design on pp. 11-14. However, this paper did not address discrimination in lending.
[12] Colorado Center for Community Development, "Survey of Small Business Lending in Denver" (1996).
[13] Faith Ando, "Capital Issues and the Minority-Owned Business," 16 *Review of Black Political Economy* 77 (Spring 1988).
[14] U.S. Department of Commerce, "The State of Small Business" (1986), at 237-38.

controlling for firm characteristics.[15] In a 1992 study Grown and Bates has also found lower rates of loans going to construction firms in the CBO data.[16] Consistent with the statement of the district court in *Adarand* cited above, Bates found that firms that start with more capital tend to be more viable and have higher survival rates. Controlling for access to bank lending, but ignoring firm location, survival rates for black start-ups matched white start-ups. [17] In a 1997 study using the 1987 CBO data, Bates found that banks lend more per dollar of equity to nonminority-owned firms than to similarly situated African American-owned firms.[18]

6.3.3 National Survey of Small Business Finance Loan Denials

The most detailed discussion of discrimination involving small business lending has used the NSSBF. Using the 1988-89 NSSBF, Cavalluzo and Cavalluzo found that African American males were 13 percent less likely to secure loans than nonminority males.[19] Denial rates for African American-owned firms were 35 percent higher than for firms owned by nonminorities, controlling for risk characteristics. However, the sample of minority firms in the 1988-89 NSSBF was small.

In a paper using the 1993 NSSBF data, Blanchflower, Levin, and Zimmerman found that African Americans were more likely to say that credit was a serious problem (31 percent) than nonminorities (13 percent) and African American firms were less likely to apply for a loan because they thought they would be denied.[20] Controlling for creditworthiness, African American firms were 28 percent more likely to have a loan

[15] T. Bates, Commercial Bank Financing of White and Black-Owned Small Business Start-Ups," 31 *Quarterly Review of Economics and Business* 65 (Spring 1991).
[16] C. Grown and T. Bates, "Commercial Bank Lending Practices and the Development of Black-Owned Construction," *Journal of Urban Affairs* (1992).
[17] T. Bates, "Commercial Bank Financing of White- and Black-Owned Small Business Startups" .
[18] T. Bates, "Unequal Access: Financial Institution Lending to Black and White-Owned Small Business Start-Ups," 19 *Journal of Urban Affairs* 487 (November 1997).
[19] K. Cavalluzo and L. Cavalluzo, "Market Structure and Discrimination: The Case of Small Business," 30 *Journal of Money, Credit and Banking* 771 (November 1998).
[20] D. Blanchflower, P Levine and D. Zimmerman, "Discrimination in the Small Business Credit Market" National Bureau of Economic Research working paper 6840 (1998).

denied than nonminority firms. The gap between African American and nonminority denial rates for small business loans was three and one half times greater than the gap in home mortgage loans. Controlling for credit, firm size, age, organizational type, education of owner, existence of line of credit, location, and industry still resulted in a 25 percent point difference in loan denial rate. Blanchflower et al. concluded that the "results suggest that even black owned firms with clean credit histories are at a significant disadvantage in getting their loans approved, holding constant other characteristics." Blanchflower et al. did find there was smaller difference in loan denial rates between races for trade credit (from suppliers and credit card companies). These results were robust across several different econometric specifications.

In a published paper using the 1993 and 1998 NSSBF data, Blanchflower, Levine, and Zimmerman found raw loan denial rates of 27 percent for firms owned by nonminorities and 66 percent for firms owned by African Americans. They also found that African American-owned businesses were about twice as likely to be denied loans after controlling for creditworthiness and other factors.[21] The 1998 NSSBF includes Dunn and Bradstreet credit ratings as well as housing and nonhousing personal net worth data—both pieces of data that were not available in the 1989 and 1993 NSSBF.

Cavalluzzo and Wolken found substantial unexplained differences in loan denial rates between minority and white-owned firms after controlling for credit characteristics and personal wealth variables.[22] While greater personal wealth was associated with a lower probability of loan denial, large differences in denial rates across demographic groups remained after controlling for personal wealth. They also found that that African American denial rates was positively associated with lender market concentration.

[21] D. Blanchflower, P. Levine, and D. Zimmerman, "Discrimination in the Small-Business Credit Market," *Review of Economics and Statistics* (November 2003): 930-943.

[22] Ken Cavalluzzo and John Wolken, "Small Business Loan Turndowns, Personal Wealth, and Discrimination" *The Journal of Business*, volume 78 (2005), pages 2153–2178.

Loan Applications

There are mixed results on applicant behavior. Coleman found that black and Hispanic-owned firms were significantly more likely to avoid applying for loans because they believed they would be denied.[23] Cohn and Coleman, relying on the 1993 NSSBF found that black-owned firms were no less likely than white-owned firms to apply for a loan.[24] In their study of 1993 and 1998 NSSBF data, Blanchflower, Levine, and Zimmerman found African American-owned firms were less likely to apply for credit than firms owned by nonminorities.[25]

Mitchell and Pearce estimated a model of model denials jointly with a model of loan applications.[26] They separated out banks from non banks (finance companies, government agencies, factoring companies and also separated out relationship loans (line of credit loans from transaction loan that require collateral and have less soft information they found that Hispanics and African Americans were less preferred borrowers for all outstanding loans and all transaction loans. They did not find this to be the case for female or Asian owned firms. They found loan denial probabilities significantly higher for black owners than otherwise identified white males.

Mitchell and Pearce found minorities were more likely to have transaction loans from nonbanks and less likely to have bank loans of any kind. They found greater loan denial probabilities for blacks and Hispanics for transaction loans from banks and non banks They state that "while virtually all past research has likewise found evidence consistent with discriminatory lending practices against African American and Hispanic firms, our contribution is to hint that discrimination may be specific to particular segments

[23] S. Coleman, "The Borrowing Experience of Black and Hispanic-Owned Small Firms: Evidence from the 1998 Survey of Small Business Finances." 8 *The Academy of Entrepreneurship Journal* 1 (2002).
[24] R. Cohn and S. Coleman, "Borrowing Behavior of Small Black-Owned Firms," 6 *The Journal of Applied Management and Entrepreneurship* 68 (2001).
[25] D. Blanchflower, P. Levine, and D. Zimmerman, "Discrimination in the Small-Business Credit Market," *Review of Economics and Statistics* 930 (November 2003).
[26] K. Mitchell and D. Pearce, "The Availability of Financing to Small Firms Using the Survey of Small Business Finances," Report for the Office of Advocacy, U.S. Small Business Administration (May 2005).

of the loan market rather than general problem,"[27] they did not find evidence that lenders require less preferred borrowers to exhibit superior owner or firm characteristics. Theoretically transaction loans should be more objective than relationship loans.

Interest Rates

In a 2003 paper Blanchflower et al. found differences in the interest rate charged to African American borrowers. Controlling for creditworthiness, African American borrowers were charged an average of one percentage point higher interest. Even African American firms with good credit were charged higher interest rates.[28]

Patterns of Financing

The SBA's Office of Advocacy studied patterns of lending in the 1998 NSSBF. The SBA found that MWBEs were also found to have a different pattern of financing as compared with all small business in general. The SBA could not determine whether or not the different sources of financing was due to the reduced availability of certain types of credit to MWBEs.[29]

Regional Analysis

Regional analysis from the NSSBF has been conducted for other local agencies using a methodology similar to Cavalluzo and Blanchflower et al. A study of the NSSBF data for the NSSBF South Atlantic region, which includes the Virginia/District of Columbia/ Maryland area, found that even after controlling for creditworthiness, African American firms were 28 percent more likely than nonminority-owned firms to have their loan request denied.[30] The study found that African Americans were more likely to use credit cards, but the differences was not statistically significant and there were no racial differences in credit card balances. The study also found that African American-owned

[27] K. Mitchell and D. Pearce (2005), at 46.
[28] D. Blanchflower et al (November 2003).
[29] Office of Advocacy, U.S. Small Business Administration, "Financing Patterns of Small Firms: Findings from the 1998 Survey of Small Business Finance." Office of Advocacy. Washington, D.C., 2003.
[30] NERA, "Utilization of Minority Business Enterprises by the State of Maryland" (2001), chapter 4.

firms with good credit history were charged a percentage point more in interest rates on small business loans. The study also found that African American and Hispanic American firms were much more likely to have a loan application denied in a survey of minority business loan applicants in the State of Maryland. The 2007 disparity study conducted for the California Department of Transportation found that the national results held for the Pacific division once regional interaction terms were added to the analysis.[31]

6.3.4 Community Reinvestment Act Data

There have been similar findings in local case studies of lending discrimination relying on CRA and Home Mortgage Disclosure Act (HMDA) data. There have been other studies of disparities in small business lending by race of neighborhood. The *Greater Philadelphia Capital Access Report* found that only 1 percent of small business loan dollars went to neighborhoods that were 80 percent African American.[32] Race remained a significant variable after controlling for other neighborhood characteristics, including income and industry mix.

Daniel Immergluck has conducted a series of studies of small business lending by race of neighborhood using CRA data. In a study of the Chicago metropolitan area, Immergluck found that minority areas receive fewer small business loans after controlling for firm density, firm size, and industrial mix.[33] Immergluck used similar data on 1998 small business lending patterns in the Philadelphia area and found that after controlling for income, firm and residential population, industry, firm size, and credit history, African American tracts received far fewer loans than nonminority tracts.[34] Going from an all-nonminority neighborhood to an otherwise equivalent, adjacent all-African

[31] BBC, *DBE Program Availability and Disparity Study Report*, 2007, Appendix H.
[32] E. Quigley, *Greater Philadelphia Capital Access Report*, Policy Paper No. 2000-01 (January 2000).
[33] D. Immergluck, "Intrametropolitan Patterns of Small Business Lending: What Do the New CRA Data Reveal?" 34 *Urban Affairs Review* 787 (1999). See also D. Immergluck, "How Changes In Small Business Lending Affect Firms In Low- And Moderate-Income Neighborhoods," *Journal of Developmental Entrepreneurship* (Aug 2003).
[34] D. Immergluck, "Redlining Redux: Black Neighborhoods, Black-owned Firms, and the Regulatory Cold Shoulder," 38 *Urban Affairs Review* 22 (2002).

American tract resulted in an estimated decline of 6.8 loans. Similarly, Canner also found that minority tracts, after controlling for income, firm and residential population, industry, and regional location, receive fewer small business loans than nonminority tracts.[35]

Bostic and Lampani added economic characteristics of a firm owners locale and geographic information, such as race of the neighborhood, to the NSSBF data and also found that neighborhood race can affect small business loan denial rates and that African Americans still faced significant disparities.[36] In their study, the disparity in denial rates in nonminority and minority neighborhoods actually increased after the neighborhood income was included in their statistical analysis.

6.4 Statistical Analysis

6.4.1 Estimated Probit Model Of Loan Denial Probability

Because of the small number of observations in the Pacific Census division the model was tested on national data. Then divisional interaction terms were used to confirm that the results still held for the Pacific Census division.

In the simple model, where only the demographic variable is specified, White, White/female and Black ownership are statistical significant at the 5 percent-level of significance (**Exhibit 6-2**). Female (regardless of ethnicity or race), Asian and Hispanic ownership variables are statistically insignificant at that level.

In the full model (**Exhibit 6-1**), the statistical relationship between the probability of denial and the demographic variable is not as strong. However, in the cases of White, White/female, and Black ownership, the demographic variables still remain statistically significant at the 5 percent-level of significance, with the others remaining statistically

[35] G. Canner, "Evaluation of CRA Data on Small Business Lending. Business Access to Capital and Credit," Federal Reserve System Research Conference Proceeding (March 1999), at 53-84.
[36] R. Bostic and P. Lampani, "Race, Geography, Risk and Market Structure: Examining Discrimination in Small Business Finance," *Business Access to Capital and Credit*, Federal Reserve System Research Conference Proceeding 149 (March 1999).

insignificant. Importantly, the only demographic variable with a statistically significant positive relationship with the probability of loan denial is Black ownership.

6.4.2 Estimated OLS Model Of Interest Rates Charged

Two models were estimated for interest rates charged on loans approved over the last three years. They are described as restrictive and full respectively. In the restrictive model, only demographic dummy variables were specified, and in the full model, other attributes and characteristics, along with the demographic variables, were specified. The same set of variables used in the probit model was specified in the OLS interest-rate model, and are shown in **Exhibit 6-1**.

With the exception of the Black-ownership variable, the demographic variable is statistically insignificant at the 5 percent level of significance (**Exhibit 6-3**). In the Black-ownership case, the variable is statistically significant and positive at this level in both the restricted and full models — indicating that on average Black-owned businesses that have had approved loans pay a higher interest rate after holding constant the variables listed in **Exhibit 6-2**. The estimated 95 percent confidence interval is 1.5 percent to 7.0 percent. The implication of this is that Black-owned businesses pay approximately 30 percent to 150 percent (average interest rate charged on approved loan is about 4.5 percent) more in interest than non-Black-owned firms**.**

EXHIBIT 6-1
FULL-MODEL VARIABLES
NATIONAL SURVEY OF SMALL BUSINESS FINANCE
2003

VARIABLE	VARIABLE DEFINITION
cf_educ=6	Weighted education level of owners: college degree
cf_educ=7	Weighted education level of owners: post graduate college degree
u1=1	Within the past three years the firm has declared bankruptcy
u2>1	Within the past three years the firm has had one or more delinquent obligations of 60 or more days.
u3=1	Within the past three years the firm has had judgments rendered against them.
a0_DB_credrk=3 or 4	"Average risk:" Dun and Bradstreet score of 26 to 75 (0 most risky)
a0_DB_credrk<=2	"High risk:" Dun and Bradstreet score of 0 to 25 (0 most risky)
Profit	Firm's income after all expenses and taxes ($1,000).
a0_urban=1	Firm located in a metropolitan statistical area
r12	Total assets ($1,000)
s8	Total liabilities ($1,000)
cf_fage	Age of the firm in years
b3=4, 6 or 8	Firm is incorporated
mrl6=1 or mrl24=1	Most recent requested loan was for a new line of credit
mrl6=2 or mrl24=2	Most recent requested loan was for a capital lease
mrl6=3 or mrl24=3	Most recent requested loan was for a mortgage for business purposes
mrl6=5 or mrl24=5	Most recent requested loan was for equipment

EXHIBIT 6-2
ESTIMATED PROBIT MODEL OF LOAN DENIAL PROBABILITY[1]
NATIONAL SURVEY OF SMALL BUSINESS FINANCE
2003

DEMOGRAPHIC GROUP	RESTRICTED MODEL[2]	FULL MODEL[3]	SAMPLE SIZE
White Ownership	**-0.993** **(-27.58)**	**-0.794** **(-4.36)**	1085
Female Ownership	0.097 (0.76)	-0.004 (-0.03)	1085
White/Female Ownership	**-0.973** **(-4.60)**	**-0.833** **(-3.76)**	1085
Black Ownership	**1.645** **(17.50)**	**1.376** **(4.25)**	1085
Asian Ownership	0.290 (0.99)	0.225 (0.86)	1085
Hispanic Ownership	0.205 (0.78)	0.048 (0.17)	1085

[1] t-statistics are given in the parenthesis.
[2] In the restricted model, only the demographic variable is specified.
[3] In the full model, the demographic variables and those listed in Exhibit 2 are specified.

EXHIBIT 6-3
ESTIMATED OLS REGRESSION LOAN INTEREST-RATE MODEL[1]
NATIONAL SURVEY OF SMALL BUSINESS FINANCE
2003

DEMOGRAPHIC GROUP	RESTRICTED MODEL[2]	FULL MODEL[3]	SAMPLE SIZE
White Ownership	-1.32 (-1.34)	-1.18 (-1.38)	963
Female Ownership	-0.05 (-0.13)	-0.35 (-0.90)	963
White/Male Ownership	-0.41 (-1.04)	-0.12 (-0.34)	963
White/Female Ownership	0.06 (0.16)	-0.21 (-0.55)	963
Black Ownership	**4.73** **(3.40)**	**4.28** **(3.29)**	963
Asian Ownership	-0.73 (-0.88)	-0.60 (-0.71)	963
Hispanic Ownership	1.66 (1.63)	1.86 (1.83)	963

[1] t-statistics are given in the parenthesis.
[2] In the restricted model, only the demographic variable is specified.
[3] In the full model, the demographic variables and those listed in Exhibit 2 are specified.

6.4.3 Selected Means By Race, Ethnicity, and Gender Characteristics of Loan Applicants in the Pacific Division

For the Pacific Census Division,[37] **Exhibit 6-4** indicates that Asian-owned small businesses were little more likely on average to be denied credit than White/male-owned businesses and that female-owned businesses were much less likely to be denied credit than White/male-owned businesses — 34 percent versus 30 percent in the first case, and 10 percent versus 30 percent in the latter.[38] The composition of the type of loans applied for by White male, Asian, and female owned firms were very different. Asian-owned businesses were more likely to apply for new lines of credit (LOC) when compared to White/male-owned businesses, but female-owned business were much less likely to apply for a new LOC – 79 percent for Asian-owned businesses and 32 percent for female-owned businesses compared to 55 percent for White/male-owned businesses. Importantly, female-owned businesses were more likely to apply for business-related mortgages than White/male-owned businesses, and Asian-owned businesses were a little more likely to apply. The typical size of the loan applied for and denied to Asian and female owned businesses were smaller than for White/male businesses.

6.4.4 Credit History of Firms/Owners

Regarding credit history, the frequency of owner and business related judgments, obligations, and bankruptcies were on average higher for White/male-owned businesses when compared with Asian and female owned businesses. In the case Asian-owned businesses, owners with judgments against them were estimated to be only 1.6 percent,

[37] Pacific Division includes the states of Washington, Oregon, California, Alaska, and Hawaii. Selected sample means for the Western Region are reported in the appendix to this chapter. The Western Region is composed of the Pacific Division and the Mountain Division. The Mountain Division is composed of Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada.

[38] It should be noted that the number of observations on Black-owned and Hispanic-owned firms is small, with only four for Black-owned and eight for Hispanic-owned respectively. Consequently, any statistical estimates for these two groups are more problematic and are therefore not included. The demographic categories considered here are not mutually exclusive. Female-owned businesses can be of any race or ethnicity and of course Asian can be of either gender. However, both are mutually exclusive of White male.

whereas, in the case of White/male-owned businesses, owners with judgments against them were estimated at 4.5 percent. For female-owned businesses, they were estimated at 1.8 percent. The estimated percent of firms with delinquent obligations was 19.8 percent, 14.9 percent, and 9.7 percent for White/male, Asian, and female owned businesses respectively. The percent of businesses with owners with personal obligations is also estimated to be on average higher for White/male-owned businesses — 15.7 percent versus 9.2 percent and 7.0 percent for Asian and female owned businesses respectively.

6.4.5 Other Firm Characteristics

Asian-owned businesses were on average substantially larger than White/male-owned businesses, whereas, female-owned businesses were typically much smaller than White/male-owned firms. Average dollar sales for Asian-owned firms were more than 80 percent larger on average than White/male-owned firms and female-owned firms had less than half the average sales of those for White/male-owned firms. However, White/male-owned businesses were estimated to be more profitable and have greater net worth than either Asian-owned or female owned firms.

Female-owned businesses were estimated to have fewer employees than White/male firms and Asian-owned businesses were estimated to have about the same.

Owners of Asian-owned firms were more likely to have a college or post-graduate degree than owners of White/male-owned businesses, whereas, owners of female-owned and White/male-owned firms were about equally likely to have a college or post-graduate degree.

Asian-owned and female-owned businesses were relatively younger than White/male-owned firms. Owners of Asian-owned and female-owned firms tended to be younger and have fewer years of experience. And Asian-owned businesses were less likely to be a sole proprietorship.

EXHIBIT 6-4
SELECTED SAMPLE MEANS OF LOAN APPLICANTS
NATIONAL SURVEY OF SMALL BUSINESS FINANCE 2003
PACIFIC CENSUS DIVISION

	ALL	WHITE MALE	ASIAN	FEMALE
% Of Firms Denied in the Last Three Years	23.7	30.3	34.2	10.3
Interest rate on approved loans (%)	6.89	6.18	9.09	7.11
Sample Size	176	110	14	49
Credit History of Firms/Owners				
% Owners with Judgments Against Them	3.1	4.5	1.6	1.8
% Firms Delinquent Business Obligations	15.9	19.8	14.9	9.7
% Owners Delinquent on Personal Obligations	12.0	15.7	9.2	7.0
% Owners Declared Bankruptcy in Past 7yrs.	2.7	2.7	2.7	2.4
Sample Size	738	421	69	248
Other Firm Characteristics				
% Female-Owned	39.6	N/A	35.2	100.0
Sales (in 1,000s of 2003 $)	1284	1507	2750	580
Profits (in 1,000s of 2003 $)	191	285	165	77
Assets (in 1,000s of 2003 $)	573	696	487	334
Liabilities (in 1,000s of 2003 $)	324	430	300	147
Owner's Years of Experience	19.2	21.3	15.3	17.2
Owner's Share of Business	81.4	85.9	82.6	74.3
Less Than High School[1]	2.4	1.2	3.6	2.9
High School Degree	15.3	19.4	4.0	11.0
Some College but No Degree	15.9	15.7	9.2	16.0

EXHIBIT 6-4 (Continued)
SELECTED SAMPLE MEANS OF LOAN APPLICANTS
NATIONAL SURVEY OF SMALL BUSINESS FINANCE 2003
PACIFIC CENSUS DIVISION

Other Firm Characteristics (Continued)				
Associates Degree Occupational/Academic	8.1	6.1	12.1	9.5
Trade School Vocational Program	5.9	2.3	0.3	12.0
College Degree	27.8	27.9	35.8	26.5
Post Graduate Degree	24.6	25.8	35.0	22.1
Sole Proprietorship	53.0	52.1	42.3	53.8
Partnership	10.3	8.8	13.1	12.8
S Corporation	21.1	17.6	20.7	21.4
C Corporation	15.7	21.5	23.9	12.0
Total Number of Workers	8.9	10.0	10.1	6.5
Firm Age, in Years	14.1	15.5	10.2	13.0
% New Firms (less than 5 yrs old)	21.7	16.9	36.9	24.8
% Firms Located in MSA	88.4	86.2	96.5	90.2
Sample Size	738	421	69	248
Characteristics Of Loan Application				
MRL Amount Applied (in 1,000s of 2003 $)	345	372	257	126
MRL Amount Denied (in 1,000s of 2003 $)	117	121	75	96
New Line of Credit	48.3	55.5	79.1	31.7
Capital Lease	2.3	2.3	0.0	3.0
Mortgage for Business Purpose	13.9	12.8	15.7	21.4
Vehicle Loan for Business Purpose	7.6	7.7	0.0	7.8
Equipment Loan	16.4	15.2	0.7	23.0
Other Loan	12.4	9.1	3.8	13.3
Sample Size	176	110	14	49

6.4.6 Estimated Probit Model Of Loan Denial Probability: Pacific Census Division

Restricted and unrestricted loan-denial probit models were estimated, in which an interactive variable of demographic-group ownership and Pacific Census Division was specified. In the restricted model, only the demographic and interactive variables were specified – the underlying assumption that only the demographic character of the applicant affects the acceptance/denial decision. In the full model, a fuller compliment of variables affecting the loan acceptance/denial decision is specified. The objective is to determine their statistical affect on the estimated coefficient of the demographic-ownership variable.

The geographic effect of demographic ownership in the Pacific Census division, as measured by the estimated coefficient of the interactive variable, is shown in Exhibit 5. It is important to note that the parameter estimates shown in this table measure the marginal effect of ownership type in the Pacific division on the estimated/expected value of the probit link function – it's benchmarked or referenced against similarly owned firms across the other eight Census divisions. The model attempts to answer the question of how is the likelihood of loan denial affected if a firm with a specific demographic-ownership characteristic were moved from any of the other eight Census divisions to the Pacific Census division.

The estimated coefficient is statistically significant in only one case. In the restricted model for a Black-owned business, the coefficient of the interactive variable is statistically significant and negative indicating that the probability loan approval is better in this division for Black owned firms than in other divisions. However, to avoid any confusion, two important points need to be made. First, this result does not mean that the **overall** marginal effect of Black ownership on the estimated probability of loan denial is less than it is for other demographic groups in the Pacific division – it only means that Black-owned firms in the Pacific division are marginally better off than Black-owned firms

in other divisions. Second and more importantly, when other credit-worthiness variables are added the estimated coefficient of the interactive variable becomes statistically insignificant (5 percent-level of significance).

The bottom line is that no strong statistical case, based on the SSBF 2003 sample, can be made one way or the other about the effect of demographic-ownership characteristics on loan-denial probabilities in the Pacific Census division.

EXHIBIT 6-5
ESTIMATED PROBIT MODEL OF LOAN DENIAL PROBABILITY
NATIONAL SURVEY OF SMALL BUSINESS FINANCE 2003
PACIFIC CENSUS DIVISION[1]

DEMOGRAPHIC GROUP	RESTRICTED[2]	FULL MODEL	SAMPLE SIZE
White Ownership	0.187 (0.95)	0.164 (0.72)	1085
White/male Ownership	0.444 (1.93)	0.385 (1.45)	1085
White/female Ownership	-0.792 (-1.97)	-0.094 (-0.55)	1085
Female Ownership	-0.629 (-2.09)	-0.356 (-1.06)	1085
Black Ownership	-1.73 (3.01)	-0.963 (-0.93)	1085
Hispanic Ownership	-0.759 (-1.24)	-0.207 (-0.30)	1085
Asian Ownership	0.100 (0.17)	0.054 (0.09)	1085

[1] t-statistic shown in the parenthesis.
[2] In the restricted model, only the demographic variable is specified.

6.5 Conclusions

There is a well-established economic literature on discrimination in small business lending. This research has been used as support for MWBE programs in several circuit court cases. Data from the more recent 2003 National Survey of Small Business Finance indicates that African American firms continue to suffer from greater loan denials and are charged higher interest rates on business loans after controlling for firm size, creditworthiness and other important factors in the lending decision. However, there is some evidence that the probability loan approval is better in the Pacific Division for Black owned firms than in other divisions.

EXHIBIT 6-6
SELECTED SAMPLE MEANS OF LOAN APPLICANTS
NATIONAL SURVEY OF SMALL BUSINESS FINANCE
2003
WEST REGION

	All	White	White Male	White Female	Black	Latin	Asian	Female
% Of Firms Denied in the Last Three Years	23.7	23.7	28.7	13.5	N/A	21.5	26.1	17.3
Interest rate on approved loans (%)	7.16	6.97	6.45	7.91	N/A	7.97	7.10	7.97
Sample Size	268	230	165	66	5	12	17	81
Credit History Of Firms/Owners								
% Owners with Judgments Against Them	2.5	2.5	2.9	1.9	5.5	2.4	1.5	1.9
% Firms with Judgments Against Them	3.4	3.6	4.8	1.7	9.2	0.2	0.2	1.8
% Firms Delinquent Business Obligations	15.2	14.7	17.7	9.8	16.1	22.5	13.9	10.7
% Owners Delinquent on Personal Obligations	11.3	10.9	11.9	9.3	25.3	15.1	8.6	10.0
% Owners Declared Bankruptcy in Past 7yrs.	2.8	2.6	2.6	2.5	4.6	5.4	2.5	2.7
% Firms Declared Bankruptcy in Past 7yrs.	0.8	0.9	0.9	1.0	0.0	0.1	0.8	0.8
Sample Size	1083	911	600	312	22	63	75	367
Other Firm Characteristics								
% Female-Owned	38.4	38.5	0.0	100	38.6	42.4	35.7	100
% Black-Owned	2.3	0.0	0.0	0.0	100	0.0	0.0	2.3
% Hispanic-Owned	6.9	0.0	0.0	0.0	0.0	100	0.8	7.6
% Asian-Owned	7.1	0.0	0.0	0.0	0.0	0.8	100	6.6
Sales (in 1,000s of 2003 $)	1177	1081	1413	551	263	910	2586	554
Profits (in 1,000s of 2003 $)	177	178	237	85	28	235	159	84
Assets (in 1,000s of 2003 $)	554	548	687	326	430	312	583	326
Liabilities (in 1,000s of 2003 $)	334	331	422	186	138	224	412	183
Owner's Years of Experience	18.8	19.5	21.1	17.0	16.0	15.3	15.8	16.7
Owner's Share of Business (percent)	80.6	80.1	84.0	73.9	93.1	79.7	82.4	73.8
Less Than High School	1.3	0.7	0.5	1.0	0.0	5.8	3.2	1.5
High School Degree	16.1	16.4	20.1	10.4	0.0	29.7	3.8	11.3
Some College but No Degree	16.8	16.5	15.9	17.6	28.7	23.7	8.6	16.9

EXHIBIT 6-6 (Continued)
SELECTED SAMPLE MEANS OF LOAN APPLICANTS
NATIONAL SURVEY OF SMALL BUSINESS FINANCE
2003
WEST REGION

Other Firm Characteristics (Continued)								
Associates Degree Occupational/Academic	10.6	10.8	8.9	14.0	21.5	2.7	12.9	13.8
Trade School Vocational Program	7.0	7.6	4.2	13.1	0.0	8.3	0.3	12.1
College Degree	27.1	27.0	27.9	25.6	27.7	17.9	37.3	25.3
Post Graduate Degree	21.0	20.9	22.6	18.3	19.0	11.8	33.9	19.1
Sole Proprietorship	49.2	48.3	45.4	53.1	72.4	63.5	39.5	52.0
Partnership	10.8	10.8	10.2	11.8	18.4	9.2	13.6	13.1
S Corporation	24.2	25.8	25.7	26.0	1.8	13.3	20.8	24.8
C Corporation	15.8	15.0	18.8	9.1	7.5	14.0	26.1	10.2
Total Number of Workers	8.50	8.35	9.50	6.51	7.79	6.89	10.0	6.44
Firm Age, in Years	13.9	14.5	15.3	13.3	8.9	11.7	10.0	12.8
% New Firms (less than 5 yrs old)	20.6	17.9	15.6	21.5	34.6	38.0	35.7	23.9
% Firms Located in MSA	82.0	80.2	77.1	85.3	100	84.0	96.7	87.0
Sample Size	1083	911	600	312	22	63	75	367
Characteristics of Loan Application								
MRL Amount Applied (in 1,000s of 2003 $)	302	273	299	225	N/A	N/A	267	214
MRL Amount Denied (in 1,000s of 2003 $)	117	122	122	121	N/A	N/A	73	103
New Line of Credit	30.4	31.2	33.6	26.4	0.0	21.8	36.4	26.7
Capital Lease	1.1	1.3	1.1	1.8	0.0	0.0	0.0	1.5
Mortgage for Business Purpose	15.0	16.5	12.3	24.9	0.0	0.0	11.5	21.3
Vehicle Loan for Business Purpose	9.5	10.6	9.2	13.5	0.0	5.9	0.0	11.6
Equipment Loan	16.4	17.8	18.7	16.0	0.0	14.7	0.6	15.8
Other Loan	8.8	4.4	3.7	5.8	73.3	36.2	27.2	7.8
Sample Size	268	230	165	66	5	12	17	81