

Table B.2
Business Characteristics by Age of Firm

	Black-Owned Businesses Only			White Male Businesses Only		
	All firms	Firms formed before 1976	Firms formed 1976- 1982	All firms	Firms formed before 1976	Firms formed 1976- 1982
Business Traits (mean value)						
Total sales, 1982	\$55,402	\$66,788	\$47,184	\$164,003	\$223,280	\$118,790
No. employ- ees, 1982	0.8	1.0	0.6	2.0	2.7	1.5
Owner Traits						
Total financial capital (mean)*	\$15,908	\$11,534	\$19,066	\$32,178	\$27,510	\$44,552
Equity capital (mean)*	\$7,945	\$6,411	\$9,054	\$17,815	\$14,423	\$20,402
Debt capital (mean)*	\$7,963	\$5,123	\$10,012	\$19,363	\$13,088	\$24,150
Percent with under 4 years of high school	25.5%	35.0%	18.5%	15.4%	20.8%	11.3%
Percent with 4 or more years of college	24.5%	18.9%	28.5%	32.9%	29.6%	35.3%
Percent of Firms Still In Business, 1986						
	75.1%	83.2%	71.0%	78.0%	83.2%	74.0%
(N=)	4,883	2,047	2,836	7,807	3,378	4,429

*At the date of entry into self-employment (dollar figures are not inflation-adjusted).

Table B.3
Linear Regression Models: Explaining 1982 Total Sales
for Firms Entered in the 1976-1981 Time Period

	Black Firms Only		White Firms Only	
	Regression coefficient	Standard error	Regression coefficient	Standard error
Constant	6.512*	0.183	7.150*	0.304
Labor input	0.011*	0.001	0.013*	0.001
Ed2	0.144*	0.064	0.062	0.066
Ed3	0.064	0.068	0.034	0.071
Ed4	0.149*	0.075	0.209*	0.076
Management	0.000	0.004	0.010*	0.003
Log capital	0.313*	0.018	0.337*	0.014
Age2	0.139*	0.063	-0.006	0.047
Age3	0.106*	0.056	-0.049	0.058
Age4	0.037	0.076	-0.223*	0.071
Ongoing	0.075	0.074	0.290*	0.046
Time80	-0.167*	0.042	-0.258*	0.038
Manufacture	-0.014	0.168	0.426*	0.086
Construction	0.396*	0.111	0.293*	0.078
Transportation	0.065	0.099	0.042	0.084
Trade	0.421*	0.083	0.576*	0.069
FIRE	-0.196	0.134	-0.041	0.091
Services	-0.024	0.080	0.203*	0.066
(N=)	2,155		3,657	
(R ² =)	0.254		0.281	
(F=)	38.27		74.89	

*Statistically significant at the alpha = .05 level.

Note: The dependent variable in the above regression equations is the logarithm of 1982 total sales.

Table B.4**Financial Capital Structure of Borrowers:
Firms Entered in the Period 1976-1982**

	Black Firms	White Male Firms
A. All CBO Sample Firms With Debt Capital Input Greater Than Zero		
Total financial capital at time of entry		
Mean	\$32,813	\$70,756
Median	\$7,500	\$17,500
Percent under \$10,000	52.3%	30.9%
Percent under \$50,000	87.9%	73.2%
Equity		
Mean	\$10,734	\$22,071
Median	\$2,625	\$4,250
Percent under \$5,000	66.3%	51.9%
Debt		
Mean	\$22,079	\$48,684
Median	\$5,625	\$14,875
Percent under \$5,000	49.2%	28.3%
Leverage* (mean)	6.39	7.25
(N=)	(1,286)	(2,197)
B. Bank Loan Recipients Only		
Total financial capital at time of entry		
Mean	\$36,530	\$76,318
Median	\$15,000	\$22,500
Percent under \$10,000	47.2%	27.7%
Percent under \$50,000	86.6%	71.7%
Equity		
Mean	\$10,826	\$20,514
Median	\$2,625	\$4,375
Percent under \$5,000	66.1%	52.8%
Debt		
Mean	\$25,704	\$55,803
Median	\$7,125	\$16,625
Percent under \$5,000	43.1%	24.6%
Leverage* (mean)	6.33	7.89
Percent of sample** with bank loans	55.5%	64.6%
(N=)	(714)	(1,419)

*Leverage is defined as the ratio of debt to equity; it is constrained so that the value of the ratio cannot exceed 19. This constraint is internal in the data base and, therefore, it cannot be altered or relaxed.

**Includes borrowers only.

Table B.5**Linear Regression Models: Explaining Debt Capital Inputs
for Commercial Bank Loan Recipients (Only) Entering
Business in the Period 1976-1982**

	White Firms Only		Black Firms Only	
	Regression coefficient	Standard error	Regression coefficient	Standard error
Constant	-8,261.060	12,118.279	14,386.918	10,834.467
Ed2	16,378.546	12,085.385	-2,151.482	10,355.462
Ed3	14,783.465	13,308.299	-13,375.310	11,107.711
Ed4	28,552.929*	12,363.037	27,110.584*	10,601.726
Management	-182.427	589.858	326.059	648.300
Equity capital	1.835*	0.042	1.164*	0.085
Age2	10,433.854	9,179.578	-8,963.618	9,101.468
Age3	4,869.243	11,003.469	-13,736.249	10,360.929
Age4	12,095.686	14,865.736	-14,487.144	13,533.935
Ongoing	14,127.628*	8,193.540	7,863.444	8,260.903
(N=)	1,419		714	
(R ² =)	0.585		0.238	
(F=)	220.390		24.410	

*Statistically significant at the alpha = .05 level.

Note: The dependent variable in the above regression equations is the dollar amount of debt capital invested at the point of business startup.

Table B.6
Discriminant Analysis: Blacks Entering Business In the
Period 1976–1982

	Discriminant Function Standardized Coefficients	Group Mean Vectors	
		Active firms	Discontinued firms
Ed2	-0.034	0.284	0.293
Ed3	-0.030	0.236	0.255
Ed4	0.114	0.289	0.277
Labor input	0.169	41.924	38.812
Management	-0.116	3.725	3.753
Age2	0.094	0.358	0.359
Age3	0.275	0.273	0.225
Age4	0.021	0.123	0.125
Sex	0.104	0.763	0.723
Leverage	0.181	3.142	2.353
Log Capital	0.404	8.827	8.577
Ongoing	-0.291	0.219	0.270
Time80	-0.614	0.353	0.417
Time82	-0.705	0.215	0.297
(N=)		1,963	873

Wilk's lambda statistic = 0.961.

F = 7.56: the group differences are statistically significant (alpha = .01 level).

APPENDIX C: SUMMARY TABLES AND ECONOMETRIC MODELS FOR CHAPTER FIVE

This appendix, which presents two tables of summary statistics described in chapter five, summarizes the results of two econometric modeling exercises:

First, linear regression models are used to explain debt capital input levels for groups of black and white firms in 28 SMSAs that received commercial bank loans. As in the analyses for chapter three, the black and white firm groups are analyzed separately (table C.2).

Second, discriminant analysis models are used to differentiate between active firms and those that have discontinued operations. Three groups of firms are analyzed separately: (1) black firms located in minority neighborhoods of 28 SMSAs (table C.3); (2) black firms located in nonminority areas of 28 SMSAs (table C.3); and (3) white firms located in the 28 SMSAs (table C.4).

All of the variables used in these econometric exercises are defined in Appendix B. As in the chapter three econometric exercises, the education variable group excludes owners having less than 12 years of formal schooling, while the age group excludes owners under age 35.

Table C.1
Business Characteristics of Firms Operating In Large Metropolitan Areas

	All Businesses		Employers Only	
	Black firms	White male firms	Black firms	White male firms
Business Traits				
Total sales, 1982	\$56,342	\$166,762	\$153,116	\$393,806
No. of employees, 1982	0.7	2.0	3.0	5.8
Owner Traits				
Total financial capital* (mean)	\$16,059	\$37,314	\$28,204	\$63,937
Equity capital* (mean)	\$8,448	\$20,867	\$13,090	\$34,532
Debt capital* (mean)	\$7,611	\$16,447	\$15,114	\$29,405
Percent with under 4 years of high school	29.9%	13.0%	18.6%	12.5%
Percent with 4 or more years of college	27.3%	41.0%	30.8%	42.5%
Percent of Firms Still in Business, 1986				
	73.9%	78.1%	82.4%	85.4%
(N=)	2,318	1,815	533	630

Source: CBO survey data (unpublished); sample selection is described in chapter one.

*At the date of entry into self-employment (dollar figures are not inflation-adjusted).

Table C.2
Linear Regression Models Explaining Debt Capital Inputs for Firms Entering Business in the 1976-1982 Time Period: Firms Operating in Large Metropolitan Areas

	Black Firms		White Firms	
	Regression coefficient	Standard error	Regression coefficient	Standard error
Constant	47,286.875	38,527.746	-25,963.528	28,177.383
Ed2	-5,403.068	28,085.396	30,827.339	29,727.324
Ed3	-26,044.350	29,714.531	221.711	30,615.072
Ed4	38,628.402**	28,606.126	34,109.655	28,118.250
Age2	-29,285.456	23,153.396	-4,829.869	18,612.486
Age3	-32,657.423	26,390.336	-5,279.664	23,041.707
Age4	-24,641.492	36,914.442	-24,204.688	28,442.568
Equity capital	0.893*	0.165	1.791*	0.224
Management	784.306	1,564.750	2,133.739*	1,207.081
Ongoing	24,769.583	20,177.228	49,995.605*	17,514.899
Minority area	-39,563.531*	18,117.158	-4,179.516	29,235.917
(N=)	271		248	
(R ² =)	0.164		0.301	
(F=)	4.31		10.21	

*Statistically significant, alpha = .05

**Statistically significant, alpha = .10

Note: Debt and equity are measured in dollars.

Table C.3

**Discriminant Analysis: Black Firms in Large SMSAs
Entering Business in the Period 1976-1982**

	<i>1st Model: Firms in Minority Communities Only</i>			<i>2nd Model: Firms in Nonminority Communities Only</i>		
	Discriminant Function Coefficients	Group Mean Vectors		Discriminant Function Coefficients	Group Mean Vectors	
	Standardized coefficients	Active firms	Discont. firms	Standardized coefficients	Active firms	Discont. firms
Ed2	-0.322	0.280	0.317	0.399	0.277	0.260
Ed3	-0.274	0.246	0.276	0.521	0.203	0.204
Ed4	-0.101	0.283	0.256	0.654	0.420	0.401
Management	-0.077	3.527	3.644	-0.099	4.022	3.923
Input	0.062	42.023	39.389	0.195	41.792	37.250
Age2	-0.228	0.335	0.369	0.074	0.415	0.408
Age3	0.055	0.309	0.240	0.263	0.233	0.225
Age4	-0.354	0.114	0.154	0.217	0.111	0.056
Log Capital	0.324	8.759	8.539	0.341	8.893	8.643
Leverage	0.213	2.499	1.695	0.156	3.105	2.418
Ongoing	-0.436	0.206	0.292	-0.142	0.199	0.232
Minority market	0.224	0.657	0.596	—	—	—
Open market	—	—	—	0.075	0.559	0.515
Time80	-0.661	0.329	0.423	-0.620	0.416	0.472
Time82	-0.600	0.216	0.282	-0.858	0.199	0.330
Sex	0.004	0.741	0.724	-0.129	0.760	0.786
(N=)		621	321		296	142

Multivariate test for differences between the two groups:

1st Model: Wilk's lambda statistic = .937.

F = 4.07: the group differences are statistically significant at the alpha = .01 level.

2nd Model: Wilk's lambda statistic = .927.

F = 2.91: the group differences are statistically significant at the alpha = .01 level.

Table C.4

**Discriminant Analysis: Whites Entering Business
In the 1976-1982 Time Period**

	Discriminant Function Coefficients	Group Mean Vectors	
		Standardized coefficients	Active firms
Ed2	-0.142	0.239	0.325
Ed3	0.211	0.219	0.214
Ed4	0.383	0.456	0.269
Management	-0.135	5.995	5.650
Input	0.249	44.881	42.537
Age2	0.025	0.338	0.329
Age3	0.095	0.196	0.182
Age4	0.185	0.134	0.111
Log Capital	0.405	9.375	9.018
Leverage	-0.210	2.375	3.211
Ongoing	0.251	0.230	0.159
Minority market	-0.211	0.087	0.119
Time80	-0.539	0.397	0.472
Time82	-0.651	0.154	0.238
Minority area	-0.075	0.157	0.170
(N=)		766	252

Multivariate test for differences between the two groups:

Wilk's lambda statistic = .948.

F = 4.63: the group differences are statistically significant at the alpha = .01 level.

Table C.5

The Incidence of Minority Employees on the Payrolls of White and Black-Owned Firms (Includes firms located in 28 large metropolitan areas only)

A. All Employers:

Percent minority employees	Black Firms	White Firms
75 percent or more	89.0%	17.8%
50 percent or more	93.5	23.2
Fewer than 50 percent (but greater than zero)	4.3	19.0
No minority employees	2.2	57.8

B. Employers by Area:

Percent minority employees	Firms Located in Minority Neighborhoods		Firms Located in Nonminority Areas	
	Black Firms	White Firms	Black Firms	White Firms
75 percent or more	93.1%	29.4%	78.9%	15.5%
50 percent or more	96.2	37.6	86.7	20.4
Fewer than 50 percent (but greater than zero)	1.9	29.4	10.2	16.9
No minority employees	1.9	32.9	3.1	62.7
Percent of employers located in each type of geographic area	71.3	16.4	28.7	83.6

NOTES

Notes to Chapter 1

1. Jaynes and Williams, 1989.
2. Danziger and Gottschalk, 1986.
3. Jaynes and Williams, 1989, p. 17.
4. *Ibid.*, p. 375.
5. *Ibid.*, p. 306.
6. *Ibid.*, p. 289.
7. *Ibid.*, p. 26.
8. *Ibid.*, p. 323.
9. Ledebur and Garn, 1980.
10. Vaughn, 1983.
11. Bates and Fusfeld, 1984, ch. 8,9; Harrison and Bluestone, 1985.
12. Birch, 1987, p. 16.
13. Armington and Odle, 1982; Harris, 1983.
14. Bates and Fusfeld 1984.
15. *Ibid.*, ch. 9.
16. Bates and Fusfeld, 1984.
17. In their recent study of South Carolina textile firms, for example, Heckman and Payner (1989) demonstrate that federal government equal-opportunity efforts were major factors in the large increase in black employment during the 1960s in an industry that had previously barred almost all black workers.

18. Jaynes and Williams, 1989, p. 321.
19. Braddock and McPartland, 1987, p. 12.
20. Tabb, 1972; Osborne and Granfield, 1976; Bates and Bradford, 1979; U.S. Commission on Civil Rights, 1986.
21. Stevens, 1984; U.S. Bureau of the Census, 1985.
22. Brimmer, 1966; Brimmer and Terrell, 1971.
23. Markwalder, 1983; Brimmer and Terrell, 1971.
24. Bates, 1981; 1983.
25. Simms, 1988.

Notes to Chapter 2

1. Bates and Grown, 1992.
2. Bates, 1989c; 1990c.
3. Holsey, 1938.
4. Kelsey, 1903.
5. Ransom and Sutch, 1977.
6. Bates and Fusfeld, 1984.
7. Bates, 1973b.
8. Pierce, 1947.
9. Bates, 1973b.
10. Watkins, 1985.
11. National Institute of Government Purchasing, 1984.
12. Bates, 1987.
13. Bates, 1989a.
14. I have excluded "casual" businesses—defined as those having 1982 annual sales of under \$5,000—but CBO enterprise data are otherwise representative of the small business universe that existed in 1982.
15. Bates, 1987.
16. *Ibid.*
17. These findings emerged from earlier studies by the author based on 1960, 1970, and 1980 census data; see Bates, 1984; 1987; and 1988a.

Notes to Chapter 3

1. Bates, 1987.
2. See, for example, U.S. Census Bureau, *Survey of Minority-Owned Business Enterprises, 1975*.
3. Markwalder, 1981.
4. Bates and Nucci, 1989.
5. Bearnse, 1983.
6. Bates, 1988a, pp. 31–5.
7. These figures on mean retail sales are based on CBO data, and they are comparable to the data summarized in table B.2 in appendix B.
8. Jovanovic, 1982.
9. Some readers may wonder why the term *discontinue* is used rather than the more familiar term *fail*. In fact, the government data on businesses which this book draws on are unable to distinguish between those firms that have closed because of failure to make a profit and those that have ended operation for family reasons or because of the owner's ill health, old age, or landing a more attractive job. All closings, then, are discontinuances, but only some are accurately labeled "failures."
10. This range of sales dispersion is measured as the coefficient of variation, that is, the standard deviation divided by the mean.
11. Bates, 1973a; Evans, 1987.
12. Jovanovic, 1982; Bates, 1989a.
13. Bates, 1990a.
14. Evans and Jovanovic, 1989; Bates, 1989a.
15. Holmes and Schmitz, 1990.
16. Terrell, 1971.
17. Jaynes and Williams, 1989, p. 292.
18. Bradford, 1988.
19. Statistical techniques for estimating small business size, such as table B.3's multiple regression technique, are not perfect predictors of firm behavior. For example, the variable for the hours of owner labor input suffers from a statistical problem known as "bi-direction of causality" when it is used to explain firm sales level. More labor input by owners, according to table B.3's statistical finding, indeed results in higher sales levels.

But consider the following hypothetical situation: an owner who pursues self-employment on a part-time basis finds that sales are booming in mid-1982. Because of this strength in business sales, the owner starts to work at the firm full-time. In this case, higher sales levels *cause* the owner to work longer hours in self-employment: by working longer hours, in turn, increased business sales levels are realized.

The regression analysis assumes that working longer hours (the independent variable) results in higher sales levels (the dependent variable); it does *not* measure the impact of dependent variable changes upon independent variable inputs (bi-direction of causality). For this reason, the statistical results (table B.3) must be viewed as being possibly biased. Such biases are the norm in cases where complex interactions exist between a variety of economic factors (such as owner traits) and the performance of an economic entity (such as small businesses). One response to such ubiquitous biases is to estimate several different econometric models that explain closely related dependent variables.

20. Bates, 1987.
21. Bates, 1974.
22. Brennan and Schwartz, 1978.
23. Bates and Hester, 1977.
24. Bates and Bradford, 1979.

Notes to Chapter 4

1. Bates, 1981.
2. Bates, 1985a.
3. Levinson, 1980.
4. Bates, 1981.
5. Handy and Swinton, 1984.
6. Bates and Fufeld, 1984.
7. Ihlanfeldt and Sjoquist, 1990.
8. Jaynes and Williams, 1987, p. 321.
9. Anderson, 1980, 1986; Braddock and McPartland, 1987.
10. Jaynes and Williams, 1989, p. 322.
11. Oakland, Sparrow, and Stettler, 1971.

12. Schaffer, 1973.
13. The role of income drains in preserving ghetto poverty is comprehensively documented in Richard Schaffer's classic New York City study, *Income Flows in Urban Poverty Areas: A Comparison of the Community Income Accounts of Bedford-Stuyvesant and Borough Park* (1973).
14. Browne, 1971.
15. Schaffer, 1973.
16. Sternlieb and Burchell, 1973.
17. Ando, 1988; Bates and Bradford, 1979.
18. Bates and Bradford, 1979.
19. Boorman and Kwast, 1974.
20. Bates and Bradford, 1979.
21. Bates and Fufeld, 1984.

Notes to Chapter 5

1. Ando, 1988.
2. Several urban areas, such as San Antonio and San Jose, had relatively few blacks in census tracts with those poverty rates and were therefore excluded from the study. Other large urban areas—e.g., San Diego and Seattle—were dropped because they lacked a sufficient number of high-poverty census tracts, while still others were dropped because they were too small and lacked a sufficient number of black-owned businesses.
3. Cited by Evans and Jovanovic, 1989.
4. Bates, 1983.

Notes to Chapter 6

1. Jaynes and Williams, 1989, p. 250.
2. Eisinger, 1984, p. 252.
3. Bates, 1985b.
4. Minority business directories utilized by corporate and government procurement officials were used in a 1983 study to generate names of minority firms that were actual or potential participants in set-aside

and preferential procurement programs. The minority business names thus extracted were matched against Dun and Bradstreet (D and B) files, and the matching process produced useful data on more than 1,000 minority firms (Bates, 1985b).

5. Five of these areas dominate the analysis, because they contain nearly 83 percent of the applicable black business sample. These five dominant areas are Atlanta, Detroit, Los Angeles, Oakland, and Washington, D.C. Similarly, the 18 areas without black mayors in 1982 are dominated by seven regions that contain over 74 percent of the applicable black business sample; these are New York, Chicago, Houston, Philadelphia, Dallas, Baltimore, and St. Louis. The 10 areas—Atlanta to Washington, D.C.—are identified as the “black mayor” group in this study; the remaining 18 areas are the “other mayor” group.

Notes to Chapter 7

1. Bates and Fusfeld, 1984, pp. 68–70.
2. Methods used by state and local governments to circumvent the intent of minority business set-aside programs are described in numerous journalistic sources. See, for example, the *Wall Street Journal* (“States Say It’s Not So Easy Finding Minority Concerns,” April 3, 1985) and the *Chicago Tribune* (“51% Solution Creates Instant Minority Firms,” June 9, 1985).
3. Bates, 1985a.
4. U.S. Comptroller General, 1981, p. 10.
5. U.S. Commission on Civil Rights, 1986, p. 2.
6. Bates and Bradford, 1979.
7. Bates, 1985a.
8. Bates, 1988b.
9. Bendick and Rasmussen, 1986, pp. 105–18.
10. Bendick and Rasmussen, 1986.