Consumption and household balance sheets' responses to the risk of losing the job: evidence from firing costs*

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Abstract

Economic theory predicts that individuals exposed to the risk of losing their job postpone their consumption and accumulate more assets to build a buffer stock of saving. We provide a new test of that hypothesis that exploits the legally-induced variation in firing costs in the Spanish labor market. Firing costs are a strong predictor of transitions into unemployment and vary across identifiable groups of the population. Using a new survey of wealth and consumption we estimate the link between the probability that several household members lose their job and the wealth and consumption of that household. Our results are tentative to date, but do not fully reject the precautionary saving model. We are currently experimenting with an instrumental variable strategy that exploits the differential timing and the amount of the subsidies introduced by Spanish regions to promote conversion of low-firing cost contracts into high-firing cost ones.

Keywords: precautionary savings, household wealth and consumption, labor firing costs.

JEL codes: D12, D31, D91, J41.

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1 Introduction

Economic theory predicts that households that are more exposed to the risk of losing their job postpone consumption and accumulate more assets to build a buffer that permit absorbing income losses associated to unemployment spells (see Caballero, 1990, or Carroll, 2001). The extent of precautionary savings has important consequences for the sensitivity of consumption to increases in income (Hall, 2006) and for the dynamics of household wealth. A large literature has used different methods to establish if households facing (or perceiving) higher chances of losing their job have lower consumption levels and/or accumulate higher levels of wealth. The results are not uncontroversial; Carroll, Dynan and Krane (2003) find that households with higher exposure to the risk of losing their job (and sufficiently high permanent income) have more wealth, consistent with the precautionary saving model. Fuchs-Schündeln and Schündeln (2005) use the reunification of Germany and the transition from a (possibly) risk-free environment to a capitalist economy to examine if affected households save more, finding evidence consistent with the hypothesis. Engen and Gruber (2001) document that unemployment subsidies crowd out private wealth accumulation, consistent with the idea of precautionary savings. On the other hand, Guiso, Jappelli and Terlizzese (1992) find little evidence for precautionary saving using Italian data. The survey of Browning and Lusardi (1996) also suggests a limited role for precautionary savings.

The discrepancy of the results may be due to several problems. First, it is hard to measure to what extent an individual is exposed to the risk of losing his or her job. Alternative measures range from subjective expectations of job loss (Manski and Straub, 2000) to occupation-specific averages from employment to non-employment. Second, even when one can find a group that does experience (or perceive) a higher probability of transiting into unemployment, it is not always the case that the higher probability is uncorrelated with other unobserved factors that correlate with either consumption or wealth.

We think that our study has three advantages that permit examining the relationship between the probability of losing the job and household decisions like consumption and wealth.

First, we exploit the fact that in several European countries easily identifiable groups of the population face very different probabilities of transiting into non-employment. During the eighties, European countries like Italy, Spain, Germany, Sweden, Portugal and France introduced low firing cost contracts as a way to fight against unemployment. Typically, countries that introduced fixed-term contracts featured rigid labor markets with very high dismissal costs. Fixed-term contracts allowed firms hire workers paying a small firing cost in the event they needed to downsize (see Dolado, Garcia-Serrano and Jimeno, 2002, for an overview). The introduction of fixed-term contracts has generated labor markets where identifiable groups of individuals face very different probabilities of transiting into unemployment for reasons unrelated to their own choice, but to firm's labor demand. Among all countries that introduced fixed-term contracts, Spain is the country with the highest share of fixed-term contracts, and thus provides an ideal setting to analyze the consumption and saving households differently exposed to dismissal costs.

Secondly, we use an unusually rich wealth and consumption survey: the Spanish Survey of Household Finances (in Spanish, *Encuesta Financiera de las Familias*, EFF), conducted by the Banco de España. The EFF is one of the few surveys around the world containing detailed information on households' assets, consumption and on the labor market situation of each household member. For example, we do not need to construct saving rates (that are typically noisy), but can examine household wealth directly. In addition, the EFF contains both recall consumption questions and household balance sheets, so we can test the validity of our approach by examining both consumption and wealth responses to the risk of losing the job. Finally, the second wave of the EFF has a full panel component that we can also exploit to analyse the impact of the risk of losing the job on household consumption and wealth growth. In this version of the paper, we make a limited use of the panel due to time constraints after obtaining preliminary data from the second wave of the EFF.

And thirdly, due to regional regulations in the Spanish labor markets, the incidence of fixed-term contracts varies across regions and demographic groups. In 1997, out of the 17 Spanish regions, several implemented subsidies to firms that upgraded workers covered by low-firing cost contracts into open-ended contracts (with high firing costs). Different regions targeted different demographic groups and gave very different subsidies. As a result, legislated subsidies provide exogenous variation that permits a causal estimation of the impact of exposure to the risk of losing the job on household consumption and wealth.

We use a strategy close to that in Carroll, Dynan and Krane (2003). We first use a longitudinal Spanish Labor Force Survey similar to the Current Population Survey (CPS) in the US, called *Encuesta de Población Activa* (hereafter, EPA), to estimate the probability of transiting into unemployment as a function of demographic variables, gender, occupation and industry and, our key variable, the type of contract held by the individual. The large sizes of the employment survey allow us to obtain precise estimates of those probabilities. Given the ample labor market information in the EFF, we can impute the probability of transiting into unemployment for each household member in our consumption and wealth sample. The second step is to run cross-sectional regressions of different measures of household consumption and household wealth on the probability that each of the members of the household loses his or her job. We control for several indicators of labor market histories to control for the possible endogeneity of the variable "holding a fixed-term contract".

The paper is structured as follows. Section 2 presents some modelling issues and Section 3 the data sets we use. Section 4 describes the methodology. Section 5 presents estimates of consumption responses to employment risk and examines net wealth responses. Section 6 provides a research agenda.

2 Differences in dismissal costs across Spanish workers

Before 1984, and as a result of the legislation during the dictatorship, Spain had one of the most rigid labor markets among European countries. In 1984, in a context of high unemployment rates, the *Estatuto de los Trabajadores* introduced a menu of contracts that were exempted from the general rule of high severance payments. The legal figure used was the authorization of extending contracts that before 1984 were used to regulate seasonal jobs to other types of labor relationships.

The exposition to the risk of losing the job differs considerably between workers covered by different types of contract. A firm that wanted to dismiss a worker who was covered by an open-ended contract had to pay a severance payment of up between 22 days and 45 days per year worked. The former applied if the worker appealed to Court and the judges declared the dismissal as "fair". Otherwise, the corresponding severance payment amounted to 45 days per year worked. Izquierdo and Lacuesta (2006) report that 75% of cases that arrived to court were declared "unfair" by Spanish judges.[1] Conversely, dismissing a worker covered by a short-term contract had a much lower cost: waiting for the expiration of the close-ended contract would basically carry no cost to the firm.

By 1994, 30% of workers reported to the Spanish Labor Force Survey (EPA, in its Spanish initials) being covered by a low-firing cost contract. While subject to certain fluctuations, the share has remained stable since (see Figure 1).

There had been some attempts to reduce the share of employed workers. In this draft, we consider one of those to obtain exogenous variation in the fraction of the workforce that is exposed to the risk of losing the job. We focus on one that started in 1997: the introduction of regional subsidies to promote firms to hire workers using open-ended contracts. As of 1997, several of the 17 Spanish regions introduced lump-sum subsidies to firms that hired workers using high firing cost contracts. The average subsidy was about 1,000 euro, but the precise amount varied widely across gender and age groups (see Table A.3). Some major regions did not implement those subsidies between 1997 and 2004 (Madrid and Catalonia), while other regions offered them to particular age groups (Andalucia). Finally, other major regions offered them later than 1997 (see García-Ferreira and Villanueva, 2007 or, specially, García-Pérez and Rebollo-Sanz, 2007 for a detailed description of the subsidies to hire workers using open-ended contracts). Below, we exploit the features of the introduction of those subsidies to obtain exogenous variation in the share of the workforce that is covered by high firing cost contracts.

2.1 Modelling issues

We build on analytical results by Blundell and Stoker (1999). Assume that an individual lives for two periods, does not discount the future, and that there is a zero interest rate. The individual has an inelastic labor supply and is subject only to a single source of income risk: job loss. Namely, second-period income Y can either be the unemployment benefit b if the individual loses his or her job or the current level of earnings y if the individual keeps his or her job. The first event happens with probability p. The utility function of the individual is the following:

[1] A subsequent reform in 1997 yet introduced another type of "high-firing cost" contract. Namely, it was the *contrato de fomento del empleo*, that reduced the maximum firing cost from 45 days per year worked to 33 days.

$$\max_{c_1,c_2} \quad \log c_1 + E_1 \log(c_2)$$

Where the expectation is taken over the binary random variable Y, with mean, $pb + (1-p)y$, and variance, $Var_1(Y) = (1-p)p[y-b]^2$. Following Blundell and Stoker (1999), we define the present value of expected wealth in period 1 as the sum of the initial wealth in period 1 and the expected stream of income in period 2, as follows:

$$W = W_1 + pb + (1-p)y$$

and define the second-period shock ζ_2 as the difference between the realization of second-period income and the expected value of the income stream

$$\zeta_2 = Y - [pb + (1-p)y]$$

We are implicitly assuming that the individual can borrow against the expected value of future income. While perhaps not a realistic assumption, it permits obtaining closed-form solutions. Blundell and Stoker (1999) linearize around the perfect-certainty solution of consumption (that is linear in first-period wealth) and obtain the following consumption levels in the presence of risk:

$$c_1 = \frac{1}{2 + \frac{Var_1(Y)}{W^2}} W \tag{1}$$

Equation (1) implies that when we compare two individuals A and B, with the same level of expected income, but where the first has a zero probability of losing the job but the second is exposed to a non-zero chance of unemployment, the second one must have a lower level of consumption.

A second implication is that the consumption growth of both individuals is different; the individual who is exposed to the risk of losing the job postpones consumption to the future and hence will exhibit higher consumption growth. Blundell and Stoker (1999) and others derive the following expression for consumption growth

$$\log(c_2) - \log(c_1) = \frac{Var_1(Y)}{W^2} + \frac{1}{c_1}\zeta_2 \tag{2a}$$

In Equation (2a), consumption growth of an individual exposed to the risk of losing the job is a stochastic variable. It may take positive or negative values depending on whether or not the individual experiences the unemployment shock. Now, taking expectations in Equation (2a) over the distribution of Y one obtains the following expression:

$$E_1[\log(c_2) - \log(c_1)] = \frac{Var_1(Y)}{W^2} \tag{2}$$

That is, workers who, as of period 1, realize that they are exposed to a higher risk of losing their job are more likely to postpone consumption and thus experience higher consumption growth than workers in safer jobs.

Overall, the discussion thus far suggests three testable hypotheses:

- First, do workers who are more exposed to the risk of losing the job consume less?
- Second, do workers who are more exposed to the risk of losing the job exhibit higher consumption growth?
- Third, do workers who are more exposed to the risk of losing the job hold more (liquid) wealth?

3 Data sets

We use two main data sources: the Spanish Survey of Household Finances (in Spanish, *Encuesta Financiera de las Familias,* EFF) is a consumption and wealth survey conducted by the Banco de España in 2002 and in 2005, and the *Encuesta de Población Activa* (EPA) is the Spanish Labor Force Survey that we use for imputing the probability of losing the job.

3.1 The consumption and wealth sample: the Spanish Survey of Household Finances

The data used come from the 2002 and 2005 waves of the EFF. The EFF surveys around 5,000 households in each wave, obtaining detailed information about wealth holdings, debt, payment habits and consumption at the household level and individual information about demographics, income and labor income status. Based on the wealth tax, there is over-sampling of wealthy households. Around 40% of the sample corresponds to households liable to the wealth tax. All the calculations reported in our study make use of the five multiple imputed data sets provided by the Banco de España as a way of dealing with item-non-response, taking into account imputation uncertainty and facilitating a correct use of the data –for details on the EFF imputations see Bover (2004) and Barceló (2006).

The dependent variable:

We use two measures of wealth. The first is "liquid" wealth, that a priori we consider to be easily cashed in the event of an emergency. It contains amounts held in checking and saving accounts, mutual funds, stock (either listed or not), all types of bonds and other financial assets. The second measure includes, in addition to the former, the value of the main residence, other real estate properties, but excludes business market value. We assume that business wealth does not serve a precautionary motive. We consider these variables net of their associated debts. We obtain debt by adding up outstanding debt for the purchase of the main residence, debt for the purchase of other real estate properties and other debts pending repayment.

We also use various measures of consumption. The first is a comprehensive PSID-like question about expenditure on food in a typical week. The second is a comprehensive question based on expenditure on non-durable goods. Finally, we also experiment with a broader definition of consumption that includes non-durable goods and the service flow of selected durables (jewellery, works of art, cars and other means of transport, furniture and housing equipment). The rates of depreciation in Fraumeni (1997), mostly based on the Hulten and Wykoff (1981) rates, are used to derive consumption measures from the household's stock of equipment and vehicles (see Bover, 2005, for a similar strategy).

Sample selection in the Wealth Survey:

We will use two main samples within the EFF. The tests based on consumption are implemented on a pooled sample of the 2002 and 2005 waves containing all heads currently working and aged below 65.[2] Overall, that sample contains 5,294 households.

The test based on consumption growth is based on a subset of the previous sample. The EFF2005 followed a subset of the original households interviewed in 2002. We select a fraction of 976 panel households whose head and marital status did not change between waves. Importantly, we select households who were employed in 2002 (either as employees or self-

[2]The definition of head of the household is not left to the household, but was determined based on the relative incomes of household members.

employed), but did not screen out according to their status in 2005. I.e., the panel sample does include those households who, at the time of the 2005-2006 interview, were unemployed.

Finally, the sample used to study the response of household wealth to the risk of losing the job adds a further selection criteria and focuses on employees. The reason for such additional sample criteria is the reliance on that test on an instrument, for reasons stated below. Namely, our instrument exploits the introduction in different Spanish regions in 1997 of a subsidy to the conversion of specific forms of fixed-term contracts into permanent ones. As the subsidy was only available for employees, the sample is further restricted to 3,784 households.

The probability of losing the job:

The regressor of interest is the probability of losing the job, as predicted by the type of contract held by the individual, and other covariates like age of the household head, industry, gender and occupation.

The EFF is a panel, so we could obtain the probability of transiting into unemployment using the EFF sample. However, the dimension of the EFF panel is somewhat small to obtain precise estimates of average probability of transiting into unemployment for groups of the population characterized by the covariates mentioned above. In future versions of the paper, we plan to examine the sensitiviy of the results to EFF-based estimates of the probability of transiting into unemployment. Thus, for the current draft we have decided to use the Spanish Labor Force Survey (EPA) to obtain outside information about the probability of losing the job based on covariates that are present both in the EFF and in the EPA. To reiterate, the main identifying variable for the exercise is the type of contract held by the household head. Either the EFF or the EPA ask about the type of contract in the current job, according to three groupings: open-ended contract (including civil servants), fixed-term contract (without specification of the particular type of contract), and employees without formal contract.

3.2 The labor force sample: *Encuesta de Población Activa*

The *Encuesta de Población Activa* (EPA) is a quarterly labor force survey with a rotating panel component. Our main purpose using the EPA is quantifying the probability that an individual experiences a transition into non-employment, and relating that probability to the type of contract. The rotating panel component permits us tracking the (short-term) labor market transitions of individuals, as it tracks households for up to 6 quarters. The current draft uses the waves spanning the period between the first quarter of 1998 and the fourth quarter of 2001.

The sample contains workers between 16 and 65 years of age. There is an issue about whether self-employed workers should be included or not. On one hand, those workers cannot be covered by our key identifier of exposure to employment risk (a fixed-term contract). On the other hand, some self-employed workers are substantially exposed to risk of no demand for their services, and thus we also include them in the sample.

3.3 Summary statistics

3.3.1 Differences in exposure to the risk of losing the job

Table A.1 in the Appendix shows the results of (gender specific) *logit* regressions of the probability of transiting into unemployment on several covariates and, most importantly, a measure of whether or not the individual has a fixed term contract. The omitted group in the regressions are self-employed workers. Clearly, employees with an open-ended contract face a much lower probability of transiting into non-employment than either employees with a fixed-term contract and similar to that of self-employed workers.

We show various measures of exposure to the risk of losing the job in Table 1. Each cell in the Panel A of Table 1 represents the predicted probability of transiting from employment to unemployment in a quarter in groups of the population defined by the type of contract. The probabilities are estimated using the estimates in Table A.1. To provide a sense of the distribution of the chances of losing the job by type of contract across the skill distribution, we further split the predicted probabilities by four levels of educational attainment (primary schooling, secondary, upper secondary and college).

Panel B provides an alternative measure of job insecurity. The EFF asks in each wave the number of months that each member of the household was working during the year prior to the interview (2001 in the case of the 2002 wave and 2004 for the 2005 wave). Using the fact that the EFF has a longitudinal component, we estimated a *logit* model of the probability of spending at least one month in unemployment in 2004 for each employee in 2002 that was also successfully interviewed in the 2005 wave. The explanatory variables are basically the same as in model A.1.

While the statistics in Panel A of Table 1 measure high-frequency moves from employment to unemployment, the statistics in Panel B measure long-run exposure to the risk of losing the job. Both measures yield the same picture. According to the estimates in Panel A, heads that are employees covered by a fixed-term contract are 4.5 percentage points more likely to move from employment to unemployment than similar workers with open-ended contracts. From a longer-run perspective, workers covered by a fixed-term contract were 9 percentage points more likely to experience a spell of unemployment of at least a month two years later than workers with an open-ended contract. The difference in the probabilities of transiting into unemployment by type of contract is larger among the family head's spouses.

Table 1 suggests that the differences in the exposure to the risk of losing the job are substantially different according with the type of contract, forming the basis for our test of the relevance of precautionary savings.

3.3.2 Differences in other variables

The summary statistics of the EFF sample are presented in Table 2. There, we split the sample according to our measure of "exposure to unemployment risk". The first group are households where the head is an employee with an open-ended (or high firing cost) contract. The group also includes either spouses who do not work or those who, if employed, have an open-ended contract. In our definition, that is a group with low exposure to the risk of losing the job. The second group is exposed to the risk of losing the job. That group is composed by households where one of the members is an employee with a fixed-term contract. Finally, the third group is that of self-employed workers (also with high exposure to income risk).

The summary statistics in Table 2 suggest that the group of households headed by an employee with an open-ended contract are older and wealthier than the group of households where a member has a fixed-term contract. Households headed by an individual with an open-ended contract consume and earn more than those in which a member has a fixed-term contract. While more exposed to risk, self-employed workers earn and consume more than any of the other groups. Those differences highlight the need of controlling for an extensive number of covariates when examining the link between exposure to the risk of losing the job and consumption and/or wealth.

4 Methodology

We first estimate the probability that an individual transits from employment to non-employment using the 1998-2001 waves of the EPA. The dependent variable takes the value of 1 if the individual is employed in quarter q but not in quarter $q + 1$. The independent variables are common across both data sets: occupation, industry, age dummies and whether or not employment in quarter q was covered by a fixed-term contract. We run separate *logit* models for males and females (see Table A.1).

In a second step, we use those predicted probabilities to impute in the EFF the probability that the head of the household (and spouse, if one exists) loses his or her job over the following quarter. We then run regressions of the outcomes of interest on the predicted probability that the head and spouse (if one exists) lose their job.

4.1 Tests based on household consumption

The first outcome of interest is the logarithm of consumption. The second is the net-worth accumulated by the household. This draft does not explore the response of different wealth components, like debt, liquid or illiquid assets. For example, a possible reaction to higher exposure to the risk of losing the current job is to leverage less when purchasing houses, resulting in higher housing net worth. Similarly, we found it hard to determine *a priori* whether or not a secondary house serves a precautionary motive or not. In future drafts, we plan to examine the issue more closely.

For the level of consumption, our main specification is:

$$\log C_i = \beta_0 + \beta_1 P_i(U_h = 1) + \beta_2 P_i(U_s = 1) + X_i^{\prime}\gamma + \varepsilon_i^c \tag{C1}$$

$P_i(U_h = 1)$ measures the probability that the head of the household transits into unemployment. $P_i(U_s = 1)$ measures the corresponding probability for an employed spouse (if one is present).

X_i contains various sets of regressors. First, it includes variables that are associated with transitions into unemployment but that we do not use for the identification of β_1 and β_2. These include dummies with the head and spouse's schooling, industry and occupation dummies.[3] We also include

[3]See Lusardi (1997), for a detailed analysis of why occupation-specific variance in income does not properly identify the income risk an individual is exposed to.

a dummy for spouse not employed, to properly interpret the magniture of $P_i(U_s = 1)$. In the estimates, the reference person is a married head of household whose spouse also works. Finally, we include a dummy for the kind of self-employment [an independent professional or self-employed worker (omitted category), an owner of a family business, and a partner in a non-family partnership]. Second, we include variables that pick up life-cycle accumulation of assets due to aging, income and demographic shifters: four dummies in 10 year age bands, three separate intercepts for single, divorced and widow head and female-head, and 5 dummies capturing different household sizes. X_i also contains total household income accrued last year. Finally, Equation (C1) is identified by assuming that the variable "type of contract" held by the household head and spouse enters the consumption equation only through its impact on the probability of losing the job.

According to the life-cycle model including the risk of losing a job, β_1 and β_2 should be negative, as explained in Section 2. We experiment with two measures of consumption: total non-durable consumption and a broader measure that includes durables.

A possible source of biases regarding the test in Equation (C1), $\beta_1 < 0$ and $\beta_2 < 0$, is that workers covered by an open-ended contract are more likely to have had continued labor market spells and lifetime income, which we cannot fully control for. The omission of lifetime income creates a negative link between $P_i(U_h = 1)$ and ε_i^c and between $P_i(U_s = 1)$ and ε_i^c biasing the OLS estimates of β_1 and β_2 toward a more negative number. In other words, the estimates of the consumption equation (C1) may be biased in favor of the null hypothesis, which is the reason we turn to alternative tests.

Our second test examines if households headed by a worker who has a higher probability of transiting into unemployment in 2002 had higher consumption *growth* between 2002 and 2005. Using the household panel sample, we estimate an equation for the household consumption growth with the following functional form:

$$\begin{aligned} \log C_{i,2005} - \log C_{i,2002} = \alpha_0 + \alpha_1 P_i(U_h = 1|year = 2002) + \\ + \alpha_2 P_i(U_s = 1|year = 2002) + X_i^{\Delta c'} \alpha_3 + \varepsilon_i^{\Delta c} \end{aligned} \tag{DC1}$$

Equation (DC1) does not come from transforming consumption equation (C1) into first differences. The variable $P_i(U_h = 1|year = 2002)$ is the probability that the head of household i employed in 2002 loses her or his job next quarter. The same applies to $P_i(U_s = 1|year = 2002)$ when the household head's spouse was employed in 2002. The vector of explanatory variables, $X_i^{\Delta c}$, contains household and personal characteristics in levels and in first-differences, such as an indicator of whether the spouse did not work in 2002; the family head's gender, age band, marital status, economic sector and nature of the business if self-employed; and the education level of the couple. The covariates in first-differences control for a three-year change in the household size and the number of children by age, and the three-year household income growth. Finally, the error term of the equation is denoted by $\varepsilon_i^{\Delta c}$, which may also include measurement errors in the consumption growth.

According to the Euler equation governing the consumption growth in (DC1), households exposed to risk postpone consumption to the future. Thus, individuals who hold low firing cost contracts should experience higher consumption growth over a two year horizon than workers whose job is regulated by a high firing cost contract. Three comments are in order.

First, rather than modelling the variance of the income process, we only include the probability of losing the job, so our test is a very reduced form of the second-order approximation to the Euler equation. Second, we include a set of covariates that do not belong to an Euler equation, like the growth of total household income. The reason for doing so is to avoid biases associated to reversion to the mean: workers covered by fixed-term contracts have lower incomes and may mechanically experience higher income and consumption growth than higher-income workers. Third, note that we do not condition on labor market attachment in 2005. The prediction of higher average consumption growth holds after averaging across all states of the world, including unemployment.

4.2 Tests based on household wealth

Finally, we examine the response of household wealth to the risk of experiencing a lay-off using the following model:

$$\log(NW_i) = \delta_0 + \delta_1 P_i(U_h = 1) + \delta_2 P_i(U_s = 1) + X_i'\theta + \varepsilon_i^w \qquad \text{(W1)}$$

$$Med(\varepsilon_i|X_i, P_i(U_s = 1), P_i(U_h = 1)) = 0$$

Dependent variable: Given the strong skewness of the wealth distribution, we decided to work with logarithm of financial and net wealth. Such choice involves selecting out of the sample a relatively small number of households that have zero "liquid" wealth: 128 out of 3,912 households (3.2 percent of the original household). Still, the marginal distribution of the logarithm of financial wealth was also severely skewed, so this version of the paper mainly presents results based on median regressions. We leave a full assessment of working with other transformations of the wealth variable, like the hyperbolic sine function to a future draft.[4] According to the model briefly discussed in Section 2, the coefficients associated with the risk of losing a job, δ_1 and δ_2, should be positive.

Biases and alternative specifications:

The model in Equation (W1) is mainly identified through the assumption that the type of contract held by the head only affects household wealth through its impact on the risk of unemployment faced currently. Nevertheless, it is not obvious that such assumption is realistic. Workers who are currently more exposed to risk will have typically had been more exposed to that risk in the past, and have had less chances to accumulate wealth. Also, by definition, those workers are more likely to have used their accumulated resources in the recent past.[5] Hence, past unemployment episodes, as well as lower income probably lead δ_1 and δ_2 to be biased toward zero, contrary to the null hypotheses of $\delta_1 > 0$ and $\delta_2 > 0$.

We use two alternative strategies to examine the causal link between the chances of losing the job and household assets. The first is to consider the impact of $P_i(U_h = 1)$ on household wealth separately by year of entry into the labor market. The rationale is the following. Individuals whose job relationship is currently covered by a fixed-term contract and who entered the labor market before the introduction of fixed-term contracts in 1984 can only have arrived to that situation through a non-employment spell. On the contrary, differences in contractual form of individuals who entered the labor market well after the introduction and expansion of fixed term contracts are possibly associated to less traumatic events, like firm's local labor demand. Thus, we estimate

[4] We have done a limited number of experiments using the hyperbolic sine transformation of the wealth variable (that preserves zeroes and negative values), obtaining qualitatively similar results. Still, a complete assessment of how to handle the skewness of the wealth variable is left to a future draft of the paper.

[5] While such biases probably affect less measures of active saving (tests 1 and 2), they will probaby affect more severely measures of accumulated savings.

$$\log(NW_i) = \delta_0 + \sum_{k=1}^{k=5} \delta_k P_i(U_h = 1) 1(Year\_entry) + X_i'\theta + \varepsilon_i^w \tag{W2}$$

$$Med(\varepsilon_i | X_i, P_i(U_s = 1), P_i(U_h = 1)) = 0$$

A second strategy identifies wealth responses to the risk of losing the job using regional variation in the stock of high-firing cost contracts that results from public incentives given to firms to hire using high-firing cost contracts. We analyze if those workers whose current job started in a region and at a period when the firm was eligible for a higher subsidy for hiring with "high firing cost contracts" have accumulated less liquid wealth than comparable workers in other regions or age groups. To control for the fact that (1) time at the job may have a separate impact on household wealth and that (2) contracts started before 1997 could not benefit from the subsidies, we also include a third-order polynomial in time at the job. We use the following median regression model:

$$\log(NW_i) = \gamma_0 + \gamma_1 Subsidy_R + g(Tenure_i) + X_i'\theta + \varepsilon_i^w \tag{W3}$$

$$Med(\varepsilon_i | X_i, Subsidy_R) = 0$$

Where $Subsidy_R$ is the subsidy that the current firm could apply for in the current region of residence, R, given the age and gender of the worker when the job started. Equation (W3) focuses mainly on intention-to-treat impacts. The parameter γ_1 in Equation (W3) measures how different it is the logarithm of financial wealth accumulated by workers in response to different incentives to firms to hire workers by converting fixed-term contracts into open-ended ones. In a separate regression, we assess the validity of $Subsidy_R$ as a predictor of exposure to the risk of losing the job by examining if those incentives increased the stock of high-firing cost contracts.

5 Results

5.1 Consumption responses.

5.1.1 Consumption levels

Table 3 shows the relationship between the probability of losing the job on two measures of consumption. The first is a measure of (recall) non-durable consumption. The second is a broader measure that adds to non-durable consumption an estimate of the flow value of services from car and furniture holdings. The rationale is to allow for adjustments to the risk of losing a member of the couple's job by delaying the purchase of durable goods. We report both the impact of the probability of losing the job on mean consumption (using OLS) and median consumption (using median regressions).

The coefficient of "the probability that the head of the household loses the job over the next *quarter*" is -.00359 (standard error: .00392), shown in the first column, first row in Table 3. The negative sign implies that a higher exposure to the risk of losing the job correlates negatively with non-durable consumption. In our sample, the change from the 50th centile to the 90th centile in the probability of transiting into unemployment in the following quarter is about 4 percentage points. Thus, the estimate in row 1 of Table 3 implies that households would cut non-durable expenses by 1.44 percent as a response to a 4 percent increase in the probability of losing the job. The estimate seems small.

The coefficient measuring the impact on non-durable consumption of the probability that an employed spouse in a married household loses his or her job over the next *quarter* is -0.002 (standard error: 0.003). It is shown in the first column, second row in Table 3. The specification contains controls for a dummy that takes the value of 1 if the secondary earner does not work. The estimate is positive, contrary to the precautionary savings hypothesis. Neither estimate of the impact of the risk of job loss is very precise.

In column (2), row 1 of Table 3, we turn to the impact of the probability that the head transits into unemployment on *total* consumption. The coefficient is now -0.010 (standard error: 0.003), significantly different from zero at the 1 percent confidence level. The magnitude suggests that households react to the risk that the household head transits into non-employment by either cutting or delaying durable expenses, like cars or housing equipment. We quantify the magnitude of the estimate as in the case with non-durables:

an increase in the quarterly probability that the head loses the job of 4 percentage points per quarter (basically, from the 50th to the 90th centile of the distribution of the probability of entering an unemployment spell in the next quarter) leads to a drop in durable consumption of 4 percent. The magnitudes of estimates of the impact of unemployment risk on median consumption are similar to mean impacts, and we do not comment them in detail.

Overall, the evidence in Table 3 is consistent with the notion that households respond to the risk that the head loses his or her job by cutting mainly durable expenses. The response for the risk that the spouse loses her job (when a spouse is present and works) is somewhat smaller and also confined to durable goods. As we mention above, the potential biases in the previous specifications go in favor of finding evidence supporting precautionary savings, which is the reason we now turn to examine consumption growth and balance sheet responses.

5.1.2 Consumption growth

Table 4 presents estimates of the impact of exposure to the risk of losing the job on various measures of consumption growth. The results in column 1 suggest that a 1 percent increase in the chance of losing the job of the head over the next quarter led households to increase food consumption growth by 3.3 percentage points between 2002 and 2005. Taking the 4 percent difference between open-ended and fixed-term contracts, one obtains a 13.2% relative increase in consumption growth, but the estimate is very imprecise.

Now, the estimates are much more reliable when we examine total non-durable consumption and total consumption. The estimate in row 1 and column 2 of Table 4 implies that a shift of 4 percentage points in the exposure to lose the job leads to an increase in non-durable consumption of 13.2 percentage points. The relative increase in the growth of our broadest measure of consumption (including the flow of services from cars and housing equipment) following a 4 percent increase in the probability that the head loses the job is smaller, around 9%. Again, the evidence in Table 4 is consistent with the idea that households exposed to the risk of losing the job delay mostly non-durable and durable consumption. The evidence for changes in food consumption is much less clear-cut. We find little evidence for responses of household consumption growth to the spouse's risk of losing the job.

5.2 Balance sheet responses

Table 5, row 1 displays estimates of a median regression of the logarithm of financial wealth on the probability that the head of the household transits into non-employment. For those heads of household who are married and whose spouse is employed, row 2 presents the impact on net wealth of the probability that the spouse loses his or her job.

The estimates of the impact of the probability that the head transits into non-employment in the following quarter is -0.053 (standard error: 0.018). At face value, the estimate suggests that households who are less exposed to the risk of losing the job actually save more than those who are more exposed, contrary to the precautionary savings hypothesis.

To get an idea of the magnitude of the estimate, column 2 of Table 5 presents estimates of the impact of changing the probability of the head losing his or her job from the 50th centile to the 90th centile on the median of the level of wealth. We compute the estimate by multiplying the -0.053 estimate by the median of our measure of "liquid" wealth in our sample of employees (i.e. excluding households whose heads are self-employed): 3,292 euro. The estimate in row 2 column 1 suggests that such change leads to a drop in net equity of about 698 euro.

Now, for several reasons, the estimates in columns 1 and 2 cannot be taken as behavioral responses. First, the link between household wealth and $P(U_h = 1)$ may reflect different factors for different cohorts. Household heads (typically males, in those cohorts) who entered the labor market before 1984 and currently have a fixed-term contract must have experienced an unemployment spell toward their current fixed-term contract. Thus, their ability to build substantial wealth stocks has been hindered relative to other members of their cohort. Second, individuals in different points of the life cycle have a different ability to respond to the exposure to unemployment risk. Young individuals may have had little time to build buffer stocks. On the contrary, for individuals close to retirement, a high exposure to unemployment risk may only mean a high exposure to public income insurance programs, like early retirement, registered unemployment that leads to retirement (a typical route into retirement in Spain, see Jiménez-Martín and Sánchez-Martín, 2007). While it is hard to disentangle between differential cohort and life-cycle responses to unemployment risk using two cross-sections (or a panel with two observations), in this draft we focus on differential cohort responses.

The results are shown in columns 3 and 4 of Table 5. Interestingly, the negative link between $P(U_h = 1)$ and household wealth is driven by individuals who entered the labor market *before or around* 1984. Rows 3 and 4 show the response of financial wealth to $P(U_h = 1)$ is -0.117 (standard error: 0.046) for the cohort that entered before 1983 and -0.106 (standard error: 0.057) for the cohort who entered the labor market between 1984 and 1989. For the rest of the cohorts, the relationship between $P(U_h = 1)$ and household wealth is tenuous, even positive in absolute value for the cohort who entered between 1990 and 1995.[6]

Variation in regional subsidies to contract conversion:

The evidence in Table 5 leads us to exploit variation in exposure to risk that is affected less by unobserved labor market histories. Thus, we turn to implement the following experiment; we compare the wealth of households whose heads have the same tenure at their job but differ in the extent to which the firms they work for had an incentive to hire them again with an open-ended contract due of the availability of regional subsidies.

The variation in regional subsidy is a proper measure of the degree to which a household is exposed to the risk of losing the job only if it ends up affecting the distribution of contracts across regions in the years we are analyzing: 2002 and 2005. Table A.2 present such evidence. Using a sample of employees (i.e., excluding the self-employed) we run linear probability models of a binary indicator indicating whether or not the head of the household is covered by a open-ended contract on the variable $Subsidy_R$, age dummies (to take into account that the subsidies differed by age group), gender of the household head and the rest of the covariates included in the wealth equations (W1) and (W2). There, we show that 1,000 increase in the amount of the subsidy increased the stock of permanent contracts by around 1.8 and 1.3 percentage points depending on whether we include regional dummies. The magnitude looks small at face value (by construction, the subsidy cannot affect the distribution of contracts across regions if they were signed before 1997). Still, the variable $Subsidy_R$ is significant at the 1% level in the first column of Table A.2. The variable still significant at a lower level (5%) in

[6] An alternative hypothesis for the negative link between $P(U_h = 1)$ and household wealth is that households who entered before 1983 are close to retirement in 2002 and 2005. If those households experience an involuntary transition into non-employment, they most likely will transit into retirement directly (see García-Pérez and Sánchez-Martín, 2008). For those households, Social Security wealth may well be a part of their precautionary savings buffer stock.

the specification that includes regional dummies. Overall, we conclude that there is evidence that the subsidies increased the stock of workers whose job was covered by a high firing cost contract.

Tables 6 and 7 document (respectively) median liquid and net wealth responses to the $Subsidy_R$. Table 6 row 1 (columns 1 and 3) shows that in regions where the subsidies to high firing cost contracts were higher, households accumulated less liquid wealth. In particular, an increase in the subsidy of 1,000 euro to hiring through open-ended contracts led to a lower amount of wealth of 184 euro, consistent with the precautionary savings hypothesis. The amount is larger but similar when we look at the impact including region dummies (Table 6, column 4, row 1) an increase of 1,000 euro in the amount of the subsidy reduced median wealth by 214 euros.

In Table 7 we broaden the wealth measure by including housing wealth. The idea is that housing wealth is less likely to serve a precautionary savings motive, as it is costly to convert housing wealth into liquid resources that can help to sustain consumption over an unemployment spell. Interestingly, once we include illiquid wealth, the effect of the subsidy on wealth disappears.

An interpretation of the evidence in Tables 6 and 7 is that households react to a higher exposure to the risk of losing the job by accumulating savings and checking accounts, bonds and stock but not by accumulating illiquid housing wealth. Engen and Gruber (2001) document similar findings in the US in an experiment that focuses on the impact of the displacement effect of unemployment benefits on household wealth accumulation. In ongoing work, we are assessing the magnitude of those estimates.

6 Items in the agenda

This draft has used the large dispersion in firing costs in the Spanish labor market to estimate the link between the probability of losing the job and household consumption and wealth. Our preliminary results suggest that households exposed to the risk of losing their job cut (mainly durable) consumption. Wealth responses to unemployment risk are very heterogeneous across age groups, but our tentative evidence suggests that households in their prime age may respond to exposure to income risk by accumulating more liquid wealth.

A number of issues is still pending. Perhaps the most pressing one is to develop an IV estimate of the impact of the probability of losing the job on median wealth and consumption. Second, we need to develop a theoretical framework to properly assess sources of biases and how to interpret magnitudes. Third, our strategy cannot distinguish between precautionary saving and the alternative hypothesis that households headed by an individual with a fixed-term contract are liquidity constrained. We plan to examine those issues in the next draft of the paper.

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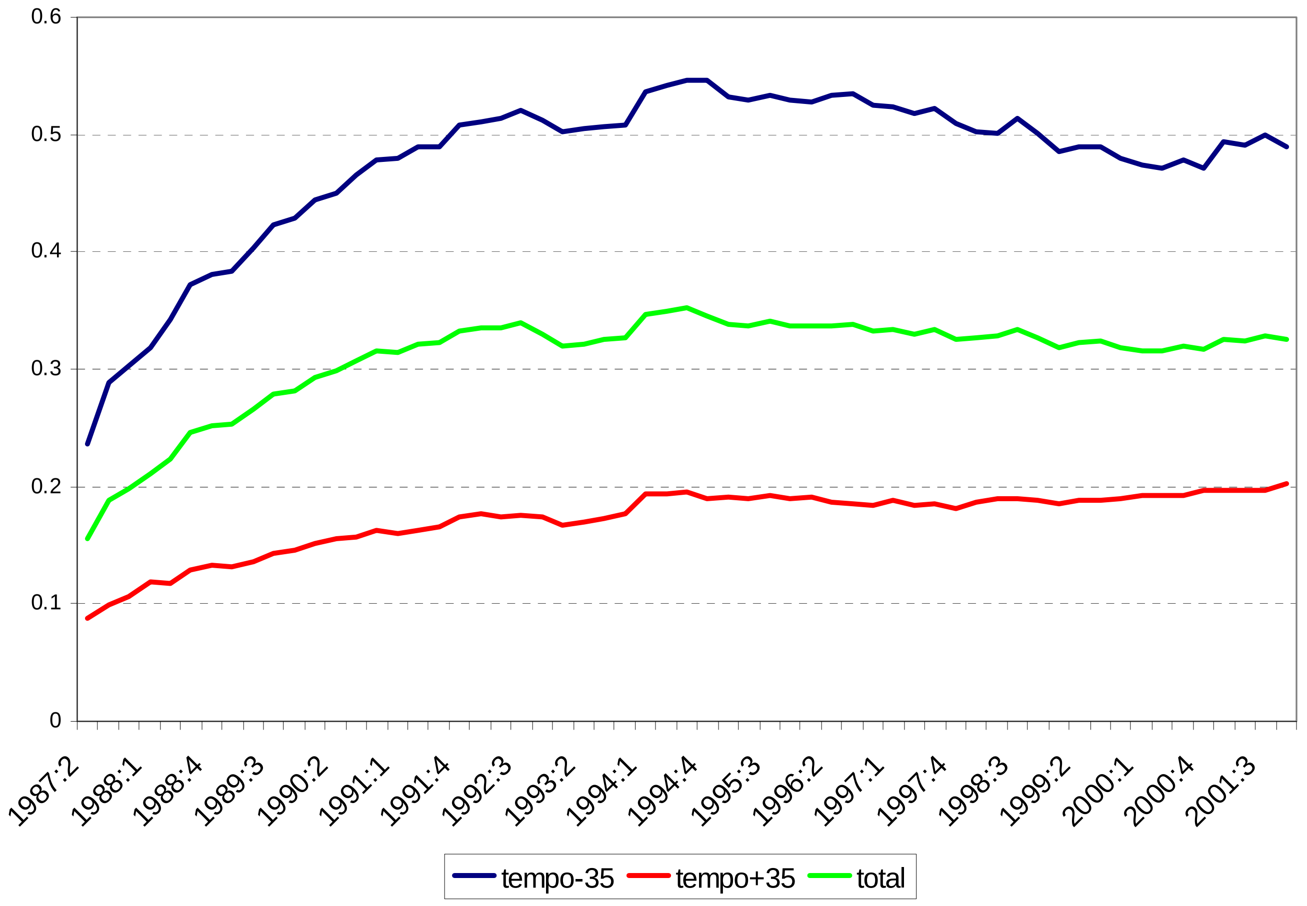
Figure 1: Evolution of fraction workers with a temporary contract



Source: own computations from the Spanish Labor Force Survey

Table 1: The distribution of the probability of losing the job, by education and occupation

Panel A: Probability of transiting into unemployment in the next quarter (Source: Spanish EPA)

	Open-ended contract	Fixed-term contract
	Primary school	
Probability head loses job	0.010	0.069
Probability spouse loses job	0.016	0.129
	Secondary school	
Probability head loses job	0.006	0.052
Probability spouse loses job	0.015	0.108
	Upper secondary school	
Probability head loses job	0.006	0.054
Probability spouse loses job	0.014	0.099
	College	
Probability head loses job	0.005	0.050
Probability spouse loses job	0.011	0.087

Panel B: Probability of experiencing an unemployment spell in 2004 by the type of contract in 2002 (Source: EFF)

	Open-ended contract	Fixed-term contract
	Primary school	
By the family head	0.117	0.289
By the spouse	0.170	0.589
	Secondary school	
By the family head	0.050	0.138
By the spouse	0.148	0.550
	Upper secondary school	
By the family head	0.046	0.130
By the spouse	0.112	0.469
	College	
By the family head	0.027	0.079
By the spouse	0.057	0.300

Source: Panel A shows the predicted probabilities of transiting into non-employment, by occupation and education, computed using the coefficients in Table A.1. The probabilities in Panel B are predicted from weighted logit estimates obtained separately for the head and the spouse and using the type of contract and the level of education as explanatory variables.

Table 2: Summary statistics of the EFF sample

	Total sample	Open-ended contract (1)	Fixed-term contract (2)	Self-employed (3)
Non-durable expenditure (yearly)	12.962	13.298	11.406	13.969
	(8.241)	(7.833)	(6.222)	(10.550)
Yearly expenditure, durables and	17.259	17.540	14.635	19.725
non-durables	(10.373)	(9.176)	(7.270)	(14.541)
Net worth	207.336	202.226	118.540	326.953
	(450.163)	(237.650)	(138.313)	(867.186)
Liquid financial wealth	23.038	23.038	8.092	49.669
	(337.255)	(337.255)	(22.790)	(699.722)
Household's yearly income	40.052	41.384	29.759	49.489
	(38.398)	(34.176)	(21.620)	(55.672)
Head with fixed-term contract	0.164	--		--
	(0.370)			
Spouse with fixed-term contract	0.104	--		--
	(0.306)			
Head is self-employed	0.189	--	--	--
	(0.391)			
Prob. job loss,head (yearly terms)	0.060	0.027	0.165	0.027
	(0.086)	(0.015)	(0.126)	(0.023)
Prob. job loss,wife	0.061	0.056	0.356	0.118
	(0.152)	(0.019)	(0.182)	(0.152)
Spouse works	0.400	0.356	0.537	0.498
	(0.490)	(0.479)	(0.499)	(.500)
Age of household head	43.666	44.572	39.903	45.482
	(9.857)	(9.666)	(9.537)	(9.506)
Divorced	0.055	0.059	0.053	0.033
	(0.227)	(0.236)	(0.223)	(0.179)
Single	0.118	0.121	0.130	0.071
	(0.323)	(0.326)	(0.337)	(0.257)
Widow/er	0.023	0.027	0.015	0.017
	(0.150)	(0.161)	(0.123)	(0.128)
Number of household members	3.250	3.208	3.221	3.452
	(1.235)	(1.226)	(1.274)	(1.189)
Number of years contributed to	19.770	21.037	15.004	21.741
Social Security -head	(11.419)	(11.119)	(10.867)	(11.188)
Social Security -spouse	6.834	7.094	5.710	8.379
	(8.596)	(9.012)	(7.051)	(9.103)

Notes to Table 2: Sample size: 4371 households in two EFF waves (2002 and 2005). (1) Sample of employee heads with open-ended contracts, the spouse is either an employee with a fixed term contract or does not work. (2) Either the head or the spouse is an employee with a fixed-term contract. (3) Either the head or the spouse is self-employed. Networth is the value of the main residence, other real estate, valuables and financial wealth minus mortgages and other debts.Vehicles and business wealth are not included in the wealth measure. Monetary variables are in 2002 thousand euros.

Table 3: Consumption responses to the risk of losing the job

Dependent variable:	Non-durable consumption (log)	Total consumption (log)	Non-durable consumption (log)	Total consumption (log)
Estimation method:	OLS		QR	
	(1)	(2)	(3)	(4)
1. (Prob job loss, head - .012)*100	-0.004	-0.010	-0.003	-0.008
	(0.004)	(0.003)***	(0.005)	(0.004)**
2. (Prob job loss, spouse - .032)*100	0.002	-0.002	0.006	0.000
	(0.003)	(0.003)	(0.004)	(0.004)
Spouse does not work	0.052	0.043	0.062	0.042
	(0.023)	(0.021)	(0.025)	(0.030)
Age 18-25	0.017	-0.005	-0.005	0.025
	(0.062)	(0.054)	(0.074)	(0.059)
Age 26-35	-0.033	-0.030	-0.023	-0.035
	(0.024)	(0.021)	(0.030)	(0.029)
Age 46-55	0.047	0.042	0.044	0.028
	(0.019)	(0.017)	(0.023)	(0.020)
Age 56-65	0.049	0.045	0.060	0.028
	(0.025)	(0.022)	(0.031)	(0.022)
Household size equals 1	-0.088	-0.101	-0.072	-0.089
	(0.033)	(0.030)	(0.034)	(0.036)
Household size equals 3	0.111	0.084	0.103	0.081
	(0.020)	(0.018)	(0.022)	(0.021)
Household size equals 4	0.173	0.133	0.156	0.145
	(0.021)	(0.019)	(0.026)	(0.024)
Household size equals 5	0.247	0.192	0.266	0.195
	(0.030)	(0.026)	(0.036)	(0.032)
Household size equals 6	0.344	0.254	0.356	0.240
	(0.040)	(0.035)	(0.047)	(0.047)
Logarithm (household income)	0.266	0.300	0.247	0.299
	(0.014)	(0.016)	(0.011)	(0.013)
Secondary	0.025	0.042	0.002	0.020
	(0.023)	(0.020)	(0.031)	(0.024)
Upper secondary	0.072	0.094	0.062	0.088
	(0.027)	(0.024)	(0.034)	(0.030)
College	0.211	0.227	0.208	0.242
	(0.027)	(0.025)	(0.031)	(0.029)

Table 3: Consumption responses to the risk of losing the job (continued).

Dependent variable:	Non-durable consumption (log)	Total consumption (log)	Non-durable consumption (log)	Total consumption (log)
Estimation method:	OLS		QR	
	(1)	(2)	(3)	(4)
Number of years contributed to	0.003	0.003	0.003	0.003
Social Security -head	(0.001)	(0.001)	(0.001)	(0.001)
Number of years contributed to	0.004	0.004	0.005	0.003
Social Security -spouse	(0.001)	(0.001)	(0.001)	(0.001)
Constant	2.132	2.476	2.175	2.507
	(0.036)	(0.032)	(0.044)	(0.043)

Notes: Sample size: 5294.

Total consumption: sum of non-durable recall consumption plus annuitization of the stock of furniture and jewellery (see text)

Standard errors corrected for heteroscedasticity. In columns (3) and (4) they are obtained by 50 bootstrap replications preserving the autocorrelation between replications of the same household.

Covariates in Column 1 included in all specifications, only shown for specifications (1) and (2)

Additional covariates not shown: indicator of whether the family head is a female; indicators of whether the family head works self-employed as an entrepreneur (omitted category), in a family business or as a manager in a non-family partnership; indicators of the family head's marital status: single married or living with a partner (omitted category), separated or divorced, and widow or widower; indicators of the family head's economic sector broken down into agriculture, industry, construction and the service sector (omitted), and indicators of whether the couple has continuously worked the year before.

Table 4: The impact of the risk of losing the job on 3-year consumption growth

Dependent variable:	Log (Food t+3)-Log(Food)	Log(Non durables t+3) -Log(Non durables t)		Log(Total Cons. t+3) -Log(Total Cons. t)	
Estimation method:	OLS	OLS	QR	OLS	QR
	(1)	(2)	(3)	(4)	(5)
1. (Prob job loss, head -.012)*100	0.033	0.033	0.034	0.023	0.018
	(0.019)	(0.013)***	(0.023)	(0.011)**	(0.017)
2. (Prob job loss, spouse -.032)*100	0.006	0.008	0.002	0.010	0.008
	(0.012)	(0.007)	(0.009)	(0.006)	(0.008)
Spouse does not work	-0.047	0.062	0.042	0.077	0.056
	(0.062)	(0.052)	(0.053)	(0.043)	(0.055)
Female head	-0.259	-0.162	-0.138	-0.039	-0.068
	(0.152)	(0.119)	(0.146)	(0.102)	(0.125)
Age 18-25	0.148	-0.132	-0.041	-0.185	-0.211
	(0.349)	(0.287)	(0.487)	(0.232)	(0.324)
Age 26-35	0.047	-0.013	-0.118	-0.014	-0.111
	(0.094)	(0.073)	(0.083)	(0.060)	(0.098)
Age 46-55	-0.046	-0.065	-0.076	-0.015	-0.021
	(0.062)	(0.053)	(0.063)	(0.044)	(0.054)
Age 56-65	0.001	-0.028	-0.088	0.010	0.006
	(0.080)	(0.064)	(0.061)	(0.052)	(0.070)
3-year change in household size	0.139	0.147	0.144	0.123	0.117
	(0.038)	(0.030)	(0.045)	(0.025)	(0.029)
3-year change in log of	0.088	0.137	0.102	0.148	0.124
household income	(0.036)	(0.026)	(0.040)	(0.023)	(0.031)
3-year change in the number of	-0.128	-0.184	-0.183	-0.148	-0.123
children below 3 years	(0.077)	(0.064)	(0.070)	(0.052)	(0.074)
3-year change in number of	-0.118	-0.186	-0.117	-0.130	-0.064
children aged between 4 and 7	(0.081)	(0.064)	(0.066)	(0.052)	(0.076)
3-year change in number of	-0.074	-0.137	-0.113	-0.086	-0.077
children aged between 8 and 11	(0.071)	(0.060)	(0.069)	(0.049)	(0.076)
3-year change in number of	-0.063	-0.183	-0.146	-0.126	-0.092
children aged between 12 and 15	(0.060)	(0.051)	(0.062)	(0.042)	(0.054)
3-year change in number of	-0.090	-0.126	-0.101	-0.089	-0.051
children aged between 16 and 18	(0.054)	(0.046)	(0.054)	(0.039)	(0.037)

Table 4: The impact of the risk of losing the job on 3-year consumption growth (continued)

Dependent variable:	Log (Food t+3)-Log(food)	Log(Non durables t+3) -Log(Non durables t)		Log(Total Cons. t+3) -Log(Total Cons. t)	
Estimation method:	OLS	OLS	QR	OLS	QR
		(1)	(2)	(3)	(4)
Head completed secondary school	0.106	0.185	0.186	0.136	0.153
	(0.094)	(0.074)	(0.096)	(0.059)	(0.073)
Head completed upper secondary	0.101	0.172	0.165	0.119	0.135
school	(0.099)	(0.077)	(0.110)	(0.063)	(0.097)
Head completed college	0.101	0.177	0.201	0.122	0.175
	(0.099)	(0.081)	(0.094)	(0.065)	(0.075)
Spouse completed secondary	-0.025	-0.126	-0.068	-0.093	-0.093
school	(0.098)	(0.075)	(0.103)	(0.061)	(0.076)
Spouse completed upper second.	0.006	-0.103	-0.071	-0.037	-0.047
school	(0.104)	(0.079)	(0.108)	(0.063)	(0.082)
Spouse completed college	-0.016	-0.097	-0.118	-0.058	-0.093
	(0.105)	(0.083)	(0.091)	(0.067)	(0.070)
Single	0.018	0.044	0.007	-0.017	0.032
	(0.173)	(0.118)	(0.154)	(0.103)	(0.139)
Widow	-0.188	-0.061	0.077	0.033	0.035
	(0.274)	(0.219)	(0.379)	(0.180)	(0.213)
Divorced	0.220	0.067	0.102	-0.042	-0.064
	(0.160)	(0.148)	(0.170)	(0.121)	(0.156)
Constant	0.078	0.023	-0.001	0.028	0.035
	(0.088)	(0.069)	(0.073)	(0.059)	(0.067)

Notes: Sample size: 976. Standard errors are in parentheses.
Total consumption: sum of non-durable recall consumption plus annuitization of the stock of furniture and jewellery (see text)
Standard errors corrected for heteroscedasticity. In columns (3) and (5) standard errors are obtained by 50 bootstrap replications.
Additional covariates not shown: indicator of whether the family head is a female; indicators of whether the family head works self-employed as an entrepreneur (omitted category), in a family business or as a manager in a non-family partnership; indicators of whether the 2002 interview happened in the first quarter of 2003.

Table 5: Financial wealth responses to the risk of losing the job

Dependent variable: Logarithm of wealth held on financial assets

Estimation method:	QR		QR	
	Coefficients	Impact on Med(Wealth) .04 change in Pr Job loss (in thousand euro)	Coefficients	Impact of .04 change in Pr Job loss (in thousand euro)
	(1)	(2)	(3)	(4)
1. Pr(Jobloss head)	-0.053	-0.698	0.031	0.408
	(0.018)***		(0.041)	
2. Pr(Jobloss spouse)	-0.013	-0.171	-0.010	
	(0.013)		(0.013)	
3. (Pr Job loss head)* Entered labor market before 1983			-0.117	-1.541
			(0.046)***	
4. (Pr Job loss head)* Entered between 1984 and 1989			-0.106	-1.396
			(0.057)*	
5. (Pr Job loss head)* Entered between 1995 and 2000			-0.065	-0.856
			(0.055)	
6. (Pr Job loss head)* Entered after 2000			-0.043	-0.566
			(0.058)	
Head entered labor market before 1983	0.239		0.297	
	(0.135)		(0.135)	
Head entered labor market between 1984 and 1989	0.316		0.357	
	(0.131)		(0.132)	
Head entered labor market between 1995 and 2000	0.100		0.099	
	(0.152)		(0.160)	
Head entered labor market after 2000	0.154		-0.044	
	(0.184)		(0.213)	
Age between 18 and 25	-0.284		-0.396	
	(0.284)		(0.277)	
Age between 26 and 35	-0.167		-0.136	
	(0.123)		(0.120)	

Table 5: Financial wealth responses to the risk of losing the job (continued)

Dependent variable: Logarithm of wealth held on financial assets

Estimation method:	QR		QR	
	Coefficients	Impact on Med(Wealth) .04 change in Pr Job loss	Coefficients	Impact of .04 change in Pr Job loss
	(1)	(2)	(3)	(4)
Age between 46 and 55	0.201		0.183	
	(0.101)		(0.098)	
Age between 56 and 65	0.495		0.494	
	(0.124)		(0.120)	
Logarithm of household income	1.180		1.175	
	(0.056)		(0.054)	
Logarithm of household income, squared	0.176		0.177	
	(0.018)		(0.018)	
Household size equals 1	-0.170		-0.196	
	(0.150)		(0.146)	
Household size equals 3	0.062		0.045	
	(0.103)		(0.099)	
Household size equals 4	-0.142		-0.163	
	(0.106)		(0.102)	
Household size equals 5	-0.297		-0.308	
	(0.145)		(0.141)	
Household size equals 6 or more	-0.835		-0.876	
	(0.202)		(0.196)	
Head completed secondary school	0.082		0.091	
	(0.121)		(0.118)	
Head completed upper secondary	0.316		0.347	
school	(0.142)		(0.138)	
Head completed college	0.871		0.886	
	(0.142)		(0.138)	
Constant	0.774		0.707	
	(0.206)		(0.201)	

Sample size: 3784

Pr(Jobloss head) is the difference of the probability of losing the job over the next quarter and .011 and is takes values between 0 and 1

Monetary magnitudes expressed in thousands of 2002 euro.

Other covariates, not shown: Year dummies, female head, industry dummies, educational attainment of the spouse

Table 6: Financial wealth responses to regional subsidies to contract conversion.

Dependent variable:	Logarithm of wealth held in "liquid" financial assets			
Estimation method:	QR		QR	
	Coefficients	Impact on Med(Wealth) (1,000€)	Coefficients	Impact on Med(Wealth) (1,000€)
	(1)	(2)	(3)	(4)
Subsidy to contract conversion:				
1. Head	-0.056	-0.184	-0.065	-0.214
	(0.026)**		(0.031)**	
2. Head * Aged below 30	0.055	0.181	0.049	0.161
	(0.039)		(0.045)	
3. Head * Female	0.07	0.230	0.077	0.254
	(0.038)*		(0.045)*	
4. Spouse	-0.024	-0.079	-0.03	-0.099
	(0.025)		(0.029)	
Logarithm of household income	1.159		1.144	
	(0.048)		(0.056)	
Secondary school, head	0.078		0.101	
	(0.102)		(0.118)	
Upper secondary school, head	0.351		0.324	
	(0.119)		(0.138)	
College, head	0.892		0.931	
	(0.118)		(0.137)	
Works for the public sector	-0.11		-0.096	
	(0.084)		(0.097)	
Industry, head	-0.054		-0.093	
	(0.084)		(0.098)	
Agriculture, head	0.022		0.04	
	(0.148)		(0.172)	
Construction, head	-0.009		-0.093	
	(0.108)		(0.098)	
Year 2003	0.199		0.232	
	(0.086)		(0.103)	
Year 2005	0.388		0.422	
	(0.101)		(0.121)	
Year 2006	0.384		0.439	
	(0.078)		(0.092)	
Tenure on the job, head	0.034		0.034	
	(0.006)		(0.007)	
Tenure on the job squared, head	-0.001		-0.001	
	(0.001)		(0.001)	
Tenure on the job cubed, head	0.000		0.000	
	(0.000)		(0.000)	
Region indicators	No		Yes	

Sample size: 3,784. Standard errors are in parentheses. The median of liquid financial wealth in the sample of employees is 3,292€. Additional covariates in all regressions not reported in Table 6 are the following: indicators of female family head, whether the spouse does not work, whether the entry to the labor market is after 1984, indicators of the household size up to six or more household members, the family head's marital status, and indicators of the education level and the economic sector in which the family head's spouse works and whether it is a public sector or not.

Table 7: Net wealth responses to regional subsidies to contract conversion.

Dependent variable:	Logarithm of net wealth (liquid financial assets + net housing)			
Estimation method:	QR		QR	
	Coefficients	Impact on Med(Wealth) (1,000€)	Coefficients	Impact on Med(Wealth) (1,000€)
	(1)	(2)	(3)	(4)
Subsidy to contract conversion:				
1. Head	0.021	2.705	0.022	2.834
	(0.015)		(0.015)	
2. Head * Aged below 30	-0.065	-8.373	-0.053	-6.828
	(0.023)		(0.022)	
3. Head * Female	-0.024	-3.092	-0.037	-4.766
	(0.022)		(0.022)	
4. Spouse	-0.026	-3.349	-0.039	-5.024
	(0.014)		(0.014)	
Logarithm of household income	0.592		0.566	
	(0.027)		(0.027)	
Secondary school, head	0.171		0.149	
	(0.058)		(0.057)	
Upper secondary school, head	0.341		0.319	
	(0.068)		(0.067)	
College, head	0.488		0.470	
	(0.067)		(0.067)	
Works for the public sector	-0.101		-0.063	
	(0.048)		(0.047)	
Industry, head	-0.068		-0.06	
	(0.048)		(0.048)	
Agriculture, head	-0.132		-0.118	
	(0.084)		(0.084)	
Construction, head	-0.018		0.003	
	(0.061)		(0.061)	
Year 2003	0.104		0.043	
	(0.049)		(0.050)	
Year 2005	0.431		0.32	
	(0.057)		(0.058)	
Year 2006	0.376		0.342	
	(0.044)		(0.045)	
Tenure on the job, head	0.024		0.022	
	(0.003)		(0.003)	
Tenure on the job squared, head	-0.002		-0.001	
	(0.000)		(0.000)	
Tenure on the job cubed, head	0.000		0.000	
	(0.000)		(0.000)	
Region indicators	No		Yes	

Sample size: 3,831. Standard errors are in parentheses. The median of net wealth in the sample of employees is 128,821€. Additional covariates in all regressions not reported in Table 7 are the following: indicators of female family head, whether the spouse does not work, whether the entry to the labor market is after 1984, indicators of the household size up to six or more household members, the family head's marital status, and indicators of the education level and the economic sector in which the family head's spouse works and whether it is a public sector or not.

Table A.1: Determinants of the transition from employment to unemployment (EPA)

Dependent variable takes value 1 if there is a transition from employment to unemployment
Estimation method: Logit

	(1)	(2)
Sample:	Males	Females
Employee with open-ended contract	-0.937	-0.880
	(0.017)	(0.018)
Open-ended contract after 1997	0.285	0.190
	(0.023)	(0.024)
Employee	0.922	0.836
	(0.022)	(0.032)
Public sector	0.148	0.086
	(0.027)	(0.021)
Public sector * Open-ended contract	-0.358	-0.286
	(0.041)	(0.033)
Secondary school	-0.128	-0.066
	(0.015)	(0.019)
Upper - secondary school	-0.158	-0.103
	(0.018)	(0.022)
College	-0.233	-0.164
	(0.021)	(0.025)
Age 18-25	0.134	0.265
	(0.02)	(0.022)
Age 26-35	-0.027	0.113
	(0.017)	(0.018)
Age 46-55	0.042	-0.031
	(0.018)	(0.020)
Age 56-65	0.266	0.010
	(0.023)	(0.031)
Year 1999	0.069	0.027
	(0.013)	(0.016)
Year 2001	0.022	-0.034
	(0.014)	(0.015)
Second quarter	0.011	0.061
	(0.015)	(0.016)
Third quarter	0.102	0.130
	(0.014)	(0.016)
Fourth quarter	0.074	0.050
	(0.017)	(0.019)
Constant	-2.408	-2.002
	(0.038)	(0.037)
Sample size:	326,648	176,633

Table A.2: First-stage estimates of a linear probability model of whether the family head is an employee with an open-ended contract.

	Without region dummies	With region dummies
Subsidy to contract conversion:		
1. Head	0.018	0.013
	(0.006)	(0.006)
2. Head * Aged below 30	-0.009	-0.007
	(0.009)	(0.009)
3. Head * Female	-0.012	-0.011
	(0.008)	(0.008)
4. Spouse	0.000	-0.002
	(0.004)	(0.004)
Logarithm of household income	0.055	0.048
	(0.008)	(0.008)
Secondary school, head	0.058	0.058
	(0.021)	(0.020)
Upper secondary school, head	0.093	0.089
	(0.022)	(0.022)
College, head	0.077	0.077
	(0.022)	(0.022)
Works for the public sector	-0.019	-0.015
	(0.012)	(0.012)
Industry, head	0.012	0.016
	(0.013)	(0.013)
Agriculture, head	-0.085	-0.072
	(0.029)	(0.028)
Construction, head	-0.108	-0.102
	(0.021)	(0.022)
Year 2003	0.028	0.020
	(0.014)	(0.015)
Year 2005	0.000	-0.003
	(0.017)	(0.018)
Year 2006	0.040	0.038
	(0.014)	(0.014)
Tenure on the job, head	0.025	0.025
	(0.001)	(0.001)
Tenure on the job squared, head	-0.002	-0.002
	(0.000)	(0.000)
Tenure on the job cubed, head	0.000	0.000
	(0.000)	(0.000)

Notes: The sample size is 3s898 in a sample of employees formed by family heads.
Standard errors are in parentheses.
Additional covariates not shown but included in all regressions in Table 6 are the following: indicators of female family head, whether the spouse does not work, whether the entry to the labor market is after 1984, indicators of the household size up to six or more household members, the family head's marital status, and indicators of the education level and the economic sector in which the family head's spouse works and whether it is a public sector or not.

Table A.3: Subsidies for conversion of temporary contracts into permanent ones, by region and year

Region / Year	1997	1998	1999	2000	2001
1. Andalucia			All years, 1,800 euro if age < 30		
2. Aragon			All years, 1,200 euro for females		
3. Asturias	2,100 euro	2,100 euro, all workers	2,100 euro, all workers	2,100 euro, all workers	None
		2,400 if "learning contract"	2,400 euro if "learning contract"	2,400 if "learning contract"	
		600 extra if female in male job	600 extra if female in male job	plus 600 if female in male job	
4. Baleares			None		
5. Canarias	None	3,600 if age<25 or if female	None	None	None
6. Cantabria	None	1,800	None	None	None
		2,400 if age<30 or female			
		3,600 if above 40			
7. Castilla-Leon	None	1,800 euro	1,800 euro	1,803 if age<30	1,803 if age<30
		2,400 if apprenticeship contract	2,400 if apprenticeship contract		2,040 if female
8. Castilla-La Mancha			None		
9. Catalonia			None		
10. Valencia	None	None	30% of payroll tax	30% of payroll tax	1400, practice contr.
					1,800 if "practice c."
					and female
11. Extremadura	4908	3545	3618	2100 if training	2101 if "practice c."
12. Galicia	None	3000 euro if age<30	None	None	None
		4200 if female in male job	None	None	None
13. Madrid			None		
14. Murcia	1800	2100 if age<=30	2100 if age<=30	2100 if age<=30	2100 if age<=30
	2400 if age<30	1500 if age>30	1800 if age>30	1800 if age>30	1800 if age>30
15. Navarra	None	1800	None	Payroll subsidy depending on age	
16. Basque country	None	3000 for age<40	3000 for age<40	Both years: Former+ 6009 euro if age<30	
	None	150 extra if female	150 extra if female	Former+ 4507 euro if age<30 & female	
17. Rioja	None	Depends on # conversions	Depends on # conversions	Depends on # conversions	

1. "Apprenticeship contract" (contrato de aprendizaje): contract typically offered to low-skilled young workers.
2. "Learning contract" (contrato de formación): contract typically used for workers between 16 and 18 years of age.
3. "Practice contract" (contrato en prácticas) Contract typically used for qualified young workers without labor market experience.