

Small Business Formation by Unemployed and Employed Workers

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ABSTRACT. This paper uses data from the Current Population Surveys for 1968–1987 and from the National Longitudinal Survey of Young Men to examine the relationship among unemployment and small business formation and dissolution for white men and women. We find that self-employed workers are more likely to have experienced unemployment than are wage workers because their higher entry rate into self-employment offsets their higher exit rate out of self-employment. Unemployed men and women who enter self-employment experience a larger drop in their earnings than the unemployed who return to wage work.

I. Introduction

The formation of small businesses by unemployed workers has attracted a great deal of interest in recent years. Several Western European countries have adopted programs to stimulate small-firm formation by unemployed workers.¹ These programs, which provide financial assistance to unemployed workers who start firms, were a response to chronically high rates of unemployment on the one hand and low rates of business formation on the other hand compared with the United States. In this country, several experimental programs have tried to encourage business formation by disadvantaged workers — e.g., low-income, unskil-

led workers, many of them on welfare — under the auspices of the Comprehensive Employment Training Act (CETA) and the Job Training and Partnership Act (JPTA).² The U.S. Department of Labor is implementing experimental programs in several states to provide financial assistance and management advice to unemployed workers who start small firms.³

Little is known about the propensity of unemployed workers to start small businesses in the absence of governmental assistance or about the exit rate of firms started by unemployed workers relative to that of firms started by wage workers. These issues are important because they provide insights into the ability of small-business assistance programs for the unemployed to stimulate the formation of viable small businesses.

The formation of small-firms started by unemployed and employed workers are examined using data drawn from the Current Population Surveys for 1968–1987. By matching respondents who were in the CPS surveys in contiguous years, we have obtained data on over 400,000 individuals between the ages of 18 and 65. We also use data from the National Longitudinal Survey of Young Men, which tracks roughly 5,000 men over a 15 year period beginning in 1966, to examine the effect of being unemployed on business and wage earnings in 1981. These datasets are described in the second section. The third section presents summary statistics on small-business startups and exit rates by unemployed and employed workers using the CPS matched data. The fourth section estimates a model of selection into self-employment for employed and unemployed workers. In the fifth section we examine the impact of unemployment experience on self-employment participation and earnings. The last section summarizes the results and presents suggestions for further research on this topic.

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II. Description of the data

The March Supplements to the Current Population Surveys (CPSs), conducted by the U.S. Bureau of the Census, are based on a stratified random sample of approximately 70,000 U.S. households. Survey participants are asked a variety of questions concerning demographic characteristics, earnings, employment, and other characteristics of the household members as of the survey week as well as information about their employment and earnings in the preceding years. In theory half of all respondents are in contiguous surveys for most survey years. We have matched these respondents over the period 1968–1987 for the pairs of years where matches are possible. For each individual, we have information pertaining to the survey week for two surveys and information about the longest held job in the preceding year. See Appendix A for details.

Figure 1 summarizes the profile of an individual on the matched CPS dataset. The individual is

interviewed in March of year 1 and asked what she is doing as of the survey week. This gives us information on whether she is a wage worker or self-employed and, if she is unemployed, the number of weeks she has been unemployed. She is also asked about her earnings and the longest-held job in the preceding year (Year 0). She is interviewed in March of year 2 about her activities as of the survey week in Year 2 and about her earnings and the longest-held job in the preceding year (Year 1).

The matched cross-sections are then pooled over the 1968–1987 period. We use this pooled (15 years) cross-section (2.33 years) data to calculate entry and exit rates between jobs held as of the survey week and between the longest-held jobs in the year.

We conducted separate analyses for white men and white women, because there are important labor-market differences between these groups. White men have a much higher rate of self-employment than white women and most other

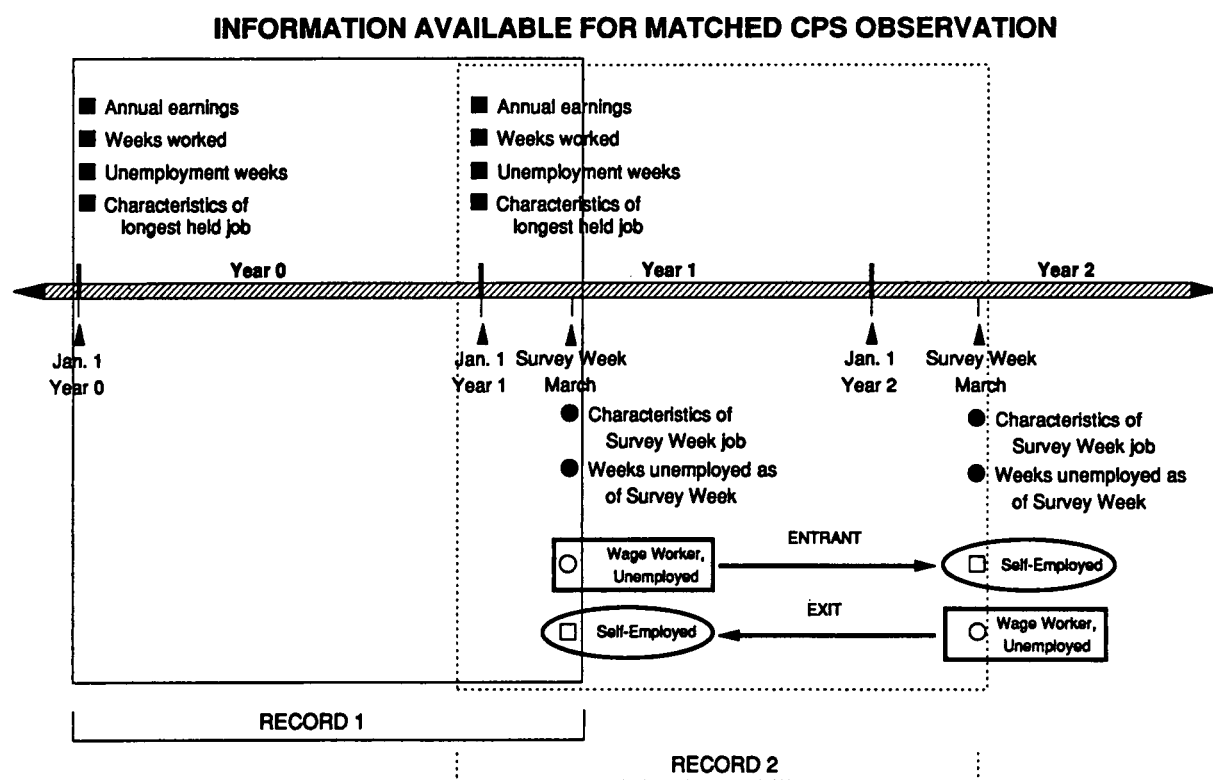


Fig. 1. Information available for matched CPS observation.

demographic groups — about twice that of white women and three times that of minorities — and comprise about 72% of all self-employed individuals in our matched samples.⁴ Minorities, especially blacks, have very low rates of self-employment. Because there are relatively few minority members in our sample and because blacks (the largest minority group) are much less likely to become self-employed than are members of other races, there are very few self-employed minority members in our sample. Consequently, we do not report results for minorities. There were a total of 150,085 white men and 96,770 white women, who were in our sample during matched surveys and who were labor force participants.

We concentrate on self-employed individuals who are unincorporated — either sole proprietors or members of partnerships — because data on self-employed individuals who are incorporated were incomplete. For the job held as of the survey week, the Census Bureau includes incorporated self-employed workers among wage workers. Consequently, it is not possible to observe entry into or exit out of incorporated self-employment between survey weeks. For the job held during the previous year, the Census Bureau did not identify incorporated and unincorporated self-employed workers separately before 1976.

We have adopted the following definitions. *Entry* is defined as a switch from wage work or unemployment to unincorporated self-employment between the survey week of Year 1 and the survey week of Year 2. *Exit* is defined as a switch from unincorporated self-employment to wage work or unemployment between the survey week of Year 1 and the survey week of Year 2. We consider an alternative definition of entry which allows us to determine the exit rate of recent entrants into self-employment. *Entry** is defined as a switch from wage work on the longest-held job in the preceding year to self-employment as of the survey week. For most individuals the longest-held job is that job held for six months or more in the preceding year. Individuals whose longest-held job in the preceding year (Year 0) was a wage job but who were self-employed as of the March survey week (Year 1) would generally have switched into self-employment between July 1 of year 0 and the March survey week of Year 1.⁵ These individuals have been self-employed for 9

months or less. We consider the exit rate of these recent entrants into self-employment below.

We describe differences in the length of time in unemployment and the reason for being unemployed on business startups.⁶ Respondents in survey Week 1 (see Figure 1) who are unemployed as of the survey week are asked the number of weeks they have been unemployed and the reason they are unemployed.⁷ Using this information, we estimate entry rates into self-employment in survey Week 2.

The National Longitudinal Survey is based on a national probability sample of men who were between the ages of 14 and 24 in 1966 and who were surveyed yearly between 1966 and 1971 and in 1973, 1975, 1976, 1978, 1980, and 1981. There were 3,918 white men in the initial survey of whom 2,731 were still in the survey in 1981. Using information on employment status and tenure, we calculated total experience in wage work and self-employment and total unemployment experience for each year of the sample. These data are described in detail in Evans and Leighton (1987).

III. Self-employment entry and exit by employed and unemployed wage workers

Entry and exit

Table I reports entry rates for employed and unemployed workers. An important finding is that the entry rate into self-employment is about twice as high for persons who are unemployed as for persons who are not unemployed: 4.5% vs. 2.4% for white men and 2.9% vs. 1.4% for white women.⁸ The probability of switching into self-employment increases as unemployment duration becomes very long (for men, 40 or more weeks; for women, 15 or more weeks).

Table 1 also reports exit rates for employed and unemployed workers. The exit rates are for persons who entered self-employment between the longest-held job in the preceding year and the survey week.⁹ We have broken down the exit rates according to the number of weeks of unemployment in the previous year. While these definitions and breakdowns are not strictly comparable to those used for the entry rate, they can give us a rough idea of whether people who have entered

TABLE I
Entry into and exit out of rate unincorporated self-employment by weeks unemployed, 1968–1987

Employment status	Entry rate ^a	Exit rate ^b
White males		
Employed	2.4%	37.0
Unemployed	4.5	51.5
Weeks unemployed		
1–4	4.3	46.8
5–10	3.6	42.6
11–14	5.2	53.3
15–26	4.5	56.5
27–39	4.3	54.2
40 or more	6.7	81.8
White females		
Employed	1.4%	41.2
Unemployed	2.9	42.3
Weeks unemployed		
1–4	2.3	61.5
5–10	2.3	40.0
11–14	2.5	28.6
15–26	3.7	50.0
27–39	4.8	50.0
40 or more	3.6	33.3

^a The entry rate is the percent of labor-force participants who were wage workers on their main current or last job as of the first survey week and who were unincorporated self-employed on their main current or last job as of the second survey week. Data were pooled for 1968–1987. The hypothesis that employed and unemployed workers have the same entry rate into self-employment can be rejected at the 0.0001 percent level using a chi-square test. Weeks of unemployment are measured as of the survey week.

^b The exit rate is the percent of individuals who were wage workers on the longest-held job in the calendar year preceding the first survey week and unincorporated self-employed workers as of the first survey week who were wage workers as of the second survey week. Weeks of unemployment is based on total weeks of unemployment during the calendar year preceding the first survey week.

self-employment after a long spell of unemployment are more or less likely to remain self-employed. Two findings are notable. First, the exit rate is higher for white men who were unemployed in the preceding year but not for white women. Second, the figures indicate a tendency for the exit rate for white men to increase with the duration of unemployment but not for white women.

Table II reports the entry rate into self-employment for unemployed workers by reason for their unemployment. White men and white women who quit their jobs or who lost their jobs are more likely to start business than individuals who were on temporary or indefinite layoff. There is no evidence that people who have lost their jobs are more likely to start a small business than people who have become unemployed by voluntarily quitting their jobs.¹⁰

TABLE II
Entry into unincorporated self-employment by unemployed workers by reason for unemployment, 1968–1987^a

Reason for unemployment	Entry rate	
	White men	White women
Lost job	5.1	2.7
Quit job	5.3	2.8
Left school	3.3	3.8
Wanted temporary work	3.1	3.0
Other	6.1	3.5
Temporary or indefinite layoff	3.5	1.8

^a The entry rate is defined as the percent of unemployed labor-force participants who were wage workers on their last job as of the first survey week and who were unincorporated self-employed on their main current or last job as of the second survey week. Data were pooled for 1968–1987. Exit rate is not available by survey week reason.

Relative earnings changes

We have seen that white male unemployed workers are more likely to start small businesses but also more likely to return to wage work during their first year of self-employment compared with employed workers. It is interesting to compare the earnings received by self-employed workers who entered from unemployment with the earnings received by self-employed workers who entered from wage employment. Because individuals enter into self-employment from wage work or unemployment at various times during the year and because only annual earnings data are available, it is not possible to obtain an exact comparison of wages in self-employment and wage work. We approximate the average hourly earnings received in Year 0 and Year 1 by taking total earnings (wage plus self-employment) received during the

calendar year and dividing by the number of hours worked during the calendar year (number of weeks worked times hours usually worked as reported by the individual). See Appendix A for a discussion of the problems and limitations of this measure.

Let us consider Table III which reports relative wage changes for entrants and nonentrants into self-employment and for entrants who entered from wage work vs. unemployment. Several findings emerge. First, individuals who have been unemployed experience a smaller increase (larger decrease) in earnings between years than individuals who have not been unemployed. This is what one would expect if poorer workers are more likely to become unemployed.¹¹ Second, unemployed individuals who enter self-employment experience a larger decrease in earnings than individuals who do not enter self-employment. Unemployed white men who enter self-employment suffer an earnings decline of 34.4% while unemployed white men who reenter wage work obtain an earnings increase of 3%. While part of the earnings decrease could be due to the greater

opportunities self-employed workers have to underreport income, unemployed workers who enter self-employment suffer a much greater decrease in earnings than employed workers who enter self-employment (34.4% vs. 17.1%). Unemployed workers who enter self-employment do poorly compared to unemployed workers who return to wage work. Third, we examined the relationship between wage changes and weeks unemployed as of the survey week for white men. There is no evidence of a systematic relationship between changes in wages and weeks of unemployment.¹²

IV. Comparison of self-employment entry for employed and unemployed wage workers

Multivariate statistical methods are used in this section to determine whether some of the differences identified above are due to differences in the characteristics of people who become unemployed. Estimates of the probability of entering self-employment and of self-employment wages are reported separately for employed and unemployed workers.

We hypothesize that the probability of entering self-employment depends upon demographic characteristics, education, experience, the wage rate received on the current job, and the availability of liquidity for starting a business. We argue that individuals will switch from wage work to self-employment if the expected value of self-employment exceeds the expected value of wage work. The difference between these expected values depends upon the difference between expected earnings in the two occupations and upon relative tastes. Expected wage earnings depend upon current wage earnings, education and experience. Expected self-employment earnings depend upon education and experience. We conjecture that the probability of switching into self-employment will decline with current wage earnings but may increase or decrease with education and experience depending upon whether these characteristics are more important in self-employment or wage work.

Finally an individual will be more likely to switch into self-employment the greater his net worth if there are liquidity constraints as in Evans and Jovanovic (1989). Liquidity is measured by

TABLE III
Average log change in real weekly earnings for workers who enter self-employment versus workers who get a wage job by unemployment status

	White males	
	Entrants	Non-entrants
Employed	-17.1	9.5
Unemployed	-34.4	3.0
Weeks unemployed		
1-4	-16.8	12.2
5-10	-50.8	-0.2
11-14	-28.1	-1.5
15-26	-50.7	1.6
27-39	-14.4	-10.6
40 or more	-38.7	-0.3
	White females ^a	
	Entrants	Non-entrants
Employed	-28.7	9.9
Unemployed	-30.2	8.0

^a Too few observations for analysis of unemployment by weeks unemployed for white females.

the sum of interest and dividend payments in the previous year. For unemployed workers, we expect that the probability of entry into self-employment is related positively to the number of weeks they have been unemployed. Variables are defined in Table IV.

To estimate the effect of these variables on the probability of entry, we obtained regression estimates of the "linear probability model" for which the dependent variable is 0 (for non-entrants) or 1 (entrants).¹³ The model was estimated with data for 1976–1987.¹⁴ Results are reported in Table V. While the magnitude and the significance of some of the estimated coefficients differ between unemployed and employed workers and between white men and white women, the results are generally similar. The probability of entry increases with experience, education, and liquidity and decreases with the wage rate. The probability of entry for unemployed workers does not increase significantly with the number of weeks of unemployment.

V. The long-term effects of unemployment on self-employment participation and earnings

We turn to the NLS dataset to see how unemployment experience over an extended time period affects self-employment participation and earnings for white men who were still in the NLS panel in 1981. Since the approach here and the results are described in more detail in Evans and Leighton (1987, 1989), we concentrate on the relevance of the results to the relationship between unemployment and self-employment. We calculated the amount of time individuals were unemployed and the amount of time individuals were in wage employment or self-employment from information on employment experience from 1966–1981.

Table VI reports estimates of the probability of participating in self-employment in 1981 obtained from a statistical procedure known as probit analysis. As an indicator of individuals who have had a relatively large amount of unemployment, we used weeks of unemployment experience divided by wage experience plus unemployment experience.¹⁵ The estimated coefficient on this variable is positive and statistically significant. This result is consistent with our CPS finding that unemployed workers are about 2 times as likely to

TABLE IV
Variable definitions

Variable	Definition
<i>Current population survey</i>	
Urban	Dummy for resident of SMSA
Married	Dummy for married individual
High-School dropout	Dummy for individual with less than 12 years of schooling
College dropout	Dummy for individual with more than 12 and less than 16 years of schooling
College graduate	Dummy for individual with 16 years of schooling
Post-graduate	Dummy for individual with more than 16 years of schooling
Experience	Age-education-6
Previous wage	Average hourly earnings in previous year
Liquidity/1000	Dividend plus interest receipts
Weeks unemployed	Number of weeks unemployed
<i>National longitudinal survey</i>	
Military	Dummy for individual who served in the military
Urban	Dummy for individual who lives within an SMSA
Professional	Dummy for individual in professional occupations
Farmer	Dummy for individual in farm occupation
Married	Dummy for individual who is married
Divorced	Dummy for individual who is divorced
Handicapped	Dummy for individual who has poor health
Log earnings	Natural log of earnings in the previous year
Education	Years of education
Business experience	Years in current business
Previous business	Years in previous business
Wage experience	Years in wage experience
Military experience	Weeks of military experience
Tenure	Years in current job
Changes	Number of jobs held by individual since 1966 divided by wage experience
Unemployment	Weeks of unemployment divided by wage plus unemployment experience times 100
Unemployment wks	Weeks of unemployment since 1966
Wage earnings	Wage earnings of wage workers
Self earnings	Self-employment earnings of self-employed workers who report wage but no self-employment earnings

enter self-employment and about 1.5 times as likely to leave self-employment during the first year as employed workers.

The unemployed are so much more likely to enter self-employment (2 times as likely as employed workers) that, even though they are more likely to leave self-employment (1.5 times as likely as employed workers), they are more likely than the employed to remain self-employed over time.¹⁶

Table VII reports earnings estimates for self-employed workers and wage workers. The important finding for our purposes is that unemployment experience — measured as the total length of

TABLE V
Linear-probability model estimates of the determinants of self-employment entry White men

Variable	Unemployed Coefficient (standard error)	Employed Coefficient (standard error)
Urban	0.0049 (0.0070)	-0.0037* (0.0011)
Married	0.0298* (0.0010)	0.0050* (0.0018)
Divorced	0.0029* (0.0141)	0.0098* (0.0028)
High-School dropout	0.0016 (0.0084)	-0.0007 (0.0017)
College dropout	0.0258* (0.0096)	0.0042* (0.0015)
College graduate	0.0269 (0.0166)	0.0112* (0.0019)
Post-graduate	0.0940* (0.0211)	0.0187* (0.0019)
Experience	0.0031* (0.0011)	0.0008* (0.0002)
Experience ² /100	-0.0071* (0.0023)	-0.0013* (0.0004)
Previous wage	-0.0006 (0.0006)	-0.0003* (0.0001)
Previous wage ²	0.0231 (0.0463)	0.0011* (0.0006)
Liquidity/1000	0.0016 (0.0027)	0.0012 (0.0002)
Weeks unemployed	0.0003 (0.0003)	—
Constant	-0.0033 (0.0113)	0.0154* (0.0020)
R ²	0.0185	0.0031
F-statistic	3.8593	12.7336
Observations	4087	81455

Table V (Continued)

Variable	Unemployed Coefficient (standard error)	Employed Coefficient (standard error)
Urban	0.0026 (0.0080)	-0.0047* (0.0010)
Married	-0.0004 (0.0114)	0.0061* (0.0016)
Number of kids	-0.0033 (0.0038)	0.0010 (0.0090)
Number of kids under 6	0.0134 (0.0080)	0.0060* (0.0012)
Divorced	0.0111 (0.0139)	0.0038* (0.0020)
High-School dropout	-0.0045 (0.0100)	-0.0009 (0.0012)
College dropout	0.0106 (0.0099)	0.0041* (0.0013)
College graduate	0.0259 (0.0150)	0.0070* (0.0018)
Post-graduate	0.0431* (0.0196)	0.0038* (0.0019)
Experience	0.0033* (0.0011)	0.0004* (0.0002)
Experience ² /100	-0.0075* (0.0026)	-0.0006 (0.0004)
Previous wage	-0.0022 (0.0013)	-0.0002* (0.0001)
Previous wage ²	0.7062* (0.3166)	0.0031 (0.0019)
Liquidity/1000	0.0013 (0.0024)	0.0006* (0.0002)
Weeks unemployed	0.0004 (0.0003)	—
Constant	0.0088 (0.0130)	0.0048* (0.0018)
R ²	0.0220	0.0023
F-statistic	2.0607	7.5238
Observations	2016	59505

* Significant at 0.05 level or less.

time spent in unemployment — carries a substantially larger penalty in self-employment than in wage work. A self-employed worker loses 0.77% of earnings per week of past unemployment while a wage worker loses 0.42% of earnings per week of past unemployment.¹⁷

VI. Conclusion

This report has investigated small business forma-

TABLE VI
Estimated probability of being self-employed in 1981 (white men probit estimates)

Variable	Coefficient	Std. error	t	Prob > t	Mean
Self-employed					0.161165
Urban	-0.1845696	0.0788463	-2.341	0.019	0.7067961
Married	0.0705539	0.0923126	0.764	0.445	0.776699
Divorced	0.1504005	0.101406	1.483	0.138	0.1446602
Handicapped	-0.2205851	0.1354426	-1.629	0.104	0.0859223
Experience	0.0631149	0.011388	5.542	0.000	14.45653
Education	0.0468791	0.0159466	2.940	0.003	13.83447
Unemployment	0.0008846	0.0001591	5.561	0.000	138.5192
Changes	0.0129181	0.0027347	4.724	0.000	16.87336
Farmer	1.852521	0.1674885	11.061	0.000	0.038835
Professional	1.318865	0.1805655	7.304	0.000	0.0286408
Military	0.2254239	0.1098127	2.053	0.040	0.3504854
Mil. exp.	-0.0039777	0.0032259	-1.233	0.218	9.865049
Constant	-3.077114	0.3627388	-8.483	0.000	1

Number of obs = 2060.

Log likelihood = -762.87545.

chi2(12) = 293.63

Prob > chi2 = 0.0000

tion by unemployed workers. Key findings include:

- Unemployed workers are about twice as likely to start businesses as employed workers. The entry rate into self-employment is 2.4% for employed white men vs. 4.5% for unemployed white men; and 1.4% for employed white women vs. 2.9% for unemployed white women.
- Unemployed white men who start small businesses are more likely to fail than employed white men who start small businesses. Of white men who started a small business after being unemployed, 51.5% returned to wage employment after a year. Of white men who were not unemployed before starting a business, only 37.0% returned to wage employment after a year. There is little difference for white women — 42.3% for the unemployed vs. 41.2% for the employed. Our sample of white women, however, is much smaller and the results less reliable.
- The higher entry rate into self-employment outweighs the higher exit rate out of self-employment for unemployed workers. Conse-

quently, over time self-employed workers are more likely to have experienced previous spells of unemployment than are wage workers.

- Men and women who enter self-employment from unemployment experience a larger drop in total earnings during their first year than either individuals who enter self-employment from wage work or individuals who return to a wage job after a spell of unemployment. White men who entered self-employment from unemployment experience a decrease in their annual earnings of 34.4%. By way of comparison, white men who were employed prior to entering self-employment had an earnings drop of 17.1%; white men who got a wage job after unemployment had an earnings increase of 3.0%. The differences for white women show a similar although less dramatic pattern.
- For both unemployed and employed workers, the probability of entry into self-employment increases with experience, education and liquidity and decreases with the wage rate.
- Time spent in unemployment depresses self-employment earnings more than wage earnings. A self-employed worker loses 0.8% of

TABLE VII
Estimated log earnings equations for self-employed and wage workers, 1981 (regression estimates)

White male self-employed workers					
Variable	Coefficient	Std. error	t	Prob > t	Mean
Log earnings					9.722387
Urban	0.2984078	0.0959255	3.111	0.002	0.5886525
Married	0.1426724	0.1182799	1.206	0.229	0.8262411
Handicapped	-0.7237983	0.1653379	-4.378	0.000	0.0744681
Wage exp.	0.0212041	0.0106104	1.998	0.047	8.838993
Bus. exp.	0.1127724	0.0267228	4.220	0.000	6.831969
Bus. exp. ²	-0.0048672	0.0012519	-3.881	0.000	78.364
Prev. Self	0.2638763	0.1084132	2.434	0.016	0.2234043
Education	0.102862	0.0187483	5.486	0.000	13.85816
Unemploy wks	-0.0076448	0.0023534	-3.248	0.001	12.71631
Changes	-0.0019309	0.0039824	-0.485	0.628	18.22286
Farmer	0.0088565	0.1262476	0.070	0.944	0.1950355
Professional	0.1607639	0.1705543	0.943	0.347	0.0957447
Military	-0.1787064	0.122895	-1.454	0.147	0.3439716
Mil. exp.	0.0065334	0.0037604	1.737	0.083	7.723404
Constant	7.547442	0.3774288	19.997	0.000	1
Number of obs = 282.				F(14,267) = 10.69	
R-square = 0.3591.				Prob > F = 0.0000	
Adj R-square = 0.3255.				Root MSE = 0.71254	
White male wage workers					
Variable	Coefficient	Std. error	t	Prob > t	Mean
Log earnings					9.888144
Urban	0.2116573	0.0287379	7.365	0.000	0.7239521
Married	0.2301503	0.0304746	7.552	0.000	0.7694611
Handicapped	-0.180494	0.0451322	-3.999	0.000	0.0874251
Wage exp.	0.0984876	0.0198633	4.958	0.000	13.97031
Wage exp. ²	-0.0024167	0.0006396	-3.778	0.000	210.6699
Self exp.	0.0447571	0.011243	3.981	0.000	0.3203938
Education	0.0706433	0.0054855	12.878	0.000	13.82814
Unemploy wks	-0.0042027	0.0005479	-7.670	0.000	16.44012
Changes	-0.0035781	0.0009934	-3.602	0.000	16.32626
Farmer	-0.4048178	0.1277192	-3.170	0.002	0.0101796
Professional	0.15914	0.1064927	1.494	0.135	0.0149701
Military	0.0213733	0.0400467	0.534	0.594	0.3556886
Mil. exp.	0.0018262	0.0010989	1.662	0.097	10.36886
Constant	7.818336	0.1790618	43.663	0.000	1
Number of obs = 1670.				F(13,1656) = 49.85	
R-square = 0.2813.				Prob > F = 0.000	
Adj R-square = 0.2756.				Root MSE = 0.51578	

earnings per week of past unemployment while a wage worker loses 0.4% of earnings per week of past unemployment.

Self-employment provides an outlet for unemployed workers. While unemployed workers do not do very well at self-employment — they fail more often, earn less in the first year than entrants from wage work — the fact that many remain self-employed rather than returning to wage work suggests that they would do even more poorly at wage work. Otherwise they would not have remained self-employed.

Recommendations for further research

These results should be viewed primarily as descriptive. We must exercise considerable care in inferring a causal relationship between unemployment and small-business formation and success. People who become unemployed and choose to start a business may differ in a variety of unmeasured ways from other people. Further research will be required to address this issue.

Moreover, the fact that many self-employed workers do find temporary and sometimes permanent employment in their own businesses does not necessarily imply that the government should or should not subsidize small business startups by unemployed workers. Such programs would be desirable from the standpoint of economic efficiency only if market breakdowns currently hinder the formation of efficient businesses by unemployed workers. There are at least three possible market breakdowns. First, capital markets may provide too little capital to small firms. Recent work by Evans and Jovanovic (1989) and Fazzari, Hubbard, and Petersen (1987) finds that smaller firms are more likely to face liquidity constraints than larger firms. If these liquidity constraints are the result of a market breakdown it is possible that government assistance programs to small businesses could rectify these breakdowns. An ongoing project for the Small Business Administration is examining this issue. Second, government regulation and requirements may hinder small-business formation as a result of imposing costs that bear more heavily on smaller firms.¹⁸ While tiering regulations so that smaller firms face lighter requirements is the preferred method for dealing

with this problem, it is possible that direct subsidies to small businesses may be more cost-effective when there are large administrative costs associated with tiering. Third, it is possible that direct subsidies for small business startups reduce chronic unemployment and the welfare and other social costs associated with such unemployment. The social costs and benefits of small-business assistance programs should be considered carefully before they are adopted or expanded.¹⁹

Appendix A

Current population surveys, 1968–1987

The March Current Population Surveys (CPS) include a special March supplement. Responses to this supplement and to the regular survey questionnaire comprise the Annual Demographic File (ADF). From the March surveys we have constructed a dataset which contains current demographic and employment information and earnings and employment information for the previous calendar year. Our dataset includes individuals between the ages of 18 and 65 as of the March survey, who were not farm owners or workers, and who were not in institutions such as dormitories or asylums.²⁰ Family workers are also excluded. There were 1,781,888 responses from individuals who met this definition between 1968 and 1987, the years for which the CPS data are available on computer tape at the time of this project.

Many individuals are in two successive March surveys because of the Census Bureau's practice of "rotating" the individuals who are in the survey. Generally, households participate in the survey for two four-month periods separated by an eight-month period when they are not in the survey. In theory, 50% of the households are in contiguous March surveys. In practice, roughly 30% of the households are in contiguous surveys because some households move or dissolve or because household members refuse to participate in the survey. There is no overlap for the years 1985–1986, 1976–1977, 1972–1973, and 1971–1972, as a result of changes in rotation groups. The resulting data set contains roughly 2.33 years of employment information for about 400,000 individuals.

Average hourly earnings

For individuals who entered self-employment between the survey week in Year 1 and the survey week in Year 2, the average hourly earnings received in Year 0 will primarily reflect wage earnings and the average hourly earnings received in Year 1 will reflect wage earnings for the part of the year where they were still wage workers and self-employment earnings for the part of the year they were self-employed. Consider an individual who was a wage worker continuously between January 1 of Year 0 and June 30 of Year 1 and self-employed continuously between July 1 of Year 1 and the March survey week of year 2. Her hourly earnings for Year 0 will reflect her wage job and her hourly earnings for Year 1 will reflect an average of her wage job for the first half of Year 1 and her self-employment job the second half of Year 1. Some entrants into self-employment between the March survey week of Year 1 and the March survey week of Year 2, however, will have switched into self-employment between January and the March survey week of Year 2. For these individuals average hourly earnings for Year 1 will not reflect any self-employment earnings. Nevertheless, the average hourly earnings for entrants will reflect some self-employment earnings and can therefore provide at least a crude indication of how entrants overall fare relative to non-entrants.

Notes

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¹ See Bendick and Egan (1987) for a summary and critique.

² See Balkin (1987), (1989) and Marschall (1986) for a summary.

³ See U.S. Department of Labor (1987) for a description of the proposed project which was awarded to Abt Associates.

⁴ They account for about 75% of all full-time self-employed individuals in the United States.

⁵ If they worked for 12 months in the previous year and switched from a wage job to a self-employed job during the year, they would have had to have spent at least 6 months in their wage job to be classified as a wage worker.

⁶ Census has reported duration of unemployment as a continuous variable since 1976 and by several categories prior to 1976. For consistency we have converted the con-

tinuous unemployment duration information to the categories used prior to 1976. The use of survey week unemployment causes well-known biases. Longer unemployment spells are more likely to be captured than shorter spells, and the truncated length of a spell is not an accurate measure of the completed spell. These limitations imply that the quantitative results should be interpreted cautiously. We do not believe the qualitative results will be affected.

⁷ These unemployed are also asked to indicate which of the following factors led them to be unemployed: they were laid off, they quit their job, they left school and are now looking for a job, they wanted temporary work, they were temporarily or indefinitely laid off, or they are unemployed for some other reason. The unemployed may include people who have left a self-employed job. However, self-employed individuals generally do not experience spells of unemployment. They do not get laid off or fired. We suspect most remain at least nominally self-employed while looking for alternative employment.

⁸ We reported a similar finding for the NLS men in Evans and Leighton (1987).

⁹ These are people who met the entry* definition discussed in the previous section.

¹⁰ People might not want to admit that they were fired or they may have quit their jobs in anticipation of being terminated. Thus the data may not be a reliable guide to the reason for termination.

¹¹ There is some evidence based on the NLS that workers with low wages and a history of instability are most likely to switch to self-employment holding assets and education constant. See Evans and Leighton (1989).

¹² Because there were few unemployed women who switched to self-employment we were unable to perform a reliable analysis for these groups.

¹³ It is well known that the standard errors of this model are biased because the error term is heteroskedastic. However, the bias tends to decrease with sample size and is unlikely to be important for the extremely large sample sizes used in this study. For more on the linear-probability model, consult any elementary textbook in econometrics, e.g., Kmenta (1971).

¹⁴ Because of resource constraints we have not retrieved all of the necessary variables from earlier years of the CPS.

¹⁵ As mentioned earlier, self-employed individuals generally do not experience spells of unemployment. Consequently, it is not appropriate to include self-employment experience in the denominator.

¹⁶ The exit rate for unemployed workers is 1.5 times that for employed workers for white men but just about the same for white women.

¹⁷ The first derivative of log earnings (E) with respect to unemployment weeks (U) is $d(\log E)/dU = (dE/E)/dU$ which equals the estimated coefficient on U . dE/E is the percent change in earnings due to a change in unemployment weeks.

¹⁸ See Brock and Evans (1985, 1986, 1989) for further details.

¹⁹ For work along these lines see Bendick and Egan (1987) and National Economic Research Associates (1988).

²⁰ Unpaid family workers — individuals who work without pay in a family business — were also excluded. Also, respon-

dents who were members of subfamilies were also excluded because of the difficulty of attributing a consistent family income to them due to changes in the definition of the number of persons in the family variable over the period studied. (In the earlier years, number of persons excluded subfamily members; from 1976 on, number of persons in the family included subfamily members. Government workers were included while armed forces workers were excluded.)

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