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ABSTRACT

We examine trends in self-employment among white and black men from 1910 to 1990 using Census and CPS microdata. Self-employment rates fell over most of the century and then started to rise after 1970. For white men, we find that the decline was due to declining rates within industries, but was counterbalanced somewhat by a shift in employment towards high self-employment industries. Recently, the increase in self-employment was caused by an end to the within industry decline and the continuing shift in employment towards high self-employment industries. We also find that social security benefits, and immigration patterns do not explain the recent upturn in self-employment. For black men, we find that the self-employment rate remained at a level of roughly one-third the white rate from 1910 to 1990. The large and constant gap between the black and the white rates is not due to blacks being concentrated in low self-employment rate industries. We also find that absent continuing forces holding down black self-employment, a simple inter-generational model of self-employment suggests that black and white rates would converge quickly.

1. Introduction

  The decline in self-employment during this century is one of the major historical trends in the U.S. labor market. The fraction of white male workers that was self-employed fell from one in six in 1910 to one in ten in 1970. It is also striking that this trend stopped and reversed itself between 1970 and 1990 as the self-employment rate rose from 10.0 percent to 11.4 percent. Given the magnitude of these changes in self-employment, surprisingly very little research has documented the changes and identified their causes. Trends in black self-employment have been studied even less, despite much recent interest in the lack of black-owned businesses and frequent conjectures about historical levels of self-employment and their causes. We use Census microdata covering most of the twentieth century to document the trends in self-employment among both white and black men and to explore some proposed explanations.

  An examination of long-term trends in self-employment is important for several reasons. First, it has been argued that small businesses create a large share of new jobs in the economy, are an important source of innovation, and have an important effect on political decisions in the United States (Birch 1979, Davis, Haltiwanger and Schuh 1996, Glazer and Moynihan 1970, Brown, Hamilton and Medoff 1990). Second, many academics and policy makers view self-employment as a route out of poverty and as an alternative to unemployment or potential discrimination in the labor market (Glazer and Moynihan1970, Light 1972, 1979, Sowell 1981, Moore 1983, U.S. Department of Labor 1992). Third, the institutional environment in which the self-employed work differs in important ways from that of wage/salary workers. The self-employed are not subject to the usual labor contracts and their consequent incentives, and they either do not receive, or purchase for themselves, fringe benefits provided by employers, such as health insurance and pensions. Past research has argued that the self-employed have a different return to education, will have a different age-earnings profile, and have more variability in hours worked than wage/salary workers (Wolpin 1977, Lazear and Moore 1984, and Rettenmaier 1996).   Finally, the self-employed are often singled out in the formation of public policy. They face different income tax treatment and are frequently excluded from social insurance programs.

  Past studies have examined trends in white or total self-employment during various periods of the twentieth century, however, these studies have generally been limited by their reliance on published aggregate data and their use of a short time period (Phillips 1962, Becker 1984, Blau 1987, Aronson 1991). Several social scientists near the middle of this century, documented the

decline in self-employment over the first half of the century and predicted that it would continue to decline (Weber 1947, C. Wright Mills 1951, Phillips 1962)   The clearest statement comes from Phillips (1962, p. 1) who reports that "...the proportion of self-employed persons in the American labor force has been declining for many decades. This trend will no doubt persist in the future." A few studies have focused on the recent rise in self-employment; only one of these studies, however, includes an empirical analysis of its potential causes. Blau (1987) finds that changes in technology, industrial structure, tax rates, and social security retirement benefits contributed to the rise in self-employment from 1973 to 1982. We test some of these explanations using Census microdata covering a longer time period.

Although several recent studies have documented and analyzed the causes of the low rate of self-employment among blacks in the U.S., none of these studies have examined the trend over the twentieth century (Bates 1987, Borjas and Bronars 1989, Meyer 1990, Fairlie 1999, Fairlie and Meyer 1996). In the past few years, many news articles and editorials have referred to estimates from the Survey of Minority-Owned Business Enterprise (SMOBE) which show a large increase in the number of black-owned businesses over the last 20 years.[1] On the contrary, estimates that we present in this paper indicate that the black self-employment rate has not appreciably changed relative to the white self-employment rate over the last 20 years or, for that matter, over the last 80 years. The issue of convergence in racial self-employment rates is of special interest because many early researchers emphasized the role that lack of traditions and past inexperience in business played in creating low rates of business ownership among blacks (Du Bois 1899, Myrdal 1944, Cayton and Drake 1946, Frazier 1957).

Using Census microdata, we first examine potential causes of the long-term decline in the white male self-employment rate from 1910 to 1970 and the reversal of this trend after 1970. We also briefly examine recent Current Population Survey data. Our main findings are:

1) We find little support for a few recently proposed explanations for the rise in self-employment. (a) Self-employment has risen sharply even for those groups unlikely to be affected by social security retirement incentives. (b) Changes in immigration levels or immigrant self-employment rates cannot explain a significant portion of the recent upturn in white self-employment.

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[1] For example, see "Black-Owned Firms in U.S. Are Increasing at Rapid Rate," Wall Street Journal, September 12, 1990, p. B2.

2) The long-term decline in the self-employment rate reflects declining rates within nearly all industries. Technological change favoring capital-intensive, large-scale production may be responsible for this trend. The long-term decline, however, was weakened somewhat by a shift in total employment towards high self-employment industries.

3) The recent increase in the self-employment rate was caused by an end to the overall decline in self-employment within industries and the continuing shift of overall employment from low self-employment industries, such as manufacturing, towards high self-employment industries, such as construction, professional, and business and repair services. We also find offsetting increases and decreases in self-employment across a few industries. These findings are consistent with changes in consumer demand, increased global competition, and changes in technology driving the recent upturn in self-employment.

We also explore the factors contributing to the trend in the black male self-employment rate. We focus on the trend in black self-employment relative to white self-employment. The main findings from this analysis are:

1) The self-employment rate of black men relative to white men has remained roughly constant from 1910 to 1990 (at a level of approximately one third the white rate).

2) The large gap between the black and the white self-employment rates is due to the lower self-employment rates of blacks in all industries and not due to the concentration of blacks in low self-employment rate industries.

3) We find that major demographic changes that occurred during the twentieth century, such as the Great Black Migration and the racial convergence in educational attainment, did not have large effects on the racial self-employment rate gap.

4) Evidence from simulations using a simple intergenerational model of self-employment suggests that, if not for continuing factors reducing black self-employment, racial convergence in self-employment rates would occur within a few generations.

2. Data

This study uses individual data from eight decennial Censuses of Population: 1910, 1920, and 1940 through 1990. A public use sample is not currently available for the 1930 Census. We use random samples of the population for each year to obtain approximately 40,000 individuals of each race if more than that many are available. Further details and the exact samples used are described in Fairlie and Meyer (1999). The Current Population Survey data that we briefly examine at the end of the paper are described in Section 5.

Our Census microdata have two major advantages over other data sources for this analysis.

First, each Census provides a sample large enough to examine self-employment rates and/or earnings within fairly detailed race, industry, age, education and region categories. The large samples allow us to conduct multivariate analyses of the determinants of racial differences in self-employment. Second, the collection of Census data allows us to analyze racial self-employment patterns from near the beginning of the twentieth century to the present.

The final sample that we use for each of the Census years only includes respondents who meet several restrictions. First, we only include men in this analysis because the study of female self-employment is complicated by overall changes in labor force participation, education, and fertility of women that are beyond the scope of this paper. Second, consistent with previous studies of self-employment, we exclude individuals who work in agriculture. Third, we restrict our samples to include individuals who are between the ages of 16 and 64 (unless noted otherwise) and who report working at least 15 hours during the week prior to the interview and at least 14 weeks during the year prior to the interview. In 1910 and 1920, however, we do not impose the hours and weeks worked restrictions because these variables are not available.

We distinguish between self-employment and wage/salary work based on the individual's response to the class of worker question found on each of the included Censuses. The self-employed in our study are those individuals who report primarily being an employer, working on own account, or being self-employed with own incorporated or not incorporated business. For example, in 1990 the relevant choices on the Census questionnaire were 6) "SELF-EMPLOYED in own NOT INCORPORATED business, professional practice, or farm" and 7) "SELF-EMPLOYED in own INCORPORATED business, professional practice, or farm" (U.S. Census Bureau 1993: E-15).

3. Results for White Men

In this section, we document the patterns and analyze the causes of changes in self-employment rates for white men over the twentieth century. Figure 1 displays black and white male self-employment rates for 1910, 1920 and decennially for 1940 through 1990. The white male self-employment rate decreased steadily from its highest point in 1910 (16.0 percent) to its lowest point in 1970 (10.0 percent). In 1970, the downward trend in the self-employment rate ended and began a climb to 11.4 percent in 1990. If we limit the sample to full-time, full-year

workers, we find a nearly identical pattern.   The similar patterns rule out the possibility that underemployment or disguised unemployment are the driving force behind the major changes in self-employment during the twentieth century (Lebergott 1964, Carter and Sutch 1994).

We now explore explanations for the pattern of white self-employment over this century with an emphasis on hypotheses regarding the recent upturn. These explanations have been proposed in past studies or are suggested by research on the determinants of self-employment.

OLDER WORKERS AND POPULATION AGING

Quinn (1980) and Fuchs (1982) find that self-employment is much more common among older workers. They argue that high rates of self-employment among older workers are due to the large number of wage/salary workers who switch to self-employment near the end of their careers as a form of partial retirement and the lower likelihood of self-employed workers fully retiring near the end of their careers. These two studies also point out that higher returns to retirement may induce higher rates of self-employment among the elderly population because the self-employed can partially retire and still receive benefits. These observations suggest that changing self-employment rates and employment shares for the elderly could be a substantial part of aggregate self-employment trends. Table 1 reports self-employment rates and employment shares by several age groups for white men. The results indicate that the self-employment rate among workers ages 55-64 decreased more from 1910 to 1970 and increased more from 1970 to 1990 than did the rate among workers ages 16-54. However, the effects of these changes on the trend in the aggregate rate were small largely because this age group represented only a small part of the total workforce throughout the twentieth century. Another interesting finding is that the share of the workforce that was ages 55 and over increased 6.7 percentage points between 1910 and 1970 and decreased 3.6 percentage points between 1970 and 1990. These changes in the employment share of older workers, who have high self-employment rates, thus worked to diminish both the long-term decline and the recent increase in the aggregate self-employment rate.

The net effect of the trend in elderly self-employment rates and the changes in elderly employment shares on the trend in the aggregate self-employment rate was small because those 55-64 were under ten percent of employment in 1990. Furthermore, the self-employment rate among workers ages 16-54 experienced nearly the same 6.0 percentage point decrease from 1910

to 1970 and a slightly larger 1.6 percentage point increase from 1970 to 1990 than occurred in the aggregate self-employment rate. To conclude, these findings indicate that the long-term decline and the recent upturn in the aggregate white self-employment rate cannot be explained by changes in either the self-employment rate of older workers or the share of the workforce that is older.

IMMIGRATION

      Recent studies of self-employment, such as Borjas (1986), Light and Sanchez (1987), Yuengert (1995), and Fairlie and Meyer (1996), find that immigrants have higher self-employment rates than comparable natives. We explore whether changes in immigration patterns or changes in immigrant self-employment rates over the twentieth century contributed to the trend in self-employment among white men. Remember that our self-employment rates are for white men, thus excluding the large number of Asian immigrants since the passage of the Immigration Reform Act of 1965. The small immigrant percentage of the white male workforce during most of the twentieth century suggests that immigrants cannot account for a large part of the aggregate trend. When one examines the trend in the white native self-employment rate, it is evident that this trend is similar to the trend in the white aggregate rate. In fact, the decrease in the white native rate from 1910 to 1990 was 0.60 percentage points larger than the decrease for the aggregate rate, and the increase from 1970 to 1990 was only 0.08 percentage points smaller.[2] From 1970 to 1990, the faster increase in self-employment among immigrants accounts for only 5.7 percent of the increase in the white self-employment rate, and there was essentially no change in the percent of the workforce that was immigrants. To conclude, patterns of immigration and immigrant self-employment cannot explain the long-term decline in white self-employment or its recent upturn. Immigration dampened the decline in self-employment from 1910 to 1970 and contributed only slightly to the recent upturn.

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   [2] From 1940 to 1970, however, the large decrease in the immigrant self-employment rate and the declining share of the workforce that was immigrant contributed to the decline in the aggregate self-employment over this period. The decrease in the white native self-employment rate was 0.94 percentage points smaller than the decrease for the white aggregate rate (accounting for 24.5 percent of the decrease in the aggregate rate).

INDUSTRY DECOMPOSITIONS

We now examine patterns of self-employment across industries. In Table 2, we report self-employment rates and employment shares by industry for white male workers in each available Census year. Major changes in both self-employment rates within industries and employment shares across industries occurred during the last 80 years.

To identify the relative importance of changes in industry self-employment rates and shares in creating the trend in the aggregate self-employment rate, we perform a decomposition. The aggregate self-employment rate in each year is equal to the sum of the industry-specific self-employment rates weighted by their employment shares. Therefore, we can represent the change in the aggregate self-employment rate from year t to year t+s as:

$$(3.1) \qquad \sum_{i=1}^{I} E^i_{t+s} \, S^i_{t+s} - \sum_{i=1}^{I} E^i_t \, S^i_t \quad ,$$

where E^i_t is the share of total employment of industry i in year t, S^i_t is the self-employment rate for industry i in year t, and I is the total number of industries. Equation (3.1) can be rewritten as two alternative expressions that differ in the base year used:

$$(3.2) \qquad \sum_{i=1}^{I} E^i_{t+s} \left(S^i_{t+s} - S^i_t \right) + \sum_{i=1}^{I} (E^i_{t+s} - E^i_t) \, S^i_t, \text{ or}$$

$$(3.3) \qquad \sum_{i=1}^{I} E^i_t \left(S^i_{t+s} - S^i_t \right) + \sum_{i=1}^{I} (E^i_{t+s} - E^i_t) \, S^i_{t+s}.$$

Equations (3.2) and (3.3) represent the decomposition of the change in the aggregate self-employment rate into the part that is due to changes in self-employment rates within industries holding employment shares constant (represented by first summation in each equation) and the part that is due to changes in employment shares across industries holding self-employment rates constant (represented by the second summation).

In Table 3, we report estimates of (3.2) and (3.3) for changes in the aggregate self-employment rate from 1910 to 1940 and decennially from 1940 to 1990. We also report the decomposition for the entire period of decline (1910-1970) and rise (1970-1990). The Census to Census estimates and the longer time-period estimates essentially provide the same findings for each period. The results indicate that the long-term decline from 1910 to 1970 in the self-employment rate was due primarily to a decrease in self-employment rates within nearly all

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industries. The within industry decline, however, was somewhat counterbalanced by a shift in overall employment towards high self-employment industries. The importance of the within industry decline can be seen in the large contribution (of the same sign as the change in the aggregate self-employment rate) from changes in self-employment rates within industries from 1910 to 1970 and the smaller contribution (of the opposite sign) from changes in employment shares. The increase in self-employment from 1970 to 1990 was caused by an end to the decline in the self-employment rate within most industries and the continuing shift in overall employment towards high self-employment industries.

To further explore the causes of the recent increase in the aggregate self-employment rate, we identify the specific industries that contributed to the trend. In particular, we decompose the contribution of each industry to changes in the aggregate self-employment rate into the part that is due to changes in its self-employment rate and the part that is due to changes in its employment share. The contribution of industry i, C^i, to the change in the aggregate self-employment rate from 1970 to 1990 can be measured as:

$$(3.4) \qquad C^i = E^i_{90}(S^i_{90} - \bar{S}_{90}) - E^i_{70}(S^i_{70} - \bar{S}_{90}),$$

where $\bar{S}_{90}$ is the aggregate self-employment rate in 1990. This contribution depends on both the size and change in the employment share of this industry and the size and change in the self-employment rate of this industry relative to the average self-employment rate in 1990. Next we add and subtract $E^i_{70}(S^i_{90} - \bar{S}_{90})$ or $E^i_{90}(S^i_{70} - \bar{S}_{90})$ to (3.4) to get:

$$(3.5) \qquad C^i = [E^i_{70}(S^i_{90} - S^i_{70})] + [(E^i_{90} - E^i_{70})(S^i_{90} - \bar{S}_{90})] \text{ or}$$

$$(3.6) \qquad C^i = [E^i_{90}(S^i_{90} - S^i_{70})] + [(E^i_{90} - E^i_{70})(S^i_{70} - \bar{S}_{90})],$$

respectively. The first term in brackets in each equation represents the contribution from the change in the self-employment rate of industry i to the increase in the aggregate self-employment rate from 1970 to 1990. The second term represents the contribution from the change in the relative share of total employment experienced by industry i from 1970 to 1990.

In Table 4, we report estimates of (3.4), (3.5), and (3.6). These estimates indicate that the upturn from 1970 to 1990 was partly due to decreases in employment shares in manufacturing and public administration (low self-employment industries) and increases in employment shares in construction, professional services, and business and repair services (high self-employment

industries). Increases in the self-employment rate within construction, manufacturing, transportation, and FIRE exerted upward pressure on the aggregate self-employment from 1970 to 1990. However, the large decrease in the self-employment rate within trade and the smaller decrease within personal services acted to diminish the overall increase in self-employment.

In summary, we find that the long-term decline in self-employment earlier in this century was primarily due to declining rates of self-employment within almost all industries. These patterns are consistent with technological change favoring capital-intensive, large-scale production during this period (see Blau 1987). In comparison, we find that the recent upturn in the aggregate self-employment rate was mainly due to an industrial shift from low to high self-employment industries. The industrial shift towards high self-employment industries may be due to factors such as changes in consumer demand, increased global competition, and changes in technology. Our findings, however, do not allow us to disentangle the effects of each of these factors on the trend in the aggregate self-employment rate.

Our results also imply a small role for changes in total factor productivity, as measured by Blau (1987), in explaining the self-employment trends.[3] Such changes in productivity were one of the two most important explanations Blau (1987) provides for the 1973-82 changes in self-employment. Blau uses changes in industry employment to calculate the relative total factor productivity in self-employment compared to wage/salary work. Because his measure depends solely on changes in the industry composition of employment, our finding of small effects of such changes between 1910 and 1970 provides an upper bound on the importance of total factor productivity changes of this sort during this earlier period.

4. Results for Black Men

We now examine trends in black self-employment during the twentieth century. A few recent studies document and explore causes of the low rate of self-employment among black men.

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[3] Blau (1987) finds that a measure of technology (total factor productivity weighted by self-employment and wage/salary industry distributions) explains a large portion of the increase in aggregate self-employment from 1973 to 1982. Changes in his measure of technology, however, may also be due to demand-induced changes in industry structure. He concludes that "the source of the favorable shift in TFP for the self-employed is uncertain."

Using various data sources, these studies generally find that black men are one-third as likely to be self-employed as white men. Low levels of education, low asset levels, smaller probabilities of having self-employed fathers, and consumer discrimination are found to contribute to the lack of self-employment among black men. In addition to the recent studies, the main historical studies argue that the absence of black traditions in the field of business enterprise is a major cause of the low level of black self-employment. We examine whether several of these hypotheses can explain the pattern of black self-employment relative to white self-employment during the twentieth century.

Referring back to Figure 1, we display the black and white self-employment rates and the ratio of the two rates from 1910 to 1990. During this period, the black self-employment rate generally followed the same time pattern as the white self-employment rate. The main difference was that the decline in black self-employment continued until 1980 and reversed only after 1980. The similar trends in the racial self-employment rates resulted in a roughly constant black/white ratio during the past 80 years. These trends in the self-employment rates and the black/white ratio remain essentially unchanged when we include only full-time, full-year workers. In most years, conditioning on full-time employment increases the white self-employment rate and decreases the black self-employment rate. The changes, however, are small and thus do not substantially alter the black/white ratio in any of the Census years.

The constancy of the black/white ratio is surprising in light of the substantial gains blacks have made in education, earnings and civil rights during the twentieth century (Smith and Welch, 1989) and the numerous government programs created to promote minority business ownership (Balkin, 1989). We now investigate several possible explanations.

INDUSTRY ANALYSES

Although black and white overall self-employment rates did not converge during the twentieth century, there may have been a convergence in racial self-employment rates within some industries during this period. In Table 5, we report black self-employment rates and black/white self-employment rate ratios by industry for 1910 to 1990. The most striking finding is that black men had substantially lower self-employment rates within all industries and Census years. Transportation and Business and Repair Services are the only industries in which the black

self-employment rate was consistently greater than 50 percent of the white rate. The finding of low black rates in all industries indicates that the large racial gap in self-employment throughout the century was primarily due to low black self-employment rates within industries and not due to an over-representation of blacks in low self-employment rate industries. In fact, the largest positive contribution from racial differences in industry distributions to the black/white gap in aggregate self-employment rates in any Census year is 11.6 percent.[4] Another interesting finding is that the trends in the black/white ratio for most industries were roughly flat over the century.

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[4] The contribution from racial differences in industry distributions in year t is $\sum_{i=1}^{I} S_t^W \left(E_t^W - E_t^B \right)$. The contributions are generally smaller using black self-employment rates as weights.

In Table 5, we also report black employment shares by industry. Although a comparison of these estimates to the white employment shares reported in Table 2 reveals some convergence in racial industry distributions, the results indicate that blacks and whites mainly experienced growths and declines in the same industries over the century. The direct contribution of relative changes over time in racial industry distributions is 0.1 to 13.5 percent of the 1990 black/white self-employment rate gap.[5] The industrial changes of the U.S. workforce from 1910 to 1990 apparently did not alter the racial gap in the aggregate self-employment rate. Clearly, the similar levels and trends in the black/white self-employment rate ratios across industries were responsible for this finding.

Overall, the findings from this analysis demonstrate that the large gap between the black and the white self-employment rate during the twentieth century was due to the fact that blacks had lower self-employment rates in all industries and not due to blacks being over-represented in low self-employment rate industries. Furthermore, the similar trends of blacks and whites in self-employment rates within industries and employment shares across industries contributed to the constancy in the black/white ratio of the aggregate self-employment rate.

EDUCATION, MIGRATION AND OTHER DEMOGRAPHIC FACTORS

We now examine the influence of demographic factors on the racial trends in self-employment. During the twentieth century, the U.S. labor force experienced major geographical, age, and educational shifts. Although the black self-employment rate remained relatively low during the century, these demographic changes may have had large offsetting effects on the difference between white and black self-employment rates. To explore the importance of demographic factors, we employ the decomposition methodology used by Smith and Welch (1989) in their study of trends in racial earnings differences. The decomposition is a dynamic generalization of the familiar method of decomposing intergroup differences in a

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[5] These contributions are $\sum_{i=1}^{I} S_{I1910}^{B}\left[\left(E_{1990}^{W} - E_{1990}^{B}\right) - \left(E_{1910}^{W} - E_{1910}^{B}\right)\right]$ and

$\sum_{i=1}^{I} S_{I1910}^{W}\left[\left(E_{1990}^{W} - E_{1990}^{B}\right) - \left(E_{1910}^{W} - E_{1910}^{B}\right)\right]$ using black and white self-employment rates, respectively.

dependent variable into those due to different observable characteristics across groups and those due to different returns to characteristics across groups.

The first step in computing the decompositions is to estimate a linear probability model of the relationship between self-employment, S, and demographic characteristics, X, using separate cross sections for each race and time period:

$$(4.1) \qquad\qquad S_t^i = X_t^i \beta_t^i + \varepsilon_t^i,$$

where t indexes the Census year (1910, . . ., 1990) and i indexes the race (B, W). Having obtained estimates of the linear probability models by time period and race, the self-employment rate is equal to the inner product of the mean characteristics and the vector of coefficients. We are interested in decomposing changes in the racial self-employment rate gap, defined as the white rate minus the black rate. Therefore, the change in the racial self-employment rate gap between two Censuses, t=1 and t=2, is simply

$$(4.2) \qquad\qquad (\overline{X}_2^W \beta_2^W - \overline{X}_2^B \beta_2^B) - (\overline{X}_1^W \beta_1^W - \text{Xbar}_1^B \beta_1^B).$$

The decomposition of (4.2) requires first choosing a base year and base race. We use the earlier Census year (t=1) as the base year and white as the base race.[6] Using white as the base race, (4.2) can be expressed as:

$$(4.3)$$

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[6] Smith and Welch (1987) argue for using the white or majority parameter estimates because these estimates more closely resemble market prices of attributes. We also calculated decompositions using black as the base race and obtained similar results.

Given the linearity of the decomposition, each of the four components can be further decomposed to capture the contributions of specific variables. We calculate separate contributions from age, family characteristics, education, and region. To provide an interpretation of each of the components (i-iv) in the decomposition, it is useful to select a specific variable, such as region, in the discussion. The interpretations of the components for the variable, region, are as follows. (i) The "Characteristics Effect" is positive if blacks relative to whites move into low self-employment regions of the country. It is positive because it increases the racial gap measured as the white minus the black rate. (ii) The "Characteristics-Race Interaction" is positive if blacks relative to whites move into regions that have large racial self-employment rate gaps. Part of this component may be due to the effect of blacks moving to areas of the country that have high levels of consumer discrimination against self-employed minorities. (iii) The "Coefficients-Race Interaction" is positive if blacks are overrepresented in the regions of the country that have falling self-employment rates over time. Thus, the effect of demand shifts for the goods and services produced by the self-employed are partly captured in this term. (iv) The "Coefficients Effect" is positive if the racial self-employment rate gap is increasing within region.[7]

In Table 6, we report the decomposition of the change in the racial gap for each decade between 1940 and 1990. The decomposition results for the change between any two Census years (1940 to 1990, for example) can be calculated by summing the included decadal decomposition results. In the underlying regressions, we include a constant, age, age squared, and dummy variables for marriage, presence of children, three educational categories (high school graduate, some college, and college graduate), and eight Census divisions.[8] The difference between the white and black self-employment rates was large in each Census year and experienced only minor changes during this period. Although the changes in the racial gap were small from 1940 to 1990, individual demographic variables may have had large effects on the trend in the gap. We first examine the effect of these variables during the period from 1940 to 1960.

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[7] The interpretation of this term for specific subsets of variables is problematic, because it is sensitive to the choice of excluded category. Therefore, we only report the total contribution of this component for all of the variables.

[8] The coefficient estimates from these regressions generally have the anticipated signs. We find that self-employment increases with age, education level, and living in the Pacific division.

One of the most important demographic changes occurring during the twentieth century was the large exodus of blacks from rural areas in the South to urban areas in the North from 1915 to 1960, known as the Great Black Migration. Using our sample of workers in nonagricultural industries, we find that the percent of black workers living in the South fell from 68 percent in 1940 to 52 percent in 1960, whereas the percent of whites living in the South increased slightly over the same period. Our decomposition results indicate that this relative regional shift increased the racial gap during this period somewhat as evidenced by the positive estimates of (i) for 1940 through 1960 that sum to just under .6 percentage points. The small positive direct effect of the Great Black Migration due to the lower self-employment rates in the North that increased the racial gap was more than offset by the fact that blacks were moving into regions with smaller racial gaps in self-employment and that self-employment was increasing in the regions overrepresented by blacks. Evidence of these latter factors, which worked to reduce the racial gap, are provided by the negative estimates of contributions (ii) and (iii) which sum to just over .6 percentage points for this period. All of the effects, however, were small, implying that the major regional shifts that occurred during this period of time had little effect on black self-employment relative to white self-employment.

During the 1940s and 1950s, racial trends in age, family characteristics and educational distributions also had little effect on changes in the racial self-employment rate gap. These findings are less surprising, however, as the racial difference in mean values of these variables did not change substantially during this period. There is some evidence that the relative trends in self-employment across educational levels were favorable to less-educated blacks.

We now examine the period from 1960 to 1990. Perhaps the most important demographic change that occurred during this period was the substantial increase in black educational levels relative to those of whites. The percent of the white male workforce that was high school graduates grew from 51.1 percent in 1960 to 85.8 percent in 1990. In comparison, 25.4 percent of employed black men were high school graduates in 1960 increasing to 74.7 percent in 1990. Past research and our regression estimates indicate that the probability of self-employment increases with education. Therefore, we expect the relative increase in black educational levels to reduce the racial gap in the self-employment rate (holding other factors constant). Our decomposition estimates indicate, however, that the relative racial trends in educational attainment had only a

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minor effect on changes in the racial gap.

Examining the other contributions from education, we find that the educational improvements made by blacks placed them in educational categories that had larger racial self-employment rate gaps. The negative estimates of (iii) reported in Table 6 indicate that rising self-employment rates among less-educated workers over time reduced the racial gap. Overall, the racial trends in education did not have a large effect on the trend in the racial self-employment rate gap from 1960 to 1990. Furthermore, none of the included variables provide large contributions to changes in the racial gap during this period.

Our results indicate that trends in demographic factors, including the Great Black Migration and the racial convergence in education levels, did not have large effects on the trend in the racial gap in the self-employment rate.[9] We therefore conclude that the constancy of the racial gap in self-employment was not due to offsetting influences of important racial trends in demographic factors.

PAST SELF-EMPLOYMENT EXPERIENCE

Past studies such as Du Bois (1899), and later Myrdal (1944), Cayton and Drake (1946) and Frazier (1957) identify the lack of black traditions in business enterprise, in large part due to slavery, as a major cause of low levels of black business ownership at the time of their analyses. We take this argument about past experience to mean that lack of past experience in self-employment per se is the cause of current low rates. We do not take this argument to include other human and physical capital as well as intangibles that are passed intergenerationally. To examine whether this story can explain the lack of convergence of the black rate to the white rate over this century, we begin by examining the microdata evidence on intergenerational links in self-employment. After having seen that these links are strong, we then do two things. First, we construct a simple model of serial correlation in self-employment rates using evidence from the earlier microdata work. We use this model to approximate the speed with which the effects of the initial low black self-employment would fade, in the absence of other forces reducing black

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[9] These results are robust to using blacks as the base race in (4.3) and including industry controls in the underlying regressions.

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self-employment. Second, we examine if younger cohorts of blacks are more likely to be self-employed as would be expected if other forces reducing black self-employment had only recently diminished.

Recent studies have used nationally representative surveys to examine the extent of the intergenerational correlation in self-employment, finding that an individual who had a self-employed parent is about two to three times as likely to be self-employed as someone who did not have a self-employed parent.[10] This intergenerational relationship is substantial, but whether or not it can explain the constancy of the black/white rate over time requires some modeling.

We use a simple intergenerational model of self-employment to determine how fast low levels of black business ownership in the past should have faded in the absence of intervening factors. The self-employment rate for generation t is given by the following equation:

(4.4) $$S_t = S_{t-1}P^S + (1-S_{t-1})P^N,$$

where S_t is the self-employment rate of generation t, P^S is the probability that the son of a self-employed man is self-employed, P^N is the analogous probability for the son of a man who is not self-employed. After assuming values for a few of these parameters, we can determine the predicted black self-employment rate after a given number of generations. We first take the white rate to be in a steady state so that $S_t = S_{t-1}$. We set $S_t=.11$, which is close to its average over the last four Census years. We further take the initial black rate to be one third that of the white rate and assume that in the absence of other forces depressing black self-employment P^S and P^N would be the same for blacks and whites. We take the ratio P^S/P^N to be 3, which is toward the high end of the past estimates. Given the steady-state self-employment rate, we then solve for P^S and P^N using (4.4). Under these assumptions, the black rate would be 88 percent of the white rate after one generation and 98 percent of the white rate after two generations.[11]

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[10] Fairlie (1999) finds that having a self-employed father increases the transition rate into self-employment by 55 percent and decreases the exit rate by 76 percent. Under a constant hazard assumption, the resulting probability of self-employment increases by 72 percent. Dunn and Holtz-Eakin (1999) find that the self-employment rate of children of self-employed parents varies from under two to almost three times that of children of parents who are not self-employed. Hout and Rosen (1997) find that having a self-employed father roughly doubles the probability of self-employment.

[11] If we assume, instead, that the initial black rate is zero then the black rate achieves 82 percent

of the white rate after one generation and 97 percent of the white rate after two generations.

Calculations using our intergenerational model of self-employment indicate that an initial lack of business experience cannot explain the current low levels of black self-employment without major changes in our assumptions. Substantial deviations from the steady-state assumption and the assumed white self-employment rate are of little quantitative importance for the convergence calculations. The assumed P^S/P^N ratio does matter, but values closer to the central tendency of estimates in the literature would lead to faster convergence rates. The assumption that, if changed, could substantially alter the results is the assumption that business experience is passed from parents to children. It seems likely that parents are the major influence, but other sources of information on acceptable careers and the means to attain them are probably also important (uncles, cousins, neighbors, and so on). However, as long as parents are the major influence, convergence would occur reasonably quickly. It seems very likely to us that the correct interpretation of this discrepancy is that P^S and P^N are much lower for blacks than for whites. In other words, the discrepancy is due to forces that reduce current black self-employment besides the initial conditions of low black self-employment. The empirical finding of a constant black/white self-employment ratio over the twentieth century implies that there are continuing factors that depress the black self-employment rate. These factors could be discrimination, or they could be skills, capital and intangibles that are passed intergenerationally.

Additional evidence against the lack of traditions in business enterprises argument is provided by the historical experiences of many disadvantaged immigrant groups that came to the U.S. with little prior business experience and created high levels of business ownership after their arrival in the U.S. Perhaps the best example is the experience of Greek immigrants who came to the U.S. from small fishing villages and rural areas, but soon after their arrival created a substantial presence in the restaurant industry in the U.S. (Aldrich and Waldinger, 1990). The evidence from the experiences of many immigrant groups in business and the results from our simple intergenerational model of self-employment demonstrate that the lack of traditions in business enterprise among blacks that resulted from slavery cannot explain a substantial part of the current racial gap in self-employment.

We also examine whether more recent generations of blacks have higher relative self-employment rates than older generations. In Figure 2, we plot the black/white ratio in the self-employment rate from 1940 to 1990 for various age cohorts. For example, the oldest cohort

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displayed was ages 15-24 in 1940. We follow this synthetic age cohort over time by examining the black/white ratio for individuals who were ages 25-34 in 1950, ages 35-44 in 1960, ages 45-54 in 1970, and ages 55-64 in 1990. There is no clear evidence of an improvement in relative self-employment rates among younger generations of blacks. Although the youngest cohort has the largest black/white ratio in 1990, the second and third youngest cohorts have low ratios in both 1980 and 1990. The figure also indicates that the black/white ratio does not change substantially as each synthetic cohort ages.

5. A Brief Comparison to Numbers from the Current Population Survey (CPS)

The focus of this paper is the nature and determinants of long-term trends in self-employment over the twentieth century. The only data available for this purpose are the decennial Censuses. The Census datasets are also large enough to allow disaggregation of the population in ways that facilitate explaining the changes. In this section, we use annual Current Population Survey (CPS) data since 1966 to examine trends in the last few years and to determine more precisely when declines or increases began. We undertake this analysis, in part, because other research has found a decline in self-employment in recent years (Blanchflower, 1998) or emphasized recent increases in the number of black owned businesses (U.S. Small Business Administration, 1999). The evidence here suggests that the Censuses provide an accurate picture of recent trends in self-employment (also see Appendix A of Fairlie and Meyer, 1999).

Table 7 reports non-agricultural self-employment rates for those ages 16-64. We impose minimum hours and weeks worked requirements to make the sample comparable to our Census samples. We report information from the March CPS Annual Demographic Survey that provides retrospective information on the previous year. Thus, the numbers in the table for a given year were collected the following year. Beginning in 1984, we also report information from the merged outgoing rotation group (ORG) data which provides contemporaneous information on employment during all of the months of the year. We report separate rates for white and black men, as well as the ratio of the black rate to the white rate.

The main disadvantages of the CPS, are its much shorter time-period, its smaller size, and several changes in methodology that seem to coincide with changes in self-employment trends. The changes in CPS methodology are indicated in Table 9 using horizontal lines where there are

breaks in the data. These methodological changes make it difficult and problematic to measure changes in self-employment rates around the break points. The break between 1974 and 1975 in the March data is due to the exclusion of incorporated self-employed among the self-employed prior to 1975. This break in the series appears to raise the white male self-employment rate about 3 percentage points.

In 1994 the CPS was also substantially redesigned (Cohany, Polivka, and Rothgeb 1994; Polivka and Miller 1998). Because the redesign appears in the March and ORG data in different years, we can examine the effect of the new survey by comparing changes around the break points in the two datasets. These comparisons suggest that the redesign led to a fall in the reported white male self-employment rate of about 1.0 percentage points.[12] On the other hand, the black male rate seems to have risen, by almost a full percentage point. These results suggest that the recent CPS changes in the white or black self-employment rate, and especially in the black/white ratio may be highly misleading if taken at face value.

Ignoring the changes in rates in the year of methodology changes, the CPS numbers suggest that the white male rate fell slightly through the late 1960s and early 1970s and then rose through 1992 or 1993. Since 1993 or 1994 the white self-employment rate appears to have fallen slightly. The black male rate has followed a similar pattern, though there is less suggestion of a fall in recent years until 1997 when the rate drops substantially. The black/white ratio appears to have been fairly steady at between 0.3 and 0.4 during the years of comparable data. Overall, the changes in recent years do not appear large and the earlier patterns agree closely with those in the Census data.

6. Conclusion

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[12] In a thorough analysis of the redesign using the parallel survey, Polivka and Miller (1998) conclude that the redesign raised the self-employment rate of men by about one-half of a percentage point. However the parallel survey seems two have to drawbacks. The sample used for the parallel survey does not appear to have the same characteristics as the regular CPS sample, and interviewer procedures were different. In particular, the interviewers had lower caseloads, and the interviews were longer and were supervised more carefully.

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In our analysis of 1910 and 1940 to 1990 Census microdata, we find that the white male self-employment rate fell from 16.0 percent in 1910 to 10.0 percent in 1970, then rose to 11.4 percent in 1990. We have ruled out a number of possible explanations for the long-term decline and recent upturn in the white self-employment rate. In particular, we find that Social Security, the age distribution of the workforce, and immigration do not explain the trends in self-employment. We do find, however, that the long-term decline was mainly due to declining self-employment rates within nearly all industries, and the recent upturn was mainly due to a shift of overall employment to high self-employment industries. These findings are consistent with technological change favoring capital-intensive, large-scale production during the period from 1910 to 1970, and changes in consumer demand, increased global competition and changes in technology favorable to self-employment during the period from 1970 to 1990.

We find that the self-employment rate of black men relative to white men has remained roughly constant from 1910 to 1990. Substantially lower black self-employment rates were found in all industries and Census years. Major demographic changes occurring during the twentieth century, such as the Great Black Migration and the racial convergence in educational attainment, did not have large effects on the racial self-employment rate gap. We show using a simple intergenerational model of self-employment that, if not for continuing factors reducing black self-employment, racial convergence in self-employment rates should occur in only a couple of generations. We also do not find higher relative self-employment rates among more recent cohorts of black men than among older cohorts. With available data, we cannot carefully examine the role that other factors, such as asset differences, consumer and lending discrimination, and risk aversion, have played in causing the absence of convergence of the black and white self-employment rates during this century.

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Table 1

White Self-Employment Rates and Employment Shares by Age Group

Age Group	1910	1940	1950	1960	1970	1980	1990
Self-Employment Rates							
Ages 16-24	4.6%	4.6%	4.0%	2.7%	2.3%	2.9%	2.8%
Ages 25-34	14.4%	10.2%	9.8%	7.5%	7.1%	9.5%	8.9%
Ages 35-44	21.8%	15.7%	15.9%	12.5%	12.4%	14.0%	14.3%
Ages 45-54	26.5%	19.8%	18.2%	14.8%	13.0%	15.3%	14.9%
Ages 55-61	29.0%	22.8%	17.2%	17.2%	15.2%	14.3%	16.7%
Ages 62-64	30.6%	25.9%	17.8%	17.6%	16.5%	17.8%	21.4%
Ages 16-54	15.1%	12.8%	12.5%	10.2%	9.1%	10.1%	10.7%
Ages 55-64	29.4%	23.6%	17.4%	17.3%	15.6%	15.1%	17.8%
Employment Shares							
Ages 16-24	27.7%	16.7%	14.8%	13.0%	16.7%	21.0%	15.2%
Ages 25-34	29.4%	28.8%	28.2%	25.3%	24.0%	29.3%	30.0%
Ages 35-44	22.3%	25.5%	25.4%	27.0%	23.2%	20.8%	26.9%
Ages 45-54	14.1%	19.6%	19.6%	22.0%	22.8%	17.7%	18.3%
Ages 55-61	4.8%	7.1%	8.8%	9.2%	9.9%	8.8%	7.3%
Ages 62-64	1.7%	2.4%	3.2%	3.4%	3.3%	2.4%	2.2%
Ages 16-54	93.5%	90.5%	88.0%	87.4%	86.8%	88.7%	90.4%
Ages 55-64	6.5%	9.5%	12.0%	12.6%	13.2%	11.3%	9.6%
Sample Size	39733	39529	39211	39726	44394	39952	39471

Notes: (1) The sample consists of male nonagricultural workers (ages 16-64) who worked at least 15 hours in the week prior to the survey date and at least 14 weeks in the year prior to survey date. We do not impose hours and weeks worked restrictions in 1910 due to data limitations.   (2) The self-employment rate is the percentage of all those working who are self-employed. (3) Estimates for 1990 are calculated using weights provided by the Census.

Table 2
Self-Employment and Wage/Salary Earnings by Race
(Full-Time, Full-Year Workers)

	1950	1960	1970	1980	1990
White Men: Self-Employment					
Mean Earnings	22865	34639	46107	40885	48376
Mean Log Earnings	9.378	9.852	10.256	10.098	10.168
Median Log Earnings	9.811	10.103	10.388	10.310	10.309
Variance Log Earnings	5.005	3.664	2.524	2.759	2.519
Sample Size	4450	3915	3995	3688	4013
White Men: Wage/Salary					
Mean Earnings	19011	25917	30711	30044	34267
Mean Log Earnings	9.678	10.001	10.177	10.135	10.230
Median Log Earnings	9.747	10.057	10.226	10.209	10.275
Variance Log Earnings	0.951	0.669	0.456	0.478	0.452
Sample Size	28298	30442	34150	30393	29732
White Men: Self-Employment - Wage/Salary					
Mean Earnings	3854	8723	15396	10841	14110
Mean Log Earnings	-0.300	-0.149	0.079	-0.037	-0.062
Median Log Earnings	0.064	0.046	0.162	0.101	0.034
Variance Log Earnings	4.054	2.995	2.068	2.281	2.067
Black Men: Self-Employment					
Mean Earnings	12678	16642	25016	27998	33421
Mean Log Earnings	8.650	9.010	9.665	9.671	9.798
Median Log Earnings	9.247	9.495	9.794	9.851	9.999
Variance Log Earnings	5.763	4.087	1.988	2.836	2.168
Sample Size	214	720	1069	1017	1151
Black Men: Wage/Salary					
Mean Earnings	11600	15321	19711	21535	24643
Mean Log Earnings	9.182	9.468	9.711	9.778	9.938
Median Log Earnings	9.350	9.589	9.864	9.851	9.952
Variance Log Earnings	0.906	0.702	0.583	0.580	0.349
Sample Size	5069	20640	28284	31364	29014
Black Men: Self-Employment - Wage/Salary					
Mean Earnings	1077	1322	5305	6463	8778
Mean Log Earnings	-0.532	-0.458	-0.046	-0.107	-0.140
Median Log Earnings	-0.103	-0.094	-0.070	0.000	0.047
Variance Log Earnings	4.857	3.385	1.405	2.256	1.819

Notes: (1) The sample consists of male nonagricultural workers (ages 16-64) who worked 40 or more weeks last year and 35 or more hours last week. (2) Earnings in all years are measured in 1990 dollars. (3) Negative reported earnings are set equal to zero.
(4) Estimates for 1990 are calculated using weights provided by the Census.

Table 3
White Self-Employment Rates and Employment Shares by Industry

Industry	1910	1940	1950	1960	1970	1980	1990
Self-Employment Rates							
Mining	3.8%	4.8%	3.8%	3.1%	5.3%	4.5%	5.0%
Construction	20.8%	21.2%	19.2%	19.9%	17.2%	21.3%	22.0%
Manufacturing	5.5%	3.2%	3.5%	2.4%	2.6%	3.4%	4.3%
Transportation	2.9%	6.4%	5.2%	4.6%	4.2%	4.7%	5.8%
Trade	37.7%	27.1%	26.7%	22.6%	16.8%	15.3%	11.6%
FIRE	26.9%	14.8%	16.1%	13.8%	12.6%	14.3%	18.5%
Bus. and Repair	39.2%	30.9%	30.0%	28.9%	23.8%	25.5%	21.9%
Personal Serv.	35.6%	29.6%	29.5%	34.8%	32.3%	30.1%	23.6%
Ent. and Rec.	26.1%	16.9%	14.4%	18.5%	20.7%	19.9%	13.1%
Professional	42.3%	27.8%	20.5%	19.4%	15.3%	14.8%	14.5%
Public Admin.	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	16.7%	13.9%	13.1%	11.4%	10.0%	11.0%	11.4%
Employment Shares							
Mining	6.0%	3.3%	2.9%	1.7%	1.3%	1.9%	1.1%
Construction	11.1%	7.4%	9.3%	9.5%	9.3%	9.7%	11.2%
Manufacturing	32.8%	33.8%	33.4%	36.3%	32.9%	28.7%	23.7%
Transportation	16.4%	11.3%	11.2%	10.0%	9.1%	9.9%	9.8%
Trade	18.6%	21.8%	21.3%	18.8%	20.0%	19.7%	20.6%
FIRE	2.8%	4.0%	3.3%	3.9%	4.5%	4.8%	5.7%
Bus. and Repair	1.8%	3.1%	3.8%	3.4%	3.6%	5.1%	5.9%
Personal Serv.	3.7%	3.7%	2.7%	2.2%	1.8%	1.4%	1.5%
Ent. and Rec.	0.8%	1.2%	1.0%	0.8%	0.7%	0.9%	1.5%
Professional	4.5%	5.7%	5.3%	7.3%	10.3%	12.1%	13.8%
Public Admin.	1.6%	4.8%	5.7%	6.1%	6.5%	5.9%	5.4%
Sample Size	37794	39070	39091	38394	44394	38948	39471

Notes: (1) The sample consists of male nonagricultural workers (ages 16-64) who worked at least 15 hours in the week prior to the survey date and at least 14 weeks in the year prior to survey date. We do not impose hours and weeks worked restrictions in 1910 due to data limitations. (2) The self-employment rate is the percentage of all those working who are self-employed. (3) Estimates for 1990 are calculated using weights provided by the Census.

	1910-1940	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1910-1970	1970-1990
Change in Aggregate								
Self-Employment Rate	-2.8%	-0.8%	-1.7%	-1.4%	1.0%	0.4%	-6.7%	1.4%
Contribution from Change in:								
Method 1 (Equation 3.2)								
Self-Employment Rates within Industries	-4.5%	-0.7%	-1.2%	-2.0%	0.4%	-0.6%	-9.4%	-0.1%
Employment Shares	1.7%	-0.1%	-0.4%	0.7%	0.6%	1.0%	2.7%	1.5%
Method 2 (Equation 3.3)								
Self-Employment Rates within Industries	-3.5%	-0.7%	-1.3%	-1.8%	0.4%	-0.5%	-7.0%	0.0%
Employment Shares	0.6%	-0.1%	-0.4%	0.5%	0.6%	0.9%	0.3%	1.4%

Notes: (1) The sample consists of male nonagricultural workers (ages 16-64) who worked at least 15 hours in the week prior to the survey date and at least   14 weeks in the year prior to survey date.   We do not impose hours and weeks worked restrictions in 1910 due to data limitations.   (2) See text for a complete description of the decomposition.   (3) Estimates for 1990 are calculated using weights provided by the Census.

Table 5

Industry Decomposition of Aggregate White Self-Employment Rate (1970-1990)

Industry	Method 1 (Equation 3.5) Contribution from Change in:		Method 2 (Equation 3.6) Contribution from Change in:		Net Contribution from Industry (Equation 3.4)
	Self-Empl. Rate	Employment Share	Self-Empl. Rate	Employment Share	
Mining	-0.00%	0.02%	-0.00%	0.02%	0.01%
Construction	0.45%	0.20%	0.54%	0.11%	0.65%
Manufacturing	0.56%	0.66%	0.40%	0.81%	1.21%
Transportation	0.14%	-0.04%	0.16%	-0.05%	0.10%
Trade	-1.04%	0.00%	-1.07%	0.03%	-1.04%
FIRE	0.27%	0.09%	0.34%	0.01%	0.36%
Bus. and Repair	-0.07%	0.24%	-0.11%	0.29%	0.17%
Personal Serv.	-0.16%	-0.04%	-0.13%	-0.07%	-0.20%
Ent. and Rec.	-0.05%	0.01%	-0.11%	0.07%	-0.04%
Professional	-0.08%	0.11%	-0.11%	0.14%	0.03%
Public Admin.	0.00%	0.13%	0.00%	0.13%	0.13%
Total	0.02%	1.37%	-0.09%	1.48%	1.39%

Notes: (1) The sample consists of male nonagricultural workers (ages 16-64)   who worked at least 15 hours in the week prior to the survey date and at least 14 weeks in the year prior to survey date. We do not impose hours and weeks   worked restrictions in 1910 due to data limitations.   (2) See text for a complete description of the decomposition.   (3) Estimates for 1990 are calculated using weights provided by the Census.

Table 6
Black Self-Employment Rates and Employment Shares by Industry

Industry	1910	1940	1950	1960	1970	1980	1990
Self-Employment Rates							
Mining	0.7%	1.2%	0.8%	0.7%	1.6%	0.7%	1.7%
Construction	11.7%	10.2%	6.1%	8.8%	9.8%	8.7%	9.9%
Manufacturing	1.1%	1.1%	0.4%	0.6%	0.9%	0.8%	1.0%
Transportation	1.6%	4.7%	3.2%	3.6%	3.8%	2.7%	4.1%
Trade	16.3%	10.5%	8.1%	4.9%	5.0%	4.6%	3.5%
FIRE	3.7%	4.2%	5.3%	2.9%	3.4%	3.9%	5.9%
Bus. and Repair	24.0%	15.6%	13.1%	15.6%	14.0%	13.7%	11.5%
Personal Serv.	9.2%	7.9%	7.9%	9.6%	12.1%	11.5%	11.3%
Ent. and Rec.	11.8%	8.7%	5.2%	4.9%	4.8%	8.0%	8.0%
Professional	11.9%	8.7%	5.9%	3.7%	3.5%	3.3%	3.4%
Public Admin.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	6.0%	6.0%	4.1%	3.8%	3.9%	3.5%	4.1%
Employment Shares							
Mining	6.4%	2.9%	1.8%	0.6%	0.5%	0.8%	0.5%
Construction	10.6%	8.9%	10.4%	10.7%	9.6%	8.0%	7.9%
Manufacturing	28.0%	27.9%	33.3%	33.0%	34.7%	31.1%	22.9%
Transportation	21.6%	12.0%	12.6%	10.4%	10.6%	13.6%	14.2%
Trade	11.6%	17.5%	17.0%	16.7%	15.3%	14.8%	17.7%
FIRE	1.9%	3.3%	2.2%	2.2%	2.8%	3.7%	4.6%
Bus. and Repair	1.1%	2.8%	3.1%	3.1%	3.5%	4.5%	6.0%
Personal Serv.	13.4%	15.0%	7.9%	6.2%	3.7%	2.0%	2.5%
Ent. and Rec.	0.8%	1.6%	1.1%	1.2%	0.8%	0.9%	1.4%
Professional	3.8%	5.3%	5.2%	8.1%	10.2%	13.1%	14.8%
Public Admin.	0.8%	2.8%	5.3%	7.8%	8.1%	7.5%	7.5%
Sample Size	4369	14421	6876	24882	35627	37484	37190
Black/White Self-Employment Rate Ratio							
Mining	0.191	0.244	0.209	0.232	0.296	0.149	0.329
Construction	0.562	0.478	0.320	0.445	0.569	0.409	0.449
Manufacturing	0.192	0.340	0.111	0.249	0.348	0.236	0.239
Transportation	0.551	0.736	0.623	0.797	0.916	0.564	0.709
Trade	0.434	0.387	0.304	0.215	0.296	0.302	0.305
FIRE	0.138	0.285	0.329	0.213	0.269	0.272	0.317
Bus. and Repair	0.612	0.506	0.437	0.539	0.590	0.538	0.524
Personal Serv.	0.260	0.268	0.268	0.274	0.376	0.383	0.479
Ent. and Rec.	0.451	0.512	0.361	0.267	0.233	0.403	0.606
Professional	0.282	0.313	0.287	0.193	0.229	0.225	0.231
Public Admin.							
Total	0.356	0.433	0.313	0.338	0.387	0.319	0.359

Notes: (1) The sample consists of male nonagricultural workers (ages 16-64) who worked at least 15 hours in the week prior to the survey date and at least 14 weeks in the year prior to survey date. We do not impose hours and weeks worked restrictions in 1910 due to data limitations. (2) The self-employment rate is the percentage of all those working who are self-employed. (3) Estimates for 1990 are calculated using weights provided by the Census.

Table 7
Decomposition of Changes in the Racial Self-Employment Rate Gap (1940-1990)

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990
Initial Year					
White Self-Empl. Rate	13.818	13.053	11.091	9.983	10.703
Black Self-Empl. Rate	6.137	4.110	3.633	3.859	3.309
Gap: White-Black Rate	7.681	8.942	7.458	6.124	7.394
Decadal Change in Gap	1.261	-1.485	-1.334	1.270	0.327
Contributions Estimates					
(i) Characteristics Effect					
Age	-0.189	-0.128	-0.104	0.078	-0.003
Marriage/Children	-0.011	0.001	-0.058	-0.041	0.030
Education	0.181	0.146	0.113	-0.090	-0.067
Region	0.390	0.192	0.142	-0.028	-0.032
(ii) Characteristics-Race Interaction					
Age	0.281	0.323	-0.118	-0.592	0.370
Marriage/Children	0.241	0.130	0.008	-0.067	-0.073
Education	-0.091	0.057	0.101	0.402	0.293
Region	-0.312	-0.101	-0.049	0.043	0.026
(iii) Coefficients-Race Interaction					
Age	-0.184	0.016	-0.054	-0.038	0.027
Marriage/Children	0.088	-0.041	-0.039	0.023	0.047
Education	0.168	-0.487	-0.143	-0.197	-0.227
Region	-0.132	-0.105	0.071	0.161	-0.131
(iv) Coefficients Effect	0.832	-1.487	-1.203	1.615	0.068

Notes: (1) The sample consists of male nonagricultural workers (ages 16-64)
who worked at least 15 hours in the week prior to the survey date and at least
14 weeks in the year prior to survey date.   (2) See text for a complete description of
each component of the decomposition.   (3) The black and white self-employment rates
in 1990 are 4.1 and 11.8 percent, respectively.

Table 8
Mean and Median Household Net Worth by Race (1990 Dollars)

| Year | Source | Mean Net Worth | | | Median Net Worth | | |
		Black	White	Black/White Ratio	Black	White	Black/White Ratio
1962	A	19314	111280	0.174	3927	38116	0.103
1984	B	25462	108601	0.234	4273	49229	0.087
1988	B	26130	111950	0.233	4606	47815	0.096
1991	B	26716	107391	0.249	4418	42615	0.104

Sources: (A) Tabulations using the Survey of Financial Characteristics of Consumers reported in Avery and Kennickell (1993). (B) The Survey of Income and Program Participation reported in U.S. Department of Commerce, Household Wealth and Asset Ownership.

Table 9
CPS Male Self-Employment Rates
March CPS 1966-1996, Outgoing Rotation Group (ORG) Data 1984-1996

	White Rates		Black Rates		
					Black/White Ratio
Year	March	ORG	March	ORG	
March		ORG			
1966			0.08267		
				0.04265	
					0.51591
1967			0.08102		
				0.03571	
					0.44069
1968			0.08423		
				0.03888	
					0.46161
1969			0.07852		
				0.03640	
					0.46359
1970			0.08112		
				0.03514	
					0.43312
1971			0.07757		
				0.04572	
					0.58944
1972			0.07979		
				0.03544	
					0.44419
1973			0.07751		
				0.02832	
					0.36535
1974			0.07385		
				0.03006	
					0.40708
1975			0.10686		
				0.02678	
					0.25056
1976			0.10977		
				0.03585	
					0.32661
1977			0.11241		
				0.04633	
					0.41216

Year						
1978					0.11526	
					0.03563	
					0.30909	
1979					0.12244	
					0.03891	
					0.31776	
1980					0.11984	
					0.03071	
					0.25623	
1981					0.12380	
					0.04992	
					0.40320	
1982					0.13165	
					0.03803	
					0.28889	
1983					0.12762	
					0.03776	
					0.29589	
1984	0.12792	0.13429	0.03149	0.04982	0.24615	0.37097
1985	0.12357	0.13161	0.04269	0.04579	0.34548	0.34795
1986	0.12487	0.13263	0.04555	0.04993	0.36480	0.37645
1987	0.12674	0.13238	0.03403	0.04892	0.26852	0.36956
1988	0.12660	0.13371	0.04134	0.04988	0.32653	0.37305
1989	0.12589	0.13395	0.04723	0.04798	0.37517	0.35819
1990	0.12836	0.13316	0.05546	0.05469	0.43205	0.41074
1991	0.12752	0.13554	0.04445	0.05365	0.34856	0.39582
1992	<u>0.13056</u>	0.13539	<u>0.04894</u>	0.05151	<u>0.37485</u>	0.38046
1993	0.12265	<u>0.14009</u>	0.05616	<u>0.04873</u>	0.45790	<u>0.34785</u>
1994	0.12070	0.12903	0.04515	0.05867	0.37408	0.45472
1995	0.11930	0.12770	0.05355	0.05554	0.44885	0.43491
1996	0.12107	0.12524	0.05583	0.05783	0.46117	0.46176
1997					0.11749	
						0.04391
						0.37376

Notes: (1) The sample consists of male non-agricultural workers ages 16-64 who worked at least 15 hours last week (March and ORG) and at least 14 weeks during the year (March only). (2) The lines represent changes in survey methodology as described in the text. (3) All rates are calculated using sample weights.