Working Paper 91-18
June 1991

Departamento de Economía
Universidad Carlos III de Madrid
Calle Madrid, 126
28903 Getafe (Madrid)

SELF-EMPLOYMENT IN THE MIDST OF UNEMPLOYMENT: THE CASES OF SPAIN AND THE UNITED STATES

Alfonso Alba-Ramírez*

Abstract

This article examines the relationship between unemployment and self-employment. The empirical work is framed by a job search model with learning, where self-employment is an alternative for jobless workers. Consistent with the model's prediction, we find that for both Spain and the United States, duration of unemployment significantly increases the probability of becoming self-employed. Further analysis showed that part-time work and the absence of Social Security coverage are more likely to be associated with self-employed workers. We also find that, in Spain, those self-employed who do not hire any persons earn significantly less than other comparable workers.

Key words
Self-employment; job search model; expected income; reservation wage; jobless; duration of unemployment; entrepreneurs.

* I am grateful for the suggestions made by John Abowd, David Blanchflower, Henry Farber, Richard Freeman, Robert Gibbons, Peter Gottschalk, Andrew Oswald, Lawrence Katz, Lisa Lynch, Bruce Meyer and participants in a meeting of members of the NBER's Program in Labor Studies. I thank Cynthia Costas for invaluable help in editing this work. I gratefully acknowledge a grant from the Spanish Ministry of Education and Science in cooperation with the Fulbright Commission during the second year of my Post-Doctoral Fellowship at Harvard University and the National Bureau of Economic Research.

"Ms. Gantka spent most of her career as a secretary and was laid off in November. Now she is the president, proprietor and sole employee of the Doll Company."

The New York Times, May 16, 1990.

I. Introduction

Recently, economists and policymakers 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 1970's and early 1980's hint that unemployment might be a contributing factor for the observed increase in self-employment. 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, it also places a potential employer in the labor market. Yet this proposition remains to be tested. 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 periods of high employment and growth there is not much incentive for self-employment, because it is more efficient to join fast-growing firms than create new ones. The reasons for this are greater productivity, the existence of economies of scale and increased competitiveness. We can consequently observe a secular reduction in self-employment. Since the mid-seventies, that tendency has been reversed with regard to non-agricultural self-employment. Such a reversal parallels increased unemployment rates in western economies. Moreover, deep structural changes have occurred and the service sector has

---

[1] See OECD 1986.

[2] Legislation aimed at helping 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 the Fall of 1989, jobless persons in the state of Washington (U.S.) 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 U.S.

expanded substantially. How these other factors contribute to self-employment is an empirical question yet to be addressed.[3]

This article studies the relationship between unemployment and self-employment at a microeconomic level. To do that, we link self-employment to duration of unemployment. In order to assess if self-employment is a worthy choice for long-term unemployed, we further make an attempt to see how well matched self-employed workers are to their jobs. Moreover, to describe various features of self-employed workers, we compare demographic and previous job characteristics of the currently self-employed to those of wage and salary workers.[4]

The empirical work in this study focuses on Spain and the United States. Spain is a fruitful case for analyzing the relationship between unemployment and self-employment. The reasons are that Spanish unemployment started to grow in the mid-1970's and peaked in 1985, and that there is a predominance of small-sized firms in the country.[5] Our comparison of the United States and Spain serves to assess particularities of the Spanish case and, thereby, allows us to arrive at more general conclusions. We use duration of unemployment data for workers who have changed firms in Spain and for those displaced from their jobs in the United States.

One result of our analysis is that, after controlling for workers who did not experience unemployment in Spain or the United States, duration of a prior unemployment spell significantly increases the probability of current self-employment status. For both countries we also find evidence of a higher

---

[3] In this article, we do not try to distinguish the growth of self-employment from selection into self-employment.

[4] Some of the factors which motivate the creation of small businesses are the following: 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.

[5] The characteristics of Spanish workers managing small businesses reveals the types of entrepreneurship which develop in economies which are in a process of modernization and restructuring. Moreover, better knowledge of small firms helps us to anticipate the effects of the European Single Market on the performance of the Spanish economy.

probability of part-time work among self-employed workers; 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 wage and salary workers depend on the firm size owned by the self-employed workers. Self-employed workers without employees earn 22% less, whereas those self-employed with over 5 employees earn 26% more than wage and salary workers in Spain.

II. Conceptual and Empirical Framework

Most predictions on the behavior of workers facing the choice between dependent work and self-employment are derived from fragmented theories, previously observed facts or basic economic principles. 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 wage and salary work is the degree of risk-taking. Based on this fundamental aspect of self-employment, namely, the risk involved, some authors like Knight (1921), Kanbur (1979) and Kihlstrom and Laffont (1979), have built up their models on entrepreneurship. In an aggregate context, Blau (1987) has 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) generate some predictions about the distribution of income and proportions of self-employment by ethnic and racial groups. Evans and Jovanovic (1989) develop a model of selection into entrepreneurship based on the existence of liquidity constraints. Lucas (1978) takes "entrepreneurial ability" to explain the choice of self-employment. 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.[6]

---

[6] See Evans and Leighton (1989) for some evidence.

When modeling the selection into self-employment, the typical worker is assumed to compare the expected income from wage and salary work with the expected income from self-employment. Self-employment is chosen if greater income results.[7] A non-rationed supply of labor is implicitly assumed, i.e., there are plenty of jobs at the market wages. Under high unemployment, this assumption is unrealistic. Workers who face limited opportunities for obtaining a wage and salary 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, some income is not earned. Furthermore, job search is costly and, in a learning environment, the reservation wage declines with job search tenure.[8] Thus, duration of unemployment becomes a key variable which indicates the difficulties in finding wage and salary 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 they catch on to 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 decreases[9] the expected wage and salary income. The worker will stop looking for paid work when the

---

[7] See e.g. Blau (1987) and Evans and Jovanovic (1989).

[8] See Mortensen (1986) for the standard search model. For models that predict a declining reservation wage in a learning environment, see Burdett and Vishwanath (1988) and McCall (1989).

[9] We assume that the reservation wage does not depend on business opportunities.

expected income that can be obtained from dependent employment falls below the expected income that can be generated from self-employment. The latter is assumed constant over the search period. Nonetheless, it can increase if, as stated earlier, some business opportunities are further revealed.[10] Our informal model predicts that, given search costs, an initial reservation wage, managerial ability, business start-up assets and other conditions,[11] some workers become readily self-employed upon leaving or losing their jobs if their expected income from self-employment is greater than their expected income from wage and salary work.[12] Other workers must experience unemployment before they enter self-employment.

We would expect that in an economy without self-employment, joblessness would last longer and more workers would withdraw from the labor force. In other words, economic forces driving workers into self-employment should reduce duration of unemployment and prevent some workers from dropping out of the labor market. Moreover, our model highlights two sets of self-employed workers: those without unemployment and those with an intervening spell of unemployment. If the reason for becoming self-employed affects the likelihood of the business to improve over time, the most likely to last and grow are those businesses owned by persons who were selected into self-employment without a spell of unemployment.[13]

---

[10] See Wall Street Journal, November 28, 1990, for a discussion of business opportunities in periods of recession.

[11] The model allows for the role of managerial experience or ability, liquidity constraints, changes in industrial structure and technology, and other economic or personal characteristics to determine the pool of potential entrepreneurs.

[12] Some wage and salary workers at times simultaneously hold self-employment as a secondary job. Upon unemployment threat or actual displacement, self-employment becomes their sole job. In light of these circumstances, dual job holders tend not to report unemployment. Another reason for this to happen might be that they did some job searching while employed.

[13] A 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, we find some suggestive differences between the self-employed with and those without employees. We have 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 entrepreneurs, or "undertakers" as expressed by

Empirical Framework

According to our informal model, the worker who has left or lost a wage and salary job decides to become self-employed if the expected income from doing so is higher than the expected income from another wage and salary job. When unemployment takes place, expected income from both sources are reevaluated throughout the search period, thus generating a dynamic process.

Suppose that the expected income from self-employment is M_s and the expected income of wage and salary work is M_w. Then the choice of self-employment is made upon the sign of the following equation:

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

where P^* expresses the income differential between self-employment and wage and salary work, Z contains all the variables that 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. We do not observe P^*, but we observe the outcome of the decision process, which is a dichotomous variable P. The probit model results:

$$P = 1 \quad \text{if} \quad P^* > 0 \quad (\epsilon > -Z\pi)$$

$$P = 0 \quad \text{if} \quad P^* \leq 0 \quad (\epsilon \leq -Z\pi)$$

Since expected income from wage and salary work depends on the reservation wage, and we assume that this diminishes with duration of unemployment, the main hypothesis we wish to test emerges: Given joblessness, the longer is the duration of unemployment the more likely is that we observe workers entering self-employment. In Z we include other demographic and economic characteristics that may affect the expected income from both

---

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 wage and salary workers at a future time. Enterprises, however, require lead time to develop. Those sole employees of their companies are candidates for successful employers.

sources: gender, marital status, age, education, tenure, reasons for job loss or quitting, etc.

A number of studies have addressed the demographic characteristics of self-employed workers in the United States and the United Kingdom.[14] Most researchers have found that the self-employed person is more likely to be male, married, older and more educated than salary and wage workers. These four features are associated with two fundamental requirements to start-up a small business: Availability of financial resources and managerial skills. However, little research has been undertaken 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 the fourth quarter of 1985 in Spain. Its goal, to assess the importance of the concealed sector in the labor market, and sample size, more than 60,000 interviewees, make the ECVT a nation-wide representative survey with extensive information on the Spanish labor force.

In the ECVT, all workers were asked if they had changed firms 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 (wage and salary, self-employed or family aid) is known for the previous and the current job.

For purposes of this work, we concentrate on workers who have moved from a previous non-agricultural wage and salary job.[15] In the analysis, workers will be classified into three groups according to the reasons for moving: workers who quit or voluntarily moved, workers who were displaced from their

---

[14] See 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).

[15] Workers who reported that they have never changed firms are not included in our sample.

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 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 considered were ruled out. We are left with 7,657 individuals, of whom 20.6% reported to be self-employed.

The U.S. data[16] 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.[17] The reasons given for displacement are plant closing, slack work and abolished position or shift. Only white workers aged 20 to 61 years, who were displaced from non-agricultural, wage and salary full-time jobs are considered.

Due to the impossibility of separating single from multiple spells of unemployment in the 1984 survey, we use only the 1986 and 1988 surveys. After deleting observations for which missing values in relevant variables exist, a limited sample of 5,282 re-employed workers is yielded. The reported class of worker allows us to distinguish those who hold wage and salary jobs from those who are self-employed (incorporated as well as unincorporated) at survey date.

IV. Self-Employment in an Economy of High Unemployment: Spain

Taken from the Spanish Labor Force Survey (EPA), Figure 1 shows the distribution of employment among class of worker for various years. The approximately 1.8 million decline in the number of jobs from 1976 to 1985 was almost recovered the following four years. The evolution of the number of wage

---

[16] I am grateful to Lawrence Katz for kindly providing extracts from the Displaced Worker Supplements.

[17] The lack of wages for self-employed workers is an unfortunate missing feature of these data.

and salary workers and the number of self-employed with employees (employers)[18] mirrors the general trend in employment. However, those self-employed workers without employees have grown from 1976 to 1989. The rate of increase is 5.1% from 1976 to 1981, and 11.8% from 1981 to 1985.[19] As the graph indicates, the reduction of 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.[20]

Table 2 reflects the proportions of self-employment by current job tenure in the ECVT sample used.[21] The table illustrates the flow of workers into self-employment, conditional on their being employed at the survey date.[22] Approximately 21% of previous wage and salary workers who entered employment in 1980 or before, and who remained employed at the end of 1985, were currently self-employed; and about 16% were self-employed without employees. Among those who began their jobs between 1981 and 1984, the proportion of the self-employed increased. However, Table 2 shows a substantially reduced probability that those workers who started their new job in 1985 shifted to self-employment. As noted above, in 1985 employment began to recover in Spain. It can be inferred, therefore, that the evolution of self-employed workers without employees in Spain has been counter-cyclical in the late 1970's and throughout the 1980's; whereas, evolution of the Spanish self-employed with employees in the same period has been pro-cyclical.

---

[18] The number of employers decreased by 20% from 1976 to 1985. Nevertheless, their number grew by 24% during the following four years.

[19] Self-employed without employees still grew from 1985 to 1987 by 7.5%, but stabilized the following two years.

[20] See Alba and Freeman (1990) for an analysis of duration of unemployment among displaced workers in Spain.

[21] No differences in the results were observed when the sample was weighted.

[22] Since our sample is a cross-section of workers, those self-employed in the survey are workers who have remained so after entering self-employment.

Self-Employment and Duration of Unemployment

In analyzing the relationship between self-employment and unemployment in this article, some limitations with regard to the data used should be highlighted. First, when we look at the transition of wage and salary workers to self-employment, we cannot 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 us with the last firm change of each worker. Although we know the number of times workers have changed firms, we do not have information on whether or not those workers who have changed more than once have had previous self-employment experience. In our regressions, we control for the number of firm changes. Third, during the recession period, it was a frequent practice among Spanish firms to convert wage and salary workers into independent contractors, a form of self-employment, in order to lower costs and enhance productivity. Given we only consider that a change in the class of worker results from a change in firm, we reduce the likelihood of reported change in the class of worker as a result of contract conversion.[23]

In the following probit regressions on the probability of entering self-employment, the dependent variable takes on 1 if the previously wage and salary worker shifted to self-employment and remained as such, and 0 otherwise. Table 2 shows that males, married women, elders, less educated[24] and longer tenured workers in the previous job are more likely to have become self-employed. Workers older than 64 years are more likely to be self-employed than other workers.[25]

Furthermore, we find that, consistent with Figure 1 and Table 1, the probability of being self-employed is higher among workers with five or fewer years of tenure in the current job. One reason for this may be that employment

---

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

[24] In an economy of high unemployment, the less educated, and hence the less competitive workers may regard self-employment as an alternative to scarce paid work.

[25] See Fuchs (1982).

spells of self-employed workers are shorter than those of wage and salary workers.[26] An alternative explanation is that, from 1981 to 1985, when unemployment soared in Spain, many workers found self-employment as the only escape from their joblessness.

We test this hypothesis, as our informal model suggests, by relating duration of unemployment to the probability of current self-employment among previous wage and salary workers. Fifty-seven per cent of workers in the sample have not experienced unemployment after leaving or losing their prior job. In the probit regression, we 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.[27] 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 entering and remaining self-employed.[28] These results hold true for males and females, although the marginal probabilities are higher for the latter. Furthermore, we find that one point increase in unemployment rates across regions significantly lessens the probability of self-employment among males by 0.6 percentage points.[29] This result turns out

---

[26] Using the ECVT, we have several ways to shed some light on this possible explanation. First, by examining workers who have changed firms, we compare the average duration of the previous job for workers in a prior wage and salary job (5.5 years), with that of those previously self-employed (10.6 years). Second, we compare the percentage of current wage and salary workers who have never changed firms (38.5%) and 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, both the probability of entering and of remaining in self-employment helps us to explain workers' selection into self-employment.

[27] The 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 $Z\pi$.

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

[29] Since the regional structure of unemployment has not significantly changed in Spain, we used the regional unemployment rate in 1985.

to be true only for voluntary movers, as will be seen later. It indicates that a depressed local labor market offers less incentives for workers voluntarily shifting to self-employment.

The reason for moving[30] 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 wage and salary job,[31] 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. Duration of unemployment, however, is not significant where other reasons for moving apply. The increase in the probability to enter 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 prior job.[32] Other remarkable results are the following: 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 responded other reasons for change, it is observed that workers who left due to retirement, marriage or birth have a higher probability of self-employment.[33]

---

[30] The 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.

[31] The duration of the current job varies across reasons given for leaving the previous one: 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. Obviously, 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.

[32] 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 about their work prospects.

[33] We ran probit regressions according to occupations in the previous job. The sample was broken into three categories of workers: skilled laborers, unskilled laborers and others. Nothing changed the results indicated earlier.

The former results indicate that, once we control for workers who did not suffer unemployment, duration of unemployment significantly increases the probability of entering and remaining self-employed.[34] 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 on 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?"[35]

Three issues should be addressed at this point. First, the selection bias: Throughout this work we considered only workers who were re-employed at survey date. Since those still unemployed are more likely to have a longer unemployment duration, we are probably understating the transition rate into self-employment. 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.

Second, endogeneity problems are apparent: Is duration an endogenous variable? We argued before that according to our informal model, self-employment reduces average duration of unemployment, because some workers stop job searching when self-employment becomes more profitable than to continue searching.[36] That can be interpreted as though shorter duration is determined by the decision to become self-employed. However, it is the time out of work what makes expected income from wage and salary work go down and the entry into self-employment an optimum decision.

---

[34] When the self-employed with employees are deleted and, consequently, only the self-employed without employees are considered, the effect of duration on self-employment becomes more significant.

[35] We 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.

[36] It is also possible that some workers start out as self-employed and continue looking for paid work.

Third, unobserved heterogeneity: It is always possible that we are not able to identify all the sources of heterogeneity in our sample. The fact that self-employed workers are more likely to have avoided unemployment after job loss tells us 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 the less 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.[37]

For the sake of robust results, the next section examines the relationship between unemployment and self-employment within a different institutional context, namely, 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 fifteen years. The proportion of self-employment in the United States is less than half the proportion of self-employment in Spain. We test how duration of unemployment affects self-employment in the U.S. economy, as compared to analogous dynamics in the Spanish economy. Differences between labor market institutions in both countries make this comparison an insightful one.

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 wage and salary jobs in the period 1981 to 1987, who worked full-time in the non-agricultural sector. The entire sample[38] is composed of 5,282 individuals, of whom 8.16% entered and remained self-employed as of the survey dates (1986 and 1988). Self-employed U.S. workers are more likely to be males, elder, residing in the Mountain and Pacific

---

[37] It is unlikely that duration of unemployment is correlated with unobserved characteristics which increase the probability of entering and remaining self-employed, others than those contemplated in our model.

[38] Some observations with missing values for some variables were deleted.

region, had not collected unemployment insurance, had suffered a longer duration of unemployment, had held fewer jobs after displacement, had been earning more in the previous job, and had not been included in a group health insurance plan.

When we analyzed workers who had held only one job after displacement, nothing substantially changed. However, some differences emerged when comparing probit regressions by gender. Women are more likely to be self-employed if they have a college education, had longer tenure in the previous job, were displaced in 1983 or before and lived in the Mountain and Pacific region. The variable duration of unemployment does not significantly affect displaced women's probability of becoming self-employed in the United States.

As opposed to the results for Spain, U.S. workers who did not experience unemployment are not more likely to be self-employed after displacement. Nonetheless, according to column 2 of Table 4, one week out of work significantly raises the probability of entering 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. Yet, because the data sets are not identical, it is difficult to compare the degree to which unemployment duration respectively 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 possible to sense how differently duration of unemployment affects self-employment in Spain and the United States. To do that, we concentrate on displaced workers who have experienced unemployment. We use the specifications in column 1 of Table 3 for Spain and in column 2 of Table 4 for the United States. To avoid the effect of measuring unit by which duration of unemployment was reported in both countries, we take the logarithm of duration. We obtain that one percent increase in unemployment duration raises the probability of self-employment by 0.15 percentage points

in the U.S and by 0.17 percentage points in Spain.[39] Since the probability of becoming self-employed is twice as high in Spain than it is in the U.S., we can conclude that the elasticity of becoming self-employed with respect to duration of unemployment among job losers is higher in the U.S. than it is in Spain.

A result shown in Table 4 merits some comments. We have observed that among displaced workers in the United States, previous higher wage earners are more likely to become and remain in self-employed.[40] 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 find that workers selected into self-employment are relatively poorer wage earners. Nevertheless, there may not be inconsistency between their finding and the one reported here, if few NLS workers who shifted to self-employment did so in the aftermath of displacement. The reason being that it is unlikely 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 quality of the jobs which workers have created for themselves should be lower than the quality of the jobs obtained by those who remain wage and salary workers. As indicators of the quality of the obtained job, we take the proportions of workers performing occasional or regular part-time work, looking for work, holding another job and the proportion of those not covered by Social Security. Table 5 shows that in Spain, self-employed workers without employees are more likely to be in all these categories than

---

[39] The probit coefficients (S.D) and the mean of the standard normal density function were the following: for the U.S, 0.104 (0.034) and 1.447; and for Spain, 0.186 (0.036) and 0.906.

[40] Unfortunately, the Spanish data do not contain information on earnings in the previous job.

are wage and salary workers. The same assertion can be made for the U.S. with regard to workers in part-time work and those not covered by a group insurance plan. This approach in assessing the quality of jobs has the limitation of not accounting for factors likely to influence job satisfaction among self-employed workers: independence, flexibility and expectations of business improvement over time.

In the framework of our model, 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.[41] Tables 6 and 7 test this prediction. The results confirm our hypothesis for Spain and the United States. Other results indicate that for 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 poorer job match.

Self-Employment and Earnings in Spain

For comparable workers earnings provide the best index of job quality as so far a pecuniary measure. Table 8 contains the results of estimated earning equations for Spain. Only males in full-time jobs have been considered.[42] Spanish self-employed workers earn less than their wage and salary counterparts. When the self-employed are split according to the size of the firm, we obtain interesting results: Self-employed workers without employees earn about 22% less than wage and salary workers. Self-employed workers with less than six employees do not earn significantly more than wage and salary workers. Those who have over six employees earn 26% more than wage and salary workers.

When wage equations are estimated for self-employed and wage and salary workers, some additional results are worthy of mention. General experience and

---

[41] Unemployment duration makes workers accept less desirable jobs. The finding that the longer unemployed are more likely to become self-employed suggests that, absent self-employment as an option, less desirable working conditions would be observed among long-term unemployed workers who find a job.

[42] Information on wages is reported in the ECVT as a coded variable. However, we have translated the variable into a continuous one by taking mid-point of each interval.

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 wage and salary workers and is not significant among self-employed workers.

VII. Conclusion

The objective of this work has been to introduce unemployment in the analysis of selection into self-employment. As the primary framework for our investigation we incorporated self-employment as plausible outcome into a job search model, in which workers learn in the process of looking for work. For both Spain and the United States, we have found that duration of unemployment significantly affects workers' decision to become self-employed. Such a result is consistent with the prediction of the model. Further inquiry into the kinds of jobs held by self-employed workers showed that those jobs have desirable characteristics: part-time work, absence of Social Security coverage, etc. At the same time, we found that for Spain, most of the self-employed workers are the only employees of their firms, obtaining much less income than comparable wage and salary workers.

This work leads us to consider several aspects of self-employment which call for future research. First, more investigation is needed to assess whether self-employment that stems from unemployment contributes to solve or to camouflage joblessness. Second, a way to better understand entrepreneurship, as related to unemployment, is to study the formation and evolution of small firms, above all those created by unemployed workers. Unemployment can be a catalyst for talented entrepreneurs who otherwise would not have decided to take the risk associated with creating a business. Third, the study of earnings prior to self-employment, income obtained from self-employment and receipt of unemployment insurance, would be helpful in shedding more light on the worker's decision to enter self-employment.

What policy implications can we derive from our findings? To have a clear policy, more probing analyses are necessary. Our finding that small businesses grow in economic downturns may indicate that self-employment represents a solution to workers' unemployment problem. More importantly, small businesses can greatly contribute to economic growth and the continuous generation of new jobs.[43] However, the relatively poorer job quality of self-employment casts doubt on the efficiency of a public policy that fosters self-employment.[44]

While this research has provided some insight into our 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 business created by self-employed workers should be pursued.

---

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

[44] It can be argued that public incentives for self-employment reduces the selection into self-employment and, therefore, increases the businesses' failure rate. 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. See Balkin (1989) for an analysis of self-employment for disadvantaged workers.

References

Alba, Alfonso and Richard B. Freeman (1990). "Jobfinding and Wages when Longterm Unemployment is Really Long: The Case of Spain." NBER Working Paper No. 3409.

Balkin, Steven. (1989). Self-Employment for Low-Income People. New York. Praeger.

Becker, Eugene H. (1984). "Self-Employed Workers: An Update to 1983." Monthly Labor Review 107 (July):14-18.

Blanchflower, David G. and Andrew J. Oswald. (1990). "What Makes a Young Entrepreneur?" NBER Working Paper No. 3252. (Revised June 1990).

Blanchflower, David G. and Bruce Meyer. (1990). "A Longitudinal Analysis of Young Entrepreneurs in Australia and the United States." Mimeo. NBER.

Blau, David M. (1987). "A Time-Series Analysis of Self-Employment in the United States." Journal of Political Economy 95 (3):445-67.

Borjas, George J. (1986). "The Self-Employment Experience of Immigrants." Journal of Human Resources 21 (4):485-506

Borjas, George J. and Stephen G. Bronars. (1989). "Consumer Discrimination and Self-Employment." Journal of Political Economy 97 (3):581-605.

Burdett, Kenneth and Tara Vishwanath (1988). "Declining Reservation Wages and Learning." Review of Economic Studies 55:655-666.

Cantillon, R. (1755): Essai sur la Nature du Commerce en Generale (ed. H. Higgs). London. Macmillan (1931).

Evans, David S. and Linda S. Leighton. (1989). "Some Empirical Aspects of Entrepreneurship." American Economic Review 79 (3):519-535.

Evans, David S. and Boyan Jovanovic. (1989). "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints." Journal of Political Economy 97 (4):808-27.

Fuchs, Victor R. (1982). "Self-Employed and Labor Force Participation of Older Males." Journal of Human Resources 17 (3):339-357.

Goffee, Robert and Richard Scase. (1986). "Women, Business Start-up and Economic Recession." Women in Small Business. Rik Donckels and Jane N. Meijer (Eds.) Assen: Van Gorcum.

Kanbur, Steve M. (1979). "Of Risk Taking and the Personal Distribution of Income." Journal of Political Economy 87 (August):769-97.

Kihlstrom, Richard E. and Jean-Jacques Laffont. (1979). "A General Equilibrium Entrepreneurial Theory of Firm Formation Based on Risk Aversion." Journal of Political Economy 87 (August):719-48.

Knight, Frank H. (1921). Risk, Uncertainty and Profit. New York. Houghton Mifflin.

Lazear, Edward P. and Robert L. Moore (1984). "Incentives, Productivity, and Labor Contracts." Quarterly Journal of Economics 99 (May):275-96.

Lucas, Robert E., Jr. (1978). On the Size Distribution of Business Firms." Bell Journal of Economics 9 (Autumn):508-23.

McCall, Brian P. (1989). "A Theory of Job Search and Learning Behavior." Mimeo. University of Minnesota.

Meyer, Bruce D. (1990). "Why Are There So Few Black Entrepreneurs?" NBER Working Paper No. 3537.

Mortensen, Dale T. (1986). "Job Search and Labor Market Analysis" in Handbook of Labor Economics, edited by O. C. Ashenfelter and R. Layard, (Amsterdam: Noth Holland) 849-919.

OECD. (1986). Employment Outlook. Paris.

Rees, Hedley and Anup Shah. (1986). "An Empirical Analysis of Self-Employment in the U.K." Journal of Applied Econometrics (1):95-108.

APPENDIX 1
Variable Definitions and Descriptive Statistics for ECVT Sample

Variable	Description	Mean (S.D.) Wage and Salary Workers	Mean (S.D.) Self-Employed Workers
Male	=1 if male	.7152	.8015
Married	=1 if married	.7116	.8027
Head	=1 if household head	.6809	.7514
Age	= age	38.2268 (11.8)	42.0615 (11.7)
Age>=65	=1 if age>=65	.0047	.0215
Exper.	= age-educ-6	24.3929 (13.4)	28.9048 (13.4)
Educ.<6	=1 <6 years of school	.2769	.3303
Educ.=6	=1 if primary school	.2824	.3202
Educ.=8	=1 if pre-secondary	.1618	.1369
Educ.=12	=1 if secondary school	.1544	.1249
Educ.=15	=1 if pre-university	.0634	.0462
Educ.=17	=1 if university	.0608	.0412
<u>Duration of previous and current job</u>:			
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	.1855	.1230
Senior1-2	=1 if >=1 and <=2 years	.0667	.0868
Senior2-5	=1 if >2 and <=5 years	.1407	.1864
Senior>5	=1 if more than 5 years	.6069	.6036
Region ur	= region unemployment rate	21.7357 (5.1)	21.2253 (5.2)
Durat.=0	=1 if not unemployment	.5542	.6442
Months unemployed	= unemployment duration in months	7.7037 (16.7)	8.9067 (20.1)
<u>Reasons for and number of firm changes</u>:			
Quit	=1 if quit the job	.5325	.5383
Retired	=1 if retired	.0013	.0088
To marry	=1 if married	.0358	.0697
Birth	=1 if gave birth	.0111	.0095
Military	=1 if went military service	.0277	.0215
Displac.	=1 if displaced	.3131	.2701
Fired	=1 if was individualy fired	.0506	.0500
Bankrup	=1 if bankruptcy	.1001	.0849
Cutback	=1 if cut-back on work	.0218	.0323
Endcont	=1 if end of contract	.1404	.1026
Not def.	=1 if not defined	.0661	.0659
Not ans.	=1 if no answer	.0120	.0158

APPENDIX 1 (Continued)
Variable Definitions and Descriptive Statistics for ECVT Sample

Variable	Description	Mean (S.D.) Wage and Salary Workers	Mean (S.D.) Self-Employed Workers
Jobchang=1=1	if changed firms once	.1771	.2149
Jobchang=2=1	" twice	.2674	.2473
Jobchang=3=1	" three times	.2179	.2022
Jobchang>3=1	" four or more times	.3365	.3354
Self w/e =1	if self-employed without employees		.8034
Self 1-5e =1	if 1-5 employees		.1559
Self >5e =1	if more than 5 employees		.0355
Log wage =	log of the monthly net earnings in current job	10.73 (.51)	10.59 (.57)
N		6080	1577

APPENDIX 2
Variable Definitions and Descriptive Statistics for 1986-1988 DWS Sample

Variable	Description	Means (S.D.) Wage and Salary Workers	Self-Employed Workers
Male	=1 if male	.6615	.7703
Married	=1 if married	.6825	.7703
Age	= age	35.6685 (10.3)	37.6496 (9.5)
Educ.<=12	=1 if <=12 years of school	.3772	.3480
Educ.=13	=1 if 13 "	.2747	.2552
Educ.=14	=1 if 14 "	.1020	.0765
Educ.=15	=1 if 15 "	.0729	.0696
Educ.=16	=1 if 16 "	.0682	.1020
Educ.>=17	=1 if 17+ "	.1047	.1484
<u>Reasons for job loss</u>:			
Close	=1 if plant closing	.5291	.4965
Slack	=1 if slack work	.3318	.3387
Abolish	=1 if abolished position or shift	.1374	.1647
Tenure	= tenure in the prior job	4.6996 (6.1)	4.9489 (6.0)
Ydisp.>83	=1 if displaced after 1983	.6413	.6403
<u>Region of residence at survey date</u>:			
Region1	=1 if New England and Middle Atlantic	.1978	.1600
Region2	=1 if E-N Central and W-N Central	.2661	.2296
Region3	=1 if S Atlantic, E-S Central and W-S Central	.3024	.3062
Region4	=1 if Mountain and Pacific	.2335	.3039
Moved	=1 if moved to other city or county	.2234	.2018
Advnotice	=1 if given advanced notice	.5256	.5591
Collec.UI	=1 if collected unemployment insurance	.5656	.5127
Durat.=0	=1 if not unemployment	.1506	.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)
Notcover.	= not covered by any group health insurance plan in previous job	.2803	.2830
# jobs	= number of jobs held since displacement	1.7019 (1.1)	1.5104 (1.0)
N		4851	431

TABLE 1
Current Class of Workers by Year of Entry, Conditional on Being Employed.

Frequency
(Row Percentage)
[Column Percentage]

	Wage-Salary Workers	Self-Empl. With Employess	Self-Empl. 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 wage and salary job.
Source: ECVT.

TABLE 2
Probit Regressions on the Probability of Entering Self-Employment Among Wage and Salary Workers in Prior Job. Spain. ECVT.

	All Workers		Males		Females	
	Coeff.	t	Coeff.	t	Coeff.	t
Constant	-2.5359	(-9.79)	-2.0391	(-6.73)	-3.4064	(-6.52)
Male	.3224	(7.37)				
Married	.0817	(1.87)	-.0605	(-1.14)	.3145	(3.86)
Age	.0519	(4.45)	.0468	(3.42)	.0774	(3.22)
Age2	-.0005	(-3.55)	-.0004	(-2.61)	-.0007	(-2.70)
Age>=65	.8859	(4.76)	1.1025	(4.58)	.8840	(2.57)
Educ.=6	.0436	(0.98)	.0137	(0.27)	.1665	(1.63)
Educ.=8	-.0483	(-0.85)	-.0785	(-1.22)	.1126	(0.91)
Educ.=12	-.0680	(-1.17)	-.1104	(-1.69)	.1300	(1.01)
Educ.=15	-.1546	(-1.94)	-.2227	(-2.33)	.0329	(0.21)
Educ.=17	-.2611	(-3.15)	-.3685	(-3.79)	.0724	(0.44)
Tenure	.0272	(3.97)	.0290	(3.84)	.0267	(1.48)
Tenure2	-.0005	(-2.24)	-.0005	(-1.95)	-.0010	(-1.36)
Senior<1	.1643	(2.87)	.1066	(1.56)	.2596	(2.42)
Senior1-2	.4685	(6.82)	.4266	(5.24)	.5697	(4.37)
Senior2-5	.4124	(8.16)	.4174	(7.06)	.4173	(4.19)
Region ur	-.0100	(-3.05)	-.0104	(-2.82)	-.0067	(-0.91)
Durat.=0	.3298	(7.10)	.3084	(5.68)	.3750	(3.85)
Months unemployed	.0068	(6.09)	.0062	(3.68)	.0063	(3.90)
Jobchang=1	.1818	(3.57)	.1474	(2.49)	.2989	(2.80)
Jobchang=2	-.0041	(-0.09)	-.0562	(-1.07)	.1842	(1.78)
Jobchang=3	-.0159	(-0.33)	-.0177	(-0.33)	.0329	(0.28)
Quit	-.1481	(-3.08)	-.0447	(-0.73)	-.2671	(-3.19)
Displac.	-.1544	(-2.84)	-.0545	(-0.82)	-.3374	(-3.02)
Log likel.	-3664.6		-2850.2		-788.84	
$\hat{P}$	.206		.225		.153	
N	7657		5613		2044	

Note: The t-statistics are presented in parentheses.

TABLE 3
Probit Regressions on the Probability of Entering Self-Employment Among Wage and Salary Workers in Prior Job. Spain. ECVT.

	Displaced		Voluntary Movers		Other Reason for Moving	
	Coeff.	t	Coeff.	t	Coeff.	t
Constant	-3.2485	(-7.01)	-2.6597	(-7.00)	-2.9684	(-4.80)
Male	.5203	(5.43)	.4142	(6.53)	.3415	(2.81)
Married	.0266	(0.34)	.0977	(1.55)	.0587	(0.53)
Age	.0704	(3.28)	.0522	(3.06)	.0633	(2.27)
Age2	-.0007	(-2.97)	-.0004	(-2.17)	-.0006	(-2.05)
Age>=65	.7298	(1.46)	1.0830	(3.98)	.6333	(1.79)
Educ.=6	.1885	(2.22)	-.0075	(-0.12)	-.0257	(-0.24)
Educ.=8	.0232	(0.21)	-.0806	(-1.01)	-.0186	(-0.14)
Educ.=12	.2297	(2.14)	-.1920	(-2.38)	-.2202	(-1.50)
Educ.=15	.2146	(1.37)	-.2037	(-1.95)	-.4736	(-2.12)
Educ.=17	-.1670	(-0.93)	-.3095	(-2.89)	-.3070	(-1.45)
Tenure	-.0029	(-0.21)	.0399	(3.79)	.0240	(1.49)
Tenure2	.0002	(0.45)	-.0008	(-2.04)	-.0006	(-1.18)
Senior<1	-.0315	(-0.35)	.3770	(3.95)	.0710	(0.54)
Senior1-2	.3745	(3.48)	.6069	(5.37)	.2023	(1.27)
Senior2-5	.2499	(2.77)	.5771	(8.06)	.2609	(2.04)
Region ur	-.0040	(-0.69)	-.0170	(-3.67)	-.0005	(-0.06)
Durat.=0	.5111	(6.41)	.1470	(2.14)	.4566	(4.16)
Months unemployed	.0099	(4.98)	.0072	(3.75)	.0032	(1.59)
Jobchang=1	.1494	(1.44)	.2123	(3.06)	.2332	(1.93)
Jobchang=2	-.0066	(-0.07)	-.0247	(-0.39)	.1419	(1.24)
Jobchang=3	.0298	(0.34)	-.0225	(-0.34)	.0294	(0.24)
Fired	.0843	(0.89)				
Bankrup	-.0624	(-0.72)				
Cutback	.2546	(2.09)				
Retired					.9108	(2.95)
To marry or give birth					.4167	(3.44)
Military					-.1089	(-0.81)
Log likel.	-1033.0		-1925.4		-635.5	
^ P	.183		.208		.243	
N	2330		4037		1240	

Note: The t-statistics are presented in parentheses.

TABLE 4
Probit Regressions on the Probability of Entering Self-Employment Among Displaced Workers in the U.S. Displaced Worker Survey 1986-1988.

			Have Held Only One Job Since Displacement			
	Entire Sample		All Workers		Males	Females
	Coeff.	t	Coeff.	t	Coeff. t	Coeff. t
Constant	-4.3610	(-9.32)	-4.7615	(-7.82)	-4.5734 (-6.36)	-4.8893 (-3.76)
Male	.1654	(2.62)	.2156	(2.65)		
Married	.1134	(1.83)	.0969	(1.19)	.0287 (0.28)	.2133 (1.39)
Age	.0538	(2.58)	.0640	(2.37)	.0698 (2.18)	.0597 (1.06)
Age2	-.0005	(-2.30)	-.0007	(-2.28)	-.0007 (-1.97)	-.0008 (-1.19)
Educ.=13	.0075	(0.11)	-.0183	(-0.21)	.0323 (0.31)	-.2349 (-1.27)
Educ.=14	-.1561	(-1.57)	-.3212	(-2.32)	-.3748 (-2.24)	-.2927 (-1.09)
Educ.=15	-.0550	(-0.51)	-.0316	(-0.23)	-.0352 (-0.22)	-.0434 (-0.15)
Educ.=16	.1179	(1.17)	.0691	(0.55)	-.1630 (-1.05)	.6056 (2.51)
Educ.>=17	.0519	(0.58)	-.0027	(-0.02)	-.0204 (-0.15)	.0365 (0.13)
Slack	.0566	(0.96)	.0242	(0.31)	-.0111 (-0.12)	.1119 (0.65)
Abolish	.1161	(1.53)	.1649	(1.72)	.0627 (0.53)	.3261 (1.86)
Tenure	.0079	(0.65)	.0263	(1.72)	.0125 (0.73)	.1172 (2.55)
Tenure2	-.0005	(-1.25)	-.0011	(-1.97)	-.0007 (-1.23)	-.0053 (-2.15)
Ydisp.>83	-.0522	(-0.89)	-.0058	(-0.07)	.1039 (1.13)	-.3333 (-2.09)
Region2	.0517	(0.63)	.1294	(1.26)	.1259 (1.08)	.2352 (0.98)
Region3	.1282	(1.64)	.1840	(1.86)	.1595 (1.41)	.3446 (1.52)
Region4	.2196	(2.73)	.2809	(2.71)	.1592 (1.31)	.6561 (2.93)
Moved	-.0774	(-1.19)	-.1348	(-1.46)	-.0832 (-0.82)	-.3542 (-1.40)
Advnotice	.0641	(1.22)	.0688	(1.01)	.0772 (0.97)	.0300 (0.21)
Collec. UI	-.1586	(-2.57)	-.1159	(-1.46)	-.1902 (-2.09)	.0739 (0.41)
Durat.=0	.0054	(0.06)	.0737	(0.75)	-.0107 (-0.09)	.3120 (1.52)
Weeks unemployed	.0029	(2.47)	.0036	(2.34)	.0038 (2.02)	.0027 (0.88)
# jobs	-.0744	(-2.80)				
Log wage	.2765	(4.82)	.2787	(3.73)	.2728 (3.18)	.2715 (1.67)
Notcover.	.1741	(2.69)	.2619	(3.11)	.2742 (2.73)	.2057 (1.26)
Log likel.	-1423.8		-875.7		-650.7	-206.3
$\hat{P}$	.0816		.0938		.1086	.0645
N	5282		2963		1971	992

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

TABLE 5
The Job Quality by Class of Worker in Spain
(Percentage of workers in each category)

	All Workers	Wage and Salary	Self-Empl. With Employees	Self-Empl. 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 of Self-Employed Workers in Spain
Self-Employed Males. ECVT.

Dependent Variable:	Part-Time Work =1		Looking For Work =1		Holding Another Job =1		Not Social Security =1	
	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
Constant	1.4911	(2.34)	-.9595	(-1.10)	.9929	(1.64)	1.3264	(2.00)
Married	-.2249	(-1.96)	.1808	(1.11)	.1178	(1.04)	-.3511	(-3.01)
Age	-.0986	(-3.58)	-.0100	(-0.25)	-.0829	(-3.13)	-.0971	(-3.40)
Age2	.0011	(3.79)	-.0000	(-0.00)	.0009	(3.31)	.0010	(3.48)
Educ.=6	-.2824	(-2.55)	-.2565	(-1.68)	-.0602	(-0.57)	-.3014	(-2.40)
Educ.=8	-.3467	(-2.21)	-.0388	(-0.20)	.1278	(0.93)	-.0348	(-0.22)
Educ.=12	-.5103	(-3.03)	-.1493	(-0.73)	-.0895	(-0.60)	-.1291	(-0.77)
Educ.=15	.0292	(0.13)	.1632	(0.59)	.1824	(0.86)	-.0221	(-0.09)
Educ.=17	-.2096	(-0.84)	-.5883	(-1.26)	.5089	(2.44)	.7079	(3.34)
Tenure	-.0366	(-2.31)	-.0226	(-1.02)	-.0373	(-2.54)	-.0404	(-2.32)
Tenure2	.0011	(2.31)	.0006	(0.95)	.0010	(2.28)	.0010	(1.85)
Senior<1	.4005	(2.66)	.1836	(0.97)	.3349	(2.33)	.3710	(2.35)
Senior1-2	.0538	(0.31)	.0317	(0.14)	-.0021	(-0.01)	.1719	(0.96)
Senior2-5	.0246	(0.18)	-.0658	(-0.38)	.0589	(0.49)	.0733	(0.53)
Region ur	.0064	(0.78)	-.0009	(-0.09)	-.0019	(-0.24)	-.0008	(-0.09)
Durat.=0	-.2709	(-2.18)	-.3040	(-1.90)	-.1667	(-1.43)	-.0547	(-0.41)
Months unemployed	.0073	(2.16)	.0069	(1.72)	.0069	(2.07)	.0094	(2.57)
Self with e	-.5382	(-3.93)	-.4866	(-2.52)	-.4484	(-3.89)	-.3414	(-2.52)
Displac.	.1317	(1.28)	.2449	(1.84)	.2149	(2.24)	.0752	(0.68)
Jobchang=1	-.1826	(-1.44)	-.0751	(-1.10)	-.1036	(-0.92)	-.0154	(-0.12)
Log likel.	-512.3		-272.1		-618.8		-442.1	
$\hat{P}$	.176		.065		.223		.138	
N	1264		1264		1264		1264	

Note: The t-statistics are presented in parentheses.

TABLE 7
Probit Regressions on Job Quality in the U.S.
Males. 1986-1988 DWS.

Dependent Variable:	Part-Time Work =1		Not Covered By Any Group Health Insurance Plan in Current Job=1	
	Self-Employed	Wage and Salary	Self-Employed	Wage and Salary
	Coeff. t	Coeff. t	Coeff. t	Coeff. t
Constant	.6718 (0.41)	.4692 (0.86)	1.7050 (1.16)	.0303 (0.06)
Married	-.3958 (-1.78)	-.2758 (-3.78)	-.3461 (-1.70)	-.3245 (-5.48)
Age	.0311 (0.43)	-.0479 (-1.93)	.0178 (0.27)	.0087 (0.42)
Age2	-.0002 (-0.27)	.0006 (1.94)	-.0003 (-0.42)	-.0001 (-0.51)
Educ.=13	-.4865 (-2.09)	.0636 (0.75)	-.3254 (-1.60)	-.0310 (-0.47)
Educ.=14	-.1844 (-0.52)	.0289 (0.24)	-.1856 (-0.63)	-.2908 (-3.07)
Educ.=15	-.0312 (-0.09)	.0501 (0.37)	-.7152 (-2.24)	-.2457 (-2.29)
Educ.=16	-.6837 (-1.90)	-.1214 (-0.78)	-.6106 (-2.06)	-.2893 (-2.55)
Educ.>=17	-.4953 (-1.73)	.1679 (1.41)	-.3609 (-1.47)	-.3806 (-3.78)
Slack	-.3259 (-1.65)	.0406 (0.56)	-.0454 (-0.27)	.0943 (1.66)
Abolish	.1411 (0.54)	-.0778 (-0.72)	-.2920 (-1.26)	-.1985 (-2.30)
Tenure	-.1010 (-2.56)	-.0211 (-1.47)	.0605 (1.68)	-.0112 (-0.89)
Tenure2	.0030 (2.15)	.0013 (2.85)	-.0028 (-2.02)	-.0001 (-0.31)
Ydisp.>83	.1403 (0.71)	.2113 (2.76)	-.0952 (-0.56)	.3825 (6.33)
Region2	-.0908 (-0.32)	.1959 (1.91)	.3778 (1.57)	.2113 (2.59)
Region3	-.0496 (-0.18)	.1103 (1.05)	.9734 (4.22)	.3583 (4.48)
Region4	.3618 (1.34)	.3591 (3.42)	.6113 (2.58)	.4211 (5.06)
Moved	-.4224 (-1.86)	-.0227 (-0.29)	-.0045 (-0.02)	.1037 (1.72)
Advnotice	.2244 (1.26)	-.1113 (-1.70)	.1268 (0.81)	-.1399 (-2.69)
Collec. UI	-.0352 (-0.18)	-.1356 (-1.74)	-.2696 (-1.59)	-.0522 (-0.84)
Durat.=0	-.2866 (-1.06)	-.1032 (-0.94)	-.2132 (-0.97)	-.0685 (-0.81)
Weeks unemployed	.0107 (2.80)	.0073 (5.04)	.0083 (2.28)	.0045 (3.67)
# jobs	.0356 (0.43)	.0733 (2.53)	.0683 (0.89)	.1360 (5.89)
Log wage	-.2968 (-1.57)	-.2218 (-3.25)	-.3277 (-2.01)	-.2296 (-4.08)
Notcover.	.0711 (0.34)	.2663 (3.35)	.3190 (1.68)	.4864 (7.77)
Log likel.	-144.9	-910.7	-195.7	-1573.7
$\hat{P}$	.205	.093	.554	.252
N	332	3209	332	3209

Note: The t-statistics are presented in parentheses.

TABLE 8
OLS Estimates of Earning Equations for Self-Employed and Wage/Salary Workers. Full-Time Male Workers (Dep. Var.: Log Net Monthly Earnings)

	All Workers	Self-Employed		Wage and Salary	
Head	.1225	.2455	.2346	.1002	.0981
	(5.62)	(3.94)	(3.77)	(4.36)	(4.29)
Exper.	.0217	.0177	.0184	.0207	.0208
	(8.75)	(2.23)	(2.33)	(7.82)	(7.86)
Exper.2	-.0003	-.0003	-.0003	-.0003	-.0003
	(-8.40)	(-3.00)	(-3.10)	(-6.88)	(-6.95)
Educ.=6	.1111	.1506	.1522	.1100	.1066
	(6.48)	(3.25)	(3.30)	(6.04)	(5.87)
Educ.=8	.2239	.2493	.2526	.2260	.2248
	(10.24)	(4.00)	(4.07)	(9.87)	(9.84)
Educ.=12	.4167	.4239	.4196	.4230	.4198
	(17.50)	(5.97)	(5.94)	(17.12)	(17.02)
Educ.=15	.7106	.6229	.6082	.7304	.7265
	(22.17)	(5.85)	(5.73)	(22.33)	(22.25)
Educ.=17	.8600	.9889	.9744	.8500	.8465
	(25.74)	(9.28)	(9.19)	(24.79)	(24.69)
Senior1-2	.0108	.0088	-.0061	.0008	-.0001
	(0.35)	(0.10)	(-0.07)	(0.02)	(-0.00)
Senior2-5	.0446	.0467	.0296	.0401	.0353
	(1.76)	(0.63)	(0.40)	(1.51)	(1.33)
Senior>5	.0904	.0444	-.0023	.1100	.0930
	(4.01)	(0.64)	(-0.03)	(4.69)	(3.93)
Quit	.0600	.1465	.1381	.0435	.0236
	(3.07)	(2.72)	(2.58)	(2.10)	(1.12)
Displac.	-.0581	-.0114	.0217	-.0702	-.0616
	(-2.71)	(-0.19)	(0.35)	(-3.12)	(-2.71)

TABLE 8 (Continued)
OLS Estimates of Earning Equations for Self-Employed and Wage/Salary Workers. Full-Time Male Workers
(Dep. Var.: Log Net Monthly Earnings)

	All Workers	Self-Employed		Wage and Salary	
Self w/e	-.2168 (-12.02)				
Self 1-5e	.0199 (0.61)				
Self >5e	.2640 (4.29)				
Durat.=0			.0803 (1.42)		.0442 (2.48)
Months unemployed			-.0027 (-1.41)		-.0016 (-2.46)
Lambda		.0597 (0.51)	.1020 (0.86)		
Constant	10.28 (189.9)	9.94 (47.3)	9.89 (44.8)	10.32 (183.9)	10.32 (182.2)
Adj. R-Square	.329	.230	.238	.336	.341
N	4340	823	823	3517	3517

Note: The t-statistics are presented in parentheses.
All equations include 8 dummies for sectors of the previous job.

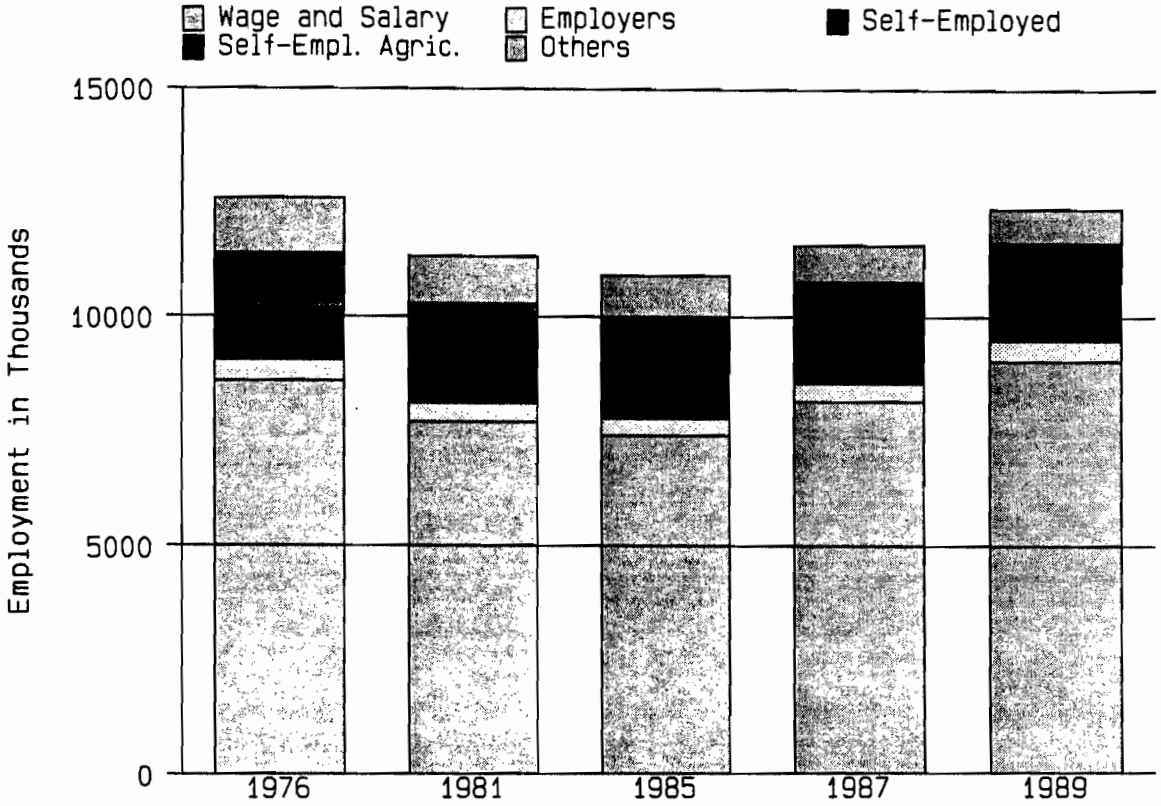

Figure 1. Structure and Evolution of Employment in Spain

stata™