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**FIRING COSTS AND STIGMA: AN EMPIRICAL ANALYSIS**

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# ABSTRACT

When information about workers' abilities is imperfect, past employment histories are important determinants of unemployment duration. This paper studies the effects of employment protection laws on unemployment spells in two countries: Italy and Spain.

Italy and Spain's adoption of fixed-term contracts with lower firing costs in the mid 1980s provides an interesting empirical framework to study the effects of policies affecting firing costs.

The evidence presented supports the hypothesis that when firing costs increase, so does the stigma attached to bad employment histories. First, I show that in Italy people, who became unemployed because of termination of the employment contract, have 10 per cent lower probability per year to remain unemployed than fired workers. Second, in Spain, workers dismissed from a temporary job have 30 per cent shorter unemployment spells than workers fired from regular contracts.

Human Resources Programme
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**ACKNOWLEDGEMENTS**

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# Firing Costs and Stigma:
# An Empirical Analysis

Patrizia Canziani[¤]

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## Abstract

When information about workers' abilities is imperfect, past employment histories are important determinants of unemployment duration. This paper studies the e®ects of employment protection laws on unemployment spells in two countries: Italy and Spain.

Italy and Spain's adoption of ¯xed-term contracts with lower ¯ring costs in the mid 1980s provide an interesting empirical framework to study the e®ects of policies a®ecting ¯ring costs.

The evidence presented supports the hypothesis that when ¯ring costs increase, so does the stigma attached to bad employment histories. First, I show that in Italy people, who became unemployed because of termination of the employment contract, have 10 percent lower probability per year to remain unemployed than ¯red workers. Second, in Spain, workers dismissed from a temporary job have 30 percent shorter unemployment spells than workers ¯red from regular contracts.

# 1   Introduction

The standard argument in favor of job security laws is that they protect workers from dismissal by employers; such terminations impose signi¯cant mobility costs on workers. However, job security provisions may increase unemployment as employers become more reluctant to hire new workers.

As Bentolila and Bertola (1990) show, higher ¯ring costs have two main e®ects. First they create a disincentive for ¯rms to ¯re workers; second, by lowering the option value of hiring workers of uncertain productivity, they make ¯rms more reluctant to hire.

Firing costs may also a®ect the way information is conveyed. If information about workers' abilities is imperfect, past employment histories are important determinants of unemployment durations. Gibbons and Katz (1991) assume that the current employer observes better the worker's ability than prospective employers, and then show that the decision to ¯re somebody a®ects the market's expectations about the worker. Firing costs a®ect the way ¯rms form expectations about the productivity of job applicants. In economies with lower ¯ring costs, being ¯red is relatively more common, and so there is less stigma attached to it, making it easier to ¯nd a job. Conversely, in high ¯ring-costs economies, because so few workers are ¯red, those who are ¯red become stigmatized as low-productivity individuals and have greater di±culty ¯nding another job. This paper tests whether increases in ¯ring costs do indeed increase the stigma attached to bad employment histories.

This paper provides empirical evidence about the relationship between unemployment duration and firing costs, where firing costs are broadly defined to include all factors that make it harder for firms to adjust their employment levels. The intuition behind this analysis focuses on how firing costs affect firms' expectations about job applicants when information is imperfect.[1].

The empirical regularity motivating this paper is the observation that long-term unemployment tends to be higher in countries with stricter employment protection laws. Among OECD countries, employment protection is assessed as relatively low in Canada, Australia and the United States, and high in Belgium, Italy, France and Spain, with other countries classified as having intermediate levels of protection.[2] The incidence of long-term unemployment over total unemployment tends to be low in the countries with little employment protection, while it is high in those with high employment protection.[3] Furthermore, over the last 15 years the incidence of long-term unemployment in France, Italy and Spain steadily increased through the mid 1980s, then decreased in the following years.[4] This evidence is particularly striking because in these three countries in the mid 1980s, major labor market

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[1]See Canziani, 1996

[2]OECD Job Study (1994) reports several indicators of the strictness of employment protection legislations. The indicator is a synthetic measure that ranks countries according to \strictness" of protection in the areas of individual dismissals of regular workers, fixed-term contracts, and employment though temporary work agencies.

[3]OECD Job Study 1995, Table 2.

[4]OECD Employment Outlook 1993, Chart 3.1. In France and Spain the ratio of long-term unemployment over total unemployment kept increasing until the mid 1980s, and decreased afterward. The same ratio went up until 1985 and then remained constant in Italy.

policies were implemented in order to lower ¯ring costs. Even though macro data point out a possible relationship between a ¯rm's cost to adjust its employment level and the duration of unemployment spells, this relationship is one that can be better investigated by examining individual data.

I use American and European microdata to test the hypothesis that, when it is harder to ¯re a worker, the stigma attached to being ¯red is higher and the unemployment spells are longer.

The analysis with American data does not focus on ¯ring costs because ¯ring costs neither di®er across states nor have changed in last twenty years in a signi¯cant and unequivocal way. In the last century, job security in the United States has been governed by the common law \employment-at-will" doctrine. Under this doctrine an employer can legally dismiss an employee for a good reason, a bad reason, or no reason at all. The employer's unmitigated right to dismiss employees at-will has been weakened by autonomous state court rulings in several jurisdictions in the 1980s. In addition, legislation to require some form of \just cause" to dismiss at-will employees has been introduced in ten state legislatures. However, even though the ¯ring legislation in the US has been modi¯ed recently, the changes are not significant, and have not been clearly established in law. Firing costs in the US are still very low in comparison to those in other OECD countries.

In the ¯rst part of this paper, I use data for American workers who lost their job and found new employment. The union status of these workers is used in order to distinguish between relatively di±cult-to-¯re and easy-to-¯re workers. We would expect that the harder it is to ¯re somebody, the

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higher the stigma from being ¯red, and the longer the unemployment spell. The results obtained con¯rm that the duration of unemployment is longer for workers who were unionized when they lost their jobs.

The analysis with European data focuses on two countries, Italy and Spain, that in the mid 1980's relaxed employment protection laws through the introduction of ¯xed-term contracts. Fixed-term contracts give employers the opportunity to hire a worker and learn better about his ability. When the contract expires, the ¯rm can choose to keep the worker o®ering him a regular contract of undetermined duration. Alternatively, the worker can be easily dismissed at the termination of the ¯xed length contract. In this way, the adoption of ¯xed term contracts corresponds to a decrease in ¯ring costs.

To the extent that lower ¯ring costs indeed lower the stigma attached to bad employment histories, then we would expect the duration of unemployment spells to decrease after the introduction of ¯xed-term contracts. The second part of this paper looks at the duration of unemployment of male workers who lost a full-time job, and analyzes how it was a®ected by the introduction of ¯xed-term contracts.

This approach has some potential problems. The ¯rst is related to the availability of data. Ideally, we would like to evaluate the impact of the intro-duction of ¯xed-term contracts using data for the years before and after the policy change. In fact, this is not possible as Italian and Spanish microdata with detailed information about the professional status of individuals are available only for more recent years. Therefore, the analysis focuses on the

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period subsequent to the lowering of ¯ring costs, and tests whether workers unemployed because of termination of the contract have shorter unemployment spells than those dismissed for other reasons.

The second potential problem is determined by the way various contracts are used for workers of di®erent ability. At the expiration of a ¯xed-term contract, it is more likely that a regular contract will be o®ered to a good rather than a bad worker. If highly productive workers are systematically o®ered an employment contract with undetermined duration at the end of the ¯xed-term contract, the sample of workers unemployed because the contract terminated would be composed of people with low productivity. In this case, being unemployed because of contract expiration would carry a stigma itself, and the unemployment spell would be on average longer for people previously employed with ¯xed-term contracts than for those who lost their job for other reasons. However, the sign of this bias is opposite to the tested hypothesis. It is certainly true that at the expiration of a ¯xed term contract some workers will be o®ered a regular contract, especially if they proved to be highly productive, but this is not necessarily the predominant e®ect. On the contrary, the evidence obtained shows that there is no stigma for being unemployed after a job ruled by a contract with determined duration.

My key ¯ndings are, ¯rst, that American workers who in 1994 lost a unionized job had 11 percent longer unemployment spell than the other unemployed workers.

Second, ¯xed-term contracts signi¯cantly decrease the stigma attached to being displaced from a job. In Italy workers unemployed due to expiration of

a ¯xed-term contract have a 10 percent lower probability than ¯red workers of remaining unemployed for more than three months. Similarly, Spanish workers displaced from temporary jobs have at least 30 percent shorter unemployment spells than ¯red workers.

The paper is organized as follows: Section 2 contains the analysis with American data. Sections 3 and 4 describe the policy changes, the data and methodology, and the empirical results for Italy and Spain, respectively. Section 5 summarizes and comments on the ¯ndings.

# 2   The United States

In this section I provide a simple test of the hypothesis that the stigma for being ¯red is higher when it is harder to ¯re. Instead of looking at various employment protection laws, I focus on workers ¯red from jobs in which they were union members and/or covered by a collective-bargaining agreement. Unionized workers are relatively more di±cult to ¯re because they enjoy the support and protection of a union. Given this assumption, prospective ¯rms might infer that a ¯red worker is worse on average if he was unionized. If this is true, we expect to observe longer unemployment spells for ¯red workers who were union members.

Thus, I examine how the unemployment duration depends on the union status of individuals, controlling for other observable characteristics.[5]

I analyze the duration of spells of joblessness for the sample using formal hazard-model techniques. The hazard rate (i.e. the escape rate from jobless-

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[5]In the analysis I do not distinguish between layo®s and plant-closing.

ness) is parameterized using a Weibull speci¯cation. The Weibull is a quite °exible parameterization and non-parametric methods have con¯rmed that it does well at ¯tting typical unemployment duration data. The hazard rate for individual i at time t is speci¯ed as

$$\lambda_i(t) = \text{®} \, t^{\text{®}_i \, 1} \, e^{X_i \pm} \tag{1}$$

where $X_i$ is a vector of time-invariant covariates for individual i, ® is the Weibull duration-dependence parameter, and ± is a vector of parameters. If $T_i$ denotes the length of individual i's unemployment spell, the Weibull speci¯cation of the hazard function implies that the log of the failure time for i can be written as a regression model of the form

$$\log(T_i) = X_i \, \bar{\phantom{x}} + \text{¾} \, e_i \tag{2}$$

where ¾ = 1=® is the Weibull scale parameter, $\bar{\phantom{x}}$ = ¡ ¾±, and $e_i$ is an error term with an extreme-value distribution. This model is estimated by maximum likelihood.

## 2.1 The data

I use data from the February 1994 Displaced Workers Supplement to the Current Population Survey. In this CPS supplement questions are asked to all persons 20 years of age or older. The survey gives information on whether the respondent lost her job in the previous three years, and whether she found a new job. Furthermore, we ¯nd information about individual characteristics of the respondent and the jobs she had in the three years preceding the interview.

The February 1994 CPS ¯le contains interviews of 156,246 people. I consider only workers that lost their job and found a new employment between 1991 and 1993. Workers in the agricultural and construction sectors are excluded because of the seasonality typical to these sectors.

## 2.2  The results

Table 2 shows maximum-likelihood estimates of a Weibull duration model for the unemployment spell for our 1994 sample. Estimates are presented in the form of the regression model in equation (2): the table reports the parameter ¯ for each covariate X. Therefore the estimates shown can be interpreted as the e®ects of the regressors on the expected log duration of unemployment.

The estimates presented support the model's basic prediction that stigma increases with ¯ring costs. The negative coe±cient on the dummy for unionized workers suggests that some stigma is attached to being laid o® when workers are union members. I ¯nd that unionized workers have 11 percent longer unemployment spells.

Coe±cients for other covariates show that men exit unemployment faster than women. Coe±cients for race and marital status are not signi¯cant. People with a high school or college degree have shorter unemployment spells then individuals with less education. As far as the occupational dummies are concerned, besides teachers and professors (for which the coe±cient is not signi¯cant), in the remaining occupations unemployment spells are shorter than in the excluded occupational group of the management related occupations. Unemployment duration is much longer in the Midwest than in the West of the US (coe±cients tend to be positive also for the northeastern and

southern regions, but they are not very significant). The results show that workers in the transportations and communications sectors have a shorter unemployment duration than individuals working in manufacturing.

Table 3 presents the results for the same duration model, but using a larger sample that includes also workers with incomplete unemployment spells. The coefficient of the dummy for the union status is still around 0.11, and it is more significant than in the sample using only completed unemployment spells. This confirms that unionized workers have 11 percent longer duration of unemployment.

I finally regressed re-employment wages on personal and professional characteristics and a dummy for the union status in the previous job. Estimates are shown in Table 4. The coefficient on the dummy for union status is negative and not significant, which implies that re-employment wages are not significantly different for people who were unionized in the last employment. Assuming that wages are correlated with ability, this last results implies that workers who lost a unionized job are not significantly better or worse than the other workers.

Unions usually affect the way firms terminate employment contracts, by enforcing seniority criteria such that workers with shorter tenure are laid-off before workers with longer tenure. Non-unionized workers tend to be dismissed more according to ability criteria. This implies that unionized workers that lost their job are on average better than non-unionized workers, and they should find a job sooner than non-unionized workers.

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# 3   Italy

This section provides evidence on unemployment duration and re-employment wages of Italian workers using data from the 1991 Bank of Italy Survey of Household Income and Wealth. In Italy the number of employment contracts with fixed duration surged after 1984, when a particular type of fixed-term contract combining work and training was introduced as one of several measures to increase labor market flexibility.

In the present analysis I focus solely on the demand side of the labor market. Fixed-term contracts presumably affect labor market participation of the long-term unemployed in a number of ways. More frequent interviews can help workers maintain contact with the labor market and reduce the risk of demoralization. Also, effective training programs may help attenuate employers' reluctance to recruit long-term unemployed persons.

This section estimates the relation of fixed-term contracts to the length of unemployment spells. I focus on workers that in the past were displaced from their job and are currently employed (completed unemployment spells), and examine how the duration of unemployment varies with the factors determining the displacement.

## 3.1   The professional training scheme contracts, PTS.

In Italy the number of fixed-term employment contracts increased significantly after the December 1984 introduction of \professional training scheme" (PTS).[6] Designed to increase the flexibility of the labor market, the use of

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[6]Contratti di formazione e lavoro. Law 863 of December 19, 1984.

Figure 1: Number of PTS contracts by gender - Italy

the PTS contracts increased considerably in the course of the following years. Hirings of ⁻rst-job seekers under this provision rose continually from 10,694 in 1984 to 529,297 in 1989,[7] despite this being a period of rising unemployment for all age groups in Italy.[8] In 1990 the number of PTS contracts slightly contracted to 469,050 due to bad conditions of the economy in general. Figures 1-4 show how PTS contracts have been intensively used in the industrial sector, mainly for 19-24 year-old male workers with low education.

PTS contracts are based on a combination of work and training activities. Their object is the hiring, discretionary and with a predetermined duration (maximum duration of the contract is 24 months) of young people aged 15-

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[7]Source of data: Italian Ministry of Labor.
[8]OECD Employment Outlook 1994, Chart 1.4.

Figure 2: Number of contracts by sector - Italy

Figure 3: Number of PTS contracts by age - Italy

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Figure 4: Number of PTS contracts by education - Italy

29. In order to promote the usage of such contracts, the law establishes tax incentives for the employers which reduced gross labor cost by 30 percent.

Subsequent legislation sought to make the PTS contracts still more attractive to employers through additional ¯nancial incentives and salary savings. To this end, the state o®ered a contribution towards the wages of any worker whose trainee contract is converted into a standard contract.[9] Furthermore, the employer has to pay a special bonus to the young worker if the latter is not hired on a permanent basis when his trainee contract terminates.[10]

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[9]Law 113 of April 11, 1986.
[10]Agreement of May 8, 1986.

## 3.2   The data

The Italian data used come from the Survey of Household Income and Wealth conducted by the Bank of Italy every two years with the purpose of gathering information concerning the economic behavior of Italian families at the microeconomic level.

The survey collects data on the social and demographic characteristics of household members as well as personal characteristics, professional and economic status for all individuals who earned any income.

The methodology used in collecting the data and the de¯nitions of the survey variables has undergone several modi¯cations over the years, hampering the possibility of using the survey to perform intertemporal comparisons. This is particularly true for the information related to the professional status of individuals, as the main focus of the survey is wealth and saving behavior.

Even though more recent survey results are currently available, I use the 1991 data because this year o®ers more detailed information about job search activity and unemployment history. In particular, only the 1991 survey asks people who ever lost a job, the reason for such loss. The response to this question makes it possible to distinguish whether people were ¯red, or unemployed because of plant closing, or voluntarily quit their job, or, ¯nally, did not have a job because their contract terminated.

The 1991 survey interviewed 24,930 individuals; 13,882 of these received income.

I restrict my analysis to 2,778 income recipients who are currently working full-time and had been unemployed in the past after losing a job. The

information about the duration of unemployment is presented as a categorical variable: the survey only shows whether an individual has been unemployed less then a month, more than a month or more than three months. Table 5 presents summary statistics for the sample. 73 percent of the sample is composed by male workers. Eleven percent of the sample were unemployed in the past because they had been employed with a ¯xed term contract and that contract terminated.

My analysis focuses on males displaced from full-time jobs in an attempt to identify a sample of workers with strong attachment to the labor market.

## 3.3   The analysis

The hypothesis under investigation is whether workers who are unemployed because their contract terminated carry less stigma than workers who were ¯red or were displaced for other reasons. If this is true we expect to observe shorter unemployment spells for people who are unemployed because their contract terminated.

Thus, I examine how the probability that the unemployment spell is longer than three months depends on the reason why the worker became unemployed.[11]

I estimate the probability that the unemployment spell is longer than three months with a maximum likelihood probit model:

$$\Pr(\text{Unemployment spell} > 3 \text{ months}) = F(X^{\bar{}}) \qquad (3)$$

[11]Similar results are obtained when looking at the probability that the unemployment spell is longer than 1 month.

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where X is the vector of the covariates and F is the cumulative normal distribution with mean 0 and variance 1.

Table 6 reports the estimation results for the male workers in the sample. The first two columns show probit coefficients and standard errors. The last two columns show how a discrete change of a dummy variable from 0 to 1 affects the outcome probability.

The results clearly show that unemployment spells change significantly depending on whether the person was displaced by plant closing, voluntarily quit his job, was fired, or was employed with a temporal contract. In comparison to fired workers, people who voluntarily quit their job have almost 30 percent lower probability to remain unemployed for more than three months. The same probability is lower by approximately 10 percent for workers who lost their job because their contracts terminated. The coefficient of the dummy variable for plant closing is slightly less significant, but it shows that something similar to Gibbons and Katz (1991) evidence for the US holds in Italy as well, since unemployment spells tend to be longer for workers displaced by layoffs than for those displaced by plant closing.

As we would expect, it is easier to exit unemployment in the North and in the Center of the country, were most of the firms are located and the labor market is more efficient. The duration of unemployment tends to be shorter in the construction sector, which can be explained by the seasonality typical of this sector.

Table 7 presents evidence on the re-employment wages of male displaced workers. Most of the coefficients assume standard signs and values. Post-displacement wages are significantly and positively correlated with firm lo-

cation and worker level of education, occupation, and the marital status.

More interestingly, almost none of the dummies for the displacement cause is significant. In contrast to Gibbons and Katz (1991) results for the US, re-employment wages are not significantly higher for workers displaced in a plant closing than for fired workers. People who voluntarily quit their jobs have significantly higher re-employment wages.

The evidence about re-employment wages is particularly important as it rules out the possibility that the findings of Table 6 are explained by a certain kind of unobserved heterogeneity. In particular the evidence found says that people who lost a job because of contract termination do not trade-off unemployment duration with re-employment wages; in other words, they are not willing to accept any wage in order to quickly find a new job.

# 4 Spain

## 4.1 Fixed-term labor contracts

In 1984 Spain introduced fixed-term labor contracts with low firing costs for all activities, temporary or not. This scheme expanded very rapidly and, as a result, it now covers one third of all employees.[12]

Prior to 1984, fixed-term contracts existed but only in exceptional circumstances. The contracts introduced in 1984, labelled as \contracts for job creation", obviated the need for an objective reason to justify the hiring of

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[12]The proportion of temporary employees was 15 percent in 1987 and rose to 34 percent in 1994. The rate is slightly lower for men (32 percent in 1994), higher among the young (58 percent for people 20-29 years old), and higher in agriculture and construction (58 percent) than in industry and services (28 percent).

workers for limited periods of time (seasonal activity, surges in demand, etc).

The original duration of such contracts varied from 6 months to 3 years (in April 1992, the minimum length was increased to 1 year). The contract cannot be renewed at the end of the maximum length period by another ¯xed-term contract for the same job, and it is not possible to transfer the worker to a di®erent job within the ¯rm without signing a permanent contract. Fixed-term contracts imply lower ¯ring costs of \new" employees, as workers have the right to a severance payment of 12 days per worked year when the contract ends (as opposed to 20 days if the permanent employee's dismissal is ruled fair in court and 45 days if ruled unfair).

Fixed-term contracts for job creation promotion had a strong impact on the labor market: in 1985 431,554 contracts were signed, and the ¯gure increased to be above 1 million in 1989. As in Italy, the number of ¯xed-term contracts in Spain steadily increased from 1984 to 1989, and then fell in 1990 as economic activity worsened.[13]

### 4.1.1 Related literature

Over the last ten years the Spanish labor market has undergone radical changes. Institutional innovations, in particular the introduction of ¯xed-term contracts, o®ered up material for a growing literature on the impact of this new regime of employment protection legislation. This literature has two main focuses: the impact of ¯xed-term contracts on employment adjustment; and the e®ect of such contracts on wage setting behavior.

The ¯rst strand of literature points out that the relaxation of employment

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[13]Milner, Metcalf and Nomberla.

protection legislation has led employment to adjust to changes of output both with greater speed and greater magnitude. Labor turnover has increased markedly since 1984, with the enormous shift of new jobs to temporary contracts of average length 18 to 20 months. Bentolila and Saint-Paul (1992) conclude that the increase in employment in the period 1987-1990 is more attributable to the e®ect of ¯xed-term contracts than to the rise in economic activity.

The second strand of literature addresses the question of the impact of the rise of ¯xed-term contracts on wage bargaining behavior and therefore wage outcomes. Bentolila and Dolado (1994) make a strong theoretical and empirical case for the argument that ¯xed-term contracts have exacerbated insider-outsider problems in Spain by internalizing such arrangements inside ¯rms. Now the outsiders include both the unemployed and the temporary workers inside the ¯rm. The consequences of such wage setting behavior depends in part on the relative wages of temporary and permanent workers, and their relative presence in the employed workforce. Temporary workers on average earn lower wages than permanent workers. The gap will possibly disappear as the proportion of outsiders continues to increase and eventually their bargaining power will outweigh that of permanent workers.

## 4.2   The data

The data come from the 1994 Spanish Labor Force Survey Enquesta de Poblacion Activa: Estadistica de Flujos, EPA, administered quarterly by the INE, Instituto Nacional de Estadistica, since 1987. One sixth of the sample is renewed each quarter, so that each individual is possibly interviewed for six

consecutive quarters.

According to the Survey:[14], in the second quarter of 1992, 30 percent of male workers and 40 percent of female workers were hired through a ¯xed-term contract. Furthermore, the EPA survey reports the following previous experience pattern for workers who signed a ¯xed-term contract in the last quarter of 1991[15]

| | |
|---|---|
| Previous permanent contract or self-employed | 37% |
| First-job seeker | 7% |
| Unemployed with previous experience | 34% |
| Inactive | 19% |
| Other | 3% |

This classi¯cation is slightly misleading since there is no mention of workers previously on another ¯xed-term contract. It is likely that such workers are included in the \Unemployed with previous experience" category. These ¯gures point out that ¯xed-term contracts play an important role in increasing the hiring of new workers (young workers, previously inactive people).

Second, it is important to note that a signi¯cant part of workers who signed a ¯xed-term contract were previously employed with a permanent contract. Apparently, ¯xed-term contracts increase the \precariousness" of the Spanish labor market, eroding the share of permanent contracts.

Other interesting statistics focus on the experiences of workers after signing a ¯xed-term contract.[16] Considering workers who had a ¯xed-term contract in the second quarter of 1991, their professional situation in the second quarter of 1992 is as follows:

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[14]INE Estadistica de Flujos 1990-1992, Cuadro V.1.
[15]INE Estadistica de Flujos 1990-1992, Cuadro V.8.
[16]INE Estadistica de Flujos 1990-1992, Cuadro V.9.2.

| | |
|---|---|
| Fixed-term contract | 58.2% |
| Permanent contract | 13.4% |
| Self-employed | 3.0% |
| Unemployed | 16.6% |
| Inactive | 6.7% |
| Other | 2.1% |

The widespread utilization of ¯xed-term contracts increases the probability that a temporary job is followed by another temporary job. More interestingly, more than 13 per cent of temporary contracts are followed in the short run by permanent contracts. This supports the possibility that ¯xed term contracts are used by ¯rms to learn about the ability of job applicants, and improve the selection of workers. Signing a ¯xed-term contract with low ¯ring costs allows ¯rms to obtain information on the productivity of workers.

EPA surveys are available for the years 1987-1994. I use the last two years, from 1993:I to 1994:IV. The survey provides information about the duration of unemployment only for people who are unemployed at the moment of the interview.[17] Therefore, limiting the analysis to a cross-section implies that only incomplete unemployment spells are recorded. I ¯rst present results from the cross-section of 1994:IV. I then extend the analysis to encompass the two year panel combining completed and incomplete spells of unemployment.

I examine a sample of male workers[18] who were displaced from a full-

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[17]Unemployed people answer to the question \How long have you been unemployed?". However, people currently employed do not give any information about their eventual unemployment experience.

[18]In the Spanish analysis restricting attention to male workers is even more recommended than for the analysis of the Italian case, since the EPA survey does not provide detailed information about important determinants of female labor supply, like family characteristics and marital status (e.g we do not know the number and characteristics of

time job. The original sample for the last quarter of 1994 includes 24,886 individuals, aged 16 or more. Table 8 shows summary statistics for the ¯nal sample that includes 2,609 male unemployed workers. People in the army and in the agricultural sector are excluded from the analysis.

Unfortunately the EPA does not provide earnings information, so that it is not possible to control how re-employment wages are related to ¯xed term contracts, or in general to the reason causing the displacement.

## 4.3 The analysis

This section presents the empirical analysis of the relation between ¯xed-term contracts and duration of unemployment spells in Spain.

I ¯rst look at individuals unemployed in the last quarter of 1994 and estimate the probability that they have a shorter unemployment if their previous job was regulated by a ¯xed-term contract. The dependent variable, the duration of unemployment, is now a continuous variable. I analyze the duration of spells of joblessness for the sample using formal hazard-model techniques. The hazard rate (i.e. the escape rate from joblessness) is parameterized using a Weibull speci¯cation and the model is estimated by maximum likelohood (See Section 2 for a discussion of the methodology here adopted.)

The group of covariates used is essentially the most comprehensive allowed by the availability of information. The regression includes a dummy for the head of a family. Distinguishing between head of the family and the other components of the family seems a better alternative to distinguishing between married and non-married individuals, since in Spain married young couples

children).

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often live with their parents.

The EPA survey has 9 categories for occupations, which do not seem to correspond to di®erent skills and responsibilities. The classi¯cation of occupations looks more like a sectoral classi¯cation and it raises the question whether it would be better to exclude the occupational dummies from the analysis. In any case, occupational dummies do not play any signi¯cant role in the results and taking them out of the estimation does not a®ect the ¯ndings.

Table 9 presents the estimation results in terms of Weibull coe±cients and the coe±cients in time (rather than log time units). Estimates show that workers dismissed from a temporary job have 30 percent shorter unemployment spells than ¯red workers. The probability of exiting unemployment is not related to the educational level of the worker or the previous tenure. Married workers and heads of families ¯nd a new job quicker.

Table 10 presents a Weibull regression equivalent to the one just considered, except for the inclusion of an additional variable among the covariates to control for the unemployment bene¯ts. The variable labelled \bene¯ts" in the table, is a dummy variable that assumes two values: 1 if the worker received (or receives) unemployment bene¯ts when unemployed, 0 otherwise. This addition slightly changes the results.

First, the coe±cient of ¯xed-term contracts becomes smaller: allowing for unemployment bene¯ts, unemployed from a temporary job have now 20 percent shorter unemployment duration than ¯red people.

Second, the coe±cient on the dummy for unemployment bene¯ts does not display the sign we would expect. The coe±cient of the bene¯t dummy

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could imply that people receiving bene¯ts have unemployment spells 43 percent shorter than unemployed people without bene¯ts. A more convincing interpretation is that the coe±cient on the dummy for bene¯ts is negative because people with longer unemployment spells lose bene¯ts. [19]

Finally, the coe±cient of the plant-closing dummy becomes smaller. Adding a dummy for unemployment bene¯ts implies that people displaced by plant closing have unemployment duration only 2.5 percent shorter than ¯red workers. This happens because a large part of the unemployed receiving bene¯ts are jobless because of plant closing. If the dummy for unemployment bene¯ts is not included in the regression, the coe±cient on plant closing implies that there is less stigma on people displaced from plant closing than on people who were ¯red, since the latter have on average 25 percent longer unemployment spells. On the other hand, adding a dummy for the recipients of bene¯ts would mostly pick out workers displaced by plant closing. This interpretation is consistent with both the negative and signi¯cant coe±cient of the bene¯ts dummy and also the lower coe±cient of the plant closing dummy.

Table 11 presents estimates relative not only to individuals that were unemployed in the last quarter of 1994, but also to those hired in any of the ¯ve preceding quarters. These estimates give even stronger evidence about the positive relation between ¯ring costs and stigma. Workers dismissed from a temporary job have almost 70 percent shorter unemployment spells than ¯red workers. People who voluntarily quit their job and workers displaced by plant closing have respectively 80 and 75 percent shorter unemployment

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[19]Bover, Arellano and Bentolila (1996) point out a correlation between longer duration of unemployment and the absence of unemployment bene¯ts.

duration than ¯red workers.

# 5   Comments and Conclusions

This paper contains evidence that increases in ¯ring costs do increase the stigma attached to bad employment histories.

In the ¯rst part of the paper I have used the union status of American workers to distinguish between relatively di±cult-to-¯re and easy-to-¯re workers, The results I have obtained con¯rm that the harder to ¯re a worker, the higher the stigma from being ¯red, and the longer the unemployment spell.

I have then focused on two European countries, Italy and Spain, that in 1984 relaxed employment protection laws through the introduction of ¯xed-term contracts.

My ¯ndings are that Italian and Spanish workers unemployed due to expiration of a ¯xed-term contract have respectively a 10 and 30 percent lower probability than ¯red workers of remaining unemployed for more than 3 months.

The evidence presented has policy implications.  The introduction of ¯xed-term contracts not only changed the structure of some labor markets and modi¯ed bargaining behavior. Temporal contracts also a®ected the way ¯rms obtain information on the productivity of workers. Temporal contracts increase the willingness of ¯rms to hire workers even if they do not have a clear perception of their ability. Even though the temporal contract is not followed by a regular contract, the ¯xed-term provision has several positive e®ects,

since it decreases the risk of discouragement among unemployed workers, helps workers to maintain participation in the market, gives more opportunities to firms and workers to meet and know each other, and possibly increases the human capital of workers. However, other effects of fixed-term contracts may represent a strong case against deregulation and the relative relevance of each of them should be carefully assessed. Excessive segmentation of the labor market, unresponsiveness of wages to unemployment, precariousness of employment are some of the damaging effects of fixed-term contracts pointed out in the literature.

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## Table 1: Summary Statistics of the US Sample

| Variable | Mean | Std.Deviation |
|---|---|---|
| Unemployment Duration (weeks) | 14.067 | 18.079 |
| Union Status (1 if unionized) | .129 | .336 |
| Pre-dispacement wage (hourly pay rate in $ ) | 8.03 | 4.55 |
| Tenure (years) | 3.799 | 5.025 |
| Sex (1 if male) | .561 | .497 |
| Race (1 if white) | .838 | .368 |
| Education dummies | | |
| Less than high school | .200 | .401 |
| High School | .610 | .488 |
| College | .161 | .368 |
| Graduate Degree | .026 | .158 |
| Occupational dummies | | |
| Management | .1 | .301 |
| Engineers | .019 | .137 |
| Medical | .035 | .185 |
| Teachers Professors | .023 | .148 |
| Professional and Technical | .113 | .316 |
| Sales | .122 | .328 |
| Clerical | .132 | .339 |
| Service | .445 | .497 |
| Trade | .010 | .098 |
| Sectoral dummies | | |
| Manufacturing | .448 | .498 |
| Banking Insurance | .258 | .438 |
| Service | .249 | .420 |
| Public | .041 | .098 |
| Regional dummies | | |
| Northeast | .254 | .436 |
| Midwest | .216 | .412 |
| South | .232 | .422 |
| West | .296 | .457 |
| Marital Status dummies | | |
| Single | .335 | .472 |
| Married | .438 | .497 |
| Widowed Separated Divorced | .225 | .418 |

Number of observation: 183.

Data: CPS Displaced Workers Survey, 1994.

## Table 2: Unemployment Duration in the US - 1994

| Variable | Coe±cient | Std.Error |
|---|---|---|
| Union Status (1 if unionized) | .114 | .072 |
| Pre-dispacement wage | .001 | .024 |
| Tenure | .045 | .023 |
| Sex (1 if male) | -.385 | .224 |
| Race (1 if white) | -.180 | .241 |
| Education dummies | | |
| High School | -.366 | .208 |
| College | -.965 | .383 |
| Graduate Degree | 2.700 | 1.177 |
| Occupational dummies | | |
| Engineers | -3.786 | 1.746 |
| Medical | -1.118 | .702 |
| Teachers Professors | -.431 | .891 |
| Professional and Technical | -.890 | .502 |
| Sales | -.903 | .475 |
| Clerical | -.846 | .492 |
| Service | -.910 | .448 |
| Trade | -2.058 | .882 |
| Sectoral dummies | | |
| Transportation Communications | -1.044 | .461 |
| Banking Insurance | -.236 | .298 |
| Service | -.050 | .248 |
| Public | .086 | .808 |
| Regional dummies | | |
| Northeast | .315 | .239 |
| Midwest | .650 | .227 |
| South | .297 | .237 |
| Marital Status dummies | | |
| Married | .128 | .205 |
| Widowed Separated Divorced | -.199 | .255 |

Dependent variable: Log (Weeks of unemployment). ¾ = 1:035. Weibull Duration Model Speci⁻cation. Number of observations: 183. Omitted categories: Educational: Less than High School, Occupational: Management, Sectoral: Manufacturing, Regional: West, Marital: Single. Data: CPS Displaced Workers Survey, 1994.

## Table 3: Unemployment Duration in the US - 1994

| Variable | Coe±cient | Std.Error |
|---|---|---|
| Union Status (1 if unionized) | .106 | .058 |
| Pre-dispacement log-wage | -.249 | .207 |
| Pre-displ. wage dummy | .198 | .138 |
| Tenure | .037 | .011 |
| Sex (1 if male) | -.385 | .224 |
| Race (1 if white) | -.162 | .102 |
| Education dummies | | |
| High School | -.103 | .162 |
| College | -.626 | .232 |
| Graduate Degree | .934 | .432 |
| Occupational dummies | | |
| Engineers | -.014 | .495 |
| Medical | -.187 | .386 |
| Teachers Professors | -.071 | .425 |
| Professional and Technical | .155 | .284 |
| Sales | .135 | .257 |
| Clerical | .373 | .281 |
| Service | .219 | .243 |
| Trade | -2.058 | .882 |
| Sectoral dummies | | |
| Transportation Communications | -1.17 | .786 |
| Banking Insurance | .146 | .823 |
| Service | -.065 | .79 |
| Public | .142 | .989 |
| Regional dummies | | |
| Northeast | .253 | .239 |
| Midwest | .522 | .227 |
| South | .195 | .173 |
| Marital Status dummies | | |
| Married | .384 | .148 |
| Widowed Separated Divorced | -.137 | .174 |

Sample includes the right-censored workers. Dependent variable: Log (Weeks of unemployment). Number of observation: 1545. Omitted categories: Educational: Less than High School, Occupational: Management, Sectoral: Manufacturing, Regional: West, Marital: Single.
Data: CPS Displaced Workers Survey, 1994.

## Table 4: Reemployment Wages - US 1994

| Variable | Coefficient | Std.Error |
|---|---|---|
| Union Status (1 if unionized) | -.016 | .018 |
| Pre-dispacement log-wage | .414 | .025 |
| Experience | .0526 | .0018 |
| Experience squared | -.001 | .0001 |
| Tenure | -.006 | .002 |
| Sex (1 if male) | .081 | .008 |
| Race (1 if white) | .086 | .045 |
| Education dummies | | |
| High School | .159 | .0311 |
| College | .260 | .0325 |
| Graduate Degree | .340 | .057 |
| Occupational dummies | | |
| Engineers | .004 | .011 |
| Medical | .021 | .009 |
| Teachers Professors | .016 | .012 |
| Professional and Technical | .151 | .013 |
| Sales | .052 | .017 |
| Clerical | -.008 | .011 |
| Service | -.023 | .009 |
| Trade | -.029 | .021 |
| Sectoral dummies | | |
| Transportation Communications | .052 | .013 |
| Banking Insurance | .151 | .017 |
| Service | -.008 | .011 |
| Public | -.002 | .009 |
| Regional dummies | | |
| Northeast | .071 | .011 |
| Midwest | .046 | .012 |
| South | -.007 | .011 |
| Marital Status dummies | | |
| Married | .069 | .009 |
| Widowed Separated Divorced | -.004 | .028 |

Dependent variable: Log (Hourly Wages). Number of observation: 183. Omitted categories: Educational: Less than High School, Occupational: Management, Sectoral: Manufacturing, Regional: West, Marital: Single.
Data: CPS Displaced Workers Survey, 1994.

## Table 5: Summary Statistics of the Italian Sample

|  | Variable | Mean | Std. Dev. |
|---|---|---|---|
| Unemployment duration dummies | More than 1 month | .382 | .486 |
|  | More than 3 months | .249 | .432 |
| Unemployment cause dummies | Fixed term contract | .116 | .320 |
|  | Quit | .723 | .447 |
|  | Plant closing | .095 | .293 |
|  | Fired | .065 | .246 |
| Educational dummies | No education | .011 | .106 |
|  | Elementary School | .213 | .409 |
|  | Junior High School | .372 | .483 |
|  | High School | .321 | .467 |
|  | College | .078 | .269 |
|  | Graduate Degree | .003 | .054 |
| Occupational dummies | Blue Collar | .516 | .499 |
|  | White Collar | .361 | .481 |
|  | High White Collars | .096 | .295 |
|  | Managerial | .027 | .162 |
| Sectoral dummies | Agriculture | .021 | .141 |
|  | Industry | .307 | .461 |
|  | Constructions | .078 | .268 |
|  | Trade | .089 | .286 |
|  | Transportation | .076 | .265 |
|  | Banking | .032 | .177 |
|  | Services | .031 | .172 |
|  | Public Administration | .144 | .351 |
|  | Public Services | .221 | .415 |
| Regional dummies | North | .506 | .501 |
|  | Center | .224 | .417 |
|  | South | .268 | .443 |
| Urban Size dummies | More than 500,000 | .166 | .372 |
|  | 40,000-500,000 | .444 | .497 |
|  | 20,000-40,000 | .208 | .406 |
|  | Less than 20,000 | .181 | .385 |
|  | Married | .753 | .431 |
|  | Sex (1 if male) | .731 | .443 |
|  | Age | 40.23 | 10.25 |

Number of Observations: 2778
Data: Bank of Italy, 1991.

## Table 6: Unemployment Duration - Italy 1991

| Variable | Coe±cient | Std.Err. | dF/dX | Std.Err. |
|---|---|---|---|---|
| Unemployment cause dummies | | | | |
| Fixed term contract | -.382 | .146 | -.095 | .036 |
| Quit | -.902 | .122 | -.295 | .039 |
| Plant closing | -.284 | .150 | -.073 | .038 |
| Educational dummies | | | | |
| Elementary | -.042 | .285 | -.012 | .081 |
| Junior High School | .028 | .286 | .008 | .082 |
| High School | .043 | .296 | .012 | .085 |
| Graduate School | .004 | .325 | .001 | .093 |
| Postgraduate school | .033 | .761 | .009 | .221 |
| Occupational dummies | | | | |
| White Collar | -.033 | .095 | -.009 | .027 |
| High White Collars | -.094 | .133 | -.026 | .037 |
| Management | -.465 | .252 | -.109 | .059 |
| Sectoral dummies | | | | |
| Industry | -.294 | .212 | -.081 | .058 |
| Construction | -.630 | .228 | -.143 | .051 |
| Trade | -.325 | .236 | -.082 | .060 |
| Transportation | -.350 | .229 | -.088 | .058 |
| Banking | -.503 | .296 | -.116 | .068 |
| Services | -.308 | .299 | -.077 | .075 |
| Public Administration | -.247 | .226 | -.065 | .060 |
| Public Service | -.016 | .220 | -.004 | .062 |
| Regional dummies | | | | |
| North | -.454 | .077 | -.128 | .021 |
| Center | -.266 | .089 | -.071 | .024 |
| Size of town/city | | | | |
| 40,000-500,000 | .065 | .113 | .019 | .033 |
| 20,000-40,000 | .029 | .091 | .008 | .026 |
| Less than 20,000 | .018 | .105 | .005 | .030 |
| Married | -.037 | .091 | -.010 | .026 |
| Age | -.001 | .003 | -.001 | .001 |

Dependent variable: Probability that unemployment duration is higher than 3 months. Probit Model Speci¯cation. Number of observation: 2030. Omitted categories: Unemployment cause: Fired, Educational: No School, Occupational: Blue Collar, Sectoral: Agriculture, Regional: South, Size of Town: Less than 20,000.

Data: Bank of Italy, 1991.

## Table 7: Reemployment Wages - Italy 1991

| Variable | Coe±cient | Std.Error |
|---|---|---|
| Unemployment cause dummies | | |
| Fixed term contract | -.018 | .027 |
| Quit | .056 | .023 |
| Plant closing | .016 | .028 |
| Educational dummies | | |
| Elementary | .056 | .048 |
| Junior High School | .105 | .049 |
| High School | .199 | .050 |
| Graduate School | .301 | .055 |
| Postgraduate school | .554 | .122 |
| Occupational dummies | | |
| White Collar | .079 | .016 |
| High White Collars | .208 | .022 |
| Management | .510 | .039 |
| Sectoral dummies | | |
| Industry | .042 | .039 |
| Construction | .026 | .041 |
| Trade | -.001 | .043 |
| Transportation | .071 | .042 |
| Banking | .177 | .050 |
| Service | .100 | .052 |
| Public Administration | .045 | .041 |
| Public Service | .040 | .040 |
| Regional dummies | | |
| North | .071 | .013 |
| Center | .018 | .015 |
| Size of town/city | | |
| More than 500,000 | .053 | .019 |
| 40,000-500,000 | .048 | .015 |
| 20,000-40,000 | .028 | .017 |
| Married | .151 | .015 |
| Age | .004 | .001 |
| Weekly Hours | .005 | .001 |

Dependent variable: Log(Yearly Wages). Number of observations: 2029. Omitted categories: Unemployment cause: Fired, Educational: No School, Occupational: Blue Collar, Sectoral: Agriculture, Regional: South, Size of Town: Less than 20,000.

Data: Bank of Italy, 1991.

Table 8: Summary Statistics of the Spanish Sample

| Variable | Mean | Std. Dev. |
|---|---|---|
| Unemployment duration (months) | 31.301 | 26.280 |
| Unemployment cause dummies | | |
| Fixed term contract | .678 | .467 |
| Quit | .019 | .139 |
| Fired | .134 | .341 |
| Plant closing | .167 | .373 |
| Educational dummies | | |
| No education | .223 | .416 |
| 8 years | .451 | .497 |
| 12 years | .246 | .431 |
| More than 12 years | .078 | .268 |
| Occupational dummies | | |
| Management | .040 | .196 |
| Professionals | .006 | .081 |
| Technicians | .038 | .192 |
| Employees in the PA | .051 | .221 |
| Employees in the service | .098 | .298 |
| Fishers and farmers | .127 | .333 |
| Artisans | .259 | .438 |
| Specialized workers | .116 | .321 |
| Not specialized workers | .257 | .437 |
| Sectoral dummies | | |
| Mining Extraction | .077 | .267 |
| Heavy Industry | .101 | .301 |
| Intermediate | .061 | .237 |
| Manufacturing | .204 | .403 |
| Construction | .174 | .379 |
| Service | .053 | .224 |
| Transportation Communications | .036 | .186 |
| Banking Insurance | .061 | .238 |
| Public services | .034 | .181 |
| Previous tenure (months) | 162.909 | 185.126 |
| Age | 46.434 | 17.568 |
| Married (1 if married) | .645 | .478 |
| Head of family (1 if head) | .672 | .469 |

Number of Observations: 2609
Data: EPA, 1994:IV.

## Table 9: Unemployment Duration in Spain - 1994:IV

| Variable | Coe±cient | Std.Err. | Tm.Ratio | Std.Err. |
|---|---|---|---|---|
| Unemployment cause dummies | | | | |
| Fixed term contract | -.339 | .052 | .711 | .037 |
| Quit | -.281 | .160 | .754 | .121 |
| Plant closing | -.273 | .061 | .760 | .047 |
| Educational dummies | | | | |
| 8 years | -.004 | .044 | .995 | .044 |
| 12 years | -.004 | .061 | .995 | .061 |
| College | .019 | .078 | 1.019 | .081 |
| Occupational dummies | | | | |
| Professionals | -.089 | .217 | .914 | .198 |
| Technicians | -.138 | .114 | .870 | .099 |
| Employees in the PA | .074 | .108 | 1.076 | .116 |
| Employees in the service | .053 | .096 | 1.054 | .101 |
| Fishers and farmers | .185 | .105 | 1.204 | .127 |
| Artisans | -.001 | .090 | .998 | .089 |
| Specialized workers | -.024 | .097 | .976 | .095 |
| Not specialized workers | .023 | .091 | 1.023 | .093 |
| Sectoral dummies | | | | |
| Mining Extraction | .196 | .081 | 1.217 | .098 |
| Heavy Industry | .246 | .076 | 1.279 | .098 |
| Intermediate | .193 | .086 | 1.213 | .104 |
| Manufacturing | .165 | .064 | 1.180 | .076 |
| Construction | .196 | .071 | 1.217 | .086 |
| Service | .216 | .092 | 1.24 | .114 |
| Transportation Communications | .206 | .103 | 1.229 | .127 |
| Banking Insurance | .160 | .082 | 1.174 | .097 |
| Married | -.127 | .061 | .880 | .054 |
| Previous tenure | .001 | .001 | 1.001 | .001 |
| Head of Family | -.248 | .071 | .781 | .055 |
| Age | .026 | .002 | 1.026 | .002 |

Dependent variable: Log (Months of unemployment). ¾ = :817 Weibull Duration Model Speci¯cation. Number of observation: 2609. Omitted categories: Unemployment cause: Fired, Educational: No School, Occupational: Management, Sectoral: Public Service.

Data: EPA, 1994:IV.

## Table 10: Unemployment Duration in Spain - 1994:IV

| Variable | Coe±cient | Std.Err. | Tm.Ratio | Std.Err. |
|---|---|---|---|---|
| Unemployment cause dummies | | | | |
| Fixed term contract | -.193 | .051 | .823 | .042 |
| Quit | -.294 | .155 | .744 | .115 |
| Plant closing | -.023 | .063 | .976 | .062 |
| Educational dummies | | | | |
| 8 years | -.010 | .043 | .989 | .042 |
| 12 years | -.031 | .058 | .970 | .056 |
| College | -.021 | .076 | .978 | .074 |
| Occupational dummies | | | | |
| Professionals | -.075 | .210 | .927 | .195 |
| Technicians | -.092 | .111 | .911 | .101 |
| Employees in the PA | .081 | .104 | 1.085 | .113 |
| Employees in the service | .067 | .092 | 1.071 | .099 |
| Fishers and farmers | .186 | .102 | 1.20 | .123 |
| Artisans | .009 | .087 | 1.01 | .088 |
| Specialized workers | -.016 | .094 | .983 | .093 |
| Not specialized workers | .022 | .088 | 1.022 | .091 |
| Sectoral dummies | | | | |
| Mining Extraction | .233 | .077 | 1.263 | .098 |
| Heavy Industry | .267 | .074 | 1.31 | .097 |
| Intermediate | .209 | .083 | 1.233 | .103 |
| Manufacturing | .185 | .062 | 1.203 | .075 |
| Construction | .219 | .069 | 1.245 | .086 |
| Service | .226 | .089 | 1.253 | .112 |
| Transportation Communications | .178 | .101 | 1.195 | .119 |
| Banking Insurance | .182 | .081 | 1.199 | .096 |
| Married | -.087 | .057 | .915 | .052 |
| Previous tenure | .001 | .001 | 1.001 | .001 |
| Head of Family | -.174 | .067 | .839 | .056 |
| Age | .024 | .001 | 1.024 | .001 |
| Bene⁻ts | -.561 | .043 | .571 | .024 |

Dependent variable: Log (Months of unemployment). ¾ = :791 Weibull Duration Model Speci⁻cation. Number of observation: 2609. Omitted categories: Unemployment cause: Fired, Educational: No School, Occupational: Management, Sectoral: Public Service.
Data: EPA, 1994:IV.

## Table 11: Unemployment Duration in Spain - 1993:III-1994:IV

| Variable | Coe±cient | Std.Err. | Tm.Ratio | Std.Err. |
|---|---|---|---|---|
| Unemployment cause dummies | | | | |
| Fixed term contract | -1.152 | .193 | .315 | .061 |
| Quit | -1.684 | .386 | .185 | .071 |
| Plant closing | -1.371 | .230 | .253 | .058 |
| Educational dummies | | | | |
| 8 years | .045 | .207 | 1.046 | .216 |
| 12 years | .330 | .231 | 1.39 | .321 |
| College | .052 | .267 | 1.053 | .282 |
| Occupational dummies | | | | |
| Professionals | 1.853 | 1.283 | 6.379 | 8.190 |
| Technicians | .415 | .507 | 1.514 | .769 |
| Employees in the PA | 1.085 | .527 | 2.960 | 1.563 |
| Employees in the service | .958 | .455 | 2.607 | 1.188 |
| Fishers and farmers | -.003 | .493 | .996 | .492 |
| Artisans | .667 | .439 | 1.950 | .856 |
| Specialized workers | .458 | .461 | 1.582 | .729 |
| Not specialized workers | .680 | .437 | 1.972 | .864 |
| Sectoral dummies | | | | |
| Mining Extraction | .343 | .281 | 1.409 | .396 |
| Heavy Industry | .095 | .283 | 1.101 | .311 |
| Intermediate | .380 | .324 | 1.463 | .475 |
| Manufacturing | -.104 | .207 | .901 | .186 |
| Construction | .272 | .236 | 1.313 | .311 |
| Service | -.091 | .333 | .913 | .304 |
| Transportation Communications | .872 | .422 | 2.39 | 1.011 |
| Banking Insurance | .832 | .341 | 2.298 | .785 |
| Married | -1.087 | .209 | .337 | .071 |
| Previous tenure | .005 | .001 | 1.005 | .001 |
| Head of Family | -.264 | .217 | .767 | .166 |
| Age | .081 | .007 | 1.084 | .007 |

Sample includes unemployment spells completed in the previous quarters. Dependent variable: Log (Months of unemployment). ¾ = 1:205 Weibull Duration Model Speci⁻cation. Number of observation: 3071. Omitted categories: Unemployment cause: Fired, Educational: No School, Occupational: Management, Sectoral: Public Service.
Data: EPA, 1993:III-1994:IV.