Does Entrepreneurship Pay? An Empirical Analysis of the Returns to Self-Employment

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Possible explanations for earnings differentials in self-employment and paid employment are investigated. The empirical results suggest that the nonpecuniary benefits of self-employment are substantial: Most entrepreneurs enter and persist in business despite the fact that they have both lower initial earnings and lower earnings growth than in paid employment, implying a median earnings differential of 35 percent for individuals in business for 10 years. The differential cannot be explained by the selection of low-ability employees into self-employment and is similar for three alternative measures of self-employment earnings and across industries. Furthermore, the estimated earnings differentials may understate the differences in compensation across sectors since fringe benefits are not included in the measure of employee compensation.

I. Introduction

The number of individuals engaged in nonfarm self-employment has increased markedly since the mid 1970s. As of 1997, business owners constituted approximately 13 percent of nonagricultural employees in the United States,[1] a fraction comparable to the percent-

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[1] Blau (1987) and Devine (1991) examine trends in male and female self-employment rates over time.

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age of the private-sector labor force that is unionized. However, in contrast to the extensive literature examining union wage differentials and the determinants of union membership, business owners are generally excluded from labor market studies. Consequently, relatively little is known about the influence of pecuniary and nonpecuniary factors on the decision to start a business or the determinants of earnings once self-employed.

This paper examines differences in the earnings distributions of self-employed workers and paid employees. The objective is to determine the extent to which the behavior of workers choosing to enter or remain in self-employment can be explained by a variety of models of the labor market and entrepreneurship. These explanations fall into three categories. First, investment and agency models (e.g., Lazear and Moore 1984) argue that self-employment differentials arise from differences in earnings profiles across sectors. Second, matching and learning models (e.g., Roy 1951; Jovanovic 1982) emphasize that earnings differences result from the sorting of workers into paid and self-employment on the basis of heterogeneous sector-specific abilities. Finally, self-employment earnings differentials may reflect variations in working conditions across sectors. Entrepreneurs may trade lower earnings for the nonpecuniary benefits of business ownership. On the other hand, an earnings premium may be necessary to compensate risk-averse business owners for the greater uncertainty of their incomes.

Recent empirical studies examining the difference between the mean earnings of paid employees and those of self-employed workers find some evidence that male entrepreneurs experience greater initial earnings growth, on average, in a new business than paid employees starting a new job and that the potential wages of entrepreneurs are not significantly different from the wages of paid employees.[2] However, the studies generally suffer from shortcomings that limit their ability to evaluate the explanations listed above. First, ''superstar'' theory (Rosen 1981) suggests that comparisons of mean earnings of self-employment and paid employment will be strongly influenced by a handful of high-income entrepreneurial superstars. Mean earnings may thus not characterize the self-employment returns of the majority of business owners. Second, the data used in the literature often lack information such as the length of time in business, which is crucial in determining whether observed differ-

[2] These studies include Brock and Evans (1986), Rees and Shah (1986), Borjas and Bronars (1989), and Evans and Leighton (1989). Recent work by Holtz-Eakin, Joulfaian, and Rosen (1994) examines the importance of capital constraints on entrepreneurial success.

ences between the earnings of entrepreneurs and employees represent true compensating differentials or simply differences in firm- or business-specific earnings growth across sectors. Finally, little attention is given to determining the appropriate measure of self-employment income. The earnings variable typically reported in labor market surveys, termed net profit, is analogous to the amount reported to the Internal Revenue Service and may be unreliable because of the tax incentives to underreport income. In addition, the sectoral differences in other forms of compensation, such as employer-provided pensions and health insurance, which are not available to self-employed workers, have also generally not been considered when the self-employment earnings differential is being interpreted.

This study uses data from the 1984 panel of the Survey of Income and Program Participation (SIPP) to construct self-employment/paid employment earnings differentials. The advantage of these data is that alternative measures of self-employment earnings may be constructed, in addition to net profit. Therefore, the sensitivity of the results to the measure of entrepreneurial earnings may be assessed. The empirical evidence supports the notion that self-employment offers substantial nonpecuniary benefits, such as ''being your own boss,'' for many workers. Comparison of median earnings profiles shows that jobs in paid employment offer both higher initial earnings and greater earnings growth. After 10 years in business, median entrepreneurial earnings are 35 percent less than the predicted alternative wage on a paid job of the same duration, regardless of the self-employment earnings measure used. Moreover, median entrepreneurial earnings are always less than the predicted starting wage (for zero job tenure) available from an employer, regardless of the length of time in business. Little evidence is found suggesting that the earnings differential reflects the selection of low-ability paid employees into self-employment. Overall, it appears that many workers are willing to enter and remain in self-employment despite receiving returns substantially below their alternative paid employment wage.

The remainder of the paper is organized as follows. Section II describes the predictions of the various theoretical models of entrepreneurship for the self-employment earnings differential. Section III describes the data set and the construction of the alternative measures of entrepreneurial income used in the analysis. Section IV constructs the earnings profiles and examines their consistency with the theoretical predictions. Section V uses longitudinal data to examine the heterogeneity associated with movement into and out of self-employment, and Section VI examines sectoral differences in the provision of health insurance. Section VII summarizes the findings.

II. Theoretical Predictions

Investment, agency, matching, learning, and compensating differential models offer different predictions for the self-employment earnings differential. Suppose that individuals are wealth maximizers and choose self-employment if it yields the highest expected present value of career earnings. Let the earnings of individual i in sector j at time t be given by Y_{ijt}, and let

$$Y_{ijt} = \mathbf{H}_{it}\delta_j + f_j(\mathbf{EXPR}_{ijt}) + \epsilon_{ijt}, \quad j = \text{SE, PE}, \tag{1}$$

where $\mathbf{H}_{it}$ is a vector of observed individual productivity characteristics such as education, $\mathbf{EXPR}_{ijt}$ is a vector of experience variables, and ϵ_{ijt} is a sector-specific random error term. The function $f_j(\cdot)$ relates experience to earnings in sector j, describing the pattern of career earnings growth in paid and self-employment. The notation $Y^a_{i\text{PE}}$ is used to denote the alternative wage available to an entrepreneur as a paid employee.

Investment and agency models argue that while the expected present value of self-employment income is equal to the paid employment alternative for the marginal worker, a cross-sectional earnings differential may exist as a result of sectoral differences in the earnings-experience profiles generated by the $f_j(\cdot)$ functions. The investment model suggests that self-employment earnings profiles will be steeper than those in paid employment because human and physical capital investments are not shared with an employer in self-employment. In contrast, the agency model argues that paid employment wage profiles will be steeper to discourage shirking since agency problems are not present in self-employment (Lazear 1981; Lazear and Moore 1984).

Matching and learning models (e.g., Roy 1951; Jovanovic 1982) argue that individuals have unobserved, time-invariant, sector-specific abilities, denoted by m_{ij}, as well as sector-specific human capital, so that the error term in equation (1) may be rewritten as

$$\epsilon_{ijt} = m_{ij} + \eta_{ijt}. \tag{2}$$

Earnings differentials may then reflect selection effects arising from differences in the sector-specific abilities of individuals. In the Roy model, worker i knows $m_{i\text{SE}}$ and $m_{i\text{PE}}$ and matches himself to the sector in which he has the relative advantage; the learning model argues that individuals are uncertain of m_{ij} and may not immediately match themselves to the sector in which they have a relative advantage. Over time, low-ability entrepreneurs will drop out of self-employment, so that cross-sectional experience profiles also potentially re-

flect selection effects. Therefore, like the investment model, the learning model implies that self-employment earnings will overtake the alternative wage with experience.

Superstar models (Rosen 1981) argue that small differences in skills may be magnified into large differences in returns in labor markets characterized by imperfect substitution among different sellers and in which the costs of production do not rise in proportion to the size of a seller's market. Examples of such markets include entertainment and personal and professional services, which are also characterized by high rates of self-employment. MacDonald (1988) demonstrates that, similarly to the learning model, workers who determine that they are not ''rising stars'' will return to paid employment. Consequently, the self-employment distribution will consist of a few experienced, highly successful entrepreneurs and a number of inexperienced individuals with low returns.

The models described thus far assume that workers are wealth maximizers. Differences in the nonpecuniary aspects of self-employment and wage work may lead to compensating earnings differences between the two sectors for equally productive workers. A popular view is that entrepreneurship offers greater freedom in the work environment, such as the opportunity to ''be your own boss,'' implying that workers will choose self-employment despite self-employment earnings below their paid employment alternative. Evidence of positive compensating differentials for jobs with greater autonomy has been found for paid employees:[3] Evans and Leighton (1989) show that individuals preferring greater autonomy are more likely to become self-employed, and Blanchflower and Oswald (1992) find that business owners experience greater job satisfaction than wage workers. Conversely, Kanbur (1982) emphasizes the role of risk aversion in the self-employment decision, suggesting that business owners may earn a risk premium because of the greater uncertainty of their earnings.

III. Data and Measurement Issues

The data used for this study are drawn from the 1984 panel of the Survey of Income and Program Participation, which consists of nine four-month waves covering mid 1983 to mid 1986. This data set was chosen because it allows one to construct different measures of self-

[3] Duncan (1976) and Duncan and Stafford (1980) report positive compensating differentials for jobs offering greater ''freedom in controlling hours worked'' and ''opportunities to choose an individual or flexible work schedule and an individual work pace.''

employment earnings, unlike the Current Population Survey (CPS). In addition, in contrast to longer panel data sets such as the Panel Study of Income Dynamics (PSID), the large sample size of the SIPP provides a sufficiently large number of observations on individuals entering and leaving self-employment, which is necessary to examine the role that self-selection (matching) plays in explaining sectoral earnings differentials. The sample consists of 8,771 male school leavers aged 18–65 working in the nonfarm sector. This group was chosen for two reasons. First, because women are excluded, issues of labor market participation are of secondary importance. Second, the reported earnings of farmers may in large part be a function of government subsidy programs. Many doctors and lawyers advance by becoming partners in the firm, implying a reclassification from paid employment to self-employment. Moreover, the earnings of many of these highly paid professionals are likely to be top-coded. Since this is generally not the case for most business owners and only a small number of doctors and lawyers are in the SIPP, these professions are dropped from the analysis.[4] Consequently, the analysis focuses on the experiences of small business owners.

Respondents to the SIPP were asked whether they were self-employed (as either a main or secondary labor market activity) and, if so, to provide the name of the business. In addition, self-employed individuals were asked about their incorporation status. Both incorporated and unincorporated business owners are included in the self-employment category. In this paper, individuals are defined to be self-employed in a given 12-month period if this employment is reported as the main labor market activity for at least three months and is reported to be ''noncasual.''[5] Sample members working simultaneously at a wage job and their own business are assigned to the sector in which they work the greatest number of hours per week. For the calendar year 1984, approximately 12.5 percent of the sample met these criteria for self-employment. Table 1 contrasts the productivity and demographic characteristics of entrepreneurs and employees in the sample for 1984. Most notably, business owners have a higher average level of potential labor market experience and are

[4] Headen (1990) analyzes differences between self-employed and employee doctors.

[5] Sample members responding that they are self-employed are then asked if they expect to earn more than $1,000 in the business over the next four months. If they answer no, self-employment is considered to be ''casual'' in the SIPP. The three-month cutoff was chosen to eliminate seasonal or temporary self-employed workers. Given that individuals reporting self-employment in the SIPP respond to a detailed self-employment module, measurement error in self-employed status is likely to be very low.

TABLE 1

VARIABLE DESCRIPTIONS AND SUMMARY STATISTICS, BY EMPLOYMENT SECTOR

VARIABLE NAME	DESCRIPTION	MEAN	
		Paid Employees	Self-Employed
X	Potential labor market experience = age − education − 6	18.5	24.2
T	Years in current job or business	8.7	10.5
HDROP	High school dropout	.18	.18
HGRAD	High school graduate	.38	.33
CGRAD	4 or more years of college	.22	.27
MARRY	Married, spouse present	.67	.82
NONW	Race is not white	.12	.05
DISAB	Health limits work	.09	.13
RETIRE	Retired from a previous job	.03	.05
Observations		7,670	1,101

better educated, less likely to be nonwhite, and more likely to be married than paid employees.

A. *Measuring Self-Employment Earnings*

Self-employed workers are often excluded from labor market studies because of difficulties in measuring and interpreting their earnings. Consequently, this paper considers alternative measures of self-employment earnings to assess the robustness of the sectoral earnings comparisons made below. Measurement of self-employment earnings begins with the identity

$$\text{revenues}_t - \text{expenses}_t = \text{draw}_t + \text{retained earnings}_t. \quad (3)$$

Equation (3) shows that the net profit generated by a business in year t, given by the difference between revenues and expenses (including depreciation), may be withdrawn from the business by the entrepreneur in the form of salary (termed the draw) or reinvested in the business. Net profit is the standard measure reported in the literature from data sets such as the CPS.[6] However, reported net profit is generally an accounting profit that may be used as the basis for the calculation of net income for tax purposes and is therefore thought to understate the true profits of business owners,

[6] Devine (1995) presents a detailed description of the net profit measure in the CPS, as well as the various drawbacks of this measure.

primarily through the overstatement of expenses due to tax considerations.[7]

Given the potential underreporting problem associated with net profit, the right-hand side of equation (3) provides potential alternative measures of self-employment earnings. Unlike other surveys, the SIPP reports the amount withdrawn in salary by all business owners. Therefore, the first alternative measure used in the paper is the draw. Because it is reported on a monthly basis in the SIPP, the draw is less likely to be influenced by tax considerations. Draw may be thought of as the amount of consumption the business generates for its owner.[8]

An entrepreneur investing in his business may report a low draw. While retained earnings and business net investment for year t are not reported in the SIPP, they may be approximated by the year-to-year change in the amount of equity held in the business at the beginning of period t and period $t + 1$.[9] Consequently, the second alternative measure of self-employment income constructed in this paper, termed the equity-adjusted draw (EAD), is the sum of the draw in period t and the change in business equity between the beginning of period t and period $t + 1$.[10] An economic definition of self-employment earnings should account for the opportunity cost of equity invested in the firm (see Wales 1973; Meyer 1990); the EAD is adjusted to account for the opportunity cost of business equity.[11]

Because EAD (and the draw) is not reported to tax authorities, it may suffer less from underreporting error and hence be superior to net profit as a measure of self-employment income. In addition, the EAD also includes the returns to the entrepreneur in the form of the capital gain (or loss) in the value of the business, which is not incorporated in either net profit or draw. Unfortunately, business

[7] For example, accelerated depreciation methods allow entrepreneurs to immediately claim a significant portion of new investment as a deduction on their tax returns. Aronson (1991) describes the impact of the tax system on the underreporting of self-employment income.

[8] The draw is the earnings measure reported by the CPS for incorporated business owners, since these individuals are considered to be employees of their own firms.

[9] Entrepreneurs are asked to provide the value of the business and the debt held against it at the beginning of 1984 and 1985.

[10] Note that the year-to-year change in business equity captures both the net investment in the business and any implicit returns in the form of goodwill, such as the increased or decreased value of a particular location or client list.

[11] It is assumed that the opportunity cost is given by the alternative risk-free rate of return available to the entrepreneur in 1984, which is measured by the six-month Treasury bill rate in 1984. The Treasury bill rate multiplied by 1984 business equity is subtracted from the EAD to give the third measure of self-employment income. Other measures of opportunity cost were considered, such as the return on the Standard & Poor's 500 or the S&P small-stock index, but these alternatives did not qualitatively affect the empirical findings.

TABLE 2

FINANCIAL CHARACTERISTICS OF SELF-EMPLOYED BUSINESSES

Measure	Mean	25th Percentile	50th Percentile	75th Percentile
1984 business value	58,443 (93,277)	2,300	17,290	70,000
1984 business equity	40,371 (75,740)	1,000	10,000	47,000
Fraction with no equity	.15			
Fraction with no debt	.50			

NOTE.—Standard deviations are in parentheses.

equity and wealth are typically imprecisely measured in survey data, and hence EAD is likely to be a noisy measure of self-employment earnings. Table 2 presents measures of the distribution of reported business value and equity in 1984 from the SIPP. The first two rows of the table show that most businesses are fairly small. Median business value and equity are both less than $20,000. Consequently, retained earnings and business value appreciation are likely to be small for most entrepreneurs, implying that the draw and EAD measures will be quite similar. However, a minority of the self-employed have large financial stakes in their businesses, implying that the net capital gain on the business could be a fairly large component of their self-employment return.[12]

Data limitations hindered construction of the three alternative measures of self-employment earnings for all entrepreneurs in the SIPP. The draw measure is available for each business owner, whereas the net profit variable is available for approximately two-thirds of the self-employed sample. Because of nonreporting of business equity and debt, the EAD measure is constructed for approximately one-fourth of the business owners in 1984. A variety

[12] Measures of business equity are generally not reported in most data sets, so it is difficult to assess the reliability of the SIPP business value and equity data. Curtin, Juster, and Morgan (1989) compared wealth data from the SIPP, PSID, and 1983 Survey of Consumer Finance. They judged the SIPP data to be of high quality. However, the SIPP does appear to somewhat understate the business equity holdings among high-income (over $50,000) and wealthy individuals (business equity over $100,000) compared to the other data sets. One major reason for the difference is that a non–household head was more likely to answer the wealth questions in the SIPP. When the EAD measure was constructed, observations for which equity was reported by someone other than the business owner were dropped. Consequently, the business valuations used to construct the EAD are less likely to suffer from underreporting. Note that the equity figures for individuals earning less than $50,000 and with business equity less than $100,000 were comparable across data sets. This group of individuals constitutes the vast majority (over 85 percent) of entrepreneurs.

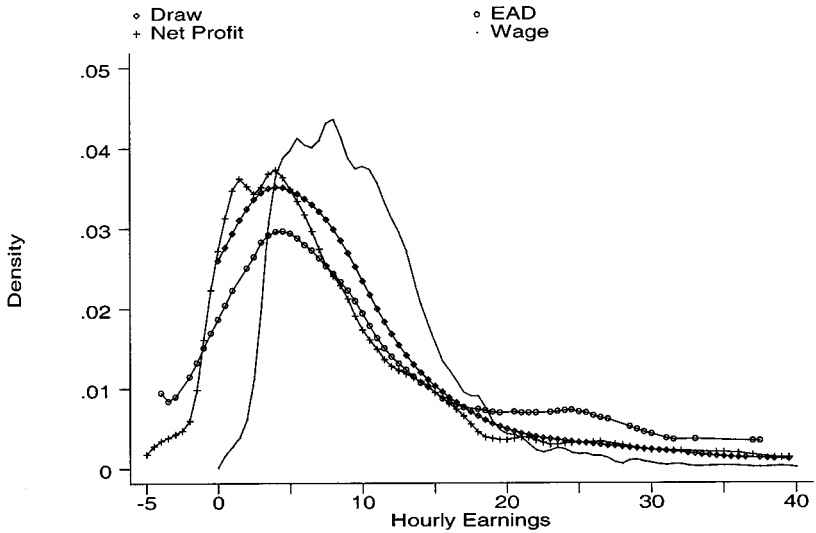

FIG. 1.—Empirical distributions, hourly earnings measures

of procedures indicated that the subsamples of entrepreneurs for whom the net profit and EAD can be constructed are random samples of the self-employed population.[13] As a result, the full self-employment sample is used in comparisons of the draw with wages, whereas the appropriate subsamples are used for the net profit and EAD measures.[14] Hourly earnings measures are used in order to focus attention on the earnings differential rather than on differences in hours worked, although the findings are qualitatively similar for weekly earnings.

The empirical distributions of the three measures of 1984 average hourly self-employment earnings are compared with the hourly wage in figure 1. The figure exhibits two notable characteristics. First, regardless of the measure used, the central tendency of the distribution of self-employment returns is less than that of the wage distribution. Second, the distribution of self-employment earnings exhibits greater dispersion and is more skewed than the wage. As indicated by the long upper tails of the self-employment distributions, approximately 13 percent of business owners earn more than

[13] A detailed description of the construction of the various samples, as well as the procedures used to examine the representativeness of the EAD and net profit subsamples, is provided in the Appendix.

[14] The correlations between the three measures are all positive and statistically significant at the .01 level. The rank correlation is stronger (.70) between draw and EAD than between either net profit and draw (.50) or net profit and EAD (.45).

TABLE 3

SUMMARY STATISTICS: HOURLY SELF-EMPLOYMENT EARNINGS AND WAGES

	Earnings Measure			
Statistic	Wage (1)	Net Profit (2)	Draw (3)	EAD (4)
Mean	9.63	7.76*	9.09	11.41
Standard deviation	5.42	10.07	9.26	19.69
25th percentile	5.73	1.92	3.60	2.49
50th percentile	8.72	5.23	6.44	6.84
75th percentile	12.26	10.52	11.34	14.20
Observations	7,670	759	1,101	288

* Mean self-employment earnings measure is significantly different from the mean wage at the .01 level.

$20 per hour, when the EAD measure is used (8.8 percent for draw and 7.6 percent for net profit), compared to only 4.2 percent of employees. Consequently, simple comparisons of the mean earnings of business owners and paid employees hide substantial differences in the properties of the distributions of the two groups.

Further evidence of the differences in self-employment and employee hourly earnings distributions is shown in table 3. Mean net profit, shown in column 2, is 19 percent less than the mean wage, shown in column 1, and exhibits greater dispersion. Other studies (e.g., Borjas and Bronars 1989) also show much greater variation in net profit than in wages. The median and upper and lower quartiles emphasize the skewness of the net profit distribution shown in figure 1. For example, the median difference is 40 percent.

The conventional net profit measure tends to be a lower-bound measure of entrepreneurial earnings. Column 3 of the table shows that mean self-employment earnings as measured by the draw are not significantly different from the wage, whereas column 4 indicates a positive difference of 18 percent when the EAD measure is used. Like net profit, both measures exhibit much greater variation than the wage, and the earnings quartiles imply that substantial returns to self-employment are concentrated among a few entrepreneurs. Finally, recall that the difference between EAD and the draw represents the net capital gain on business equity, implying that 20 percent of mean (but only 6 percent of median) entrepreneurial earnings reflects the net appreciation of the business.

IV. Earnings Profiles

This section constructs earnings profiles using the various measures of self-employment income and wages to determine whether the

predictions of the investment, agency, learning, superstar, and compensating differential models are consistent with the evidence. Given the skewness observed in the data, both ordinary least squares (OLS) and quantile regressions of equation (1) are conducted. Panels A–C of table 4 present selected parameter estimates from OLS and quantile regressions of equation (1) for the hourly earnings of entrepreneurs, using the draw, EAD, and net profit measures.[15] Panel D presents the estimates for paid employees. The $f_j(\cdot)$ functions in equation (1) are specified with quadratics in potential labor market experience (X_{it}) and the length of the current spell with the employer or business at time t (T_{iPEt} and T_{iSEt}, respectively).[16] Differences in productivity across individuals are captured by indicators for educational attainment, whether the individual has a health condition that limits work, marital status, race,[17] as well as a dummy for whether the individual has retired from a previous job.[18]

The OLS parameter estimates for self-employed workers indicate that the coefficients on the productivity and demographic controls generally have the same sign across earnings measures, with the draw estimates being most similar to those for net profit. The EAD coefficients tend to be higher in absolute magnitude but are less precisely estimated, largely because of the substantial variation exhibited by the dependent variable. The estimates for the .25 and .50 quantiles in columns 2 and 3 tend to be smaller in magnitude than those found using OLS, particularly in the case of the education variables, whereas the .75 quantile estimates are larger. This is to be expected given the right skewness in the entrepreneurial earnings distributions found in the previous section. In contrast, the OLS and quantile regression results for employees are generally quite similar, reflecting the relative lack of skewness of the wage distribution.

The productivity variables have the expected sign and are similar to the results of Borjas and Bronars (1989) and Evans and Leighton (1989). Less educated entrepreneurs generally suffer a smaller earnings penalty than wage workers. For example, the earnings of self-

[15] A number of entrepreneurs (10 percent) report zero or negative earnings. So as not to exclude these observations, earnings levels rather than log(earnings) are used in the regressions. To examine the sensitivity of the results to this specification, all the regressions were reestimated using log(earnings) as the dependent variable, with observations of negative earnings recoded to a small positive earnings value. The qualitative nature of the results when logs were used was identical to that when levels were used.

[16] Experience-tenure interactions were insignificant in the self-employment regressions.

[17] Nonwhite entrepreneurs may have lower returns because of such factors as consumer discrimination (Borjas and Bronars 1989; Meyer 1990).

[18] Fuchs (1982) argues that older workers may view self-employment as a form of partial retirement.

TABLE 4

PARAMETER ESTIMATES FROM HOURLY EARNINGS REGRESSIONS

	REGRESSION			
VARIABLE	OLS (1)	.25 (2)	.50 (3)	.75 (4)
	A. Dependent Variable: Draw (N = 1,101; R^2 = .070)			
Constant	5.181	2.125	3.448	4.781
	(4.964)	(4.021)	(4.693)	(3.886)
X	.112	−.014	.117	.348
	(1.288)	(.766)	(1.702)	(3.112)
X^2	−.001	.0003	−.002	−.005
	(.533)	(.355)	(1.526)	(2.264)
T	.232	.162	.105	.206
	(2.686)	(3.183)	(1.570)	(1.885)
T^2	−.005	−.003	−.001	−.002
	(2.116)	(1.993)	(.860)	(.731)
HDROP	−2.852	−.663	−1.091	−3.484
	(3.923)	(1.462)	(1.462)	(4.079)
HGRAD	−.450	−.188	−.144	−.028
	(.665)	(.545)	(.223)	(.035)
CGRAD	3.711	.911	2.322	4.977
	(4.413)	(1.601)	(3.201)	(3.962)
MARRY	.556	1.067	1.068	.179
	(.749)	(2.587)	(2.121)	(.220)
NONW	−2.474	−.422	−1.747	−2.591
	(3.089)	(.816)	(3.010)	(2.569)
	B. Dependent Variable: EAD (N = 288; R^2 = .027)			
Constant	1.469	.976	1.639	2.295
	(.373)	(.485)	(.752)	(.482)
X	.202	.025	.153	.577
	(.592)	(.197)	(.893)	(1.418)
X^2	.001	−.002	−.003	−.005
	(.114)	(.114)	(.769)	(.574)
T	.479	.221	.166	.186
	(1.239)	(1.544)	(.929)	(.395)
T^2	−.017	−.006	−.003	−.007
	(1.707)	(1.183)	(.667)	(.551)
HDROP	−5.543	1.805	−1.448	−8.988
	(2.270)	(1.556)	(.762)	(2.855)
HGRAD	3.773	1.981	1.906	2.172
	(1.485)	(1.614)	(1.101)	(.561)
CGRAD	5.786	1.261	2.270	3.362
	(1.593)	(.725)	(1.224)	(.818)
MARRY	2.922	.160	2.248	4.277
	(.882)	(.125)	(1.585)	(1.360)
NONW	−4.893	−.344	−1.793	−3.600
	(2.063)	(.251)	(.835)	(1.072)

TABLE 4 (Continued)

Variable	Regression			
	OLS (1)	.25 (2)	.50 (3)	.75 (4)
	C. Dependent Variable: Net Profit ($N = 759$; $R^2 = .046$)			
Constant	3.086	.321	1.458	3.440
	(1.865)	(.380)	(1.343)	(2.327)
X	.148	−.031	.112	.234
	(1.303)	(.446)	(1.325)	(1.837)
X^2	−.001	.0005	−.002	−.002
	(.525)	(.358)	(1.348)	(.765)
T	.159	.116	.153	.345
	(1.416)	(1.552)	(1.924)	(2.632)
T^2	−.003	−.002	−.002	−.006
	(1.034)	(.665)	(.761)	(1.616)
HDROP	−2.308	−.003	−1.397	−4.054
	(2.109)	(.004)	(1.593)	(3.310)
HGRAD	−.238	.395	.096	−1.264
	(.246)	(.553)	(.136)	(1.346)
CGRAD	3.383	1.129	2.540	4.455
	(3.139)	(1.460)	(2.609)	(3.522)
MARRY	1.188	1.492	1.972	1.817
	(1.227)	(2.868)	(2.562)	(1.716)
NONW	−2.897	−.495	−1.966	−3.433
	(2.679)	(.845)	(2.581)	(2.245)
	D. Dependent Variable: Wage ($N = 7{,}670$; $R^2 = .403$)			
Constant	4.832	3.240	4.403	6.006
	(31.848)	(24.216)	(36.942)	(36.511)
X	.345	.212	.286	.402
	(21.494)	(15.557)	(22.732)	(22.228)
X^2	−.006	−.004	−.005	−.007
	(18.109)	(15.169)	(20.381)	(18.328)
T	.236	.289	.286	.240
	(12.971)	(18.477)	(20.028)	(11.523)
T^2	−.003	−.004	−.004	−.003
	(5.326)	(8.778)	(9.013)	(5.102)
HDROP	−2.993	−1.721	−2.321	−3.197
	(18.579)	(12.864)	(17.627)	(17.217)
HGRAD	−1.261	−.645	−.952	−1.358
	(9.742)	(5.999)	(9.363)	(9.174)
CGRAD	3.182	1.665	2.940	4.351
	(21.783)	(13.696)	(25.607)	(26.147)
MARRY	.843	.760	.822	.812
	(7.051)	(7.717)	(8.747)	(5.894)
NONW	−1.482	−1.059	−1.129	−1.341
	(9.858)	(8.394)	(9.552)	(7.904)

Note.—All regressions include indicators for work-limiting health condition and retirement from a previous job. Absolute values of t-statistics are in parentheses. The OLS standard errors are heteroskedastic-consistent estimates. Quantile regression standard errors are bootstrapped using 500 draws.

employed high school graduates are not significantly different from those of college dropouts, whereas the difference is significant in paid employment. These findings are consistent with Wolpin's (1977) argument that the difference in the returns to education across sectors reflects employer screening in paid employment. Recent studies also suggest that blacks earn less in self-employment, on average, than whites (Borjas and Bronars 1989). The quantile regression estimates indicate that this may reflect a lack of black entrepreneurial superstars, since the self-employment earnings of blacks are not significantly less than those of whites at the lower quartile but are substantially lower at the upper quartile.

The results for the $f_{SE}(\cdot)$ and $f_{PE}(\cdot)$ experience functions also show marked differences across sectors. The hypothesis that the labor market experience coefficients are jointly zero in the self-employment regressions can be rejected only for the seventy-fifth percentile estimates.[19] On the other hand, the hypothesis that the business tenure coefficients are jointly zero is generally rejected. As is the case for most of the demographic controls, business tenure has a larger effect on mean earnings than on the median or lower quartile. Median self-employment earnings profiles may thus be expected to exhibit less earnings growth than the mean. In addition, labor market experience has a greater effect on paid employee wages than is the case for entrepreneurs. Both the labor market experience and job tenure coefficients are strongly significant and have a generally similar magnitude in the OLS and quantile regressions.

The differences in the relationship between earnings and experience across sectors are illustrated more fully by the tenure and entry wage profiles, constructed using fitted values generated from table 4. Let $Y_j(X, T_j)$ denote predicted sector j earnings for workers with X years of potential labor market experience and T_j years of tenure in a particular job or business. Figure 2 plots fitted 25-year mean, .25, .50, and .75 quantile tenure profiles for each of the three measures of self-employment income as well as the wage for workers entering a new business or job with 10 years of labor market experience.[20]

[19] Rees and Shah (1986) cannot reject the hypothesis that the experience coefficients are jointly zero in their OLS regressions. Evans and Leighton (1989) find that previous business experience is strongly significant in explaining the mean earnings of young entrepreneurs. It may be that the significant effect of experience in the .75 quantile regressions results from the reentry of former business owners into self-employment who are likely to be more successful than other entrepreneurs. On the other hand, more experienced workers have had a longer period to find a good business match. Previous business and paid employment experience cannot be separated in the SIPP data, so we cannot distinguish between these hypotheses.

[20] The median level of labor market experience for workers entering self-employment in 1985 is 10 years. The values chosen for $\mathbf{H}_u$ are the mean values of the self-

The profiles illustrate the joint impact of labor market experience and job or business tenure on earnings. Workers with 10 years of labor market experience have zero tenure in the job or business, whereas those with 20 years of experience have been in the job or business for 10 years.

The conclusions that may be drawn from figure 2*a* concerning the mean self-employment earnings differential vary with the income measure. The EAD tenure profile overtakes that for the wage after a few years in business. The discounted present value of earnings from a business lasting 25 years is only 5 percent less than that from a paid job of the same duration.[21] However, when the draw or net profit measure is used, the figure shows that self-employment earnings never overtake the alternative wage, leading to earnings differentials of −19 percent (draw) or −33 percent (net profit) after 10 years in business or on the job. The difference between EAD and the draw increases with business tenure, implying that the rapid growth in business income shown by the EAD measure primarily reflects the net capital gains accruing to the business.

The fitted lower quartile and median profiles shown in figures 2*b* and *c* yield unambiguous results. Regardless of the measure used, the earnings of new entrepreneurs are substantially less than the alternative wage. The self-employment profiles are flatter than the wage profile so that with 10 years of tenure in a job or business, $Y_{SE}(20, 10)$ is 35–45 percent less than $Y^{a}_{PE}(20, 10)$, depending on the earnings measure. In this case, the discounted present value of the draw or EAD from a business lasting 25 years is over 35 percent less than the discounted present value of wages from a paid job of the same duration.

Finally, the profiles at the seventy-fifth percentile, shown in figure 2*d*, emphasize the skewness of the self-employment earnings distribution. When the EAD measure is used, self-employment offers both higher initial earnings and greater earnings growth than paid employment jobs. In addition, while less than the wage, the earnings differential calculated using either the draw or net profit is substantially smaller at the upper quartile than at the median.

Since an entrepreneur returning to paid employment starts the new job with zero tenure, figure 3 plots the entry wage, $Y^{a}_{PE}(X, 0)$, that an entrepreneur with X years of labor market experience could expect to receive if he returned to paid employment (with zero ten-

employed sample in 1984. The sectoral differences in profiles are generally qualitatively similar for other specifications of $\mathbf{H}_{it}$.

[21] The present values are calculated assuming the same number of hours worked per week in self-employment and wage work and a real interest rate of 2 percent.

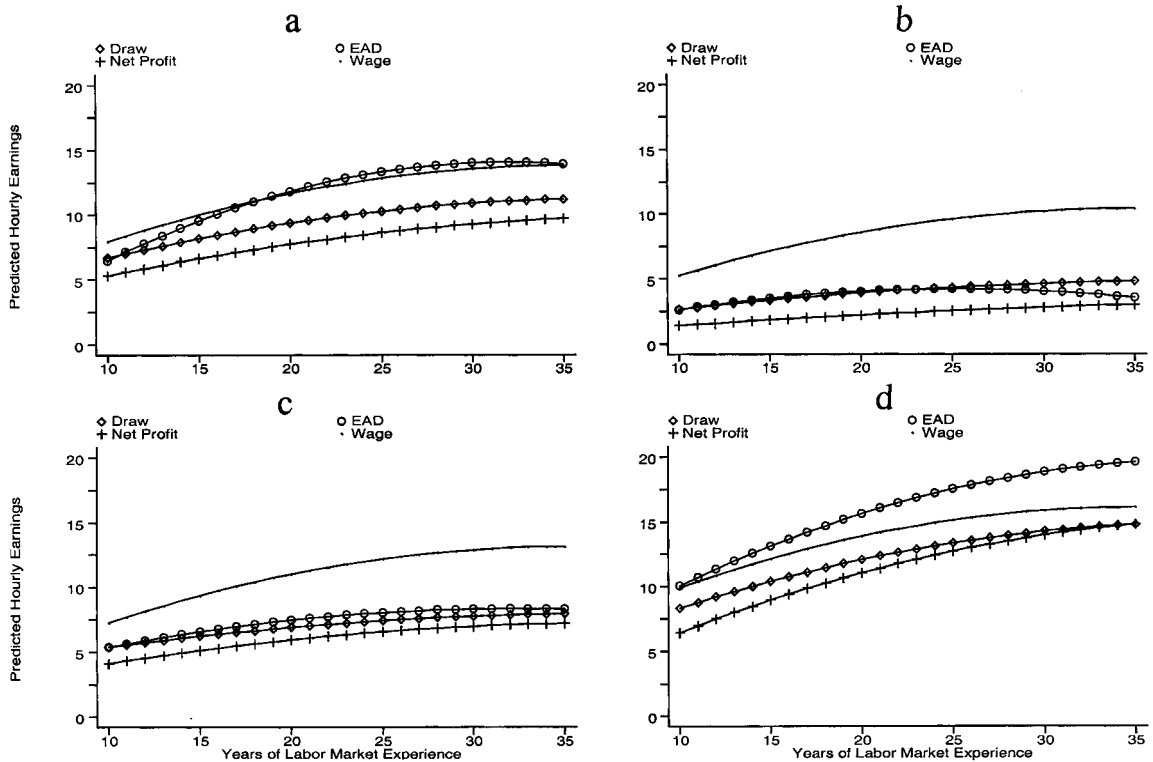

FIG. 2.—Tenure profiles, self-employment and paid employment: *a*, mean; *b*, twenty-fifth percentile; *c*, median; *d*, seventy-fifth percentile.

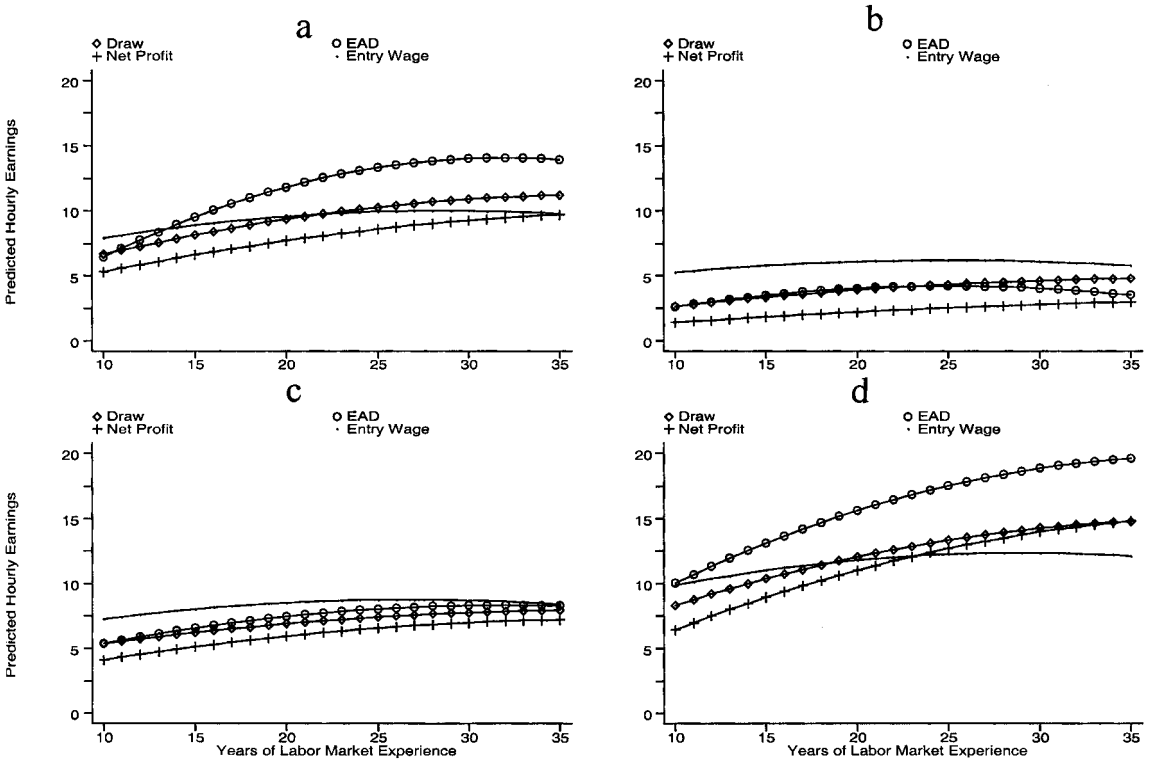

FIG. 3.—Entry wage profiles: *a*, mean; *b*, twenty-fifth percentile; *c*, median; *d*, seventy-fifth percentile

ure on his new job), along with the self-employment tenure profiles from figure 2 for the mean, .25, .50, and .75 quantiles. Again, the predicted mean self-employment earnings differential in figure 3*a* depends on the self-employment income measure used. Entrepreneurs would suffer an immediate 22 percent earnings loss if they left self-employment after 10 years in business (implying 20 years of labor market experience) if the EAD is used as the self-employment income measure. On the other hand, the draw and net profit profiles show that entrepreneurs would actually increase their earnings if they returned to paid employment during their first few years in business.

The lower quartile and median entry wage profiles shown in figures 3*b* and *c* again produce unambiguous findings. Regardless of the income measure used, entrepreneurial earnings are less than the alternative entry wage for all levels of business tenure and labor market experience. For example, if we consider a median entrepreneur returning to paid employment after 10 years in business, $Y^{a}_{PE}(20, 0)$ is at least 15 percent higher than $Y_{SE}(20, 10)$. Notice that even if this individual were to change employers every year, he would still earn more as a paid employee than had he remained in self-employment. Figure 3*d* shows that successful entrepreneurs in the upper quartile of the distribution initially would lose if they were to return to paid employment.

A. Implications for the Theoretical Models

The lower quartile and median tenure and entry wage profiles are not consistent with predictions of the investment, agency, and learning models. In each case, the overtaking behavior predicted by these models is not found. Instead, the profiles indicate that individuals are willing to enter self-employment despite a stream of future returns at least 35 percent less than that available as a paid employee. This is consistent with predictions of a positive compensating differential for self-employment. Reinforcing the conclusion that many entrepreneurs receive substantial nonpecuniary benefits, such as ''being their own boss,'' the median entry wage profile shows that entrepreneurs remain in business despite the fact that the alternative starting wage is always greater than self-employment earnings.

The earnings profiles for the mean and upper quartile provide some evidence consistent with the investment, learning, and superstar models. However, the conclusions rest on the self-employment earnings measure used. The mean wage and EAD profiles suggest that the timing of compensation is fairly similar across sectors, whereas the plots for the mean draw and net profit measures yield

results similar to those found for the median profiles. The EAD and wage profiles for the .75 quantile suggest that a small fraction of entrepreneurs earn substantial returns, as predicted by the superstar model. However, these models cannot explain why most entrepreneurs, as shown by the median and lower-quartile profiles, are willing to enter and remain in business despite lower earnings in self-employment.[22] The earnings profiles support the prediction of a positive compensating differential associated with owning a business for many workers.[23]

V. Does Self-Selection Explain the Earnings Differentials?

I now examine the possibility, suggested by the matching model, that the self-employment differential reflects the movement of low- (or high-) ability employees into entrepreneurship. Two methods are used to assess the selection argument. First, I reestimate equation (1) for paid employees in 1984 including the inverse Mills ratio to account for potential nonrandom selection in paid employment. The estimated selection coefficient is -0.722 with a t-statistic of -2.602,[24] implying that the mean wages of employees are less than the expected wages of entrepreneurs had they been paid employees. This is similar to results in the literature, which generally finds the coefficient on the selection term in the wage equation either to be insignificant or to indicate negative selection into paid employment.[25] The mean wage profiles presented in figures 2*a* and 3*a* may

[22] One may argue that the earnings differences reflect compensating differentials associated with industry working conditions rather than the nonpecuniary benefits of self-employment. The earnings equations were estimated separately for the construction, trade, and service industries. These industries contain the bulk of the self-employed. The predicted earnings differentials found within these industries are similar to those presented above for the economy as a whole. For example, the predicted median hourly earnings differential $Y_{SE}(20, 10) - Y^{a}_{PE}(20, 10)$ ranges from -3.136 (t-statistic $= -3.810$) in services to -3.792 (-5.798) in construction.

[23] This finding is consistent with responses to job satisfaction queries from the National Longitudinal Survey of Young Men, in which 70 percent of the self-employed report ''being my own boss—independence'' as a factor they liked the most about their employment. Only 12 percent of paid employees report independence as a factor they liked most.

[24] As in Borjas and Bronars (1989), the first-stage probit regression included the wage equation variables as well as measures of the education and incomes of other family members. The results were similar when subsets of these variables were used in the first-stage probit.

[25] Brock and Evans (1986) and Evans and Leighton (1989) find no evidence of self-selection in paid employment. Borjas and Bronars (1989) find no selection effects for whites when all occupations are pooled and negative selection for white nonprofessionals. They do find positive selection for nonwhites, but these individuals make up a small fraction of the self-employed population.

TABLE 5

1984–85 EMPLOYMENT PATTERNS: NUMBER AND FRACTION OF WORKERS BY MOBILITY GROUP

Category	Self-Employed 1985 (SE_{85})	Paid Employee 1985 (PE_{85})	Total
Self-employed 1984 (SE_{84}):			
Number	687	194	881
Fraction	.78	.22	1.00
Paid employee 1984 (PE_{84}):			
Number	151	6,441	6,592
Fraction	.023	.977	1.00
Total	838	6,635	7,473

thus be a lower bound for the alternative paid employment earnings available to entrepreneurs.

The second approach to examining selection effects exploits the two-year panel to implement the preprogram estimator (Heckman and Hotz 1989) to determine whether the wage distribution of would-be entrepreneurs prior to entering self-employment is similar to that of workers remaining in paid employment.[26] In particular, I reestimate the 1984 wage regressions for paid employees including a dummy variable (SE_{85}) that equals one if the individual enters self-employment the next year. Table 5 shows that approximately 2.3 percent of paid employees in 1984 became self-employed in 1985.

Panel A of table 6 shows that the mean hourly wages of future entrepreneurs are $0.24 higher than the wages of employees remaining on the job, although the difference is not significant. The .25 and .50 quantile estimates show a similar pattern. The estimate for the seventy-fifth percentile, shown in column 4, indicates that at least some of the individuals entering self-employment are above-average paid employees. Like the control function estimates, these results provide little evidence to support the argument that the earnings differentials found above result from the movement of low-ability workers into self-employment. The wage distribution of would-be entrepreneurs does not appear to be significantly different from that of paid employment stayers, except perhaps at the upper end.[27] Consequently, the earnings of employees appear to represent a valid alternative wage profile for entrepreneurs, if it is assumed that indi-

[26] Jovanovic and Moffitt (1990) use this approach to examine the selection associated with the movement of workers across industries.

[27] It may be argued that individuals with a poor realization of ϵ_{PE84} are more likely to be self-employed in 1985. This would bias the SE_{85} coefficient downward. The results in panel A may thus be a lower bound.

TABLE 6

ESTIMATED MOBILITY COEFFICIENTS FROM HOURLY EARNINGS REGRESSIONS

Variable	OLS (1)	.25 Quantile (2)	.50 Quantile (3)	.75 Quantile (4)
	A. Dependent Variable: 1984 Employee Wage			
SE_{85}	.239	.099	−.030	.723
	(.580)	(.400)	(.097)	(1.851)
	B. Dependent Variable: 1985 Employee Wage			
SE_{84}	1.245	.273	.749	.736
	(1.545)	(1.097)	(1.992)	(1.555)
SE_{84}	1.791	.348	1.119	.753
	(1.472)	(1.029)	(2.250)	(1.195)
$SE_{84} \times T_{84}$	−.073	−.032	−.070	−.002
	(.662)	(1.045)	(1.519)	(.037)
	C. Dependent Variable: 1984 Self-Employment Draw			
PE_{85}	.086	−.301	−.365	.125
	(.120)	(.804)	(.670)	(.132)

NOTE.— Absolute values of *t*-statistics are in parentheses. Table entries are the parameter estimates of the mobility indicators included in earnings regression (1) for the listed sample. The OLS standard errors are heteroskedastic-consistent estimates. Quantile regression standard errors are bootstrapped.

viduals entering self-employment in 1985 are similar to entrants in previous years.[28]

It may be the case that self-employment carries a stigma, so that after a few periods in business, entrepreneurs wishing to return to paid employment receive lower wage offers than other workers with the same level of total labor market experience. To investigate this possibility, the wage equation is estimated using the sample of wage and salary workers in 1985 (PE_{85} workers) including the variable SE_{84}, which indicates whether the worker had been self-employed in 1984. If self-employment carries a negative stigma, then the coefficient on SE_{84} is expected to be negative. The OLS and quantile regression estimates, shown in the first row of panel B of table 6, indicate that entrepreneurs returning to paid employment actually earn a higher wage than employees with the same observed characteristics, although the difference is statistically significant only for the median.

Most entrepreneurs are in business only a short time before re-

[28] Carrington, McCue, and Pierce (1996) show that self-employment earnings in 1984 and 1985 were near their long-term trend. Thus it is unlikely that relatively large numbers of low-ability business owners entered self-employment during this period.

turning to paid employment.[29] Short stayers in self-employment may not suffer a wage penalty, whereas long stayers potentially experience substantial depreciation of their paid employment human capital and hence may be more likely to receive low wage offers. To examine the variation of the entry wage with past business experience, both SE_{84} and an interaction of SE_{84} with business tenure in 1984, $T_{SE,84}$, are included in the 1985 wage regressions. The estimates in the second and third rows of panel B indicate that the entry wage premium earned by self-employed leavers is lower for long-term business owners but still positive. These findings are consistent with those of Evans and Leighton (1989), who find that each additional year of self-employment experience increases the mean wages of males aged 29–39 by 4.5 percent, as compared with an increase of 3.1 percent for an extra year of wage experience. A possible explanation for these results is that successfully operating a business over a number of years is a positive signal of ability to potential employers.

The estimated wage premium for self-employment leavers shown in panel B is based on the accepted wage offers of self-employment leavers, which may not represent the paid employment opportunities available to those remaining in business in 1985. If the accepted wage offers of self-employment leavers are representative of the alternative paid employment earnings available to self-employment stayers, then

$$E(Y_{iPEt+1}|SE_{it} = 1, SE_{it+1} = 0) = E(Y_{iPEt+1}|SE_{it} = 1, SE_{it+1} = 1). \quad (4)$$

A simple way to investigate whether condition (4) holds is to again use Heckman's (1979) sample selection framework. Following his two-step procedure, we first estimate a probit regression for the probability that a self-employed worker in 1984 enters paid employment in 1985. We then estimate equation (1) augmented with the inverse Mills ratio for the sample of entrepreneurs returning to paid employment in 1985 (the SE_{84}, PE_{85} subsample). The estimated coefficient on the inverse Mills ratio from the second-stage regression is 1.702 with a *t*-statistic of 0.764, implying that the expected wages of self-employment stayers are actually greater than the expected wages of self-employment leavers, although the difference is insignificant. Consequently, there is little evidence for the hypothesis that entrepreneurs remain self-employed because they would earn relatively low wages when moving to paid employment. Moreover, the estimates in panel C of table 6 indicate that the entrepreneurial earnings of individuals leaving self-employment are not significantly

[29] Of the individuals leaving self-employment in 1984, 75 percent had been in business less than four years.

different from those of entrepreneurs remaining in business. Together with the findings for self-employment entrants, these results provide little support for the predictions of the matching model for the self-employment earnings differential. The persistence of many entrepreneurs in business, despite low earnings, suggests that self-employment offers substantial nonpecuniary benefits.

VI. Other Considerations

The earnings differentials calculated in this paper have considered only paid wages or earnings. However, nonwage compensation, such as employer-provided health insurance, is not incorporated into employee earnings. To the extent that fringe benefits are substituted for wages in paid employment, the self-employment earnings differential found above may understate the true difference in compensation across sectors. Table 7 describes the extent and source of health insurance coverage of paid employees and business owners. Panel A indicates that entrepreneurs were almost twice as likely to be uninsured and more likely to be covered by a policy in the name of another household member.[30] This finding is consistent with the predictions of Devine's (1992) household model of the self-employment decision that the wife will choose a job that is more likely to offer fringe benefits, such as health insurance, that are costly for nonemployees to obtain. This allows the husband to enjoy the nonpecuniary benefits of self-employment.

Panel B presents multinomial logit estimates indicating that the patterns observed in panel A persist after one controls for differences in observed characteristics across sectors. Finally, while the dollar amount of the insurance premium is not reported in the SIPP, panel C reports that over half of all entrepreneurs pay for health insurance out of pocket, compared to only 6 percent of paid employees with coverage. Given that the self-employed are both less likely to have health insurance and more likely to pay for it out of pocket, the value of the compensating differential associated with self-employment may be even greater than that reflected by the difference in earnings.

VII. Conclusion

A variety of factors have been proposed to explain the difference in the earnings of entrepreneurs and paid employees. For most entrepreneurs, the empirical evidence of the paper is consistent with the

[30] Gruber and Poterba (1994) report similar findings.

TABLE 7

PROBABILITY OF HEALTH INSURANCE COVERAGE AND SOURCE OF PAYMENT, BY SECTOR

A. HEALTH INSURANCE COVERAGE BY SECTOR

Insurance Status	Self-Employment	Paid Employment
Uninsured	26.7%	14.7%
Covered by policy in own name	57.9%	76.1%
Covered by policy in other's name	15.4%	9.2%

B. MULTINOMIAL LOGIT ESTIMATES OF THE EFFECT OF SELF-EMPLOYMENT ON THE PROBABILITY OF INSURANCE COVERAGE*

Insurance Status	Self-Employment Dummy Variable	Difference in Probabilities between Entrepreneurs and Paid Employees†
Uninsured	1.472	.145
	(15.679)	
Covered by policy in own name		−.236
Covered by policy in other's name	1.377	.091
	(12.744)	

C. SOURCE OF PAYMENT IF INSURED (Covered by Policy in Own Name)

	Self-Employment	Paid Employment
Employer or business pays all	32.6%	44.4%
Employer or business pays part	9.0%	49.3%
Individual pays all	58.4%	6.3%

NOTE.—*t*-statistics are in parentheses.

* Other independent variables are experience and its square; tenure and its square; education dummies; indicators for marital status, race, disability, and part-time; and four health levels.

† Differentials are calculated at the mean values of the self-employed sample.

notion that self-employment offers significant nonpecuniary benefits, such as "being your own boss." Many entrepreneurs have not only lower initial earnings than employees with the same observed characteristics but also lower earnings growth. For example, the present value to the median entrepreneur of a business lasting 25 years is over 25 percent less than the present value of a paid job of the same duration. Even more striking, median self-employment earnings never overtake the alternative entry wage available on a paid job with zero job tenure. These results are generally robust to the measure of self-employment earnings used. Moreover, this self-employment differential may be a lower bound for the difference in total compensation across sectors since entrepreneurs are less likely to have health insurance. Paid employees are more likely to have all or part of their health insurance paid for by their employer.

Such nonwage benefits may represent over 20 percent of paid employment compensation.

The results also provide some support for the superstar model since a handful of entrepreneurs earn substantial returns in self-employment. In particular, when the EAD measure is used, self-employment earnings profiles were above those in paid employment at the seventy-fifth percentile. Little evidence is found to support the selection explanation for these findings. The wages of workers entering self-employment and the wages of entrepreneurs returning to paid employment are not significantly different from the earnings of other employees.

The conclusion that the self-employment earnings differential reflects entrepreneurs' willingness to sacrifice substantial earnings in exchange for the nonpecuniary benefits of owning a business appears to be quite robust to a variety of alternative explanations. Nevertheless, some limitations of the present analysis must be kept in mind. First, the analysis focuses on the experiences of small business owners. The findings may be quite different for highly paid professionals such as doctors or lawyers, where superstar considerations may be even more important. Second, differences in the probabilities of survival in a business versus a job have not been stressed. To the extent that involuntary separations are greater in self-employment than in wage work, the conclusions of this paper would be strengthened since individuals would have even lower expected earnings in entrepreneurship. Third, the results presented here are of a reduced form, providing evidence as to whether observed earnings differentials are consistent with the predictions of a variety of theoretical models. Structural estimates of the compensating differential, for example, would require an explicit specification of worker utility and the probability of observing particular employment and earnings sequences over the life cycle, as in dynamic programming models of occupational choice. Future research along these lines would be most valuable in adding to our understanding of self-employment.

Appendix

Construction of Samples

The samples used for the self-employment regressions were constructed as follows: the initial sample consisted of all incorporated and unincorporated business owners. Then 124 individuals classifying themselves as ''casual'' business owners were dropped from the self-employment sample. Of the remaining 1,101 entrepreneurs, all had valid responses for the draw earnings measure; 759 had valid responses for the net profit measure. With

regard to the EAD measure, 526 individuals were excluded because they did not report the value or debt or both of the business in both 1984 and 1985. The imputation procedure in the SIPP was found to produce implausible business equity differences. The spouse responded to the business value and debt questions in 1984 or 1985 in the case of an additional 281 entrepreneurs. Spousal responses to these questions also produced implausible responses, and so the observations were dropped when the EAD measure was constructed. Finally, six sample members reporting obviously incorrect equity values (reported equity of $0 in one year and $500,000 in the next, or vice versa) were dropped from the EAD subsample.

To examine the representativeness of the net profit and EAD subsamples, the draw from the full draw sample is compared with the draw from the net profit and EAD subsamples. Little difference was found between the means, variances, and quartiles of the distributions. The OLS and quantile draw regressions in Section IV were estimated including a variable indicating whether the observation was also in the net profit or EAD subsample. These dummy variables were insignificant. A probit regression was also estimated to determine whether any demographic characteristics affected the probability of reporting the EAD or net profit. Only marital status significantly affected the probability of being in the EAD subsample. Consequently, the EAD and net profit subsamples appear to be representative of the sample of entrepreneurs as a whole.

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