

# Earnings Growth Among Young Less-Educated Business Owners

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Using data from the National Longitudinal Survey of Youth (NLSY), I examine the earnings patterns of young less-educated business owners and make comparisons with young less-educated wage/salary workers. Estimates from fixed-effects earnings regressions indicate that the self-employed experience faster earnings growth on average than wage/salary workers after a few initial years of slower growth. I also find some evidence suggesting that a relatively high percentage of less-educated business owners, especially men, experience either rapid earnings growth or large annual losses.

THERE HAS BEEN A PROLIFERATION OF MICROENTERPRISE 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 challenged legally in the past decade.<sup>3</sup>

This interest in microenterprise programs has been spurred by arguments from academicians and policymakers that self-employment provides a route

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<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 unemployment insurance program.

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

out of poverty and an alternative to unemployment or discrimination in the labor market.<sup>4</sup> For example, Glazer and Moynihan (1970:36) argued 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, Kahan, and Gross 1975, and 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 microenterprise or entrepreneurial training programs in the United States, there is very 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, Joulfaian, and Rosen 1994b, and Fairlie 1999), the self-employed have lower initial earnings and lower earnings growth than wage/salary workers (Hamilton 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). On the other hand, previous studies find that a high self-employment 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, and Fairlie and Meyer 2000), there is more upward mobility in the income distribution among low-income self-employed workers than among low-income wage/salary workers (Holtz-Eakin, Rosen, and Weathers 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). With the exception of Holtz-Eakin, Rosen, and Weathers (2000), none of these studies, however, provides evidence from longitudinal data covering many years on the relationship between business ownership and economic advancement for disadvantaged groups.<sup>5</sup>

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

<sup>5</sup> Holtz-Eakin, Rosen, and Weathers (2000) took a different approach than that of this article and examined 1- and 5-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.

In this article I use data from the National Longitudinal Survey of Youth (NLSY) to examine the earnings patterns of young less-educated business owners. To place these earnings patterns into context, I make comparisons to young less-educated wage/salary workers. The key question is whether less-educated youths who are self-employed early in their careers experience faster earnings growth than young wage/salary workers. 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 less-educated youth. Although this is an important question, no credible identifying instruments exist.<sup>6</sup> 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 less-educated youths.

I focus on less-educated youths for two reasons. First, this group largely has been overlooked in the creation of microenterprise training programs. Entrepreneurial education and training may serve as a useful intervention program for at-risk youths, redirecting them from becoming drug dealers and other criminals into becoming owners of legitimate businesses (Light and Rosenstein 1995, Myers 1989). These types of programs may be especially useful because at-risk youths often demonstrate a keen interest in business ownership and show disdain for available wage/salary jobs (Light and Rosenstein 1995).<sup>7</sup> Second, less-educated youths face limited opportunities for rapid earnings growth in the wage/salary sector and have experienced declining wages relative to the wages of their college-educated counterparts.<sup>8</sup> The question of whether business ownership can provide an opportunity for rapid earnings growth for this group, however, remains unanswered.

## Data

I use data from the National Longitudinal Survey of Youth (NLSY), a nationally representative sample of 12,686 men and women between the ages of 14 to 22 years when they were first interviewed in 1979.<sup>9</sup> Survey

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<sup>6</sup> 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.

<sup>7</sup> There also appears to be a high level of interest in self-employment among youths in general and among youths in a large number of countries (Blanchflower and Oswald 1998a).

<sup>8</sup> See Levy and Murname (1992) and Katz and Autor (1999) for reviews of the literature on wage inequality.

<sup>9</sup> See Center for Human Resource Research (1997) for additional details on the NLSY sample.

members were interviewed annually from 1979 to 1994 and in 1996. I exclude the sample of 1280 youths 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 5295 civilian black, Hispanic, and economically disadvantaged nonblack, non-Hispanic youths.

To focus on less-educated workers, I exclude all individuals whose highest grade completed during the sample period was greater than twelfth grade. Self-employed workers are defined as those individuals who identify themselves as self-employed in their own business, professional practice, or farm on the class-of-worker question for the current or most recent job.<sup>10</sup> In most of the analyses below, I remove individuals who reported being enrolled in high school or college and workers who reported working fewer than 300 hours in the preceding calendar year. The hours restriction is imposed to rule out very small-scale business activities.

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 59.3 percent of the self-employed with positive earnings in my sample reported wage and salary income but did not report business income. This is only partly due to incorporated business owners reporting their income as wage and salary income—58.3 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.

Self-employment earnings also are difficult to measure for a few additional reasons. First, as reported, business income includes returns to both labor and 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

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<sup>10</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 (1997).

to labor and the returns to capital. As noted earlier, 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 with the earnings of wage/salary workers. Unfortunately, however, the question on business assets in the NLSY includes the value of other real estate and is not available for all years.<sup>11</sup>

Second, there is concern that business owners underreport income. Using data on both total income from the business and reported labor income from the 1989 Survey of Consumer Finances, Yuengert (1996) found that the self-employed, on average, understate their labor earnings by 38 percent and overstate their capital income. Third, there is ambiguity regarding how reinvested profits are treated (Hamilton 2000). 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 because they are more likely to be depreciated over a long period of time. Finally, it is unclear how an individual reports the returns to the labor of other family members. With all these concerns in mind, I proceed in the analysis using reported total earnings to measure self-employment earnings.

Earnings observations in all years are inflated to 1996 dollars. The responses for each of these three sources of income were top-coded at \$75,000 from 1979 to 1984 and \$100,000 from 1985 to 1996. Instead of using these top codes, I create a top code of \$100,000 in 1996 dollars that is consistent across all years. I set all top-coded values to \$150,000.<sup>12</sup> Only 0.2 percent of observations are top-coded.

## Self-Employment Rates and Earnings Among Less-Educated Youths

Before examining self-employment and wage/salary earnings patterns, I present some descriptive results on self-employment rates and total earnings

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<sup>11</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 \$5000 of startup capital (U.S. Bureau of the Census 1997).

<sup>12</sup> In the most recent years of the NLSY, the average value of all top-coded observations is assigned to top-coded observations. These generally were close to \$150,000.

TABLE 1  
 SELF-EMPLOYMENT RATES BY AGE, NLSY (1979–1996)

Age	Men		Women	
	SE Rate	N	SE Rate	N
22	5.4%	2429	2.7%	1723
23	6.1%	2487	3.4%	1749
24	6.9%	2566	4.0%	1809
25	8.1%	2593	5.2%	1834
26	8.2%	2539	5.6%	1794
27	8.1%	2473	6.2%	1733
28	9.2%	2421	7.6%	1711
29	9.5%	2359	6.4%	1666
30	10.4%	2103	8.0%	1521
31	11.1%	1913	7.2%	1384
32	9.6%	1676	8.4%	1225
33	10.9%	1289	8.5%	987
34	10.5%	954	7.4%	758
35	11.3%	750	8.7%	597
36	9.9%	470	7.3%	387
37	12.3%	240	10.9%	193
38	12.0%	189	7.4%	177
39	6.7%	51	7.3%	36

NOTES: (1) The sample consists of less-educated youths who worked at least 300 hours in the survey year. (2) All estimates use sample weights provided by the NLSY.

comparisons for less-educated youths. Table 1 reports self-employment rates by sex and age for this group. The reported estimates indicate that self-employment rates increase sharply with age. At age 22, 5.4 percent of less-educated men are self-employed and 2.7 percent of less-educated women are self-employed. By age 35, the male self-employment rate is 11.3 percent and the female self-employment rate is 8.7 percent. The estimates also indicate that less-educated men have much higher average probabilities of choosing self-employment than do less-educated women. These two findings are similar to those reported in previous studies using samples that include workers of all ages and education levels.

In Table 2 I report mean, median, and the standard deviation of total annual earnings for self-employed and wage/salary youths. In the first panel I include all less-educated youths who worked at least 300 hours in the past calendar year. In the second panel I include only full-time workers (defined here as working at least 1400 hours in the past calendar year). On average, self-employed men earn substantially more than wage/salary men using either sample. The difference in average annual earnings is approximately \$11,000. The opposite is true for young women, although the differences

TABLE 2  
 SELF-EMPLOYMENT AND WAGE/SALARY EARNINGS, NLSY (1979–1996)

	Men		Women	
	Self-Employed	Wage/Salary	Self-Employed	Wage/Salary
I. All workers				
Mean	\$34,745	\$23,812	\$12,825	\$15,077
Median	\$21,474	\$19,364	\$6,631	\$13,000
Standard deviation	\$65,745	\$25,277	\$33,833	\$19,135
Sample size	2,031	26,415	1,082	19,431
II. Full-time workers				
Mean	\$37,004	\$25,771	\$17,645	\$18,071
Median	\$23,630	\$21,292	\$12,005	\$15,847
Standard deviation	\$68,666	\$24,954	\$39,624	\$17,713
Sample size	1,741	22,403	608	13,826

NOTES: (1) The samples used in Panel I and Panel II consist of less-educated youths who worked at least 300 and 1400 hours, respectively, in the survey year. (2) All estimates use sample weights provided by the NLSY.

are not as large. Self-employed women earn \$2252 less than wage/salary women, on average. Conditioning on full-time work, however, the earnings difference drops to \$426.

A comparison of median earnings tells a similar story. Self-employed men earn more than wage/salary men, but self-employed women earn less than wage/salary women. The gaps, however, are much smaller for men (approximately \$2000) and larger for women (\$3843 and \$6369). For both men and women, median incomes are much lower than average incomes among the self-employed. Another interesting comparison between self-employment and wage/salary earnings for this group is the difference in variability. The standard deviation of self-employment income is substantially higher than that of wage/salary income among both less-educated young men and women.

In addition to these estimates, I display earnings distributions for full-time workers in Figures 1 and 2. The reported values along the  $x$  axis represent the midpoint of their range.<sup>13</sup> The figures generally confirm what we would expect from analyzing the estimates reported in Table 2. For men, the self-employment earnings distribution is visibly more dispersed than the wage/salary earnings distribution. This is due primarily to the thicker upper tail of the self-employment distribution. Over 20 percent of self-employed men earn \$50,000 or more, compared with only 5 percent of wage/salary men.<sup>14</sup>

<sup>13</sup> For example, \$20,000 includes all earnings observations between \$19,750 and \$20,249.

<sup>14</sup> Forty-six percent of the self-employed men who earn \$50,000 or more are in the construction industry. Among all less-educated self-employed men, 34 percent are in the construction industry.

FIGURE 1

EARNINGS DISTRIBUTIONS FOR LESS-EDUCATED YOUNG MEN, NLSY (1979–1996),  
FULL-TIME WORKERS



FIGURE 2

EARNINGS DISTRIBUTIONS FOR LESS-EDUCATED YOUNG WOMEN, NLSY (1979–1996),  
FULL-TIME WORKERS



Evidently, some less-educated young men own very successful businesses. Another difference between the two distributions is that the self-employed are less likely to have earnings in the middle of the wage/salary distribution. The bottom tails of the distribution, however, are fairly similar.

Among women, the self-employment earnings distribution also appears more disperse than the wage/salary earnings distribution. In this case, however, it appears to be due primarily to a high concentration of self-employed women at the bottom of the distribution. Forty-five percent of self-employed women earn \$10,000 or less, compared with only 16 percent of wage/salary women. This is surprising because these estimates condition on full-time work. Apparently, many young women who choose self-employment have very low annual earnings.

In this analysis I find that self-employed men earn more than wage/salary men and self-employed women earn less than wage/salary women. These results, which do not fully exploit the longitudinal nature of the data, provide some suggestive evidence that self-employed men (women) experience faster (slower) earnings growth than their wage/salary counterparts. Of course, this inference is based 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.

The estimates presented in Table 1, however, imply that the self-employed are older on average than wage/salary workers. Furthermore, previous studies found that the self-employed differ in important ways from wage/salary workers.<sup>15</sup> 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. Finally, conditioning on current self-employment or wage/salary work when making earnings comparisons may create a distorted picture of the results of previous earnings growth. For example, this comparison includes only the self-employed who were successful enough to remain in business, possibly inflating self-employment earnings. Working in the opposite direction, however, it also includes individuals who only recently started their businesses. I address each of these issues in the next section.

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<sup>15</sup> These studies generally found 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 (1998b), Dunn and Holtz-Eakin (2000), and Fairlie (1999) for a few recent examples.

## Earnings Growth Among Less-Educated Youths

Do the self-employed experience faster earnings growth than wage/salary workers? To explore this question, I compare the earnings patterns of less-educated youths who were self-employed early in their careers with the earnings patterns of those who were wage/salary workers. The sample only includes young men and women who reported working at least 300 total hours in one of the years between the ages of 22 and 26.<sup>16</sup> Self-employment is defined in the following analysis as being self-employed in one of these 5 years.<sup>17</sup> I start with age 22 because this is the age of the oldest NLSY respondents in 1979. This process yields two groups: (1) individuals who are self-employed early in their careers and (2) individuals who only have wage/salary jobs early in their careers.<sup>18</sup> I then examine the earnings patterns of these two groups excluding observations for years in which the respondent is enrolled in school, in jail, or not in the labor force for other reasons. I include, however, observations for years in which the respondent is unemployed, working only a few hours, or working in the other work sector.

By defining the self-employment group in this way, I can measure the total effect of choosing self-employment on future earnings. As noted earlier, I want to capture the possibility that business ownership leads to a higher probability of future unemployment or low wage/salary earnings. These potential costs of self-employment would not be captured if I conditioned on self-employment in each year.

Before discussing the earnings patterns, it is useful to examine the characteristics of the self-employed and wage/salary groups. Table 3 reports average characteristics for the two groups at age 26. The self-employed group represents 12.9 percent of the sample of less-educated young men and 8.2 percent of the sample of less-educated young women. The racial composition of the two groups differs somewhat. The self-employed group is less likely to be black or Hispanic.<sup>19</sup> The self-employment group also has less education on average than the wage/salary group. For both men and women, a lower percentage of the self-employed group graduated from high school than the wage/salary group. In contrast, the average Armed Forces

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<sup>16</sup> Of the sample that is observed to be self-employed in at least one year during the entire sample period, 55.8 percent are observed to be self-employed for the first time by age 26.

<sup>17</sup> I also try the stricter definition of having at least 2 years of self-employment during the 5-year period and compare results below.

<sup>18</sup> Using this definition, a very small percentage of the wage/salary group tries self-employment prior to age 22. Among the wage/salary group for which I have pre-age 22 observations, the average annual probability of choosing self-employment between the ages of 18 to 21 was 0.7 percent.

<sup>19</sup> This is consistent with the finding in previous research that blacks and Hispanics have lower self-employment rates than whites (see, e.g., Fairlie and Meyer 1996).

TABLE 3  
 CHARACTERISTICS OF SELF-EMPLOYMENT AND WAGE/SALARY GROUPS AT AGE 26,  
 NLSY (1979–1996)

Variable	Men		Women	
	Self-Employed Group	Wage/Salary Group	Self-Employed Group	Wage/Salary Group
Black	0.1752	0.2945	0.1319	0.2532
Hispanic	0.1692	0.1914	0.1593	0.1632
High school graduate	0.6364	0.6861	0.7072	0.7805
Married	0.4955	0.4360	0.6813	0.5344
Children	0.8006	0.7041	1.5659	1.2207
Midwest	0.2530	0.2371	0.2637	0.2365
South	0.3811	0.3956	0.3187	0.4059
West	0.1860	0.1953	0.2692	0.1921
Urban	0.7837	0.7491	0.7709	0.7533
Adjusted AFQT score	-8.4436	-12.4460	-9.0209	-10.6537
Sample size	331	2241	182	2034

NOTES: (1) The sample consists of less-educated youths who were surveyed in each year between the ages of 22 and 26 and worked at least 300 hours in one or more of these years. (2) The self-employed group consists of youths who were self-employed in one or more of the 5 years.

Qualification Test (AFQT) score is higher for the self-employed group than for the wage/salary group.<sup>20</sup> The self-employed group is also more likely to be married and have children. Finally, the regional and urban/nonurban distributions differ slightly. Overall, the differences between the two groups line up fairly well with the findings from previous empirical studies of the determinants of self-employment.

These results suggest that there exist some observable differences between the self-employed and wage/salary groups. These differences, however, do not appear to be too substantial, which may be due in part to restricting the sample to less-educated workers. Keeping in mind that the two groups are not identical, I compare the unadjusted earnings patterns for the two groups.

In Figures 3 and 4 I plot the average earnings patterns by age for the self-employed and wage/salary groups.<sup>21</sup> I only report estimates for ages 22 to 36, although the oldest members of the NLYS were 39 in 1996 because of small sample sizes for these ages. For less-educated men, the self-employed

<sup>20</sup> The adjusted AFQT score is the residual in a linear regression of actual AFQT scores on dummy variables for each possible birth year.

<sup>21</sup> I report earnings patterns by age instead of by tenure or experience because I want to capture the full costs and benefits of the choice of work sector. For example, self-employment may lead to a higher probability of future unemployment, thus limiting the accumulation of work experience.

FIGURE 3

AVERAGE EARNINGS FOR LESS-EDUCATED YOUNG MEN, NLSY (1979–1996)

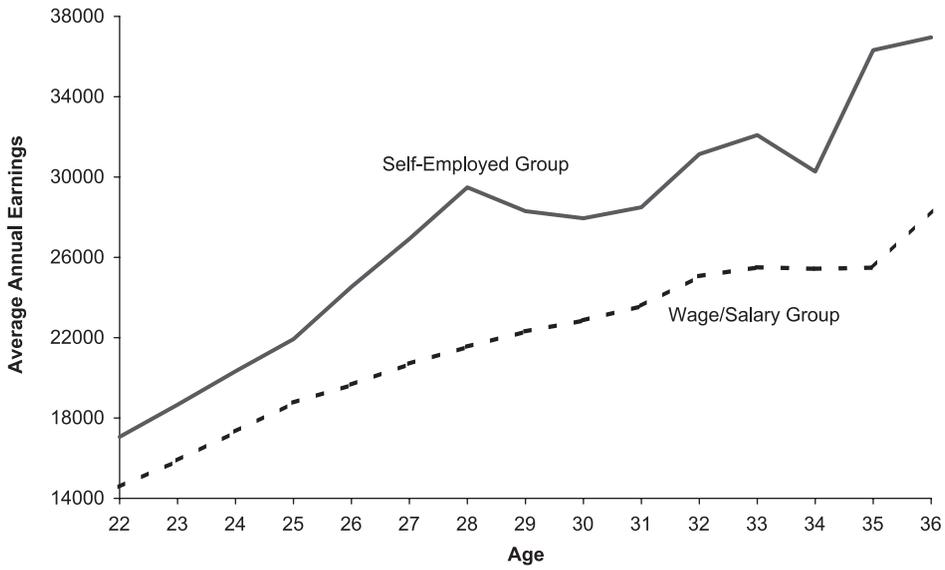


FIGURE 4

AVERAGE EARNINGS FOR LESS-EDUCATED YOUNG WOMEN, NLSY (1979–1996)



group has higher earnings for all ages. This pattern is reversed for less-educated women. For almost all ages, self-employed women have lower average earnings than wage/salary women. More important for this study, however, the self-employed group appears to experience faster earnings growth than the wage/salary group among both young men and young women.<sup>22</sup> It is difficult, however, to estimate differences in earnings growth because these calculations are sensitive to the chosen endpoints. For example, from age 27 to age 35, average earnings of self-employed women increase by \$6644, whereas the increase from age 27 to age 36 was only \$1297. The difference between these two estimates is likely due to the variability associated with small sample sizes.

*Earnings Regressions.* Although the results presented in Figures 3 and 4 are informative, it is useful to estimate the annual amount of earnings growth for the self-employed and wage/salary groups. I also want to compare the earnings patterns for the two groups after controlling for differences in observable and unobservable characteristics. To address these issues, I specify and estimate a reduced-form equation for annual earnings:

$$y_{it} = \alpha_i + X_{it}'\beta + \gamma_1^S t_{it} S_i + \gamma_2^S t_{it}^2 S_i + \gamma_1^W t_{it}(1 - S_i) + \gamma_2^W t_{it}^2(1 - S_i) + \varepsilon_{it} \quad (1)$$

where  $y_{it}$  is individual  $i$ 's annual earnings in year  $t$ ,  $\alpha_i$  is an individual-level fixed effect,  $X_{it}$  includes time-varying individual characteristics,  $t_{it}$  is a time trend that equals zero at age 27,  $S_i$  is a dummy variable indicating the self-employed group, and  $\varepsilon_{it}$  is the error term.<sup>23</sup> Annual earnings growth for the self-employed group is  $\gamma_1^S + 2\gamma_2^S t$ , and annual earnings growth for the wage/salary group is  $\gamma_1^W + 2\gamma_2^W t$ . The inclusion of the individual-level fixed effects controls for differences in unobservable characteristics that do not change over time.<sup>24</sup> I exclude observations for individuals ages 22 to 26 to remove years in which the self-employed group may first try self-employment. This removes the possibility of obtaining an inflated estimate of earnings growth for the self-employed group due to low earnings in the startup year of the business.

<sup>22</sup> This is consistent with the finding in Holtz-Eakin, Rosen, and Weathers (2000) that low-income self-employed workers experience more upward mobility in the income distribution than low-income wage/salary workers.

<sup>23</sup> I use a quadratic specification for the relationship between annual earnings and the time trend instead of a linear specification for the relationship between log annual earnings and the time trend because there are a large number of zero or low earnings observations in the sample. Because of the shape of the log function, these low earnings values would have an overly strong influence in determining the regression line.

<sup>24</sup> The fixed effects may also reduce the problems of earnings comparisons associated with the likely underreporting of self-employment earnings.

TABLE 4

FIXED-EFFECTS EARNINGS GROWTH REGRESSIONS (AGES 27 TO 39), NLSY (1979–1996)

	Men	Women
Time trend for	285.18	136.51
self-employed group	(311.83)	(353.45)
Squared time trend for	44.16	76.04
self-employed group	(33.79)	(37.53)
Time trend for	574.56	636.35
wage/salary group	(112.71)	(96.39)
Squared time trend for	-14.75	-16.02
wage/salary group	(11.94)	(10.20)
$R^2$	0.6677	0.6218
Sample size	14,739	11,310

NOTES: (1) The sample consists of less-educated youths who were surveyed in each year between the ages of 22 and 26 and worked at least 300 hours in one or more of these years. (2) The self-employed group consists of less-educated youths who were self-employed in one or more of the 5 years. (3) Standard errors are in parentheses below coefficient estimates. (4) Both specifications include individual fixed effects, marital status, and number of children.

Estimates of Equation (1) are reported in Table 4. I first discuss the results for less-educated young men. Although only one of the individual time-trend coefficients is statistically significant, the set of all four coefficients is jointly significant. In addition, I reject the null hypothesis that the self-employment coefficients are the same as the wage/salary coefficients. The estimates indicate that wage/salary earnings growth has a concave relationship with time, whereas self-employment earnings growth has a convex relationship.<sup>25</sup>

The different growth patterns for earnings make it difficult to determine which group experiences faster earnings growth at various ages. To ease in the interpretation of these coefficient estimates, I simulate earnings trajectories for both groups. These simulations are displayed in Figure 5. I impose the same starting values for earnings for the two groups. I set these starting values to \$20,700, which is equal to mean earnings for the wage/salary group at age 27. By imposing the same starting values, I attempt to control for differences between the two groups in time-invariant characteristics. The slopes of the two simulated patterns indicate that the self-employed group initially experiences slower earnings growth than the wage/salary group. This does not last long, however, because earnings growth for this group quickly catches up and overtakes earnings growth for the wage/salary group. By age 36, the self-employed group experiences substantially faster earnings growth than the wage/salary group. Annual earnings growth is

<sup>25</sup> The finding of a convex earnings profile for the self-employed is consistent with self-employed business owners taking a few years to establish a clientele and learn from early mistakes.

FIGURE 5

EARNINGS GROWTH SIMULATIONS FOR LESS-EDUCATED YOUNG MEN, NLSY (1979–1996)



\$1080 for the self-employed group, compared with \$309 for the wage/salary group at this age.

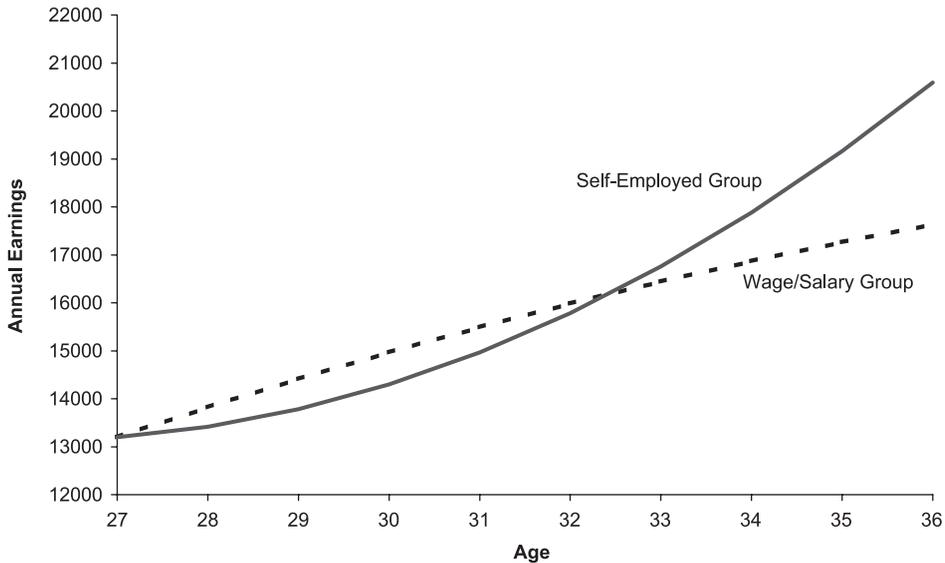
These earnings-growth patterns imply that the self-employed group has lower annual earnings than the wage/salary group until age 32. After this age, the self-employed group is projected to earn more than the wage/salary group. By age 36, the self-employed group is projected to earn \$26,843, compared with \$24,677 for the wage/salary group. Furthermore, the growth estimates indicate that the earnings premium experienced by the self-employed is likely to become larger for at least a few more years. These estimates suggest that less-educated men who try self-employment early in their careers experience faster (but only after a few years) earnings growth than those who only have wage/salary jobs early in their careers.

I find similar earnings patterns for less-educated young women.<sup>26</sup> The earnings-age relationship is concave for the wage/salary group and convex for the self-employed group. I display the earnings patterns in Figure 6. The self-employed group initially experiences slower earnings growth than the wage/salary group but soon overtakes it. By age 36, earnings growth for the self-employed group is \$1505 per year, compared with \$348 per year for

<sup>26</sup> I also find that the set of time-trend coefficients is jointly significant and that there is a statistically significant difference between the self-employment and wage/salary coefficients.

FIGURE 6

EARNINGS GROWTH SIMULATIONS FOR LESS-EDUCATED YOUNG WOMEN, NLSY (1979–1996)



the wage/salary group. The patterns of earnings growth imply that the two groups have similar annual earnings at age 32. However, by age 36, the self-employed group is projected to earn \$20,590, which is notably higher than the projected earnings of the wage/salary group of \$17,631. These estimates suggest that, similar to less-educated young men, less-educated women who choose self-employment experience faster earnings growth than those who only work in the wage/salary sector.

The fixed-effects earnings regression estimates indicate that, on average, the self-employed experience faster earnings growth than wage/salary workers. Assuming similar starting points, these differences in earnings growth result in substantially higher earnings levels as early as age 36 for the self-employed. Furthermore, the projected earnings gap between the self-employed and wage/salary workers is larger for young men if I instead use sector-specific starting values. For women, the gap is smaller but remains large and positive at age 36.

These results differ from estimates for all workers. Using the 1984 Survey of Income and Program Participation (SIPP), Hamilton (2000) found that the self-employed have both lower initial earnings and lower earnings growth than paid employees. His findings, however, are not directly comparable with the estimates reported here because his earnings estimates are based on current self-employment status instead of early-career

self-employment status. Nevertheless, the findings from this study suggest that a comparison of patterns for all less-educated workers or for more-educated youths may provide different results.

Although the estimates presented earlier indicate that less-educated business owners experience faster earnings growth on average than their wage/salary counterparts, much caution is warranted in taking the next step of inferring that self-employment provides a better opportunity than wage/salary work for earnings growth among less-educated youths. The earnings growth estimates from Equation (1) may be biased due to sample selection. 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]. Although the fixed effects included in Equation (1) control for the part of this selection that remains constant over time, there remains the possibility of a selection bias associated with workers choosing the sector that provides the fastest growth rate in earnings. Due to a lack of appropriate exclusion restrictions and the likely sensitivity of estimates to distributional assumptions, however, I do not address this issue.

*Additional Estimates.* I now check the sensitivity of these results to changes in the treatment of top-coded values and the definition of the self-employed group. I first discuss the results for an alternative treatment of top-coded earnings observations. As noted earlier, I enforce a consistent top code of \$100,000 in 1996 dollars for each income question in all years and assign these observations a value of \$150,000. To determine whether my estimates of earning growth are sensitive to these observations, I estimate Equation (1) assigning \$100,000 to all top-coded values of the income questions. Instead of reporting the estimates from these regressions, I display simulated earnings patterns in Figures 7 and 8. For less-educated young men, the earnings patterns are similar to those displayed in Figure 5. The self-employed group initially experiences slower earnings growth than the wage/salary group but soon experiences faster growth. At age 36, earnings for the self-employed group grow by \$1050 per year, compared with \$250 per year for the wage/salary group. The self-employed and wage/salary groups are projected to earn \$26,200 and \$24,330, respectively, at this age. As expected, estimates of earnings growth and projected earnings are smaller than before for both groups, but the differences between the two groups are similar. Earnings-growth patterns are also very similar for less-educated young women. At age 36, the self-employed group is projected to earn \$19,950 with growth at \$1120 per year. The wage/salary group is projected to earn \$17,471 with growth at \$339 per year.

FIGURE 7

EARNINGS GROWTH SIMULATIONS FOR LESS-EDUCATED YOUNG MEN, NLSY (1979-1996)  
(TOP CODES SET TO \$100,000)

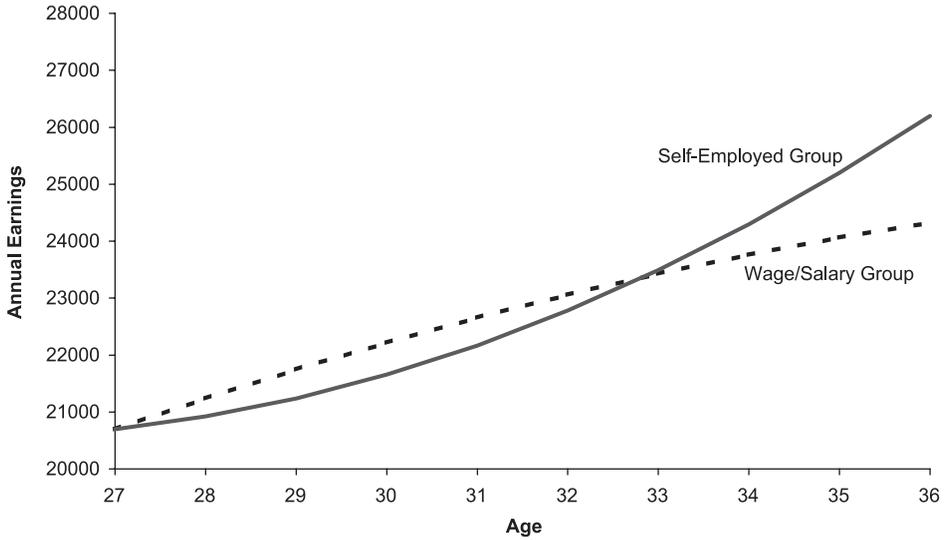


FIGURE 8

EARNINGS GROWTH SIMULATIONS FOR LESS-EDUCATED YOUNG WOMEN, NLSY (1979-1996)  
(TOP CODES SET TO \$100,000)

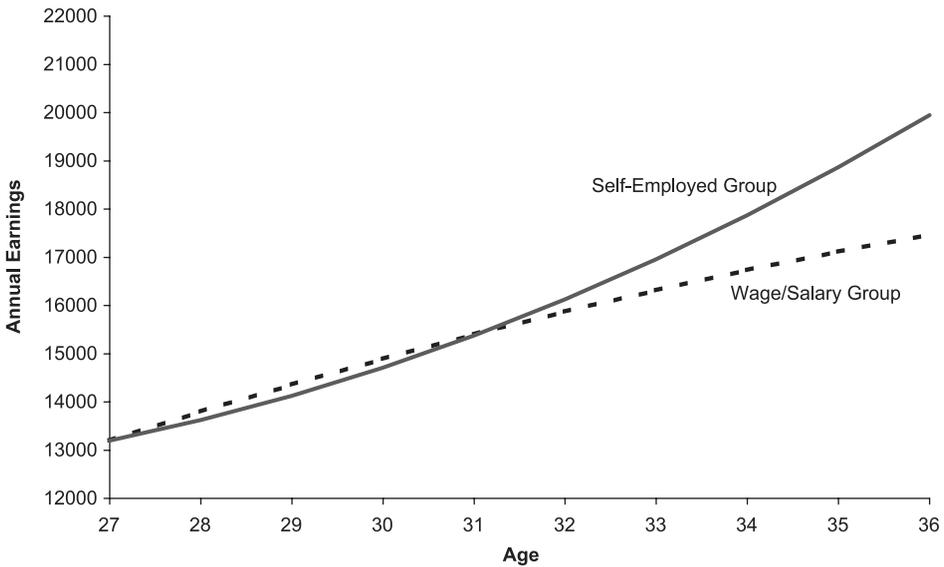
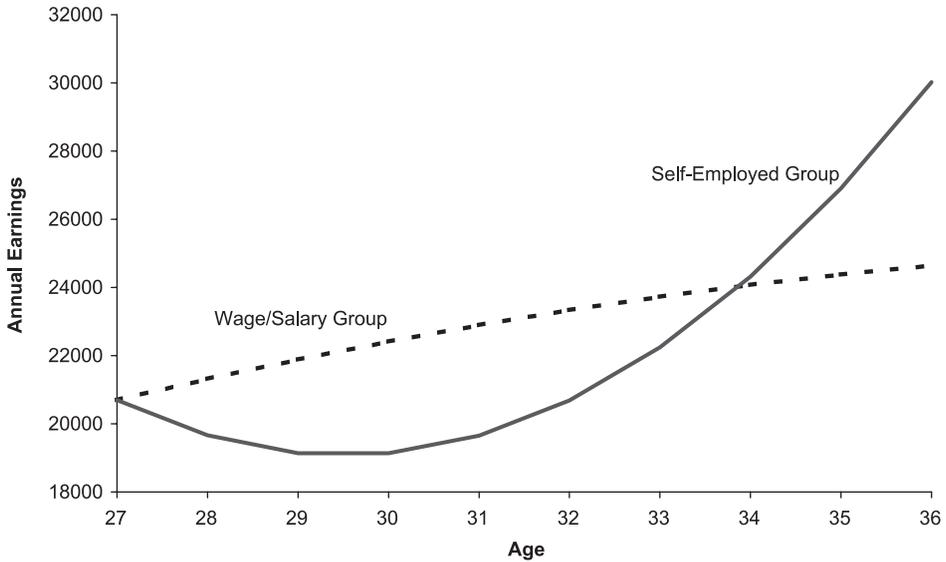


FIGURE 9  
EARNINGS GROWTH SIMULATIONS FOR LESS-EDUCATED YOUNG MEN, NLSY (1979–1996),  
TWO YEARS OF SELF-EMPLOYMENT



I also check the sensitivity of results to the definition of the self-employed group. I create the self-employed group from all workers who were self-employed in at least 2 years between the ages of 22 to 26 (Figures 9 and 10). This more restrictive definition rules out youths who have a weaker attachment to self-employment in those years. It also excludes less successful business owners. Using this definition, 144 young men and 86 young women are classified in the self-employed group. The earnings patterns are fairly similar for young men. The self-employed start out with slower earnings growth but soon have faster earnings growth. The difference is that now the self-employed group experiences a few years in which earnings are lower than the starting point. By age 36, however, projected earnings are \$30,017, and earnings growth is \$3370 per year. Using the stricter definition, self-employed women experience a small drop in earnings in the first couple of years but then experience much more rapid earnings growth than their wage/salary counterparts. They are projected to earn \$20,590 with earnings growth of \$2514 per year by the age of 36.

Overall, these results indicate that the estimates of earnings growth patterns presented in Table 3 and Figures 5 and 6 are not overly sensitive to assigning a different value for top-coded observations or to using a stricter definition of the self-employment group. In both cases, the differences in

FIGURE 10

EARNINGS GROWTH SIMULATIONS FOR LESS-EDUCATED YOUNG WOMEN, NLSY (1979–1996),  
TWO YEARS OF SELF-EMPLOYMENT



earnings growth and projected earnings between the self-employed and wage/salary group do not change substantially.

*Earnings Growth Distributions.* The fixed-effects estimates indicate that youths who try self-employment early in their careers experience faster earnings growth on average than their wage/salary counterparts. The finding discussed earlier that the self-employment earnings distribution is notably more disperse than the wage/salary earnings distribution, however, suggests that it is also useful to examine the entire distribution of growth rates for the two groups.<sup>27</sup>

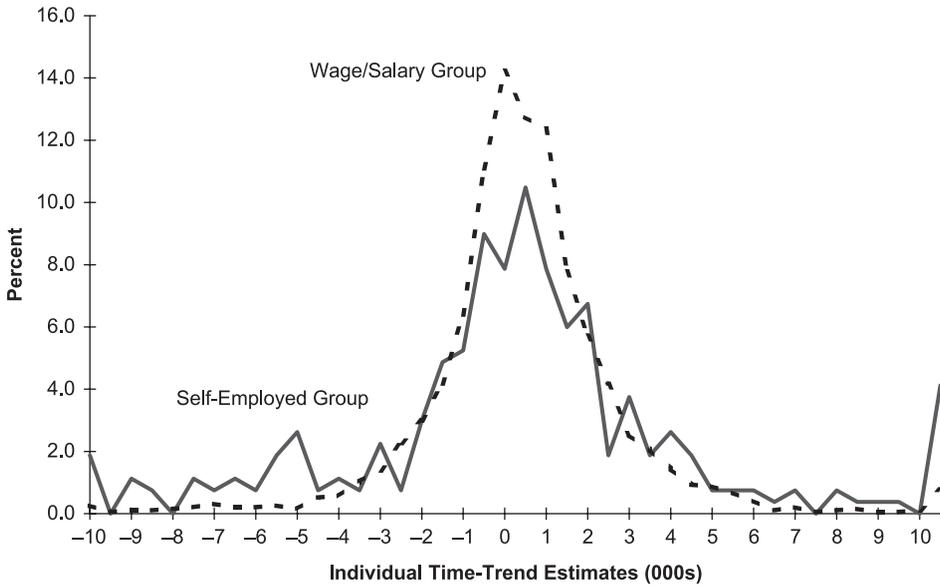
To examine these distributions, I first estimate the following equation:

$$y_{it} = \alpha_i + X'_{it}\beta + \gamma_i t_{it} + \varepsilon_{it} \quad (2)$$

where  $\gamma_i$  is an individual-specific coefficient on the time trend. In this equation,  $\gamma_i$  provides an estimate of the annual amount of earnings growth for

<sup>27</sup> The finding in Holtz-Eakin, Rosen, and Weathers (2000) of greater upward and downward income mobility among the self-employed than among wage/salary workers also suggests that an analysis of the growth-rate distributions may be important.

FIGURE 11  
EARNINGS GROWTH DISTRIBUTIONS FOR LESS-EDUCATED YOUNG MEN



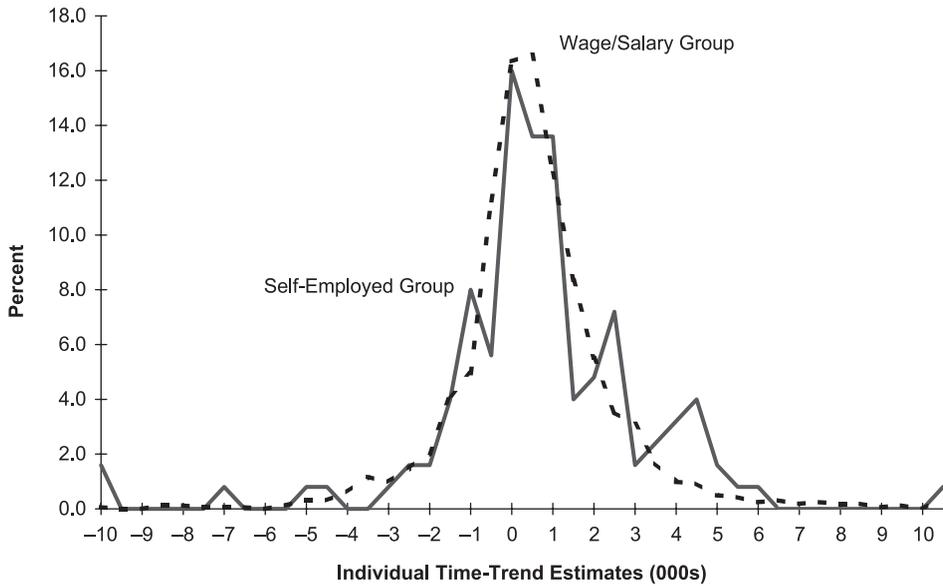
individual  $i$ . The individual time-trend coefficients in Equation (2) are adjusted for differences across individuals in observable and unobservable characteristics that are fixed over time and for the time-varying characteristics included in  $X_{it}$ . I use the sample of individuals who have at least 3 years of data to estimate this equation. This sample restriction removes 2.5 percent of the male sample and 4.3 percent of the female sample.

I display the distributions of earnings growth coefficients in Figures 11 and 12. I first discuss the results for less-educated young men. Although it is difficult to see from the graph, the self-employment earnings-growth distribution lies to the right of the wage/salary distribution. The mean and median estimates of earnings growth are \$651 and \$384 for the self-employed group, compared with \$512 and \$361 for the wage/salary group. These findings confirm those presented earlier indicating that the self-employed experience faster earnings growth on average than their wage/salary counterparts.

The real contribution from Figure 11, however, is the finding that the self-employment earnings-growth distribution is notably more dispersed than the wage/salary earnings-growth distribution. The standard deviation of the self-employment coefficients is \$6458, whereas the standard deviation of the wage/salary coefficients is \$2748. A high percentage of the self-employed

FIGURE 12

EARNINGS GROWTH DISTRIBUTIONS FOR LESS-EDUCATED YOUNG WOMEN



group experiences either a large annual decline in earnings or a large annual gain in earnings. Nearly 19 percent of the self-employed experience earnings growth of more than \$3000 per year, and 16 percent experience a decline of at least \$3000 per year. In contrast, only 9 percent of male wage/salary workers experience growth of \$3000 or more per year, and 5 percent experience losses of \$3000 or more per year.

For less-educated young women, the self-employment and wage/salary distributions are more similar in shape. The coefficients for the two groups have similar standard deviations. The self-employment distribution, however, lies to the right of the wage/salary distribution. The mean and median self-employment coefficients are \$648 and \$586, which are larger than the mean and median wage/salary coefficients of \$640 and \$407. In addition, a higher percentage of self-employed women have rapid earnings growth. Nearly 14 percent of self-employed women have earnings-growth coefficients greater than \$3000, whereas only 8 percent of wage/salary women have coefficients at this level.

For both men and women, estimates from Equation (2) confirm the previous finding that the self-employed experience faster earnings growth on average than their wage/salary counterparts. The estimates also indicate that, at least for men, there is more variability in earnings growth among

the self-employed than among wage/salary workers. A high percentage of self-employed men experience very rapid earnings growth. In contrast, a much lower percentage of less-educated men employed in the wage/salary sector are able to attain high levels of earnings growth. On the downside, however, a high percentage of self-employed men also experience substantial annual earnings losses. These patterns are somewhat similar for less-educated young women but are not as pronounced.

## Conclusions

I use data 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. In comparisons of unadjusted earnings patterns, average earnings for the self-employed appear to grow faster over time than average earnings for wage/salary workers. This finding is confirmed by estimates from fixed-effects earnings regressions that control for differences in time-invariant observable and unobservable characteristics and time-varying observable characteristics. These estimates indicate that less-educated business owners experience faster earnings growth on average than less-educated wage/salary workers after a few initial years of slower growth. By age 36, self-employed men experience annual earnings growth that is \$771 higher than the earnings growth of wage/salary men. Annual earnings growth for self-employed women is \$1157 higher than the growth for wage/salary women.

Using fixed-effects earnings regressions that include individual time trends, I also compare self-employed and wage/salary distributions of earnings growth. I find that a high percentage of less-educated business owners experience either rapid earnings growth or large annual losses, especially among young men. For example, 19 percent of self-employed men experience earnings growth of \$3000 or more per year, and 16 percent experience earnings losses of \$3000 or more per year. In contrast, 9 percent of male wage/salary workers experience growth of \$3000 or more per year, and 5 percent experience losses of \$3000 or more per year. Some caution, however, is warranted in making the comparison because the estimated percentages are based on fixed-effects estimates in which the average *t*-statistic is 0.3.

The results presented here provide evidence that, for at least some less-educated youths, business ownership provides a route for economic advancement. Of course, we cannot determine whether business ownership provides more mobility for the randomly chosen less-educated youth. These

results also do not support the conclusion that self-employment is a “better” option than wage/salary work for *all* less-educated youths. This finding, however, is important in light of the relatively small potential for rapid earnings growth among less-educated wage/salary workers and the declining wage prospects for this group relative to their college-educated counterparts. 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 sizable 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 less-educated youths.

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