

## Entrepreneurship and Earnings among Young Adults from Disadvantaged Families

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**ABSTRACT.** Academicians and policymakers have argued that entrepreneurship provides a route out of poverty and an alternative to unemployment or discrimination in the labor market. Existing research, however, provides little evidence from longitudinal data on the relationship between business ownership and economic advancement for disadvantaged groups. I use data from the National Longitudinal Survey of Youth (NLSY) to examine the earnings of young business owners from disadvantaged families and make comparisons to young wage/salary workers from disadvantaged families. For young men from disadvantaged families, I find some evidence that self-employed business owners earn more than wage/salary workers. In contrast, I find that for young women from disadvantaged families business owners earn less than wage/salary workers. The results from these earnings comparisons are somewhat sensitive to the use of different measures of income and econometric models.

**KEYWORDS:** *entrepreneurship, business owners, disadvantaged.*

### 1. Introduction

There has been a proliferation of “micro-enterprise” or “entrepreneurial” training programs targeted toward disadvantaged groups in recent years. The Aspen Institute’s *1999 Directory of U.S. Microenterprise Programs* lists over 340 programs in the United States (Severens and Kays 1999).<sup>1</sup> Experimental programs promoting self-employment as a way to leave the welfare and unemployment insurance rolls are two well-known examples of these types of programs.<sup>2</sup> There also exist a large number of federal, state and local government programs providing set-asides and loans to minorities and women, although many of these programs have been legally challenged in the past decade.<sup>3</sup>

This interest in micro-enterprise programs has been spurred by arguments from academicians and policymakers that entrepreneurship provides a route out of poverty and an alternative to unemployment or discrimination in the labor market.<sup>4</sup> 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; Bonacich and Modell, 1980). More recently, Koreans have purportedly used business ownership for economic mobility (Min, 1989, 1993).

Although these arguments have resulted in the creation of a plethora of micro-enterprise or entrepreneurial training programs in the United States, there is little empirical evidence indicating that business ownership provides an avenue for economic advancement. In fact, previous research indicates that many ethnic entrepreneurs are marginal (Light and Rosenstein, 1995), small businesses have high failure rates (Bates, 1989, 1990; Meyer, 1990; Holtz-Eakin et al., 1994; Fairlie, 1999), there is more downward mobility in the income distribution among high-income self-employed workers than among high-income wage/salary workers (Holtz-Eakin et al., 2000), and retail firms owned by less-educated blacks, Korean immigrants and Chinese immigrants produce hourly returns that are below the minimum wage (Bates, 1997).<sup>5</sup> On the other hand, previous studies find that a high self-employment

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rate for an ethnic or racial group is strongly associated with a high average income for that group (Fairlie and Meyer, 1996), the self-employed earn more on average than wage/salary workers (Borjas, 1986, 1999; Meyer, 1990; Fairlie and Meyer, 2000), there is more upward mobility in the income distribution among high-income self-employed workers than among high-income wage/salary workers (Holtz-Eakin et al., 2000), less-educated business owners experience faster earnings growth on average than less-educated wage/salary workers after a few initial years of slower growth (Fairlie, 2000), and income inequality across education levels has not risen among the self-employed in recent decades as it has among wage/salary workers (Borjas, 1999).

None of these previous studies, however, examines whether business ownership provides a source of economic advancement among young adults from disadvantaged families using long-term longitudinal data.<sup>6</sup> The answer to this question is important for the argument that business ownership provides a route out of poverty. To be sure, the studies by Fairlie (2000) and Holtz-Eakin, Rosen and Weathers (1999) use long-term longitudinal data, but they define being disadvantaged based on individual characteristics (e.g. education or income). They do not examine the characteristics of their parents or the economic environment in which they were raised.

In this paper, I use data from the National Longitudinal Survey (NLSY) to examine the earnings of business owners from disadvantaged families. The NLSY follows more than 12,000 young adults from 1979 to 1998. I define disadvantaged families as those in which both parents have less than a high school education. To place the earnings of these disadvantaged business owners into context, I make comparisons to wage/salary workers from disadvantaged families. The key question is whether young adults from disadvantaged families who are self-employed experience higher earnings than wage/salary workers from disadvantaged families. I should note, however, that I do not specifically model the selection process into self-employment, however, and thus cannot infer from these results whether self-employment is a “better” option for the randomly chosen disadvantaged youth. 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 disadvantaged groups.

## 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.<sup>7</sup> 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, but retain the supplemental sample of 5,295 civilian black, Hispanic, and economically disadvantaged non-black, non-Hispanic youth.

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.<sup>8</sup> I remove individuals who report being enrolled in school and workers who report working fewer than 1,400 hours in the previous calendar year. The hours restriction rules out small-scale business activities and makes annual earnings comparisons more credible.

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.<sup>9</sup>

### 3. Self-employment rates and earnings by parents' education

I first compare rates of business ownership across parental education groups. I define three groups. The first group contains all young adults whose parents both dropped out of high school. This represents 20.2 percent of all young adults ages 14 to 22 in 1979. The second group contains young adults who have at least one parent who graduated from high school, but did not attend college. This group represents 43.6 percent of all young adults. The final group contains young adults who have at least one parent who attended college. This group represents 36.2 percent of all young adults.

In this study, I focus on the group with the lowest level of parents' education. I define these young adults as coming from a disadvantaged family. Ideally, I would like to have information on family income for each year of childhood and create a summary measure of disadvantage from this information. Unfortunately, the NLSY does

not include a childhood measure of family income. Parents' education, however, should represent a reasonably good proxy for family income because of the strong positive correlation between education and earnings.<sup>10</sup> For example, estimates from the 1990 Census indicate that the average earnings for all workers who did not complete high school is \$13,946, compared to \$24,091 for all other workers (U.S. Bureau of the Census, 1993).

Table I reports self-employment rates by sex and parents' education. The self-employment rate is defined as the fraction of workers that is self-employed. Young adults whose parents have the highest level of education are the most likely to be self-employed business owners. Slightly more than 10 percent of young men who have at least one college-educated parent are self-employed. For young women, 5.4 percent are self-employed. For both men and women, self-employment rates decline with the next two parental education categories. For youths whose parents are high school dropouts, 8.7 percent of men and 3.7 percent of women are self-employed. Overall, however, self-employment rates do not differ substantially across levels of parents' education.

#### Earnings comparisons

Young adults from disadvantaged families are likely to face many obstacles in obtaining education and potentially employment. Therefore, it is important to determine whether the disadvantaged young men and women who do choose to start a business are indeed successful. Of course, success is relative. To address this issue, I examine earnings using two comparison groups. First, I compare the earnings of disadvantaged business owners to disadvantaged young workers in the

TABLE I  
Self-employment rates by parents' education NLSY (1979-98)

Parents' education	Men		Women	
	SE rate	N	SE rate	N
Both parents dropped out of high school	8.7%	10,161	3.7%	7,566
One or both parents graduated from high school	9.1%	15,500	5.4%	12,002
One or both parents attended college	10.1%	10,809	5.4%	8,822

Notes: (1) The sample consists of young adults who worked at least 1,400 hours in the survey year. (2) All estimates are calculated using sample weights provided by the NLSY.

wage/salary sector. This is important because wage/salary earnings may be viewed as the opportunity cost of self-employment. Second, I compare the relative difference in earnings between the self-employed and wage/salary workers by parents' education. From this analysis, I will be able to discern whether self-employed business owners earn more or less than wage/salary workers from all family backgrounds or from only the most disadvantaged families.

Table II reports the mean, median, and standard deviation of total annual earnings for self-employed and wage/salary youths by parents' education. I only include full-time workers, defined here as working at least 1,400 hours in the past calendar year, to control for differences in hours worked. I first discuss the results for young men. For all parental education levels, the self-employed earn substantially more on average than wage/salary workers. For example, the self-employed whose parents both dropped out of high school earn \$11,384 more than their wage/salary counterparts. The differential in earnings is roughly the same for higher parental education categories. A comparison of means can create a distorted picture, however, if a few business owners are extremely successful.<sup>11</sup> Comparing

median income levels removes these concerns. For all parental education categories, median self-employment earnings are higher than median wage/salary earnings, however, the differences are smaller.

Although average and median earnings are higher for self-employed men, it is important to also compare the variance of earnings in the two sectors. For all parental education categories, the standard deviation of self-employment income is substantially higher than that of wage/salary income.

In Table II, I also report estimates of the mean, median and standard deviation for self-employment and wage/salary earnings for women in each parental education category. I should note, however, that some caution is warranted in interpreting the estimates for self-employment earnings as sample sizes are small. The results are different than those for men. I find that mean self-employment earnings are slightly lower than mean wage/salary earnings for the lowest and highest parental education groups. Among young women, the self-employed whose parents both dropped out of high school earn \$911 less than their wage/salary counterparts. Median earnings are lower for the self-employed for all groups. Finally,

TABLE II  
Self-employment and wage/salary earnings by parents' education NLSY (1979-98)

	Men		Women	
	Self-employed	Wage/salary	Self-employed	Wage/salary
Both parents dropped out of high school				
Mean	\$36,864	\$25,480	\$18,295	\$19,206
Median	\$23,738	\$21,959	\$14,664	\$17,089
Standard deviation	\$63,536	\$21,713	\$26,393	\$16,373
Sample size	608	9,211	231	7,094
One or both parents graduated from high school				
Mean	\$46,092	\$32,179	\$24,190	\$22,485
Median	\$31,205	\$27,262	\$16,315	\$19,718
Standard deviation	\$90,287	\$38,824	\$56,062	\$23,803
Sample size	1,194	13,892	502	11,194
One or both parents attended college				
Mean	\$51,835	\$38,941	\$27,261	\$28,080
Median	\$36,167	\$32,713	\$21,032	\$23,695
Standard deviation	\$104,869	\$53,052	\$51,636	\$36,927
Sample size	978	9,497	433	8,145

Notes: (1) The sample consists of less-educated young adults who worked at least 1,400 hours in the survey year.  
(2) All estimates are calculated using sample weights provided by the NLSY.

the estimates also indicate that self-employment earnings have a higher variance than wage/salary earnings for all parental education groups.

To summarize, for young men from disadvantaged families, self-employed business owners earn more than wage/salary workers. Furthermore, the earnings premium from owning a business is large and exists for all parental education levels. It is also similar in size across parental education levels, suggesting that no loss of information will result from focusing on young men from disadvantaged families. The results are different for young women. Self-employed business owners from disadvantaged families earn less than their wage/salary counterparts. It is important to note that this disparity in earnings is not due to differences in hours worked as the comparison conditions on full-time, full-year work.

#### *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.<sup>12</sup> 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 \$5,000 of startup capital (U.S. Bureau of the Census, 1997).<sup>13</sup>

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.<sup>14</sup> 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 if he or she owns a partnership. 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).<sup>15</sup> I then subtract this opportunity cost of capital from reported business income.<sup>16</sup> 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 III. I only report estimates for young adults whose parents both dropped out of high school (i.e. youths from disadvantaged families). I also report the average market value, debt and equity in business, farm and other real estate. Disadvantaged business owners have low levels of equity. For men from disadvantaged families, their average equity is \$42,174. Disadvantaged female business owners have an average equity of \$18,753.

In Table III, I also report unadjusted earnings for the self-employed and wage/salary workers for 1985–90 and 1992–98. As expected, mean earnings are larger than those reported in Table II. This is because the cohort is older on average for the later sample period. The difference between self-employment earnings and wage/salary earnings, however, is similar for disadvantaged men and women.

I now turn to the results in which I remove the opportunity cost of equity. As expected, the removal of the opportunity cost of business, farm and other real estate equity decreases relative self-employment earnings. For young men from

TABLE III  
Self-employment and wage/salary earnings for full-time workers from disadvantaged families NLSY (1985–98)

	Self-employed	Wage/salary	Difference
<b>Men</b>			
Market value of business, farm and other real estate	\$65,135	\$2,437	\$62,698
Debt owned on business, farm and other real estate	\$22,961	\$964	\$21,997
Equity in business, farm and other real estate	\$42,174	\$1,473	\$40,701
Unadjusted earnings	\$38,027	\$26,196	\$11,831
Adjusted earnings (30-year treasury bond)	\$36,852	\$26,181	\$10,671
Adjust earnings (S&P 500)	\$35,695	\$26,166	\$9,529
Sample size	482	7,351	
<b>Women</b>			
Market value of business, farm and other real estate	\$23,931	\$3,821	\$20,111
Debt owned on business, farm and other real estate	\$5,178	\$1,290	\$3,888
Equity in business, farm and other real estate	\$18,753	\$2,530	\$16,222
Unadjusted earnings	\$18,659	\$19,740	-\$1,081
Adjusted earnings (30-year treasury bond)	\$18,320	\$19,731	-\$1,411
Adjust earnings (S&P 500)	\$18,176	\$19,727	-\$1,551
Sample size	202	5,621	

Notes: (1) The sample consists of young adults who worked at least 1,400 hours in the survey year.

(2) Adjusted earnings remove the opportunity cost of equity in business, farm and other real estate. See text for more details.

disadvantaged families, however, the difference between mean self-employment earnings and wage/salary earnings remains large even when using the S&P 500 as the alternative investment. Self-employed young men earn \$9,529 more on average than wage/salary workers. For young women from disadvantaged families, the self-employed earn \$1,551 less than wage/salary workers. To conclude, the simple method used here to remove the returns to 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.<sup>17</sup>

#### 4. Earnings regressions

Overall, the results presented in Tables II and III provide suggestive evidence that self-employed men from disadvantaged families earn more than wage/salary workers from disadvantaged families. The evidence suggests the opposite for young women from disadvantaged families. These estimates, however, do not control for differences between the two groups. In fact, previous 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. Many of these factors are associated with higher earnings suggesting that controlling for differences between the self-employed and wage/salary workers may be important prior to making earnings comparisons.

To address these issues, I estimate separate earnings regressions for men and women. I control for current self-employment and wage/salary status and for differences in observable characteristics, such as age, race and education. Specifically, I estimate the following reduced form equation for annual earnings:

$$y_{it} = X_{it}'\beta + \delta S_{it} + \lambda_t + \mu_i + \varepsilon_{it}, \quad (4.1)$$

where  $y_{it}$  is individual  $i$ 's annual earnings in year  $t$ ,  $X_{it}$  is vector of individual characteristics,  $S_{it}$  is a dummy variable indicating whether the individual is self-employed in year  $t$ ,  $\lambda_t$  is a time fixed effect for year  $t$ , and  $\varepsilon_{it}$  is the error term.<sup>18</sup> The use of the NLSY panel implies that the disturbance term,  $\varepsilon_{it}$ , has two components,  $\mu_i$  and  $v_{it}$ . In this two-component error term,  $\mu_i$  represents the individual-specific component and is included to capture

unobservable characteristics of the individual that affect earnings. It is well known that estimation of this model using standard regression techniques provides inefficient estimates and incorrect standard errors (Hsiao, 1986). Therefore, I estimate the model using a random effects regression.

In this random effects earnings equation,  $\delta$  provides an estimate of the effect of self-employment on earnings. The coefficient estimate controls for differences between the self-employed and wage/salary workers in measurable characteristics, such as age, race and education. The coefficient is identified by comparisons between the earnings of self-employed and wage/salary workers and by comparisons of self-employment and wage/salary earnings for the same individual in different years. The latter source of identification results from individuals making transitions between self-employment and wage/salary over

time, which is the major advantage of having longitudinal data to address this question.

Specifications 1 and 3 of Table IV report the results for young men and women from disadvantaged families, respectively. Both equations include controls for age, ethnicity/race, immigrant status, own education, age-adjusted AFQT (Armed Forces Qualification Test) score, marital status, number of children, geographical areas, urbanicity, and the local unemployment rate.<sup>19</sup> I only report estimates for a few of the controls. As expected, earnings increase with age, education, and AFQT score and decrease with the local unemployment rate.

For young men from disadvantaged families, the coefficient on self-employment is large, positive, and statistically significant. The coefficient estimate is \$5,820.8, which is lower than the difference in raw means of \$11,384. Apparently,

TABLE IV  
Random effects earnings regressions for workers from disadvantaged families NLSY (1979–98)

Department variable	Men		Women	
	(1) Earnings	(2) Log earnings	(3) Earnings	(4) Log earnings
Self-employed	5820.8 (677.3)	0.0097 (0.0218)	-1718.5 (628.3)	-0.3458 (0.0133)
Age	932.4 (140.6)	0.0337 (0.0078)	436.7 (104.2)	0.0392 (0.0078)
Black	-1202.6 (849.4)	-0.0231 (0.0468)	-179.8 (646.2)	-0.0113 (0.0516)
Hispanic	197.3 (873.7)	0.0192 (0.0475)	599.6 (644.8)	0.0738 (0.0519)
Born abroad	1745.9 (1027.5)	0.1685 (0.0580)	2587.6 (815.0)	0.1282 (0.0689)
High school graduate	1747.0 (638.2)	0.0637 (0.0269)	2182.7 (540.1)	0.1997 (0.0170)
Some college	2640.8 (989.3)	0.0688 (0.0446)	4792.6 (685.3)	0.2875 (0.0223)
College graduate	9960.3 (1476.9)	0.3123 (0.0704)	11917.5 (954.6)	0.6052 (0.0329)
Adjusted AFQT score	141.8 (16.1)	0.0080 (0.0009)	101.1 (13.2)	0.0097 (0.0010)
R-square	0.1818	0.1314	0.2290	0.1215
Sample size	9017	9017	6983	6983

Notes: (1) The sample consists of young adults who worked at least 1,400 hours in the survey year.

(2) Standard errors are in parentheses below coefficient estimates.

(3) All specifications include marital status, number of children, geographical area controls, urbanicity, year fixed effects and dummies for the local unemployment rate.

the controls explain part of the difference in earnings between self-employed business owners and wage/salary workers. However, the coefficient is large, indicating that young male business owners from disadvantaged families earn considerably more than their wage/salary counterparts even after controlling for many observable characteristics, such as age, race, education, and basic skills (as measured by AFQT scores). The point estimate implies an effect that is similar in magnitude to moving someone from the 50th percentile in earnings to the 68th percentile in earnings for this group of young men from disadvantaged families.

The results reported in Table IV are different for young women from disadvantaged families. The coefficient on self-employment is negative and statistically significant. The coefficient estimate of  $-\$1,718.5$  is also larger in absolute value than the simple difference in means of  $-\$911$  reported above. Apparently, young women from disadvantaged families who own businesses earn less than disadvantaged young women working in the wage/salary sector, and this disparity is not due to differences in age, race, education or basic skills. In this case, the coefficient estimate implies a movement from the 50th percentile to the 45th percentile for young women from disadvantaged families.

Table IV also reports estimates using log earnings as the dependent variable in the random effects regressions. The results for young men from disadvantaged families are reported in Specification 2, and the results for young women from disadvantaged families are reported in Specification 4. Log earnings are often used in studies of the earnings of wage/salary workers because the transformation lessens the influence of large earnings outliers on coefficient estimates. The outlier issue for actual earnings as the dependent variable, however, is less important for this analysis because of the aforementioned top coding. All earnings are top coded at  $\$109,987$  in 1998 dollars. The disadvantage of using log earnings is that low earnings observations may exert a strong influence on the coefficient estimates. The typical correction made in previous studies of wage/salary workers is to exclude “implausibly” low hourly wages (e.g. less than  $\$2$  per hour) in the estimation of log earnings regres-

sions. In the case of the self-employed, however, this is problematic because these low earnings may be perfectly plausible.<sup>20</sup> Therefore, it does not make sense to remove these observations.

For young men from disadvantaged families, the log earnings regression estimates do not provide evidence of higher earnings in self-employment. The point estimate indicates that the self-employed earn approximately 1 percent more than wage/salary workers, however, it is not statistically significant. Part of the discrepancy appears to be due to strong influence of low earnings observations, which are disproportionately in the self-employment sector.<sup>21</sup> Although not reported, I also estimate a specification in which all annual earnings observations below  $\$3,000$  are assigned to equal  $\$3,000$  before taking log values. Any worker in the sample who has annual earnings of less than  $\$3,000$  cannot make more than  $\$2.15$  an hour. It would be difficult to argue that  $\$3,000$  in annual earnings presents much less of an economic hardship for someone than  $\$1$  in annual earnings. The coefficient estimate on the self-employment variable is larger and statistically significant, although only at the  $\alpha = 0.10$  level. The point estimate implies that the self-employed earn approximately 3.6 percent more, on average, than wage/salary workers. In an additional specification, I censor observations at  $\$5,000$ . In this specification, the coefficient implies that the self-employed earn roughly 4.2 percent more than wage/salary workers. The coefficient is statistically significant at conventional levels. Apparently, the results for log earnings are sensitive to the treatment of very low earnings observations.<sup>22</sup>

For young women from disadvantaged families, the log earnings regression results do not differ substantially from the earnings regression results. The coefficient estimate is large, negative and statistically significant, providing additional evidence that disadvantaged young women who own businesses are earning substantially less than their wage/salary counterparts.<sup>23</sup> This disparity in earnings holds even after controlling for observable personal characteristics.

#### *Fixed-effects earnings regressions*

Although the NLSY contains detailed information on individual characteristics, including age, race,

education, and AFQT scores, there may exist unobserved differences between self-employed business owners and wage/salary workers. For example, business owners may be less risk averse and have more entrepreneurial ability (Fairlie, 2002).<sup>24</sup> Self-employed business owners may differ in additional “unobservable” ways from wage/salary workers. 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; Reardon, 1997 for a few examples). Thus, workers choosing wage/salary work over business ownership may be those who have the most ability in the wage/salary sector leading to the well-know self-selection problem (Heckman, 1990). To address these issues, I estimate fixed effect earnings regressions. These fixed effects control for the part of unobservable characteristics that do not change over time.

I estimate the following reduced form equation for annual earnings:

$$y_{it} = \alpha_i + X_{it}'\beta + \delta S_{it} + \lambda_t + \varepsilon_{it}, \quad (4.1)$$

where  $\alpha_i$  is an individual-level fixed effect and  $X_{it}$  only includes time-varying independent variables. The individual-level fixed effects control for all observable and unobservable characteristics that do not change over time. 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. This is the primary advantage of using longitudinal data to address this question.

Table V reports the results for the fixed-effects regressions. I estimate separate equations for men and women and for actual earnings and log earnings. For men from disadvantaged families, the coefficient estimate is large, positive and statistically significant. The self-employed earn \$5,211 more on average than wage/salary workers after controlling for differences in time-varying observable characteristics and fixed observable and unobservable characteristics. The size of the coefficient is roughly similar to the coefficient estimate in the random effects regression. The coefficient in the log earnings regression is now larger. The point estimate is 0.027, but remains statistically insignificant. Overall, the fixed-effects earnings regressions do not change the conclusions regarding the effect of self-employment on earnings. For young men from disadvantaged families, I find some evidence indicating that the self-employed earn more than their wage/salary counterparts. Business ownership appears to be a successful option for those who choose it.

For young women from disadvantaged families, the earnings disadvantage associated with self-employment disappears in the actual earnings specification and becomes substantially smaller in the log earnings specification. The actual earnings coefficient is -\$414, but is statistically insignificant. The log earnings coefficient is now -0.228. These results suggest that controlling for unobservable characteristics is important for young

TABLE V  
Fixed-effects earnings regressions for workers from disadvantaged families NLSY (1979–98)

Department variable	Men		Women	
	(1) Earnings	(2) Log earnings	(3) Earnings	(4) Log earnings
Self-employed	5211.3 (684.4)	0.0277 (0.0334)	-413.8 (723.8)	-0.2284 (0.0531)
R-square	0.5917	0.5256	0.6480	0.5810
Sample size	9541	9541	7185	7185

Notes: (1) The sample consists of young adults who worked at least 1,400 hours in the survey year.

(2) Standard errors are in parentheses below coefficient estimates.

(3) All specifications include marital status, number of children, urbanicity, year fixed effects, and dummies for the local unemployment rate.

women from disadvantaged families, although there is no evidence suggesting that business ownership is, on average, a more successful option for earnings.

### *Self-employment spells*

Another approach to examining whether disadvantaged youth earn more in self-employment than wage/salary work is to condition on the length of the self-employment spell. We expect those youth who try self-employment for longer periods of time to be more successful than those who only try it for short periods of time. In other words, it may be interesting to compare the earnings of “more successful” entrepreneurs to wage/salary workers and “less successful” entrepreneurs. To address this question, I interact self-employment with the length of the current self-employment spell. Thus, I include two additional measures of self-employment in the earnings regressions. I include a dummy variable indicating whether the current self-employment spell is at least 2 years, and a dummy variable indicating that the current self-employment spell is at least 3 years.

Table VI reports estimates. Somewhat surprisingly, the coefficients on the self-employment dummy are not substantially different from the original estimates. It does not appear as though the exclusion of disadvantaged youth who only try

self-employment for one year has much of an effect on the results. In fact, the coefficients on the 2 or more year self-employment spell and 3 or more year self-employment spell variables are not statistically significant in almost all of the specifications. The only exception is that in the log earnings specification for women, disadvantaged youth who are self-employed for at least three consecutive years earn roughly 36 percent more on average than wage/salary workers. The three or more year coefficient is also close to statistical significance at conventional levels in Specification 1. Overall, it does not appear that delineating self-employment by length of time changes the conclusions.<sup>25</sup>

## 5. Conclusions

I use data from the National Longitudinal Survey (NLSY) to examine the earnings of young business owners from disadvantaged families and make comparisons to young wage/salary workers from disadvantaged families. I find that disadvantaged male business owners have higher mean and median earnings than their wage/salary counterparts. The difference between self-employment and wage/salary earnings is large and is fairly comparable to the difference for young adults whose parents have higher education levels. The results are different for young women from dis-

TABLE VI  
Fixed-effects earnings regressions for workers from disadvantaged families with self-employment spells NLSY (1979–98)

Department variable	Men		Women	
	(1) Earnings	(2) Log earnings	(3) Earnings	(4) Log earnings
Self-employed	5701.2 (1093.5)	0.0436 (0.0534)	-331.1 (1275.5)	-0.2297 (0.0935)
Self-employment spells of 2 or more consecutive years	-2906.8 (1717.7)	0.0460 (0.0838)	-1540.2 (1865.0)	-0.2466 (0.1367)
Self-employment spells of 3 or more consecutive years	3102.0 (1627.7)	-0.1012 (0.0794)	2051.7 (1692.3)	0.3582 (0.1240)
R-square	0.5919	0.5257	0.6481	0.5816
Sample size	9541	9541	7185	7185

Notes: (1) The sample consists of young adults who worked at least 1,400 hours in the survey year.

(2) Standard errors are in parentheses below coefficient estimates.

(3) All specifications include marital status, number of children, urbanicity, year fixed effects, and dummies for the local unemployment rate.

advantaged families. I find that they earn less in self-employment than in wage/salary work. None of these simple earnings comparisons appears to be sensitive to removing the returns to capital from self-employment earnings.

To address the economic mobility question, I also estimate random effects earnings regressions that control for personal characteristics that have an important effect on earnings, such as age, race, education, and basic skills (AFQT scores). For young men from disadvantaged families, I find some evidence suggesting that the self-employed earn more, on average, than wage/salary workers. The results are somewhat sensitive to the chosen specification. For young women from disadvantaged families, the results provide no evidence suggesting that the self-employed earn more than wage/salary workers. In fact, the estimates consistently indicate that the self-employed earn less than wage/salary workers, on average.

Finally, I estimate fixed-effect earnings regressions that control for the unobserved characteristics of individuals that do not change over time (possibly including risk aversion and entrepreneurial ability). 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. Similar to the results from the random effects earnings regressions, I find some evidence suggesting that the self-employed earn more than wage/salary workers for young men from disadvantaged families, but not for disadvantaged young women.

The results presented here provide evidence that, for at least some young men from disadvan-

tagged families, entrepreneurship provides a better alternative than wage/salary work. Of course, we cannot determine whether business ownership provides more economic mobility or higher earnings for the randomly chosen disadvantaged youth. These results also do not support the conclusion that self-employment is a “better” option than wage/salary work for *all* youths from disadvantaged families. These findings, however, are important in light of potentially limited opportunities in the wage/salary sector for this group and the high level of interest in self-employment among youths in general and among youths in a large number of countries (Blanchflower and Oswald, 1998a). Currently, the focus of major job training programs for disadvantaged youths, such as JTPA Title IIC and Job Corps, is on providing training for jobs in the wage/salary sector. The addition of a microenterprise or entrepreneurial training and assistance component to these programs, however, may allow more less-educated youths to experience sizeable earnings growth. There may exist a large number of less-educated youths who possess the skills and desire to become self-employed, but ultimately do not create small businesses due to a lack of knowledge of business opportunities, sector-specific human capital, and financial capital. More research, preferably from experimental programs, is needed to evaluate the long-term effectiveness of these types of government programs for disadvantaged youths.

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## Appendix

Means of analysis variables NLSY (1979–98)

	Men		Women	
	Mean	Standard deviation	Mean	Standard deviation
Earnings	24776.77	16414.25	18871.84	11097.41
Log earnings	9.9217	0.7433	9.6598	0.7460
Self-employment	0.0604	0.2382	0.0313	0.1742
Age	28.63	4.41	28.96	4.56
Black	0.2716	0.4448	0.3086	0.4619
Hispanic	0.3291	0.4699	0.3052	0.4605
Born abroad	0.1343	0.3410	0.1031	0.3042
High school graduate	0.5003	0.5000	0.5393	0.4985
Some college	0.1438	0.3509	0.2290	0.4202
College graduate	0.0514	0.2208	0.0852	0.2792
Married	0.5179	0.4997	0.5326	0.4990
Number of children	0.9380	1.1587	1.2109	1.1677
Midwest	0.1755	0.3804	0.1541	0.3611
South	0.4542	0.4979	0.5237	0.4995
West	0.2131	0.4095	0.1674	0.3733
Urban	0.7470	0.4347	0.7557	0.4297
Unemployment rate in local area of 6.0–8.9%	0.3799	0.4854	0.3705	0.4830
Unemployment rate in local area of 9.0% or higher	0.2403	0.4273	0.2413	0.4279
Age-adjusted AFQT (Armed Forces Qualified Test)				
Score	–13.07	23.71	–10.55	21.93
Sample size	9017		6983	

Notes: The sample consists of young adults who worked at least 1,400 hours in the survey year.

## Notes

<sup>1</sup> See Balkin (1989) for an earlier list and description of many of the programs promoting self-employment among low-income people.

<sup>2</sup> See Guy, Doolittle, and Fink (1991) and Raheim (1997) for descriptions of the welfare program, and see U.S. Department of Labor (1992), Benus et al. (1995) and Vroman (1997) for descriptions of the UI program.

<sup>3</sup> See Bates (1993) for a description of programs promoting self-employment among minorities.

<sup>4</sup> See Glazer and Moynihan (1970), Light (1972, 1979), Sowell (1981), and Moore (1983).

<sup>5</sup> A related finding is that self-employment spells are associated with lower returns in wage/salary work for women (Williams, 2000).

<sup>6</sup> The focus on youth is important because of the high level of interest in self-employment for this group (Blanchflower and Oswald, 1998). See also Blanchflower and Meyer (1994), Williams (2000), and Fairlie (2000) for examples of research on youth self-employment.

<sup>7</sup> See Center for Human Resource Research (1999) for additional details on the NLSY sample.

<sup>8</sup> 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).

<sup>9</sup> 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.

<sup>10</sup> I also use parents’ occupations and family status as proxies for family income. The earnings comparison and regression results do not differ substantially when I focus on disadvantaged youth who have parents working in low paying occupations. Also, the results do not differ substantially for young men from single-parent households, but differ somewhat for young women from single-parent households. For example, in the fixed effects earnings regressions self-employed young women from single-parent households earn more than their wage/salary counterparts.

<sup>11</sup> I should note, however, that this problem is mitigated somewhat by the top coding described above.

<sup>12</sup> 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.

<sup>13</sup> 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).

<sup>14</sup> 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)."

<sup>15</sup> 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.

<sup>16</sup> I censor equity and adjusted business income at zero.

<sup>17</sup> 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.

<sup>18</sup> The  $\lambda_t$  are included to capture the effects of macroeconomic fluctuations and the interest rate.

<sup>19</sup> Sample means are reported in the Appendix. The age-adjusted AFQT score is the residual in a linear regression of actual AFQT scores on dummy variables for each possible birth year.

<sup>20</sup> To address the issue of taking the log of zero, I add \$100 to all annual earnings observations before taking the log.

<sup>21</sup> In the sample of young men from disadvantaged families, 3.0 percent of the self-employed and 1.7 percent of wage/salary workers are censored at \$1,000.

<sup>22</sup> Censoring actual earnings at \$3,000 and \$5,000 has very little effect on the coefficient estimates.

<sup>23</sup> After censoring earnings observations less than \$3,000, the coefficient is smaller in absolute value (-0.2419), but remains statistically significant.

<sup>24</sup> Fairlie (2002) uses drug dealing as a youth as a proxy for low risk aversion, entrepreneurial ability, and a preference for autonomy, and finds that it has a positive effect on legitimate business ownership later in life.

<sup>25</sup> I also estimated specifications that include dummy variables for self-employment spell lengths of 4 or more years and 5 or more years. The results were mixed. A related issue is whether relative self-employment earnings are larger for those who are self-employed later in their careers. The concern is that some young adults may try self-employment early in their careers with limited success. I do not find evidence suggesting that the relationship between entrepreneurship and earnings is different for young men and women who are ages 30 and over.

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