Drug Dealing and Legitimate Self-Employment

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Theoretical models of self-employment posit that attitudes toward risk, entrepreneurial ability, and preferences for autonomy are central to the individual's decision between self-employment and wage/salary work. I provide indirect evidence on this hypothesis by examining the relationship between drug dealing as a youth and legitimate self-employment in later years using data from the National Longitudinal Survey of Youth. I find that drug dealers are 11%–21% more likely to choose self-employment than non-drug-dealers, all else equal. After ruling out a few alternative explanations, I interpret these results as providing indirect evidence supporting the hypothesis.

I. Introduction

The literature on self-employment has grown rapidly in the past few years. Prior to this recent interest, research in labor economics has focused almost exclusively on wage and salary workers. The omission of the self-employed in these studies, however, has become less innocuous over time. After a long period of decline earlier this century the percent of the workforce that is self-employed has risen dramatically in recent decades,

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especially among women.[1] Data from the 1997 Current Population Survey (CPS) indicate that 11.5% of all working men and 6.5% of all working women are self-employed.

Interest in self-employment has also been spurred by arguments that small businesses create a disproportionate share of new jobs in the economy, represent an important source of innovation, and have a notable effect on political decisions in the United States (e.g., see Glazer and Moynihan 1970; Birch 1979; and Brown, Hamilton, and Medoff 1990). In addition, many academicians and policy makers view self-employment as a route out of poverty and as an alternative to unemployment or discrimination in the labor market (see Glazer and Moynihan 1970; Light 1972, 1979; Sowell 1981; and Moore 1983). Several states and the federal government are currently promoting self-employment as a way to leave the welfare and unemployment insurance rolls (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). There also exist a plethora of governmental and private programs promoting self-employment among minorities, women, the disabled, and other disadvantaged groups (see Balkin [1989], Bates [1993], and Severens and Kays [1999] for descriptions of various programs). Finally, the self-employed earn more on average than wage and salary workers (see Borjas 1999).

A few patterns are beginning to emerge in the young and expanding literature on self-employment. The empirical studies in this literature 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 Aronson [1991] for an earlier review of this literature, and see Hout and Rosen [2000], Blanchflower and Oswald [1998*b*], Dunn and Holtz-Eakin [2000], and Fairlie [1999*a*] for a few recent examples). In contrast, most theoretical research emphasizes the importance of unobservable factors, such as attitudes toward risk, entrepreneurial ability, and preferences for autonomy, in the decision between self-employment and wage/salary work. Partly drawing on Frank Knight's (1921) classic work, Kihlstrom and Laffont (1979) and Rees and Shah (1986) posit that less risk averse individuals are more likely to choose self-employment, whereas Lucas (1978), Jovanovic (1982), Blau (1987), Evans and Jovanovic (1989), Holtz-Eakin, Joulfaian, and Rosen (1994*b*), and Dunn and Holtz-Eakin (2000) create theoretical models in which entrepreneurial or managerial ability is a key determinant of self-employment. In addition, models by Rees and Shah (1986) and Blanchflower

[1] The white male self-employment rate declined from 16.0% in 1910 to 10.0% in 1970 before rising to 11.4% by 1990 (Fairlie and Meyer 2000). The female self-employment rate rose by 68% from 1975 to 1990 (Devine 1994).

and Oswald (1998*b*) take into account "the flexibility associated with hours worked and the independence entailed" (Rees and Shah 1986, p. 97) and "the nonpecuniary utility from being independent and one's own boss" (Blanchflower and Oswald 1998*b*, p. 31) from self-employment, respectively.

Perhaps not surprisingly, there exists very little empirical evidence on the importance of these unobservable characteristics in the self-employment decision. In particular, we do not know whether attitudes toward risk, entrepreneurial ability, and preferences for autonomy play a major role, or only a minor role, relative to those of human capital, assets, and opportunities in the wage/salary sector in determining who is self-employed. The answer to this question will not only improve our understanding of the determinants of self-employment, but may provide insights into the design of government policies to promote small business formation and growth. Currently, the focus of most governmental programs is on providing financial, technical, and management assistance. These policies generally attempt to remove the barriers to entry and survival associated with lack of access to capital, markets, and business knowledge for certain groups of the population. It may be equally important, however, for governmental programs promoting small business to specifically target individuals or groups of the population that are likely to possess these unobserved entrepreneurial characteristics.[2]

In this article, I take an indirect approach in examining whether attitudes toward risk, entrepreneurial ability, and preferences for autonomy are important determinants of self-employment as posited by the theoretical models. Based on findings from the criminology literature, I use past drug dealing as a proxy for these entrepreneurial characteristics. The nature of drug dealing makes it likely to be attractive to individuals who are less risk averse, have more entrepreneurial ability, and have a preference for autonomy, all else equal. A review of past ethnographic studies provides evidence that drug dealers possess especially high levels of these characteristics. This group is also unlikely to possess other unmeasurable characteristics that are positively associated with self-employment, which suggests that drug dealing may represent a useful proxy for entrepreneurial characteristics. The relationship between drug dealing and legitimate self-employment, however, has not been examined in the literature.[3]

To explore this relationship, I use data from the National Longitudinal Survey of Youth (NLSY). The 1980 wave of the NLSY contained a special

[2] For example, programs to promote self-employment among disadvantaged youths and ex-convicts may be successful (Myers 1989; Light and Rosenstein 1995).

[3] I use the term "self-employment" to refer to only legitimate forms of self-employment in the remainder of the article.

section on participation in illegal activities, including questions on selling marijuana and other "hard" drugs. The answers to these questions and data from subsequent years of the NLSY allow me to examine the relationship between drug dealing as a youth and legitimate self-employment in later years. I find that drug dealing has a large, positive, and statistically significant effect on the probability of self-employment. I also find that drug dealers who sold more frequently, used drugs less frequently, or reported receiving income from drug dealing are more likely to choose self-employment than other drug dealers. In addition, my estimates indicate that the positive effect is not simply due to respondents reporting drug dealing as a self-employed job activity, drug dealing leading to blocked wage/salary opportunities, or drug dealers accumulating assets to start businesses. I interpret these results as providing evidence that drug dealers possess unobserved characteristics, such as low levels of risk aversion, high levels of entrepreneurial ability, and a preference for autonomy, that are positively associated with future self-employment, thus providing indirect evidence that these entrepreneurial characteristics are important determinants of self-employment.

Before proceeding, however, it is important to note two important limitations of the following analysis. First, the use of drug dealing as a proxy for entrepreneurial characteristics is problematic for individuals who do not sell drugs for reasons unrelated to risk aversion, entrepreneurial ability, and preferences for autonomy (e.g., those who object for moral reasons). This suggests that the difference between the average probability of self-employment among former drug dealers and the average probability among non-drug-dealers may understate the effect of entrepreneurial characteristics on self-employment. Second, although drug dealing may serve as a proxy for attitudes toward risk, entrepreneurial ability, and preferences for autonomy, it does not provide a method of identifying the independent contributions of these three factors to the self-employment decision.[4] At best, this study should be viewed as the first attempt in the literature to determine whether these entrepreneurial characteristics have a combined effect on self-employment after controlling for the effects of human and financial capital, and other measurable characteristics. More research, possibly using data from new survey designs, is needed before we can fully test the theory.

II. The Nature of Drug Dealing: A Review of the Criminology Literature

I first need to establish that drug dealing is likely to proxy for low risk aversion, entrepreneurial ability, and a preference for autonomy. The crim-

[4] Another potential criticism is that, at best, the measure of drug dealing used in this analysis only represents a proxy for the permanent components of these entrepreneurial characteristics.

inology literature may provide help on this issue. In particular, a review of the findings from ethnographic studies of drug dealing may shed light on the nature of this illegal activity and on the characteristics of the individuals who are attracted to it. As noted above, the measure of drug dealing used in this study is only available in 1980. Therefore, I focus on the findings from studies conducted prior to the advent of the crack epidemic in the mid-1980s.

Ethnographic studies of drug dealers indicate that it is an extremely risky activity. In his study of young marijuana sellers in San Francisco, Fields (1986) provides evidence of several types of risks faced by these dealers, including risks associated with criminal prosecution and physical harm from being robbed. These dealers also faced substantial risks in terms of lost profits from having their merchandise confiscated by the police (sometimes due to community informants) or stolen by muggers, "sneak thieves," and potential customers who "burn" them. A reading of other ethnographic studies from roughly the same period of time indicates that these risks were common to drug dealers in other cities, at higher levels of distribution, and for those who sold harder drugs (see Moore 1977; Adler 1985; Sullivan 1989; and Jankowski 1991, for example).[5] Studies using more recent data point to similar legal, financial, and physical risks of drug dealing.[6] The risks associated with drug dealing are great, and thus we expect that individuals who have low levels of risk aversion will be drawn to it, all else equal.

Another characteristic that is likely to be an important determinant of drug dealing is the individual's level of entrepreneurial ability or business acumen. Success or failure among the upper-level drug dealers and smugglers studied by Adler (1985) was partly determined by their "entrepreneurial business skills." The skills needed included "business sense," which she states "more closely resembles common sense, especially the instinct which fosters a good eye for profit and the capacity to wheel and deal" (p. 105). Entrepreneurial ability is also important for the marijuana-selling youths studied in Fields (1986) and Sullivan (1989). For example, one youth in Sullivan's (1989) study had a marketing strategy in which he sold at different locations during different times of the day designed to

[5] Adler (1985) notes extensive drug use as another risk faced by cocaine dealers (p. 89).

[6] For example, in their study of drug dealing in Washington, DC, Reuter, MacCoun, and Murphy (1990) list as risks the following: "arrest, possibly leading to conviction and incarceration; loss of the gains from their criminal activity, as a result of law-enforcement actions or theft by competitors, suppliers, customers, or deceptive collaborators; and injury or death caused by these other market participants" (p. 20). They note that attitudes toward risk are very important in determining who participates in drug dealing.

"maximize his clientele while minimizing his exposure to arrest and competition" (p. 169).

It may be useful to think of entrepreneurial ability as a vector of different types of ability, which includes marketing, managerial, and technical abilities, along with others. Successful drug dealers may not possess all possible types of entrepreneurial ability, but are likely to possess many of them.

The independent nature of drug dealing suggests that it also attracts individuals who have a preference for autonomy. For example, in comparing legitimate work to drug dealing, Adler (1985) notes that "dealing was accomplished during discretionary, or recreational, hours and settings" (p. 126). Although corresponding to a period after the beginning of the crack crisis (1988), the study of drug dealers on probation in Washington, DC, by Reuter, MacCoun, and Murphy (1990) provides additional evidence. They find that only 6% of their sample of drug dealers who sold marijuana were employed by someone else.[7]

To conclude, the ethnographic literature provides evidence that drug dealing is a very risky activity, requires entrepreneurial ability, and offers much autonomy and is thus likely to attract individuals who possess especially high levels of these entrepreneurial characteristics. Furthermore, the review of the literature on drug dealing does not reveal any other obvious unmeasurable characteristics that are likely to have a positive effect on self-employment. These two findings suggest that drug dealing may provide a useful proxy for entrepreneurial characteristics in the following empirical analyses.

III. Data

I use data from the NLSY, a nationally representative sample of 12,686 men and women who were between the ages of 14 and 22 when they were first interviewed in 1979 (see Center for Human Resource Research [1997] for additional details on the NLSY sample). Survey members were interviewed annually from 1979 to 1994 and in 1996. 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.

The 1980 wave of the NLSY includes a special set of questions on participation in delinquent or criminal activities. Along with other questions on illegal activities, respondents were asked how many times they

[7] They also report that the percentages of dealers who sold crack, cocaine, PCP, and heroin were 21%, 24%, 17%, and 38%, respectively. This is consistent with drug-selling organizations being mainly temporary and decentralized economic arrangements (Fagan 1992).

sold marijuana or hashish and how many times they sold hard drugs, such as heroin, cocaine, or LSD in the previous year. Prior to being asked to answer these questions, respondents were told, "I want to remind you that all of your answers are confidential. Your answers will not be seen by anyone but our trained survey staff" (National Opinion Research Center 1980, p. 154). They were given a special form on which to answer the questions on illegal activities and were told to place this form in an envelope also provided by the interviewer. They were then asked to seal the envelopes and return them to the interviewer. Respondents were also told that this process was to insure that "no one who knows you will see any of your answers" and that they were "doing this so that everyone in the study can answer these questions honestly." Finally, they were told that the sealed envelope "will not be opened until it gets back to the staff in Chicago."

Partly due to these assurances of confidentiality, response rates for the two drug-selling questions were very high. Only 3.3% and 3.1% of respondents failed to provide an answer to the questions on selling marijuana and selling hard drugs, respectively. Although response rates were high, some underreporting of selling activity may have occurred. Previous research, however, finds that self-reports of criminal activity are generally reliable. Hindelang, Hirshi, and Weiss (1981) compare police records on arrests to self-reports for a sample of individuals and find these to be similar, with the exception of self-reports for young black men, which appear to understate the amount of crime committed.

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.[8] In most of the analyses below, I remove observations for which individuals report being enrolled in high school or college, or report working fewer than 300 hours in the previous calendar year. The hours restriction is imposed to rule out very-small-scale business activities. I also exclude women and observations from 1979 and 1980. As shown below, drug dealing is not common among young women. These restrictions and the removal of missing observations for key analysis variables create a sample of 4,924 employed young men who have an average of 9.5 years of data.

[8] 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).

Table 1
Number of Times Sold Marijuana and Hard Drugs in 1980 NLSY

	Percentage of Young Adults	
Times Sold	Men	Women
Marijuana or hashish:		
0	84.1	92.7
1	3.3	2.4
2	2.5	1.2
3–5	3.4	1.6
6–10	2.5	1.0
11–50	2.1	.8
51 or more	2.0	.4
Sample size	5,124	5,460
Hard drugs (heroine, cocaine, or LSD):		
0	96.6	98.5
1	.8	.6
2	.8	.3
3–5	.5	.1
6–10	.6	.2
11–50	.2	.3
51 or more	.6	.0
Sample size	5,138	5,468

NOTE.—The sample consists of young men and women who were interviewed in 1980. All percentages are calculated using sample weights provided by the National Longitudinal Survey of Youth (NLSY).

IV. Who Sells Drugs?

Estimates from the NLSY indicate that a large number of youths sold drugs in 1980. Table 1 reports the percentage of young adults who sold marijuana and hard drugs by number of times in 1980. The reported categories for the number of times sold drugs are those available on the NLSY questionnaire. In 1980, 15.9% of young men and 7.3% of young women sold marijuana or hashish at least once in 1980. Fewer young men and women reported selling marijuana more frequently, but at least for men, a substantial number of young men reported selling drugs on a regular basis. For example, 6.7% of young men sold marijuana at least six times in 1980. In comparison, 2.2% of young women sold marijuana at least six times in 1980.

As expected, young men and women were much less likely to report selling hard drugs, such as heroin, cocaine, and LSD. The estimates indicate that 3.4% of young men and 1.5% of young women sold hard drugs at least once in 1980. In addition, 1.4% of young men and 0.5% of young women sold hard drugs six or more times. Individuals who sold hard drugs were also very likely to sell marijuana. Of those selling hard drugs, more than 75% also sold marijuana.

In the following analyses, I define drug dealers as those individuals

Table 2
Characteristics of Male Drug Dealers in 1980 NLSY

	Percentage or Mean Value for Young Men	
	Drug Dealers	Non-Drug-Dealers
Age (mean)	18.84	18.66
Race:		
White (%)	87.1	80.0
Black (%)	10.1	13.5
Hispanic (%)	2.8	6.5
Education:		
Not enrolled, high school dropout (%)	25.7	12.1
Enrolled in high school (%)	29.8	39.7
Enrolled in college (%)	11.3	18.2
Not enrolled, high school graduate (%)	33.2	30.0
Region:		
North (%)	19.4	21.0
Midwest (%)	30.2	31.2
South (%)	26.2	31.8
West (%)	24.2	16.0
Urban (%)	83.1	78.0
Self-employment rate (%)	3.9	.2

NOTE.—The sample consists of young men who were interviewed in 1980. Drug dealers are individuals who report selling drugs six or more times in 1980. All percentages are calculated using sample weights provided by the (NLSY).

who reported selling marijuana or hard drugs at least six times in 1980.[9] Perhaps it would be preferable to define drug dealers as those who sold more frequently; however, this restriction would result in a substantial loss in the sample size of drug dealers. For example, defining drug dealers as individuals who sell drugs 11 or more times reduces the sample of dealers by nearly 40%. Nevertheless, in the next section I estimate regression models using alternative definitions of drug dealing and compare results.

Using selling six or more times as my definition of drug dealing, I examine the characteristics of drug dealers and compare these characteristics to those of non-drug-dealers. Here and in the remainder of the article, I exclude young women from the analysis due to their low rates of drug dealing. Table 2 reports average values and distributions for various demographic characteristics of young male drug dealers and non-drug-dealers. Drug dealers were primarily white, non-Hispanic. Only 2.8% and 10.1% of male drug dealers were Hispanic and black, respectively. In comparison, Hispanics and blacks represented 6.5% and 13.5% of male non-drug-dealers.

[9] This definition also includes individuals who sold one type of drug (marijuana or hard drugs) three to five times and the other type of drug two or three to five times.

The average age of drug dealers was similar to that of non-drug-dealers. Although not reported, I also find very similar age distributions for the two groups.[10] A major difference between the two groups, however, was their school enrollment and educational attainment status. Drug dealers were more likely to have dropped out of high school and were less likely to be currently enrolled in high school or college than non-drug-dealers. Apparently, drug dealing was much more prevalent among young men not enrolled in school than among young men enrolled in school. Drug dealers had a similar regional distribution, but were somewhat more likely to live in urban areas than non-drug-dealers. Finally, the self-employment rate was much lower among drug dealers than among non-drug-dealers. I return to this issue in Section VI.

V. Estimating the Relationship between Drug Dealing and Self-Employment

Are young drug dealers more likely to be self-employed in later years? The answer to this question may provide some indirect evidence on whether attitudes toward risk, entrepreneurial ability, and preferences for autonomy are important determinants of self-employment. To examine this question, I specify and estimate a reduced form equation for self-employment. The underlying equation determining self-employment in time t for individual i is

$$S_{it}^{*} = Z_{it}'\gamma + \delta D_i + \lambda_t + \epsilon_{it}, \tag{1}$$

where S_{it}^{*} is an unobservable latent variable, Z_{it} is a vector of time-varying and static individual-level characteristics, D_i is a dummy variable for whether the individual sold drugs in 1980, λ_t is a fixed effect for survey year t, and ϵ_{it} is the disturbance term.[11] Only the dichotomous variable, S_{it}, is observed, however. It equals one if $S_{it}^{*} \geq 0$ (denoting self-employment) and equals zero otherwise (denoting wage/salary work), implying the use of a discrete choice model.

The use of the NLSY panel implies that the disturbance term, ϵ_{it}, has two components, μ_i and v_{it}. In this two-component error term, μ_i represents the individual-specific component and is included to capture unobservable characteristics of the individual that affect the self-employment probability. Making the assumption that μ_i and v_{it} are normally distributed independently and identically distributed random variables and $\text{corr}[\epsilon_{it}, \epsilon_{is}] = \sigma_\mu^2/(1 + \sigma_\mu^2)$, the appropriate model for estimation is the random effects

[10] The one exception is that only 5.1% of drug dealers were 15 years of age, compared to 10.1% of non-drug-dealers. This is the youngest possible age for the NLSY cohort in 1980.

[11] The λ_t are included to capture the effects of macroeconomic fluctuations and the interest rate.

Table 3
Probit Regressions for Probability of Self-Employment: NLSY (1981–96)

	Specification				
	(1)	(2)	(3)	(4)	(5)
Age	.0556	.0596	.0601	.0482	.0547
	(.0100)	(.0100)	(.0099)	(.0105)	(.0103)
Black	−.4856	−.5378	−.5404	−.4892	−.4148
	(.0629)	(.0630)	(.0635)	(.0655)	(.0643)
Hispanic	−.4609	−.4739	−.4676	−.4332	−.4600
	(.0745)	(.0735)	(.0731)	(.0758)	(.0762)
Low-income white sample	−.0517	−.0880	−.0898	−.0021	−.0002
	(.0831)	(.0830)	(.0830)	(.0931)	(.0836)
Born abroad	.1312	.0937	.0708	.1472	.1298
	(.0929)	(.0925)	(.0930)	(.0962)	(.0957)
12 years of school	−.3111	−.2839	−.2712	−.2839	−.2910
	(.0486)	(.0481)	(.0481)	(.0500)	(.0498)
13–15 years of school	−.3125	−.3417	−.2979	−.2497	−.2892
	(.0628)	(.0633)	(.0629)	(.0645)	(.0640)
16+ years of school	−.4478	−.4749	−.4413	−.3726	−.4199
	(.0704)	(.0697)	(.0692)	(.0720)	(.0722)
Drug dealer who sold drugs 6+ times	.4169			.2049	−.2229
	(.0802)			(.1073)	(.2240)
Drug dealer who sold drugs 11+ times		.4793			
		(.0973)			
Drug dealer who sold drugs 51+ times			.7127		
			(.1359)		
Drug dealer who does not use more than sells				.5935	
				(.1730)	
Drug dealer who reports illegal income					.6382
					(.2508)
Drug dealer who reports one quarter or more illegal income					.1962
Mean of dependent variable	.0694	.0694	.0694	.0699	.0693
Average derivative adjustment factor	.0200	.0203	.0201	.0196	.0198
Sample size	46,894	46,885	46,885	45,107	45,485
Log likelihood	−8,336.28	−8,335.80	−8,332.42	−8,039.47	−8,098.01

NOTE.—NLSY = National Longitudinal Survey of Youth. The sample consists of young men who worked at least 300 hours in the survey year. All specifications are estimated using a random effects probit (see text for more details). Standard errors are reported in parentheses. All specifications include a constant, number of children, and dummy variables for marital status, region, urbanicity, county unemployment rates, and year of survey. The average derivative is equal to the adjustment factor multiplied by the coefficient (see text for more details).

probit model. Although the normality assumption should only be taken as an approximation, the probit model provides a useful descriptive model for the binary event that a person is self-employed. I follow the approach taken in Butler and Moffitt (1982) and use Gaussian quadrature to evaluate the integrals in the likelihood function for the random effects probit. The number of evaluation points in the Hermite integration formula is set to 20. The results presented below are not sensitive to using fewer evaluation points.

Table 3 reports results from several random effects probit regressions for a sample of young male workers for the years 1981–96. In all probit regressions the dependent variable equals one if the individual is self-employed and zero if the individual is a wage/salary worker. All reported specifications include controls for age, race, years of education, marital

status, number of children, urban residence, region, local unemployment rates, and year of survey (means are reported for most variables in the appendix). These independent variables have been included in most previous empirical studies of self-employment and should remove a substantial amount of the heterogeneity in the sample.

I first discuss the main results (reported in specification 1). Most of the coefficients on the independent variables have the expected sign. Similar to previous studies I find that being black or Hispanic has a large negative effect on the probability of self-employment (see Fairlie and Meyer 1996, for example). The coefficient for the supplemental low-income white sample (actually non-black, non-Hispanic) is negative, but statistically insignificant. The left-out category is the representative sample of non-black, non-Hispanic young men. The coefficient on having been born outside the United States is positive, but statistically insignificant. I find a negative relationship between self-employment and educational attainment, although most of it is due to the lower probability for high school graduates relative to high school dropouts.[12] Previous studies generally find a positive relationship between self-employment and educational attainment among workers of all ages. These studies, however, do not focus on a younger cohort of workers for which the relationship appears to differ. Using microdata from the 1981–96 CPSs for individuals of the same age as the NLSY cohort, I find an inverted U-shaped relationship between self-employment and educational attainment.

In specification 1, I include my standard measure of drug dealing, defined as selling marijuana and/or hard drugs six or more times in 1980.[13] The coefficient on drug dealing is large, positive, and statistically significant at conventional levels. The coefficient estimate of 0.4169 implies that drug dealing increases the future probability of self-employment by 0.0083.[14] The effect is substantial as the average probability of self-employment in the sample is 0.0694. Young drug dealers appear to be more likely to choose self-employment in later years than non-drug-dealers, all else equal.

The estimated effect of drug dealing on the probability of self-em-

[12] In a specification in which I include the number of years of school, I also find a negative and statistically significant coefficient estimate.

[13] The inclusion of this variable does not notably affect the coefficients on the controls.

[14] This derivative estimate is calculated by multiplying the coefficient estimate by the average derivative adjustment factor reported at the bottom of table 3. The average derivative adjustment factor is $\Sigma\beta k(Xit\prime\beta)/NT$, where β_k is the coefficient on drug dealing, ϕ is the normal probability density function, X_{it} includes all independent variables, and NT is the total number of observations. The effect of a one unit increase in any of the independent variables can be estimated by multiplying the coefficient on that variable by the average derivative adjustment factor.

ployment may be sensitive to the number of drugs sold.[15] In specification 2, I define drug dealing as selling marijuana and/or hard drugs 11 or more times. This alternative definition of drug dealing may exclude some young men who were selling drugs only casually. This group of casual sellers may be less likely to possess the entrepreneurial characteristics that are hypothesized to increase the probability of self-employment. Using the stricter definition of drug dealing, the coefficient estimate is 0.4793, which is slightly larger than the original coefficient estimate. Although the standard error has risen, the coefficient estimate remains highly significant. Using an even stricter definition of drug dealing results in a further rise in the coefficient estimate. In specification 3, I define drug dealing as selling drugs 51 or more times in 1980. The coefficient estimate is highly significant and now implies that being a young drug dealer increases the future probability of self-employment by 0.0143, representing 20.6% of the sample mean.

The coefficient estimates reported in specifications 1–3 provide evidence that drug dealers are more likely to be self-employed in later years than non-drug-dealers. Not to be overlooked, however, is that the increase in coefficient estimates using stricter definitions of drug dealing is also consistent with the hypothesis that attitudes toward risk, entrepreneurial ability, and preferences for autonomy are important determinants of self-employment. It is likely that young men who sold drugs on a very regular basis, such as 51 or more times in a year, are likely to possess higher levels of these entrepreneurial characteristics than young men who sold less frequently.

Drug Use

Although drug use was prevalent among young men, it was ubiquitous among young male drug dealers. Data from the NLSY indicate that 99.5% of drug dealers used marijuana or hard drugs at least once in 1980 compared to 48.9% of non-drug-dealers. Furthermore, drug dealers are not simply occasional users, as nearly 87.6% used drugs 51 or more times. These results are consistent with the findings of previous studies. For

[15] The potential risks and returns to selling marijuana and hashish vs. selling hard drugs, such as cocaine, heroin, and LSD, are likely to differ markedly. Thus, the effects of these two types of drug dealing on self-employment may differ. I estimate a probit regression that includes dummy variables indicating whether the individual sold marijuana six or more times, but did not sell hard drugs; whether the individual sold hard drugs six or more times; and whether the individual sold both types of drugs, but neither type six or more times. The coefficient estimates on the first two types of drug dealers are large, positive, statistically significant, and similar in magnitude. The coefficient estimate on the third type is statistically insignificant (this group, however, represents less than 4% of all drug dealers). See Fairlie (1999*b*) for more details.

example, Reuter, MacCoun, and Murphy (1990) find that their sample of drug dealers in Washington, DC, spent an average of one-fourth of their earnings on drugs.

The drug use variables available in the NLSY may provide additional evidence on whether the finding of a positive coefficient on drug dealing is consistent with the story that entrepreneurial characteristics are important determinants of self-employment. In particular, we expect that some drug dealers who used drugs frequently were originally attracted to drug dealing because it provided access to less expensive and possibly higher-quality drugs. This group of drug dealers may not possess the same level of entrepreneurial characteristics as that of drug dealers who only occasionally used drugs. Therefore, we should find a lower future probability of self-employment among drug dealers who were heavy users than among drug dealers who were only occasional users.

To test this hypothesis, I create a dummy variable for drug dealers who reported using drugs the same or fewer times than the number of times they reported selling drugs. Estimates for this measure are reported in specification 4 of table 3. The coefficient on this variable is positive and statistically significant, suggesting that drug dealers who used drugs infrequently are more likely to be self-employed than are other drug dealers. This finding provides further evidence that the positive coefficient on drug dealing captures the effect of entrepreneurial characteristics on self-employment and is not due to a spurious correlation.

Illegal Income

Another method of measuring the seriousness of drug dealers is to examine whether they reported receiving income from selling drugs. Drug dealers who sold drugs to support, or at least partly support, themselves may possess higher levels of entrepreneurial characteristics than more casual drug dealers. Although the NLSY does not include a measure of drug-dealing income, respondents were asked how much of their total income or support in 1980 came from all illegal activities.

In specification 5 of table 3, I report estimates from a probit regression that includes interactions between the responses to this variable and the drug-dealing variable. I include a dummy variable indicating whether the drug dealer reported receiving any income from illegal activities and an additional dummy variable indicating whether the drug dealer reported receiving at least one quarter of his total support from illegal activities. Slightly more than 75% of the sample of drug dealers reported receiving at least some income from illegal activities, with 32% reporting that this income represented at least one quarter of their total support. Interestingly, the coefficient on drug dealing is no longer positive and statistically significant, suggesting that drug dealers who reported receiving no illegal

income are not more likely to choose self-employment than non-drug-dealers. The large positive and statistically significant coefficient on the first interaction variable implies that drug dealers who reported illegal income have a higher probability of choosing self-employment than drug dealers who did not report illegal income. There is also a positive coefficient on the second interaction variable; however, it is statistically insignificant. Overall, these results provide additional evidence that suggests that entrepreneurial characteristics are important determinants of self-employment.

Additional Estimates

I estimate several additional probit regressions to examine the sensitivity of the main results. More details are provided in Fairlie (1999*b*). Although the probit regressions discussed above include a large number of individual characteristics that effect the probability of self-employment, they do not include two potentially important characteristics of the individual's parents. Several recent studies have shown that the probability of self-employment is substantially higher among the children of the self-employed (see Lentz and Laband 1990; Lindh and Ohlsson 1996; Blanchflower and Oswald 1998*b*; Fairlie 1999*a*; Dunn and Holtz-Eakin 2000; and Hout and Rosen 2000). In addition, Dunn and Holtz-Eakin (2000) find that parental wealth has a weak positive effect on the probability of a transition into self-employment, possibly due to parental wealth improving the individual's access to start-up capital. Unfortunately, the NLSY does not provide information on whether the individual's parents are self-employed nor does it provide a measure of parental wealth. Instead, I use dummy variables for parental occupations and education levels as proxies for parental self-employment and wealth. The inclusion of these parental controls results in a slight increase in the size of the coefficient on drug dealing.

Previous studies find that Armed Forces Qualification Test (AFQT) scores have a large positive effect on earnings (see Neal and Johnson 1996 for a recent example). The general argument is that AFQT scores represent a measure of basic skills that help predict job performance. Youths who have low levels of these basic skills may have limited opportunities in the wage/salary sector possibly leading to higher probabilities of both drug dealing as a youth and self-employment in later years. To examine this issue further, I estimate a probit regression in which the AFQT score is included as an additional independent variable.[16] The coefficient on the AFQT score is positive, but not statistically significant and implies a small effect on the probability of self-employment. More important, the co-

[16] The included AFQT score is the residual in a linear regression of actual AFQT scores on dummy variables for each possible birth year.

efficient on drug dealing remains positive, statistically significant, and similar in magnitude to the main estimate. In addition to these results, drug dealers and non-drug-dealers have very similar average AFQT scores. These results suggest that the positive correlation between drug dealing as a youth and future probabilities of self-employment is not due to drug dealers possessing lower levels of basic job skills (as measured by AFQT scores).

Finally, I estimate a probit regression that includes only full-time, full-year workers (defined as 1,400 hours in the past year). This sample restriction results in a loss of slightly more than 15% of the total sample size, but has little effect on the drug-dealing coefficient. The coefficient estimate is 0.4355 with a standard error of 0.0922. Therefore, the results are not sensitive to the inclusion of part-time or part-year workers. In addition, this finding suggests that drug dealers are not choosing types of self-employment that may represent underemployment or "disguised unemployment" (Lebergott 1964; Carter and Sutch 1994). In fact, a slightly higher percentage of drug dealers than non-drug-dealers in the original sample work at least 1,400 hours.

VI. Alternative Explanations

An important question remains: Is the large, positive, and statistically significant coefficient estimate on drug dealing capturing the effects of the unobservable characteristics of drug dealers, such as low levels of risk aversion, high levels of entrepreneurial ability, and preferences for autonomy, or is it capturing something else? I investigate a few alternative explanations below.

Are Drug Dealers Reporting Selling Drugs as a Self-Employed Job Activity?

The simplest explanation for the positive coefficient estimate is that individuals who reported selling drugs in 1980 continue to sell drugs in later years and report this activity as a self-employed job. I argue that this is unlikely. A careful inspection of the questionnaire and interviewer's instruction guide reveals that it would be difficult to report an income-producing illegal activity as a job activity. National Longitudinal Survey of Youth sample members are asked a large number of detailed questions, such as industry, occupation, class of worker, hours, and earnings, for each job held during the survey year. Respondents are also asked to report on whether they held each of their current jobs in the previous survey year and are asked the reason they left any job during the survey year. Finally, they are asked to report their employer's name if employed by someone else or the name of their business if self-employed. Given the large number of detailed questions for each job activity and the difficulty

Table 4
Responses to 1980 Class-of-Worker Question: NLSY

	Drug Dealers		Non-Drug-Dealers	
Class-of-Worker Question	Percentage	*N*	Percentage	*N*
Employee of private company	47.4	157	46.0	2,203
Government employee	7.3	24	5.8	278
Self-employed in own business, professional practice, or farm	1.2	4	1.8	86
Working without pay in family business or farm	.3	1	.7	33
Did not have a job	43.8	145	45.7	2,185

NOTE.—NLSY = National Longitudinal Study of Youth. The sample consists of young men who were interviewed in 1980.

of inventing a consistent and reasonable set of job characteristics for drug dealing, respondents are likely to avoid reporting this activity to the interviewer.

An examination of reported job activities in 1980, the year of reference for the illegal activity questions, provides additional evidence that respondents do not report drug dealing as a job activity. As presented in table 2, drug dealers have lower self-employment rates than non-drug dealers. To further investigate this issue, I report more detailed responses to the 1980 class-of-worker question for young male drug dealers and non-drug-dealers in table 4. The class-of-worker question is used to identify whether the respondent is self-employed. Only four out of the 331 young male drug dealers reported a self-employed job on the class-of-worker question. In fact, a higher percentage of non-drug-dealers reported self-employment on the class-of-worker question than drug dealers (1.8% compared to 1.2%). Furthermore, none of the drug dealers or non-drug-dealers refused to answer or provided a don't know response to the question in 1980.

These results indicate that only a few of the individuals who reported selling drugs frequently in 1980 also reported being self-employed in 1980. There is always the possibility, however, that some individuals continued to sell drugs and changed their reporting behavior in subsequent years. Therefore, as a final check, I examine the industry distributions of drug dealers and non-drug-dealers who report being self-employed in the period 1981–96.[17] As shown in table 5, the top four industries for self-employed drug dealers are construction (37.8%), business and repair services (21.3%), horticultural services and agriculture (12.5%), and trade (9.2%). These are also the top four industries for non-drug-dealers, al-

[17] Only five self-employed workers had missing values for industry. These observations were all for non-drug-dealers.

Table 5
Industry Distribution of Self-Employed Male Drug Dealers and Non-Drug-Dealers: NLSY (1981–96)

	Percentage of Self-Employed Young Men	
Industry	Drug Dealers	Non-Drug-Dealers
Horticulture services and agriculture	12.5	14.3
Construction	37.7	25.4
Manufacturing	3.3	5.9
Transportation, communication, and public utilities	4.8	5.2
Wholesale and retail trade	9.2	11.9
Finance, insurance, and real estate	1.5	2.7
Business and repair services	21.3	17.7
Personal services	5.5	5.9
Entertainment and recreation services	1.5	3.6
Professional and related services	2.9	6.8
Other	.0	.6
Sample size	273	3,103

NOTE.—NLSY = National Longitudinal Study of Youth. The sample consists of young men who were self-employed and worked at least 300 hours in the survey year.

though a much smaller fraction are in construction (25.3%).[18] Overall, self-employed drug dealers appear to report similar industries as those reported by non-drug-dealers, which suggests that they are not simply reporting drug dealing as a self-employed job activity. Furthermore, the similarity in industry distributions provides additional evidence that the businesses owned by young drug dealers are not substantially different than those owned by young non-drug-dealers.[19]

Incarceration and Limited Wage/Salary Opportunities

The estimated positive relationship between drug dealing and self-employment may be the result of limited employment opportunities or reduced potential wages in the wage/salary sector for this group. This may occur if drug dealers are more likely than non-drug-dealers to experience current or future encounters with the criminal justice system, such as arrests, convictions, or incarceration, and if these encounters result in reduced opportunities in the wage/salary sector. Past research indicates that incarceration and probation have large and long-term negative effects on employment probabilities (see Freeman 1994 for a review). In addition, several recent studies generally find that convictions and incarcerations

[18] As a sensitivity check, I estimate a probit regression that excludes workers from the construction industry. The coefficient on drug dealing is somewhat smaller (0.2902), but remains large, positive, and statistically significant.

[19] I also find that self-employed drug dealers report a similar average level of earnings as self-employed non-drug-dealers.

have a negative effect on current and future earnings (see Lott 1990; Nagin and Waldfogel 1993; Waldfogel 1994; and Grogger 1995, for example). In contrast to these findings, an ex-offender who chooses self-employment does not face discrimination, either pure or statistical, by employers in the labor market.[20] The resulting signal of low worker quality (Grogger 1992), loss of trust wage premia (Waldfogel 1994), signal of lack of honesty (Lott 1992), or shunning by employers (Freeman 1987) from criminal activity does not affect the self-employed.

Estimates from the NLSY indicate that drug dealers are much more likely than non-drug-dealers to be incarcerated during the sample period. The average annual probability of being interviewed in jail or prison for the sample of non-drug-dealers is 0.0197. The average probability for drug dealers is nearly three times higher (0.0535). Evidently, drug dealing in 1980 and future incarceration are highly correlated.

The findings from the literature on the earnings costs of incarceration and this comparison of incarceration probabilities suggest that the coefficient on drug dealing may capture the effect of incarceration on self-employment instead of the effects of entrepreneurial characteristics. To explore this issue, I estimate a probit regression for the probability of self-employment that includes a dummy variable indicating whether the individual had been previously incarcerated. I create this variable by first examining the responses to a question asked in 1980 on whether the respondent had ever been sentenced to spend time in a correctional institution, such as a jail, prison, or youth institution. I then use responses to the type of residence question from 1980 to 1994 to identify those individuals who were interviewed in jail or prison in each year. Of course, this measure will miss many short-term jail and prison sentences. Nevertheless, this variable provides a fairly accurate measure of whether the respondent had experienced a long-term incarceration prior to the current survey year.

In table 6, I report estimates from probit regressions that include a few different measures of the previously incarcerated variable. Specification 1 reports estimates from the main specification for comparison. Unfortunately, there exist a large number of years in which respondents were not interviewed, and thus I cannot determine their incarceration status. This is especially problematic because a missing interview affects all future values of the previously incarcerated variable. To address this issue, I first code missing years as zeros for the incarcerated variable. Then I include an additional dummy variable that equals one if the individual was not previously incarcerated and has missing incarceration data in a previous

[20] They may, however, face consumer or lending discrimination. See Borjas and Bronars (1989) and Blanchflower, Levine, and Zimmerman (1998) for evidence of consumer and lending discrimination against blacks, respectively.

Table 6
Probit Regressions for Probability of Self-Employment with Previous Incarceration: NLSY (1981–96)

	Specification			
	(1)	(2)	(3)	(4)
Age	.0556	.0610	.0625	.0624
	(.0100)	(.0043)	(.0047)	(.0043)
Black	−.4856	−.4995	−.6238	−.4788
	(.0629)	(.0625)	(.0693)	(.0623)
Hispanic	−.4609	−.4826	−.4694	−.4562
	(.0745)	(.0741)	(.0823)	(.0739)
Low-income white sample	−.0517	−.0833	−.0959	−.0639
	(.0831)	(.0829)	(.0875)	(.0828)
Born abroad	.1312	.1153	−.0097	.1112
	(.0929)	(.0940)	(.1075)	(.0930)
12 years of school	−.3111	−.3057	−.1986	−.3248
	(.0486)	(.0481)	(.0523)	(.0480)
13–15 years of school	−.3125	−.3158	−.2690	−.3299
	(.0628)	(.0627)	(.0689)	(.0625)
16+ years of school	−.4478	−.4514	−.3202	−.4606
	(.0704)	(.0702)	(.0737)	(.0698)
Drug dealer who sold drugs 6+ times	.4169	.3936	.3822	.4304
	(.0802)	(.0822)	(.0900)	(.0824)
Previous incarceration		.1794	.2081	
		(.0749)	(.0761)	
Number of years previously incarcerated				.0231
				(.0300)
Mean of dependent variable	.0694	.0694	.0658	.0694
Average derivative adjustment factor	.0200	.0202	.0186	.0202
Sample size	46,894	46,894	41,337	46,894
Log likelihood	−8,336.28	−8,327.84	−7,103.69	−8,332.99

NOTE.—NLSY = National Longitudinal Survey of Youth. See note to table 3. Specification 2 also includes a dummy variable for missing incarceration data in a previous year. Specification 3 removes all observations with missing incarceration data. Specification 4 also includes the number of years of missing incarceration data.

year. The inclusion of these two variables allows me to include all of the observations included in the main specification. I report the results in specification 2. The inclusion of the previously incarcerated dummy variable has little effect on the drug-dealing coefficient. The drug-dealing coefficient estimate is now 0.3936, compared to 0.4169 in the main specification. It remains highly significant.

The coefficient on previous incarceration is also of interest. It is positive and statistically significant. The coefficient estimate implies that having a previous incarceration increases the probability of self-employment by 0.0036 or 5.2%. To my knowledge, this result has not been previously

documented. It suggests that self-employment provides an important alternative to wage/salary work for at least some ex-convicts.

I also estimate a specification that includes a slightly different measure of the previous incarceration variable. In this specification, I remove all observations in which I cannot determine whether the respondent was previously incarcerated. The sample size decreases by 22%. Estimating a probit regression that does not include the incarceration variable, but uses this smaller sample, I find a coefficient on drug dealing of 0.3929. Estimates from the probit regression that includes the incarceration variable are reported in specification 3. The drug-dealing coefficient estimate is 0.3822 and remains highly significant. The coefficient on previous incarceration is also similar to that reported in specification 2. It implies that having a previous incarceration increases the probability of self-employment by 0.0039 or 5.9%.

In the final specification reported in table 6, I include the number of years in which the respondent was previously incarcerated and the number of years in which the respondent has missing information. The inclusion of these variables again has little effect on the drug-dealing coefficient, which is now 0.4304. The coefficient on the number of years incarcerated is positive, but not statistically significant.

These results indicate that the inclusion of the previously incarcerated variable has little effect on the drug-dealing coefficient. There is always the possibility, however, that drug dealing is correlated with other contacts with the criminal justice system, such as being charged, convicted, or placed on probation for a crime, and that these activities are responsible for the positive coefficient on drug dealing. Unfortunately, measures of these criminal activities are not available from 1981 to 1996. Instead, I use measures from 1980. I estimate probit regressions that include these variables (see Fairlie 1999*b* for estimates). In each specification, the coefficient on the criminal activity variable is positive and statistically significant. Furthermore, the coefficient on drug dealing remains large, positive, and statistically significant.[21] Therefore, the positive relationship between drug dealing and the probability of self-employment does not appear to be due to limited opportunities in the wage/salary sector from

[21] These results combined with the incarceration results provide evidence suggesting that the positive correlation between drug dealing and self-employment is not simply due to drug dealing proxying for a high tolerance for breaking the law. Individuals who have a high tolerance for breaking the law may be attracted to self-employment because of increased opportunities for tax evasion compared to wage/salary employment.

subsequent periods of incarceration or past contacts with the criminal justice system.[22]

Are Drug Dealers Accumulating Assets to Start Legitimate Businesses?

Another potential explanation for the positive relationship is that drug dealing may provide the means for accumulating capital to start legal businesses for some individuals. Profits obtained by drug dealers may be saved and eventually used as start-up capital for legitimate businesses. One method of testing this hypothesis is to examine whether the coefficient on drug dealing is sensitive to the inclusion of the individual's net worth in the probit regression.[23] If drug dealers are accumulating assets and liquidity constraints exist, then the coefficient on drug dealing should drop sharply. A serious problem arises, however, if net worth is included in an equation determining the probability of self-employment. This variable may be endogenous as we might expect that the self-employed are more likely to accumulate assets than wage/salary workers through operating and owning their own businesses.

To address this problem, I follow the approach taken in several recent studies of analyzing the determinants of transitions into self-employment (see Evans and Jovanovic 1989; Evans and Leighton 1989; Meyer 1990; Holtz-Eakin, Joulfaian, and Rosen 1994*a*; Fairlie 1999*a*; and Dunn and Holtz-Eakin 2000 for a few recent examples). Specifically, I condition on the individual being a wage/salary worker in year $t - 1$ and examine whether the individual becomes self-employed by year t. The results from three probit regressions for the probability of entry into self-employment are reported in table 7. The dependent variable equals one if the individual is self-employed in year t or equals zero if the individual remains a wage/salary worker. All of the independent variables, including net worth, are measured in year $t - 1$, which is prior to when the work-sector decision is made.[24] Although individuals may save in anticipation of becoming self-

[22] Another approach to exploring whether drug dealers experience limited opportunities in the wage/salary sector is to compare the wages of drug dealers to those of non-drug-dealers. Estimates from the NLSY indicate that drug dealers who choose wage/salary work earn only 1.4% less than non-drug-dealers who choose wage/salary work. Of course, this comparison does not control for individual characteristics and self-selection into wage/salary work. In log wage regressions, I find a coefficient of 0.0211 on drug dealing when I do not control for selection and a coefficient of 0.0258 when I control for selection.

[23] Data from the NLSY indicate that the average net worth of drug dealers is 11% lower than the average net worth of non-drug-dealers.

[24] This is the main advantage to analyzing transitions into self-employment. The main disadvantage, however, is that a large amount of information is lost by removing all observations in which individuals are self-employed in two or more consecutive years. Furthermore, drug dealing is measured prior to the first survey year included in the preceding analyses and is thus unlikely to be endogenous.

Table 7
Probit Regressions for Transitions into Self-Employment: NLSY (1981–96)

	Specification		
	(1)	(2)	(3)
Age	.0353	.0232	.0159
	(.0110)	(.0127)	(.0125)
Black	−.3550	−.3160	−.2774
	(.0649)	(.0760)	(.0754)
Hispanic	−.3002	−.3052	−.2730
	(.0818)	(.0958)	(.0945)
Low-income white (sample)	−.0240	−.0206	−.0061
	(.0805)	(.0999)	(.0989)
Born abroad	.1437	.2083	.1953
	(.1021)	(.1186)	(.1159)
12 years of school	−.1724	−.2191	−.2381
	(.0592)	(.0716)	(.0704)
13–15 years of school	−.1668	−.2258	−.2702
	(.0754)	(.0914)	(.0904)
16+ years of school	−.3085	−.3519	−.4405
	(.0806)	(.0947)	(.0959)
Drug dealing	.2556	.3394	.3341
	(.0922)	(.1079)	(.1060)
Net worth/100,000			.1999
			(.0435)
(Net worth/100,000)^2			−.0076
			(.0025)
Mean of dependent variable	.0299	.0300	.0300
Average derivative adjustment factor	.0259	.0211	.0228
Sample size	33,366	22,346	22,346
Log likelihood	−4,219.72	−2,844.77	−2,823.57

NOTE.—NLSY = National Longitudinal Survey of Youth. The dependent variable equals one if the individual switches from wage/salary work to self-employment. See note for table 3.

employed, a measure of net worth in year $t - 1$ should be more exogenous than a contemporaneous measure.

I first estimate the effect of drug dealing on the probability of entering self-employment without controlling for asset levels (reported in specification 1).[25] The coefficient on drug dealing is large, positive, and statistically significant. The finding of a positive coefficient on drug dealing is consistent with the positive coefficient reported in specification 2 of table 3. The coefficient estimate implies that drug dealing increases the probability of entering self-employment by 0.0066 or 22.1% of the sample mean.

The NLSY only collected asset information for the survey years 1985–90, 1992, 1993, 1994, and 1996. For those years, I use a measure of net worth that was created from the detailed asset questions available in

[25] I exclude observations for the 2-year transition from 1994 to 1996.

the NLSY.[26] Due to the large reduction in sample size from including this variable, I estimate a probit regression for the probability of entry into self-employment that does not include net worth, but uses the same sample (reported in specification 2). This "benchmark" drug-dealing coefficient is 0.3394. In specification 3, I include net worth and net worth squared. The coefficient on net worth is positive and statistically significant, indicating a concave relationship. Evaluated at the mean level of net worth (which equals $36,900), the coefficient estimates imply that increasing net worth by $10,000 increases the probability of a transition into self-employment by 0.00044. This represents only 1.5% of the sample entry rate into self-employment. Thus, the estimates provide some evidence that young men face liquidity constraints, but these constraints do not appear to be overly restrictive. More important, the inclusion of net worth essentially has no effect on the drug-dealing coefficient. The coefficient estimate is 0.3341 and remains statistically significant.

These results suggest that the large positive coefficient on drug dealing is not due to drug dealers accumulating assets to start businesses. Some drug dealers may save their profits to start legitimate businesses, but the fact that they were drug dealers remains an important determinant of entry into self-employment. Furthermore, studies from the criminology literature provide examples of the lavish consumption patterns among many drug dealers, suggesting these dealers are not saving a high percentage of their profits (see Adler 1985 for example).

VII. Conclusions

Using data from the NLSY, I find that drug dealing in 1980 has a large, positive, and statistically significant effect on the future probability of self-employment. Using various definitions of drug dealing and specifications of the econometric model, I find that young drug dealers are 11%–21% more likely to choose self-employment in later years than are young non-drug-dealers, all else equal. I also find that drug dealers who sold more frequently, used drugs less frequently, or reported receiving income from drug dealing are more likely to choose self-employment than other drug dealers. In addition, my estimates indicate that the positive effect is not simply due to respondents reporting drug dealing as a self-employed job activity, drug dealing leading to blocked wage/salary opportunities, or drug dealers accumulating assets to start businesses. I interpret these results as providing evidence that drug dealers possess unobserved characteristics, such as low levels of risk aversion, high levels of entrepreneurial ability, and preferences for autonomy, that are posi-

[26] This variable is not available in the public use data , but can be obtained from Jay L. Zagorsky at the Center for Human Resource Research. See Zagorsky (1998) for more details on the construction of this variable.

tively associated with future self-employment, thus providing indirect evidence that these entrepreneurial characteristics are important determinants of self-employment.

The findings from this study provide support for the emphasis placed on attitudes toward risk, entrepreneurial ability, and preferences for autonomy in previous theoretical models of self-employment. Although it is difficult to find a common metric, the effect of being a drug dealer appears to be much larger than the effects of measurable human and financial capital on the probability of self-employment. For example, the estimates indicate that the effect of drug dealing on the probability of entering self-employment is more than four times the effect of doubling an individual's net worth. I find that basic skills (measured by AFQT scores) and education have even smaller or negative effects on the probability of self-employment. Thus, the self-employed appear to have at least some of the characteristics associated with the popular notion of what it takes to be an entrepreneur and are not simply those individuals who possess high levels of human and financial capital or who face limited opportunities in the wage/salary sector.

The results presented above also have important policy implications. In his 1989 Presidential Address to the National Economic Association, Samuel Myers, Jr., criticized policy makers for not exploiting "the entrepreneurial talents of street-wise hustlers and dope-dealers in the inner city to enable them to become managers and owners of legitimate inner-city businesses" (Myers 1989, p. 6). He noted that instead government expenditures were directed toward training programs in the wage/salary sector, such as the Comprehensive Employment and Training Act and the Job Training Partnership Act. Although certainly not widespread, there do exist a number of small local programs promoting entrepreneurship among disadvantaged youths, ex-convicts, and other low-income groups (see Balkin 1989, 1993). The findings from this research suggest that an expansion in the number and scope of services provided by entrepreneurial training programs targeted toward these groups may be successful. Many disadvantaged youths and ex-convicts, especially those who are former drug dealers, may possess the entrepreneurial characteristics needed for self-employment, but ultimately do not operate successful small businesses due to a lack of knowledge of business opportunities, sector-specific human capital, and financial capital.[27]

[27] Interestingly, at-risk youth and prisoners demonstrate a keen interest in business ownership and show disdain for available wage/salary jobs (Balkin 1993; Light and Rosenstein 1995). Balkin (1993) reports that, depending on the institution, from 10% to 75% of prison inmates expressed an interest in self-employment. Blanchflower and Oswald (1998*a*) provide evidence of very high levels of interest in self-employment among all youths in several countries. Finally, Light and Rosenstein (1995) make the additional point that entrepreneurial education

Appendix

Table A1
Sample Means and Standard Deviations of Analysis Variables: NLSY (1981–96)

	Drug Dealers			Non-Drug-Dealers		
Variable	Mean	SD	*N*	Mean	SD	*N*
Self-employed	.0868	.2815	3,054	.0682	.2521	43,840
Age	26.9967	4.6194	3,054	27.1883	4.4830	43,840
Black	.2004	.4004	3,054	.2521	.4342	43,840
Hispanic	.1025	.3033	3,054	.1820	.3858	43,840
Low-income white (sample)	.1103	.3134	3,054	.0906	.2871	43,840
Born abroad	.0108	.1034	3,054	.0743	.2622	43,840
12 years of school	.5065	.5000	3,054	.4693	.4991	43,840
13–15 years of school	.1467	.3539	3,054	.1702	.3758	43,840
16+ years of school	.0711	.2570	3,054	.1638	.3701	43,840
Drug dealer who sold drugs 6+ times	1.0000	.0000	3,054	.0000	.0000	43,840
Drug dealer who sold drugs 11+ times	.6243	.4844	3,045	.0000	.0000	43,840
Drug dealer who sold drugs 51+ times	.3149	.4646	3,045	.0000	.0000	43,840
Drug dealer who uses less than sells	.3182	.4659	3,023	.0000	.0000	43,840
Drug dealer who reports illegal income	.7511	.4325	2,981	.0000	.0000	42,504
Drug dealer who reports one quarter or more illegal income	.2918	.4547	2,981	.0000	.0000	42,504
Previous incarceration	.1975	.3982	2,729	.0562	.2303	38,608

NOTE.—NLSY = National Longitudinal Survey of Youth. The sample consists of young men who worked at least 300 hours in survey year.

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