


Membership duration in a Spanish union: A survival analysis

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Abstract

This article presents an analysis of the characteristics that are associated with union membership duration using data from the membership registers of the largest Spanish trade union: *Comisiones Obreras* (CCOO, Workers' Commissions). Making use of survival analysis techniques, the results indicate that the shortest membership durations and the highest risks of leaving are associated with workers with poor employment conditions, mainly youth and foreigners, as well as those in firms, economic sectors, and territories where the union has a rather weak presence. As workers in these situations represent the majority of both current joining and leaving rates, the article concludes that retention policies should focus on the early stages of union membership.

Keywords

Dual labor market, trade unions, union membership

Introduction

In the last two decades, a number of countries have exhibited high in- and out-flows of union membership (Frege and Kelly, 2004; Labbe and Croiset, 1992; Martinez Lucio,

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1998; Miguélez, 2000). Spain is a prime example of this phenomenon, where levels of annual membership in-flows and out-flows above 10% of overall membership have been documented, indicating particularly dynamic union membership¹ (Alós et al., 2011). Although enlightening, the aggregated data do not indicate whether there is only a progressive renewal of the membership or an increasing pluralization of union membership trajectories as well. For the latter, we would expect asymmetries in membership trajectories. Put simply, some workers would experience stable and linear trajectories, while others would experience short memberships or constant disruptions and re-entrance into membership. To explain these asymmetries from a micro-level perspective, studies on union memberships have distinguished a wide range of characteristics and reasons behind entering (Guest and Conway, 2004; Lange et al., 1982; Visser, 2002; Waddington and Whitston, 1997) and leaving the union (Guest and Conway, 2004; Klandermans, 1997; Lévesque et al., 2005; Waddington, 2006). However, these analyses are largely static; identifying membership status and determinant characteristics for a discrete interval of time.

In this article, we present a more dynamic approach and analyze membership trajectories to understand membership dynamics and complement existing knowledge on membership turnover to inform membership retention policies. As an initial step we look at the length or duration of memberships (i.e., the link between the joining and leaving events along a time axis). The underlying premise is that although all union members will end up leaving the union, some members will exit sooner than others. The latter aspect is what we want to test and we expect our results on duration of membership to be in line with previous findings indicating a divide between membership groups experiencing both higher entrance and leaving rates (e.g., youth, women, and foreigners) and those with more stable memberships (Alós et al., 2011).

A comprehensive examination of the length of membership requires the application of longitudinal methods for the analysis of durations (i.e., survival analysis) (Blossfeld et al., 2007). This goes beyond the traditional analysis of membership tenure (i.e., length of stay of current membership), as the outcome of analysis is the proportion of members who remain in the union over membership time, including actual members as well as those who left the union by the end of the observation period. The empirical results allow responses to the following questions:

1. How many union members remain after a given interval of membership duration since joining?
2. What are the intervals of membership duration with the highest risks of union attrition?
3. Which personal-, labor-, and union-related characteristics are associated with shorter or longer membership durations?

Analyses of membership duration for the Spanish case are somewhat of a novelty. We use archival data of membership registries of one of the largest Spanish union federations: *Comisiones Obreras* (CCOO). Membership turnover and duration are relevant objects of analysis for this case study owing to indirect linkages between job change – and/or termination – and membership withdrawal in CCOO. Membership is voluntary

and conditioned solely on payment of union dues. Workers in unionized environments can join or exit the union at any time. Those changing firms, or sectors of activity, may retain their membership at their discretion. A centralized membership registry allows tracking employment changes without membership status change. Interestingly, CCOO membership is not restricted to salaried workers. Although a minority, the CCOO data include unemployed and retired persons in the membership counts; additionally, non-employed members pay reduced dues.

We focus on a sample of members who joined the union after January 2005, while leaving is restricted to an observation window for which we have individual-level data on union withdrawal (between January and October 2009). The greatest advantage of using the registries is the ability to account for the whole population of membership exits for the period (160,000 exits). To obtain unbiased results of the duration analyses, we compare the durations of exits with those who remained members by the end of the observation window of our study (October 2009), which account for more than 1 million observations. The results of our analyses indicate that shorter membership duration is associated with workers in peripheral positions in the labor market. This is mostly youth, foreigners, and workers based in firms, economic sectors, and territories where economic activity is associated with seasonality, insecure employment, and where union presence is rather low.

Spanish industrial relations, CCOO, and the evolution of union membership composition

In this article we analyze the membership of one of the two main unions in Spain, *Comisiones Obreras*. CCOO is a union federation, encompassing salaried workers from all occupational and economic activity sectors, with a functional structure of activity branches within territorial organizations. The origins of the union are based on industrial tradition. However, as with its European counterparts, union membership in CCOO has evolved to mirror the occupational structure of the Spanish labor market. Workers in service activities are currently the majority, with a strong incidence of public sector workers. Moreover, in the last decade, the presence of women and immigrants has increased. These groups – together with younger workers, workers with unstable job contracts, and those in companies without union presence – remain underrepresented.

The evolution of the current membership composition reflects internal and external changes since the legalization of unions in Spain (1977). With a union density of 18% at the time of legalization, membership in Spanish unions initially declined (1977–1980) and fluctuated during the 1980s due to the economic cycle and the early stage of institutional consolidation, or the transition from *informal movements* towards *formal organizations* (Jordana, 1996). A union strategy oriented towards legal recognition reduced resources which could have otherwise been utilized for membership attraction and retention. This lack of interest may have also derived from the fact that the relative importance of unions in Spain is not measured by the membership size, but by the results of union representatives' elections at the firm level.² Together with *Unión General de Trabajadores* (UGT), the second largest union federation with a similar structure and composition, CCOO controls approximately three-quarters of union representation in Spain (38.8%

CCOO, 37.1% UGT) (Beneyto, 2011). In addition, some features of the legal framework, the Workers' Statute of 1980, have determined the persistently low union density (Fernández Macías, 2003; Hamann, 2001). These are the workers' delegation of bargaining rights in a *dual representation* system that allows both membership (*Sección Sindical*) and non-membership (*Delegado – Comité de Empresa*) firm-based workers' representation, and the *erga omnes* institution that enhances free-rider mentalities; that is, the extension of union bargaining outcomes in the functional and territorial setting where bargaining takes place independently of whether workers are members or not (Miguélez et al., 1991).³ To illustrate this fact, although the union density of both CCOO and UGT is only around 20%, their bargaining outcomes, mostly at sectoral levels of negotiation, affect between 80 and 85% of the total salaried workforce.⁴ As a result, Köhler and Martin (2005) indicate that incentives to join and remain in the union, at this stage, were based on union identity – principally male workers in large industrial companies and unionized environments.

In the mid-1980s, the break with prior political affiliation (leading to the start of the long-term collaboration between the two union federations), a progressive formalization of the organizational structures, and a favorable economic and political context led to rising membership levels for both federations. In addition, these same circumstances led to their legitimization as social partners, culminating in the general strike of 1988 (Alós et al., 2011; Hamman, 2001; Hamman and Martínez Lucio, 2003). The steady increase of membership in CCOO since has been linked to a turn from a reactive to a proactive attitude. This has induced new strategies on the quantity and quality of employment.

Adapting to the increasingly segmented labor market (Toharia, 2011), specifically labor reforms that introduced fixed-term contracts and the dramatic increase of women and foreigners in the labor market, the union launched recruitment programs targeting these groups.⁵ New membership groups feature vulnerable job situations in comparison to traditional membership due to insufficient employment protection and the persistently high costs of collective action derived from lack of union presence at the workplace. The gradual growth of non-traditional membership has been encouraged by the introduction of elements of a social partnership model and the extension of services (e.g., training and legal representation). This has coincided with a slight retention of members experiencing non-employment situations like first job seekers, unemployed or retirees. These members have access to union services paying reduced dues.

Recent internal and external changes may explain the rise of materialistic incentives in the decision to join the union. The upturn in incentives to become a member connected to less stable job situations and non-traditional work environments has fueled a pluralization of union members and their membership trajectories (Alós et al., 2011).⁶

Membership trajectories, membership duration, and the analysis of duration data

Membership dynamics can be understood as the interdependence of membership trajectories (i.e., the process starting at the time of joining and finishing when leaving the union). A comprehensive analysis of membership trajectories should at least cover and connect the recruitment process with the initiatives that ease or impede membership

retention. Such an analysis should also cover the causes that lead to union exit, or the reasons members commit to the union for varying periods of time (Alós et al., 2011). However, due to data limitations, little research on the interconnected stages of membership in relation to membership dynamics has been carried out (Schnabel, 2003).

The temporal continuity between these stages leads us to consider the length of membership (i.e., between joining and leaving) as an object of analysis in order to introduce initial evidence on what membership trajectories look like and whether we find systematic differences across union members. Some empirical literature has begun to analyze membership duration. Vaona (2008) presents an analysis of union duration for 29,035 members of the Italian union CGIL, belonging to two counties of the Veneto region. Using OLS regression, where the dependent variable is membership tenure, Vaona finds that younger, female, foreign, and flexible workers are more likely to be recent members. Their shorter membership tenure, the author suggests, can be accounted for, on average, by inferior working conditions and vulnerable labor situations. Van Rij and Saris (1993) present an event-history analysis (or survival analysis) of duration until joining the union, and as well as duration from joining to exit. Using data from the Netherlands, they find that most exits occur with shorter rather than longer membership durations. The risk of leaving diminishes progressively the longer the individual membership is. Buttigieg et al. (2007) conduct a similar analysis of the Australian context. They find that shorter membership durations are related to non-unionized environments (i.e., no presence of a union at the firm level), individualistic orientations (i.e., usefulness of the union on achieving gains for the individual), and also when the individual perceives that the procedures designed to determine labor outcomes are ineffectual.

Characteristics of membership exits for the case of CCOO (Alós et al., 2011; Jódar et al., 2011b), as well as for other institutional settings (Gallie, 1996; Visser, 2002; Waddington, 2006; Waddington and Kerr, 1999), are similar to those of shorter membership durations in the aforementioned studies. Women, younger and older age groups, foreigners, fixed-term contract situations, shorter service lengths, and workers in small firms or without union representatives are highly associated with leaving the union (Alós et al., 2011).⁷ In general, contextual changes pertaining to job situations produce the majority of union withdrawals independently of the initial commitment of members to the union (Klandermans, 1986; Visser, 2002). This is also the case for around half of leavers in CCOO (Alós et al., 2011). Although some would be tempted to sustain that stable careers lead to commitment to the union over time, evidence remains weak for such an assertion. Our aim is more reserved, as data do not allow accurate determination of the employment situation or repeated memberships over time. Instead, we offer a robust test on associations between the information provided at the time of membership registration for which we were able to derive variables and membership duration. The underlying hypothesis is that: women, youth (and workers of older age), non-Spanish nationals (as highly representative demographic groups of peripheral positions), those working in sectors of economic activity and regions with higher incidence of insecure employment and lower union tradition, and workers in firms with few or no union members will leave the union within shorter periods of membership than the average.

To test for pluralization of membership trajectories and to observe nuances of segmentation theory, we assume a further alternative: the membership typology of Alós

et al. (2009). This typology features four status-consistent groups reflecting the multidimensional aspects behind diverse groups of members and delineates the segmented Spanish labor market.⁸ The largest group, the *traditional-core*, is comprised mainly of men, employed in private industry, in medium- to large-sized workplaces, with high seniority. A second group of members, the *emerging-core*, is comprised of workers with high educational attainment, working as technical staff in public services or private skilled service companies. Both groups, to be found in the unionized context, boast the largest rates of union activism (Jódar et al., 2011c); therefore, longer memberships are expected. A third group, the *peripheral-in-transition*, is composed of young male workers with low seniority. Finally, there is a small group of *peripheral* members, mostly women with elementary or no education, and with no expectations of promotion. They are characterized by lower activism and by working in hostile environments for union members (Jódar et al., 2011c); we therefore expect shorter memberships.

In this research we also employ survival analysis methodology because of its analytical superiority over traditional regression methods for the object of analysis proposed here.⁹ Survival analysis is the set of statistical techniques adequate to examine and model duration data (also time-to-event or spell data). This is the time span stretching from the beginning of a status until its end (e.g., the length of a membership spell). Technically, this measures the time that it takes until event occurrence or a transition between statuses from when the individual starts to be exposed to the *risk* of event occurrence or changing status.¹⁰ For instance, the risk of leaving the union starts at the very moment the individual becomes a union member, and not before. There are two main results of interest: the *survival probability* (i.e., the proportion of individuals who did not experience the event after an interval of time from the onset of the risk exposure event), and the *hazard rate* or *transition rate* (i.e., the probability of experiencing an event at a given time interval, conditional on not having experienced the event before; e.g., since joining the union).

We mention three key features and advantages of the method. First, while traditional analysis of membership turnover averages out when union withdrawal happens, survival methods offer a wide range from parametric to non-parametric techniques to examine the shape of time functions for survival probabilities and hazard rates. These techniques account for the fact that durations are always positive and their distributions are skewed (e.g., members become more committed over time).

Second, survival analysis accounts for durations of those who left the union as well as those who are still members. The latter are called *censored cases* and are analytically important as their inclusion eliminates endemic bias in non-survival analysis designs. Although we do not observe when censored cases leave the union, accounting for the length of their membership by the end of the observation period corrects the results for selective features that lead to late leaving across union members.

Third, survival analysis allows identification of individual-, labor-, and union-related characteristics associated with short-term memberships and those which lead to long-term commitments. In addition, by inclusion of characteristics that vary over time (e.g., employment status) it is possible to offer evidence on the interdependence of membership duration with changing conditions (e.g., family situations, employment conditions or the relation with the union).

Data

For our analyses, we use data from two registries on CCOO membership accessed at the union federation's Revenue Administration Unit. Territorial units provide data to the central unit. The first of the registries covers information for all members who left the union between January and October 2009. This amounts to 160,367 observations. Exits in the registry are measured as those individuals who contacted the union and informed them about the wish to leave it, and those individuals who did not pay union dues for six consecutive months. To complement the leavers' population, we use the registry of members as of 31 October 2009. This amounts to 1,092,284 observations.

Due to the data limitations, we are compelled to apply some restrictions to our sample and restrict the interpretation of our results. First of all, our results cannot be separated from the period effect behind the determinants of leaving throughout the year 2009.¹¹ This was a year where membership was particularly affected by layoffs and a reduction of new employment in the labor market coinciding with the second year of a world financial crisis. Second, our *observation window*, the period when exits are observed, is rather short if the analysis is strictly focused on those who joined and left within this period (i.e., membership under one year). Allowing for the introduction of observations for whom we observe the leaving date within the observation window, but who joined before the start of that period, can lead to *left-truncation* bias. That is to say, while we allow individuals that joined the union prior to January 2009 to enter the analysis, we omit those who joined at a comparable date but left the union before January 2009. Thus, shorter durations of membership are underrepresented in the analyses. Larger bias increases the risk of leaving concentrations in shorter durations. Being informed about this shortcoming, we decided to include in our analyses those individuals who joined the union after four years before the observation window (i.e., January 2005).¹² We regard this as a sufficient time period to avoid large biases in our analyses.¹³ To shed more light on possible bias due to left-truncation, we run two parallel analyses; one for members who joined from January 2005 onwards, and another only for those observations representing members who joined from January 2009 onwards (i.e., no left-truncation). The differences between the results for both samples are good indications for the direction of the biases.

We disregarded from the analyses those members not living in Spain, those who live in the North African Spanish territories of Ceuta and Melilla (below 1% of the initial population), and those over age 70 (2% of the initial population). With the application of these restrictions, our population for analysis is reduced to a sample of 547,168 individuals who joined between January 2005 and October 2009. By the 31 October 2009, 97,841 individuals had left the union and 449,327 decided to remain.¹⁴

Data analysis

From the membership register we derive the following variables that feature the outcome of interest for survival analysis:

Membership duration: Time in months since observation of last membership joining. Only for those who joined after 1 January 2005 and are still members, at least, until January 2009.

Censoring indicator: Dummy indicator that takes the value 1 when union leaving is observed between January and October 2009, and the value 0 when no leaving is observed (i.e., s/he is still a member by the end of the observation window).

We also use other information available in the membership registry to construct covariates, which the literature finds relevant to predict union exits (see e.g., Alós et al., 2011). For the sake of reliability, we will only use information that was taken at the time of registration (i.e., the last time a member joined the union). Among others we use information on:

Sex: Dummy indicator that takes value 1 for females (reference: 0 – males).

Age: Four dummy variables for age ranges: 16–29, 30–44, 45–59, 60–70.

Citizenship: Four dummy variables indicating the following citizenship groups: Spanish, African (mainly North African), Latin American, and other citizenships.

Activity branch: Twelve dummy variables encompassing sectors of economic activity with common collective bargaining outcomes.

Regional unit: We use 17 dummy variables identifying the union regional units.

Union members at the firm: Up to five dummy variables indicating the number of union members at the firm level (1–5, 6–25, 26–100, 101–500, > 500) and another variable indicating ‘no members’ for non-employment situations (mainly unemployed and retired members), but also missing observations.

Membership channel: We grouped several channels in two main types: 1 – *worker self-register* (including passing by union office, telephone, mail, and internet) and 2 – *via union contacts* (including union representative in the company, visit of union representative from union office, and other forms of campaign).

We use two well-known techniques within the survival analysis family. First, non-parametric techniques for the estimation of survival probabilities known as Kaplan–Meier (KM) estimators (Kaplan and Meier, 1958) will be calculated and plotted as survival curves for each covariate category. KM estimates offer a simple and efficient estimation of the survival function, or the probability that leaving the union has not occurred at a given duration interval since the beginning of the possibility to experience the event. This will provide insight on the duration until exit for different membership groups.

Second, we apply Cox regression (Cox, 1972), a semi-parametric regression model for survival data, which estimates in a multivariate setting how membership groups raise or reduce the risk of membership withdrawal over time.¹⁵ The membership duration is cancelled out in the mathematics of the model and not a relevant result. The influences of the covariates introduced into the model on the hazard of leaving the union are therefore constant over time. This is known as the *proportional hazards* assumption (Blossfeld et al., 2007), and may not apply if, for example, we suspect that a certain covariate increases the hazard of leaving the union at the beginning of membership duration and decreases by the end. However, we test that assumption confirming proportionality of the effect over duration intervals for the great majority of covariates.¹⁶

Results

Survival curves

We first present the description of the average membership duration by personal-, labor-, and union-related characteristics. We present survival probabilities estimated by the Kaplan–Meier method, which can be interpreted as the proportion of members remaining in the union in a given membership duration interval (e.g., the proportion of those still members after six months of joining). On average, we find that after 12 months more than 10% of the membership left the union. The result suggests that there is a high turnover among recent joiners, most probably due to the change in the job situation or after the use of union services (Jódar et al., 2011b). The rest of the descriptive results are presented graphically as survival curves (i.e., survival probabilities in the y -axis over all observed duration intervals on the x -axis) by different categories. The Wilcoxon test is used to assess the significant differences between survival functions.

In Figure 1, we show survival curves of membership duration by sex, age, and citizenship. First, patterns of leaving for men and women over duration intervals are not noticeably different; though men have durations of membership which are marginally shorter than those of women, and the difference is statistically significant. The result confirms what others have found: the effect of the economic crisis on women's joining and leaving rates has been delayed (Jódar et al., 2012).

Second, there is a clear difference in the levels and speed of leaving between the youngest age group (i.e., 16- to 29-year-olds), clearly the most vulnerable, and other age groups: 20% of the youngest age group left the union before the second year of membership, and about 40% had left the union by the fourth year of membership. These levels are much lower among other age groups. In order, the second (30–44) and third (45–59) age groups present moderate levels of disaffection, with relatively less incidence at shorter durations than the youngest age group. The oldest age group (60 and more) displays low intensities of leaving at shorter durations of membership, but very high intensities at longer ones. Leaving after retirement, at age 65, might be the reason behind the pattern observed for this group.

Differences by citizenship are also discernible. We confirm the results of Jódar et al. (2011b) in Catalonia, where non-nationals are more likely to leave the union. In particular, more than 75% of the non-Spanish citizens who joined between 2005 and 2009 left the union in 2009, while this percentage is reduced to 25% for the case of Spanish citizens.¹⁷ The magnitude of this result substantiates evidence which indicates that the economic crisis has substantially affected the employment situation of non-Spanish citizens.

Figure 2 presents survival curves for activity branches. There are activity branches that clearly suffer more membership losses, and particularly faster, than the others (i.e., at shorter durations people are more likely to leave). They are the construction branch and the retail and other personal services branches, respectively. These activity sectors, boasting high rates of seasonal employment, were decidedly exposed to economic difficulties deriving from the economic crisis of the period of study (see Toharia, 2011).

Figure 3 presents survival curves by regional units. Differences are not very important, but we find an initial high attrition among the Balearic Islands, Canary Islands,

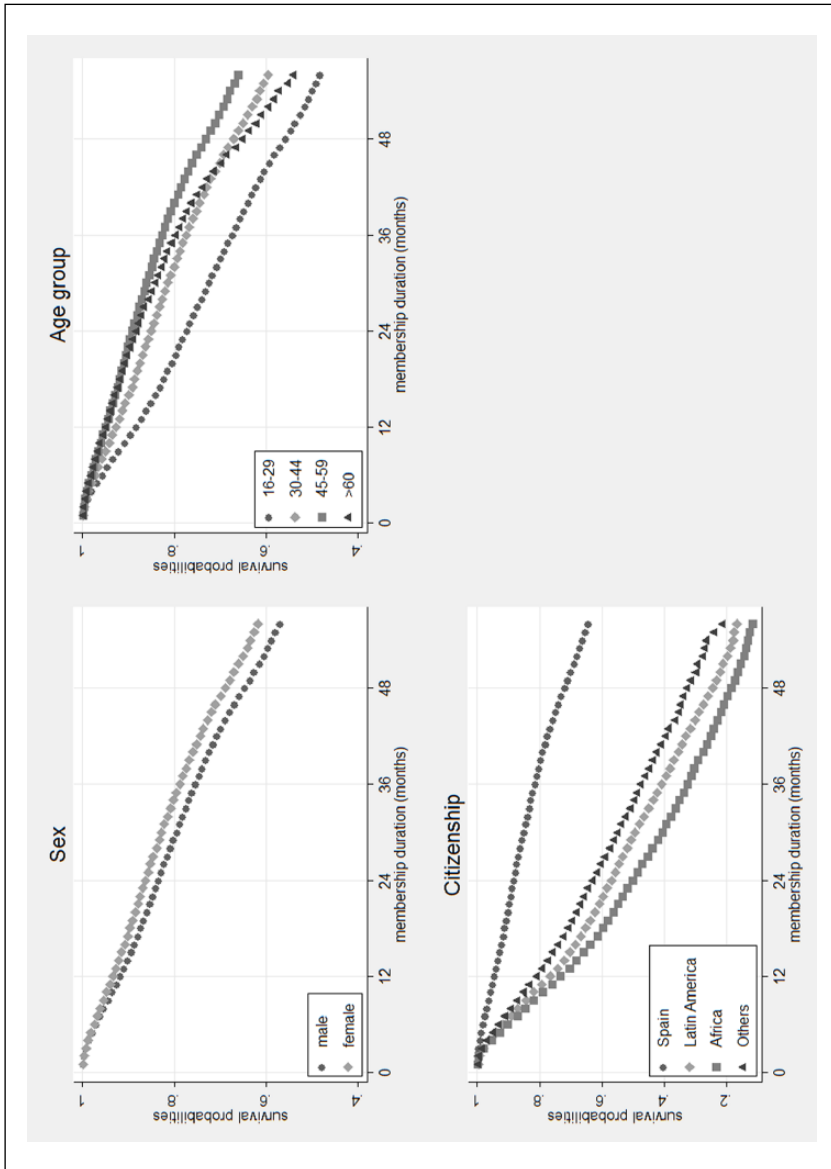


Figure 1. Survival curves by sociodemographic factors.
 Wilcoxon tests: sex ($Pr > \chi^2 = .00$), age group ($Pr > \chi^2 = .00$), citizenship ($Pr > \chi^2 = .00$).

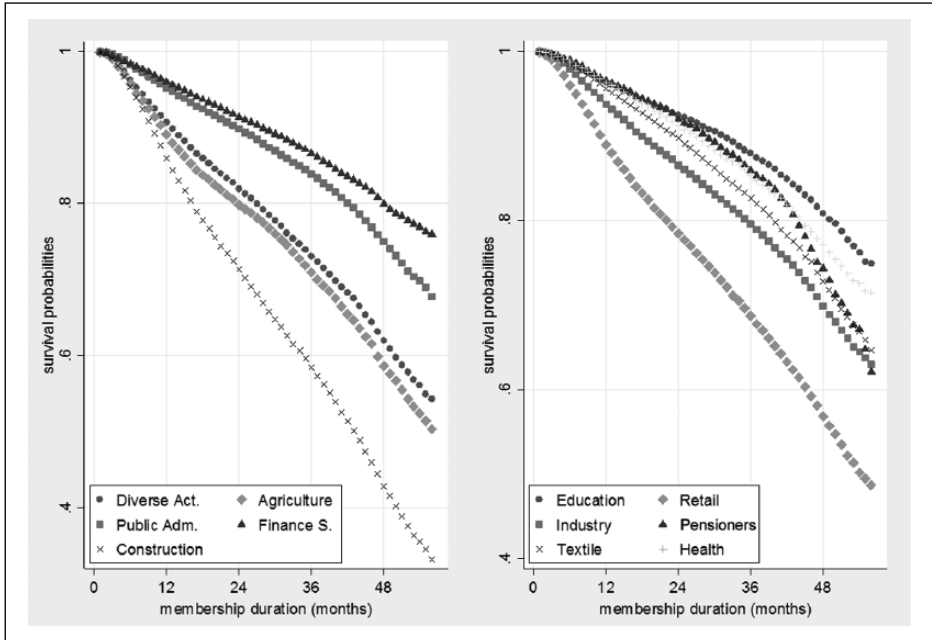


Figure 2. Survival curves by activity branch.

Wilcoxon tests: $Pr > \chi^2 = .00$.

Valencian Community, Murcia, and – to a lesser extent – Andalusia and Castile-La Mancha. Most of these regions share a high percentage of their workforce devoted to personal services, high levels of seasonality, and work insecurity, and less union tradition.

The most striking differences are presented in Figure 4 and relate to the level and rate of leaving regarding the channel used for joining the union. We employ the term *union contact* register when a union contact (e.g., union representative at the firm) was directly involved in the registration of a member, and a *self-register* in lieu of this situation. Those who join by self-register have relatively larger levels of attrition during the first five years than those joining by union contacts. In particular, half of the members who joined by self-register are likely to leave the union before the fifth year of membership. Although self-registered workers may also have contacts in the union, this membership channel reflects non- or less unionized environments and higher membership vulnerability.

In Figure 4, we also present survival curves according to the size of membership at the firm level. For those cases coded in the registries as 0 union members in the firm, we cannot distinguish those who are not employed from those who did not provide information on membership size. First, those in missing information/non-employment situations (i.e., unemployed, retired and other pensioners) present shorter membership durations than those in employment. In particular, half of those registered with no information about membership size are likely to leave the union before the fourth year of membership. This suggests that most of them are to be found in non-employment situations or

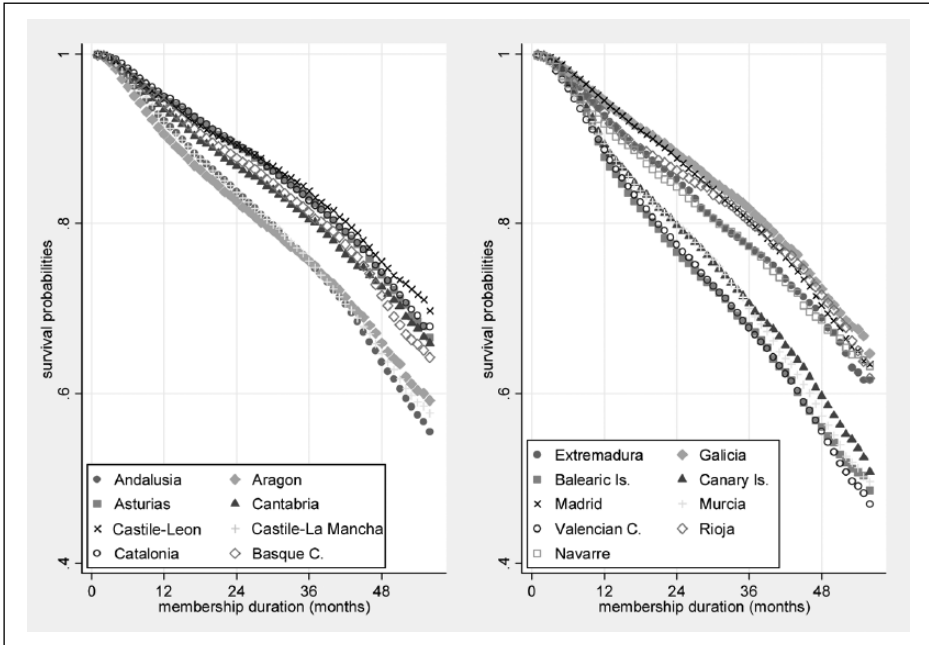


Figure 3. Survival curves by regional unit.

Wilcoxon tests: $Pr > \chi^2 = .00$.

very small firms. Among the employed, the number of union members at the firm presents minor differences on the duration of membership when compared to not being employed or not having information on the membership size.¹⁸ The more union members a firm has, the longer the average duration and the lower the attrition rate is after five years of membership. This result confirms that workers in a unionized context have lower probabilities of leaving.

Cox regression

In the subsequent paragraphs we present the results of the Cox regression to highlight the effects of the covariates described above on leveling the risk of union leaving, controlling for all variables in the same model. The variable *membership channel* will be excluded from regression analysis due to the high degree of missing information in the registry.¹⁹ We also exclude those over age 60, as this category violates the *proportional hazards* assumption of Cox regression models commented earlier. This omission forces us to exclude the union branch for pensioners. No variable indicating period of joining/leaving (i.e., calendar year) is included, as the observation window of leave takes place only in 2009; therefore, a period variable would be collinear with the duration of membership. The coefficients of the covariates in the analysis are presented as hazard rates (i.e., exponentiated coefficients) and represent higher hazard of union leaving than the

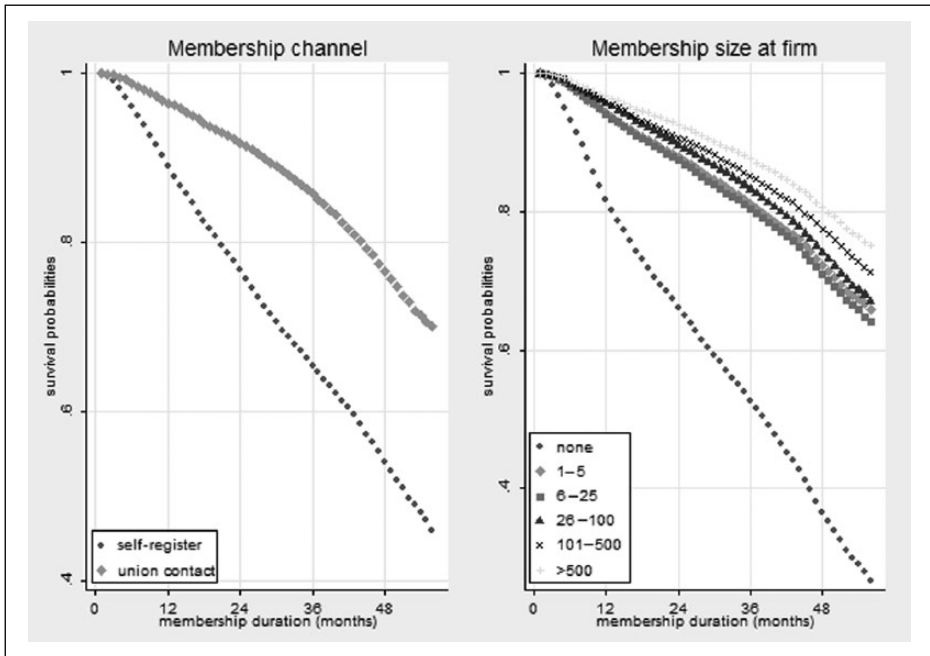


Figure 4. Survival curves by membership channel and by membership size at firm. Wilcoxon tests: membership channel ($Pr > \chi^2 = .00$), membership size at firm ($Pr > \chi^2 = .00$).

average (when the hazard rate is above 1), or lower hazard (when the hazard rate is below 1). The positive or negative effect of the covariates is presumed to be constant over all membership duration intervals.

In the second column of Table 1 (i.e., Joining since Jan. 2005), we present the results for a model where members joined after January 2005 and were leaving between January and October 2009, or stayed in the union after October 2009. Regarding sociodemographic variables, the results of the regression analysis validate, *ceteris paribus*, those of KM estimation. Those with citizenship other than Spanish have twice the hazard rates of leaving the union at each duration interval. Young people (under 30) have an exponentiated coefficient of 1.74, which means that members under age 30 are 1.74 times more likely to leave the union at any duration interval than members in the age group 45–59. Likewise, the age group 30–44 is 1.23 times more likely to leave than those aged 45–59. *Ceteris paribus*, women are only marginally more likely to leave at each duration interval than men. This confirms that sociodemographic characteristics associated to peripheral employment situations in the labor market are more likely to leave the union at any given time.

Regarding the activity branch, only those dealing with welfare services (e.g., education and health), or those of financial services, have a lower risk of union exit for all time intervals when compared to the largest one (i.e., public administration). Members in other branches present higher risks of leaving than the reference category, with construction and

Table 1. Cox regression of duration of membership (hazard rates).

	Joining since Jan. 2005		Joining since Jan. 2009	
	Hazard ratio		Hazard ratio	
(a) Sex: female (ref. male)	1.05***	(0.01)	0.97	(0.02)
(b) Citizenship (ref. Spanish)				
North African	2.43***	(0.03)	2.09***	(0.07)
Latin American	2.58***	(0.04)	2.19***	(0.08)
Others	2.27***	(0.04)	1.95***	(0.09)
(c) Age (ref. 45–59)				
16–29	1.74***	(0.02)	1.44***	(0.04)
30–44	1.23***	(0.01)	1.21***	(0.03)
(d) Activity branch (ref. public administration)				
Services (miscellaneous)	1.39***	(0.02)	1.41***	(0.06)
Agriculture	1.17***	(0.02)	1.16***	(0.05)
Financial services	0.88***	(0.02)	0.84***	(0.04)
Construction	1.54***	(0.02)	1.28***	(0.05)
Education	0.64***	(0.01)	0.67***	(0.04)
Retail	1.40***	(0.02)	1.50***	(0.06)
Industry	1.16***	(0.02)	1.00	(0.04)
Textile	1.01	(0.02)	0.92	(0.06)
Health	0.80***	(0.01)	0.63***	(0.04)
(e) Regional unit (ref. Andalusia)				
Aragon	0.83***	(0.02)	0.77***	(0.04)
Asturias	0.69***	(0.02)	0.66***	(0.05)
Cantabria	0.80***	(0.02)	0.67***	(0.06)
Castile-Leon	0.66***	(0.01)	0.66***	(0.04)
Castile-La Mancha	0.86***	(0.01)	0.69***	(0.03)
Catalonia	0.73***	(0.01)	0.56***	(0.03)
Basque Country	0.76***	(0.02)	0.72***	(0.04)
Extremadura	0.84***	(0.02)	0.77***	(0.06)
Galicia	0.82***	(0.02)	0.67***	(0.04)
Balearic Islands	1.32***	(0.03)	0.92	(0.07)
Canary Islands	1.27***	(0.02)	1.09*	(0.05)
Madrid	0.79***	(0.01)	0.69***	(0.03)
Murcia	0.95***	(0.02)	1.03	(0.05)
Valencian Community	1.05***	(0.01)	0.86***	(0.03)
La Rioja	0.76***	(0.03)	0.71***	(0.09)
Navarre	0.65***	(0.02)	0.74***	(0.06)
(f) Membership size at firm (ref. > 500)				
Non-employed/no info.	3.27***	(0.04)	3.83***	(0.15)
1–5 members	1.20***	(0.02)	1.13***	(0.05)
6–25 members	1.39***	(0.02)	1.28***	(0.06)
26–100 members	1.20***	(0.02)	1.09	(0.06)
101–500 members	1.12***	(0.02)	1.15***	(0.06)

Table 1. (Continued)

	Joining since Jan. 2005	Joining since Jan. 2009
	Hazard ratio	Hazard ratio
N	488,881	97,607
Log-likelihood (empty model)	-1,091,449.9	-107,810.3
Log-likelihood (final model)	-1,058,791.6	-103,717.8

Notes: * $p < .10$, ** $p < .05$, *** $p < .01$. Exits are observed between January and October 2009.

retail and personal services branches exhibiting particularly high leaving hazards. We took Andalusia, the largest unit with a higher level of members working in personal services, as a reference category for the regional unit. As for the activity-specificity of the reference category, we find that most of the coefficients for the other regions show lower hazards of leaving. This holds more for regions with industrial traditions (e.g., Basque Country or Catalonia), as well as for those where tourism-related services are not at the core of their economic activity (e.g., Asturias, Castile-Leon or Madrid). Instead, regions which rely chiefly on seasonal work derived from personal services or a diminished union tradition (such as the Balearic Islands, Canary Islands or Valencian Community) show more intense rates of leaving at any given time. Regarding the size of membership at the firm level, we find that those working in firms with more than 500 union members have the lowest propensities of withdrawal. Other sizes of membership have similar hazard ratios of leaving the union though. Last, non-employment situations, and those with no information on membership size, are associated with the highest risks of leaving the union at any duration interval.

To confirm the validity or the bias of our results due to left-truncation, we run a parallel analysis with observations that are strictly not left-truncated. We do so in the model presented in the third column of Table 1 (i.e., *Joining since Jan. 2009*), where members joined since January 2009 and were leaving between January and October 2009. The results of this model greatly resemble those of the model with left-truncation, with some exceptions. First, women are no more likely to leave at any time than men. Previous research has found that women have been consolidating their membership over time, and that the economic crisis has affected more the membership of men, more often working in the construction sector (Jódar et al., 2012). The other sociodemographic characteristics (age and citizenship) reduce the differences with the reference categories, though the sign and the statistical significance of the coefficients remain stable. Slight changes are also observed for other coefficients, but do not affect the interpretations presented so far. All in all, the problem of left-truncation in our initial analysis does not significantly bias our results.

Finally, we present predictions of the hazard rates and the survival curves adjusting for characteristics of the four groups which Alós et al. (2009) worked out, mirroring traits of segmentation of the Spanish labor market also in the union membership. The dataset, unfortunately, does not allow us to construct the groups as in Alós et al. (2009). However, we present proxies with the available data. The two peripheral groups are identified, first

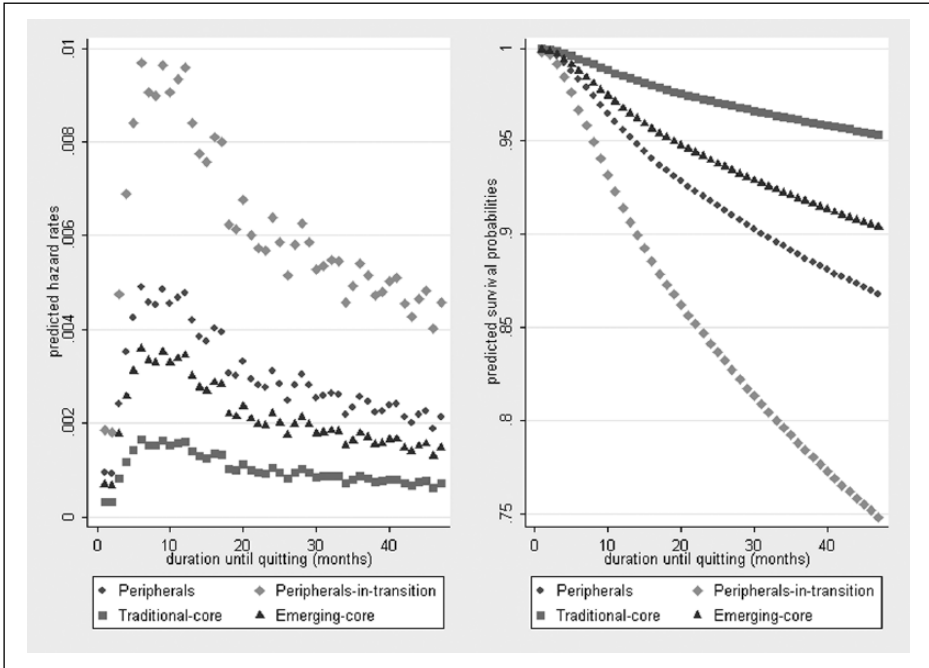


Figure 5. Cox regression predicted hazard rates (left) and survival curves (right). Predictions based on regression model *Joining since Jan. 2005* of Table 1.

by women, above age 30, working in the retail sector, as the *peripheral* group; and by those aged below 30, as the *peripherals-in-transition*. Regarding the central groups, one captures men between the ages 45 and 59, working in industry, as the *traditional-core*, and another accounts for workers aged 30–44 working in financial services or the public sector, as the *emerging-core*.

The predicted hazard rates (left) and survival curves (right) presented in Figure 5 are baseline hazard rates and survival probabilities adjusted for the membership categories commented above and using the results of the above Cox estimations.²⁰ Predictions by groups produce results which confirm previous research.²¹ The predicted hazard rates show, in general, increasing risks of leaving the union from joining until the 10th month of membership duration, which is the highest peak of leaving hazard. Following this, leaving hazards reduce over time, indicating that the longer the membership duration the more committed the membership. Differences, however, are noticeable across groups. We find that the peripheral groups are those with a higher hazard of leaving at any time, especially at shorter membership durations. The consequence is that peripheral groups leave more by the end of the observation period and present shorter average duration memberships compared with the central groups. In particular, the youth group (*peripherals-in-transition*) presents the highest hazard of leaving, with 10% having left in the first 12 months and approximately 25% having exited the union after five years. The *traditional-core* group has the lowest rate of disaffection (5% at the end of the observation window) and the

highest predicted survival probabilities for all prior duration intervals. The other two groups lie in between, with middle-aged women in retail (*peripherals*) more likely to leave and with lower membership durations than the *emerging-core*.

Discussion and conclusions

In this article we have proposed a further step in understanding membership dynamics by analyzing membership durations in the largest general union federation in Spain – *Comisiones Obreras* (CCOO). The results of the survival analysis show high and increasing union leaving intensities at short membership durations, leveling off after the first year of membership. Moreover, there is a dualization (or pluralization) of membership trajectories as different characteristics in the analysis are not uniformly distributed across membership durations. Confirming our expectations, workers' personal characteristics associated with insecure jobs and those working in non-unionized contexts are more likely to stay for a shorter time in the union and are more likely to leave at any given time. This is particularly the case of youth, foreigners, and workers in volatile sectors such as retail, construction, and those in small firms. In contrast, workers in sectors with a tradition of unionism, like industrial sectors, or where the influence of the union emerged more recently (mainly the public service sectors), and those in regional units where the union is particularly strong have memberships which appear to be longer and the probability of leaving is much lower. The pluralization of memberships is additionally confirmed by testing the typology of CCOO union members by Alós et al. (2009), where the extreme vulnerability of the membership of the youth (*peripherals-in-transition*) contrasts with the more stable memberships of traditional industrial workers (*traditional-core*).

The facts presented so far suggest that high membership turnover in CCOO is partly derived from *express-memberships* of short durations. These are mainly featured by the growing segment of peripheral workers in the membership, though they are still a minority. This may illustrate the case of workers who join for the express intention of solving an immediate problem. However, due to the vulnerability of the work situation and the invisibility of the union in the work environment, these workers might disaffect themselves from union membership. This can happen in a very short time if the employment situation does not improve or the union is not perceived to be close and active. To provide an illustration, workers under age 30 have the highest rates of unemployment and fixed-term contracts in Spain. This age group represents around 8% of the membership of CCOO in 2010, but they were around 70% of all new CCOO members in 2010 but 60% of exits during the same period.

The results of this research indicate that the union has paid more attention to the attraction than to the retention of *new* membership. Current efforts to retain potential leavers range from reducing union dues for the non-employed and offering individualized counseling, to contacting those with pending dues in order to retain them. However, results also indicate the need to focus on those workers with more precarious job situations, or non-unionized work environments, and to do so at an early stage of memberships. That is, the union should identify specific demands of the new membership as soon as possible following joining, in order to avoid ex-members stating that they left the

union because they felt the union never did anything for them (Jódar et al., 2011c). The union should make an initial contact with its members before a pending due appears or before the self-arrangement of individual counseling appointments by members. Early contacts are even more important in small work centers with no union representatives, where peripheral worker members are employed, boasting low levels of activism (Jódar et al., 2011b) and high levels of union attrition (Jódar et al., 2011c). The implantation of transversal union delegates to deal with matters of work centers without union representatives, but with union members, can make the union visible and more accessible to their members.

The union should also pay attention to the diversity among potential leavers. We do not claim (and results do not allow raising any causal claim) that only one mechanism leads to leaving and its timing across peripheral workers. Instead, multiple situations and demands might exist. For instance, *women* are a very heterogeneous group. Some have relatively higher education and work in public or financial services. These women are more likely to have lower costs of remaining in the union than other women, generally much younger or older, who work in less qualified services and have poor career prospects. Youth, striving for labor market insertion, are likely to change to a job that improves their employment conditions substantively instead of engaging in collective action (Antón, 2007; Germe, 2011). Immigrants as a group are more likely to lose employment by working in more volatile sectors (e.g., construction). However, immigrants are also more likely to enter the union if they were unionized in their country of origin and if they find a critical mass of co-ethnics (Jódar et al., 2011a). Indeed, socialization and contacts in the union (i.e., relatives, acquaintances, or work colleagues) may explain differences between peripheral workers who enter and remain the union and those who do not.

It is important to identify under what conditions (including social contacts) a large proportion of new membership remains over a year, and maybe over the length of their work contract.²² In an inclusive model of industrial relations like Spain, where workers do not need to join the union to enjoy bargaining outcomes, the employment situation is still an important, but not the only, catalyst of membership dynamics. We should draw attention to the efforts of the union on recruitment practices of new membership groups. The turn towards a social partnership model and a servicing organization has been responsible for the increase and consolidation of new membership groups, emphasizing the plurality of membership composition. This, however, is difficult to fit into a common union strategy. Secretariats and localized structures for youth, foreigners or women have been active in dealing with specific problems of these workers in order to ensure their recruitment and retention. However, the effects of these efforts may have been limited so far. It should be kept in mind that the overall capacity of union membership recruitment and retention in Spain can be limited in comparison to unions in other industrialized nations by a lack of clearly articulated bargaining structure, featuring a rather weak shop-floor, and the endemic under-organized civil society that undermines the establishment of long-term strategic coalitions (Hamman and Martinez Lucio, 2003). These tensions are also evidenced by some results of re-joining levels for CCOO in Catalonia, where only 10% of leavers between 2001 and 2010 were likely to re-join, indicating that those who leave the

union are unlikely to return. Although unrepresentative, these results point to the need for further examination of who re-joins and when.

In this article we have gone beyond the leave/stay dichotomy, and shown differences on durations of membership. Longer durations support organizational stability and consolidate union representation strategies, while short durations assimilate to uncertainties. The findings of this type of analysis shed some light on understanding membership dynamics and may be useful to invoke priorities of retention at specific moments of high incidence of attrition. Survival models are appealing methods for the analysis of membership duration as they account for endemic biases in the analyses of duration data with traditional methods (e.g., censored cases and non-normality of duration function). They also allow the assessment of independent variables that may change over time (e.g., job situation).

We are aware that our analyses suffer some flaws and interpretation might be delimited. Although our results are more reliable than those of traditional regression methods, analyses should be replicated for a longer period of observation. One should also be aware that we analyzed a period of economic crisis. This may particularly emphasize shorter duration for those more prone to leaving the union, those whom the economic crisis has affected the most (e.g., youth, foreigners). In the analysis, women presented longer membership durations than men because the effects of the economic crisis on lowering their joining and leaving rates have been delayed. Future analyses should also include a richer set of personal-related characteristics, such as values, perceptions, educational attainment, as well as (changing) job- or work context-specific characteristics relevant to test different theoretical arguments about membership trajectories and/or their pluralization. In addition, if an individual is likely to join and leave the union several times, then the whole working biography of an individual might form the object of analysis. For that we must extend the traditional setting of single memberships to multilevel methods that allow modeling repeated memberships of the same individual.

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Notes

1. In some countries the equally high rates of joining and leaving implied the maintenance, or even slight increases, of membership levels over time. This is also the case of Spain where union density remained stable at around 17–20% of the labour force since the mid-1990s (Beneyto, 2011).

2. Traditionally the union receives more financial resources from the state due to their representativeness measured by the outcomes from worker representatives' elections, than from membership dues.
3. This fact suggests that the relative strength of unions is measured more by elected representatives in work councils than by the membership size.
4. Both unions engage, usually in unison, in almost all collective bargaining in Spain.
5. It is worth noting that a dualization of employment conditions, separating secure from insecure positions, has been found to be very strong in the Spanish case (Banyuls et al., 2009), which boasts one of the largest rates of fixed-term employment contracts within western economies. Although the proportion of non-permanent contract workers has increases in terms of union membership, their levels of membership still do not mirror their levels in the labor market (Alós et al., 2011).
6. Swapping between the two main union federations (CCOO and UGT) is considered normal practice depending on which one is present in the firm or, when both are present, depending on which offers more attractive services.
7. Males of adult age, manufacturing work, large companies, and workers in unionized working environments are less likely to leave the union and more likely to report a high level of compromise with the union and to take positions of responsibility, like union delegates. These workers also feature among the much smaller fraction of those leaving the union for reasons of disagreement with the union organization, priorities on union strategies, union ideology, or alternatively through lay-off or early retirement (Alós et al., 2011).
8. Membership groups were generated by means of multivariate methods of information reduction. First, multiple correspondence analysis was applied to reduce personal, work, and firm-related information of a random sample of union members into a few consistent dimensions. These dimensions were used in a cluster analysis to calculate distances across sample cases that were ultimately used to classify individuals into groups, which were internally homogeneous and as different as possible from each other (see Alós et al., 2009).
9. In the empirical literature different names are used to refer to the same methodology, e.g., event-history analysis, duration analysis or transition-rate analysis.
10. Risk and risk set are traditional terminology in survival analysis that merely refer respectively to non-zero probability and population with non-zero probability of event-occurrence. The name derives from initial analyses done to measure death timings in epidemiological literature.
11. Employment seasonality is not relevant in our analysis as we account for union exits during almost the whole year of 2009.
12. Those who joined before January 2005 accounted for 54% of the initial population.
13. Cain et al. (2011) suggest that the lower the proportion of left-truncated cases the less the bias we introduce into the results.
14. Those who left the union before January 2009 were not observed.
15. Cox models are sensible to ties, that is to say that many cases share the same event time. We apply the Breslow method to eliminate this issue from our analyses (see Breslow, 1974).
16. Only the older age group (60–70) presents a non-proportional pattern, as we discuss later.
17. Jódar et al. (2011) find that the stabilization of the employment situation (e.g., permanent work contract) for immigrant workers is associated with lengthier memberships and with the acquisition of Spanish citizenship. Therefore, identifying immigrant populations by citizenship instead of country of birth yields biased portrayals of worse-off outcomes across migrants.
18. We found a significant association between the category of non-employment/no information on membership size and the worker self-register as a membership channel. This is because

- those who self-register do not always report the firm identification number, by which the firm's membership size is obtained.
19. Missing information on this variable is particularly important in some regions (e.g., 95% of responses are missing in Catalonia), as the collection of data is done by each regional unit.
 20. Unlike the crude survival curves calculated by the KM method, the predicted (or adjusted) survival curves for each group keep constant at the mean value of other coefficients in the model, so the results are interpreted as survival probabilities net of other confounding variables in the model.
 21. We estimated a model regarding interaction terms of the variables presented in Table 1 in order to assess statistically significant differences across membership profiles. The interaction terms, not presented here for space reasons, are statistically significant and confirm the differences on duration of membership and leaving rates across membership groups.
 22. Unpublished analysis of a survey of CCOO union leavers indicate that 34% of union leavers had disrupted their employment situation and/or changed job/occupation during their membership.

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