Why Are Black-Owned Businesses Less Successful than White-Owned Businesses? The Role of Families, Inheritances, and Business Human Capital

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Abstract

Using confidential microdata from the Characteristics of Business Owners, we examine why African-American owned businesses lag substantially behind white-owned businesses in sales, profits, employment, and survival. Black business owners are much less likely than white owners to have had a self-employed family member owner prior to starting their business and are less likely to have worked in that family member's business. Using a nonlinear decomposition technique, we find that the lack of prior work experience in a family business among black business owners, perhaps by limiting their acquisition of general and specific business human capital, negatively affects black business outcomes.

1. Introduction

The plight of African-Americans in the labor market is one of the most studied topics by economists, sociologists and other social scientists over the past several decades. Interestingly, however, much less attention has been drawn to the plight of blacks in the main alternative form of making a living -- business ownership. More than 1 out of every 10 working-age adults in the United States owns a business (U.S. Census Bureau 1993). Furthermore, only 3.8 percent of black workers are self-employed business owners compared to 11.6 percent of white workers. Several recent studies have examined the causes of the dearth of black-owned businesses and find that relatively low levels of education, assets, and parental self-employment are partly responsible (see Bates 1997, Fairlie 1999, and Hout and Rosen 2000 for a few recent examples). Although these results are informative, they do not shed light on why black-owned firms lag behind white-owned firms. Black-owned firms have lower revenues and profits, hire fewer employees, and are more likely to close than white-owned businesses (U.S. Census Bureau 1997).

The relative lack of success of black-owned businesses in the United States is a major concern among policymakers. It is particularly troubling because business ownership has historically been a route of economic advancement for disadvantaged groups. It has been argued, for example, that the economic success of several immigrant groups in the United States, such as the Chinese, Japanese, Jews, Italians, and Greeks, is in part due to their ownership of small businesses (See Loewen 1971, Light 1972, Baron et al. 1975, and Bonacich and Modell 1980). In addition, many states and the federal government are currently promoting self-employment as a way for families to leave the welfare and unemployment insurance rolls. The lack of business success among blacks also contributes to racial tensions in urban areas throughout the United States (Yoon 1997 and Min 1996).

Another reason for concern about the lack of business success among African-Americans is that they have made little progress in rates of business ownership even in light of the substantial gains in education, earnings, and civil rights that they have made during the twentieth

century. The 3 to 1 ratio of white to black self-employment rates has remained roughly constant over the past 90 years (Fairlie and Meyer 2000). Early researchers emphasized the role that past inexperience in business played in creating low rates of business ownership among blacks. In particular, Du Bois (1899), and later Myrdal (1944), Cayton and Drake (1946) and Frazier (1957) identify the lack of black traditions in business enterprise as a major cause of low levels of black business ownership at the time of their analyses.

The lack of black traditions in business argument relies on a strong intergenerational link in business ownership. Theoretically, we might expect the link to be strong due to the transmission of general business or managerial experience in family-owned businesses ("general business human capital"), the acquisition of industry- or firm-specific business experience in family-owned businesses ("specific business human capital"), the inheritance of family businesses, and the correlation among family members in preferences for entrepreneurial activities. Past empirical research supports this conjecture. The probability of self-employment is substantially higher among the children of the self-employed (see Lentz and Laband 1990, Fairlie 1999, Dunn and Holtz-Eakin 2000, and Hout and Rosen 2000). There is also evidence suggesting that current racial patterns of self-employment are in part determined by racial patterns of self-employment in the previous generation (Fairlie 1999 and Hout and Rosen 2000).

Although these findings indicate that the intergenerational transmission of business ownership is important in creating racial disparities in *rates* of business ownership, little is known about whether it also contributes to racial disparities in business outcomes *conditioning* on ownership. Do black business owners have limited opportunities for the acquisition of general and specific business human capital from working in family-owned businesses and the receipt of business inheritances? And, can racial disparities in these measures explain why black-owned businesses have worse outcomes, on average, than white-owned businesses? Previous studies have not explored these questions in detail because of the difficulty in finding nationally

representative data that include a large enough sample of black firms and information on family business ownership, prior work experience in family businesses and business inheritances.

In this paper, we use confidential and restricted-access microdata from the Characteristics of Business Owners (CBO) to explore the role that intergenerational links in self-employment play in contributing to racial differences in small business outcomes such as closure rates, profits, employment size, and sales. The CBO contains detailed information on the characteristics of both the business and the owner, but has been used by only a handful of researchers primarily because of difficulties obtaining access, using and reporting results from the data. We build on previous findings using the CBO indicating that previous work experience in a family member's business and previous work experience in a business providing similar goods and services have large positive effects on small business outcomes, whereas having a self-employed family member and business inheritances play only a minor role (Fairlie and Robb 2005). A careful examination of how these measures of family business background differ by race may uncover some answers. The inability of blacks to acquire general and specific business human capital through exposure to businesses owned by family members may contribute to their limited success in business ownership.

2. Data

The 1992 Characteristics of Business Owners (CBO) survey was conducted by the U.S. Bureau of the Census to provide economic, demographic and sociological data on business owners and their business activities (see U.S. Census Bureau 1997, Bates 1990a, Headd 1999, and Robb 2000 for more details on the CBO). The CBO is unique in that it contains detailed information on both the characteristics of business owners and the characteristics of their businesses. It includes oversamples of black-, Hispanic-, other minority-, and female-owned businesses. The survey was sent to more than 75,000 firms and 115,000 owners who filed an IRS form 1040 Schedule C (individual proprietorship or self-employed person), 1065 (partnership), or

1120S (subchapter S corporation). Only firms with $500 or more in sales were included. The universe from which the CBO sample was drawn represents nearly 90 percent of all businesses in the United States (U.S. Census Bureau, 1996). Response rates for the firm and owners surveys were approximately 60 percent. All estimates reported below use sample weights that adjust for survey non-response (Headd, 1999). The Data Appendix provides more details on the CBO.

The sample used below includes firms that meet a minimum weeks and hours restriction. Specifically, at least one owner must report working for the business at least 12 weeks in 1992 and at least 10 hours per week. This restriction excludes 22.1 percent of firms in the original sample. The weeks and hours restrictions are imposed to rule out very small-scale business activities such as casual or side-businesses owned by wage/salary workers. We also impose tighter restrictions on weeks and hours worked to check the sensitivity of our main results and comment on these below.

3. Racial Differences in Small Business Outcomes

Black-owned firms have worse outcomes than white-owned firms. Table 1 reports estimates of closure rates between 1992 and 1996, and 1992 profits, employment size, and sales from the CBO. The magnitude of these differences in business outcomes is striking. For example, only 13.9 percent of black-owned firms have annual profits of $10,000 or more, compared to 30.4 percent of white-owned firms. In fact, the entire distribution of business net profits before taxes for black-owned firms is to the left of the distribution for white-owned firms (with the exception of the largest loss categories). Surprisingly, nearly 40 percent of all black-owned firms have *negative* profits. Black-owned firms also have lower survival rates than white-owned firms. The average probability of business closure between 1992 and 1996 is 26.9 percent for black-owned firms compared to 22.6 percent for white-owned firms.

Black-owned firms are substantially smaller on average than are white-owned firms. Mean sales or total receipts among black-owned firms were $59,415 in 1992. Average sales

among white-owned firms were nearly 4 times larger. The difference is not simply due to a few very large white firms influencing the mean. Median sales for black firms were one half that of white firms, and the percent of black firms with sales of $100,000 or more was less than half the percent of white firms. Black-owned firms also hire fewer employees than white-owned firms. On average, they hire only 0.63 employees, whereas white-owned firms hire 1.80 employees. Interestingly, only 11.3 percent of black-owned firms hire *any* employees. In comparison, 21.4 percent of white-owned firms hire at least 1 employee.

Estimates from other data sources paint a similarly bleak picture for the state of black business. Closure rates are high among black-owned firms (Bates 1997, Robb 2000, Boden and Headd 2002, and Robb 2002). Data from the Survey of Small Business Finances show that black owned businesses had lower sales, employment, and profits, as well has higher bankruptcies and credit risk ratings (Bitler, Robb, and Wolken 2001 and Robb 2005). Using data from the Panel Study of Income Dynamics, Fairlie (1999) finds that the annual exit rate from self-employment for black men is twice the rate for white men.

4. Racial Differences in Family Business Background

An extensive literature addresses the "breakdown" of the African-American family (Wilson 1987, Tucker and Mitchell-Kernan 1995, Wilson 2002). Blacks are 40.1 percent less likely to be married than are whites, and black women are 78.8 percent more likely to have an out-of-wedlock birth than are white women (U.S. Census Bureau 2001 and National Center for Health Statistics 2002). The result is that 53.3 percent of black children live with only one of their parents compared with 21.5 percent of white children (U.S. Census Bureau 2001). In addition, previous research indicates that the probability of self-employment is substantially higher among the children of the self-employed than among the children of the non-self-employed (see Lentz and Laband 1990, Fairlie 1999, Dunn and Holtz-Eakin 2000, and Hout and Rosen 2000). These studies generally find that an individual who had a self-employed parent is

roughly two to three times as likely to be self-employed as someone who did not have a self-employed parent. The high incidence of growing up in a single-parent family and the strong intergenerational link in self-employment may limit business ownership opportunities for blacks.

Concerns about the negative consequences of weak family ties on business opportunities among blacks are not new. In fact, four decades ago Nathan Glazer and Daniel Patrick Moynihan made the argument that the black family "was not strong enough to create those extended clans that elsewhere were most helpful for businessmen and professionals (Glazer and Moynihan 1970, p.33)." More recently, Hout and Rosen (2000) note a "triple disadvantage" faced by black men in business ownership. They are less likely than whites to have self-employed fathers, to become self-employed if their fathers were not self-employed, and to follow their father in self-employment. Fairlie (1999) provides evidence that current racial patterns of self-employment are partly determined by racial patterns of self-employment in the previous generation.

We know less, however, about whether blacks and whites differ in work experience in family businesses and their likelihood of receiving business inheritances, and whether these patterns contribute to why black firms are less successful than white firms. Estimates from the CBO indicate that black and white primary business owners have different family business backgrounds. Table 2 reports the percentage of owners that had a family member who was a business owner and the percentage of owners that worked for that family member.[1] More than half of all white business owners had a self-employed family member owner prior to starting their business. In contrast, approximately one-third of black business owners had a self-employed family member.

Although family members may include spouses and siblings in addition to parents, these findings are consistent with Hout and Rosen's (2000) finding of a lower probability of self-

[1] The questions ask (1) "Prior to beginning/acquiring this business, had any of your close relatives ever owned a business OR been self-employed? (Close relatives refer to spouses, parents/guardians, brothers, sisters, or immediate family)", and (2) "If "Yes," did you work for any of these relatives?" (U.S. Census Bureau 1997, p. C-4).

employment among the children of self-employed parents (the "intergenerational pick up rate with respect to self-employment") for blacks than for whites.[2] To see this, we express the joint probability of having a self-employed parent ($S_{t-1}=1$) and child (S_t) as:

(4.1) $P(S_t=1, S_{t-1}=1) = P(S_t=1 \mid S_{t-1}=1)P(S_{t-1}=1) = P(S_{t-1}=1 \mid S_t=1)P(S_t=1)$.

Assuming a steady state equilibrium, $S_t=S_{t-1}$ and one-to-one matching of parents to children, the intergenerational pick up rate equals the probability of a business owner having a self-employed parent. We find a black/total ratio of 0.632 for the probability of having a self-employed family member, which is in the range of Hout and Rosen's (2000) estimates.

Family businesses may provide important opportunities for acquiring general and specific business human capital (Lentz and Leband 1990, Fairlie and Robb 2005). Estimates from the CBO indicate that conditional on having a self-employed family member, black business owners were also less likely to have worked for that person than were white business owners. Only 37.4 percent of black business owners who had a self-employed family member worked for that person's business, whereas 43.9 percent of white business owners who had a self-employed family member worked for that person's business.[3] Finally, black business owners overall were much less likely than white business owners to work for a family member's business. The unconditional rate of working for family member's business was 12.6 percent for blacks and 23.3 percent for whites.

Black business owners were slightly less likely to inherit their businesses than were white owners (Table 2). Only 1.4 percent of black owners inherited their firms compared with 1.7 percent of white owners. These rates of inheritance are very low and suggest that racial differences in inheritances cannot explain much of the gaps in small business outcomes. These estimates are consistent with estimates of racial differences in inheritances and gifts from the

[2] A large percentage of owners who report having a self-employed family member prior to starting their businesses are likely to have self-employed parents because the question refers to family business ownership prior to starting the business, less than a quarter of the self-employed have self-employed spouses and business ownership runs in families (see Fairlie and Robb 2005 for further discussion).

Federal Reserve's Survey of Small Business Finances (SSBF). Estimates from the SSBF indicate that 4.2 percent of white firms and 4.0 percent of black firms are inherited or acquired as gifts. Unfortunately, the SSBF questionnaire does not distinguish between inheritances and gifts.

Overall, the estimates reported in Table 2 indicate that black business owners have a relatively disadvantaged family business background compared to white business owners. The lack of family business experience may contribute substantially to the relative lack of success of black-owned businesses because of limited opportunities to receive the informal learning or apprenticeship type training that occurs in working in a family business. Family businesses provide an opportunity for family members to acquire general business human capital and in many cases also provide the opportunity for acquiring specific business human capital. The impact of racial differences in these opportunities on business outcomes, however, are unknown.

5. The Determinants of Small Business Outcomes

To better understand why racial differences in business outcomes exist, we first model the determinants of small business outcomes. Logit and linear regression models are estimated for the probability of a business closure from 1992-1996, the probability that the firm has profits of at least $10,000 per year, the probability of having employees, and log sales.[4] Table 3 reports estimates of marginal effects for the logit regressions and coefficients for the OLS regression. After controlling for numerous owner and business characteristics, black-owned businesses continue to lag behind white-owned businesses. In all specifications except the closure probability equation, the coefficient estimate on the black-owned business dummy variable is large, negative and statistically significant. Thus, racial differences in the included variables cannot explain all of the black/white disparities in outcomes (which we discuss further below).

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[3] These patterns may in part be due to lower employment levels among black-owned firms.

[4] The profit measure available in the CBO is categorical. We estimate a logit model for the cutoff of $10,000 to make it easier to interpret the coefficients and perform the decomposition described below. We find similar results in estimating an ordered probit for profits (Fairlie and Robb 2005).

Similar to previous studies, we find that small business outcomes are positively associated with the education level of the business owner (Bates 1990b). Female-owned businesses have lower outcomes, on average, than male-owned businesses, which is consistent with previous findings indicating that self-employment is associated with higher earnings for men, but lower earnings for women (see Hundley 2000 for example). And, firms located in urban areas are more likely to close and are less likely to have employees, but are more likely to have large profits and have higher sales than firms located in non-urban areas.

Having a family business background is important for small business outcomes (see Fairle and Robb 2005 for more details). The main effect, however, appears to be through the informal learning or apprenticeship type training that occurs in working in a family business and not from simply having a self-employed family member. The coefficient estimates on the dummy variable indicating whether the owner had a family member who owned a business are small and statistically insignificant in all of the specifications except for the closure probability equation. In contrast, working at this family member's business has a large positive and statistically significant effect in all specifications. The probability of a business closure is 0.042 lower, the probability of large profits is 0.032 higher, the probability of employment is 0.055 higher, and sales are roughly 40 percent higher if the business owner had worked for one of his/her self-employed family members prior to starting the business.[5] The effects on the closure, profit and employment probabilities represent 15.3 to 26.6 percent of the sample mean for the dependent variables.

Perhaps not surprisingly, inherited businesses are more successful and larger than non-inherited businesses. The coefficients are large, positive (negative in the closure equation) and statistically significant in all specifications. Inheritances may represent a form of transferring successful businesses across generations, but their overall importance in determining business

[5] These estimates are not overly sensitive to the exclusion of firms started before 1980 or the inclusion of the age of the firm (with the exception of the inheritance variable). In addition, estimates from the log sales

outcomes is slight at best. Although the coefficient estimates are large in the outcome equations, the relative absence of inherited businesses (only 1.6 percent of all small businesses) suggests that they play only a minor role in establishing an intergenerational link in self-employment.

The strong effect of previous work experience in a family member's business on small business outcomes suggests that family businesses provide an important opportunity for family members to acquire human capital related to operating a business. The general lack of significance of having a self-employed family member may indicate that correlations across family members in entrepreneurial preferences and ability are less important in creating an intergenerational link in business ownership. There is the possibility, however, that the more able children are the ones that are more likely to work in family businesses.

The CBO also provides detailed information on other forms of acquiring general and specific business human capital. Available questions include information on prior work experience in a managerial capacity and prior work experience in a business whose goods and services were similar to those provided by the owner's business. These variables may have an important effect on small business outcomes. There may also exist important racial differences in the extent to which these methods of acquiring general and specific business human capital are used, thus leading in turn to racial differences in business outcomes.

The effects on small business outcomes of working for a self-employed family member are generally stronger than the effects of prior work experience in a managerial capacity. Management experience has a similar size effect in the profit and employer equations, but has a much smaller effect on log sales and a positive and statistically significant effect on business closures. Management experience prior to starting or acquiring a business generally improves business outcomes, but has a less consistent effect than experience working for a close relative.

The CBO also provides information on whether the owner worked in a business whose goods and services were similar to those provided by his/her business. This more general case of

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specification are not sensitive to the exclusion of firms with extremely large annual sales.

acquiring specific business human capital appears to be very important. In fact, the coefficient estimates on a dummy variable for whether the owner had work experience in a similar business are comparable in size to the coefficient estimates on prior work experience in a family member's business in the closure probability and log sales equations. The coefficient estimate is smaller in the employer probability equation, but larger in the profits equation. In all specifications, the coefficient estimates are large and statistically significant.

The inclusion of prior managerial experience and similar business experience suggests that the large, positive coefficient estimates on working for a self-employed family member are not simply capturing the effects of management experience or specific business human capital on small business outcomes. Instead, prior work experience in a family member's business has an independent effect on small business outcomes, which may in part be due to the acquisition of less specific, general business human capital. In contrast, the independent effects of having a family member who owns a business on small business outcomes are not large. Finally, inherited businesses may be more successful on average than non-inherited businesses, but their limited representation among the population of small businesses suggests that they are only a minor determinant of small business outcomes.

ADDITIONAL ESTIMATES

We investigate whether the regression estimates are sensitive to alternative samples.[6] First, we estimate regressions using a sample that excludes firms with less than $5,000 in startup capital. We do not use this restriction in the original sample because most businesses report requiring very little in startup capital, and, in fact, many large successful businesses started with virtually no capital. For example, estimates from the CBO indicate that among businesses with sales of $100,000 to $200,000 per year, approximately 40 percent of firms required less than $5000 in startup capital (U.S. Census Bureau 1997). We also do not exclude these firms in the

original sample because we are concerned that the receipt of startup capital may be related to the potential success of the business (we discuss this issue further below). Although mean outcomes among businesses that started with $5,000 or more in startup capital are better than those for all businesses, we find roughly similar estimates for most variables in the regression models. In particular, we find that having a self-employed family member has little effect on outcomes, whereas prior work experience in a family member's business improves outcomes. Overall, these estimates indicate that the findings regarding the importance of family business backgrounds in contributing to small business success are not due to the inclusion of smaller, less successful firms that require little or no startup capital.

Although not reported, we also check the sensitivity of our results to the removal of part-time business owners. In particular, we estimate means and a separate set of regressions that only include businesses with at least one owner who works 30 hours or more per week and 36 weeks or more per year, which reduces the sample size by roughly 20 percent. Although average business outcomes are better for this sample, we find similar coefficients on the family business background measures. We also estimate regressions that include even tighter hours and weeks worked restrictions and find roughly similar results. Finally, we estimate regressions that exclude partnerships, which represent 7 percent of the total sample. We find similar results using this sample. Overall, the regression results are not sensitive to these alternative sample restrictions.

FINANCIAL STARTUP CAPITAL AND INDUSTRY

Two additional factors that are associated with business success are access to startup capital and the industry of the business. The causal effects of these two variables on business outcomes, however, are difficult to estimate. We first discuss the results for startup capital.

A large and growing literature examines the importance of personal wealth as a potential determinant of self-employment. Most studies find that asset levels (e.g. net worth) measured in

[6] The estimates are not sensitive to missing data (see the Data Appendix).

one year increase the probability of entering self-employment by the following year.[7] The finding has generally been interpreted as providing evidence that entrepreneurs face liquidity constraints, although there is some recent evidence against this interpretation (Hurst and Lusardi 2004). The main concerns with the liquidity constraint interpretation are that business ownership may be an effective method of acquiring wealth and that individuals who are adept at accumulating wealth perhaps through wage/salary work may be the same ones who are the most successful at starting businesses.[8]

Although we do not present new evidence on liquidity constraint debate, we note the possibility that the owner's level of wealth may affect future business success. In particular, if liquidity constraints bind the owner's wealth may affect access to financial capital because this wealth can be invested directly in the business or used as collateral to obtain business loans. Constant returns to scale production implies that liquidity constrained entrepreneurs might start smaller, undercapitalized businesses. These businesses will have worse outcomes than those created in the absence of liquidity constraints. Unfortunately, the CBO does not contain a measure of the owner's net worth prior to starting the business.[9] Instead, the CBO contains categorical information on "the total amount of capital required to start/acquire the business" (U.S. Census Bureau 1997, p. C-15). Related to the aforementioned problems, however, the amount of required startup capital is potentially endogenous to business success because potentially successful business ventures are likely to generate more startup capital than business ventures that are viewed as being potentially less successful (Bates 1990b).[10]

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[7] For example, see Evans and Jovanovic (1989), Evans and Leighton (1989), Meyer (1990), Holtz-Eakin, Joulfaian, and Rosen (1994), Blanchflower and Oswald (1998), Dunn and Holtz-Eakin (2000) Fairlie (1999, 2002), Holtz-Eakin and Rosen (2004), and Hurst and Lusardi (2004).

[8] See Bradford (2003) for evidence on wealth accumulation among black and white entrepreneurs.

[9] The CBO does not include any measure of the owner's net worth. Using the 1987 CBO, Astebro and Bernhardt (2005) instead use instrumented household income as a proxy for household wealth and find a positive relationship between this variable and startup capital controlling for other owner and business characteristics.

[10] In support of the use of this measure, there is evidence suggesting that the size of inheritances received by individuals increases the amount of capital invested in the business (Holtz-Eakin, Joulfaian, and Rosen 1994a). Hurst and Lusardi (2004) find, however, that future inheritances also increase the probability of

The industry of the business is also likely to be associated with the size and success of the business. Estimates from the CBO indicate large industry differences in business outcomes (U.S. Census Bureau 1997). These patterns are difficult to interpret, however, because the choice of industry and the choice of starting and the size of a business may be simultaneously determined, and industry choice may be correlated with unobserved preferences for the scale of the business and entrepreneurial ability.

In light of these concerns, we estimate a second set of small business outcome regressions that include dummy variables for different levels of startup capital and major industry categories. Estimates are reported in Table 4. As expected, small business outcomes are positively associated with the amount of required startup capital. The coefficients on the startup capital dummies are large, positive (negative for the closure probability), and statistically significant in all specifications. Industry is also linked to business success as many of the dummy variables for industries are large in magnitude and statistically significant (retail trade is the left-out category). The estimates vary across specifications, however, making it difficult to summarize the association between industries and business outcomes.

It is also important to note that the addition of startup capital and industry does not overly influence the estimated effects of the family business background, human capital and business human capital variables. The coefficient estimates on having a self-employed family member and inheriting the business do not change substantially. The coefficients on previous work experience in a family member's business are generally smaller, but remain statistically significant.

6. Identifying the Causes of Racial Differences in Small Business Outcomes

Estimates from the CBO indicate that black business owners have less family business experience than white business owners and differ for many other characteristics, such as

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self-employment entry suggesting that liquidity constraints are not the underlying cause of the positive relationship between inheritances and entrepreneurship.

education and startup capital (see Table 2 and the Appendix). Furthermore, the estimates reported in Tables 3 and 4 indicate that many of these variables are important determinants of small business outcomes. Taken together these results suggest that racial differences in family business background, education, and startup capital contribute to why black-owned businesses have worse outcomes on average than white-owned businesses. The impact of each factor, however, is difficult to summarize. In particular, we wish to identify the separate contributions from racial differences in the distributions of all of the variables or subsets of variables included in the regressions.

To explore these issues further, we employ a variant of the familiar technique of decomposing inter-group differences in a dependent variable into those due to different observable characteristics across groups and those due to different "prices" of characteristics of groups (see Blinder 1973 and Oaxaca 1973).[11] The technique that we describe here takes into account the nonlinearity of the logit regressions used to estimate the closure, profit, and employment probability equations discussed above (see Fairlie 1999 for more details). The standard Blinder-Oaxaca decomposition is used for the log sales specification. Similar to most recent studies applying the decomposition technique, we focus on estimating the first component of the decomposition that captures contributions from differences in observable characteristics or "endowments." We do not report estimates for the second or "unexplained" component of the decomposition because it partly captures contributions from group differences in unmeasurable characteristics and is sensitive the choice of left-out categories making the results difficult to interpret (see Jones 1983 and Cain 1986 for more discussion).

For a nonlinear equation, such as $Y = F(X\hat{\beta})$, a modification is needed for the decomposition because $\overline{Y}$ does not necessarily equal $F(\overline{X}\ \hat{\beta})$. Instead, we use the full

[11] The standard Blinder-Oaxaca decomposition of the white/minority gap in the average value of the dependent variable, Y, can be expressed as: $\overline{Y}^W - \overline{Y}^M = \left[(\overline{X}^W - \overline{X}^M)\hat{\beta}^W\right] + \left[\overline{X}^M(\hat{\beta}^W - \hat{\beta}^M)\right]$.

distribution of X to calculate the average predicted probability. In the case of a logistic model that includes a constant term, the average value of the dependent variable must equal the average value of the predicted probabilities in the sample.[12] Another issue that arises in calculating the decomposition is the choice of coefficients or weights for the first component of the decomposition. The first component can be calculated using either the white or minority coefficients often providing different estimates, which is the familiar index problem with the Blinder-Oaxaca decomposition technique. An alternative method is to weight the first term of the decomposition expression using coefficient estimates from a pooled sample of the two groups (see Oaxaca and Ransom 1994 for example). We follow this approach to calculate the decompositions by using coefficient estimates from a logit regression that includes a sample of all racial groups.

The contribution from racial differences in the characteristics can thus be written as:

$$(5.1)\quad \sum_{i=1}^{N^W} \frac{F(X_i^W \hat{\beta}^*)}{N^W} - \sum_{i=1}^{N^M} \frac{F(X_i^M \hat{\beta}^*)}{N^M},$$

where X_i^j is a row vector of characteristics for firm i of race j, $\hat{\beta}^*$ is a vector of pooled coefficient estimates, N^j is the sample size for race j, and $j=M$ or W for minorities and whites, respectively.. Equation (5.1) provides an estimate of the contribution of racial differences in the entire set of independent variables to the racial gap. An additional calculation, however, is needed to identify the contribution of group differences in specific variables to the gap. For example, assume that X includes two variables, X_1 and X_2. The independent contribution of X_1 to the racial gap can be expressed as:

$$(5.2)\quad \frac{1}{N^M} \sum_{i=1}^{N^M} F(X_{1i}^W \hat{\beta}_1^* + X_{2i}^W \hat{\beta}_2^*) - F(X_{1i}^M \hat{\beta}_1^* + X_{2i}^W \hat{\beta}_2^*).$$

[12] In contrast, the predicted probability evaluated at the means of the independent variables is not necessarily equal to the proportion of ones, and in the sample used here it is likely to be smaller because the logit function is convex for values less than 0.5.

Next, to calculate the contribution of racial differences in X_2 to the gap, we use the difference between the average predicted probability using the minority distribution for X_1 and the white distribution for X_2 and the average predicted probability using the minority distributions for both X_1 and X_2. Thus, the contribution from racial differences in each variable to the gap is calculated from the change in average predicated probabilities resulting from sequentially switching white characteristics to minority characteristics one variable or set of variables at a time.[13] The calculation of (5.2), however, is not possible without first matching the white distribution of X_1 to the minority distribution of X_1. We draw a random subsample of whites with a sample size equal to N_B and randomly match it to the minority sample. Each observation in the white sample is thus uniquely matched to an observation in the black sample to allow for switching values of X_1.

The decomposition estimates obtained from this procedure depend on the randomly chosen subsample of whites. Therefore, to obtain estimates that use the entire white sample, we draw a large number of random white subsamples. We then calculate the mean value of estimates from all of these samples. In the decompositions reported below, we use 1000 random subsamples of whites to calculate these means.

Table 5 reports estimates from this procedure for decomposing the large black/white gaps in small business outcomes discussed above. The separate contributions from racial differences in each set of independent variables are reported. Racial differences in the male/female ownership of the firm contribute significantly to the gaps in small business outcomes. Low levels of education among black business owners relative to white business owners appear to have a negative effect on business outcomes, but educational differences do not translate into large effects. Racial differences in owner's education explain from 2.4 to 6.5 percent of the black/white gaps in small business outcomes. Although black-owned businesses have a different regional

distribution and are more likely to be located in urban areas than are white-owned businesses, racial differences in geographical locations do not appear to contribute substantially to the gaps in small business outcomes. Racial differences in the amount of prior work experience and management experience have either small effects or mixed effects across specifications.

As reported in Table 2, black business owners are much less likely to have a self-employed family member than are white business owners. This difference, however, is unimportant in explaining racial disparities in profits, employment, and sales. The only exception is that racial differences in having a self-employed family member explain 8.9 percent of the black/white gap in closure rates. The contribution of group differences in parental self-employment to racial differences in small business outcomes appears to be smaller than the contribution to rates of self-employment and entry into self-employment. Estimates from the PSID indicate that differences in the probability of having a self-employed father explain 8 to 14 percent of the black/white gap in the entry rate into self-employment and 4 to 6 percent of the gap in the self-employment rate (Fairlie 1999).

The explanatory power of racial differences in prior work experience in a family member's business is stronger. With the exception of the profits specification, racial differences in this variable explain 5.6 to 11.6 percent of the black/white gaps in small business outcomes. Apparently, the lack of work experience in family businesses among future black business owners, perhaps by restricting their acquisition of general and specific business human capital, limits the successfulness of their businesses relative to whites.

Providing some additional evidence on this point, racial differences in prior work experience in a business providing similar goods and services consistently explain a small part of the gaps in outcomes. Although the coefficient estimates in the small business outcome regressions were generally similar in magnitude to coefficient estimates on the family business

[13] Unlike in the linear case, the independent contributions of X_1 and X_2 depend on the value of the other variable. This implies that the choice of a variable as X_1 or X_2 (or the order of switching the distributions)

work experience variable, the contributions from racial differences are somewhat smaller. The racial disparity in the percent of owners that worked in a family member's business is larger than the disparity in the percent of owners that worked in a business with similar goods and services.

Black-owned businesses are less likely to be inherited than white-owned businesses and inherited businesses are generally more successful than non-inherited businesses, but racial differences in business inheritances explain virtually none of the gaps in small business outcomes. The overall likelihood of business inheritances (1.6 percent) is just too small to play a major role in explaining racial differences in business outcomes.

The finding is interesting in light of the finding in the literature that blacks are less likely to receive inheritances and typically receive much smaller inheritances than whites. In fact, there is recent evidence suggesting that the lack of inheritances among blacks is one of the primary factors explaining why blacks have asset levels that are substantially lower than white levels (Menchik and Jianakoplos 1997, Gittleman and Wolff 2000, and Avery and Rendall 2002). Furthermore, the receipt of inheritances is a major determinant of starting businesses (Holtz-Eakin, Joulfaian, and Rosen 1994a and Blanchflower and Oswald 1998) suggesting that lower levels of inheritances among blacks contributes to lower rates of business ownership. Focusing on business inheritances and small business outcomes, however, apparently changes the conclusion on the importance of racial differences in inheritances.

GENDER DIFFERENCES

We also investigate whether the decomposition results hold separately for male- and female-owned businesses. Overall, male and female business owners have fairly similar family business backgrounds. Estimating separate business outcome regressions, we also find that human capital, business human capital and family business experiences are similarly related to business success for men and women (see Fairlie and Robb 2005). Having a self-employed

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is potentially important in calculating its contribution to the racial gap.

family member has no effect on business outcomes, but prior work experience in a family business has large effects on business outcomes for both men and women. Black firms are also found to have substantially worse outcomes than white firms, on average, for both men and women. Overall, separate male and female decompositions indicate some differences in the results for men and women, but the main findings for the family business background variables are similar (see Fairlie and Robb 2006 for more details). Racial differences in having a self-employed family member explain very little of the gaps in business outcomes, whereas having prior work experience in a family member's business explains part of the gaps. Racial differences in business inheritances explain virtually none of the gap for either men or women.

STARTUP CAPITAL AND INDUSTRY DIFFERENCES

Table 6 reports the results of decompositions that include contributions from racial differences in startup capital and industry. Black-owned firms clearly have less startup capital than white-owned firms. For example, 8.1 percent of black-owned businesses required at least $25,000 in startup capital compared to 15.7 percent of white-owned businesses. These racial differences in startup capital explain a substantial portion of the black/white gaps in small business outcomes. The contribution estimates range from 14.5 to 43.2 percent. Clearly, lower levels of startup capital among black-owned firms are associated with less successful businesses.

An important question is whether these lower levels of startup capital are related to difficulties in obtaining funding because of low levels of personal wealth and/or lending discrimination. The median level of net worth for black households is $6,166, compared to $67,000 for white households (U.S. Census Bureau 2005). These enormous disparities in wealth may translate into differential access to startup capital because personal wealth can be invested directly in the business or used as collateral to obtain business loans. Recent research also indicates that black firms may face lending discrimination which potentially exacerbates the problem (see Blanchflower, Levine and Zimmerman 2003 and Cavalluzzo and Wolken 2002 for

example). Blacks may also have less access to family wealth through inheritances, loans and equity investments (Bates 1997). All of these factors may contribute to the substantially lower levels of startup capital among black business owners than among white business owners. In the end, however, we cannot rule out the possibility that racial disparities in startup capital may also be caused by differences in the types, scale or potential successfulness of businesses that black entrepreneurs start.[14]

Black and white firms concentrate in different industries. Black firms are underrepresented in construction, manufacturing, wholesale trade, agricultural services and finance, insurance and real estate relative to white firms. Black firms are more concentrated in transportation, communications and public utilities, and personal services than white firms. These industry differences are associated with worse outcomes among black-owned firms. The decomposition estimates indicate that industry differences explain 7.0 to 20.5 percent of the racial differences in business outcomes. Differences in industry distributions may be due to capital constraints, skill differences, discrimination and differences in preferences making it difficult to interpret these results.

Overall, racial differences in the explanatory variables explain a large percentage of the total black/white gaps in small business outcomes. They explain nearly 50 percent of the racial gap in profits or employment, and nearly 70 percent of the total gap in log sales. The entire black/white gap in business closure rates is explained by racial differences in the explanatory variables. The remaining or "unexplained" portion of the racial gaps in small business outcomes may be due to lending discrimination and consumer discrimination against black-owned firms, the omission of important unmeasurable or difficult-to-measure factors such as risk aversion and networks, or the inability to accurately measure racial differences in *access* to capital. Although there is evidence consistent with lending discrimination as noted above, the evidence on

[14] Interestingly, black-owned firms have lower levels of startup capital across all major industries (U.S. Census Bureau 1997).

consumer discrimination is more mixed (Borjas and Bronars 1989, Meyer 1990 and Kawaguchi 2004). Previous research also indicates that social and business networks are important for business success, but there is little evidence on the question of whether racial differences in networks are important in contributing to racial differences in business outcomes (Fratoe 1988, Bates 1993, Feagin and Imani 1994, Bates and Howell 1997, Allen 2000, Rauch 2001, Shane and Cable 2002, and Davidsson and Honig 2003, Kalnins and Chung 2005).

7. Conclusions

An important finding in the rapidly growing literature on self-employment is that the probability of business ownership is substantially higher among the children of business owners than among the children of non-business owners (Lentz and Laband 1990, Fairlie 1999, Dunn and Holtz-Eakin 2000, and Hout and Rosen 2000). Recent evidence also suggests that current racial patterns of self-employment are in part determined by racial patterns of self-employment in the previous generation (Fairlie 1999 and Hout and Rosen 2000). Using confidential and restricted-access microdata from the Characteristics of Business Owners (CBO), we expand on these results by exploring whether the intergenerational transmission of business ownership is also important in creating racial disparities in business outcomes *conditioning* on ownership.

Estimates from the CBO indicate that black-owned firms have lower profits and sales, hire fewer employees, and are more likely to close than white-owned firms. Black business owners also have a relatively disadvantaged family business background compared to white business owners. Black business owners are much less likely than white business owners to have had a self-employed family member owner prior to starting their business and are less likely to have worked in that family member's business. Only 12.6 percent of black business owners had prior work experience in a family member's business compared to 23.3 percent of white business owners. Racial differences and overall rates of business inheritances were much smaller. The

percent of business owners inheriting their firms was 1.4 percent for blacks and 1.7 percent for whites.

Using a nonlinear decomposition technique, we find that the lower probability of having a self-employed family member prior to business startup among blacks than among whites does not generally contribute to racial differences in small business outcomes. Instead, the lack of prior work experience in family businesses among future black business owners, perhaps by restricting their acquisition of general and specific business human capital, limits the successfulness of their businesses relative to whites. With the exception of the profits specification, racial differences in this variable explain 5.6 to 11.6 percent of the gaps in small business outcomes. Providing some additional evidence on the importance of limited opportunities for acquiring business human capital, racial differences in prior work experience in similar businesses also consistently explain part of the gaps in small business outcomes. Furthermore, the combination of these two factors suggests that racial differences in opportunities to acquire business human capital in general contribute substantially to black/white differences in small business outcomes.

Black-owned businesses are less likely to be inherited than white-owned businesses and inherited businesses are generally more successful than non-inherited businesses, but racial differences in business inheritances explain virtually none of the gaps in small business outcomes. The overall likelihood of business inheritances (1.6 percent) is just too small to play a major role in explaining racial differences in business outcomes.

Our estimates indicate that blacks are less likely than whites to have previous work experience in a family member's business and are less likely to have previous work experience in a similar business. The relative lack of opportunities for acquiring general and specific business human capital apparently has a negative effect on the outcomes of black-owned firms. This finding has important policy implications. Most minority business development policies currently in place, such as set-asides and loan assistance programs, are targeted towards

alleviating financial constraints not towards providing opportunities for work experience in small businesses. To break the "vicious" cycle of low rates of business ownership and negative business outcomes being passed from one generation of blacks to the next, programs that directly address deficiencies in family business experience, possibly through an expansion of apprenticeship-type entrepreneurial training programs, may be needed.

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Data Appendix

1. The Characteristics of Business Owners (CBO)

The 1992 Characteristics of Business Owners (CBO) Survey is the third survey of its kind conducted by the Bureau of the Census. The first two surveys were conducted for 1982 and 1987. Minorities and women were oversampled to allow researchers to more reliably study these businesses and business owners. The sample for the CBO is a sub-sample of the Survey of Minority-Owned Business Enterprises (SMOBE) and drawn from the businesses that responded to the SMOBE. The SMOBE had a 77 percent response rate.

The 1992 CBO survey was conducted by the U.S. Census Bureau to provide economic, demographic and sociological data on business owners and their business activities (see U.S. Census Bureau 1997, Bates 1990a, Headd 1999, and Robb 2000 for more details on the CBO). The survey was sent to more than 75,000 firms and 115,000 owners who filed an IRS form 1040 Schedule C (individual proprietorship or self-employed person), 1065 (partnership), or 1120S (subchapter S corporation). Larger C corporations were not included because of the difficulty in asking owner questions for many investors. C corporations as a tax filing status, however, are becoming less popular relative to S corporations due to changes in tax laws (Headd 1999).

The CBO and underlying SMOBE contain only firms with $500 or more in annual sales. The universe from which the CBO sample was drawn represents nearly 90 percent of all businesses in the United States (U.S. Census Bureau, 1996). These businesses, however, represent a much smaller percent of total employment. Response rates for the firm and owners surveys were approximately 60 percent. All estimates reported below use sample weights that adjust for survey non-response (Headd 1999).

The CBO is unique in that it contains detailed information on both the characteristics of business owners and the characteristics of their businesses. For example, owner characteristics include education, detailed work experience, hours worked in the business, marital status, age, weeks and hours worked, personal income, and how the business was acquired. Business characteristics include closure, profits, sales, employment, industry, startup capital, types of customers, health plans, and exports. Most business characteristics refer to 1992, with the main exception being closure which is measured over the period 1992 to 1996. Additional advantages of the CBO over other nationally representative datasets for this analysis are the availability of measures of business ownership among family members and the large oversample of black-owned businesses. In particular, the CBO contains rare or unique information on business inheritances, business ownership among family members, prior work experience in a family member's business, and prior work experience in a business whose goods/services were similar to those provided by the owner's business. The CBO allows us to conduct a detailed analysis of the determinants of racial patterns in several business outcomes, such as closure rates, sales, profits, and employment size.

For owner characteristics in multi-owner firms, which represent 20.6 percent of the sample, we identify one person as the primary owner of the business. The primary owner is identified as the owner working the most annual hours in 1992 (weeks*hours). In the case of ties, we identify the primary owner as the person who founded the business. Finally, all remaining ties are resolved by assigning a random owner. The primary business owner is used to identify all owner characteristics of the firm, such as marital status, education, prior work experience, and family business background. The race and sex of the firm, however, are identified by majority ownership, which is the method used by SMOBE/SWOBE (U.S. Bureau of the Census, 1996, Robb 2000).

The main disadvantage of the CBO is that it does not contain information on a comparison group of wage/salary workers. Therefore, it is difficult to examine the determinants of business ownership rates using these data. Another disadvantage is that there may be nonresponse bias and recall bias associated with conducting the survey in 1996. Although sample

weights are used that correct for non-response, there is some concern that closure rates are underestimated for the period from 1992 to 1996 in the CBO. Businesses that closed or moved over this period may have been less likely to respond to the survey which was sent out at the end of the period. Indeed, Robb (2000) showed, through matching the CBO to administrative records for employer firms using the Business Information Tracking Series (BITS), that nonrespondents had a higher rate of closure than respondents (14 percentage points). Racial differences in closure rates, however, were similar for respondents and nonrespondents.

Given the detailed information on both owner and business characteristics, the oversamples of minority-owned businesses, and availability since 1982, it is surprising that the CBO microdata have only been used by a handful of researchers to study minority businesses (see Bates 1997 and many other studies; Christopher, 1993, 1998; Kijakazi, 1997, and Robb 2000, 2002). The lack of use appears to be primarily due to difficulties in accessing and reporting results from these confidential, restricted-access data. All research using the CBO must be conducted in a Census Research Data Center or at the Center for Economic Studies (CES) after approval by the CES and IRS, and all output must pass strict disclosure regulations.

2. Missing Data

A concern with the main estimates reported in Table 3 is the amount of missing data for some of the independent variables in the CBO. Approximately 10 percent of the observations for each of the specifications reported in Table 3 are excluded because of missing values for one or more of the independent variables. Although these levels of missing data are not extremely high, we examine the sensitivity of our results to two alternative methods of correcting for missing data. First, we estimate regressions in which dummy variables are included for missing values of specific independent variables.[15] For example, if the education level of the business owner is missing then the four education level dummy variables would be equal to zero and a special missing education dummy variable would be equal to one. Thus, the missing observation for owner's education would not contribute to the coefficient estimates on the main education level dummies, but would contribute to coefficient estimates on other variables. This technique is becoming increasingly common in the literature because it is easy to implement and allows for an increase in the efficiency of some coefficient estimates. Although not reported, we find estimates that are similar to the ones reported in Table 2 for all four specifications.

We also address the missing data problem by using multiple imputation (see Rubin 1987, Schafer and Olsen 1998, and Schafer 1997, 1999 for more details).[16] The multiple imputation technique essentially replaces each missing value in the data with a set of plausible values resulting in separate datasets that include the true values for nonmissing observations and the imputed variables for missing observations. The Markov Chain Monte Carlo (MCMC) method is used to impute the missing observations, which is preferred in the case of an arbitrary missing data pattern (Schafer 1997). The means and covariances between the variables for the non-missing observations and the assumption that the variables have a multivariate normal distribution are used to impute missing values. The correlations between all of the variables in the main specification and additional variables measuring financial capital, industry and start year of the firm are used to improve the imputations. We also placed restrictions on minimum and maximum values and rounding. Logit or linear regressions are then run on five separately imputed datasets.[17] The results from the five runs are combined for inference and adjustments are

[15] Race, gender, region, and urbanicity are from administrative record data and have no missing values. All other independent variables have missing values.

[16] The technique has been discussed recently in the Economics literature (Brownstone and Valetta 2001) and has been used to impute income and wealth variables in the Survey of Consumer Finances (Kennickell 1998).

[17] The gains in efficiency are small after increasing the number of imputations above five (Schafer and

made for sampling variance. The resulting coefficient estimates summarize this information and their standard errors capture the variability of estimates across the five runs, which differs from the typical overstatement of the statistical precision of estimates from single imputation methods. We report the multiple imputation coefficient estimates and their standard errors in Appendix 1. Despite the large increase in sample size, the estimates are similar to those reported in Table 3. Thus, the removal of observations with missing data does not appear to overly affect our results.

Olsen 1998).

Data Appendix
Multiple Imputation Regressions for Small Business Outcomes
Characteristics of Business Owners, 1992

	Specification			
	(1)	(2)	(3)	(4)
Dependent variable	Closure (1992-96)	Profits $10,000+	Employer Firm	Ln Sales
Black-owned business	0.0213	-0.1866	-0.1038	-0.4883
	(0.0121)	(0.0197)	(0.0157)	(0.0522)
Latino-owned business	-0.0190	-0.0340	0.0167	0.0552
	(0.0113)	(0.0135)	(0.0111)	(0.0463)
Native American-owned business	-0.1220	0.0338	0.0650	0.3944
	(0.0522)	(0.0502)	(0.0396)	(0.1783)
Asian-owned business	-0.0473	0.0198	0.0696	0.4549
	(0.0135)	(0.0137)	(0.0110)	(0.0508)
Female-owned business	0.0199	-0.2066	-0.0640	-0.6942
	(0.0047)	(0.0063)	(0.0049)	(0.0197)
High school graduate	-0.0280	0.0634	0.0390	0.1620
	(0.0080)	(0.0108)	(0.0090)	(0.0346)
Some college	-0.0188	0.0734	0.0419	0.0781
	(0.0080)	(0.0105)	(0.0088)	(0.0342)
College graduate	-0.0619	0.1141	0.0542	0.2428
	(0.0089)	(0.0112)	(0.0097)	(0.0373)
Graduate school	-0.1596	0.2187	0.1581	0.6181
	(0.0102)	(0.0119)	(0.0098)	(0.0396)
Urban	0.0171	0.0476	-0.0291	0.1260
	(0.0055)	(0.0066)	(0.0053)	(0.0225)
Prior work experience in a managerial capacity	0.0617	0.0247	0.0529	0.2395
	(0.0053)	(0.0062)	(0.0052)	(0.0228)
Prior work experience in a similar business	-0.0423	0.1014	0.0414	0.3862
	(0.0049)	(0.0057)	(0.0049)	(0.0208)
Have a self-employed family member	-0.0241	0.0174	0.0011	-0.0138
	(0.0059)	(0.0065)	(0.0056)	(0.0231)
Prior work experience in a family member's business	-0.0389	0.0311	0.0535	0.3607
	(0.0083)	(0.0077)	(0.0074)	(0.0327)
Inherited business	-0.1266	0.1378	0.1987	1.2058
	(0.0225)	(0.0200)	(0.0145)	(0.0736)
Mean of dependent variable	0.2253	0.3009	0.2131	10.0995
Sample size	37,156	33,804	38,020	38,020

Note: (1) The sample includes businesses that are classified by the IRS as individidual proprietorships or self-employed persons, partnerships and subchapter S corporporations, have sales of $500 or more, and have at least one owner who worked at least 12 weeks and 10 hours per week in the business. (2) Logit models are used for Specifications 1-3 and OLS is used for Specification 4. (3) Marginal effects and their standard errors (in parenthesis) are reported. (4) All specifications also include a constant, and dummy variables for marital status of primary owner, region, and work experience of the primary owner. (5) Missing values for all independent variables are imputed. See text for more details.

Appendix
Means of Selected Variables
Characteristics of Business Owners, 1992

	White-Owned Firms	Black-Owned Firms
Female-owned business	0.3268	0.4261
Married	0.8041	0.7293
Never married	0.1398	0.1392
High school graduate	0.2651	0.2230
Some college	0.3123	0.3423
College graduate	0.1962	0.1292
Graduate school	0.1353	0.1437
Northeast	0.0643	0.0194
Midatlantic	0.1469	0.1315
East North Central	0.1666	0.1403
West North Central	0.0847	0.0330
South Atlantic	0.1597	0.3259
East South Central	0.0518	0.0792
West South Central	0.0999	0.1443
Mountain	0.0670	0.0163
Urban	0.7351	0.8877
Prior work experience: less than 2 years	0.0707	0.0680
Prior work experience: 2-5 years	0.1641	0.1500
Prior work experience: 6-9 years	0.1507	0.1445
Prior work experience: 10-19 years	0.2973	0.3143
Prior work experience: 20 years or more	0.2578	0.2393
Sample size	14,282	6,831
Startup capital: $5,000-$25,000	0.2374	0.2107
Startup capital: $25,000-$100,000	0.1095	0.0645
Startup capital: $100,000+	0.0475	0.0168
Agricultural services	0.0269	0.0175
Mining and construction	0.1261	0.0718
Manufacturing	0.0330	0.0168
Wholesale	0.0360	0.0112
FIRE	0.0987	0.0609
Trans., communications, and public utilities	0.0389	0.0834
Personal services	0.2616	0.3287
Professional services	0.1937	0.2060
Uncoded industry	0.0391	0.0572
Sample size	14,068	6,743

Notes: (1) The sample includes businesses that are classified by the IRS as individidual proprietorships or self-employed persons, partnerships and subchapter S corporporations, have sales of $500 or more, and have at least one owner who worked at least 12 weeks and 10 hours per week in the business. (2) The samples are those used in Specifications 3 and 4 of Tables 6 and 8.

Table 1
Small Business Outcomes by Race
Characteristics of Business Owners, 1992

	All Firms	White-Owned Firms	Black-Owned Firms
Percent of firms in 1992 no longer operating in 1996 (Closure)	22.5%	22.6%	26.9%
Percent of firms with a net profit of at least $10,000	30.1%	30.4%	13.9%
Percent of firms with a positive net profit	74.5%	75.1%	60.7%
Percent of firms with 1 or more paid employees	21.3%	21.4%	11.3%
Mean number of employees	1.77	1.80	0.63
Mean sales	$212,791	$219,190	$59,415
Mean log sales	10.10	10.10	9.43
Sample size	38,020	15,872	7,565

Notes: (1) The sample includes businesses that are classified by the IRS as individidual proprietorships or self-employed persons, partnerships and subchapter S corporporations, have sales of $500 or more, and have at least one owner who worked at least 12 weeks and 10 hours per week in the business. (2) All estimates are calculated using sample weights provided by the CBO.

Table 2
Family Business Background by Race
Characteristics of Business Owners, 1992

	All Firms	White-Owned Firms	Black-Owned Firms
Percent of owners that had a self-employed family member prior to starting firm	51.6%	53.1%	33.6%
Percent of owners that previously worked in that family member's business (conditional)	43.6%	43.9%	37.4%
Percent of owners that previously worked in a family member's business (unconditional)	22.5%	23.3%	12.6%
Percent of owners that inherited their businesses	1.6%	1.7%	1.4%
Percent of owners that previously worked in a business with similar goods/services	50.1%	50.4%	43.1%
Percent of owners that have previous work experience in a managerial capacity	55.2%	55.6%	47.1%
Sample size	38,020	15,872	7,565

Notes: (1) The sample includes businesses that are classified by the IRS as individidual proprietorships or self-employed persons, partnerships and subchapter S corporporations, have sales of $500 or more, and have at least one owner who worked at least 12 weeks and 10 hours per week in the business. (2) All estimates are calculated using sample weights provided by the CBO.

Table 3
Logit and Linear Regressions for Small Business Outcomes
Characteristics of Business Owners, 1992

	Specification			
	(1)	(2)	(3)	(4)
Dependent variable	Closure (1992-96)	Profits $10,000+	Employer Firm	Ln Sales
Black-owned business	0.0212	-0.1786	-0.0951	-0.4636
	(0.0130)	(0.0207)	(0.0166)	(0.0554)
Latino-owned business	-0.0138	-0.0443	0.0231	0.0660
	(0.0121)	(0.0144)	(0.0116)	(0.0490)
Native American-owned business	-0.1176	0.0422	0.0717	0.3991
	(0.0554)	(0.0530)	(0.0415)	(0.1879)
Asian-owned business	-0.0457	0.0259	0.0728	0.4709
	(0.0145)	(0.0145)	(0.0115)	(0.0539)
Female-owned business	0.0247	-0.2107	-0.0616	-0.6941
	(0.0050)	(0.0066)	(0.0051)	(0.0206)
High school graduate	-0.0209	0.0624	0.0447	0.1534
	(0.0085)	(0.0112)	(0.0092)	(0.0351)
Some college	-0.0101	0.0724	0.0471	0.0570
	(0.0084)	(0.0111)	(0.0091)	(0.0351)
College graduate	-0.0553	0.1133	0.0606	0.2397
	(0.0093)	(0.0118)	(0.0097)	(0.0383)
Graduate school	-0.1491	0.2127	0.1650	0.6115
	(0.0107)	(0.0122)	(0.0097)	(0.0404)
Urban	0.0164	0.0447	-0.0343	0.1008
	(0.0058)	(0.0069)	(0.0055)	(0.0234)
Prior work experience in a managerial capacity	0.0655	0.0265	0.0513	0.2089
	(0.0054)	(0.0063)	(0.0052)	(0.0217)
Prior work experience in a similar business	-0.0425	0.1024	0.0432	0.4087
	(0.0049)	(0.0059)	(0.0048)	(0.0202)
Have a self-employed family member	-0.0200	0.0113	-0.0022	-0.0356
	(0.0055)	(0.0067)	(0.0055)	(0.0227)
Prior work experience in a family member's business	-0.0419	0.0322	0.0552	0.3784
	(0.0069)	(0.0079)	(0.0063)	(0.0273)
Inherited business	-0.1007	0.1097	0.2006	1.3144
	(0.0237)	(0.0217)	(0.0157)	(0.0800)
Mean of dependent variable	0.2280	0.2980	0.2070	10.0725
Sample size	33,485	30,500	34,179	34,179

Notes: (1) The sample includes businesses that are classified by the IRS as individidual proprietorships or self-employed persons, partnerships and subchapter S corporporations, have sales of $500 or more, and have at least one owner who worked at least 12 weeks and 10 hours per week in the business. (2) Logit models are used for Specifications 1-3 and OLS is used for Specification 4. (3) Marginal effects and their standard errors (in parenthesis) are reported. (4) All specifications also include a constant, and dummy variables for marital status of primary owner, region, and work experience of the primary owner.

Table 4
Logit and Linear Regressions for Small Business Outcomes
Characteristics of Business Owners, 1992

	Specification			
	(1)	(2)	(3)	(4)
Dependent variable	Closure (1992-96)	Profits $10,000+	Employer Firm	Ln Sales
Black-owned business	0.0077	-0.1684	-0.0703	-0.3215
	(0.0133)	(0.0213)	(0.0176)	(0.0506)
Latino-owned business	-0.0143	-0.0444	0.0277	0.0735
	(0.0123)	(0.0149)	(0.0126)	(0.0447)
Native American-owned business	-0.1270	0.0322	0.0696	0.3468
	(0.0564)	(0.0548)	(0.0454)	(0.1706)
Asian-owned business	-0.0091	-0.0176	-0.0164	0.0216
	(0.0149)	(0.0150)	(0.0128)	(0.0495)
Female-owned business	0.0150	-0.1943	-0.0498	-0.5708
	(0.0053)	(0.0069)	(0.0057)	(0.0193)
High school graduate	-0.0065	0.0428	0.0251	0.0324
	(0.0087)	(0.0116)	(0.0099)	(0.0325)
Some college	0.0095	0.0637	0.0398	0.0011
	(0.0086)	(0.0115)	(0.0098)	(0.0322)
College graduate	-0.0433	0.0855	0.0470	0.1441
	(0.0096)	(0.0123)	(0.0106)	(0.0355)
Graduate school	-0.1617	0.1573	0.1674	0.5567
	(0.0117)	(0.0137)	(0.0115)	(0.0397)
Urban	0.0079	0.0610	-0.0144	0.1831
	(0.0059)	(0.0071)	(0.0059)	(0.0214)
Prior work experience in a managerial capacity	0.0826	0.0075	0.0212	0.0401
	(0.0056)	(0.0066)	(0.0057)	(0.0200)
Prior work experience in a similar business	-0.0505	0.0962	0.0426	0.4081
	(0.0052)	(0.0061)	(0.0053)	(0.0187)
Have a self-employed family member	-0.0181	0.0004	-0.0057	-0.0651
	(0.0057)	(0.0069)	(0.0060)	(0.0207)
Prior work experience in a family member's business	-0.0323	0.0210	0.0344	0.2300
	(0.0071)	(0.0081)	(0.0069)	(0.0250)
Inherited business	-0.0761	0.1351	0.2267	1.3143
	(0.0246)	(0.0238)	(0.0182)	(0.0764)

(continued)

Table 4 (continued)
Logit and Linear Regressions for Small Business Outcomes
Characteristics of Business Owners,1992

	Specification			
Explanatory Variables	(1)	(2)	(3)	(4)
Startup capital:	-0.0871	0.1505	0.1487	0.7156
$5,000-$24,999	(0.0061)	(0.0068)	(0.0059)	(0.0214)
Startup capital:	-0.1308	0.2312	0.3077	1.4676
$25,000-$99,999	(0.0090)	(0.0088)	(0.0070)	(0.0291)
Startup capital:	-0.2295	0.1791	0.3735	2.1520
$100,000 or more	(0.0166)	(0.0125)	(0.0099)	(0.0422)
Agricultural services	0.0112	-0.0111	-0.1586	-0.9204
	(0.0164)	(0.0184)	(0.0167)	(0.0574)
Mining and construction	0.0438	0.0528	-0.0353	-0.2546
	(0.0096)	(0.0111)	(0.0090)	(0.0350)
Manufacturing	-0.0625	0.0358	0.0035	-0.1055
	(0.0171)	(0.0166)	(0.0129)	(0.0532)
Wholesale	0.0057	0.1305	-0.0006	0.6082
	(0.0148)	(0.0153)	(0.0127)	(0.0518)
FIRE	-0.0609	0.0771	-0.1856	-0.4926
	(0.0109)	(0.0122)	(0.0109)	(0.0367)
Trans., communications,	0.0600	0.1205	-0.1523	-0.3300
and public utilities	(0.0130)	(0.0147)	(0.0139)	(0.0486)
Personal services	0.0195	-0.0488	-0.1161	-0.7430
	(0.0079)	(0.0096)	(0.0077)	(0.0286)
Professional services	0.0973	0.0650	-0.1191	-0.7021
	(0.0089)	(0.0110)	(0.0092)	(0.0328)
Uncoded industry	0.0198	-0.1020	-0.5054	-0.9842
	(0.0132)	(0.0183)	(0.0334)	(0.0490)
Mean of dependent variable	0.2280	0.2975	0.2066	10.0668
Sample size	33,116	30,271	33,701	33,701

Notes: (1) The sample includes businesses that are classified by the IRS as individidual proprietorships or self-employed persons, partnerships and subchapter S corporporations, have sales of $500 or more, and have at least one owner who worked at least 12 weeks and 10 hours per week in the business. (2) Logit models are used for Specifications 1-3 and OLS is used for Specification 4. (3) Marginal effects and their standard errors (in parenthesis) are reported. (4) All specifications also include a constant, and dummy variables for marital status of primary owner, region, and work experience of the primary owner.

Table 5
Decompositions of Black/White Gaps in Small Business Outcomes
Characteristics of Business Owners,1992

	Specification			
	(1)	(2)	(3)	(4)
Dependent variable	Closure	Profits	Employer	Ln Sales
Black mean	0.2696	0.1410	0.1121	9.4241
White mean	0.2282	0.3004	0.2067	10.0680
Black/white gap	-0.0414	0.1594	0.0946	0.6439
Contributions from racial differences in:				
Sex	-0.0032	0.0253	0.0083	0.0689
	7.7%	15.9%	8.8%	10.7%
Marital status	-0.0037	0.0044	0.0042	0.0166
	8.9%	2.8%	4.4%	2.6%
Education	-0.0027	0.0056	0.0023	0.0156
	6.5%	3.5%	2.4%	2.4%
Region	-0.0033	0.0032	-0.0050	0.0139
	8.0%	2.0%	-5.3%	2.2%
Urban	-0.0026	-0.0060	0.0051	-0.0154
	6.3%	-3.8%	5.4%	-2.4%
Prior work experience	0.0011	-0.0017	-0.0008	-0.0011
	-2.7%	-1.1%	-0.8%	-0.2%
Prior work experience in a managerial capacity	0.0061	0.0016	0.0042	0.0178
	-14.7%	1.0%	4.4%	2.8%
Prior work experience in a similar business	-0.0025	0.0036	0.0017	0.0277
	6.0%	2.3%	1.8%	4.3%
Have a self-employed family member	-0.0037	0.0017	-0.0004	-0.0070
	8.9%	1.1%	-0.4%	-1.1%
Prior work experience in a family member's business	-0.0048	0.0027	0.0053	0.0412
	11.6%	1.7%	5.6%	6.4%
Inherited business	-0.0002	0.0005	0.0002	0.0021
	0.5%	0.3%	0.2%	0.3%
All included variables	-0.0200	0.0409	0.0251	0.1910
	48.3%	25.7%	26.5%	29.7%

Notes: (1) The samples and regression specifications are the same as those used in Table 3.
(2) Contribution estimates are mean values of the decomposition using 1000 subsamples of whites. See text for more details

Table 6
Decompositions of Black/White Gaps in Small Business Outcomes
Characteristics of Business Owners,1992

	Specification			
	(1)	(2)	(3)	(4)
Dependent variable	Closure	Profits	Employer	Ln Sales
Black mean	0.2692	0.1414	0.1116	9.4221
White mean	0.2288	0.3003	0.2065	10.0615
Black/white gap	-0.0404	0.1590	0.0948	0.6394
Contributions from racial differences in:				
Sex	-0.0019	0.0231	0.0060	0.0562
	4.7%	14.6%	6.3%	8.8%
Marital status	-0.0030	0.0055	0.0041	0.0118
	7.5%	3.5%	4.3%	1.8%
Education	-0.0031	0.0045	0.0013	0.0066
	7.8%	2.8%	1.4%	1.0%
Region	-0.0031	0.0035	0.0010	0.0160
	7.6%	2.2%	1.0%	2.5%
Urban	-0.0012	-0.0078	0.0021	-0.0277
	2.9%	-4.9%	2.2%	-4.3%
Prior work experience	0.0014	-0.0021	-0.0010	-0.0032
	-3.5%	-1.3%	-1.1%	-0.5%
Prior work experience in a managerial capacity	0.0065	0.0005	0.0018	0.0035
	-16.1%	0.3%	1.9%	0.5%
Prior work experience in a similar business	-0.0029	0.0042	0.0022	0.0277
	7.1%	2.6%	2.3%	4.3%
Have a self-employed family member	-0.0032	0.0001	0.0009	-0.0128
	7.8%	0.0%	1.0%	-2.0%
Prior work experience in a family member's business	-0.0032	0.0019	0.0033	0.0246
	7.9%	1.2%	3.4%	3.8%
Inherited business	-0.0001	0.0005	0.0000	0.0007
	0.1%	0.3%	0.0%	0.1%
Startup capital	-0.0175	0.0231	0.0350	0.1512
	43.2%	14.5%	36.9%	23.6%
Industry	-0.0083	0.0112	0.0092	0.0633
	20.5%	7.0%	9.7%	9.9%
All included variables	-0.0395	0.0683	0.0658	0.3179
	97.7%	42.9%	69.4%	49.7%

Notes: (1) The sample and regression specifications are the same as those used in Table 4.
(2) Contribution estimates are mean values of the decomposition using 1000 subsamples of whites. See text for more details.