

« Union Membership in France: An Empirical Study »

Auteurs

Olivier Guillot, Magali Jaoul-Grammare, Isabelle Terraz

Document de Travail n° 2019 – 04

Février 2019

**Bureau d'Économie
Théorique et Appliquée
BETA**

www.beta-umr7522.fr

 @beta_economics

Contact :
jaoulgrammare@beta-cnrs.unistra.fr

Union Membership in France: An Empirical Study

Olivier Guillot*, Magali Jaoul-Grammare**, Isabelle Terraz**

Abstract: The purpose of this study is to examine the determinants of unionisation among French employees. Special emphasis is placed on the impact of contextual factors relating to the sector and workplace. The analysis, based on two different datasets, is carried out using two-level (individual and sector) logistic regression models. Beyond the effects of individual factors such as age, education or type of job contract, the results indicate that the probability of being a union member is significantly higher in sectors with high proportions of mature and large establishments, and whose volume of activity is increasing (or at least stable). The workplace context also clearly matters. The presence of unions in the establishment and a tense social climate are both factors that increase membership.

Key words: Trade Unions, Union Membership, Economic Sectors, Workplace Context, France.
JEL Classification: J5

* BETA (CNRS and University of Lorraine)
Email: Olivier.Guillot@univ-lorraine.fr

** BETA (CNRS and University of Strasbourg)
Email: jaoulgrammare@beta-cnrs.unistra.fr
terraz@unistra.fr

1. Introduction

We explore the role of individual and contextual factors in the union membership decision in France, a country with a peculiar institutional context. Indeed, in the field of industrial relations, this country stands out. Union density is very low but bargained agreements cover the large majority of workers. Membership is declining but in the latter years, French law has tended to compel firms to bargain. Moreover, unions are partners in professional bargaining, present in the management of Social security, or regularly consulted by the Government on wages or training. Hence the French paradox lies in the fact that, despite low membership, unions appear to have important prerogatives in the economic and social arena.

Only representative unions have the ability to bargain and sign collective agreements. A 2008 law changed the rules of representativeness and gave unions the ability to sign agreements on the basis of voting results in professional elections. Trade unions should therefore be particularly concerned about employees' support for their actions and union membership could be a way to secure their capacity to sign and implement collective agreements. Besides, union membership is also crucial to provide financial resources to labour organisations and to insure support in case of strike actions. Determinants of unionisation should therefore be an important issue in France as it is in a number of other countries.

A large literature can be found on union membership. A focus on Anglo-American countries (United States, United Kingdom, Canada and New Zealand) depicts empirical regularities on the determinants of unionisation. Factors such as age, education, working in the public sector or left political preference appear to be common determinants of unionisation. Multi-country studies also highlight these motives of membership as well as the role played by macroeconomic and institutional factors (Fazekas et al., 2011; Ebbinghaus et al., 2011; Jaoul-Grammare and Terraz, 2013). For instance, the incentive to become member is higher in Ghent countries where unions are involved in the management of unemployment insurance. Continental and Southern European countries remain much less studied. Some research papers focused on Germany (Beck and Fitzenberger, 2004; Fitzenberger et al., 2011) but less is known on other countries. As union densities greatly differ in Europe and as determinants of unionisation may depend on context and time, further investigation is required. The present paper

focuses on a country that has not been much studied in the literature. Beyond the role of the usual individual determinants of union membership, we investigate the effects of contextual factors on the worker's decision to join a union. Both sectoral and workplace factors are considered in this analysis.

Historically, unions emerged in large manufacturing companies in order to defend workers' rights. But even today, large discrepancies in unionisation rates can be found depending on economic sectors. This effect is largely acknowledged in the literature but seldom explained. It is largely imputed to History and sociological factors. Now, if History matters, other determinants might also play a role. Our first contribution therefore consists in taking into account sectoral determinants of unionisation and analysing the individual decision to be a union member while controlling for these effects. For this purpose, we use multilevel regression models.

The incentive to join a union may be less present in France than in other countries. It is illegal to discriminate between union members and non-members in this country. The coverage of union agreements hence applies to all employees in the firm whether unionised or not. Moreover, extension mechanisms are common. The Ministry of Labour extends agreements to other companies that were not involved in the negotiations beforehand. Now, it has been argued that in this case, workplace characteristics have a lower impact on the decision to unionise (Fazekas, 2011). Hence, a second contribution of this paper is to study the role of such factors within a particular institutional context. We investigate not only the impact of the presence of unions at the workplace but also the effect of the establishment's social climate on union membership.

The rest of the paper is organised as follows. Section 2 reviews the literature on the factors that increase the propensity to unionise in different industrialised countries. We then turn in Section 3 to the description of the data and the methodology. Section 4 presents and discusses the main findings. Finally, Section 5 concludes.

2. Motives of unionisation

A number of explanations have been provided to explain workers' unionisation. They are related to various fields of research such as economy, sociology, psychology and political science (Schnabel and Wagner, 2007; Godard, 2008). In the following, we will depict their main arguments.

Briefly, the economic approach of unionisation considers a demand-offer framework to explain the decision to become member. On the demand side, this decision stems from a cost-benefit analysis and potential union members act as utility-maximisers. Membership appears to be negatively correlated to the cost of becoming member and positively correlated to gains, whether monetary or non-monetary. Membership dues or psychic costs may lower the propensity to unionise. On the opposite, monetary incentives provided by wage premium increase the incentive to become a member. Non-pecuniary incentives such as better working conditions, strike pay, legal advice or dismissal protection (Goerke and Pannenberg, 2011) may also increase the demand for unionisation. On the supply side, it is often argued that the offer of union service is related to the establishments' size. The attitude of managers towards unions is also bound to favor or inhibit the implementation of unions in the workplace.

A puzzle raised by this approach is that non-union members may benefit from advantages bargained by unions. Why would then employees support the cost of membership if they can benefit from bargained agreements? This is known as the free-rider problem (Olson, 1965) and is especially an issue in France where discrimination between union and non-union members is not allowed. Moreover, extension procedures are common and this lowers the incentive to be involved in bargaining.

Social scientists offer a line of research to explain this puzzle and insist on the social dimension of membership (Booth, 1985; Naylor, 1990). Thus, it could be a way for workers to belong to a community and to conform to the rules of this community. As stated by Schnabel and Wager (2007:9) *“within a community there is a set of rules and customs that are obeyed by individuals because of the sanction of a loss of reputation if the custom should be disobeyed”*. Unionisation then appears to be

also linked to “*Social custom, reputation benefits, prestige, philosophy of life, and conformity*” (Beck and Fitzenberger, 2004:335).

Psychologists also offer different types of explanations. What they call the rational choice theory is close to the economic theory. Other theories as the frustration-aggression approach or the attribution theory relate the decision to become a union member to dissatisfaction with work and/or the desire to change one’s work environment. Unionisation is then related to work experience in the establishment and to the desire and/or conscience of a possible action to change it. Finally, the interactionist approach links the decision to unionise to the social environment of the worker and the social context in which he/she evolves.

All these theories emphasise diverse motives of membership. Obviously, motives to join may vary from one worker to another. Different reasons may also co-exist for the same individual. The empirical literature usually tests a mix of economic, sociological and psychological arguments. Variables taken into account broadly refer to four types of determinants. Besides personal characteristics, workplace-related factors and political or social factors are usually considered (Schnabel and Wagner, 2007). Institutional features of countries also appear to have a predominantly impact on membership (Fazekas, 2011; Ebbinghaus et al., 2011). As our analysis is carried out on a single country, we here focus on determinants of membership in a given institutional context.

Many articles on the empirical motives of membership go back to the 80s. They focus especially on the UK and the US¹. More recent papers extend the research field on the North –American context (Godard, 2008; Godard, 2011) and to other European countries. The latter are considered whether in multi-country studies or in single-country studies. We shall summarise the main results of the literature hereafter.

Personal characteristics

Age. Membership follows an inverted U-shaped pattern with age. This is significant for the UK, the US and Canada (Blanchflower, 2007; Blanden and Machin, 2003) as well as in multi-country studies (Checchi et al., 2010; Fazekas, 2011). This is partly related to a cohort effect (Beck and Fitzenberger,

2004; Schnabel and Wagner, 2007; Blanchflower, 2007). Nevertheless, taking into account this latter effect, age still appears to play a role. Explanations put forward usually suppose that young employees are more individualistic and/or less attached to their work environment and then more prone to change jobs if they are dissatisfied. However, recent studies showed that in New-Zealand, Australia, the UK and Canada (Haynes et al., 2005; Freeman and Diamond, 2003; Bearfield, 2003; Gomez et al., 2002), young employees have, on the contrary, a more positive view of unions than older people. Their lower unionisation rate could then be related to the type of jobs and sectors they work in and to a lesser opportunity to be in contact with union leaders. At the other extreme, less is known on older workers. In the US, employees are supposed to have lesser needs from union protection and/or to move to non-union places as they get older (Blanchflower, 2007).

Sex. In a number of countries, the rate of unionisation is lower for women than for men. But the discrepancy tends to shade away (Visser, 2006) and is even reversing in Nordic countries. Traditionally, the argument was that women had a lower attachment to the labour market and that men had historically greater involvement in unions. Men still have a higher propensity to unionise in Germany (Fitzenberger, 2011), Netherlands (Van Den Berg and Grift, 2001), the UK, the US and Canada (Blanchflower, 2007). No effect is found for Nordic countries and for France (Checchi et al., 2010).

Education. Using multi-country data, Fazekas (2011) and Ebbinghaus et al. (2011) show that low-educated and high-educated employees are less unionised than those with an intermediate level of education. An explanation could be that more educated workers usually have more individual bargaining power and are less involved in collective voice. For low-educated workers, membership dues may hinder involvement. But the effect of education is not significant for women (Checchi et al., 2010) and for employees of the public sector in the UK, the US and Canada (Blanchflower, 2007).

Other personal characteristics. The effect of marital status differs across countries. The effect of being married is positive for West Germany, negative for East Germany (Fitzenberger, 2011). It is found to be positive in Italy and Norway, but non-significant in other countries (Checchi et al., 2010). According to Beck and Fitzenberger (2004), in Germany, foreign-born employees are less likely to

join union than the natives. Schnabel and Wagner (2007), in their study of 18 European countries, also found a negative effect but only in Belgium, Denmark and Portugal. Finally, in the UK and the US, black people have a greater propensity to unionise (Blanchflower, 2007).

Workplace characteristics and type of employment

Characteristics of employment. Traditionally, unions have enabled blue-collar workers to organise. This still plays a role in Ireland and Germany (Schnabel, 2013; Goerke and Pannenberg, 2007). According to Hirsch and Addison (1986), it might be explained by the fact that blue-collar workers are easier to organise due to their homogeneous preferences and working conditions. More generally, atypical employment is associated with lower unionisation. Studies usually find that part-time workers and those with fixed-term contracts are less unionised. This could be due to a lesser attachment of these workers to their workplace and to the difficulty to organise them.

Sector. Working in the public sector increases membership compared to the private sector. Most studies stick to this rather crude distinction but large discrepancies in membership appear across economic sectors. Fitzenberger et al. (2011) introduce a more detailed analysis for Germany and find a large positive effect of working in the ‘Chemical Products’ industry or in the ‘Transport and Communication’ sectors. In contrast, being employed in the ‘Hotels and Restaurants’, ‘Financial Intermediation’ or ‘Other services’ sector is associated with a lower propensity to unionise. Pignoni (2016) also highlights large sectoral effects for France. Membership is far higher in the ‘Finance and Insurance’ and ‘Transport’ sectors than in the ‘Construction’ and ‘Trade’ sectors.

Presence of unions at the workplace. Bain and Elsheim (1976) underline that the decision to unionise should be considered according to two dimensions: propensity and opportunity. The desire to become a member is the propensity. The presence of a union at the workplace gives the opportunity for employees to become members. This is a strong determinant of unionisation (Schnabel, 2013; Ebbinghaus et al., 2011; Schnabel and Wagner, 2007; Bryson and Gomez, 2005; Blanden and Machin, 2003). According to Schnabel and Wagner (2007), three reasons might explain this effect. First, recruitment is made easier when a union is present at the workplace. Second, unionisation is often

considered as an experience good. It means that employees may be conducted to unionise by observing the actions of unions. Their presence in the establishment is therefore crucial. Third, peer pressure (social custom theory) is increased and leads to greater membership. In a multi-country study, Fazekas et al. (2011) show that this doubles the probability to become a member. They also highlight that this effect is contingent on the institutional context. In Ghent countries where unions administrate unemployment funds, the incentive to unionise is so strong that the presence of unions at the workplace plays a lesser role. In presence of extension mechanisms where the Ministry of Labour applies agreements to other companies which were not involved in the negotiation, it should also be of lesser importance.

Attitudes and social factors

Unionisation is also a way to defend values. Unions appeared in the 19th century as a way to defend workers' rights in a context of impoverishment of wage-earners. Today, political motives still play a role. Persons with left-wing views (Fazekas, 2011; Beck and Fitzenberger, 2004; Charlwood, 2002) and who think that inequalities are too strong are more prone to unionise (Checci et al., 2010). Besides, family is crucial in the transmission of social values. This is true for political values (Dalton, 1980; Jennings and Niemi, 1968) but also for unionisation. In the UK, the probability to be a member is increased when one's parent is already a member (Blanden and Machin, 2003). Finally, members of unions tend to be more involved in social life and have more social capital. They generally simultaneously belong to other associations (Ebbinghaus et al., 2011; Pignoni, 2017).

How workers perceive their work environment

According to the frustration-aggression theory, unionisation is related to dissatisfaction with work and to the desire to change one's work environment. Another theory, the dissonance theory, sees in the gap between expectations and perception of work the motive to unionise. Both theories lead to a higher unionisation of dissatisfied workers. This is also in line with the 'voice effect' (Freeman, 1978; Freeman and Medoff, 1984) according to which dissatisfied workers may unionise in order to express their grievances instead of moving to another job. Fazekas (2011) finds a positive but small effect of

dissatisfaction. The results of Charlwood (2002) on UK data show a significant effect for non-manual workers but not for manual workers. It should also be noted that endogeneity issues may appear, since unionisation is likely to affect the satisfaction of members. In the UK, this effect was rejected by Bryson et al. (2004; 2010) but the study of Haile et al. (2015) finds that union presence in the workplace lowers non-members' wellbeing.

Determinants of union membership in France

The rate of unionisation in France is one of the lowest of the OECD countries. The institutional context may give less incentives to unionise in this country than in others. We mentioned earlier the role of extension mechanisms and the impossibility to discriminate between union and non-union members. We should also add that the French government is known to be interventionist in the labour arena. In the comparative industrial relations literature, France is classified as a 'State centred model' (European Commission, 2009). Faced with a government which frequently resorts to legislation, representatives of employers and workers may then have a lesser role in the labour arena. Moreover, after the Second World War, a law declared some unions to be representative of workers, giving them the ability to sign collective agreements. Since 2008, this law has changed and labour unions have to collect a certain amount of votes in professional elections to be considered as representative. But during decades, French unions were less dependent on membership than in other countries.

Moreover, determinants of unionisation might be different in France than in other countries. European trade unions took different shapes in the 19th century and could be regrouped under three main models (Régis and Wolikow, 2002; Sagnes, 1995): the British model (the union labour model), the German model (the social democrat centralised model), and the French model (the direct action union). The first two types of unionism defended workers' living conditions rather than claiming a specific model of society. In that sense, these unions were considered as reformist. At that time, French unionism, by contrast, had a strong ideological dimension and stood in head of opposition to the Capitalist system. As unions' roots differ in France, determinants of unionisation might also appear to be peculiar.

To our knowledge, studies on the determinants of unionisation in France are scarce. Using data from the *Working Conditions Survey* of 2013, Pignoni (2016) finds results consistent with studies on other countries. The probability of unionisation is positively associated with factors such as age, being a man, establishment size, working in the public sector, and employment stability. A previous work based on the French part of the *European Social Survey* (2002/2003) depicts the same kind of determinants (Sandi, 2006). Women, young employees and those working in atypical employment have a lower probability to have ever been members of trade unions. These two studies also introduce sectoral variables in their determinants of membership. They underline that working in specific economic sectors increases the probability of union membership.

These studies tend to show that, despite the specific institutional context and the low density rate, the individual traits of unionisation are similar in France as in other industrialised countries. Our study goes further and deepens the analysis of union membership. We take into account a larger set of explanatory variables and introduce contextual factors such as the social climate or the presence of unions at the workplace. The latter factor, which appears as a major determinant of unionisation in the literature, was not taken into account in the previous French studies. Moreover, we carry out a multilevel analysis and consider the individual decision to join a union as embedded in a given sectoral environment.

Indeed, as already pointed out, strong discrepancies in unionisation rates appear across economic sectors. Bechter et al. (2012) stressed that these variations across sectors within a country are almost as large as the national differences between countries. To explain this, historical and sociological factors are often invoked. But these arguments could be further explored. Historically, unions developed in large manufacturing industries. A tradition of unionism may then survive in some establishments. It might also be that unions need time to settle and are more prone to appear in older firms. Moreover, since unions incur some costs to organise, unions are more bound to emerge in larger establishments (Bain and Elias, 1985; Booth, 1985; Schnabel and Wagner, 2007). Unions also tend to emerge where there are rents to extract. First underlined by the theoretical literature on unions (Booth, 1995, for a review), this has been confirmed by several empirical studies (Abowd and Lemieux, 1993; Menezes-

Filho and Van Reenen, 2003). Hence, structural aspects of sectors such as age and firms' size or rents might explain these discrepancies of density rates. We therefore take into account determinants of sectoral density rates and analyse the decision to be a trade union member in this framework.

3. Data and methodology

The SRCV and REPONSE surveys

Our empirical analysis is based on two datasets: the 2010 wave of the SRCV (*Statistiques sur les Ressources et les Conditions de Vie*)² survey and the REPONSE (*Relations professionnelles et négociations d'entreprises*)³ survey carried out in 2011. The SRCV survey is the French part of the *European Union Statistics on Income and Living Conditions* (EU-SILC), a household panel survey coordinated by EUROSTAT. It provides cross-sectional and longitudinal information on income, poverty and living conditions in the European countries. The REPONSE survey, provided by the Statistics department of the French Ministry of employment and labour (DARES), is a survey conducted every six years on social relations in the establishments of the non-agricultural private sector in France. It collects information on industrial relations at the workplace level, on labour conflicts, as well as data on firms' characteristics and structure.

Both surveys contain individual questionnaires including a question on union membership. In both cases, this question was phrased as follows: '*Are you a union member?*'. In the REPONSE survey, a distinction can, furthermore, be made among the non-members between those who have never been union members and those who are former members. The two surveys, which differ in their field of study (i.e. individuals / households [SRCV] vs employees / establishments [REPONSE]), allowed us to take account of a wide range of variables to explain the determinants of unionisation.

The questionnaire of the SRCV survey was asked to individuals aged 16 or over. It then covers all people in employment whatever the firm's size and offers detailed information on individual characteristics. From this survey, we were able to analyse the effects of personal factors and job characteristics such as night work and repetitive tasks. The REPONSE survey collects data on employees, managers and staff representatives of establishments. It links points of view of these actors

on industrial relations and provides information unavailable in the SRCV survey. In the present study, we exploited the employees' and the managers' questionnaires. The latter questionnaire allowed us to introduce in our analysis the opinion of managers on trade unions and on the social climate of the establishment. Furthermore, the information collected on establishments (including age and size) was used to characterise the structure of economic sectors and explain the discrepancies in density rates.

The REPOSE survey is restricted to firms of the private sector with more than ten workers. Moreover, due to sampling procedure, only employees working in the firm for more than one year responded to the questionnaire. Hence, there is an underestimation of precarious employment in this dataset. For comparability purposes, we restricted the SRCV sample to employees working in the private sector. Our two datasets were also restricted to individuals of working age (less than 65 years). Final samples contain respectively 6 143 (SRCV) and 11051 (REPOSE) employees.

Methodology

The workers' decision to join a trade union was analysed using two-level logistic regression models (see, for example, Snijders and Bosker, 2012), with estimations being carried out separately on the SRCV and REPOSE samples. Level-1 is the individual (*i*) and level-2 is the sector in which he/she works (*j*). The dependent variable is coded 1 if the worker is a union member and 0 otherwise.

The variables included as level-1 predictors can be divided into three categories: (i) the variables that are common to the SRCV and REPOSE surveys, (ii) those that are only available in the SRCV survey, and (iii) those that are specific to the REPOSE survey (Table 1).

The variables common to the two surveys are the following: age, sex, education level (highest degree obtained), occupation (executive / manual worker / others), type of job contract (permanent / temporary), working time (full-time / part-time), whether the worker is not satisfied with his/her job, and whether there is a trade union at the workplace.

The SRCV survey allowed us to include five additional variables: country of birth (France / other EU country / non-EU country), family status (single / couple), whether the worker is a member of at least

one association (excluding unions), and two variables relating to working conditions (night work, repetitiveness of tasks).

As regards the variables specific to the REPOSE survey, it should be noted that three of these variables are of subjective nature. The first one takes the value 1 if the worker believes that he/she will lose his/her job in the next 12 months (0 otherwise). This perceived risk was only considered for employees with permanent job contracts. The two other subjective variables come from the managers' questionnaire. The first of these two variables is coded 1 if the social climate of the establishment is perceived as bad by managers (0 otherwise). The second one relates to managers' perceptions of trade unions. In particular, they had to indicate whether they "fully agree", "somewhat agree", "somewhat disagree" or "fully disagree" with the following statement: "Trade unions hinder the functioning of the enterprise". We thus created a dummy variable coded 1 if the managers' view on unions is negative (i.e. "fully agree" / "somewhat agree" responses) rather than positive or neutral ("somewhat disagree" / "fully disagree"). From the REPOSE survey, we were also able to include a variable about working conditions (shift work).

At level-2, twenty-eight different economic sectors were considered (Appendix 1). We based our classification of sectors on the NACE3 level⁴ and excluded agriculture, administration, as well as two sectors without enough observations. Sectors with similar economic characteristics were then grouped together. In order to explain the inter-sector differences in trade union membership, a set of variables describing the structure of sectors were introduced as level-2 predictors. The criteria taken into account were the following: age of the establishment (percentage of establishments aged less than 10 years / 10-49 years / 50 years or more), size (percentage of establishments with at least 50 employees), activity evolution (percentage of enterprises/establishments whose volume of activity has increased / remained stable / decreased in the past 3 years), and business area (percentage of export-oriented enterprises). All the level-2 explanatory variables were taken from the managers' questionnaire of the REPOSE survey. This information was used in our estimations carried out on both the SRCV and the REPOSE samples.

We began by estimating an “empty” model (i.e. a model without explanatory variables). This model (called “Model I”) is of the form:

$$\log \left[\frac{Pr(Y_{ij} = 1)}{1 - Pr(Y_{ij} = 1)} \right] = \alpha_j$$

Where Y_{ij} represents the dependent variable (i.e. the union membership status of individual i in sector j), and α_j is an intercept specific to sector j , defined as:

$$\alpha_j = \alpha + u_j \quad u_j \rightarrow N(0, \tau_0)$$

The level-2 error term, u_j , is assumed to be normally distributed with mean 0 and variance τ_0 .

In a second and third step, we included successively the level-1 and level-2 covariates. Our models (“Model II” and “Model III”), in their reduced form, are written as:

$$\log \left[\frac{Pr(Y_{ij} = 1)}{1 - Pr(Y_{ij} = 1)} \right] = \alpha + X_{ij}\beta_1 + u_j$$

$$\log \left[\frac{Pr(Y_{ij} = 1)}{1 - Pr(Y_{ij} = 1)} \right] = \alpha + X_{ij}\beta_1 + Z_j\beta_2 + u_j$$

Where X_{ij} and Z_j denote, respectively, the vectors of level-1 and level-2 explanatory variables, and β_1 and β_2 are the corresponding vectors of parameters.

The estimations were performed using the Glimmix procedure of the SAS[®] statistical software.

Descriptive analysis

Density rates in our two datasets are respectively of 10.8% (REPONSE) and 7.8% (SRCV). Our SRCV rate of unionisation is low compared to the rate of 11% obtained for 2013 by Pignoni (2016, 2017) using two different data sources (the SRCV survey and the Working Conditions Survey). This is not surprising since we focus on the private sector. Indeed, in France as in other countries, unionisation is more prevalent among public-sector employees than among private-sector employees. The gap is particularly high in France, with density rates of 19.8% in the public service sector and 8.7% in the private sector (Pignoni, 2016).

A lower density rate is found in the SRCV sample than in the REPONSE sample. This comes from the fact that the SRCV survey covers all employees whatever the firm size whereas the REPONSE survey is restricted to firms with more than ten employees. As unionisation is less likely in small firms, there is a difference between our two density rates. Indeed, applying the survey field of REPONSE to the SRCV sample, we obtain a rate of unionisation of 10.2% for individuals (aged less than 65 years) employed in firms of the private sector with more than ten workers.

Table 1

Higher rates are found among men, manual workers and individuals with permanent job contracts. For example, in the REPONSE survey, 11.2% of individuals with permanent contracts are unionised, as against 3.9% of those with fixed-term contracts. We also note that union density is more likely among workers employed in establishments where unions are present. In the SRCV sample, 17.7% of individuals employed in these establishments are unionised, as against 2.5% of those employed in establishments without union. In the REPONSE data, the observed rates are 15.7% and 4.2% respectively. Union density is also higher among permanent contract employees who believe that they are at risk of losing their jobs (17.4% vs 10%). Individuals working in establishments where the social climate is perceived as bad are also more likely to be union members (16.4% vs 10%).

Density rates vary with individual characteristics but also across economic sectors (Figure 1). In many industrialised countries, employees working in public utilities and in the manufacturing sector are more likely to be unionised (Boeri and Van Ours, 2008). Here, we find higher-than-average rates in the 'Electricity, gas, steam and air conditioning supply' sector (23.5% according to the SRCV survey; 18.4% in the REPONSE sample), manufacturing (18.1% / 21.3% in 'Manufacture of motor vehicles, trailers and semi-trailers; Manufacture of other transport equipment') and transportation sectors (18.7% / 20.5% in 'Water transport; Air transport; Warehousing and support activities for transportation; Postal and courier activities'). This is not surprising since unions first developed in large manufacture industries and gained in importance during the thirty-year post-war boom (Pignoni, 2016). In the transport sector, there is also a long history of unionisation. On the contrary, union

membership is lower in the services. However, a notable exception is the financial sector. Indeed, many French banks are former public establishments with strong unions (Pignoni, 2016).

Figure 1

Most sectors are composed of establishments between 10 and 49 years old (Table 2). The highest proportion of young establishments (i.e. less than 10 years) can be found in two service sectors ('Accommodation and food service activities' and 'Information and communication') and in the 'Electricity, gas, steam and air conditioning supply' sector. The latter also has the greatest share of establishments with increasing activity (85.6%). This share is also high in 'Financial and insurance activities' (79.1%) and 'Real estate activities' (75%). On the opposite, three manufacturing sectors have a high part of establishments with decreasing activities: 'Textile and Wood' (49.8%), 'Metal products, Computer and Electronic goods' (47.8%) and 'Manufacture of wood, paper, printing and furniture' (45.7%). Concerning the business area, 24 of the 28 sectors considered are composed of at least two-thirds of local-oriented establishments. Only four manufacturing sectors have an export-oriented activity. Finally, sectors are mainly composed of establishments with less than 50 employees. The proportion of establishments with more than 50 employees is quite high in 'Residential care activities', 'Electricity, gas, steam and air conditioning supply' and two manufacturing sectors. On the opposite, the lowest share is found in the 'Specialised construction activities' sector (8.8%).

Table 2

4. Results and discussion

The results of the empty model indicate that the probability of union membership varies significantly across sectors (cf. Tables 3 and 4, Model I). However, the estimated level-2 variance (τ_0) is far lower in the REPONSE sample (0.188) than in the SRCV sample (0.433). This is not surprising, since the REPONSE survey is focused on establishments with at least ten workers, whereas the SRCV survey covers all employees. After including the level-1 explanatory variables, the level-2 variance remains significant, although substantially reduced (estimated values of 0.129 and 0.069; cf. Model II). This is no longer the case when the level-2 covariates are added to the regression model (cf. Model III).

Effects of level-1 covariates

Looking at the effects of the level-1 explanatory variables, we see that the probability of being a union member increases with age. This can be observed in both samples. The coefficient associated with the squared term is significant and negative, suggesting that the effect of age starts to decline at some point, but the predicted reversal point is far outside the 16-64 age range. This stands in contrast with other countries where the peak occurs at around age 40 (Blanchflower, 2007). Our study does not show a large sex difference in union membership. Based on the SRCV sample, we find, as did Pignoni (2016), that men are somewhat more likely than women to join unions. However, this effect is only significant at the 10% level (and only in Model III). In the regressions on the REPONSE sample, the sex dummy is not significant. As regards education, the results from the SRCV survey indicate that the probability of being a union member is significantly higher among employees with diplomas below the *Baccalauréat*, as well as, to a lesser extent, among those having the *Baccalauréat* but no tertiary degree, than among workers with no diploma. This is not confirmed by the analysis carried out on the REPONSE sample, where none of the education dummies appear significant at the 5% level.

Table 3 and Table 4

Other personal characteristics have significant effects on the probability of union membership. Thus, judging from the results on the SRCV sample, workers born in a non-EU country are less likely to belong to a trade union than their counterparts born in France. This result is in line with what found Beck and Fitzenberger (2004) for Germany. We also find that being a member of at least one association other than a trade union is positively correlated with union membership. This social capital effect was underlined by Ebbinghaus et al. (2011) and Pignoni (2017). Marital status, by contrast, does not seem to play a significant role. Indeed, there is no significant difference in the probability of union membership between single and married employees.

According to both sets of regressions, executives are less likely to be union members than other employees. The same holds true for workers with non-permanent job contracts. Working part-time is also associated with a lower probability of union membership, at least according to the results from the SRCV survey, an effect significant at the 10% level. The literature generally argues that employees

with supervisory activities might be closer to employers and have a lesser need from the “collective voice” of unions (Beck and Fitzenberger, 2004; Checchi et al., 2010; Pignoni, 2016). Workers with temporary contracts and part-time employees are often said to be more difficult to organise. Their attachment to the workplace might be lower.

Despite the strong institutional characteristics of the French bargaining system, the presence of a trade union at the workplace has a major impact on unionisation. It appears from the results that workers in establishments with on-site union representatives are far more likely to belong to a trade union than those in establishments without union presence, other things being equal. The estimated effect, although significant at the 1% level in both sets of regressions, is stronger in the SRCV sample (with an odds ratio of 6.2) than in the REPONSE sample (3.5).

Difficult working conditions seem to influence the decision to join unions. Indeed, our results indicate that working at night or having alternate working hours increases the probability of belonging to a trade union. Performing repetitive tasks, however, has no significant effect. Like previous studies (Fazekas, 2011; Charlwood, 2002), we also find that workers that are dissatisfied with their jobs are more likely to be union members.

Taking the opportunity of our linked employer-employee dataset, we introduced, in the regressions on the REPONSE data, the social climate of the establishment as evaluated by managers. According to these results, a bad social climate is associated with a higher probability of unionisation. Hence, beyond individual determinants of unionisation, we here show that the decision to become a union member is influenced by the workplace environment. The managers’ view on unions, by contrast, does not seem to play a significant role. Flanagan (2005), using US data, showed that unionisation is positively linked to management opposition. We do not find such an effect for France.

Another interesting result from the REPONSE survey is the positive link, among employees with permanent job contracts, between job loss risk and unionisation. The direction of causality remains however unclear. Indeed, the fear of losing their jobs may encourage workers to join a trade union, as a protection strategy or in order to increase their bargaining power in the layoff process. But being

unionised may also be associated with a higher risk of being fired, especially in establishments with bad social climate.

Effects of level-2 covariates

According to the results from the SRCV survey, three of the four level-2 (sector) factors considered have significant effects on the probability of unionisation. These are: age of the establishment, size, and evolution of activity. We find that workers are more likely to belong to a trade union in sectors with high proportions of mature establishments (i.e. having at least 10 years of existence), composed of at least 50 employees, and whose volume of activity has increased (or remained stable) in the past 3 years. By contrast, the percentage of export-oriented enterprises has no influence on unionisation. In the regression on the REPOSE data, the only level-2 covariate that appears significant at the 5% level is the proportion of establishments with at least 50 employees. As in the analysis carried out on the SRCV survey, this variable has a positive effect on the probability of union membership.

Judging from the SRCV results, unionisation is more likely in more mature establishments. This effect is partly related to History but could also reflect the time necessary for unions to settle in the workplace. Establishment size also appears to be a strong determinant of sectoral unionisation. This is in line with a large literature (e.g. Bain and Elias, 1985; Booth, 1985) which provides different explanations. Unions may incur some fixed costs to organise and then tend to emerge in larger establishments. Schnabel and Wagner (2007:22) also highlighted that union representation is more necessary in “*bureaucratic organisations where workers are likely to be treated impersonally and feel a greater need for representation and protection*”. We should also add that there are legal obligations to bargain in France which depend on the firms’ size⁵. This explains why unions are more likely to be present in large than in small establishments. Finally, union density rates are higher in economic sectors with an economic activity increasing or at least stable. This is in line with the theoretical literature which stresses that unions are more present when there are rents to extract.

Discussion

The usual individual determinants of unionisation are similar in France than in other countries. We find a significant influence of factors such as age, education level, occupation, type of job contract and working part-time. Concerning the effects of sex, marital status and birthplace, there is no consensus across countries and France does not appear to be atypical. Union members share some common traits between European countries, which suggests that, despite the institutional context, the individual incentives to unionise play a major role. This result may be in line with the economic theory of unionisation.

In France, unionisation is also related to difficult working conditions and dissatisfaction. Unionisation appears as a way to defend workers' rights and to change the working environment. Surprisingly, performing repetitive tasks does not influence trade union membership. Finally, unionisation is sometimes related to political motives (Fazekas, 2011; Beck and Fitzenberger, 2004; Charlwood, 2002), an effect which may be more relevant in France than in Anglo-Saxon countries due to the strong political roots of the French workers' movement. Unfortunately, we have no information on the political orientation of workers in our datasets. We find, however, that union members are more often members of other associations, which suggests a social capital effect. Unionisation may then be partly related to unobserved characteristics of workers.

Our estimation results show a strong positive link between union presence at the workplace and union membership. Now it should be emphasised that there may be unobserved factors that affect both the probability of working in a unionised firm and the probability of being a union member. To account for this potential endogeneity problem, we estimated a (recursive) bivariate Probit model (Table 5), with union presence being the dependent variable of the first equation, while being at the same time introduced as an explanatory variable in the second one (i.e. the union membership equation). In this model, rural-urban residential status was used as an "instrument" variable. Indeed, living in a large urban area is positively associated with the probability of working in a unionised firm but has no direct effect on union membership⁶. This analysis could only be performed on the SRCV data because the REPONSE survey does not provide information on the place of residence of employees. The results confirm that union presence at the workplace has a positive impact on the probability of being a union

member (Table 5). Furthermore, the estimated correlation between the error terms of the two equations is not statistically significant ($\sigma = -0.056$), suggesting that endogeneity does not really affect the previous estimates.

Table 5

The social climate of the establishment also plays a role in trade union membership. Ferraci and Guyot (2016) report several statistics on the quality of the French social dialogue. A first score taken from the *International Social Survey Program* (ISSP) of 2005 assesses the quality of relations between managers and employees. Employees were asked to evaluate the quality of these relations on a scale going from 1 (very bad) to 5 (very good). According to this indicator, France had the lowest position (3.5) and Switzerland the highest (4.3). In this case, however, the discrepancies between countries are moderate. A second score evaluates the managers' feeling on the social dialogue. Employers attending the World Economic Forum in Davos were asked to assess the cooperative nature of relations between employers and employees in their country. Once again, Switzerland scored highest. Among 144 countries, France stood at the 137th rank. A broader social environment index build on data from the *European Working Conditions Survey* of 2016 also shows a particular position for France (Eurofound, 2016). This index is computed for 34 countries and France and Netherlands have the lowest scores. We underlined earlier that the individual's dissatisfaction with work played a role. We here show that the broader context of the establishment as evaluated by managers also matters. We could question the endogeneity issue, since unionisation could create a bad social climate. But it is not sure that the decision of individuals to be trade union members could weigh on the social climate of the establishment.

Finally, we thought that the political roots of the French trade union movement could influence attitudes of managers and motives of unionisation. According to Mouriaux (1983), French employers have a long tradition of hostility with respect to unionisation. But, judging from our results, managers' perception of trade unions does not seem to influence the employees' decision of membership. Nevertheless, our data do not allow us to conclude on eventual actions of managers which could

hinder trade union actions. Indeed, a recent French study showed that union representatives suffer from discrimination (Breda, 2014).

5. Conclusion

Our study aimed at understanding the French individual determinants of unionisation and contributed to the literature by bringing several originalities. We considered two datasets to assess a wide range of factors, including establishment characteristics whose impact on unionisation had not yet been investigated in the French case. We also took into account sectoral determinants and analysed the individual decision to be a union member while controlling for these effects.

Union density rates differ across economic sectors. These differences seem to be explained by sectors' characteristics. Workers are more likely to be union members in sectors with high proportions of mature and large establishments, and whose volume of activity is increasing (or at least stable). Taking this into account, union membership appears to be related to usual individual characteristics such as age, education, and type of job contract. But our results also indicated significant effects of work dissatisfaction, painful working conditions and job-loss risk, suggesting that the decision to join a union is often driven in France by defensive motives. Moreover, the context of the establishment clearly matters. As in other countries, the presence of unions at the workplace is a strong determinant of membership. We also found that membership is more likely in companies with a tense social climate.

One question remains: Why is the density rate so low in France? An explanation could be that the attitude of managers may hinder unionisation. Our results, however, do not support this view. Another explanation could be that the determinants of unionisation are similar in France as in other countries but that the institutional context lowers the individual incentive to become a trade union member. Our results suggest that this conclusion might be valid. Nevertheless, to further explore this issue, an international dataset should be mobilised. This could be an avenue for future research.

Table 1

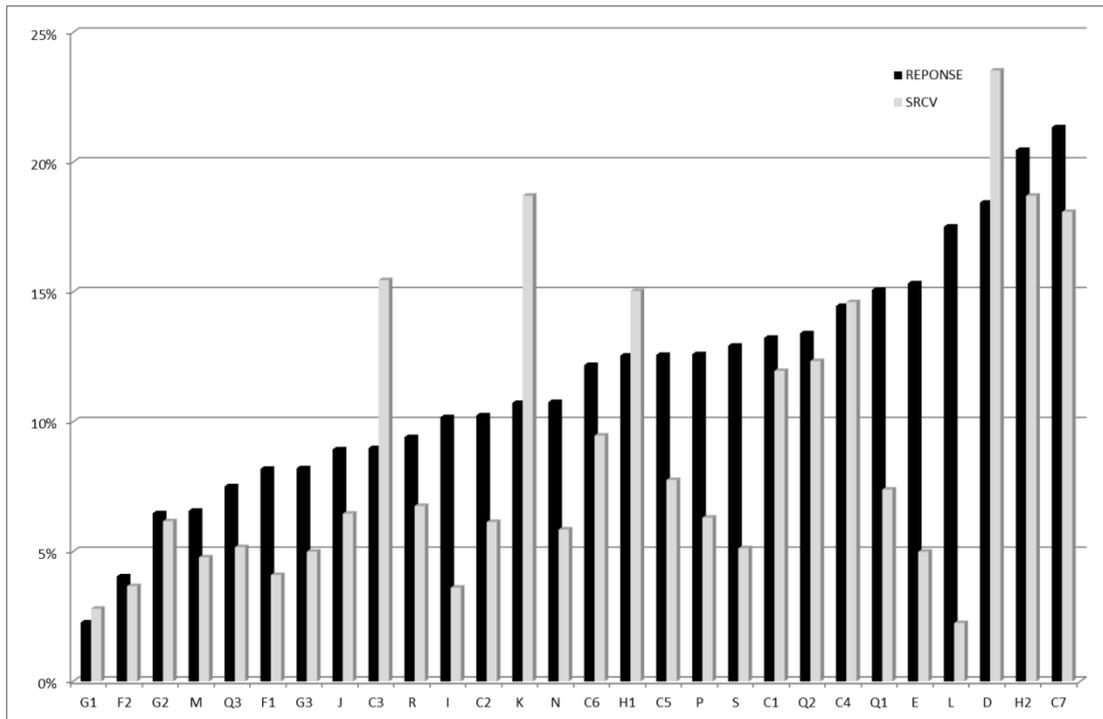
Means of explanatory variables

Level-1 explanatory variables		
<i>Variables common to the SRCV and REPONSE surveys</i>	SRCV	REPONSE
Age	39.2	40.6
Age-squared	1657.1	1759.2
Sex: Male	0.553	0.587
Education (highest degree)		
<i>Without diploma</i>	0.122	0.096
< Baccalauréat	0.570	0.534
Baccalauréat	0.156	0.163
7> Baccalauréat	0.152	0.207
Occupation		
Executive	0.148	0.209
Manual worker	0.292	0.319
<i>Others</i>	0.560	0.472
Non-permanent job contract	0.150	0.057
Part-time work	0.172	0.142
Work dissatisfaction	0.185	0.255
Union presence at the workplace	0.349	0.574
<i>Variables specific to the SRCV survey</i>		
Country of birth		
<i>France</i>	0.898	-
Other EU country	0.030	-
Non-EU country	0.072	-
Family status: Single	0.248	-
Night work		
No	0.588	-
Yes	0.116	-
Information missing	0.296	-
Repetitive tasks		
No	0.482	-
Yes	0.222	-
Information missing	0.296	-
Association membership (excluding unions)	0.279	-
<i>Variables specific to the REPONSE survey</i>		
Type of job contract / Job loss risk		
Permanent contract – Job loss risk: no	-	0.607
Permanent contract – Job loss risk: yes	-	0.113
Permanent contract – Job loss risk: missing	-	0.223
Shift work	-	0.087
Social climate in the establishment : Bad	-	0.130
Managers' view on unions		
<i>Positive or neutral</i>	-	0.673
Negative	-	0.294
Information missing	-	0.033
Level-2 explanatory variables		
% of establishments aged less than 10 years	14.2	
aged 10-49 years	64.5	
aged 50 years or more	21.3	
% of establishments with at least 50 employees	28.2	
% of enterprises/establishments whose volume of activity		
has increased in the past 3 years	41.2	
has remained stable in the past 3 years	33.9	
has decreased in the past 3 years	24.9	
% of export-oriented enterprises	21.1	
Number of observations		
Individuals	6,143	11,051
Sectors	28	28

Source: SRCV 2010, INSEE / REPONSE 2011, DARES (Authors' computations).

Figure 1

Unionisation rate by economic sector



Source: SRCV 2010, INSEE / REPOSE 2011, DARES (Authors' computations).

Table 2
Characteristics of the economic sectors

Sectors	% of employees		Rate of unionisation		% of establishments								
	SRCV	REPONSE	SRCV	REPONSE	aged			Increasing economic activity	With Decreasing economic activity	Stable economic activity	Export oriented	With ≥ 50 employees	
					< 10 years	10-49 years	≥ 50 years						
Manufacturing	C1	4.3	3.6	12.0	13.2	19.6	54.5	25.9	38.2	20.6	41.2	16.7	27.7
	C2	1.2	1.4	6.1	10.2	4.0	55.5	40.4	19.4	49.8	30.8	49.0	27.3
	C3	1.5	2.2	15.5	9.0	1.7	68.3	29.9	36.5	45.7	17.8	21.3	23.9
	C4	3.9	5.4	14.6	14.5	7.5	66.7	25.8	34.5	34.7	30.8	44.0	42.1
	C5	3.6	3.9	7.8	12.6	8.3	62.3	29.4	20.3	47.8	31.8	32.5	18.3
	C6	2.8	5.2	9.5	12.2	11.5	73.1	15.4	37.1	33.3	29.6	52.4	35.0
	C7	3.3	3.0	18.1	21.3	11.0	78.4	10.6	27.3	37.3	35.4	65.7	51.8
Mining, energy, water, waste management and decontamination	D	1.2	0.5	23.5	18.4	29.7	54.8	15.5	85.6	0.0	14.4	19.0	68.3
	E	1.0	0.9	5.0	15.3	20.0	70.9	9.1	35.1	24.7	40.2	19.6	30.7
Construction	F1	3.3	2.1	4.1	8.2	16.5	61.2	22.3	23.0	36.8	40.2	7.8	29.7
	F2	7.6	5.4	3.7	4.0	13.8	72.7	13.4	34.5	27.9	37.6	2.2	8.8
Wholesale and retail trade; repair of motor vehicles and motorcycles	G1	2.2	1.8	2.8	2.3	17.8	68.8	13.4	43.0	22.5	34.5	16.7	11.7
	G2	4.1	6.9	6.2	6.5	14.0	70.0	16.1	33.6	31.6	34.8	29.9	18.5
	G3	9.8	8.2	5.0	8.2	20.6	75.7	3.7	39.8	28.9	31.2	17.3	23.2

Transportation and storage	H1	4.2	5.2	15.0	12.5	14.3	65.3	20.4	37.7	26.5	35.8	13.4	26.4
	H2	2.3	3.4	18.7	20.5	14.0	54.6	31.5	40.7	24.1	35.2	41.9	31.2
Services	I	4.6	3.3	3.6	10.2	26.7	59.9	13.4	43.5	24.0	32.5	19.8	13.7
	J	4.9	2.9	6.5	8.9	27.5	64.7	7.8	50.0	16.4	33.6	29.9	28.3
	K	4.9	5.5	18.7	10.7	4.4	54.2	41.4	79.1	3.3	17.6	23.8	32.9
	L	1.5	1.3	2.3	17.5	12.8	53.5	33.7	75.0	14.2	10.7	0.2	28.3
	M	4.8	6.4	4.8	6.6	16.9	63.5	19.6	47.2	17.5	35.3	20.1	18.0
	N	3.2	5.4	5.9	10.8	14.5	81.4	4.0	48.5	26.0	25.4	15.7	33.1
Human health and social work activities	P	1.7	1.4	6.3	12.6	15.8	37.0	47.2	32.0	19.0	49.0	2.3	21.2
	Q1	4.2	3.5	7.4	15.1	8.9	65.5	25.6	41.5	12.3	46.3	0.1	35.4
	Q2	2.6	3.8	12.3	13.4	15.3	65.3	19.4	27.8	8.3	63.9	2.8	41.6
Other services	Q3	6.9	4.8	5.2	7.5	11.3	78.3	10.5	45.8	16.7	37.5	0.1	28.0
	R	1.5	0.9	6.8	9.4	6.6	61.6	31.8	39.3	24.0	36.7	14.7	15.2
	S	3.3	1.6	5.1	12.9	11.6	67.8	20.5	38.5	21.5	40.0	12.6	19.9
	All	100.0	100.0	7.8	10.8	15.1	66.4	18.5	40.0	24.8	35.3	18.0	23.8

Source: SRCV 2010, INSEE/ REPONSE 2011, DARES (Authors' computations).

Table 3

**Union membership in France:
estimated parameters of the multilevel regressions – SRCV survey**

	Model I	Model II	Model III
Fixed effects			
Intercept	-2.549 ***	-9.268 ***	-13.511 ***
Age	-	0.206 ***	0.208 ***
Age-squared	-	-0.002 ***	-0.002 ***
Sex: Male	-	0.163	0.224 *
Country of birth			
France	-	Ref.	Ref.
Other EU country	-	0.319	0.318
Non-EU country	-	-0.456 **	-0.433 *
Education (highest degree)			
Without diploma	-	Ref.	Ref.
< Baccalauréat	-	0.566 ***	0.548 ***
Baccalauréat	-	0.472 **	0.439 *
> Baccalauréat	-	0.458 *	0.414
Family status: Single	-	-0.023	-0.024
Occupation			
Executive	-	-0.407 **	-0.386 **
Manual worker	-	0.110	0.192
Others	-	Ref.	Ref.
Non-permanent job contract	-	-1.948 ***	-1.957 ***
Part-time work	-	-0.350 *	-0.350 *
Night work			
No	-	Ref.	Ref.
Yes	-	0.588 ***	0.577 ***
Information missing	-	-2.683 **	-2.734 **
Repetitive tasks			
No	-	Ref.	Ref.
Yes	-	0.093	0.107
Information missing	-	2.858 **	2.913 **
Work dissatisfaction	-	0.540 ***	0.553 ***
Association membership (excluding unions)	-	0.250 **	0.234 **
Union presence at the workplace	-	1.849 ***	1.802 ***
Level-2 (sector) variables			
% of establishments aged 10-49 years	-	-	0.023 *
% of establishments aged 50 years or more	-	-	0.024 **
% of establishments with at least 50 employees	-	-	0.015 **
% of enterprises/establishments whose volume of activity has increased in the past 3 years	-	-	0.023 ***
% of enterprises/establishments whose volume of activity has remained stable in the past 3 years	-	-	0.023 *
% of export-oriented enterprises	-	-	0.000
Random effects			
Level-2 intercept variance (τ_0)	0.423 ***	0.129 **	0.029
-2 Residual log pseudo-likelihood	34911.13	38737.12	38941.46
Number of observations	6,143	6,143	6,143

*** significant at 1% level; ** significant at 5% level; * significant at 10% level; Ref.: category of reference.

Source: SRCV 2010, INSEE (Authors' computations).

Table 4

**Union membership in France:
estimated parameters of the multilevel regressions – REPONSE survey**

	Model I	Model II	Model III
Fixed effects			
Intercept	-2.107 ***	-6.153 ***	-5.763 ***
Age	-	0.115 ***	0.112 ***
Age-squared	-	-0.001 ***	-0.001 ***
Sex: Male	-	0.092	0.096
Education (highest degree)			
Without diploma	-	Ref.	Ref.
< Baccalauréat	-	-0.089	-0.103
Baccalauréat	-	0.056	0.024
> Baccalauréat	-	-0.246 *	-0.278 *
Occupation			
Executive	-	-0.543 ***	-0.549 ***
Manual worker	-	0.139 *	0.144 *
Others	-	Ref.	Ref.
Type of job contract / Job loss risk			
Permanent contract – Job loss risk: no	-	Ref.	Ref.
Permanent contract – Job loss risk: yes	-	0.476 ***	0.488 ***
Permanent contract – Job loss risk: missing	-	-0.062	-0.056
Non-permanent contract	-	-0.725 ***	-0.742 ***
Part-time work	-	-0.112	-0.103
Shift work	-	0.311 ***	0.302 ***
Work dissatisfaction	-	0.390 ***	0.395 ***
Union presence at the workplace	-	1.251 ***	1.244 ***
Social climate in the establishment : Bad	-	0.233 ***	0.231 ***
Managers' view on unions			
Positive or neutral	-	Ref.	Ref.
Negative	-	-0.042	-0.025
Information missing	-	-0.457 *	-0.447 *
Level-2 (sector) variables			
% of establishments aged 10-49 years	-	-	-0.019 *
% of establishments aged 50 years or more	-	-	-0.008
% of establishments with at least 50 employees	-	-	0.013 **
% of enterprises/establishments whose volume of activity has increased in the past 3 years	-	-	0.004
% of enterprises/establishments whose volume of activity has remained stable in the past 3 years	-	-	0.015 *
% of export-oriented enterprises	-	-	0.002
Random effects			
Level-2 intercept variance (τ_0)	0.188 ***	0.064 **	0.020
-2 Residual log pseudo-likelihood	59072.65	61863.83	62003.87
Number of observations	11,051	11,051	11,051

*** significant at 1% level; ** significant at 5% level; * significant at 10% level; *Ref.*: category of reference.

Source: REPONSE 2011, DARES (Authors' computations).

Table 5

**Union presence at the workplace and union membership:
estimated parameters of the bivariate Probit model**

	Union presence at the workplace	Union membership
Intercept	-3.198 ***	-7.377 ***
Age	0.074 ***	0.102 ***
Age-squared	-0.001 ***	-0.001 ***
Sex: Male	0.011	0.140 **
Country of birth		
<i>France</i>	<i>Ref.</i>	<i>Ref.</i>
Other EU country	-0.266 **	0.155
Non-EU country	-0.099	-0.231 *
Education (highest degree)		
<i>Without diploma</i>	<i>Ref.</i>	<i>Ref.</i>
< Baccalauréat	0.233 ***	0.286 ***
Baccalauréat	0.277 ***	0.224 *
> Baccalauréat	0.295 ***	0.243 *
Family status: Single	-0.031	-0.010
Occupation		
Executive	0.014	-0.184 **
Manual worker	0.065	0.115
<i>Others</i>	<i>Ref.</i>	<i>Ref.</i>
Non-permanent job contract	-0.047	-0.841 ***
Part-time work	-0.249 ***	-0.154
Number of employees in the establishment		
< 50	<i>Ref.</i>	-
50 - 499	1.457 ***	-
≥ 500	1.945 ***	-
Information missing	0.668 ***	-
Night work		
<i>No</i>	<i>Ref.</i>	<i>Ref.</i>
Yes	0.308 ***	0.310 ***
Information missing	0.562	-1.558 **
Repetitive tasks		
<i>No</i>	<i>Ref.</i>	<i>Ref.</i>
Yes	0.048	0.048
Information missing	-0.543	1.644 **
Work dissatisfaction	-	0.291 ***
Association membership (excluding unions)	-	0.129 **
Union presence at the workplace	-	0.985 ***
Sector variables		
% of establishments aged 10-49 years	-	0.015 **
% of establishments aged 50 years or more	-	0.014 ***
% of establishments with at least 50 employees	-	0.007 **
% of enterprises/establishments whose volume of activity has increased in the past 3 years	-	0.014 ***
% of enterprises/establishments whose volume of activity has remained stable in the past 3 years	-	0.014 **
% of export-oriented enterprises	-	0.001
Rural/urban residential status		
<i>Rural area</i>	<i>Ref.</i>	-
Urban area: < 100,000 inhabitants	0.030	-
Urban area: 100,000 - 499,999 inhabitants	0.157 ***	-
Urban area: ≥ 500,000 inhabitants	0.209 ***	-
Σ		-0.056
Log likelihood		-4182.32
Number of observations		6,143

*** significant at 1% level; ** significant at 5% level; * significant at 10% level; *Ref.*: category of reference.

Source: SRCV 2010, INSEE (Authors' computations).

Bibliography

- Abowd, J. and Lemieux, T. (1993), "The effect of product market competition on collective bargaining agreements. The case of foreign competition in Canada", *Quarterly Journal of Economics*, 108: 983-1014.
- Bain, G. and Elias, P. (1985), "Trade union membership in Great Britain: An individual level analysis", *British Journal of Industrial Relations*, 23(1): 71-92.
- Bain, G. and Elsheikh, F. (1976), *Union growth and the business cycle: An econometric analysis*, Oxford: Blackwell.
- Bearfield, S. (2003), "Australian Employees' Attitudes Towards Unions", Working Paper no. 82, Australian Centre for Industrial Relations Research and Teaching, University of Sydney.
- Bechter, B. and Brandl, B. (2012), "Sectors or countries? Typologies and levels of analysis in comparative industrial relations", *European Journal of Industrial Relations*, 18(3): 185-202.
- Beck, M. and Fitzenberger, B. (2004), "Changes in union membership over time: a panel analysis for West Germany", *Labour*, 18(3): 329-362.
- Blanchflower, D. (2007), "International Patterns of Union Membership", *British Journal of Industrial Relations*, 45(1): 1-28.
- Blanden, J. and Machin, S. (2003), "Cross-generation correlations of union status for young people in Britain", *British Journal of Industrial Relations*, 41(3): 391-415.
- Boeri, T. and Van Ours, J. (2008), *The Economics of Imperfect Labor Markets*, Princeton University Press.
- Booth, A. (1985), "The Free Rider Problem and a Social Custom Model of Trade Union Membership", *Quarterly Journal of Economics*, 100(1): 253-261.
- Booth, A. (1995), *The economics of trade union*, Cambridge: Cambridge University Press.
- Breda, T. (2014), "Les délégués syndicaux sont-ils discriminés ?", *Revue économique*, 65: 841-880.
- Bryson, A., Cappellari, L. and Lucifora, C. (2004), "Does union membership really reduce job satisfaction?", *British Journal of Industrial Relations*, 42(3): 439-459.
- Bryson, A., Cappellari, L. and Lucifora, C. (2010), "Why So Unhappy? The Effects of Unionization on Job Satisfaction", *Oxford Bulletin of Economics and Statistics*, 72 (3): 357-380.
- Bryson, A. and Gomez, R. (2005), "Why have workers stopped joining unions? The rise in never-membership in Britain", *British Journal of Industrial Relations*, 43(1): 67-92.
- Charlwood, A. (2002), "Why Do Non-union Employees Want to Unionize? Evidence from Britain", *British Journal of Industrial Relations*, 40: 463-491.
- Checchi, D., Visser, J. and Van de Werfhorst, H. (2010), "Inequality and union membership: the influence of relative earnings and inequality attitudes", *British Journal of Industrial Relations*, 48(1): 84-108.
- Cregan, C. (1991), "Young people and trade union membership: a longitudinal analysis", *Applied Economics*, 23(9): 1511-1518.
- Dalton, R. (1980), "Reassessing parental socialization: indicator unreliability versus generational transfer", *American Political Science Review*, 74: 421-31.
- Ebbinghaus, B., Göbel, C. and Koos, S. (2011), "Social capital, 'Ghent' and workplace contexts matter: Comparing union membership in Europe", *European Journal of Industrial Relations*, 17(2): 107-124.
- Eurofound (2016), *Sixth European Working Conditions Survey - Overview report*, Luxembourg: Publications Office of the European Union.

- European Commission (2009), *Industrial Relations in Europe*, Directorate-General for Employment, Social Affairs and Inclusion, Luxembourg: Publications Office of the European Union.
- Fazekas, Z. (2011), "Institutional effects on the presence of trade unions at the workplace: moderation in a multilevel setting", *European Journal of European Relations*, 7(2): 53-69.
- Ferracci, M. and Guyot, F. (2016), *Dialogue social et performance économique*, Chaire de sécurisation des parcours professionnels.
- Flanagan, R.J. (2005), "Has management strangled U.S. unions?", *Journal of Labor Research*, 26(1): 33-63.
- Fitzenberger, B., Kohn, K. and Wang, Q. (2011), "The erosion of union membership in Germany: determinants, densities, decompositions", *Journal of Population Economics*, 24: 141-165.
- Freeman, R.B. (1978), "Job satisfaction as an economic variable", *American Economic Review*, 68: 135-141.
- Freeman, R. and Diamond, W. (2003), "Young workers and trade unions", in Gospel, H. and Wood, S. (eds.), *Representing Workers: Union Recognition and Membership in Britain*. London: Routledge, 29-50.
- Freeman, R.B. and Medoff, J.L. (1984), *What Do Unions Do?* New York: Basic Books.
- Godard, J. (2008), "Union formation", in Blyton, P., Heery, E., Bacon, N. and Fiorito, J. (eds), *Handbook of Industrial and Employment Relations*, London: Sage Publications, 375-405.
- Godard, J. (2011), "Uncertainty and the Correlates of Union Voting Propensity: An Organizing Perspective", *Industrial Relations*, 50(3): 472-496.
- Goerke, L. and Pannenberg, M. (2007), "Trade Union Membership and Works Councils in West Germany", *Industrielle Beziehungen*, 14: 154-175.
- Goerke, L. and Pannenberg, M. (2011), "Trade union membership and dismissals", *Labour Economics*, 18: 810-821.
- Gomez, R., Gunderson, M. and Meltz, N. (2002), "Comparing youth and adult desire for unionization in Canada", *British Journal of Industrial Relations*, 40: 521-42.
- Green, F. (1990), "Trade union availability and trade union membership in Britain", *The Manchester School*, 58(4): 378-394.
- Haile, G., Bryson, A. and White, M. (2015), "Spillover effects of non-unionization on non-members wellbeing", *Labour Economics*, 35: 108-122.
- Haynes, P., Vowles, J. and Boxall, P. (2005), "Explaining the younger-older worker union density gap: evidence from New-Zealand", *British Journal of Industrial Relations*, 43(1): 93-116.
- Hirsch, B. and Addison, J. (1986), *The economic analysis of Unions: New Approaches and Evidence*, Boston: Allen and Unwin.
- Jaoul-Grammare, M. and Terraz, I. (2013), "A Causality Analysis of Economic Growth and Union Density in European Countries", *Labour*, 27(4): 421-442.
- Jennings, N. K. and Niemi, R. (1968), "The transmission of political values from parent to child", *American Political Science Review*, 68: 169-84.
- Menezes-Filho, N. and Van Reenen, J. (2003), "Unions and Innovation: A Survey of the Theory and Empirical Evidence", in Addison, J. and Schnabel, C. (eds.), *International Handbook of Trade Unions*, Cheltenham, UK: Edward Elgar, 293-334.
- Naylor, R. (1990), "A Social Custom Model of Collective Action", *European Journal of Political Economy*, 6(2): 201-216.
- Olson, M. (1965), *The Logic of Collective Action*, Cambridge, MA: Harvard University Press.

- Payne, J. (1989), "Trade union membership and activism among young people in Great Britain", *British Journal of Industrial Relations*, 27(1): 111-132.
- Pignoni, M.T. (2016), "La syndicalisation en France", *Dares analyses*, 25.
- Pignoni, M.T. (2017), "De l'adhérent au responsable syndical : Quelles évolutions dans l'engagement des salariés syndiqués ?", *Dares analyses*, 15.
- Régin, T. and Wolikow, S. (2002), *Les Syndicalismes en Europe: à l'épreuve de l'histoire*, Institut CGT d'histoire Sociale, Paris: éditions Syllepse.
- Sagnes, J. (1995), *Histoire du syndicalisme dans le monde. Des origines à nos jours*, Toulouse: Privat.
- Sandi, M. (2006), "Déterminants de la syndicalisation syndicale en France", *Revue multidisciplinaire sur l'emploi, le syndicalisme et le travail*, 2(1): 72-93.
- Schnabel, C. and Wagner, J. (2007), "Union density and determinants of union membership in 18 EU countries: evidence from microdata, 2002/2003", *Industrial Relations Journal*, 38(1): 5-32.
- Schnabel, C. (2013), "Union membership and density: Some (not so) stylized facts and challenges", *European Journal of Industrial Relations*, 19(3): 255-272.
- Snijders, T.A.B. and Bosker, R.J. (2012), *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling* (2nd Edition), London: Sage Publications.
- Stewart, M. B. (1987), "Collective bargaining arrangements, closed shops and relative pay", *The Economic Journal*, 97(385):140-156.
- Visser, J. (2006), "Union membership statistics in 24 countries", *Monthly Labor Review*, January: 38-49.
- Van Den Berg, A. and Grift, M. (2001), "Determinants of trade union membership 1979-1995", *Applied Economics*, 33: 1233-1242.

Appendix 1. Economic Business Sectors (REV.2, 2008)

Our sectors	Statistical Classification of Economic Activities in the European Community	Name
C1	10, 11	Manufacture of food products and beverages
C2	12,13,14,15,32	Manufacture of tobacco products, textiles, wearing apparel, leather and related products, other manufacturing
C3	16, 17, 18, 31	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials ; Manufacture of paper and paper products ; Printing and reproduction of recorded media ; Manufacture of furniture
C4	19, 20, 21, 22, 23	Manufacture of coke and refined petroleum products ; Manufacture of chemicals and chemical products ; Manufacture of basic pharmaceutical products and pharmaceutical preparations ; Manufacture of rubber and plastic products ; Manufacture of other non-metallic mineral products
C5	24, 25	Manufacture of basic metals ; Manufacture of fabricated metal products, except machinery and equipment
C6	26, 27, 28, 33	Manufacture of computer, electronic and optical products ; Manufacture of electrical equipment ; Manufacture of machinery and equipment n.e.c. ; Repair and installation of machinery and equipment
C7	29, 30	Manufacture of motor vehicles, trailers and semi-trailers ; Manufacture of other transport equipment
D	35	Electricity, gas, steam and air conditioning supply
E	36, 37, 38, 39	Water Supply; Sewerage, Waste Management And Remediation Activities
F1	41, 42	Construction of buildings ; Civil engineering
F2	43	Specialised construction activities
G1	45	Wholesale and retail trade and repair of motor vehicles and motorcycles
G2	46	Wholesale trade, except of motor vehicles and motorcycles
G3	47	Retail trade, except of motor vehicles and motorcycles
H1	49	Land transport and transport via pipelines
H2	50, 51, 52, 53	Water transport ; Air transport ; Warehousing and support activities for transportation ; Postal and courier activities
I	55, 56	Accommodation and food service activities
J	58, 59, 60, 61, 62, 63	Information and communication
K	64, 65, 66	Financial and insurance activities
L	68	Real estate activities
M	69, 70, 71,72, 73,74,75	Professional, scientific and technical activities
N	77,78,79,80,81,82	Administrative and support service activities
P	85	Education
Q1	86	Human health activities
Q2	87	Residential care activities
Q3	88	Social work activities without accommodation
R	90, 91, 92, 93	Arts, entertainment and recreation
S	94,95,96	Other service activities

¹ See for instance: Bain and Elias (1985), Booth (1985), Stewart (1987), Payne (1989), Green (1990), Cregan (1991).

² Statistics on resources and life conditions.

³ Professional relationships and companies' bargaining.

⁴ NACE, Rev. 2, 2008 – 88 economic sectors.

⁵ For instance, professional elections are mandatory in establishments with 11 or more employees. For those with more than 50 employees, a work council has to be elected. Establishments with more than 200 employees also have to bargain on specific subjects.

⁶ The number of employees in the establishment is another variable that was only included in the equation explaining union presence at the workplace. The reason is that establishment size and union presence are highly correlated variables that could not be simultaneously introduced in the union membership equation. Nonetheless, the impact of establishment size on the probability of union membership was at least partially controlled for since we added the sectoral variables (i.e. our level-2 covariates in the multilevel regressions) to this equation, which thus includes the proportion of establishments of at least 50 employees.