Does Business Ownership Provide a Source of Upward Mobility for Blacks and Hispanics?

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1. Introduction

The differences between African-American and Hispanic self-employment rates and the white self-employment rate are striking. Approximately, 11.6 percent of white workers are self-employed, whereas only 3.8 percent of black workers and 6.8 percent of Hispanic workers are self-employed (U.S. Bureau of the Census 1993). Furthermore, the 3 to 1 ratio of white to black self-employment rates has remained roughly constant over the past 80 years (Fairlie and Meyer 2000). Of the blacks and Hispanics who are self-employed, their businesses have lower revenues and profits, hire fewer employees, and are more likely to fail than white-owned businesses (U.S. Bureau of the Census 1997).

The relative absence of black and Hispanic-owned businesses in the United States is a major concern among policymakers. It is particularly troubling because it has been argued that self-employment provides a route out of poverty and an alternative to unemployment or discrimination in the labor market.[1] For example, Glazer and Moynihan (1970, p. 36) argue that "business is in America the most effective form of social mobility for those who meet prejudice." Proponents also note that many disadvantaged groups facing discrimination or blocked opportunities in the wage/salary sector have used business ownership as a source of economic advancement. It has been argued, for example, that the economic success of earlier 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). More recently, Koreans have purportedly used business ownership for economic mobility (Min 1989, 1993).

Although a rapidly growing literature documents and examines the causes of ethnic and racial differences in rates of business ownership in the United States, there is very little empirical

evidence from longitudinal data on the relationship between business ownership and economic mobility for disadvantaged minorities.[2] An important question is whether business ownership provides a route for economic advancement for at least the relatively few blacks and Hispanics who are self-employed. To my knowledge, only two previous studies provide evidence from long-term panel data on this question. First, in previous research I use data for 1982 to 1996 from the National Longitudinal Survey of Youth (NLSY) to examine the earnings patterns of young less-educated business owners and make comparisons to young less-educated wage/salary workers (Fairlie 2000). Using fixed-effects earnings regressions, I find that the self-employed experience faster earnings growth on average than wage/salary workers after a few initial years of slower growth suggesting that, for at least some less-educated youths, business ownership provides a route for economic advancement. Second, Holtz-Eakin, Rosen and Weathers (2000) examine one-year and five-year mobility rates in the income distribution for prime-age self-employed and wage/salary workers using data from the 1968 to 1990 waves of the Panel Study of Income Dynamics. They find that low-income self-employed workers experienced more upward mobility in the income distribution than did low-income wage/salary workers. Furthermore, they find some evidence that self-employment was more successful for blacks than non-blacks.

In this paper, I examine the earnings patterns of young black and Hispanic business owners. Using data from the National Longitudinal Survey of Youth (NLSY), this study is the first to examine the long-term earnings patterns (1979-1998) of young self-employed blacks and Hispanics. To place these earnings patterns into context, I make comparisons to young black and Hispanic wage/salary workers and to young white self-employed and wage/salary workers. The key question is whether black and Hispanic youths who are self-employed early in their careers

experience faster earnings growth than their counterparts employed in the wage/salary sector. I

do not specifically model the selection process into self-employment, and thus cannot infer from

these results whether self-employment is a "better" option for the randomly chosen black or

Hispanic. Although this is an important question, no credible identifying instruments exist.[3]

Nevertheless, the following analysis of earnings patterns may shed light on the potential for self-

employment to provide a source of economic mobility and self-sufficiency for at least some

blacks and Hispanics.

2. Data

     I use data from the National Longitudinal Survey of Youth (NLSY), a nationally

representative sample of 12,686 men and women who were between the ages of 14 to 22 when

they were first interviewed in 1979.[4] Survey members were interviewed annually from 1979 to

1994, and in 1996 and 1998. I exclude the sample of 1,280 youth designed to represent the

population who were enlisted in the four branches of the military as of September 30, 1978 and

the supplemental sample of 1,643 economically disadvantaged non-black, non-Hispanic youths.

The resulting sample contains random samples of black, Hispanic and non-black, non-Hispanic

youths (referred to as whites).

     Self-employed workers are defined as those individuals who identify themselves as self-

employed in own business, professional practice, or farm on the class of worker question for the

current or most recent job.[5] I remove individuals who report being enrolled in school and

workers who report working fewer than 300 hours in the previous calendar year. The hours

restriction rules out very small-scale business activities. In all annual earnings comparisons, I

focus on workers reporting at least 1400 hours in the past calendar year.

Total annual earnings are calculated by summing the responses to questions on military income, wage and salary income, and business or farm income (after expenses) in the past calendar year. I add the income from all three sources because 56.9 percent of the self-employed with positive earnings in my sample report wage and salary income, but do not report business income. This is only partly due to incorporated business owners reporting their income as wage and salary income -- 55.3 percent of unincorporated business owners with positive total earnings report zero business income. As suggested by Jay Zagorsky at the Center for Human Resource Research, Ohio State University, it may partly be due to the ordering of questions on the questionnaire. Respondents were asked 1) How much money did you get from the military?, 2) Excluding military pay, how much money did you get from wages, salary, commissions or tips?, and 3) Excluding anything you already mentioned did you receive any business income? Thus, some of the self-employed may have reported their income in the second question and did not correct their mistake. Another possibility is that the self-employed report only their labor income from the business under wage/salary income. I explore this issue further below.

Earnings observations in all years are inflated to 1998 dollars. The responses for each of these three sources of income are top coded at $75,000 from 1979 to 1984, $100,000 from 1985 to 1994, and the top 2 percent for 1996 and 1998. Instead of using these top codes, I impose the 1994 top code in 1998 dollars for all years, which equals $109,987. I set all top coded values to $150,000.[6]

3. Self-Employment Rates and Earnings Comparisons

Before examining self-employment and wage/salary earnings patterns, I present some descriptive results on self-employment rates and total earnings comparisons by race. Table 1

reports self-employment rates by sex and race. The self-employment rate is defined as the fraction of workers that is self-employed. The reported estimates indicate that self-employment rates differ substantially by race.[7] Similar to estimates reported in previous studies, blacks and Hispanics are much less likely to be self-employed than are whites. Only 4.8 percent of black men are self-employed compared to 9.6 percent of white men. The Hispanic male rate of 6.9 percent is also lower than the white rate, but higher than the black rate. Among women, the black/white and Hispanic/white self-employment rate ratios are similar to those for men. The main difference, however, is that for all racial groups female self-employment rates are lower.

These estimates from the NLSY are comparable to those from 1990 Census microdata using a similar age group (reported in Appendix Table 1). I generally find slightly lower rates using the Census, but the relative differences between the races are similar. Blacks and Hispanics are substantially less likely to own businesses than are whites.

Although relatively few blacks and Hispanics are self-employed it is important to determine whether these minority business owners are successful. In Table 2, I report the mean, median, and standard deviation of total annual earnings for black and Hispanic self-employed and wage/salary youths. I only include full-time workers, defined here as working at least 1400 hours in the past calendar year, to control for differences in hours worked. I first discuss the results for men. For both black and Hispanic men, the self-employed earn substantially more on average than do wage/salary workers. Self-employed blacks and Hispanics earn $6819 and $10,981 more than their wage/salary counterparts, respectively.[8] These differences are large, representing 30-40 percent of average wage/salary earnings. A comparison of means can create a distorted picture, however, if a few business owners are extremely successful.[9] Comparing median income levels removes these concerns. For both blacks and Hispanics, median self-

employment earnings are higher than median wage/salary earnings, however, the differences are much smaller.

Although average and median earnings are higher for self-employed blacks and Hispanics, it is important to also compare the variance of earnings in the two sectors. For both races, the standard deviation of self-employment income is substantially higher than that of wage/salary income. This dissimilarity is also apparent when examining earnings distributions for self-employed and wage/salary workers. In Figures 1 and 2, I display earnings distributions for black and Hispanic men. For both groups, a much larger percentage of the self-employed have very high or very low earnings than wage/salary workers. For example, 18 percent of self-employed blacks earn more than $60,000 whereas only 4 percent of blacks in the wage/salary sector have earnings at this level. At the other end of the distribution, 15 percent of self-employed blacks earn less than $10,000 compared to 8 percent of wage/salary blacks.

I also report characteristics of the earnings distribution for white men in Table 2 and Figure 3. The most notable difference is that white men earn substantially more than either black or Hispanic men in both the self-employment and wage/salary sectors.[10] Of interest to this analysis, however, is the difference between the two sectors. Using mean or median earnings, self-employed white men earn substantially more than their wage/salary counterparts. The differences are also similar in magnitude when measured as a percentage of wage/salary earnings. Finally, the comparison of self-employment and wage/salary earnings distributions for white men reveals similar patterns as those for black and Hispanic men.

In Table 2, I also report estimates of the mean, median and standard deviation for self-employment and wage/salary earnings for black and Hispanic women. I should note, however, that some caution is warranted in interpreting the estimates for self-employment earnings as

sample sizes are small. Similar to the results for men, I find that self-employed black and Hispanic women earn more than black and Hispanic women working in the wage/salary sector, although the difference is small for black women.[11] A major difference, however, is that median self-employment earnings are lower than median wage/salary earnings for black and Hispanic women. Median self-employment earnings are roughly $2000-$3000 less than median wage/salary earnings. Therefore, an evaluation regarding whether self-employed minority women earn more or less than minority women working in the wage/salary sector depends on the measure chosen.

The estimates reported in Table 2 also indicate that self-employment earnings have a higher variance than wage/salary earnings for black and Hispanic women. The earnings distributions presented in Figures 4 and 5 support this finding. Higher percentages of black and Hispanic women who are self-employed are found in the tails of the earnings distribution. Finally, I find that black and Hispanic women who are self-employed or work in the wage/salary sector earn less than white women. The one surprising exception is that mean earnings among self-employed Hispanic women is slightly higher than mean earnings among white women.

RETURNS TO CAPITAL

One issue that arises in comparing self-employment earnings to wage/salary earnings from survey data is the treatment of returns to capital. In the NLSY, the question regarding self-employment income asks "How much did you receive after expenses?" from your farm or business in the past calendar year. Although there is some uncertainty, respondents are likely to interpret this question to include both the returns to labor and the returns to capital. As noted above, however, the majority of the self-employed report their earnings as wage/salary income

and not as business income. In the case of the respondent reporting income as business income it would be preferable to remove the returns to capital before making comparisons to the earnings of wage/salary workers. [12] This may not pose a substantial problem, however, because many business owners do not invest large amounts of capital. Data from the 1992 Characteristics of Business Owners survey indicate that 57 percent of small businesses require less than $5000 of startup capital (U.S. Bureau of the Census 1997).[13] The percent of black- and Hispanic-owned businesses started with less than $5000 of capital are even smaller (67 and 59 percent, respectively).

The NLSY contains two variables that may shed some light on the issue. It contains the market value of the individual's farm, business and/or other real estate and the total amount of debt owed on this farm, business and/or other real estate.[14] These two variables, however, suffer from three major problems. First, they are only for 1985 to 1990 and 1992 to 1998. Second, both measures include other real estate. There is a separate question asking whether the individual owns other real estate, however, a question on the value of the other real estate does not exist. Third, I do not have information on the percent of the business owned by the respondent. The 1997 Survey of Minority Owned Businesses indicates that 90 percent of black firms and 86 percent of Hispanic firms, respectively, are individual proprietorships (U.S. Bureau of the Census 2001). With these reservations in mind, I proceed.

To remove the returns to capital from total self-employment income, I first need to calculate an opportunity cost for this capital. I calculate the owner's equity in the business, farm and other real estate and multiply this by the rate of return on an alternative asset. I calculate estimates using both a less risky alternative (30-year Treasury Bond) and a more risky alternative (the S&P 500).[15] I then subtract this opportunity cost of capital from reported business income.[16]

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I do not subtract the opportunity cost of capital from reported wage/salary income for business owners. I assume that this income measure only captures the returns to labor.

Estimates of adjusted self-employment and wage/salary income are reported in Table 3. I also report the average market value, debt and equity in business, farm and other real estate. Self-employed blacks and Hispanics have substantially lower levels of equity than do whites. Furthermore, within each racial group self-employed women have lower levels of equity than do self-employed men.[17]

In Table 3, I also report unadjusted earnings for the self-employed and wage/salary workers for 1985-90 and 92-98. As expected, mean earnings are larger than reported in Table 2. The differences between self-employment and wage/salary are generally similar. For all groups, the self-employed have higher earnings than wage/salary workers. As expected, the removal of the opportunity cost of business, farm and other real estate equity decreases relative self-employment earnings. For black and Hispanic men, however, the difference between mean self-employment earnings and wage/salary earnings, however, remains large even when using the S&P 500 as the alternative investment. Self-employed blacks earn $5413 more on average than wage/salary workers, and self-employed Hispanics earn $9879 more. The earnings differences also decrease, but remain positive for black and Hispanic women after adjusting for the opportunity cost of business equity. To conclude, the simple method used here to remove the returns to capital indicates that average self-employment earnings remain higher than average wage/salary earnings for blacks and Hispanics. The adjustment for the opportunity cost of capital does not substantially affect earnings comparisons. Given these results and the uncertainty over how respondents interpret the income questions I use total earnings in the remainder of the analysis.[18]

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4. Estimates of Earnings Patterns

Overall, the results presented in Table 2, Table 3 and Figures 1-6 provide evidence that self-employed black and Hispanic men earn more than black and Hispanic wage/salary workers. The evidence is less clear, however, for women. These estimates, which do not fully exploit the longitudinal nature of the data, provide some suggestive evidence that self-employed blacks and Hispanics experience faster earnings growth than their wage/salary counterparts. Of course, this inference relies on the assumption that the two groups have the same initial earnings levels at entry into the labor market and have the same age distribution. In fact, pervious studies find that the self-employed are older on average than are wage/salary workers, and differ in other important ways.[19] Another problem with the interpretation is that workers may select into the sector that provides the highest expected earnings. Therefore, even after controlling for differences in observable characteristics self-employed and wage/salary workers may differ in unobservable characteristics.

Do black and Hispanic business owners experience faster earnings growth than black and Hispanic wage/salary workers? To explore this question, I compare the earnings patterns of black and Hispanic youths who were self-employed early in their careers to the earnings patterns of those who were wage/salary workers. The sample includes observations for young men and women who report working at least 1400 annual hours in the survey year.

I estimate separate log earnings regressions for each race and sex. I control for current self-employment and wage/salary status and for differences in observable and unobservable characteristics. Specifically, I estimate the following reduced form equation for annual earnings:

(4.1) $\ln y_{it} = \alpha_i + X_{it}'\beta + \gamma_1 t + \gamma_2 t^2 + \pi S_{it} + \gamma_1^S t S_{it} + \gamma_2^S t^2 S_{it} + \varepsilon_{it},$

where y_{it} is individual i's annual earnings in year t, α_i is an individual-level fixed effect, X_{it} is vector of time-varying independent variables, t is a time trend which equals zero at the completion of formal schooling, S_{it} is a dummy variable indicating whether the individual is self-employed in year t, and ε_{it} is the error term.[20] The individual-level fixed effects control for all observable and unobservable characteristics that do not change over time. The dummy variable for current self-employment status and its interactions with the time trend variables allow the earnings growth patterns to differ between self-employed and wage/salary workers. The difference between self-employment and wage/salary earnings at time t is equal to $\pi + \gamma_1^S t + \gamma_2^S t^2$. Because individuals make transitions between self-employment and wage/salary over time, comparisons of self-employment and wage/salary earnings for the same individual in different years contribute to identifying these coefficients.

Although estimates from (4.1) are useful in determining whether minorities who choose self-employment experience faster earnings growth on average than their wage/salary counterparts, it is impossible to infer from these estimates whether self-employment is a "better" option for the randomly chosen black or Hispanic. The standard economic model of the self-employment decision posits that workers choose the sector that provides the highest expected income or utility (see Evans and Jovanovic 1989, Rees and Shah 1986, and Reardon 1997 for a few examples). The fixed effects included in (4.1) control for the part of this selection that remains constant over time, however, they do not control for the possibility of a selection bias associated with workers choosing the sector that provides the fastest growth in earnings. Due to a lack of credible identifying instruments and the likely sensitivity of estimates to distributional assumptions, however, I do not address this issue. The difficulty lies in identifying a variable

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that theoretically affects the decision to become self-employed, but does not affect self-employment and wage/salary earnings patterns.

I now turn to the results for black men. It is difficult to interpret the separate shift, linear growth and quadratic growth coefficients for relative self-employment earnings in (4.1). Instead of simply reporting these coefficients, I simulate earnings patterns for the self-employed relative to wage/salary workers. These simulations are displayed in Figure 7 (the actual coefficient estimates are reported in Appendix Table 2). The point estimates indicate that black men who are self-employed initially experience slower earnings growth than wage/salary workers, then after several years this reverses and they experience faster earnings growth and higher earnings. The two growth interaction coefficients, however, are not jointly statistically significant. I cannot reject the null hypothesis that the time trend interactions are different between the self-employed and wage/salary workers at conventional levels of significance. After removing these interactions, I find a positive and statistically significant coefficient on the self-employment dummy variable. This result confirms the previous findings that the self-employed earn more on average than wage/salary workers among black men.

Figure 8 displays the results for the sample of Hispanic men. The patterns suggest that Hispanic men who are self-employed start at much lower earnings levels than do wage/salary workers, however, they experience faster growth rates. In fact, the self-employed earn slightly more than wage/salary workers after 9 years. The hypothesis that the self-employment and wage/salary time trend coefficients are the same is easily rejected for Hispanic men. The time pattern suggests that on average self-employed Hispanic men may struggle in the first few years of owning a business relative to wage/salary workers, but ultimately experience higher earnings.

This pattern may also explain why Hispanic men have relatively low rates of self-employment as many may not be able to survive the initial years of relatively low earnings.

To place the relative self-employment earnings patterns among blacks and Hispanics into context, it is useful to compare them to the patterns for white men. Figure 9 displays the results. The time pattern is strikingly similar to that for black men. The self-employed initially have lower earnings and slower growth than wage/salary workers. After several years, however, they experience faster growth and eventually higher earnings. The two growth coefficients are jointly significant at the α=0.05 level. The similarity of results suggests the possibility that the lack of statistical significance for the results among blacks may be due to small sample sizes. However, if the black and white male patterns are truly similar then it raises the question of why black self-employment rates are so much lower than white rates. It may have to do with blacks having difficulty obtaining credit (see Fairlie 1999 and Blanchflower, Levine and Zimmerman. 1998).

Figures 10 and 11 display the results for black and Hispanic women, respectively. The coefficient estimates imply similar patterns for the two groups. In both cases, the self-employed initially earn considerably less than wage/salary workers, but essentially catch up after 10 years. For both groups, however, the pair of growth interactions is not jointly significant. Thus, it is difficult to infer much from these results. In contrast, the results for white women are statistically significant and indicate a different pattern (reported in Figure 12). Relative self-employment earnings start out positive then become negative. After several years relative growth becomes positive and the gap narrows. The effects seem implausibly large, however. At 11 years, the self-employed earn more than 70 percent less than wage/salary workers. It is unclear what causes these patterns.

ADDITIONAL ESTIMATES

In all of the regressions discussed above, I enforce a consistent top code of $109,987 for each income question and assign these observations a value of $150,000. To determine whether my estimates of earnings growth are sensitive to these observations, I estimate (4.1) assigning $109,987 to all top-coded values of the income questions. This will further limit the influence that these high earnings observations have on the time trends. As noted in the previous section, the self-employed are more likely to experience high earnings than are wage/salary workers. For all groups, the estimated relative self-employment earnings patterns are very similar to those displayed in Figures 7-12. Evidently, the faster rates of earnings growth among the self-employed are not simply due to the original assignment of values to top coded observations.

Figures 1-6 also indicate that the self-employed are more likely to experience very low earnings observations than are wage/salary workers. Using a log specification for the earnings regression may allow these low earnings observations to overly influence the coefficient estimates. A simple method of checking the sensitivity of results to this concern is to censor all very low earnings observations. Specifically, I assign all earnings observations below $500 to equal $500.[21] In the sample, 2.3 percent of the self-employed and 0.6 percent of wage/salary workers are censored at $500. For black men, censoring results in a similar pattern for relative log self-employment earnings with the curve shifting up slightly. The curve for Hispanic men shifts up more moving the "breakeven" point to the left. Relative self-employment earnings now become positive at 4 years instead of 9 years. For white men, the curve shifts upward to the point where relative self-employment earnings are always positive. The curve for black women shifts upward slightly, whereas the curve for Hispanic women shifts downward. Finally, the curve becomes more compressed for white women, but has a very similar shape. Overall, these

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results suggest that the shape of the relative log self-employment earnings patterns are not sensitive to censoring at $500, however, for most groups it appears as though relative self-employment earnings would be higher.

I also examine whether previous self-employment has an independent effect on current earnings. For example, past self-employment may have a negative effect on wage/salary earnings if business failures often result in the owners being forced to take inferior wage/salary jobs. On the other hand, the experience gained from running a small business, even if it was unsuccessful, may be valuable to some employers. I include a vector of lag values of self-employment status for the previous five years in (4.1). Most of the coefficient estimates on the lag values of self-employment are statistically insignificant across samples. Furthermore, among the few statistically significant coefficients many are implausibly large. For example, I find a coefficient of 0.4214 on self-employment lagged four years for Hispanic women. I also experimented with including fewer lags and found roughly the same results. Overall, the findings from these regressions do not provide clear evidence that lagged self-employment has an independent effect on current earnings.

5. Conclusions

I use data from the National Longitudinal Survey (NLSY) to examine the earnings patterns of young black and Hispanic business owners and make comparisons to young black and Hispanic wage/salary workers. I find that self-employed black and Hispanic men have higher mean and median earnings than their wage/salary counterparts. The results for black and Hispanic women, however, are mixed.

I also compare the earnings growth of self-employed minorities to the earnings growth of minorities employed in the wage/salary sector. In particular, I estimate fixed-effects earnings regressions that control for differences in time-invariant observable and unobservable characteristics and time-varying observable characteristics. For black men, the point estimates from these earnings regressions indicate that the self-employed initially experience slower earnings growth than wage/salary workers. After several years this reverses and they experience faster earnings growth and higher earnings. The relative growth coefficients, however, are not statistically significant. For Hispanic men, the relative self-employment earnings coefficients suggest that the self-employed start at much lower earnings levels than do wage/salary workers, but experience faster growth rates. In fact, the self-employed earn slightly more than wage/salary workers after 9 years. The relative growth coefficients are statistically significant. These patterns suggest that on average self-employed Hispanic men may struggle in the first few years of owning a business relative to wage/salary workers, but ultimately experience higher earnings. Finally, the relative self-employment earnings coefficients are not statistically significant for both black and Hispanic women, possibly due to small sample sizes.

The results presented here provide some evidence that business ownership may provide a route for economic advancement among minority men when compared to opportunities in the wage/salary sector. The evidence is less clear for the contribution of self-employment to economic mobility for black and Hispanic women. Unfortunately, these results do not provide an answer to the question of whether a randomly chosen minority will experience faster earnings growth in self-employment than in wage/salary work as they simply make comparisons between the actual experiences of minorities who are self-employed and employed in the wage/salary sector. Perhaps future research will shed light on this question.

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Although self-employed black and Hispanic men earn more on average than their counterparts in the wage/salary sector, they earn considerably less than self-employed white men. The estimates from Table 3 indicate that self-employed black and Hispanic men earn 35.5 and 18.9 percent less than self-employed white men, respectively. The differences in business equity, however, are even more striking. Average business equity for self-employed black men is 53.7 less than the average for self-employed whites and average business equity for self-employed Hispanic men is 52.0 percent less than for whites.[22] Among women, self-employed blacks and Hispanics also have substantially lower levels of business equity than do whites. These disparities are important in light of the controversy surrounding set-aside programs that target government contracts for disadvantaged and minority-owned firms. Many of these programs, which were created in the late 1970s to mid 1980s, have been both judicially and legislatively challenged and dismantled in the past decade. In particular, the landmark 1989 *City of Richmond v Croson Co.* Supreme Court decision, invalidated the use of local and state programs unless they were used as narrowly tailored remedies for identified discrimination. More recently, the 1995 *Adarand Constructors, Inc. v. Peña* Supreme Court decision and state referendums passed in California (Proposition 209 in 1996) and Washington (1998) further jeopardize the future of government set-asides. The elimination of these programs may further exacerbate racial inequalities in small business outcomes as well as in rates of business ownership.[23]

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Endnotes

[1] See Glazer and Moynihan (1970), Light (1972, 1979), Sowell (1981), and Moore (1983).

[2] A few recent studies include Bates (1997), Blanchflower, Levine, and Zimmerman (1998), Fairlie (1999), Fairlie and Meyer (2000), and Hout and Rosen (2000).

[3] The difficulty lies in finding a variable that affects the decision to become self-employed, but does not affect self-employment and wage/salary earnings patterns.

[4] See Center for Human Resource Research (1999) for additional details on the NLSY sample.

[5] Unpaid family workers are not counted as self-employed. The current or most recent job or "Current Population Survey (CPS) employer" is defined as the job with the most hours for those who worked during the survey week and as the most recent job for those who did not work during the survey week. More details are provided in Center for Human Resource Research (1999).

[6] In the most recent years of the NLSY, the average value of all top coded observations is assigned to top coded observations. These are generally close to $150,000.

[7] The rates are generally similar when including only workers with at least 1400 hours in the past calendar year.

[8] Apparently, higher average self-employment earnings are not due to differences in observed characteristics. Controlling for age, education, family characteristics, region, urbanicity, local unemployment rates, and AFQT scores, I find that self-employed black men earn $6039 more than black wage/salary workers and self-employed Hispanic men earn $13,143 more than Hispanic wage/salary workers. Both estimates are statistically significant. Portes and Zhou (1999) find similar results using data from the 1990 Census. They find higher actual and adjusted earnings among self-employed native-born blacks and Hispanic immigrants than their counterparts in the wage/salary sector.

[9] I should note, however, that this problem is mitigated somewhat by the top coding described above.

[10] The earnings differences between minorities and whites in the wage/salary sector has been documented and studied extensively in the literature (see Altonji and Blank 1998 for a recent review). Previous estimates also indicate that black- and Hispanic-owned businesses have lower profits and sales than do white-owned businesses (see U.S. Small Business Administration 1999 and U.S. Bureau of the Census 1997).

[11] Controlling for differences in observable characteristics, I find that self-employed Hispanic women earn $2198 more than Hispanic wage/salary workers. The estimated difference in earnings among black women, however, is small and statistically insignificant.

[12] See Yuengert (1996) for a thorough discussion of the issues. Using data on both total income from the business and reported labor income from the 1989 Survey of Consumer Finances, he finds that the self-employed, on average, understate their labor earnings by 38 percent and overstate their capital income

[13] The definition of small business used in the CBO is anyone who filed an IRS form 1040 Schedule C (individual proprietorship or self-employed person), 1065 (partnership), or 1120S (subchapter S corporation).

[14] The instructions on the two questions were 1) ""Market Value" is defined as "how much the respondent would reasonably expect someone else to pay if the item(s) were sold today in its/their present condition: not the original price the respondent paid for the item(s)," and 2) "What is the total amount of debts or liabilities you ... owe on this operation or property? Include any unpaid mortgages. (Do not include any commodity credit loans.)."

[15] I calculate the average annual real rate of return from 1985 to 1998 for both investments. The rate of return on the Treasury bond and S&P 500 are 4.8 and 10.4 percent, respectively.

[16] I censor equity and adjusted business income at zero.

[17] I also calculate business equity for the sample of self-employed who report not owning any other real estate. These levels of equity are from 7.6 to 29.8 percent lower than the levels reported in Table 3.

[18] Another potential problem with reported business income is the ambiguity regarding how reinvested profits are treated. As the question in the NLSY is written, we do not know whether respondents incorrectly subtract reinvested profits from total self-employment income. To complicate issues further, this may differ depending on how the profits are reinvested. Purchases of small equipment may be considered expenses, whereas purchases of large items such as buildings or vehicles may be considered profits as they are more likely to be depreciated over a long period of time.

[19] These studies generally find that being male, white, older, married and an immigrant, and having a self-employed parent, higher asset levels and more education increase self-employment. See Aaronson (1991) for a review of

earlier studies in this literature, and Hout and Rosen (2000), Blanchflower and Oswald (1998), Dunn and Holtz-Eakin (2000), and Fairlie (1999) for a few recent examples.

[20] I include marital status, children, and local unemployment rates as time varying controls. The coefficient estimates on the time trend interactions are not overly sensitive to their inclusion.

[21] Another approach would be to exclude these observations from the sample, which is similar to the common approach of removing "implausibly" low hourly wages (e.g. less than $2 per hour) in the estimation of log earnings regressions among wage/salary workers. In the case of the self-employed, however, it is more problematic because these low earnings may be perfectly plausible.

[22] The differences are even larger when I include only those who report not owning other real estate.

[23] Chay and Fairlie (1998) provide some evidence that the minority business set-aside programs created in many large cities in the 1980s led to an increase in the number of black-owned construction firms.

Figure 1
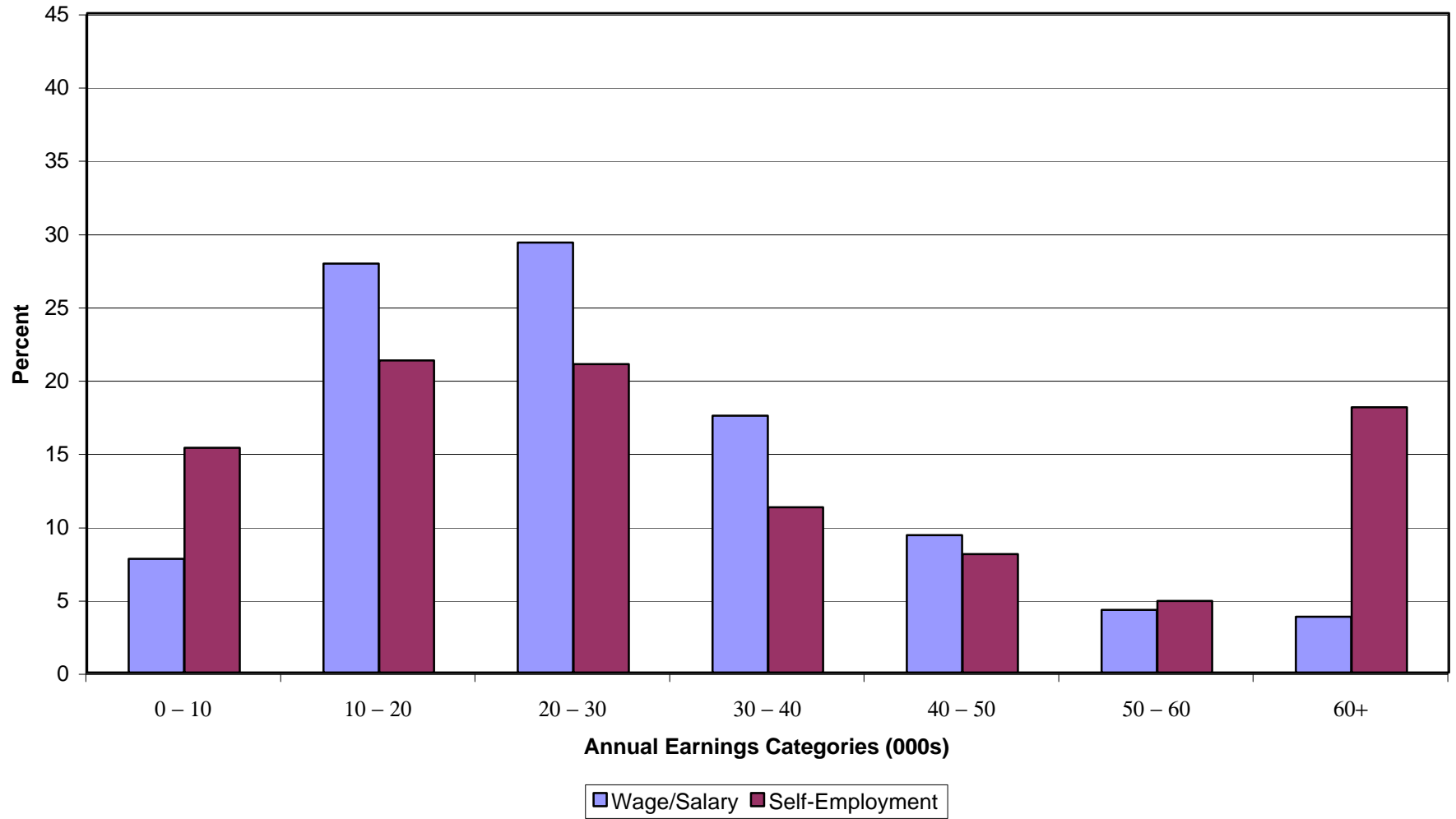**Earnings Distributions for Black Men, Full-Time Workers**
NLSY (1979-98)

Figure 2
Earnings Distributions for Hispanic Men, Full-Time Workers
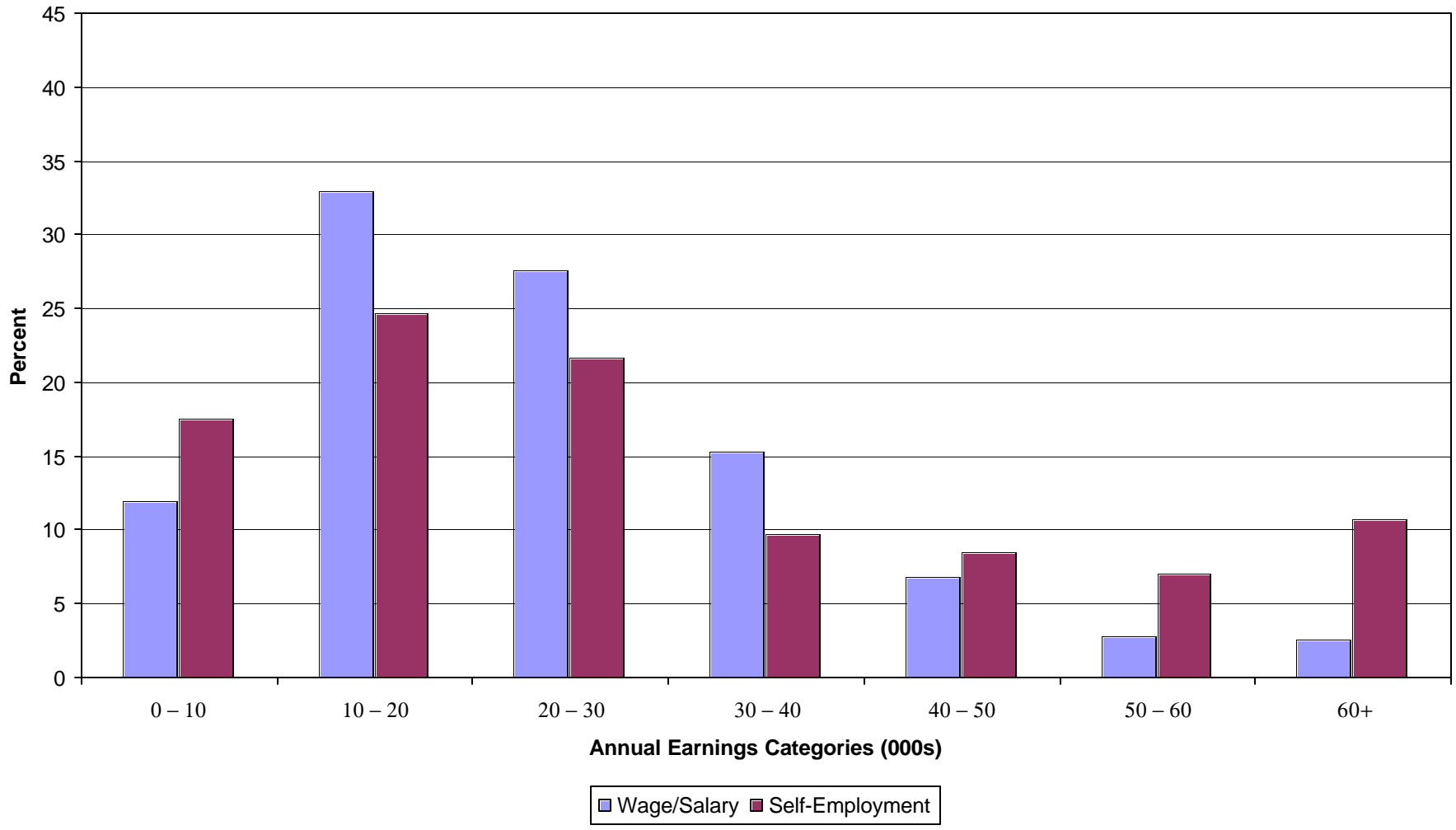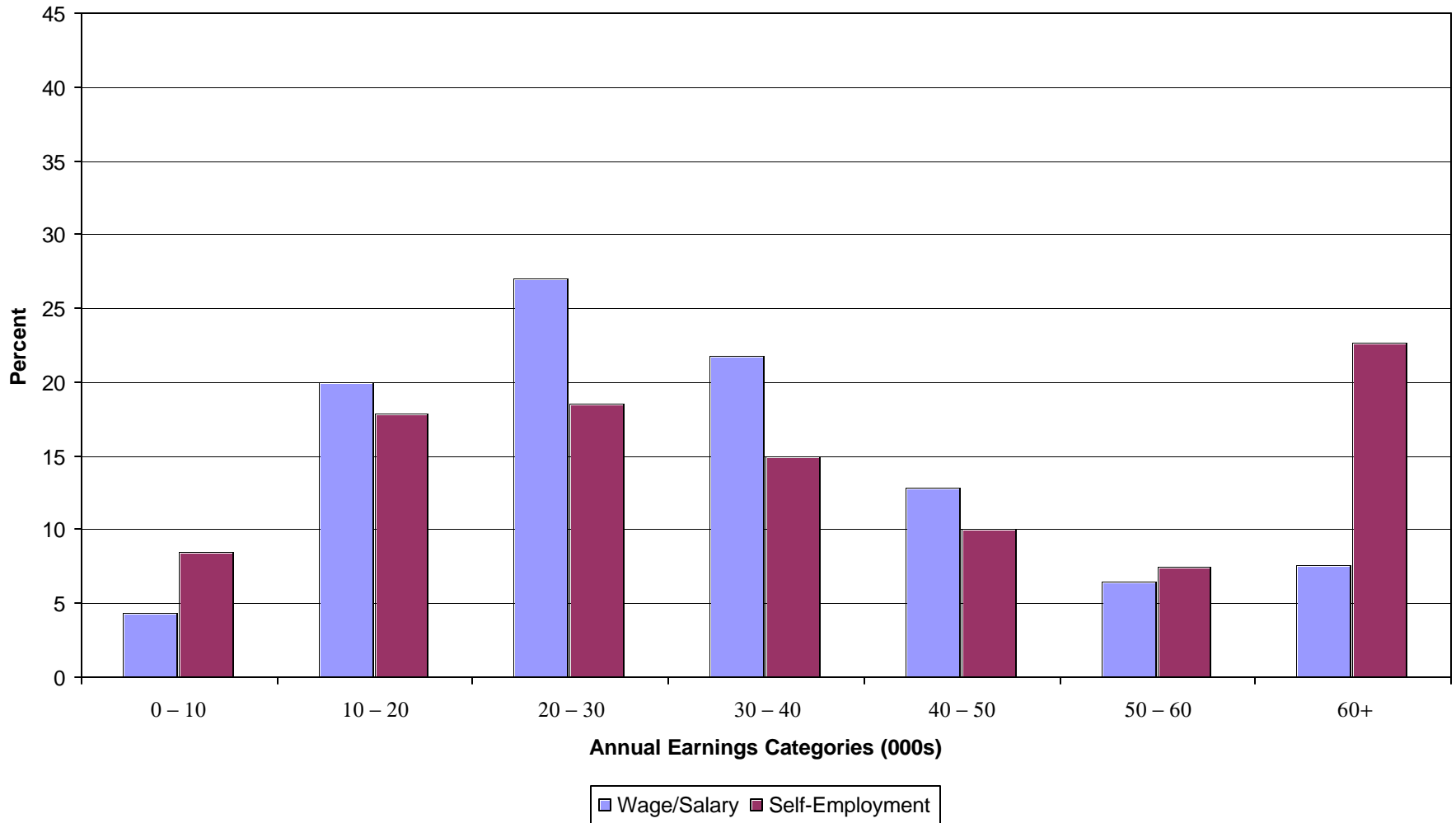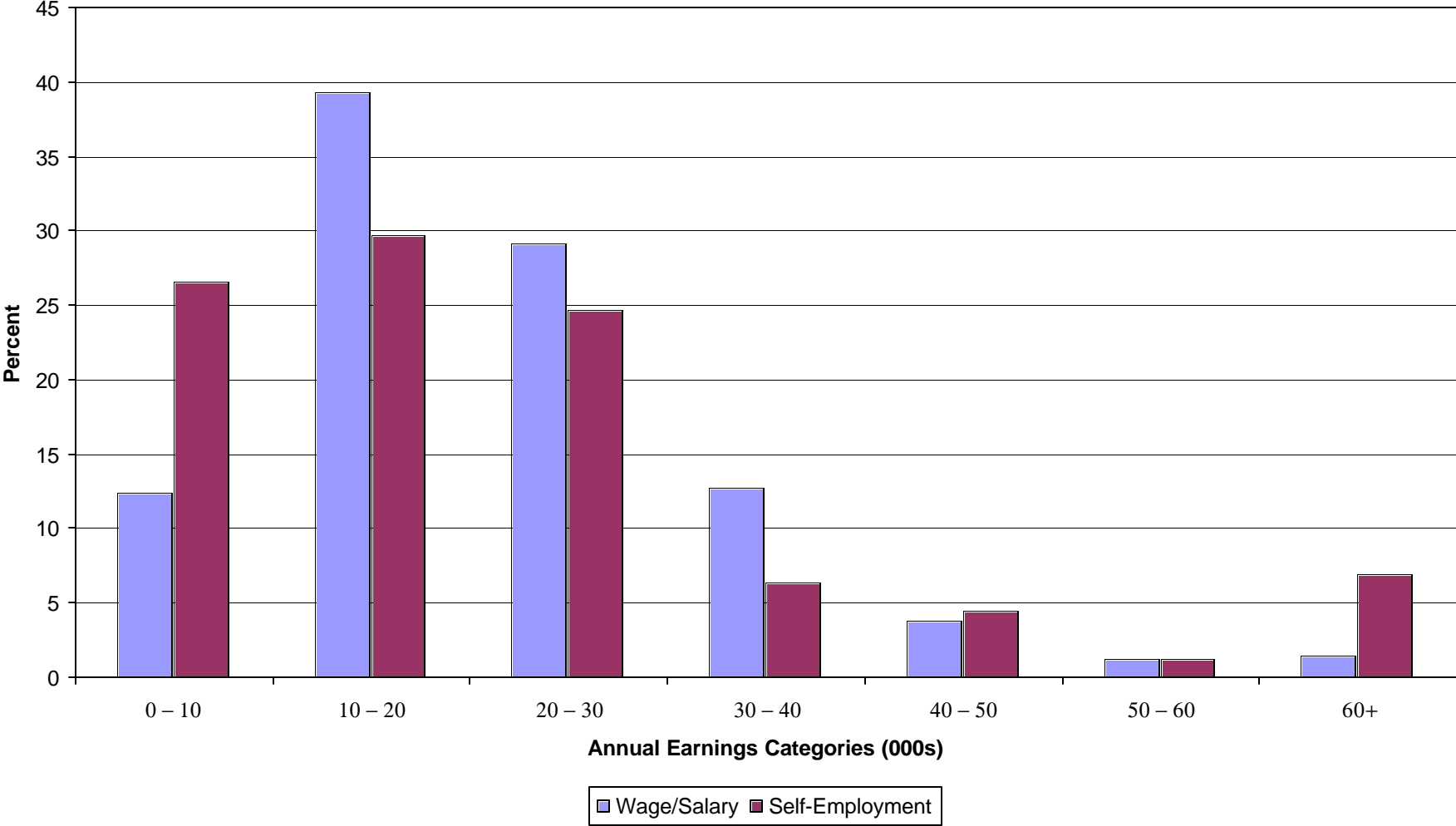**NLSY (1979-98)**

Figure 3
Earnings Distributions for White Men, Full-Time Workers
NLSY (1979-98)

Figure 4
Earnings Distributions for Black Women, Full-Time Workers
NLSY (1979-98)

Figure 5
Earnings Distributions for Hispanic Women, Full-Time Workers
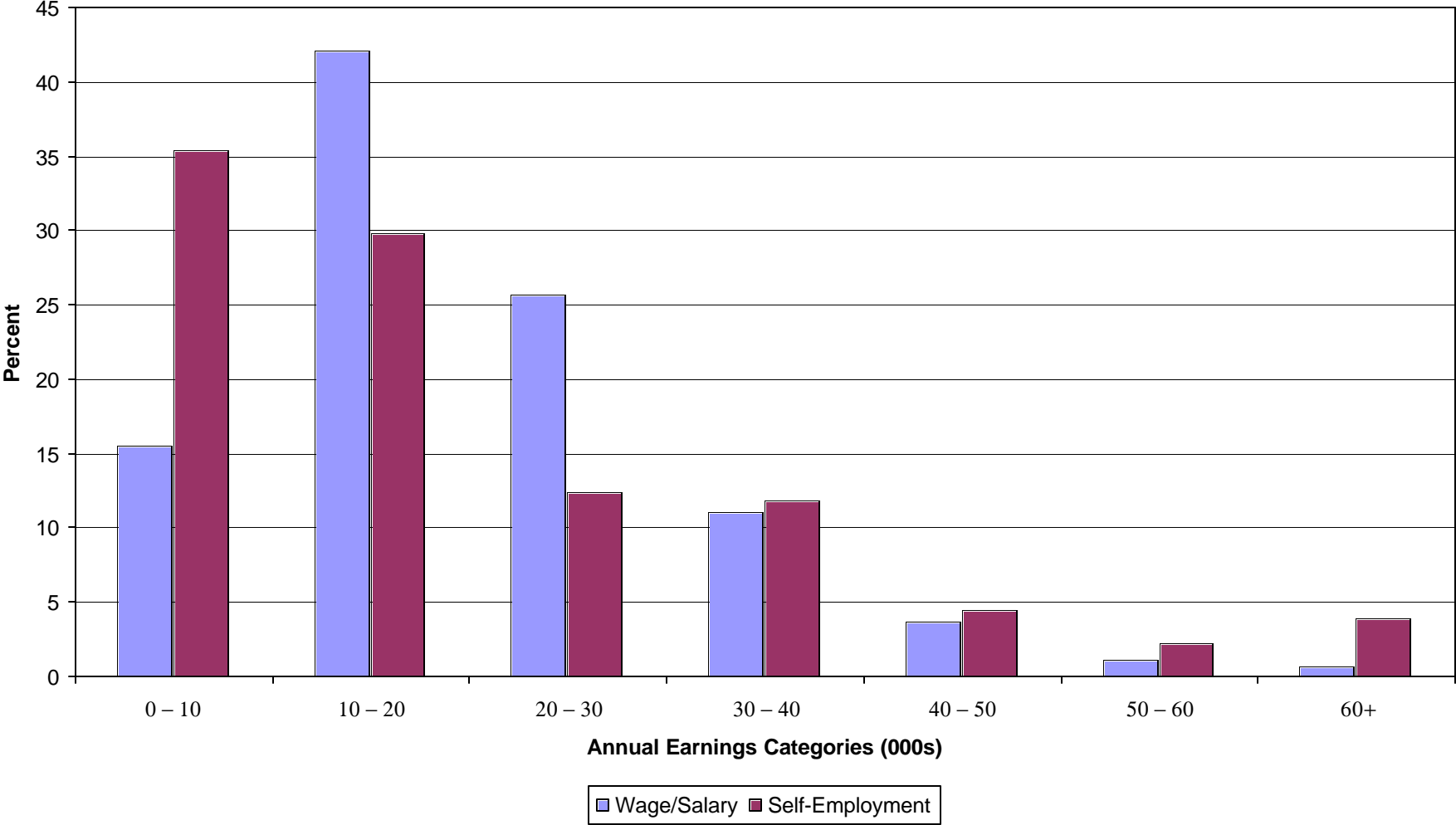**NLSY (1979-98)**

Figure 6
Earnings Distributions for White Women, Full-Time Workers
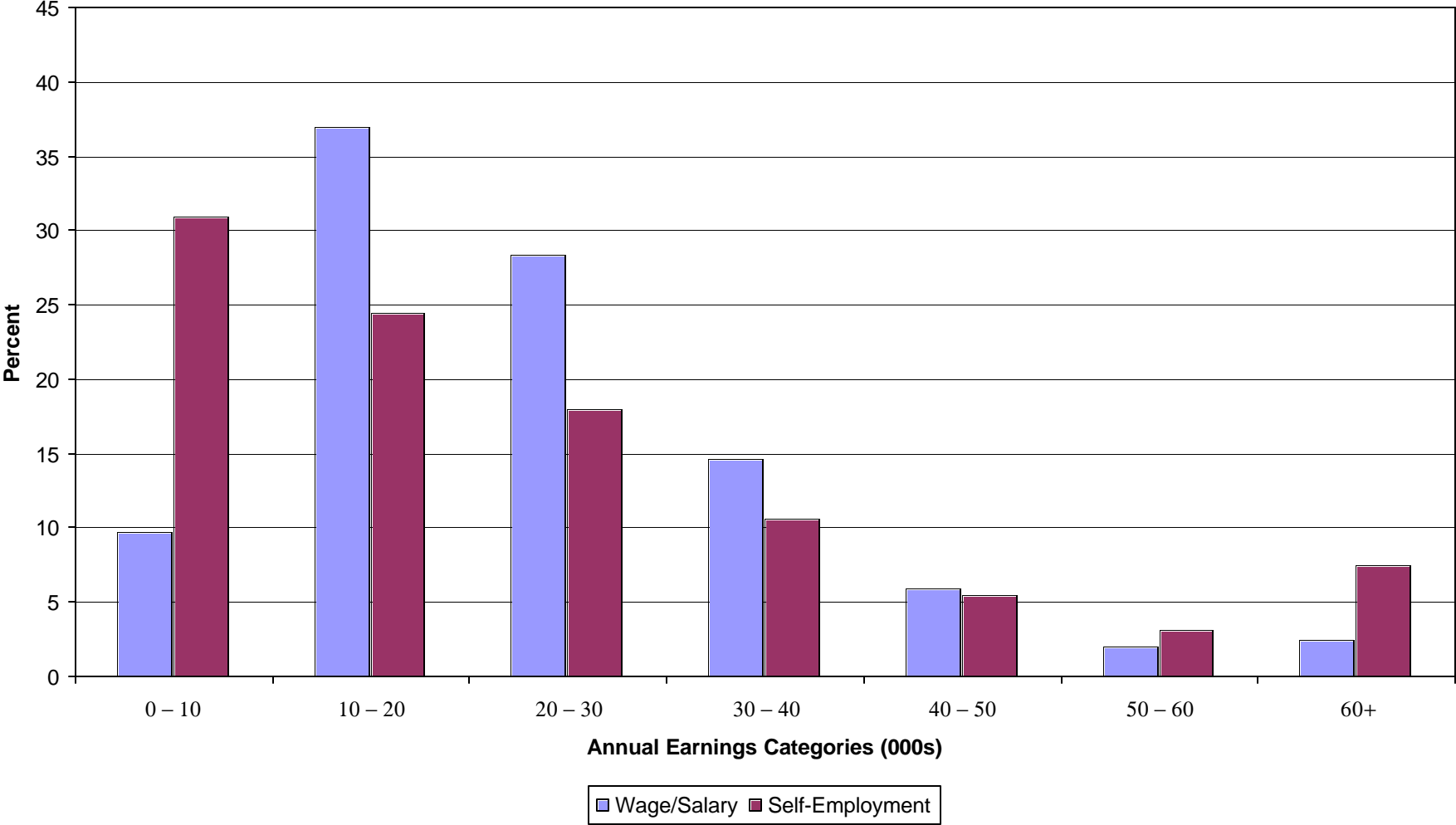**NLSY (1979-98)**

Figure 7
Combined Effects of Relative Log Self-Employment Earnings Coefficients
Black Men - NLSY (1979-98)

Figure 8
Combined Effects of Relative Log Self-Employment Earnings Coefficients
Hispanic Men - NLSY (1979-98)

Figure 9
Combined Effects of Relative Log Self-Employment Earnings Coefficients
White Men - NLSY (1979-98)

Figure 10
Combined Effects of Relative Log Self-Employment Earnings Coefficients
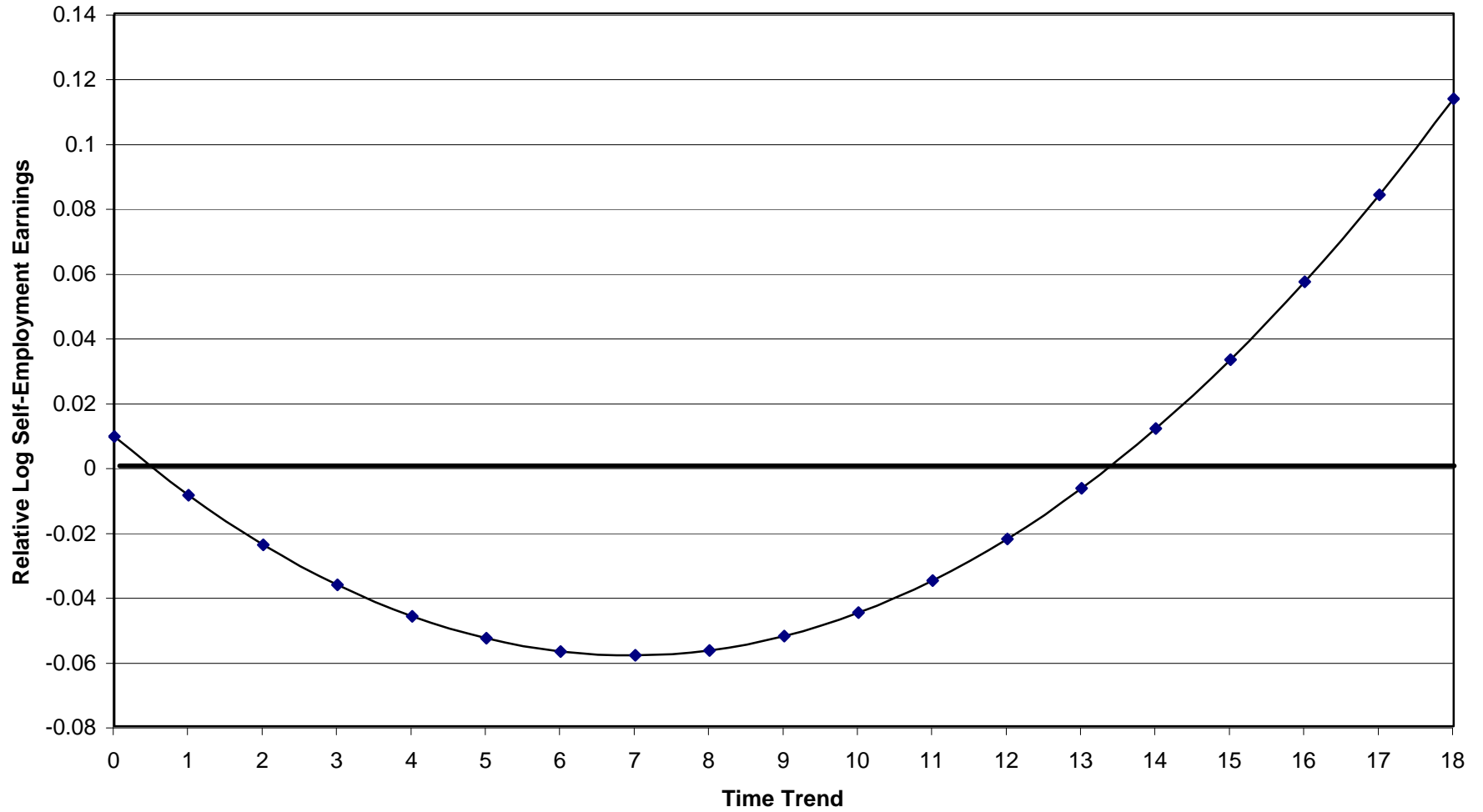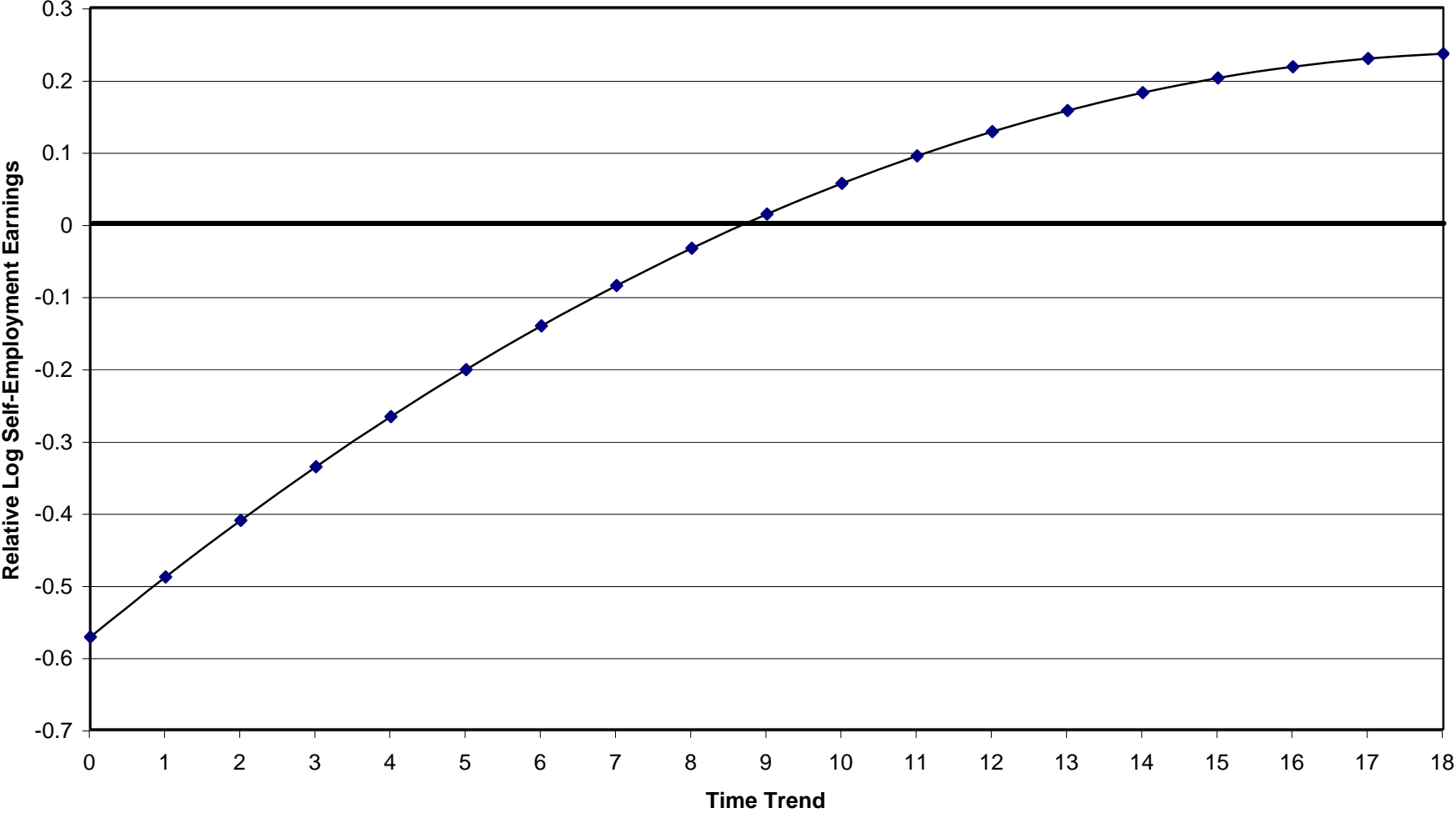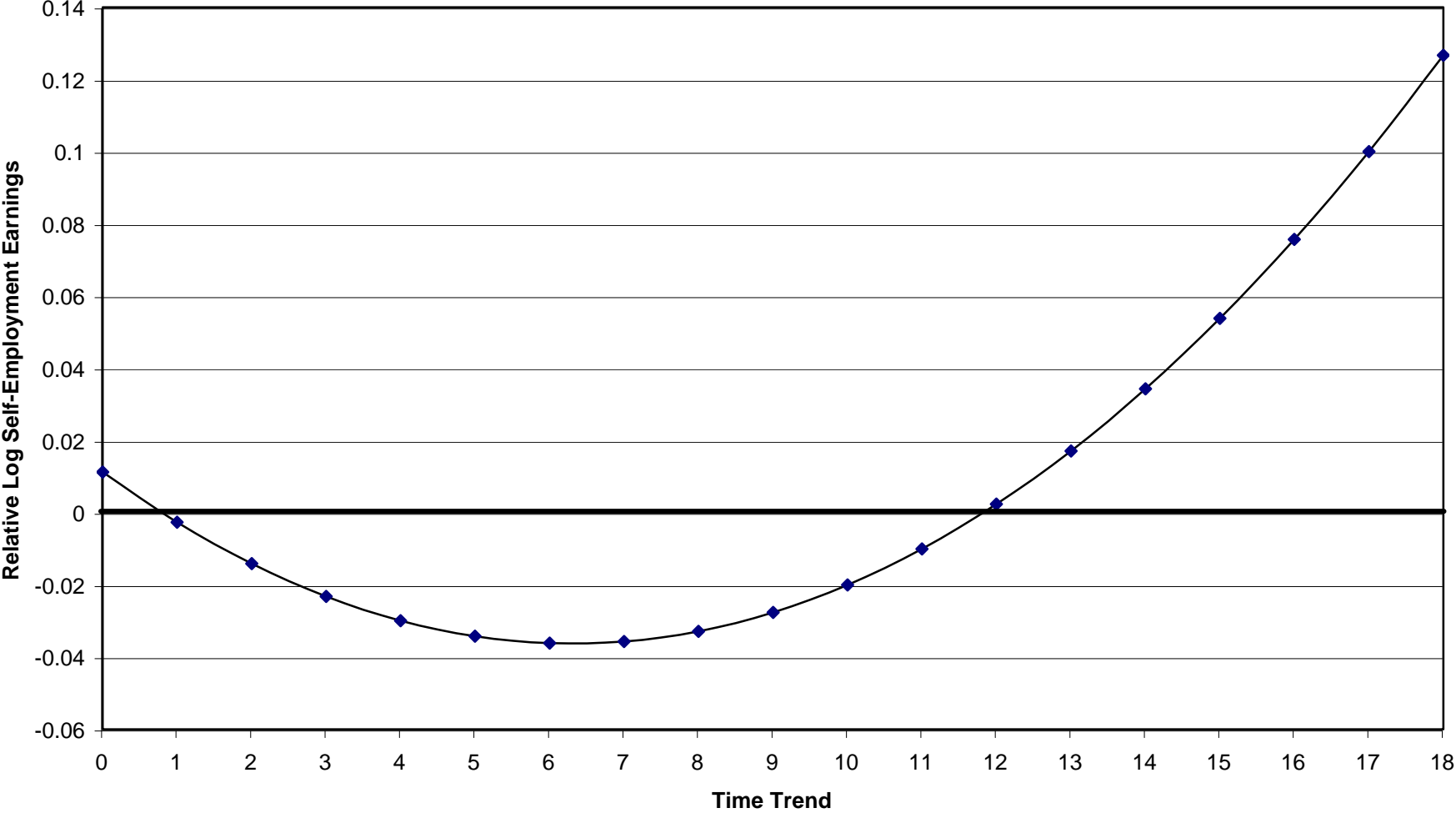**Black Women - NLSY (1979-98)**
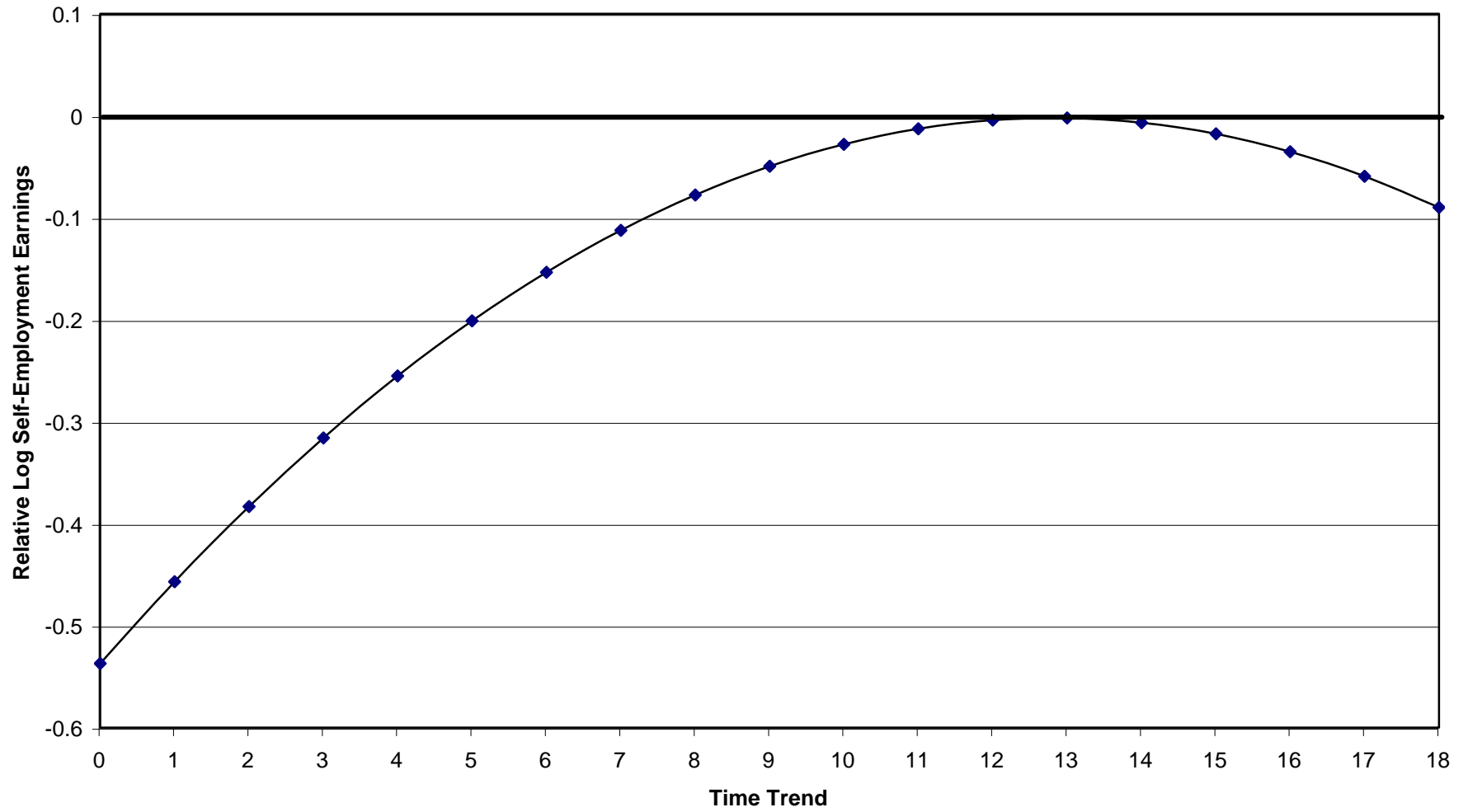
Figure 11
Combined Effects of Relative Log Self-Employment Earnings Coefficients
Hispanic Women - NLSY (1979-98)
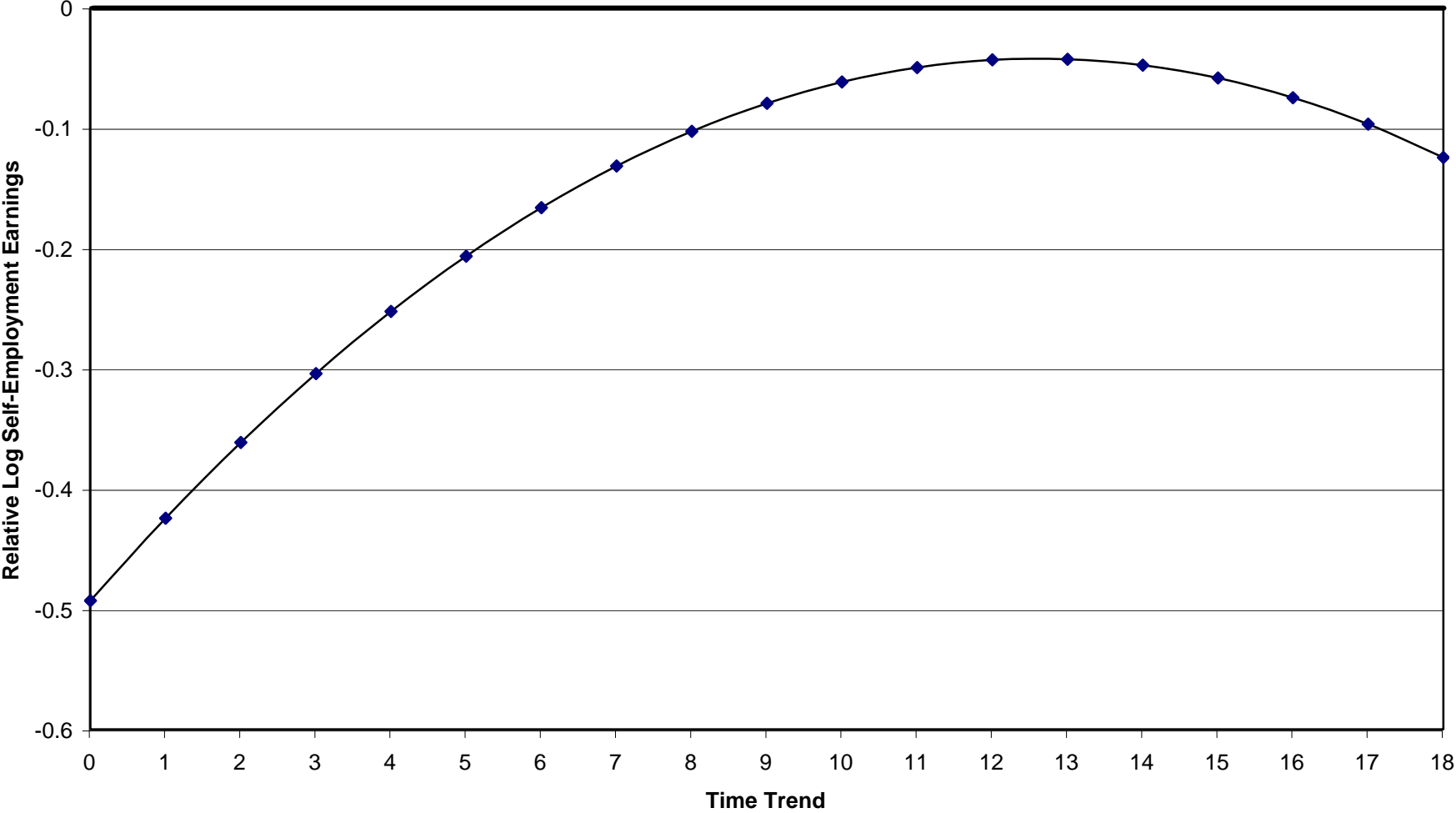
Figure 12
Combined Effects of Relative Log Self-Employment Earnings Coefficients
White Women - NLSY (1979-98)
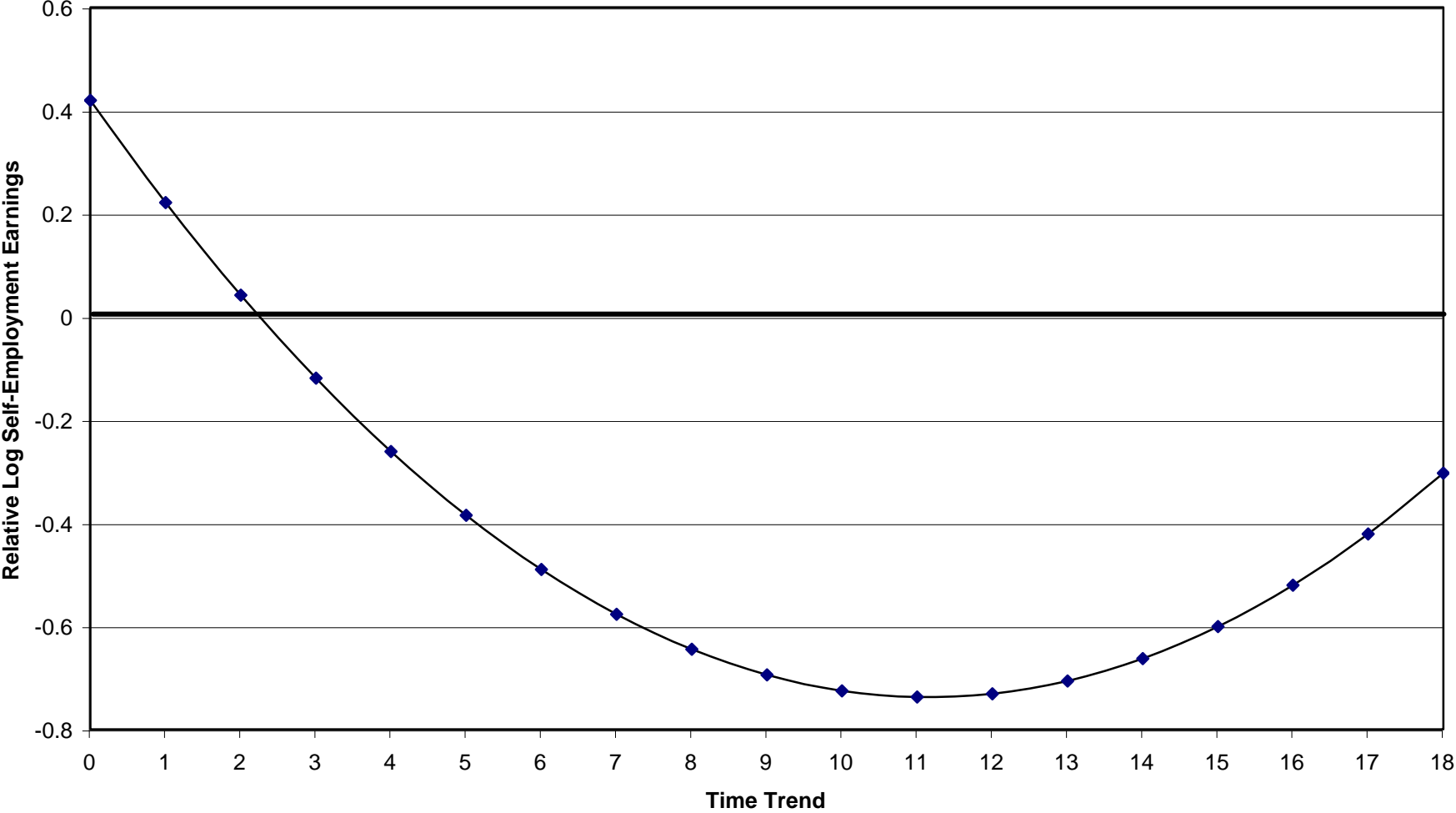
Table 1
Self-Employment Rates by Race
NLSY (1979-98)

Race	Men SE Rate	Men N	Women SE Rate	Women N
Blacks	4.8%	12682	2.6%	11623
Hispanics	6.9%	8957	4.6%	7282
Whites	9.6%	24207	6.6%	21602

Notes: (1) The sample consists of youths who worked at least 300 hours in the survey year. (2) White race includes all non-black, non-Hispanic individuals.

Table 2
Self-Employment and Wage/Salary Earnings, Full-Time Workers
NLSY (1979-98)

	Men		Women	
	Self-Employed	Wage/Salary	Self-Employed	Wage/Salary
Blacks				
Mean	$ 31,280	$24,461	$ 20,584	$ 20,168
Median	$ 22,261	$ 21,523	$ 14,916	$ 18,002
Standard Deviation	$ 29,486	$ 16,268	$ 25,557	$ 11,998
Sample Size	410	9476	178	8179
Hispanics				
Mean	$ 38,678	$ 27,697	$ 24,702	$ 21,660
Median	$ 26,344	$ 24,801	$ 17,899	$ 19,693
Standard Deviation	$ 41,167	$ 17,225	$ 33,819	$ 12,674
Sample Size	470	7001	158	5121
Whites				
Mean	$ 46,952	$ 33,663	$ 24,509	$ 24,088
Median	$ 33,002	$ 29,534	$ 17,912	$ 20,912
Standard Deviation	$ 46,102	$ 22,290	$ 26,534	$ 15,625
Sample Size	2028	19141	835	14898

Notes: (1) The sample consists of youths who worked at least 1400 hours in the survey year. (2) White race includes all non-black, non-Hispanic individuals.

Table 3
Self-Employment and Wage/Salary Earnings, Full-Time Workers
NLSY (1985-98)

	Men			Women		
	Self-Employed	Wage /Salary	Difference	Self-Employed	Wage /Salary	Difference
Blacks						
Market Value of Business, Farm and Other Real Estate	$33,590	$2,017	$31,573	$13,797	$1,429	$12,368
Debt Owed on Business, Farm and Other Real Estate	$11,045	$983	$10,063	$974	$577	$397
Equity in Business, Farm and Other Real Estate	$22,544	$1,034	$21,510	$12,823	$852	$11,970
Unadjusted Earnings	$31,550	$25,093	$6,457	$21,199	$20,703	$496
Adjusted Earnings (30-Year Treasury Bond)	$31,014	$25,084	$5,930	$21,056	$20,701	$355
Adjusted Earnings (S&P 500)	$30,489	$25,076	$5,413	$20,998	$20,699	$300
Sample Size	339	7681		157	6612	
Hispanics						
Market Value of Business, Farm and Other Real Estate	$36,646	$5,866	$30,780	$25,270	$4,529	$20,741
Debt Owed on Business, Farm and Other Real Estate	$13,289	$2,859	$10,430	$13,008	$1,909	$11,099
Equity in Business, Farm and Other Real Estate	$23,356	$3,006	$20,350	$12,262	$2,620	$9,642
Unadjusted Earnings	$39,688	$28,486	$11,201	$23,828	$22,327	$1,501
Adjusted Earnings (30-Year Treasury Bond)	$39,017	$28,460	$10,557	$23,529	$22,322	$1,206
Adjusted Earnings (S&P 500)	$38,317	$28,439	$9,879	$23,283	$22,317	$966
Sample Size	391	5557		130	4039	
Whites						
Market Value of Business, Farm and Other Real Estate	$81,287	$7,896	$73,390	$47,622	$8,870	$38,753
Debt Owed on Business, Farm and Other Real Estate	$32,644	$3,186	$29,458	$17,478	$3,887	$13,591
Equity in Business, Farm and Other Real Estate	$48,642	$4,710	$43,932	$30,144	$4,983	$25,162
Unadjusted Earnings	$48,943	$34,796	$14,146	$25,654	$24,858	$797
Adjusted Earnings (30-Year Treasury Bond)	$47,661	$34,753	$12,909	$25,054	$24,828	$226
Adjusted Earnings (S&P 500)	$46,417	$34,718	$11,699	$24,637	$24,807	-$170
Sample Size	1617	15379		673	11665	

Notes: (1) The sample consists of youths who worked at least 1400 hours in the survey year. (2) White race includes all non-black, non-Hispanic individuals. (3) Adjusted earnings remove the opportunity cost of equity in business, farm and other real estate. See text for more details.

Appendix Table 1
Self-Employment Rates and Earnings Estimates
1990 Census

	Men		Women	
	Self-Employed	Wage/Salary	Self-Employed	Wage/Salary
Blacks				
Self-Employment Rate	3.70%		1.91%	
Mean Earnings	$35,523	$28,023	$23,617	$23,990
Sample Size	3,435	102,949	1,779	103,732
Hispanics				
Self-Employment Rate	6.23%		4.24%	
Mean Earnings	$37,649	$27,350	$24,039	$22,292
Sample Size	6,886	107,720	2,388	62,749
Whites				
Self-Employment Rate	10.89%		6.30%	
Mean Earnings	$49,337	$38,802	$26,745	$27,257
Sample Size	133,113	1,055,508	44,797	744,168

Notes: (1) The sample consists of individuals (ages 22-41) who worked at least 300 hours in the survey year. (2) White race includes all non-black, non-Hispanic individuals. (3) All estimates use sample weights provided by the Census.

Appendix Table 2
Fixed Effects Earnings Regressions
NLSY (1979-98)

	Men			Women		
	Blacks	Hispanics	Whites	Blacks	Hispanics	Whites
Time Trend	0.0992	0.1478	0.1109	0.0949	0.1193	0.1020
	(0.0076)	(0.0083)	(0.0046)	(0.0088)	(0.0099)	(0.0049)
Time Trend Squared	-0.0034	-0.0052	-0.0039	-0.0028	-0.0039	-0.0031
	(0.0003)	(0.0004)	(0.0002)	(0.0004)	(0.0005)	(0.0002)
Self-Employed	0.0093	-0.5720	0.0112	-0.5371	-0.4931	0.4196
	(0.2134)	(0.2003)	(0.0856)	(0.4218)	(0.4000)	(0.1325)
Time Trend* Self-Employed	-0.0195	0.0852	-0.0151	0.0835	0.0714	-0.2074
	(0.0396)	(0.0368)	(0.0168)	(0.0771)	(0.0683)	(0.0252)
Time Trend Squared* Self-Employed	0.0014	-0.0022	0.0012	-0.0033	-0.0028	0.0093
	(0.0017)	(0.0016)	(0.0008)	(0.0034)	(0.0029)	(0.0011)
R-Square	0.4157	0.4038	0.3864	0.3970	0.4272	0.4831
Sample Size	10563	8062	22770	8652	5638	16971

Notes: (1) The sample consists of youths who worked at least 1400 hours in the survey year. (2) Standard errors are in parentheses below coefficient estimates. (3) All specifications include individual fixed effects, marital status, number of children, and dummy variables for the local unemployment rate. (4) White race includes all non-black, non-Hispanic individuals.