
Self-employment in the midst of unemployment: the case of Spain and the United States

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This article examines the relationship between unemployment and self-employment. The possibility that self-employment is an alternative for jobless workers is discussed. In doing so, the standard job search model is used to show informally that if workers learn about the job market in the process of looking for work, those who have been unemployed for longer are more likely to become self-employed. Indeed, it was found that for both Spain and the United States the duration of unemployment significantly increases the probability of becoming self-employed. Further analysis indicates that part-time work and the absence of social security coverage are more likely to be associated with self-employed workers. In Spain, it was also found that the self-employed without employees earn significantly less than other workers with similar characteristics.

I. INTRODUCTION

Recently, economists and policy makers have become increasingly concerned with the role of small businesses in the economy. One reason for this interest is the recent growth of self-employment among some OECD countries.¹ High levels of unemployment in the late 1970s and early 1980s hint that unemployment might be a contributing factor for the observed increase in self-employment.

In general, we know little about the characteristics and circumstances associated with the workers who, sooner or later in their life, decide or are prompted to become 'entrepreneurs'. In the midst of high unemployment, establishing a business becomes a plausible alternative for the jobless.² Self-employment not only solves an individual's unemployment problem, but also places a potential employer in the labour market. Nonetheless, this proposition remains to be tested.

One might think that in periods of high employment and growth, there is not much incentive for self-employment

because there is a greater tendency to join fast-growing firms than to create new ones. The reasons for this are the expectation of greater productivity, the existence of economies of scale and increased competitiveness. As a consequence, a trend toward reduced self-employment was observed in most of the OECD countries. Since the mid-1970s, this tendency reversed in the non-agricultural sector. Such a reversal parallels the increased unemployment rates in western economies. Moreover, deep structural changes have occurred and the service sector has expanded substantially. How these factors contribute to self-employment is an empirical question yet to be addressed by researchers.

This article studies the relationship between unemployment and self-employment at a microeconomic level. To do that, self-employment can be linked to duration of unemployment. In order to assess if self-employment is a worthy choice for the long-term unemployed, a further attempt is made to see how well matched self-employed workers are to their jobs. Furthermore, to describe various features of self-employed workers, the demographic and

¹See OECD (1986).

²Legislation aimed to help the jobless start up their own businesses has been implemented in Europe and in the United States. Spain enacted a law in 1985 to provide lump-sum unemployment insurance to workers willing to become self-employed. As of the autumn of 1989, jobless persons in the state of Washington (US) can apply to the Self-Employment and Enterprise Development Project (SEED), which allocates lump-sum unemployment insurance and provides training for some of those who want to create a small business. This measure has been extended to other states in the US.

previous job characteristics of the currently self-employed are compared to those of waged and salaried workers.³

The empirical work in this study focuses on Spain and the United States. Spain is a fruitful case for analysing the relationship between unemployment and self-employment. First, unemployment began to grow in the mid-1970s and reached its peak in 1985. Second, due to the predominance of small-size firms, a comparison between the United States and Spain helps in the assessment of the special features of the Spanish case. The duration of unemployment data for workers who have changed firms in Spain and for those displaced from their jobs in the United States are used.

One result of our analysis is that, after controlling for workers who did not experience unemployment in Spain or the United States, the duration of a prior unemployment spell significantly increases the probability of current self-employment status. For both countries, evidence of a higher probability of part-time work among self-employed workers is also found. This is a circumstance that is more likely to be associated with workers who suffered a longer unemployment spell before re-employment. Another result is that the wage differences between self-employed and waged and salaried workers depend on the size of firm owned by the self-employed workers. Self-employed workers without employees earn 22% less, whereas the self-employed with over five employees earn 26% more than waged and salaried workers in Spain.

II. CONCEPTUAL AND EMPIRICAL FRAMEWORK

Thus far, insufficient effort has been made to understand the generation and evolution of entrepreneurship. Some of the literature stresses that one feature distinguishing self-employment from waged and salaried work is the degree of risk-taking. Based on this fundamental aspect of self-employment, namely, the risk involved, Knight (1921), Kanbur (1979) and Kihlstrom and Laffont (1979) have built up their models on entrepreneurship. In an aggregate context, Blau (1987) tried to model the relationships between the proportion of self-employment and variables such as relative prices, technology and tax structures.

Using a consumer discrimination framework, Borjas and Bronars (1989) generated some predictions about the distribution of income and proportions of self-employment by ethnic and racial groups. Evans and Jovanovic (1989) developed a model of selection into entrepreneurship based on the existence of liquidity constraints. Lucas (1978) takes 'entrepreneurial ability' to explain the choice of self-employ-

ment. Other theories, grounded in psychology and sociology, emphasize motivation and social relations in explaining the creation of small businesses. To date, however, little attention has been paid to the relationship between unemployment and self-employment.⁴

When modelling the selection into self-employment, the typical worker is assumed to compare the expected income from waged or salaried work with the expected income from self-employment. Self-employment is chosen if greater income results (Blau, 1987; Evans and Jovanovic, 1989). A non-rationed supply of labour is implicitly assumed, i.e. there are plenty of jobs at market wages. Under high unemployment, this assumption is unrealistic. Workers who face limited opportunities for obtaining a waged or salaried job have drastically constrained income streams.

Unemployment has two main effects on workers. (1) Specific skills are lost and general human capital deteriorates. Thus, as time out of work lengthens, the probability of getting the desired job diminishes. (2) As a result of joblessness, income is lost. Furthermore, job search is costly and, in a learning environment, the reservation wage declines with job search tenure (Mortensen, 1986; Burdett and Vishwanath, 1988; McCall, 1989). Thus, duration of unemployment becomes a key variable which indicates the difficulties in finding waged or salaried work, along with the financial loss associated with pursuing it. In this context, self-employment, so long as it is endogenously determined, becomes a viable alternative for jobless workers.

Unemployed workers not only learn about the job market (job offers and wage offer distribution), but also obtain information about business opportunities. In the hardship of joblessness, the worker's underlying managerial ability (mix of creativity and boldness) flourishes or is reinforced out of necessity. For those workers who have not decided to employ themselves before experiencing unemployment, self-employment becomes more attractive or acceptable as duration of unemployment is prolonged.

The process would develop as follows. As duration of unemployment lengthens, the decline in the reservation wage reduces the expected wage or salary income. The worker will stop looking for paid work when the expected income from dependent employment falls below the expected income from self-employment. The latter is assumed to be constant over the search period. Nonetheless, it can increase if, as stated earlier, some business opportunities are realized as time passes.

The above discussion suggests that, given search costs, an initial reservation wage, managerial ability, business start-up assets and other conditions, some workers become readily self-employed upon leaving or losing their jobs if

³Some of the factors which motivate the creation of small businesses are social environment, dissatisfaction with paid work, personality differences, family circumstances, desire for profits, availability of assets, possession of skills and technology, willingness to take risks, or simply the necessity to 'survive'. Some of these factors are elusive to an economic analysis, but fortunately some of them are not.

⁴See Evans and Leighton (1989) for some evidence.

their expected income from self-employment is greater than their expected income from waged or salaried work.⁵ Other workers must experience unemployment before they enter self-employment.

It would be expected that in an economy where self-employment is not feasible, joblessness would last for longer periods and more workers would withdraw from the labour force. In other words, economic forces driving workers into self-employment should reduce the duration of unemployment and prevent some workers from dropping out of the labour market. In this context, it can be argued that if the reason for becoming self-employed affects the likelihood that the business will improve over time, the most likely to last and grow are those businesses owned by persons who were selected into self-employment without an intervening spell of unemployment.⁶

Empirical framework

According to the previous discussion, the worker who has left or lost a waged or salaried job decides to become self-employed if the expected self-employment income is higher than the expected wage or salary from a job. When there is a spell of unemployment, expected incomes from both sources are re-evaluated throughout the search period as new information is obtained.

Assume that the expected income from self-employment is M_s and the expected income of waged or salaried work is M_w . Then the choice of self-employment is made upon the sign of the following equation:

$$P^* = M_s - M_w = Z\pi + \varepsilon$$

where P^* expresses the income differential between self-employment and waged or salaried work, Z contains all the variables which affect M_s and M_w , π indicates the reduced-form impact of the personal and economic variables on P^* , and ε is an error term. The term P^* is not observed, but the outcome of the decision process is observed, which is a dichotomous variable P . Assuming normality for ε , the probit model results:

$$\begin{aligned} P &= 1 & \text{if } P^* > 0 (\varepsilon > -Z\pi) \\ P &= 0 & \text{if } P^* \leq 0 (\varepsilon \leq -Z\pi) \end{aligned}$$

⁵At times, some waged and salaried workers simultaneously hold self-employment as a secondary job. Upon the threat of unemployment or actual displacement, self-employment becomes their only job. In the light of these circumstances, dual job holders tend not to report unemployment. Another reason for this might be that they did some job searching while employed.

⁶A successful entrepreneur is one whose firm grows. In the context of understanding entrepreneurship as a process of undertaking, innovation and profit maximization, the distinction between the self-employed with and without employees may be relevant. In this work, some suggestive differences are found between the self-employed with and those without employees. It is observed that the growth of self-employment in Spain corresponds to those business owners without employees. Only the self-employed who hire other workers might be considered to be entrepreneurs, or 'undertakers' as expressed by Cantillon (1755). The workers who create their own jobs without hiring other workers are more likely to seek self-employment as a temporary alternative, with the underlying expectation of finding a job as waged or salaried workers at a future time. However, enterprises require lead time to develop. Those who are the sole employees of their companies are prime candidates for becoming successful employers.

⁷See Blanchflower and Meyer (1990), Blanchflower and Oswald (1990), Meyer (1990), Evans and Leighton (1989), Borjas (1986), Rees and Shah (1986), Becker (1984) and Fuchs (1982).

Since expected income from waged or salaried work depends on the reservation wage, and it is assumed that the latter diminishes with duration of unemployment, the main hypothesis to be tested emerges. Given joblessness, the longer the duration of unemployment, the more likely are workers to enter self-employment. In Z , other demographic and economic characteristics are included that may affect the expected income from either waged or salaried work or self-employment, i.e. gender, marital status, age, education, tenure, reasons for job loss or quitting, and others.

A number of studies have addressed the demographic characteristics of self-employed workers in the United States and the United Kingdom.⁷ Most researchers have found that the self-employed person is more likely to be male, married, older and more educated than salaried and waged workers. These four features are associated with two fundamental requirements for starting up a small business: availability of financial resources and managerial skills. However, little research has been done on the relationship between self-employment and unemployment.

III. DATA

The Spanish data used in this study are from the Working and Living Conditions Survey (hereinafter ECVT), a government-sponsored household survey carried out in Spain in the fourth quarter of 1985. Its goal, to assess the importance of the concealed sector in the labour market, together with its size of more than 60 000 interviewees, make the ECVT a nation-wide representative survey with extensive information on the Spanish labour force.

In the ECVT, all workers were asked if they had changed firms at any time in their working life. Those who responded in the affirmative were further questioned about their reason for changing firms, their previous and current job characteristics, and their duration of unemployment. The class of worker (waged or salaried, self-employed or family aid) is known for the previous and the current job.

This work concentrates on workers who have moved from a previous non-agricultural waged or salaried job. Workers who reported that they have never changed firms are excluded from the sample. In the analysis, workers are

classified into three groups according to their reasons for moving: workers who quit or voluntarily moved, workers who were displaced from their jobs (individually fired, firm bankruptcy, cutback on work, end of contract), and workers who moved for other reasons (retirement, marriage, birth, military service, other). Workers for whom information on duration of unemployment was missing or who reported more than 120 months out of work were deleted. Also, some observations with missing values for the relevant variables were ruled out. This left 7657 individuals, of whom 20.6% were self-employed.

The US data⁸ are from the Displaced Worker Survey (hereinafter DWS), a supplement to the Current Population Survey in 1984, 1986 and 1988. This data set contains ample information regarding workers' previous and current jobs, together with aspects related to the transition period, e.g. duration of unemployment and collection of unemployment insurance.⁹ The reasons given for displacement are plant closing, slack work and position or shift abolished. The sample used is composed of white workers aged 20–61 years, who were displaced from non-agricultural waged or salaried full-time jobs.

Due to the impossibility of separating single and multiple spells of unemployment in the 1984 survey, only the 1986 and 1988 surveys are used. After deleting observations for which missing values in relevant variables exist, a limited

sample of 5282 re-employed workers is obtained. The reported class of worker allows those who hold waged or salaried jobs to be distinguished from those who are self-employed (incorporated as well as unincorporated) at the survey date.

The samples were selected with the sole condition that workers had moved from a previous non-agricultural waged or salaried job. Additional restrictions on the US sample are imposed by the data available. The reason for considering only movers is that the focus of the study is on the transition from waged or salaried work to self-employment. Thus, the results presented here do not apply to all workers. For example, workers who enter self-employment directly from the labour force are not included in this analysis. Moreover, the results on the characteristics of self-employed workers must be interpreted accordingly.

IV. SELF-EMPLOYMENT IN AN ECONOMY OF HIGH UNEMPLOYMENT: SPAIN

Using data taken from the Spanish Labour Force Survey (EPA), Fig. 1 shows the distribution of employment by class of workers for various years. The approximately 1.8 million decline in the number of jobs from 1976 to 1985 was almost recovered in the following 4 years. The evolution of the number of waged and salaried workers and the number of self-employed with employees (employers) reflects the general trend in employment. The number of employers decreased by 20% from 1976 to 1985, and grew by 24% during the following 4 years. However, the number of self-employed workers without employees grew from 1976 to 1989. The rate of increase was 5.1% from 1976 to 1981, 11.8% from 1981 to 1985, 7.5% from 1985 to 1987, and stabilized in the following 2 years. As the graph indicates, the fall in employment was much lower in the second phase of the economic recession (1981–1985). At the end of 1985, the unemployment rate reached 22% and the mass of displaced workers had little chance to escape unemployment.¹⁰

Table 1 reflects the proportions of self-employment by current job tenure in the ECVT sample used.¹¹ The table illustrates the flow of workers into self-employment, conditional on their being employed at the survey date.¹² Among previously waged or salaried workers who entered employment in 1980 or before and remained employed at the end of 1985, 21% were currently self-employed and about 16%

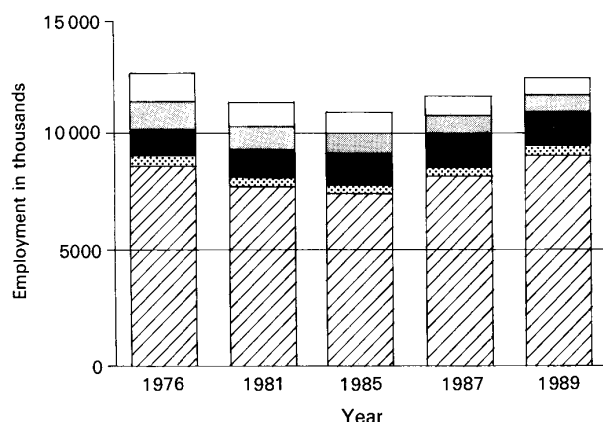


Fig. 1. Structure and evolution of employment in Spain, □ waged or salaried, ▨ employers, ■ self-employed, ▩ self-employed in agriculture, ▤ others

⁸I am grateful to Lawrence Katz for kindly providing extracts from the Displaced Worker Supplement.

⁹The absence of wage information for self-employed workers is an unfortunate feature of these data.

¹⁰See Alba-Ramirez and Freeman (1990) for an analysis of the duration of unemployment among displaced workers in Spain.

¹¹No differences were observed in the results when the sample was weighted.

¹²It should be kept in mind that, since the present sample is a cross-section of workers, those self-employed in the survey are workers who have remained so after entering self-employment.

Table 1. *Current class of workers by year of entry, conditional on being employed*

Period	Frequency (row percentage) [column percentage]			
	Waged-salaried workers	Self-employment with employees	Self-employment without employees	Total
≤ 1980	3690 (79.49) [60.69]	214 (4.61) [69.03]	738 (15.90) [58.25]	4642 (100.00) [60.62]
1981-83	856 (74.43) [14.08]	51 (4.43) [16.45]	243 (21.13) [19.18]	1150 (100.00) [15.02]
1984	406 (74.77) [6.68]	14 (2.58) [4.52]	123 (22.65) [9.71]	543 (100.00) [7.09]
1985	1128 (85.33) [18.55]	31 (2.34) [10.00]	163 (12.33) [12.87]	1322 (100.00) [17.27]
Total	6080 (79.40) [100.00]	310 (4.05) [100.00]	1267 (16.55) [100.00]	7657 (100.00) [100.00]

Note: The sample is composed of workers who have moved from a previous non-agricultural waged or salaried job.

Source: ECVT.

were self-employed without employees. Among those who began their jobs between 1981 and 1984, the proportion of self-employed workers increased. However, Table 1 shows a substantially reduced probability of shifting to self-employment among those workers who started their new job in 1985. As previously noted, in 1985 employment began to recover in Spain. It seems that the evolution of self-employed workers without employees in Spain was counter-cyclical in the late 1970s and throughout the 1980s, whereas evolution of the Spanish self-employed with employees in the same period was pro-cyclical.

Self employment and duration of unemployment

In analysing the relationship between self-employment and unemployment in this article, some limitations with regard to the data used should be highlighted. First, when considering the transition of waged and salaried workers to self-employment, it is not possible to separate the probabilities of a worker's switch to and permanence in self-employment. Current job tenure will be used to partly control for this. Second, the data provide the last firm change of each worker. Although the numbers of times workers have changed firms are known, there is no information on whether or not those workers who have changed more than once have had

previous self-employment experience. The regressions used control for the number of firm changes. Third, during the recession period, it was a frequent practice among Spanish firms to convert waged and salaried workers into independent contractors, a form of self-employment, in order to lower costs and enhance productivity. Because it is presumed that a change in the class of a worker results from a change of firm, the likelihood of reported change in the class of a worker being due to contract conversion is reduced.¹³

In the following probit regressions on the probability of entering self-employment, the dependent variable is 1 if the previously waged or salaried worker shifted to self-employment and remained in that situation, and 0 otherwise. Table 2 shows that males, married women, older people, the less educated and workers with longer tenure in their previous job are more likely to have become self-employed. The result for older workers is well-known (Fuchs, 1982). The result for education may indicate that in an economy of high unemployment, the less educated, and hence the less competitive, workers regard self-employment as an alternative to scarce paid work.

Furthermore, it is found that, consistent with Fig. 1 and Table 1, the probability of being self-employed is higher among workers with five or fewer years of tenure in their current job. One reason for this may be that employment spells of self-employed workers are shorter than those of

¹³Note however, that some of the workers who have changed firms might have changed their worker class in the current job.

Table 2. *Probit regressions on the probability of entering self-employment among workers with a wage or salary in their previous job.*

Variable ¹	Coefficient		
	All workers	Males	Females
Constant	-2.5359 (-9.79)	-2.0391 (-6.73)	-3.4064 (-6.52)
Male	0.3224 (7.37)		
Married	0.0817 (1.87)	-0.0605 (-1.14)	0.3145 (3.86)
Age	0.0519 (4.45)	0.0468 (3.42)	-0.0774 (3.22)
Age ²	-0.0005 (-3.55)	-0.0004 (-2.61)	-0.0007 (-2.70)
Age ≥ 65	0.8859 (4.76)	1.1025 (4.58)	0.8840 (2.57)
Education = 6	0.0436 (0.98)	0.0137 (0.27)	0.1665 (1.63)
Education = 8	-0.0483 (-0.85)	-0.0785 (-1.22)	0.1126 (0.91)
Education = 12	-0.0680 (-1.17)	-0.1104 (-1.69)	0.1300 (1.01)
Education = 15	-0.1546 (-1.94)	-0.2227 (-2.33)	0.0329 (0.21)
Education = 17	-0.2611 (-3.15)	-0.3685 (-3.79)	0.0724 (0.44)
Tenure	0.0272 (3.97)	0.0290 (3.84)	0.0267 (1.48)
Tenure ²	-0.0005 (-2.24)	-0.0005 (-1.95)	-0.0010 (-1.36)
Senior < 1	0.1643 (-2.87)	0.1066 (1.56)	0.2596 (2.42)
Senior 1-2	0.4685 (6.82)	0.4266 (5.24)	0.5697 (4.37)
Senior 2-5	0.4124 (8.16)	0.4174 (7.06)	0.4173 (4.19)
Region ur	-0.0100 (-3.05)	-0.0104 (-2.82)	-0.0067 (-0.91)
Duration = 0	0.3298 (7.10)	0.3084 (5.68)	0.3750 (3.85)
Months unemployed	0.0068 (6.09)	0.0062 (3.68)	0.0063 (3.90)
Jobchange = 1	0.1818 (3.57)	0.1474 (2.49)	0.2989 (2.80)
Jobchange = 2	-0.0041 (-0.09)	-0.0562 (-1.07)	0.1842 (1.78)
Jobchange = 3	-0.0159 (0.33)	-0.0177 (-0.33)	0.0329 (0.28)
Quit	-0.1481 (-3.08)	-0.0447 (-0.73)	-0.2671 (-3.19)
Displaced	-0.1544 (-2.84)	-0.0545 (-0.82)	-0.3374 (-3.02)
Log Likelihood	-3664.6	-2850.2	-788.84
\hat{P}	0.206	0.225	0.153
N	7657	5613	2044

Note: The *t*-statistics are presented in parentheses.

Source: Spain and ECVT.

¹For a full explanation of these terms see appendix Table A1.

waged and salaried workers.¹⁴ An alternative explanation is that from 1981 to 1985, when unemployment soared in Spain, many workers found self-employment to be the only escape from their joblessness.

As suggested before, this hypothesis is tested by relating duration of unemployment to the probability of current self-employment among previously waged and salaried workers. Fifty-seven per cent of workers in the sample did not experience unemployment after leaving or losing their previous job. In the probit regression, one can control for this circumstance by adding a dummy variable.

Column 1 of Table 2 indicates that the dummy for workers without an intervening spell of unemployment has a mean effect of 0.22 on the probability of shifting to self-employment.¹⁵ However, given a spell of unemployment, the longer the duration of such a spell, the more likely workers are to become self-employed; a month out of work translates to a 0.45 percentage point increase in the probability of becoming and remaining self-employed.¹⁶ These results hold true for males and females, although the marginal probabilities are higher for the latter. Furthermore, we find that a one-point increase in unemployment rates across

¹⁴Using the ECVT, there are several ways to shed some light on this possible explanation. First, by examining workers who have changed firms, the average duration of the previous job for workers in a prior waged or salaried job (5.5 years) is compared, with that of those previously self-employed (10.6 years). Second, the percentage of currently waged or salaried workers who have never changed firms (38.5%) is compared with that of their self-employed counterparts (40.7%). One should keep in mind that, depending on the business cycle, the probability of remaining self-employed may change over time. Moreover, the probability of both entering and remaining self-employed helps to explain workers' selection into self-employment.

¹⁵The mean effect on the probability of a unit change in the independent variable is calculated as the coefficient estimates of the probit regression times the mean value for the sample of the standard normal density function evaluated at $Z\pi$.

¹⁶For a clearer perspective on the probability of entering self-employment, only workers who have been in their current job for less than a year were considered. Both variables, dummy for absence of unemployment and duration of unemployment, resulted in positive and significant coefficients.

regions significantly lessens the probability of self-employment among males by 0.6 percentage points.¹⁷ This result turns out to be true only for voluntary movers, as will be seen later. It indicates that a depressed local labour market offers less incentive for workers to voluntarily shift to self-employment.

The reason for moving¹⁸ offers insight into the relationship between unemployment and self-employment, and

highlights the role of other variables in explaining self-employment. According to reasons for moving from the previous waged or salaried job,¹⁹ Table 3 presents the results of the probit regressions for the probabilities of becoming and remaining self-employed. The dummy for workers who have not experienced unemployment is always significant. However, duration of unemployment is not significant where other reasons for moving apply. The increase in the

Table 3. *Probit regressions on the probability of entering self-employment among workers with a wage or salary in their previous job.*

Variable ¹	Coefficient		
	Displaced	Voluntary movers	Other reason for moving
Constant	-3.2485 (-7.01)	-2.6597 (-7.00)	-2.9684 (-4.80)
Male	0.5203 (5.43)	0.4142 (6.53)	0.3415 (2.81)
Married	0.0266 (0.34)	0.0977 (1.55)	0.0587 (0.53)
Age	0.0704 (3.28)	0.0522 (3.06)	0.0633 (2.27)
Age ²	-0.0007 (-2.97)	-0.0004 (-2.17)	-0.0006 (-2.05)
Age ≥ 65	0.7298 (1.46)	1.0830 (3.98)	0.6333 (1.79)
Education = 6	0.1885 (2.22)	-0.0075 (-0.12)	-0.0257 (-0.24)
Education = 8	0.0232 (0.21)	-0.0806 (-1.01)	-0.0186 (-0.14)
Education = 12	0.2297 (2.14)	-0.1920 (-2.38)	-0.2202 (-1.50)
Education = 15	0.2146 (1.37)	-0.2037 (-1.95)	-0.4736 (-2.12)
Education = 17	-0.1670 (-0.93)	-0.3095 (-2.89)	-0.3070 (-1.45)
Tenure	-0.0029 (-0.21)	0.0399 (3.79)	0.0240 (1.49)
Tenure ²	0.0002 (0.45)	-0.0008 (-2.04)	-0.0006 (-1.18)
Senior < 1	-0.0315 (-0.35)	0.3770 (3.95)	0.0710 (0.54)
Senior 1-2	0.3745 (3.48)	0.6069 (5.37)	0.2023 (1.27)
Senior 2-5	0.2499 (2.77)	0.5771 (8.06)	0.2609 (2.04)
Region ur	-0.0040 (-0.69)	-0.0170 (-3.67)	-0.0005 (-0.06)
Duration = 0	0.5111 (6.41)	0.1470 (2.14)	0.4566 (4.16)
Months unemployed	0.0099 (4.98)	0.0072 (3.75)	0.0032 (1.59)
Jobchange = 1	0.1494 (1.44)	0.2123 (3.06)	0.2332 (1.93)
Jobchange = 2	-0.0066 (-0.07)	-0.0247 (-0.39)	0.1419 (1.24)
Jobchange = 3	0.0298 (0.34)	-0.0225 (-0.34)	0.0294 (0.24)
Fired	0.0843 (0.89)		
Bankrupt	-0.0624 (-0.72)		
Cutback	0.2546 (2.09)		
Retired			0.9108 (2.95)
To marry or give birth			0.4167 (3.44)
Military			-0.1089 (-0.81)
Log Likelihood	-1033.0	-1925.4	-635.5
\hat{P}	0.183	0.208	0.243
\tilde{N}	2330	4037	1240

Note: The *t*-statistics are presented in parentheses.

Source: Spain and ECVT.

¹For a full explanation of these terms see appendix Tables A1&2.

¹⁷Since the regional structure of unemployment has not significantly changed in Spain, the regional unemployment rate in 1985 is used.

¹⁸The very significant negative coefficients of the dummies representing reasons for moving among females in Table 2 are due to the fact that the omitted reasons, moving because of marriage, giving birth or retirement, notably increase the probability of self-employment. See Goffe and Scase (1986) for an analysis of the married woman and self-employment.

¹⁹The duration of the current job varies across reasons given for leaving the previous one. For example, the proportion of workers who have been in the current job for less than 5 years is 60% among displaced workers, 26% among voluntary movers, and 40% among those who responded with other reasons for moving. The reason for moving from and into a job is closely related to the business cycle. Also, the probabilities of permanency in self-employment are likely to depend upon the underlying motive for becoming so.

probability of entering self-employment after a month of unemployment is 0.77 percentage points among displaced workers and 0.51 percentage points among voluntary movers from a previous job, though the majority of voluntary movers, 75%, did not experience unemployment. A possible reason for observing unemployment among some of the workers who moved voluntarily may be that they made a mistake in assessing their work prospects.

Some other remarkable results are found. Variables for tenure in the previous job, one firm change and regional unemployment rate are significant only for voluntary movers. Those displaced workers who lost their jobs because of cutback on work are more likely to become self-employed. Among those who gave other reasons for change, it is observed that workers who left due to retirement, marriage or birth have a higher probability of self-employment.²⁰

The former results indicate that, after controlling for workers who did not suffer unemployment, the duration of unemployment significantly increases the probability of becoming and remaining self-employed. This probability is enhanced when only self-employed workers without employees are considered.²¹

Although setting up a business takes time, it is unlikely that workers who decide to become self-employed soon after displacement will report the time spent setting up the business as time unemployed. In this respect, the question of the duration of unemployment was formulated in fairly clear terms: 'After leaving this job, how long did you spend (or are you) out of work and actively looking for a job?'

Three issues should be addressed at this point.

(1) *The selection bias.* Throughout this work only workers who were re-employed at the survey date were considered. Since those still unemployed are more likely to have a longer unemployment duration, this probably means that the transition rate into self-employment is understated. A way to deal with this problem, not undertaken in this work, consists of using duration models where there are three possible outcomes: unemployment, dependent employment and self-employment. The results shown in this article suggest an increasing hazard rate for self-employed workers.

(2) *Endogeneity problems are apparent.* Is duration an endogenous variable? We argued previously that according to the standard job search model, self-employment reduces the average duration of unemployment. The reason for the reduction is that some workers stop job-searching when self-employment becomes more profitable than to continue searching. That can be interpreted as meaning that the shorter duration of unemployment is determined by the decision to become self-employed. However, it is the time

out of work that makes the expected income from waged or salaried work go down and the entry into self-employment a reasonable decision. Thus, it seems plausible to use unemployment duration as an exogenous variable in explaining the decision to become self-employed.

(3) *Unobserved heterogeneity.* It is always possible that all the sources of heterogeneity were not identified in the present sample. The fact that self-employed workers are more likely to have avoided unemployment after job loss indicated that the positive relationship observed between self-employment and duration of unemployment cannot be caused solely by heterogeneity. In other words, self-employed workers are not necessarily those least able workers whose only alternative is to employ themselves. They become self-employed as a result of an efficient choice made under some exogenous conditions, e.g. scarcity of paid work.

For the sake of robust results, the next section examines the relationship between unemployment and self-employment in the United States.

V. SELF-EMPLOYMENT AMONG DISPLACED WORKERS IN THE UNITED STATES

The United States is one of the OECD countries where self-employment has grown the most in the last 15 years. On the other hand, the US proportion of self-employment is less than half the proportion of self-employment in Spain. How the duration of unemployment affects self-employment in the US as compared to the Spanish economy was tested. Differences between labour market institutions in both countries make this comparison very enlightening.

Table 4 reports the results of probit regressions for the probability of entry and permanence in self-employment among displaced workers in the United States. The sample is restricted to white workers, between 20 and 61 years of age, displaced from waged and salaried jobs during the period 1981–1987, who worked full-time in the non-agricultural sector. After deleting some observations with missing values for some variables, a sample of 5282 individuals is left, of whom 8.16% had become and remained self-employed as of the survey dates (1986 and 1988). Self-employed US workers are more likely to be males, older people, residents of the mountain or Pacific regions, non-collectors of unemployment insurance, sufferers of longer duration of unemployment, holders of fewer jobs after displacement, higher earners in the previous job, and non-participants in a group health insurance plan.

²⁰The probit regressions were run according to occupation in the previous job. The sample was broken down into three categories of workers: skilled labourers, unskilled labourers and others. No change was observed in the results indicated earlier.

²¹We have insufficient data to answer the question of how much of the increase in self-employment is accounted for by the increase in unemployment duration in Spain.

Table 4. *Probit regressions on the probability of entering self-employment among displaced workers in the US.*

Variable ¹	Coefficient			
	Entire Sample	Have held only one job since displacement		
		All workers	Males	Females
Constant	-4.3610 (-9.32)	-4.7615 (-7.82)	-4.5734 (-6.36)	-4.8893 (-3.76)
Male	0.1654 (2.62)	0.2156 (2.65)		
Married	0.1134 (1.83)	0.0969 (1.19)	0.0287 (0.28)	0.2133 (1.39)
Age	0.0538 (2.58)	0.0640 (2.37)	0.0698 (2.18)	0.0597 (1.06)
Age ²	-0.0005 (-2.30)	-0.0007 (-2.28)	-0.0007 (-1.97)	-0.0008 (-1.19)
Education=13	0.0075 (0.11)	0.0183 (-0.21)	0.0323 (0.31)	-0.2349 (-1.27)
Education=14	-0.1561 (-1.57)	-0.3212 (-2.32)	-0.3748 (-2.24)	-0.2927 (-1.09)
Education=15	-0.0550 (-0.51)	-0.0316 (-0.23)	-0.0352 (-0.22)	-0.0434 (-0.15)
Education=16	0.1179 (1.17)	0.0691 (-0.55)	-0.1630 (-1.05)	0.6056 (2.51)
Education ≥ 17	0.0519 (0.58)	-0.0027 (-0.02)	-0.0204 (-0.15)	0.0365 (0.13)
Slack	0.0566 (0.96)	0.0242 (0.31)	-0.0111 (-0.12)	0.1119 (0.65)
Abolish	0.1161 (1.53)	0.1649 (1.72)	0.0627 (0.53)	0.3261 (1.86)
Tenure	0.0079 (0.65)	0.0263 (1.72)	0.0125 (0.73)	0.1172 (2.55)
Tenure ²	-0.0005 (-1.25)	-0.0011 (-1.97)	-0.0007 (-1.23)	-0.0053 (-2.15)
Y displaced > 83	-0.0522 (-0.89)	-0.0058 (-0.07)	0.1039 (1.13)	-0.3333 (-2.09)
Region 2	0.0517 (0.63)	0.1294 (1.26)	0.1259 (1.08)	0.2352 (0.98)
Region 3	0.1282 (1.64)	0.1840 (1.86)	0.1595 (1.41)	0.3446 (1.52)
Region 4	0.2196 (2.73)	0.2809 (2.71)	0.1592 (1.31)	0.6561 (2.93)
Moved	-0.0774 (-1.19)	-0.1348 (-1.46)	-0.0832 (-0.82)	-0.3542 (-1.40)
Advnotice	0.0641 (1.22)	0.0688 (1.01)	0.0772 (0.97)	0.0300 (0.21)
Collected UI	-0.1586 (-2.57)	-0.1159 (-1.46)	-0.1902 (-2.09)	0.0739 (0.41)
Duration=0	0.0054 (0.06)	0.0737 (0.75)	-0.0107 (-0.09)	0.3120 (1.52)
Weeks unemployed	0.0029 (2.47)	0.0036 (2.34)	0.0038 (2.02)	0.0027 (0.88)
No. of jobs	-0.0744 (-2.80)			
Log wage	0.2765 (4.82)	0.2787 (3.73)	0.2728 (3.18)	0.2715 (1.67)
Not covered	0.1741 (2.69)	0.2619 (3.11)	0.2742 (2.73)	0.2057 (1.26)
Log Likelihood	-1423.8	-875.7	-650.7	-206.3
\hat{P}	0.0816	0.0938	0.1086	0.0645
N	5282	2963	1971	992

Note: The sample is composed of white workers who were displaced from full-time non-agricultural waged and salaried jobs. The *t*-statistics are presented in parentheses.

Source: Displaced workers survey 1986–88.

¹For a full explanation of these terms see Appendix Table A2.

Analysis of workers who had held only one job after displacement showed no substantial change. However, some differences emerged when comparing probit regressions by gender. Women are more likely to be self-employed if they were college-educated, had longer tenure in the previous job, were displaced in 1983 or before, and lived in the mountain or Pacific regions. The variable duration of unemployment does not significantly affect displaced women's probability of becoming self-employed in the United States.

Contrary to the results for Spain, US workers who did not experience unemployment are not more likely to be self-employed after displacement. Nonetheless, according to column 2 of Table 4, 1 week out of work significantly raises the probability of becoming and remaining self-employed by 0.46 percentage points. Recall that a month of unemployment increases the probability of self-employment by 0.77

percentage points among displaced workers in Spain. However, because the data sets are not identical, it is difficult to compare the degree to which unemployment duration affects self-employment in Spain and the United States. Also, the incidence and evolution of unemployment duration and self-employment differ in both countries.

With these limitations in mind, it is nevertheless possible to sense how differently duration of unemployment affects self-employment in Spain and United States. To achieve that, displaced workers who have experienced unemployment are considered. The specifications in column 1 of Table 3 for Spain, and in column 2 of Table 4 for the United States were used. To avoid the effect of the measurement unit for unemployment duration in both countries, the logarithm of duration was taken. It was found that a 1 % increase in unemployment duration raises the probability of self-

Table 5. *The job quality by class of worker in Spain*

	Percentage of workers in each category			
	All workers	Waged and salaried	Self-employment with employees	Self-employment without employees
Part-time workers	18.40	17.78	7.42	24.07
Looking for work	5.22	4.98	1.94	7.18
Holding another job	21.25	20.63	11.94	26.52
No social security	15.31	14.11	9.35	22.49
Number	7657	6080	310	1267

Source: ECVT.

Table 6. *Probit regressions on job quality among Spanish self-employed males*

Dependent variable ¹	Coefficient			
	Part-time work = 1	Looking for work = 1	Holding another job = 1	No social security = 1
Constant	1.4911 (2.34)	-0.9595 (-1.10)	0.9929 (1.64)	1.3264 (2.00)
Married	-0.2249 (-1.96)	0.1808 (1.11)	0.1178 (1.04)	-0.3511 (-3.01)
Age	-0.0986 (-3.58)	-0.0100 (-0.25)	-0.0829 (-3.13)	-0.0971 (-3.40)
Age ²	0.0011 (3.79)	-0.0000 (-0.00)	0.0009 (3.31)	0.0010 (3.48)
Education = 6	-0.2824 (-2.55)	-0.2565 (-1.68)	-0.0602 (-0.57)	-0.3014 (-2.40)
Education = 8	-0.3467 (-2.21)	-0.0388 (-0.20)	0.1278 (0.93)	-0.0348 (-0.22)
Education = 12	-0.5103 (-3.03)	-0.1493 (-0.73)	-0.0895 (-0.60)	-0.1291 (-0.77)
Education = 15	0.0292 (0.13)	0.1632 (0.59)	0.1824 (0.86)	-0.0221 (-0.09)
Education = 17	-0.2096 (-0.84)	-0.5883 (-1.26)	0.5089 (2.44)	0.7079 (3.34)
Tenure	-0.0366 (-2.31)	-0.0226 (-1.02)	-0.0373 (-2.54)	-0.0404 (-2.32)
Tenure ²	0.0011 (2.31)	0.0006 (0.95)	0.0010 (2.28)	0.0010 (1.85)
Senior < 1	0.4005 (2.66)	0.1836 (0.97)	0.3349 (2.33)	0.3710 (2.35)
Senior 1-2	0.0538 (0.31)	0.0317 (0.14)	-0.0021 (-0.01)	0.1719 (0.96)
Senior 2-5	0.0246 (0.18)	-0.0658 (-0.38)	0.0589 (0.49)	0.0733 (0.53)
Region ur	0.0064 (0.78)	-0.0009 (-0.09)	-0.0019 (-0.24)	-0.0008 (-0.09)
Duration = 0	-0.2709 (-2.18)	-0.3040 (-1.90)	-0.1667 (-1.43)	-0.0547 (-0.41)
Months unemployed	0.0073 (2.16)	0.0069 (1.72)	0.0069 (2.07)	0.0094 (2.57)
Self with e	-0.5382 (-3.93)	-0.4866 (-2.52)	-0.4484 (-3.89)	-0.3414 (-2.52)
Displaced	0.1317 (1.28)	0.2449 (1.84)	0.2149 (2.24)	0.0752 (0.68)
Jobchange = 1	-0.1826 (-1.44)	-0.0751 (-1.10)	-0.1036 (-0.92)	-0.0154 (-0.12)
Log likelihood	-512.3	-272.1	-618.8	-442.1
\hat{P}	0.176	0.065	0.223	0.138
N	1264	1264	1264	1264

Note: The *t*-statistics are presented in parentheses.

Source: ECVT.

¹For a full explanation of these terms see Appendix Table A1.

employment by 0.15 percentage points in the US and by 0.17 percentage points in Spain.²² Since the probability of becoming self-employed is twice as high in Spain as it is in the US, one can conclude that unemployment duration has a relatively stronger effect on the probability of becoming

self-employed in the United States as compared with Spain.

The results shown in Table 4 merit some additional comments. It was observed that among displaced workers in the United States, previously high wage earners are more

²²The probit coefficients (SD) and the mean of the standard normal density function were 0.104 (0.034) and 1.447, respectively, for the US and 0.186 (0.036) and 0.906, respectively, for Spain.

likely to become and remain self-employed.²³ This result seems inconsistent with those obtained by Evans and Leighton (1989), and Evans and Jovanovic (1989), using the National Longitudinal Survey of Young Men (NLS). They found that workers selected into self-employment are relatively poorer wage earners. Nevertheless, their findings and the one reported here may not be incompatible if few NLS workers who shifted to self-employment did so in the aftermath of displacement. The reason is that it is unusual to find voluntary job separations among relatively higher paid workers. If the job is exogenously terminated, more specific human capital, higher reservation wage, more assets and higher managerial experience should be associated with higher paid workers.

VI. JOB QUALITY OF SELF-EMPLOYED WORKERS

The significant relationship between self-employment and unemployment suggests that the jobs which workers have created for themselves should be lower in quality than the jobs obtained by workers who remain waged or salaried. As indicators of the quality of the job obtained, the incidence of the following situations is taken: occasional or regular part-time work, search for another job, more than one job held, lack of social security coverage. Table 5 shows that in Spain, self-employed workers without employees are more likely to be in all these categories than are waged and salaried workers. In the case of the US, the self-employed are more

Table 7. *Probit regressions on job quality among US males*

Dependent variable ¹	Coefficient			
	Part-time work = 1		not covered by any group health insurance plan in current job = 1	
	Self employed	Waged and salaried	Self-employed	Waged and salaried
Constant	0.6718 (0.41)	0.4692 (0.86)	1.7050 (1.16)	0.0303 (0.06)
Married	-0.3958 (-1.78)	-0.2758 (-3.78)	-0.3461 (-1.70)	-0.3245 (-5.48)
Age	0.0311 (0.43)	-0.0479 (-1.93)	0.0178 (0.27)	0.0087 (0.42)
Age ²	-0.0002 (-0.27)	0.0006 (1.94)	-0.0003 (-0.42)	-0.0001 (-0.51)
Education = 13	-0.4865 (-2.09)	0.0636 (0.75)	-0.3254 (-1.60)	-0.0310 (-0.47)
Education = 14	-0.1844 (-0.52)	0.0289 (0.24)	-0.1856 (-0.63)	-0.2908 (-3.07)
Education = 15	-0.0312 (-0.09)	0.0501 (0.37)	-0.7152 (-2.24)	-0.2457 (-2.29)
Education = 16	-0.6837 (-1.90)	-0.1214 (-0.78)	-0.6106 (-2.06)	-0.2893 (-2.55)
Education ≥ 17	-0.4953 (-1.73)	0.1679 (1.41)	-0.3609 (-1.47)	-0.3806 (-3.78)
Slack	-0.3259 (-1.65)	0.0406 (0.56)	-0.0454 (-0.27)	0.0943 (1.66)
Abolish	0.1411 (0.54)	-0.0778 (-0.72)	-0.2920 (-1.26)	-0.1985 (-2.30)
Tenure	-0.1010 (-2.56)	-0.0211 (-1.47)	0.0605 (1.68)	-0.0112 (-0.89)
Tenure ²	0.0030 (2.15)	0.0013 (2.85)	-0.0028 (-2.02)	-0.0001 (-0.31)
Y displaced > 83	0.1403 (0.71)	0.2113 (2.76)	-0.0952 (-0.56)	0.3825 (6.33)
Region 2	-0.0908 (-0.32)	0.1959 (1.91)	0.3778 (1.57)	0.2113 (2.59)
Region 3	-0.0496 (-0.18)	0.1103 (1.05)	0.9734 (4.22)	0.3583 (4.48)
Region 4	0.3618 (1.34)	0.3591 (3.42)	0.6113 (2.58)	0.4211 (5.06)
Moved	-0.4224 (-1.86)	-0.0227 (-0.29)	-0.0045 (-0.02)	0.1037 (1.72)
Advnotice	0.2244 (1.26)	-0.1113 (-1.70)	0.1268 (0.81)	-0.1399 (-2.69)
Collected UI	-0.0352 (-0.18)	-0.1356 (-1.74)	-0.2696 (-1.59)	-0.0522 (-0.84)
Duration = 0	-0.2866 (-1.06)	-0.1032 (-0.94)	-0.2132 (-0.97)	-0.0685 (-0.81)
Weeks unemployed	0.0107 (2.80)	0.0073 (5.04)	0.0083 (2.28)	0.0045 (3.67)
No. of jobs	0.0356 (0.43)	0.0733 (2.53)	0.0683 (0.89)	0.1360 (5.89)
Log wage	-0.2968 (-1.57)	-0.2218 (-3.25)	-0.3277 (-2.01)	-0.2296 (-4.08)
Not covered	0.0711 (0.34)	0.2663 (3.35)	0.3190 (1.68)	0.4864 (7.77)
Log likelihood	-144.9	-910.7	-195.7	-1573.7
\bar{P}	0.205	0.093	0.554	0.252
N	332	3209	332	3209

Note: The *t*-statistics are presented in parentheses.

Source: 1986-1988 DWS.

¹For a full explanation of these terms see Appendix Table A2.

²³Unfortunately, the Spanish data do not contain information on earnings in the previous job.

likely to be part-timers and to lack coverage by a group insurance plan. Although this analysis is useful in assessing the quality of jobs, it is limited in that it does not take into account a number of factors which are likely to influence job satisfaction among self-employed workers, e.g. independence, flexibility and expectations of business improvement

over time.

In the framework provided by our initial discussion, the positive effect of duration on self-employment implies that the longer the unemployment duration, the worse is the job match for re-employed workers.²⁴ Results in Tables 6 and 7 confirm our hypothesis in this regard for both Spain and

Table 8. *OLS estimates of earning equations for self-employed and waged or salaried workers. Full-time male workers (Dependent variables: log net monthly earnings)*

	All workers	Self-employed		Waged and salaried	
Head	0.1225 (5.62)	0.2455 (3.94)	0.2346 (3.77)	0.1002 (4.36)	0.0981 (4.29)
Experience	0.0217 (8.75)	0.0177 (2.23)	0.0184 (2.33)	0.0207 (7.82)	0.0208 (7.86)
Experience ²	-0.0003 (-8.40)	-0.0003 (-3.00)	-0.0003 (-3.10)	-0.0003 (-6.88)	-0.0003 (-6.95)
Education = 6	0.1111 (6.48)	0.1506 (3.25)	0.1522 (3.30)	0.1100 (6.04)	0.1066 (5.87)
Education = 8	0.2239 (10.24)	0.2493 (4.00)	0.2526 (4.07)	0.2260 (9.87)	0.2248 (9.84)
Education = 12	0.4167 (17.50)	0.4239 (5.97)	0.4196 (5.94)	0.4230 (17.12)	0.4198 (17.02)
Education = 15	0.7106 (22.17)	0.6229 (5.85)	0.6082 (5.73)	0.7304 (22.33)	0.7265 (22.25)
Education = 17	0.8600 (25.74)	0.9889 (9.28)	0.9744 (9.19)	0.8500 (24.79)	0.8465 (24.69)
Senior 1-2	0.0108 (0.35)	0.0088 (0.10)	-0.0061 (-0.07)	0.0008 (0.02)	-0.0001 (-0.00)
Senior 2-5	0.0446 (1.76)	0.0467 (0.63)	0.0296 (0.40)	0.0401 (1.51)	0.0353 (1.33)
Senior > 5	0.0904 (4.01)	0.0444 (0.64)	-0.0023 (-0.03)	0.1100 (4.69)	0.0930 (3.93)
Quit	0.0600 (3.07)	0.1465 (2.72)	0.1381 (2.58)	0.0435 (2.10)	0.0236 (1.12)
Displaced	-0.0581 (-2.71)	-0.0114 (-0.19)	0.0217 (0.35)	-0.0702 (-3.12)	-0.0616 (-2.71)
Self w/e	-0.2168 (-12.02)				
Self 1-5e	0.0199 (0.61)				
Self > 5e	0.2640 (4.29)				
Duration=0			0.0803 (1.42)		0.0442 (2.48)
Months unemployed			-0.0027 (-1.41)		-0.0016 (-2.46)
Lambda		0.0597 (0.51)	0.1020 (0.86)		
Constant	10.28 (189.9)	9.94 (47.3)	9.89 (44.8)	10.32 (183.9)	10.32 (182.2)
Adjusted R ²	0.329	0.230	0.238	0.336	0.341
N	4340	823	823	3517	3517

Note: The *t*-statistics are presented in parentheses.

All equations include eight dummies for sectors of the previous job.

Source: Spain and ECVT.

²⁴Unemployment duration makes workers accept less desirable jobs. The finding that the longer unemployed are more likely to become self-employed suggests that if self-employment is not an option, less desirable working conditions would be observed among long-term unemployed workers who find a job.

the United States. Other results indicate that in Spain, younger workers, self-employed workers without employees, and workers with shorter tenure in both the previous and the current job are more likely to have a poorer job match.

Self-employment and earnings in Spain

For comparable workers, earnings provide the best index of job 'quality' relative to pecuniary measures. Table 8 contains the results of estimated earnings equations for Spain. Only males in full-time jobs were considered.²⁵ Generally, Spanish self-employed workers earn less than their waged and salaried counterparts. When the self-employed are split according to the size of the firm, remarkable results are obtained: self-employed workers without employees earn about 22% less than waged and salaried workers. Self-employed workers with fewer than six employees do not earn significantly more than waged and salaried workers. Those who have over six employees earn 26% more than waged and salaried workers. When wage equations are estimated for self-employed and waged and salaried workers, some additional results are worthy of mention. General experience and tenure in the current job are better compensated in the wage and salary sector. This result is consistent with the Lazear and Moore (1984) finding that the self-employed have flatter age-earning profiles. The selection bias correction through the inverse Mills ratio turns out to be insignificant and has little effect on the results. When the variable duration is included in the earnings equations, its negative effect is significant among waged and salaried workers and is insignificant among self-employed workers.

VII. CONCLUSION

The objective of this work has been to analyse empirically the effects of unemployment on the selection into self-employment. In this discussion, self-employment was considered to be a plausible outcome of the job search process, suggesting that long-term unemployed workers were more likely to enter self-employment. For both Spain and the United States, it was found that duration of unemployment

significantly affects a worker's decision to become self-employed. Further inquiry into the kinds of jobs held by self-employed workers showed that those jobs have undesirable characteristics: part-time as opposed to full-time work, absence of social security coverage and other circumstances. At the same time, it was found that in Spain, most self-employed workers are the only employees of their firms, earning significantly less income than comparable waged and salaried workers.

These findings suggest several self-employment issues which call for future research. First, it is necessary to investigate whether self-employment stemming from unemployment solves or disguises joblessness. Second, the formation and evolution of small firms created by unemployed workers should be studied in order to gain a better understanding of entrepreneurship as it relates to unemployment. Unemployment can be a catalyst for talented entrepreneurs who otherwise would not have decided to take the risk associated with creating a business. Third, one needs to study earnings prior to self-employment, income obtained from self-employment and receipt of unemployment benefit, so as to shed more light on the worker's decision to become self-employed.

What policy implications can be derived from these findings? To provide clear policy recommendations, more probing analyses are necessary. The present finding that small businesses grow in economic downturns may indicate that self-employment represents a viable solution to workers' unemployment problems. More importantly, small businesses can greatly contribute to economic growth and the continuous generation of new jobs.²⁶ However, the relatively poorer job quality of self-employment casts doubt on the efficacy of a public policy that fosters self-employment.

It can be argued that public incentives for self-employment reduces the selection into self-employment and, therefore, increases businesses' failure rates. The opposite argument would defend public assistance in preventing business failure. A way to reconcile both positions may be to give public support only to already established businesses.²⁷

While this research has provided some insight into the understanding of self-employment, it has left important questions for future investigations – should self-employment be given public support? If the answer is yes, what types of economic policy should be adopted? To respond to these questions, a better knowledge of the evolution of businesses created by self-employed workers should be pursued.

²⁵Information on wages is reported in the ECVT as a coded variable. However, we have translated the variable into a continuous one by taking the midpoint of each interval.

²⁶Yet it remains to be seen how seedling firms, sown by the hardship of unemployment, grow under the impulse of subsequent economic recovery. That recovery, in turn, can be enhanced by a network of newly established enterprises.

²⁷See Balkin (1989) for an analysis of self-employment for disadvantaged workers.

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APPENDIX

Table A1. Variable definitions and descriptive statistics for ECVT sample.

Variables and description		Mean (SD)	
		Waged and salaried workers	Self-employed workers
Male	= 1 if male	0.7152	0.8015
Married	= 1 if married	0.7116	0.8027
Head	= 1 if household head	0.6809	0.7514
Age	= age	38.2268 (11.8)	42.0615 (11.7)
Age ≥ 65	= 1 if age ≥ 65	0.0047	0.0215
Experience	= age - education - 6	24.3929 (13.4)	28.9048 (13.4)
Education < 6	= 1 < 6 years of school	0.2769	0.3303
Education = 6	= 1 if primary school	0.2824	0.3202
Education = 8	= 1 if pre-secondary	0.1618	0.1369
Education = 12	= 1 if secondary school	0.1544	0.1249
Education = 15	= 1 if pre-university	0.0634	0.0462
Education = 17	= 1 if university	0.0608	0.0412
<i>Duration of previous and current job</i>			
Tenure	= years of tenure in the previous job	4.6467 (5.3)	6.4309 (6.6)
Senior < 1	= 1 if less than 1 year in the current job	0.1855	0.1230
Senior 1-2	= 1 if ≥ 1 and ≤ 2 years	0.0667	0.0868
Senior 2-5	= 1 if > 2 and ≤ 5 years	0.1407	0.1864
Senior > 5	= 1 if more than 5 years	0.6069	0.6036
Region ur	= region unemployment rate	21.7357 (5.1)	21.2253 (5.2)
Duration = 0	= 1 if not unemployment	0.5542	0.6442
Months unemployed	= unemployment duration in months	7.7037 (16.7)	8.9067 (20.1)
<i>Reasons for and number of firm changes</i>			
Quit	= 1 if quit the job	0.5325	0.5383
Retired	= 1 if retired	0.0013	0.0088
To marry	= 1 if married	0.0358	0.0697
Birth	= 1 if gave birth	0.0111	0.0095
Military	= 1 if went military service	0.0277	0.0215
Displaced	= 1 if displaced	0.3131	0.2701
Fired	= 1 if was individually fired	0.0506	0.0500
Bankrupt	= 1 if bankruptcy	0.1001	0.0849
Cutback	= 1 if cut-back on work	0.0218	0.0323
Endcont	= 1 if end of contract	0.1404	0.1026
Not defined	= 1 if not defined	0.0661	0.0659
Not answered	= 1 if no answer	0.0120	0.0158
Job change = 1	= 1 if changed firms once	0.1771	0.2149
Job change = 2	= 1 if changed firms twice	0.2674	0.2473
Job change = 3	= 1 if changed firms three times	0.2179	0.2022
Job change > 3	= 1 if changed firms four or more times	0.3365	0.3354
Self w/e	= 1 if self-employed without employees		0.8034
Self 1-5e	= 1 if 1-5 employees		0.1559
Self > 5e	= 1 if more than 5 employees		0.0355
Log wage	= log of the monthly net earnings in current job	10.73 (0.51)	10.59 (0.57)
N		6080	1577

Table A2. Variable definitions and descriptive statistics for 1986–1988 DWS sample

Variables and description		Mean (SD)	
		Waged and salaried workers	Self-employed workers
Male	= 1 if male	0.6615	0.7703
Married	= 1 if married	0.6825	0.7703
Age	= age	35.6685 (10.3)	37.6496 (9.5)
Education ≤ 12	= 1 if ≤ 12 years of school	0.3772	0.3480
Education = 13	= 1 if 13 years of school	0.2747	0.2552
Education = 14	= 1 if 14 years of school	0.1020	0.0765
Education = 15	= 1 if 15 years of school	0.0729	0.0696
Education = 16	= 1 if 16 years of school	0.0682	0.1020
Education ≥ 17	= 1 if 17+ years of school	0.1047	0.1484
<i>Reasons for job loss</i>			
Close	= 1 if plant closing	0.5291	0.4965
Slack	= 1 if slack work	0.3318	0.3387
Abolish	= 1 if abolished position or shift	0.1374	0.1647
Tenure	= tenure in the prior job	4.6996 (6.1)	4.9489 (6.0)
Y displaced > 83	= 1 if displaced after 1983	0.6413	0.6403
<i>Region of residence at survey date</i>			
Region 1	= 1 if New England and Middle Atlantic	0.1978	0.1600
Region 2	= 1 if E–N Central and W–N Central	0.2661	0.2296
Region 3	= 1 if S Atlantic, E–S Central and W–S Central	0.3024	0.3062
Region 4	= 1 if Mountain and Pacific	0.2335	0.3039
Moved	= 1 if moved to other city or county	0.2234	0.2018
Advnotice	= 1 if given advanced notice	0.5256	0.5591
Collected UI	= 1 if collected unemployment insurance	0.5656	0.5127
Duration = 0	= 1 if not unemployment	0.1506	0.1740
Weeks unemployed	= unemployment duration in weeks	17.5273 (23.4)	19.0464 (25.1)
Log wage	= log of prior job weekly earnings	5.7752 (5.8)	5.9949 (6.0)
Not covered	= not covered by any group health insurance plan in previous job	0.2803	0.2830
No. of jobs	= number of jobs held since displacement	1.7019 (1.1)	1.5104 (1.0)
N		4851	431