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Which side are you on? A historical perspective on union membership composition in four European countries

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Which side are you on?

A historical perspective on union membership composition in four European countries

Cyprien Batut, Ulysse Lojkine, Paolo Santini *

September 2021

Abstract

In this paper, we look at the long term evolution of the composition of union membership in the four largest European countries: France, West Germany, Italy, and the United Kingdom. Using unexploited micro data coming from post electoral, labor, and household surveys, we first revisit commonly accepted unionization levels from the past 60 years. We find that, for France and Italy, union density was at time under- and over- estimated respectively. Second, we present long run evidence on the evolution of the composition of unions in terms of the socio-economic characteristics (occupation, length of education, public or private sector, gender) of their members. Two types of unionisation emerge from this analysis. In France and Italy, the composition of unions has been primarily determined by structural changes in the composition of the workforce with no notable changes in the selection of the different groups into unions when aggregate density varied. In the UK and West Germany, instead, selection into unions has changed dramatically: Blue collars and less educated worker were over-represented in the '60s, but this has declined over time. We argue that these two types of unionization are related to the institutional characteristics of each country and show that the evolution of selection into union is linked to the public-sectorization of unions: as union density fall, the share of public workers in unions increases.

JEL Codes: J21; J51; N30

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Which side are you on boys?
Which side are you on?
My dady was a miner,
And I'm a miner's son.

Florence Reece, 1931

1 Introduction

In developed countries, unions have been a key component of the social equilibrium of the postwar decades. They are widely recognized as having offered working classes a voice in economic matters, raising their living standards and contributing to the reduction of inequality (see e.g. [Farber et al. \(2021\)](#) on the US). Conversely, the fall of union size and influence since the 1980s in most developed countries has often been given a prime role in the transition away from the Fordist growth regime

The importance of unions has led to a rich empirical economic literature that covers the main aspects of these two macro-periods: on one hand, the literature has concentrated on the estimation of the union wage premium (see for instance [Card \(1996\)](#)), on the other hand, it has investigated the causes of the fall of aggregate union density (see for instance [Schnabel \(2013\)](#) for a summary). In this paper, we ask a third, although related, question: what is the socioeconomic composition of union membership across time and space? We investigate this by looking at a rich set of characteristics including gender, occupation (blue vs white collar), education and sector of employment (public vs private). We believe this is an important question to better understand the union movement, its role in society, and its differences across the different countries and institutional settings. In other words, to open up the black box of unionization.

To do so, as explained in section 2, we collect unexploited micro data coming from a variety of sources, ranging from post-electoral surveys to labor force surveys, for four different European countries (France, West Germany, Italy and the UK). Our aim is to combine the largest possible amount of information to retrieve a consistent picture of unionisation over the past 60 years. Some work, using micro data, had already been done in this direction. To take some examples, [Amossé \(2004\)](#) or [Pignoni \(2016\)](#) have investigated the composition of union membership in France, [Windolf](#)

and Haas (1989), and Greef (2014) in (West) Germany, Checchi et al. (2010) in Italy, Machin (1997), Addison and Siebert (2002) and Gosling and Lemieux (2004) in the UK. There have also been some comparative studies such as Schnabel and Wagner (2005), Blanchflower (2006), Checchi et al. (2010) and OECD (2019). That literature has, however, two main limitations that we aim to overcome. The first is chronological: these studies almost never include years before the 1980s, and as a result do not offer a robust picture of union composition before de-unionization, except in Germany. The second is that these studies are scattered. They most often rely on one data source each, with the OECD (2019) report being the only one, to our knowledge, to present a cross-country time-series, but only for recent years. We substantially extend the period covered using a novel source of micro data, namely post-electoral and other opinion surveys, in our analysis. We then present a consistent cross country comparison over the long run.

In this respect, our work is close to Piketty (2018), who uses post electoral surveys to study the socioeconomic characteristics of voters after WW2, and Farber et al. (2021), who use Gallup opinion surveys to study the long run evolution of American labor unions and its impact on inequality. We add to these papers the study of trade unions in four European countries focusing on various socio-economic characteristics previously unexploited.

In section 3, before getting to the question of union composition, which is the core of our paper, we contribute to the existing literature by revisiting union density estimates for two countries. In some sub-periods in our analysis, the commonly used union density time-series for France and Italy were based on more or less accurate estimates, extrapolated from self-declarations from unions themselves. We bring new quantitative evidence based on micro-data to assess the real size of union membership in the different countries and we find that density had been underestimated in France in the 1970s and overestimated in Italy since the 2000s.

In section 4, we turn to the analysis of union membership composition across time and countries. We find that in all countries union members have become more female, white collar, and more educated in the past 60 years, in line with the changing structure of the labor force. Differences exist, though, in the selection of various groups into union membership, which measures how being

a member of a given group affects the probability of belonging to a union. In particular, in West Germany and in the UK, we find that the selection of male, blue collar and less educated workers has declined. For instance, once three times more likely to be a union member, a male worker in the UK is now less likely to belong to a union than his female colleagues. We do not find the same pattern of selection in France and Italy in which the variables just mentioned affect union membership to a much lower degree.

These results are synthesized in section 5, where we also propose some elements of interpretation. The patterns in selection allows us to distinguish between two unionization families: unions with blue collar origins (the UK, West Germany, and the US), and universal unions (Italy and France). We argue that the differences between the two families can be attributed to the different institutional settings in the two blocks of countries. The main exception to the opposition between the two families is the selection into the public sector: in all countries we find that public sector workers are positively selected into unions, and that this selection rises during periods of deunionization. We interpret this regularity as evidence that public sector employees are more shielded from adverse labor market pressures.

To sum up, the paper is composed as follows. Section 2 describes our different sources on union membership in Europe. Section 3 presents how we revisit commonly accepted union density time series thanks to these sources. Section 4 analyses the change in union membership composition in the last 60 years trying to differentiate between structural determinants and what is specific to unions. Finally, in section 5, we try to take stock of these new stylized facts and in section 6, we conclude.

2 Sources

We use microdata from three different sources. The first one is labor and household surveys conducted by public institutions. They provide high quality data with a detailed information on the respondents : the *Enquête permanente sur les conditions de vie des ménages* (EPCV) since

1996 and the *Statistiques sur les ressources et les conditions de vie* (SRCV) since 2008 in France, the General Household Survey (GHS) in 1983 and since 1989 the Labour Force Survey (LFS) since 1989 in the UK, the *Allgemeine Bevölkerungsumfrage der Sozialwissenschaften* (Allbus) since 1980 and the *German SOcioEconomicPanel* (GSOEP) since 1985 in West Germany. We can also include in this category the german Politbarometer survey since 1977, which is an opinion survey but with a large number of observations. These data sources are very useful, and have been used in a number of studies on unionization, such as [Amossé \(2004\)](#) and [Pignoni \(2016\)](#) in France ; [Schnabel and Wagner \(2003\)](#), [Biebeler and Lesch \(2006\)](#) and [Anders et al. \(2015\)](#) in Germany¹ ; [Addison and Siebert \(2002\)](#) and [Gosling and Lemieux \(2004\)](#) in the UK².

However, the main limitation of these data is their coverage in terms of time and space. We do not have any such survey with a question on unions in Italy; in France, the question on unions in household surveys appears in the 1990s, when deunionization was already over; in the UK, the first data point from the GHS is in 1983, during deunionization. Therefore we turn to another type of data source, opinion surveys, and in particular post-electoral surveys. The quality of the data is not as good, but these or similar surveys have been used for similar historical socioeconomic research, in particular by [Piketty \(2018\)](#) and other works on political cleavages. This new source of data allows us to extend the scope of our investigation in space, by including Italy, and in time, allowing us to have a picture of union membership composition before deunionization, which was not the case in the existing literature so far except in West Germany, where Allbus starts early and deunionization starts late. Except in France, we can even go back to the 1960s, which allows us to follow union membership composition during the aggregate rise in density of the 1970s. Such electoral surveys have, to the best of our knowledge, never been used to study deunionization, with [Windolf and Haas \(1989\)](#) being the exception, on West German unions between 1976 and 1984.

The third category of data which we use is cross-country surveys: the 1960 Civic culture survey, Eurobarometer surveys starting in 1970, the European Value Study starting in 1981, the

¹Another west german household survey which we could have used is the German socio-economic panel starting in 1984. It has been used by [Haggenev et al. \(1998\)](#), [Fitzenberger and Beck \(2003\)](#) and [Fitzenberger et al. \(2006\)](#).

²Another potential source is the British Social Attitudes Survey (starting in 1983), which has been used by [Blanchflower and Freeman \(1992\)](#).

Table 1: Sources overview

Country	Earliest survey	Number of surveys	Total N
France	1970 (1996*)	65	105,222
West Germany	1953 (1976)	172	387,077
Italy	1960 (1985)	43	24,661
UK	1960 (1983)	67	1,162,371

(*) We indicate first the date of the first survey we use, and in brackets the earliest survey used so far in the literature on unions to the best of our knowledge. — The number of surveys is the number of survey*years.

International Social Survey Program (ISSP) starting in 1985, and the European Social Survey (ESS) starting in 2001. They are useful for providing data points in the 1960s, the 1970s and in Italy. They also allow us to check if the definitions of our variables of interest are consistent across countries. To our knowledge, these cross-country surveys have also rarely been used to study deunionization, with the exception of ISSP used by [Blanchflower and Bryson \(2003\)](#) and [Cecchi et al. \(2010\)](#).

These sources allow us to present a consistent, long term, cross country overview of union membership density and composition in Europe. However, they have intrinsic limits. The response rate to surveys may be different among groups (see [Gaxie \(1990\)](#)). In particular, persons more interested in politics might be both more inclined to answer surveys and to join unions. In the same vein, a positive answer "I am a union member" is subjective, and may have a blurrier meaning than administrative data based on the payment of dues: for example, a worker who was a union member in his previous job may still declare himself a union member, although he has not yet joined a union in his new job (see [Appendix B](#) for a discussion on the relation of being a union member and paying dues). Finally, and relatedly, the heterogeneity of our sources may pose consistency problems. In particular, the questions on union membership and on educational attainment are not always the same across surveys.

We hope to partially answer these concerns in two ways. First, we aggregate all our results in the following sections in five-year bins, to average away survey-specific errors. The information on which surveys are included in which five-year-bin is presented in [Appendix H](#). More detailed information on the formulation of the questions, the weighting and links to the documentation are

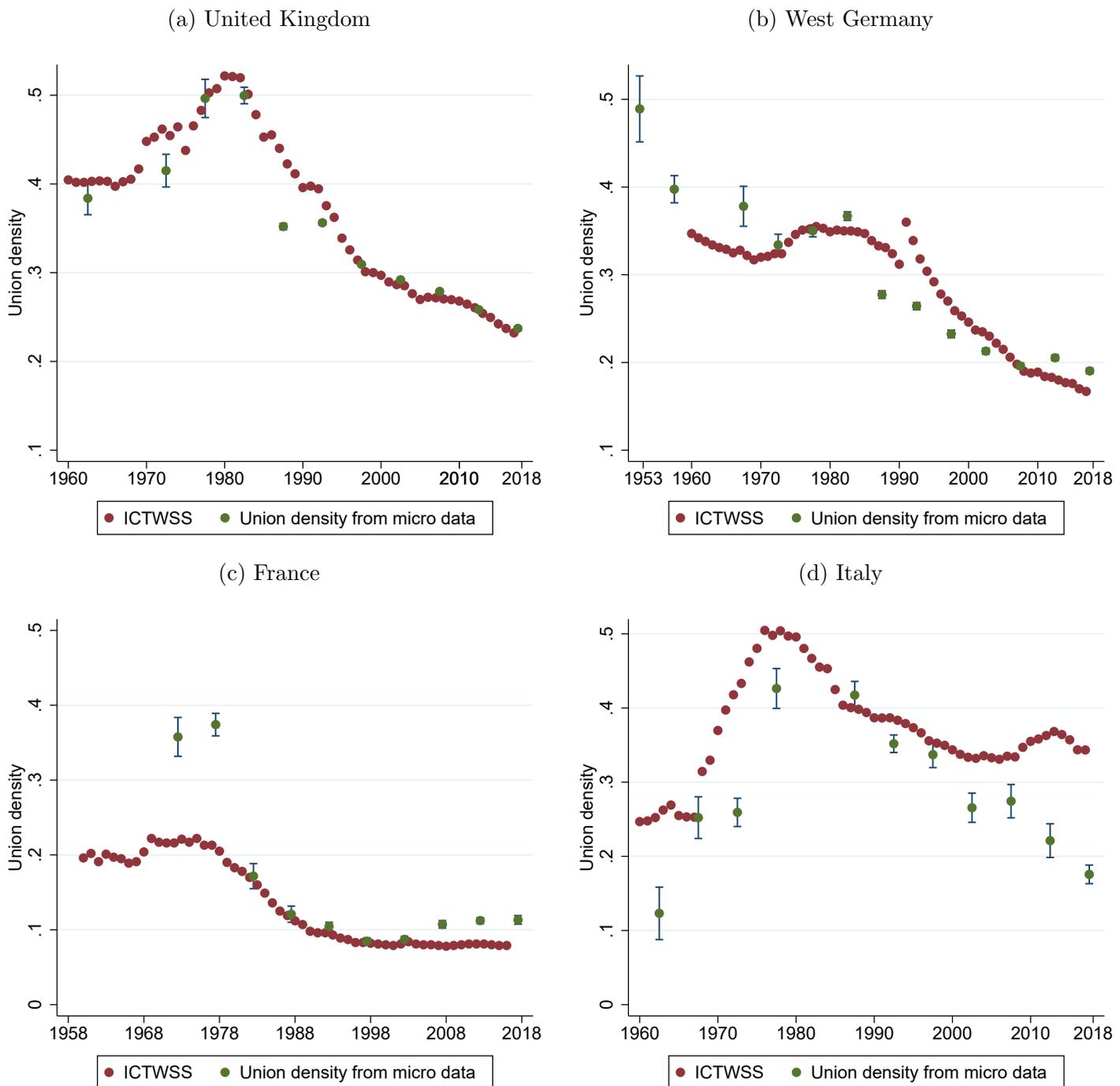
available for most surveys in an online documentation³.

Second, we devote section 3 to the estimation of aggregate union density levels from our micro-data and their comparison with administrative data released by unions themselves and commonly used as a reference. As we will see, for most countries and periods, but with notable exceptions, the series are very close, showing that there is no systematic problem with surveys.

³https://www.dropbox.com/sh/ech76fiof6yrd8h/AAByeX3_3rTEui7KWwTNmQexa?dl=0

3 The rise and fall of unions

Figure 1: Union density



Note: The figure presents the evolution of union density as measured in our different micro-data sources by periods of 5 years for our four countries of interest and compare them with the time series from the ICTWSS dataset.

In this section, we try to revisit commonly accepted time series of union density in Europe. To this end, we compare our data with the ICTWSS data, which are based on declarations from the unions themselves for early years. In appendix D, we also look at the aging of union members parallel to de-unionization.

3.1 France

According to our data, union density in France during the 1970s was between 30 and 40 %, which is significantly higher than the only existing estimates so far, which were based on financial data from the major unions (Bevort (1995), Labbé (1995), Labbe (1996), Andolfatto and Labbé (2007)). As the only available estimates, they were widely accepted and quoted (Amossé (2004), Wolff (2008) and Pignoni (2016)), and are used in the ICTWSS database used by the OECD (Ebbinghaus and Visser (2000):254, cited by Visser (2021):34). As we explain in Appendix B, we believe that Bevort and Labbé overestimate the average frequency at which union members paid their dues and that this leads them to underestimate union density.

If we consider our new estimate as more reliable, this has two main consequences. First, union density in France was historically not so low as is commonly admitted. A density of more than 30 % in the 1970s is comparable to West Germany at the same period, or to the US during the heydays of trade unions in the 1950s. This shows that the extension of the coverage of union agreements to all employees, which in France predates deunionization, and the subsequent 'free rider problem' do not necessarily entail a low number of union members.

The second consequence is on the magnitude of de-unionisation. According to the traditional estimates, the density was cut by half in a decade, which is already a deep and rapid process. But according to our data, the density could have fallen by 75% in less than a decade. That is more brutal than in any comparable country. This was indeed reflected in a change of atmosphere, from the post-1968 years of intense and often leftist shop floor militancy, to the 1980s when unemployment appeared to have made collective action impossible. But this shift remains mysterious, and

potentially relevant for the study of de-unionisation, as there was, during this period, no reform which directly targeted the bargaining power of unions, as discussed in Appendix B.

3.2 West Germany

In Germany, our micro-data closely track the ICTWSS estimates⁴, and administrative data as compiled by Schnabel and Pege (1992) or Greef (2014): a high union density in the early 1950s, followed by a sharp decline, then a significant rise in the 1970s. Then a long and deep de-unionization happened, but with two specific characteristics when compared to other European countries. First, it started later, not in the late 1970s as in France or in the early 1980s as in Italy or in the UK, but in the late 1980s, and receded under the level of the 1970s only after the unification shock of 1990. Second, West German density stabilized above 20 % in the 2000s, whereas it continued to decline in Italy, in the UK and in the US.

3.3 UK

In the UK, our micro-data track closely the ICTWSS estimates. The common trajectory is one of rising unionization in the 1970s and then a deep and long fall continuing until today. Some historical context may help to understand this curve. The electoral victory of the Conservative party led by Margaret Thatcher in 1979 is commonly understood as a backlash against a series of successful strikes (Winter of discontent) led by the unions (powerful after a decade of rising membership) against the wage moderation policies of the previous Labour government. The Conservatives then voted two laws restricting union activity (esp. closed shops) : the Employment Acts 1980 and 1982. Remarkably, the large decline in union density started as of 1983. 1984 was the year of a major miners' strike, repressed by the Thatcher government. Another law restricting strike activity, the Trade Union Act, was voted the same year. (See Freeman and Pelletier (1990), Machin (1997),

⁴The apparent gap after 1990 is easily explained by the fact that the ICTWSS estimate covers unified Germany after this date, whereas we focus on West Germany for the sake of consistency of our time series. East German density was much higher than the western one in the early 1990s, and is much lower today, which explains the gaps.

[Addison and Siebert \(2002\)](#) or [Pencavel \(2004\)](#) for a detailed account of the legislative changes and their effect on de-unionisation.)

3.4 Italy

Our historical reconstruction of unionisation rates for Italy often lies slightly below the official data of the ICTWSS. This is to be expected, as the official sources rely on auto declared membership data from the three largest confederations (CGIL, CISL and UIL) inflated by an additional 10-20 % to account for independent unionism ([Ebbinghaus and Visser \(2000\)](#):395, cited by [Visser \(2021\)](#):37). It is hence reasonable to believe that these estimates might tend to exaggerate union size as unions have incentives to overstate their membership (see [Farber et al. \(2021\)](#) for the description of the same phenomenon in the US). The two series, however, do track each other quite well in describing the rapid raise and the long lasting decline of the Italian union movement in the last 60 years (see [Appendix C](#) for an account of Italian union history). This is no longer the case starting from the mid nineties. As of this moment onward, our estimates are consistently and significantly lower than those reported in the official sources.

We believe that our estimates may better capture the real level of unionisation for this period for a number of reasons (see [Appendix C](#) for a detailed discussion) but, in the absence of any large-scale labor survey, we can not provide a definitive answer. If we take our results as the real ones, however, today's Italian unionization rate seems to be closer to 25 % rather than the official 35 %, hence fully 10 percentage points lower than reported. According to our analysis, this is due to the longer than previously thought de-unionisation process that stopped (if it actually did) a decade later than previously established.

4 Membership composition

4.1 Definitions

We want to investigate the changing composition of unions, in terms of the four following variables: gender, public sector, blue collar occupation (binary variables), length of education (in years). The most straightforward determinant of union membership composition is the composition of the workforce. For example, the share of blue collar workers in unions has declined in all the countries studied, and one obvious explanation is the falling share of blue collar workers among wage workers because of de-industrialization. But this is not the only determinant. For example, consider the public sector. It is well known that in the UK, the relative importance of public sector unions has grown spectacularly over the last decades, whereas public sector employment was falling. So another factor is at play, the increasing over selection or over representation of the public sector: being a public sector worker increases the probability of being a union member, and more and more so over time. So workforce structure is not the only determinant of union membership composition, but has to be complemented by the selection of various groups into unions.

In the following subsections, we therefore explore the evolution of these three variables - composition of union membership, composition of the workforce and selection into unions⁵ - defined as follows with respect to a subset X of employees ($X =$ males, public sector or blue collar workers ; \bar{X} is the complementary subset, i.e. females, private sector or white collar workers): union composition UC_X relative to X is the share of members of X in the union membership (e.g., the share of male workers among unionized wage workers); workforce composition WC_X is the share of members of X in the workforce (e.g., the share of male wage workers among wage workers) ; selection of X into unions US_X is the ratio of the union density among wage workers who are

⁵We have focused our analysis on these three summary variables, but the reader interested in descriptive data can refer to Appendix E where we simply display the density by subgroup in each country over time: e.g., union density among men and among women.

members of X to the union density among wage workers who are not:

$$UC_X = \frac{|\text{Unions} \cap X|}{|\text{Unions}|}; WC_X = \frac{|\text{Workers} \cap X|}{|\text{Workers}|}; US_X = \frac{|\text{Unions} \cap X|/|\text{Workers} \cap X|}{|\text{Unions} \cap \bar{X}|/|\text{Workers} \cap \bar{X}|}$$

Hence the identity:

$$\frac{UC_X}{1 - UC_X} = \frac{WC_X}{1 - WC_X} \cdot US_X$$

If the composition of unions simply mirrors the composition of the workforce ($UC_X = WC_X$), then there is no selection effect ($US_X = 1$). If group X is more represented in the unions than in the workforce ($UC_X > WC_X$), it is positively selected into the unions ($US_X > 1$). In the opposite case ($UC_X < WC_X$), it is negatively selected ($US_X < 1$).

We compute the selection variable US_X as the coefficient of a log-linear model that we estimate thanks to a Poisson regression, where $Union_{i,t}$ is a binary variable equal to 1 if the individual i in survey or period t is part of a union, $X_{i,t}$ is the binary variable equal to one if individual is part of category X and μ_t a set of survey or period fixed effects.

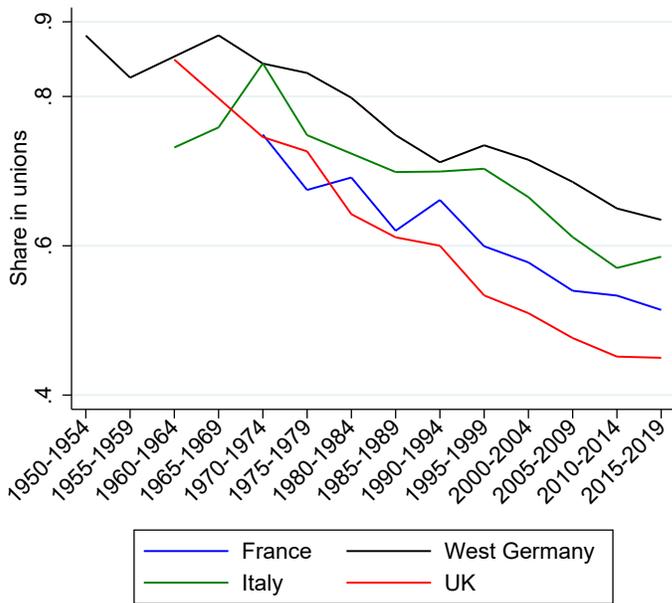
$$\log(\mathbb{E}[Union_{i,t}|X_{i,t}]) = \beta_t \cdot \mu_t \times X_{i,t} + \mu_t + \epsilon_{i,t} \quad (1)$$

In this context, e^{β_t} measures the incidence rate ratio of unionism in category X in the period or survey t and is an estimator of US_X . Estimating selection this way has the advantage of giving us a sense of their uncertainty, as we can also provide confidence intervals for our estimates. This is especially important because we are using nationally representative surveys and not administrative data.

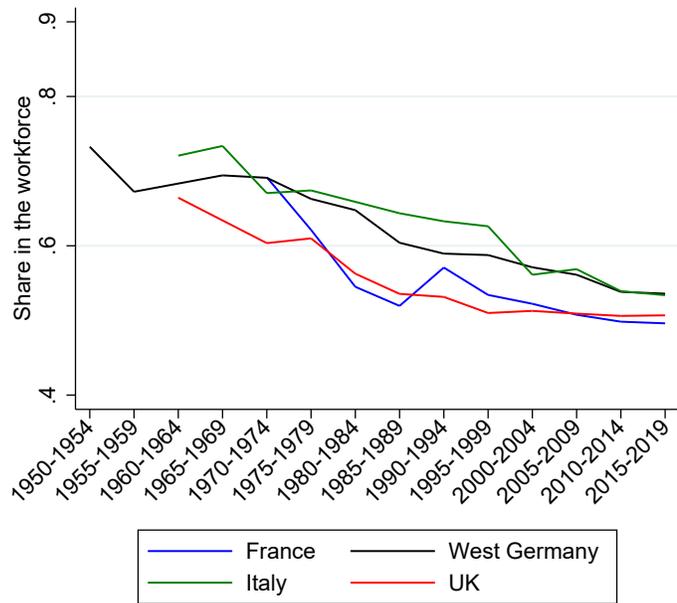
4.2 Gender

Figure 2: Evolution of the share of men in unions and among all employees

(a) Composition of unions



(b) Composition of the workforce



Reading: In the first half of the 1980s, men made up 80 % of union members in West Germany, compared to only 65% of the workforce.

As shown in Figure 2a, there was a clear feminization of unions in all the countries studied. In the 1960s, the share of men in unions was around 85% in West Germany and the UK, and in the 1970s, it was more than 70% in France and Italy. This share is today less than 65% everywhere: Unions have reached almost gender parity in France, and gone beyond it in favor of women in the UK. This is of course explained in part by the massive entry of women in the dependent workforce over the same period, as shown in Figure 2b.

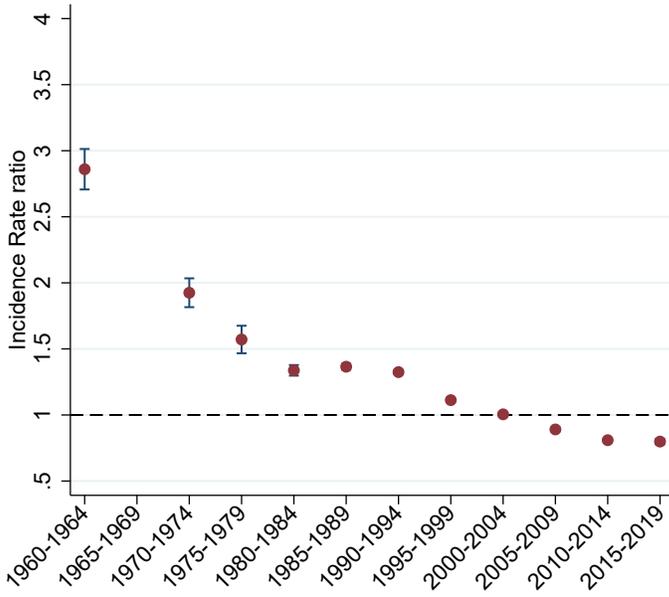
However, this is not the only factor. As we can see in Figure 3, the differential likelihood of joining unions for women compared to men also changed over the period. The clearest case is that of the UK, where the constantly declining selection of men accounts for more than half of their declining share in union membership composition. In West Germany, our data show an apparent rise in male selection from 1950s to the 1960s, but one should not over-interpret it as our two points in the 1950s are based on one electoral survey each. However, there is a clear feminization during the later period, from the 1960s to today. This feminization of union membership in Germany is parallel to the feminization of the left vote as documented by [Kosse and Piketty \(2020\)](#). Comparing

Germany to the UK, it should be noted that the declining male selection stabilized earlier (around 2000 versus around 2010), and at a higher level (1,5 versus 0,8) in this country.

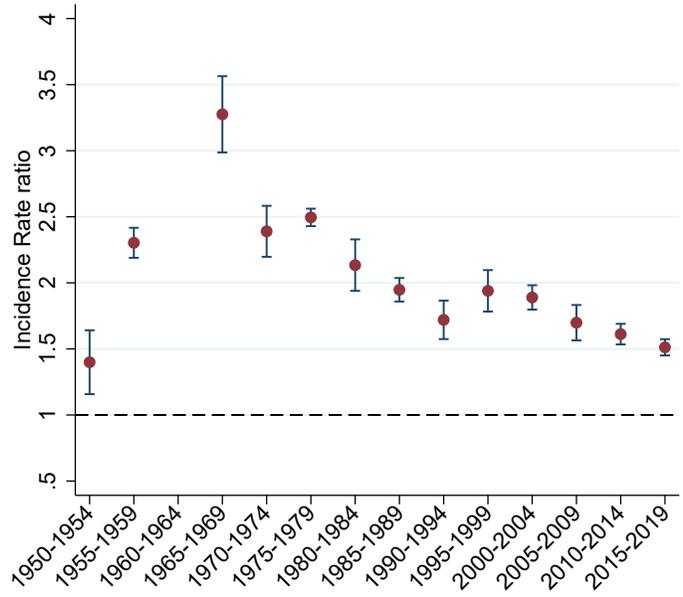
In France and in Italy, no clear long term trend emerges. Men were always more likely to be union members than women, and this selection seems to vanish in recent years, but there were already important fluctuations before.

Figure 3: How does gender predict union membership?

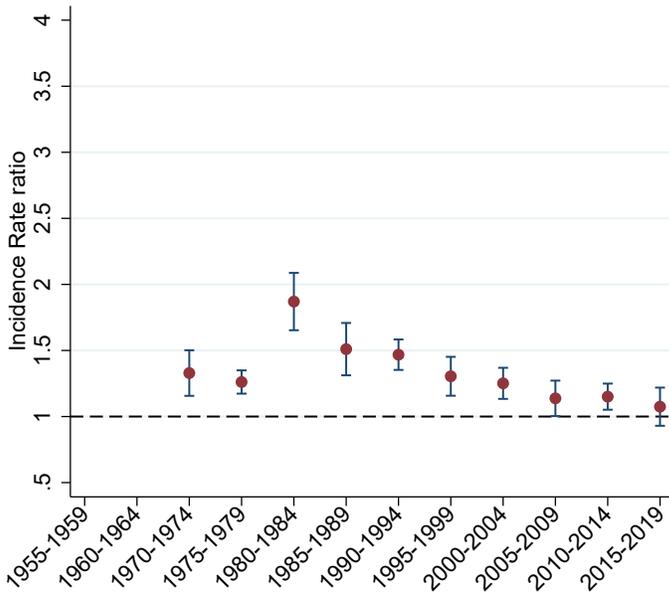
(a) UK



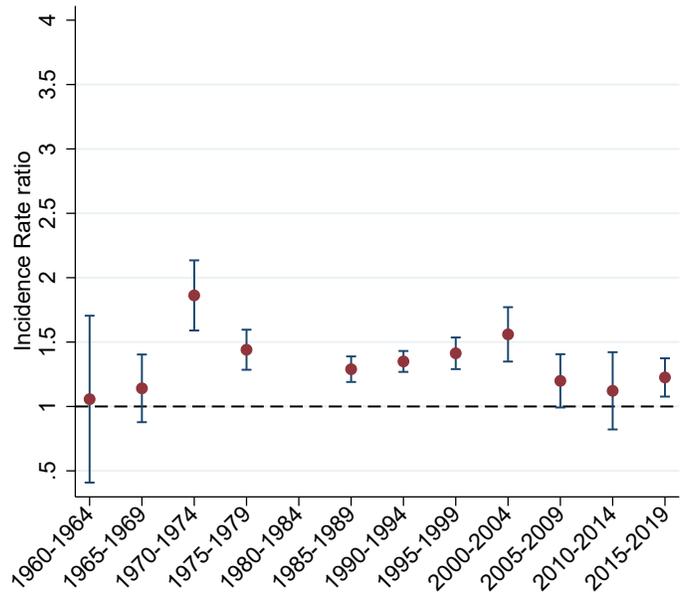
(b) West Germany



(c) France



(d) Italy

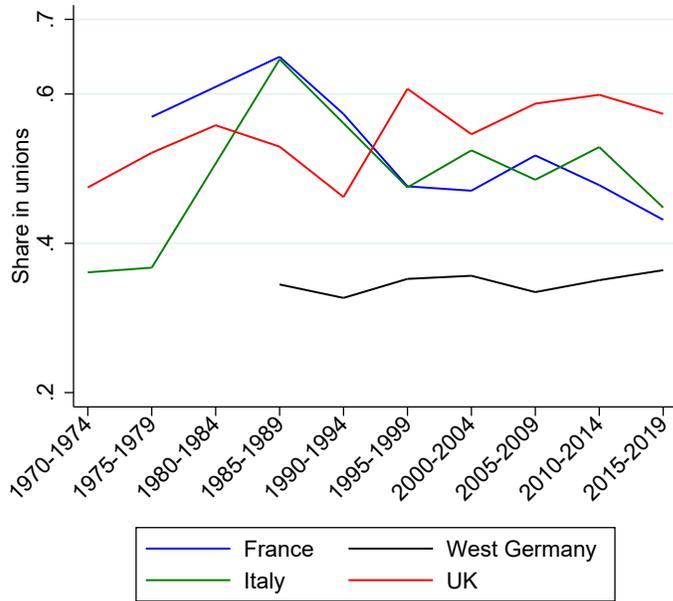


Note: Results from the estimation of equation (1) when the category variable is a binary variable equal to 1 when the individual is a man. We also provide the 95% confidence interval for all estimates. This represents the evolution of the ratio of union densities of working men and women in our four countries of interest.

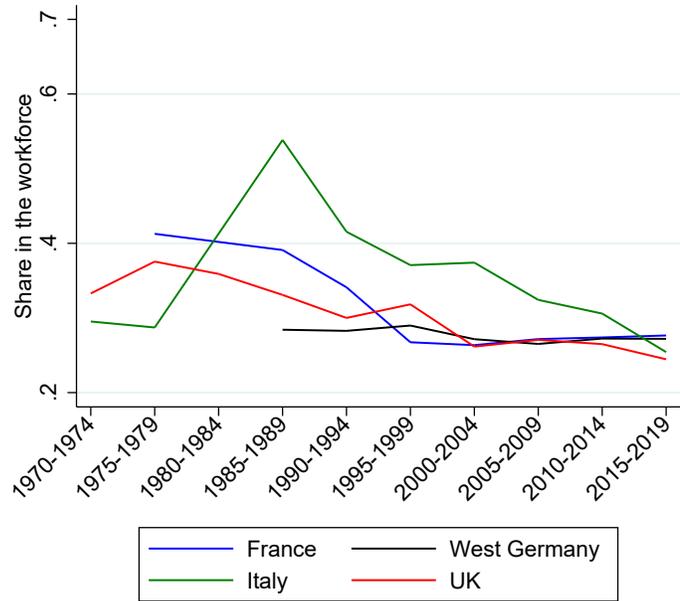
4.3 Public sector

Figure 4: Evolution of the share of public sector workers in unions and among all employees

(a) Union composition



(b) Workforce composition



Reading: In the second half of the 2000s, public sector workers represented around 50% of union members in Italy, compared to only around 25% of the workforce.

Comparison of figures 4a and 4b shows as the first glance that in all the countries studied, the share of the public sector in unions has been, over the whole period and in all the countries considered, significantly more important than its share in the workforce.

However, as figure 5 shows, this positive selection of public sector workers varies across time and space. The clearest cases of a long term rise in public sector selection are Italy and the UK, although with very different levels of selections. In the latter case, the selection coefficient is so high that private and public sector unionism appear to follow different dynamics in the last decades, similar to what has been observed in the US (see e.g. Walker (2014)).

Graph 5b shows a modest rise in the last decades for Germany⁶. The natural conjecture to explain this general rise of public sector selection is that when de-unionization happened because of an adverse state of the economy and of the labor market, unions in the public sector resisted better

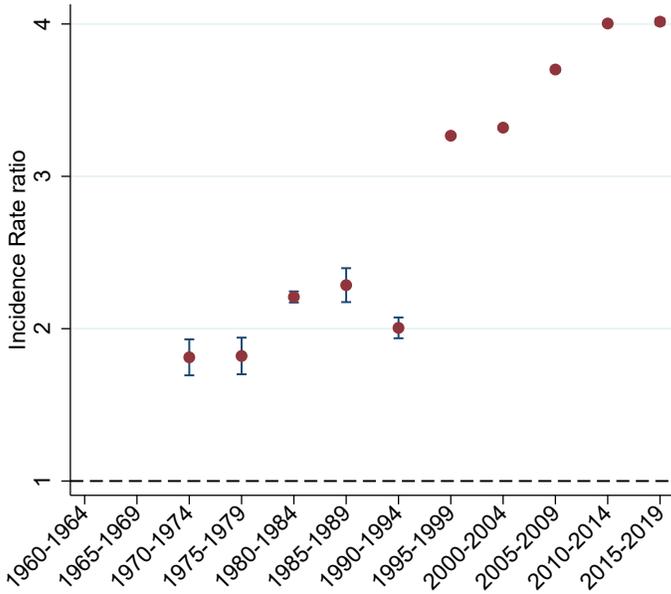
⁶Most of the German surveys in our database tell whether the respondent is a 'Beamter', but only a minority of public sector workers (35% as of 2019, see BPB (2020)) have the status of *Beamten*. Therefore, we use only the data from the GSOEP and Allbus (from 1990 onwards), which include a question on public sector in the usual sense.

being relatively insulated from the pressures of profitability.

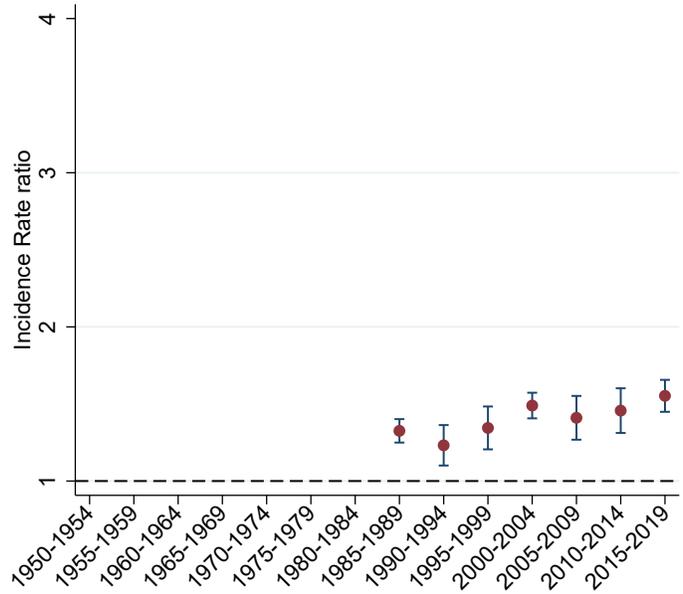
In France, there is no long run trend, but a decline in selection over the last decade. It is tempting to connect this change to the apparent rise in density (see fig. 1c) and decline in selection by education (see fig. 7c) over the same period: it is possible that in recent years, unionization has progressed in France, driven by the entry of new private sector and relatively less educated workers.

Figure 5: How does working in the public sector predict union membership ?

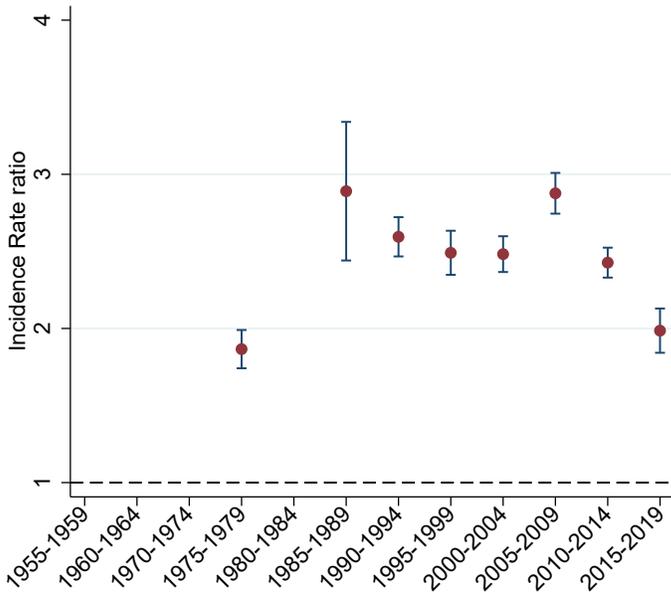
(a) UK



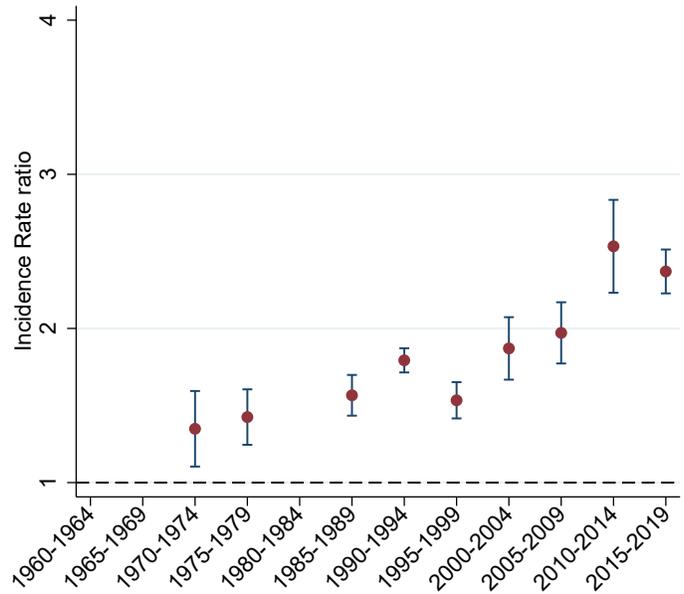
(b) West Germany



(c) France



(d) Italy

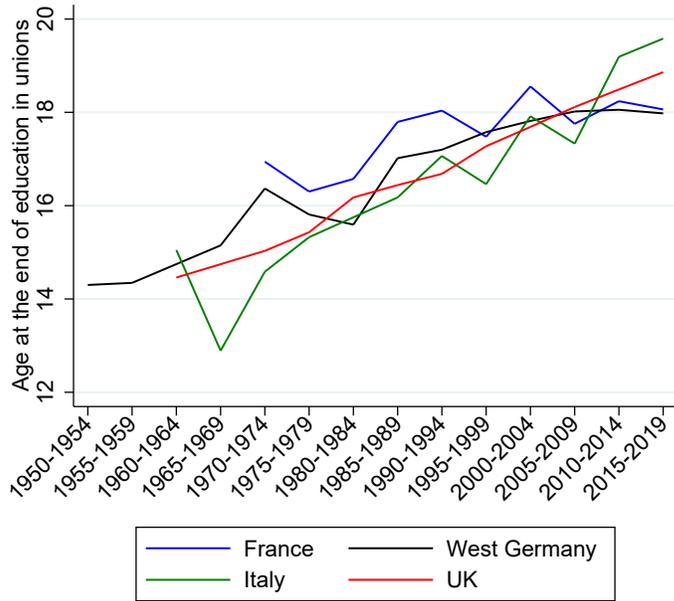


Note: Results from the estimation of equation (1) when the category variable is a binary variable equal to 1 when the individual is part of the public sector. We also provide the 95% confidence interval for all estimates. This represents the evolution of the ratio of union densities of public sector workers and private sector workers in our four countries of interest.

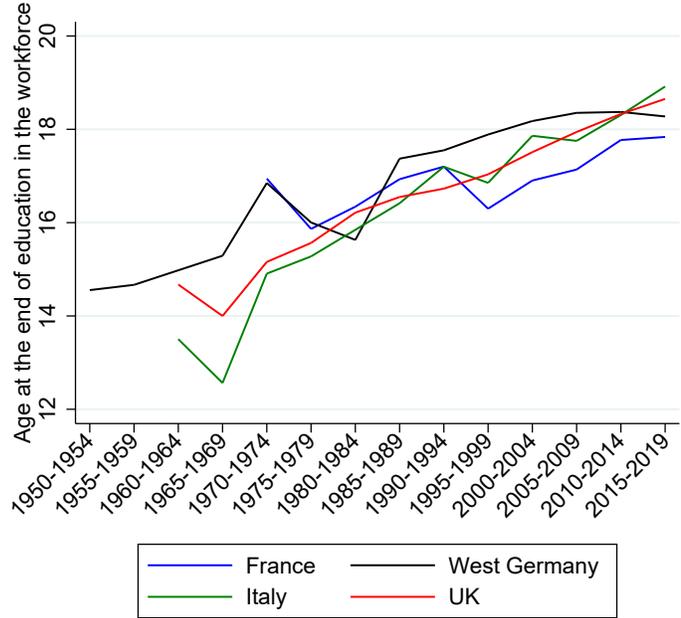
4.4 Education: towards brahmin unions?

Figure 6: Evolution of the average age at the end of full-time education among union members and among all employees

(a) Union composition



(b) Workforce composition



Reading: In the early 2000s, in France the average age at the end of education was 18 years for union members but less than 17 in the dependent workforce.

In the 1960s, unskilled workers were positively selected into unions in the UK and in West Germany. This selection tends to disappear over time as shown in figure 7a and 7b. We can hence say that in the UK and in West Germany there was a brahmanization, i.e. an increase in the educational attainment, of union membership. This parallels the electoral brahmanization of the left documented by Piketty (2018) and Kosse and Piketty (2020) in the same countries. This picture is also strikingly similar to the one of union membership in the US, as studied by Farber et al. (2021) (figures 3, A5-A8). However, an important difference exists between the two sides of the Atlantic: in the US, brahmanization went parallel to de-unionization, whereas in the UK and West Germany it started well before it, and even occurred at the time of rising union density. As it was the case for gender, in West Germany the trend stops earlier than in the UK and therefore a slightly positive selection of low skilled workers still remains nowadays, unlike in the UK⁷.

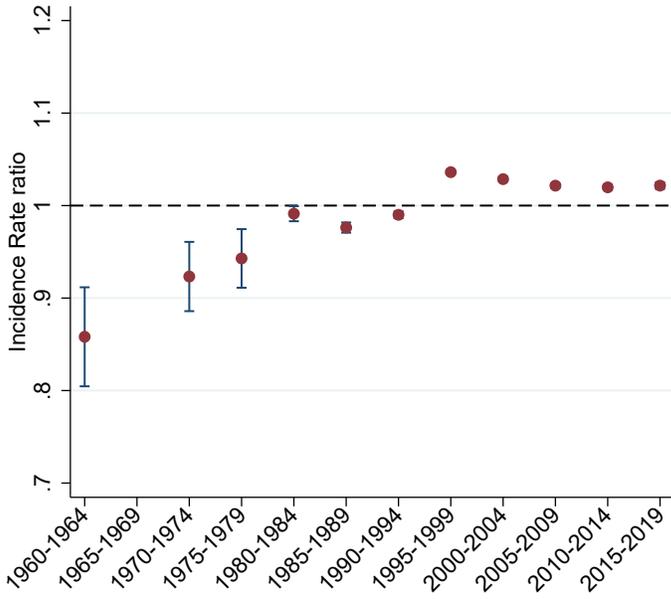
⁷In the UK, it is the rising selection of public sector workers that explains that more educated workers have been more likely to be union members since the 1990s, as shown in Appendix G, fig. 21a.

Note that in the UK, the trend in the selection by education had already been described in [Machin \(1997\)](#), [Addison and Siebert \(2002\)](#) and [Gosling and Lemieux \(2004\)](#), but for the 1980s and the 1990s only. In France and in Italy, instead, unskilled workers are constantly slightly underrepresented, with no clear trend. So in both countries, union membership composition has not changed in parallel to that of the left electorate, as analyzed by [Piketty \(2018\)](#) for France and [Bauluz et al. \(2021\)](#) for Italy.

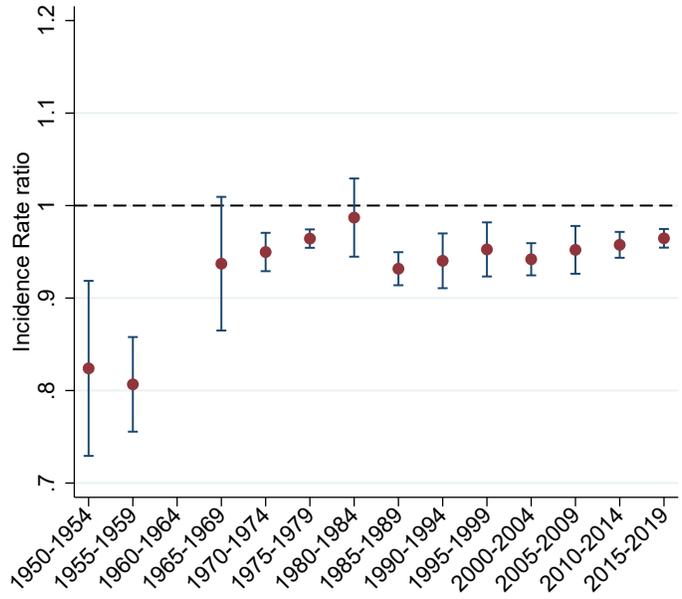
These results still hold when using a binary variable distinguishing employees who completed full secondary education from those who did not ([Appendix F](#)). These different trajectories have something in common: in no country do we find a consistently falling selection of the skilled workers. As already noted by [Farber et al. \(2021\)](#) for the US case, this stands in contrast to the theory of [Acemoglu et al. \(2001\)](#), developed by [Kaymak and Acikgoz \(2011\)](#), which explains de-unionization (at least in the US and the UK) by the exit of the high skilled.

Figure 7: How do years of education predict union membership?

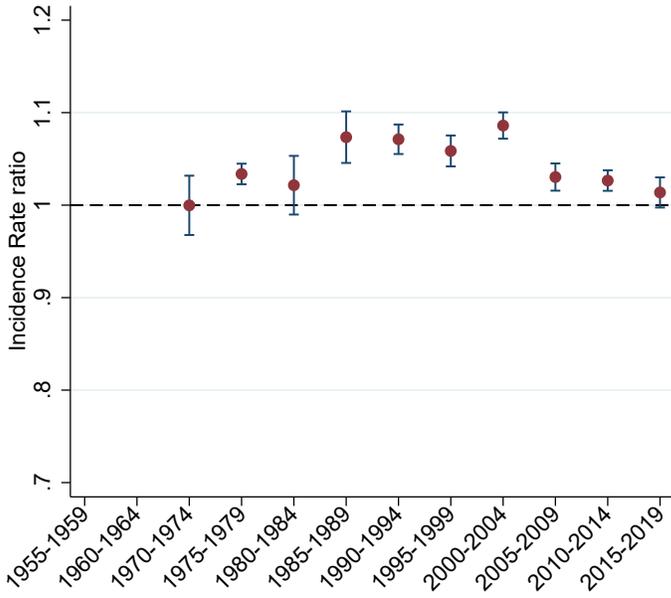
(a) UK



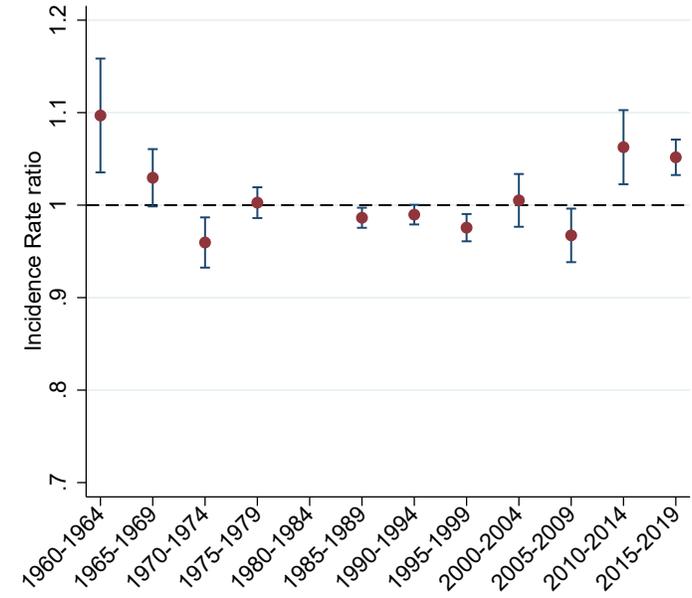
(b) West Germany



(c) France



(d) Italy

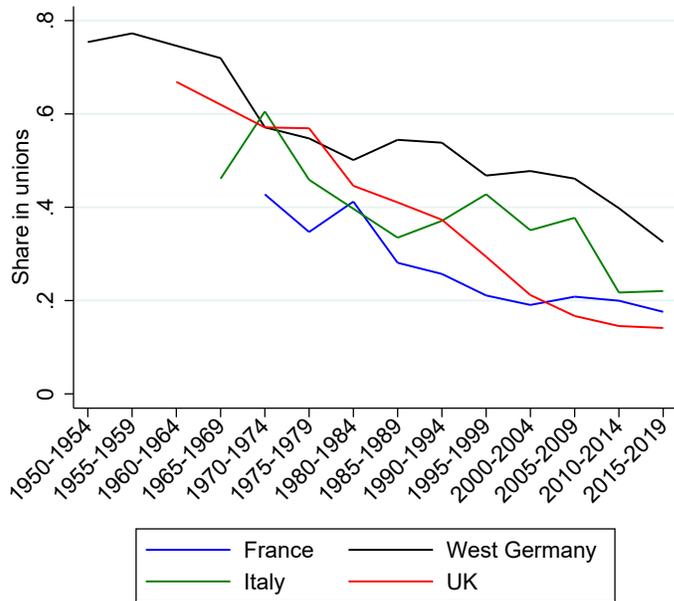


Note: Results from the estimation of equation (1) when the category variable is a continuous variable measuring the year at the end of education of individual. We also provide the 95% confidence interval for all estimates. This represents the evolution of the ratio of union densities when you add one year of education in our four countries of interest. If the coefficient is lower than one then it means that the union density decreases as education increases.

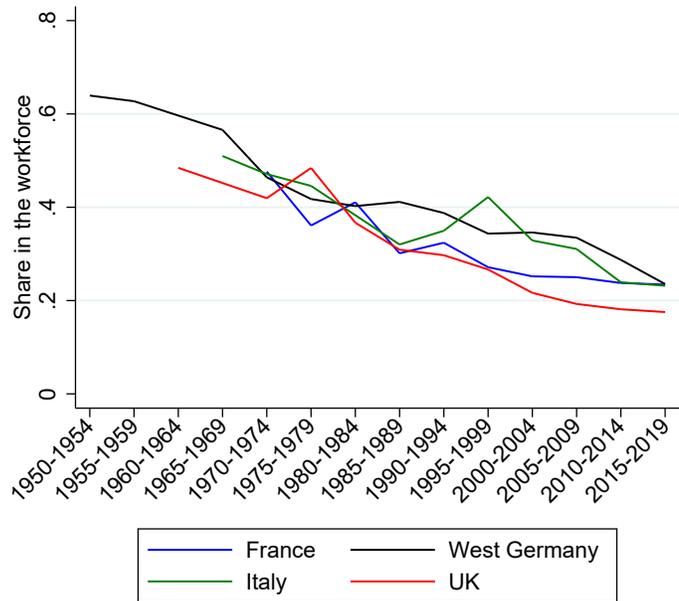
4.5 Blue collars

Figure 8: Evolution of the share of blue-collar workers in unions and among all employees

(a) Union composition



(b) Workforce composition



Reading: In 1965, blue collar workers represented around 60 % of unionised workers while they were less only slightly more than 40 % of the total dependent workforce.

The shrinking number of blue collar jobs in rich countries since the 1970s is a well known fact, reflected in figure 8b. Therefore, de-industrialization, a structural factor, is often considered among the causes of aggregate de-unionization.

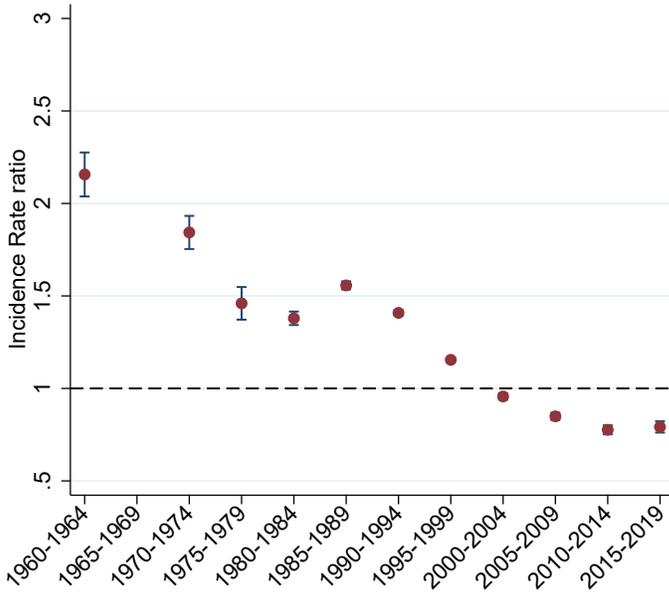
However, a more careful look at Figure 8a shows that union composition changed faster than workforce structure in West Germany and in the UK. This results from a falling selection of blue collar workers in these two countries, as illustrated in figure 9. In West Germany and in the UK, blue collar workers were strongly over represented in unions in the 1950s and 1960s. In West Germany, this selection declined early, but remained positive. In the UK, the deselection continued unto the 2000s, and became negative. These evolutions mimic quite closely those of gender (see section 4.2), probably because most blue collar workers tend to be men.

In France and in Italy, instead, there never was a clear over-representation of blue collar workers, neither a clear trend in their selection since the 1970s. In France, blue collar workers are

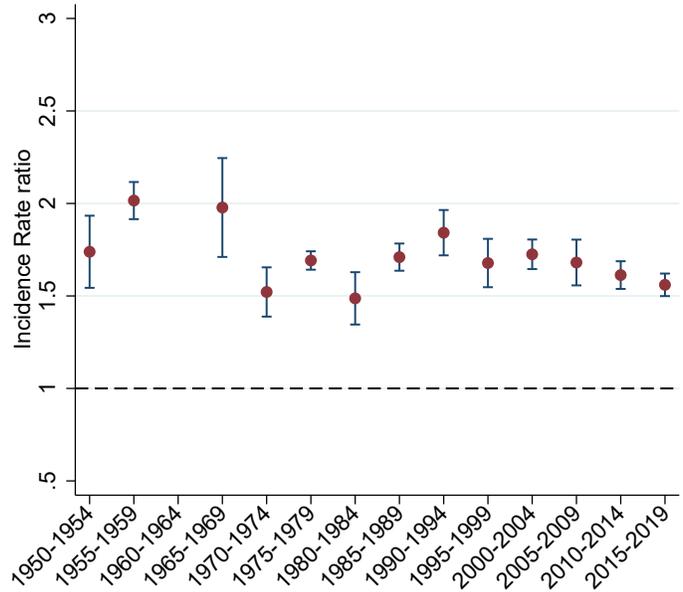
significantly *under*-represented, especially from the 1990s onward. In Italy, blue collar workers have always been as equally organized as other workers.

Figure 9: How does a blue collar occupation predict union membership

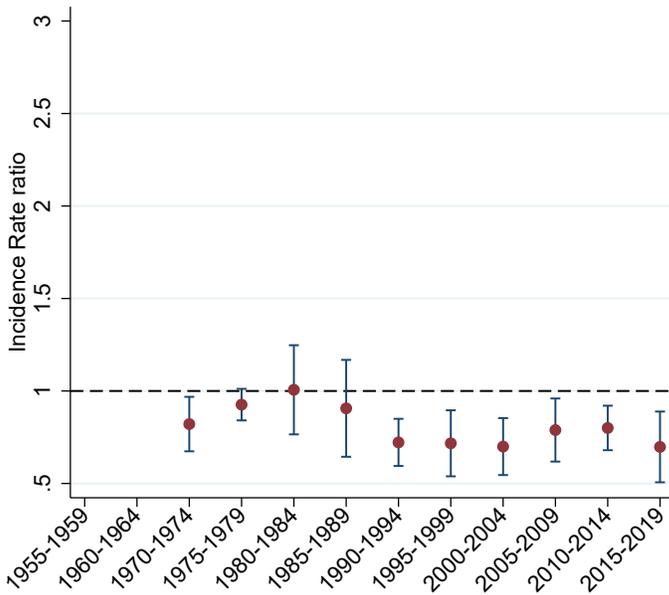
(a) UK



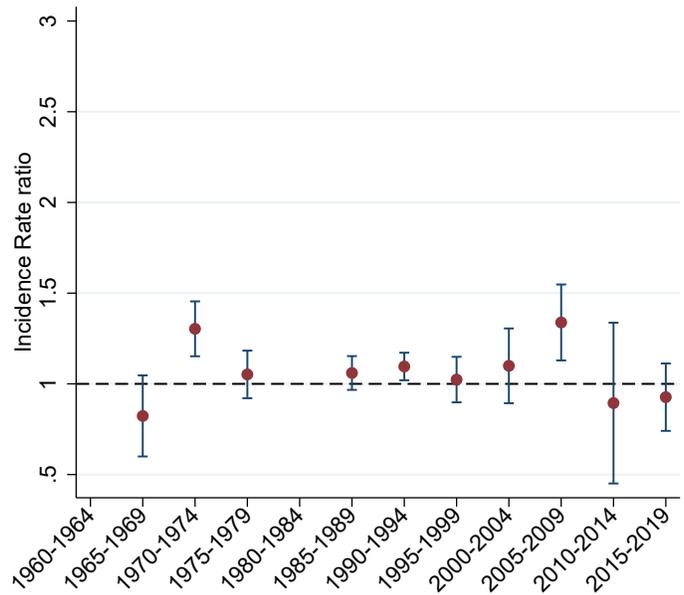
(b) West Germany



(c) France



(d) Italy



Note: Results from the estimation of equation (1) when the category variable is a binary variable equal to one if the individual is a blue-collar worker. We also provide the 95% confidence interval for all estimates. This represents the evolution of the ratio of union densities of blue-collar workers and white-collar workers in our four countries of interest.

5 Interpretation

Section 4 has shown trends in union membership composition common to all of our countries of interest: more women (fig. 2a), less blue-collars (fig. 8a) and more educated workers (fig. 6a). As we have seen, these changes reflect, for a significant part, secular changes in the structure of the workforce of developed countries.

What is left to be explained is the selection of different groups into unions, which measures the distortion from the composition of the workforce to the composition of union membership (as explained in section 4.1). The selection levels, and their variation over time, differ between countries. We try to summarize our findings as stylized facts: first, in the countries we study, density in the public sector has always been higher, and has better resisted to de-unionization; second, the selection by gender, occupation and education allow us to distinguish between two types of union systems, unions with blue collar origins (in the UK, the US and West Germany) and 'universal' unions (in France and Italy). We now examine each of these stylized facts in turn and suggest explanations.

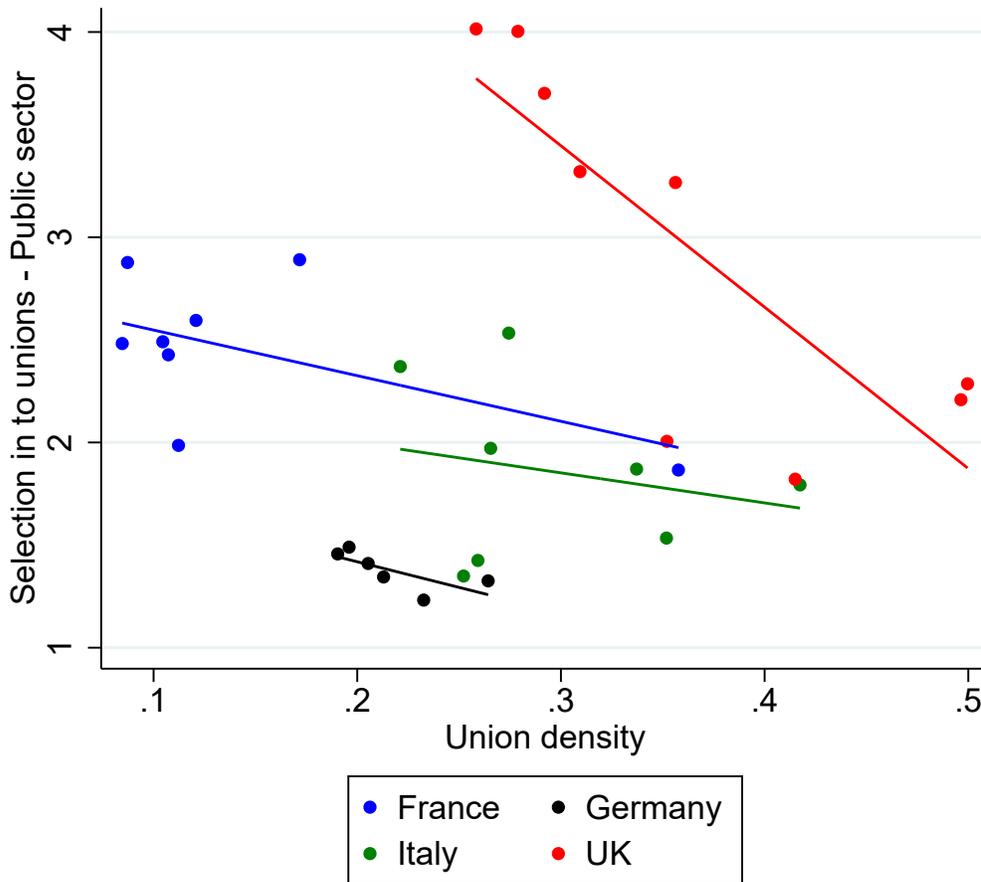
5.1 The presence and resistance of the public sector

As shown in section 4.3, there is at least one common element to the selection patterns in all the countries studied, to which we could add the US, and during the whole period covered here: workers in the public sector are more unionized than in the private one, and this positive selection has risen in most countries during de-unionization.

The fall of union density is associated to a rise in the selection of public workers into unions, as shown in Figure 10. We interpret this finding as an indication that the public sector and, possibly, stronger labour protection, seem to have somewhat shielded union power from adverse pressures. Thus, the downward stickiness of union membership in this sector has been way larger than in the private one, implying that as density fell the selection of of public sector members rose.

As an aside, we can note that this relative resistance of public sector unionization might be important to understand de-unionization. A valid candidate to explain de-unionization should, in fact, impact more the private sector than the public sector. In particular, more harsh competition and a decline in profitability in some private industries could explain why de-unionization has been more pronounced in there as hypothesised by [Blanchard and Giavazzi \(2003\)](#).

Figure 10: Public Sector Selection and Union Density



Did this presence and resistance of public sector workers in unions affect the other selection variables we are interested in? To answer this question, we estimate equation (1) for our main variables, gender, occupation and education, while controlling for the public sector variable, so that we can recover, for example, the changing selection of women into unions while accounting for the changing selection of public sector workers. To be sure that what drives the differences between the different estimations is not data availability, we restrict ourselves to surveys where all

variables are specified. The results of these estimations are presented in Appendix G.

The most striking observation is that the selection of public sector workers plays a role in almost all other selection levels, in all countries and periods. When controlled for public sector, the selection of men and of blue collar workers is consistently higher (fig. 19 and 20), and the selection by education is lower (fig. 21). In other words, the over-representation of public sector workers, who tend to be more female, white collar and educated than their private workers colleagues, reflects itself in all selection statistics.

Whereas the selection of the public sector is key to explain selection levels along other dimensions, it can not explain much of the changes in selection over time. The exception is the UK, where the rising selection of women, white collars and more educated workers is tamed when the 'public' variable is controlled for (fig. 19a, 20a, 21a). Even there, however, the trends mentioned do not disappear completely.

5.2 Two unionization families

Now let us turn to the three other selection variables: by gender, by occupation and by education. Their level and evolution is not the same across countries. In West Germany and in the UK, in the 1960s and 1970s, male (fig. 3b and 3a), blue-collar (fig. 9b and 9a) and less educated (fig. 7b and 7a) workers were significantly more likely to be union members than others. Around the same time, in France and Italy, blue-collar workers (fig. 9c and 9d) and less educated workers (fig. 7c and 7d) were not positively selected into unions to a significant degree, and the selection of men was smaller (fig. 3c and 3d).

Therefore, the countries studied can be regrouped in two "*unionization families*" based on the initial selection into union membership:

- **Unions with blue collar origins**⁸ (The UK and West Germany) where there was a sig-

⁸Of course, we are not speaking here of the true origins of unionism in each country, but only of the postwar situation.

nificant selection of blue collar workers, men and less educated workers in the 1960s. We can also add the US to this group, based on studies by [Farber et al. \(2021\)](#) on the selection by education, [Stansbury and Summers \(2020\)](#) on the selection by occupation⁹, [Card et al. \(2020\)](#) on the public sector and gender.

- **Universal unions** (France and Italy) where there was no significant selection of blue collar workers or of less educated workers into unions, and the selection of men was lower than in the previous group.

Let's turn to the evolution over time. In the universal family, the selection of various groups was relatively stable over time. In the other family, it depends. In the UK and the US, unions have dramatically moved away from their blue collar origins, with a stark decline in the selection of men, blue collars and less educated workers, and a strongly rising selection of public sector workers (reaching 4 in the UK, 5 in the US). West Germany has remained closer to its blue collar origins: selection of the public sector has remained comparatively modest; selection of men and of blue collar workers has declined since the 1960s, but remains at a positive level; and the selection of the less educated has declined in the 1950s and the 1960s, but has been stable since, at a positive level.

How can we explain these various trends? Let us first focus on the most clear cases, the US and the UK, as illustrations of the 'blue collar origin' family, and France and Italy, as illustrations of the 'universal' family, and let us emphasize that we have no definitive explanation, and our suggestions are not based on causal inference. Our suggestion is to try to explain the difference between the two families with two (related) underlying differences in the role of unions in the countries under study. First, bargaining occurs at the workplace level in the UK and the US, and at the industry level in France and Italy. The national level of bargaining has also gained increasing importance in recent decades in both countries, and in France all employees are covered by a national minimum wage, which is relatively high since 1968.

⁹Appendix C1 shows the evolution of density by industry. We can assume that jobs in transports, construction, manufacturing and mining were and are mostly blue collar.

Second, unions in the UK and the US were politically relatively united at the national level, under a unique confederation during most of the period considered (the AFL-CIO connected to the Democratic party, and the TUC connected to the Labour); whereas there was a political division in France and Italy, notably between communists (CGT in France, CGIL in Italy) and non communist (FO and CFDT, CSIL and UIL) unions. During the heydays of unionization in these countries, the strongest unions were the communist ones, with deep ties to the communist parties: during that period, in France, the leader of the CGT was a member of the political bureau of the french PCF and in Italy the two leaderships have often overlapped (even in recent years) with former union leaders becoming leaders of the left wing party and vice-versa.

These underlying differences generate a different set of incentives in the two groups of countries. In the UK and the US, because of the bargaining institutions, benefits from unionization accrue to union members only, giving rise to a significant wage premium ([Farber et al. \(2021\)](#)). Therefore, for these countries, there is a plausibility to the model of [Blanchard and Giavazzi \(2003\)](#) where workers in each workplace estimate the amount of firm-specific rent they could appropriate through unionization. Assuming that until the 1970s, the then thriving manufacturing and similar sectors benefited, more than other sectors, from rents that were susceptible of workers' appropriation, this could explain the high unionization of their workers, who were mostly male, less educated blue collars. Then, the profitability crisis of these sectors could have led to the stark decline in union membership of these subgroups¹⁰.

In contrast, unionization in France and Italy can not be conceived as a directly economic choice. At the industry level, a union with more members can presumably obtain more in the bargaining process. But these gains are shared with all workers from all firms in the industry, whether unionized or not. The individual, material return from unionization is therefore presumably small (see [Breda \(2015\)](#) for an estimate of the wage premium in France in the recent period). On the other hand, the politicization of unions mentioned above makes unionization more akin to political militancy, which is not necessarily predicted by the same variables as those mentioned above.

¹⁰This narrative could be supported, if not proved, by adding an industry variable into our analysis. Unfortunately, a question on industry was rarely asked in the surveys we used.

How does West Germany fit into that narrative? Not perfectly, because bargaining happens mostly at the sectoral level, as in France or Italy, but firms have the possibility (which they increasingly exercised after the reunification) with an employee vote, to opt out from those agreements (Streeck (2009) and Dustmann et al. (2014)). Moreover, as in the UK, all unions were and still are under the same confederation (DGB), and in the period considered, were less permeable to a revolutionary discourse than the CGT or the CGIL. Finally, the divergence between West Germany and the UK over time, mentioned above, can be explained by the relative West German resistance to de-industrialization. The relative profitability of the German manufacturing sector could have encouraged workers to unionize to share the rents preserving them from the adverse pressure on unionization characteristic of struggling sectors.

6 Conclusion

In this paper, we look at the evolution of the composition of union membership in four European countries since the 60's: France, West Germany, Italy, and the UK. We use new micro-data derived from various sources, ranging from post-electoral surveys to labor and household surveys, to provide novel evidence on union density and unions' membership composition over the long run. We study in particular what can be attributed to the structural changes of the workforce and what can be attributed to the evolving selection into unions. We focus on four variables: gender, occupation, education and sector of employment (public vs private) and show how they matter for the selection into unions in our four countries of interest.

Our first finding is about the importance of unions and the evolution of union densities in France, West Germany, Italy, and the UK. Our new series for union density starting from our micro-data match closely the ICTWSS series based on administrative data for the UK and Germany but not for France and Italy. For France, we find that unionization was consistently higher at the end of the seventies and dropped dramatically in a decade or so from around 35% to 10%. For Italy, after 1995 union density is stable at around 33% in the official series while we find a steady decline

and possibly a stabilization at 20% a decade later. In both cases, we believe the official sources misrepresent unionisation rates due to the use of imputation methods to supplement the lack of data for smaller union confederations.

The heart of our paper is about the change in membership composition of unions. We find that as the workforce has become more feminized, less blue-collar and more educated, so have union members. This pattern is quite similar in all our four countries of interest. Differences exist though in the evolution of which characteristics better predict the enrollment of an individual in a trade union. In Germany and the UK, the probability of being a union member was once strongly associated with being a male, a blue collar worker and less educated. It is not the case anymore. We do not find the same pattern of selection in France and Italy where all workers have been relatively equally selected into unions. We argue that these differences can be attributed to the different institutional settings in the two groups of countries. The main exception to this binary distinction is in the selection into the public sector. In all countries, we find that union density is negatively associated with relative probability of a public worker to be unionised. We interpret this regularity as an evidence that public sector employment shields workers from at least some of the causes of de-unionization.

To our knowledge, despite our strictly descriptive approach, we are the first paper to exploit some of our databases systematically to study unionisation in a long-run, comparative perspective. Thus, our paper contributes to the literature on the changing composition of unions and their history since World War II. We are far from having fully dissected the rise and fall of union memberships in our four countries of interest as many factors, not only public-sectorization of union members, might explain their changing composition. More research is needed on this question, especially to recover the interactions between the crisis of the manufacturing sector that is shared by our four countries and our two unionization families. Finally, we believe an important work would be to extend our analysis to other countries to underline differences and commonalities between systems and generalize our findings.

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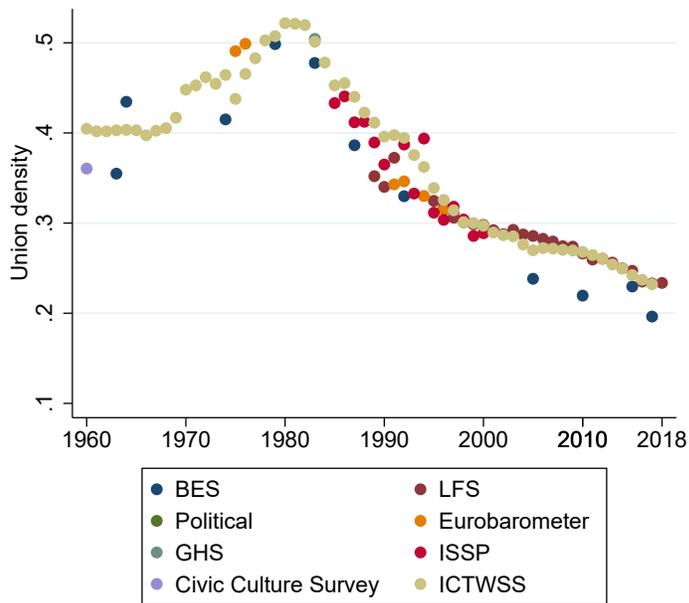
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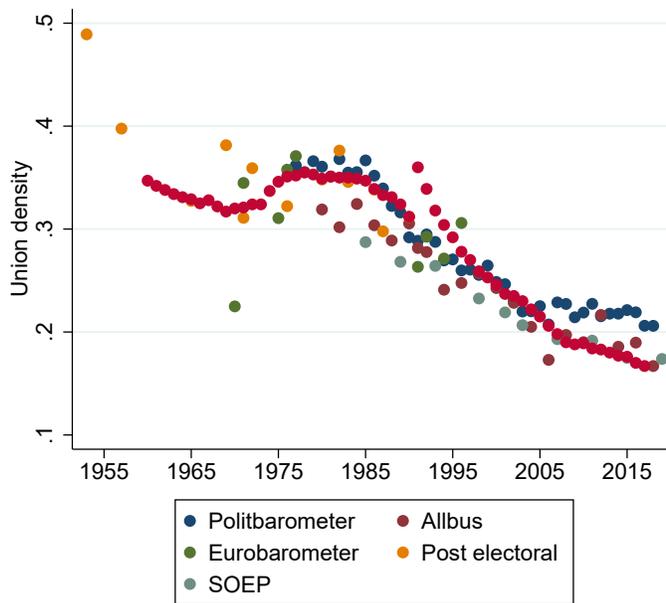
A Density, disaggregated by survey

Figure 11: Union density

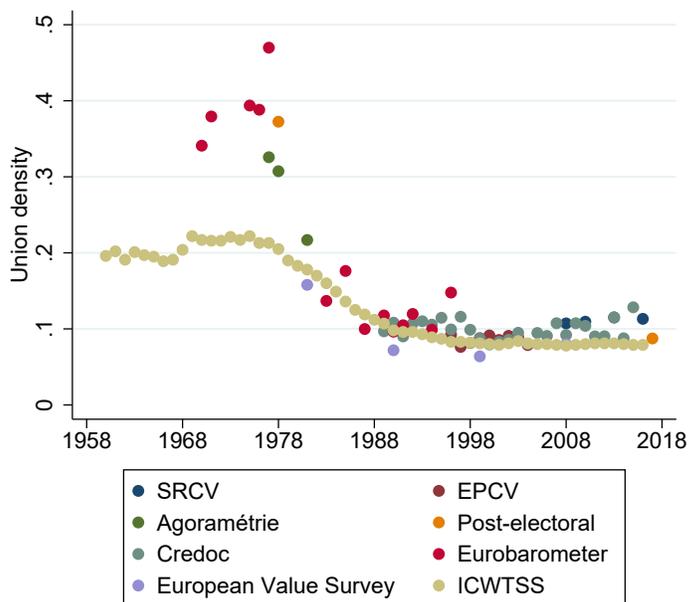
(a) UK



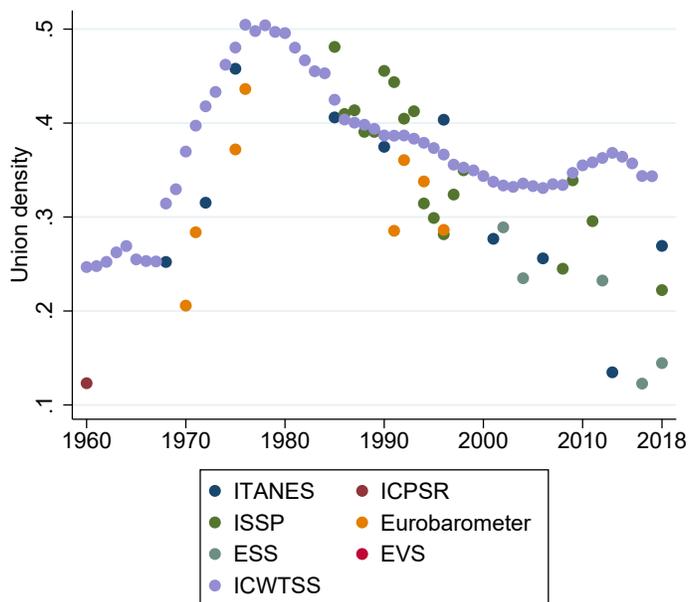
(b) West Germany



(c) France



(d) Italy



Note: The figure presents the evolution of union density as measured in our different micro-data sources for our four countries of interest and compare them with the time series from the ICTWSS dataset.

B Density in France

B.1 Explaining the gap

Figure 12: Union membership in France



Year	Total density		CGT + CFDT density	
	Labbé	microdata	Labbé	microdata
1970	23%	34%	15%	16%
1971	23%	38%	15%	20%
1972	23%	–	15%	–
1973	23%	–	14%	–
1974	23%	–	14%	–
1975	23%	39%	15%	–
1976	22%	39%	14%	22%
1977	22%	33%*; 46%	14%	18%*
1978	22%	31%*; 37%	13%	17%*; 23%

(b) Comparison of Labbé and survey data. Surveys : Eurobarometer 1970, 1971, 1975, 1976, 1977 ; Post-electoral survey 1978 ; Agoramétrie 1977, 1978, marked by an asterix (*) for disambiguation.

(a) Union card of a CGT member from 1949 with eight stamps. Source : eBay.

Before the start of the EPCV in 1996, the ICTWSS density series are built from financial data from the two major unions, CGT and CFDT, through two steps. The first step is to convert these financial data into membership data. Until the 1980s, union members paid their dues by buying supposedly monthly 'stamps' to stick on their union cards (see fig. 12a). So to obtain membership, the first step is to divide the yearly number of stamps sold by the confederation, by an estimate of the average number of stamps paid by each member each year. The second step is to extrapolate membership from these unions to all other unions. We can indeed write the following identity :

$$\text{Union density}_t = \frac{\text{CGT \& CFDT stamps}_t}{\text{Stamps per member}_t \cdot \text{Share of CGDT \& CFDT}_t \cdot |\text{Employees}|_t} \quad (2)$$

The first step of the conversion was originally performed by [Bevort \(1995\)](#), who assumes that the average number of stamps bought per union member per year is constant, equal to 9. The second step was performed by [Labbé \(1995\)](#), under the assumption that the relative membership of the various unions is the same as their relative success in the professional elections. In that

paper, Labbé uses Bevort's figures for the membership of the two major unions, but also tests the hypothesis of 8 stamps per year.

To see where the gap between our estimations and the ones from Labbé (1995) comes from, we compare our results with the computations of Labbé in Table 12b. We see that each survey in the 1970s estimates a higher aggregate density than Labbé, to various degrees, but consistently above 30%. We can track the source of this gap because some surveys, in addition to the binary question on union membership, asked to which union confederation the respondent belongs. We see that the microdata also yield consistently higher estimates for the density of CGT and CFDT members only.

Therefore we have good reason to believe that Bevort and Labbé overestimate the average number of stamps paid per year in the second half of the 1970s. If we suppose that the true combined density of CGT and CFDT was at 19% (the average of our various estimates from micro-data), versus 14% on average in Labbé's estimate, this means that the average number of stamps per member per year was not 9 but rather $9 \times 14/19$, i.e. between 6 and 7 stamps per year. This is supported by two facts. First, Bevort acknowledges that there is some uncertainty around his variable. Between 1945 and 1957, the CGT gave the figure and it was not constant, but fluctuated between 7,0 and 8,5. Bevort suggests that they could have ceased to publish the figure because of its decline. Second, it is likely that with time, confederations began to collect dues in a more systematic way, in particular with the introduction of the automatic deduction from the banking accounts of the members, which makes the number of stamps automatically 12 for the workers who choose this system. This would explain that our series cease to diverge from Labbé's from the 1990s onwards.

However, this revision upwards accounts only for part of the estimated density gap. If we apply the correction of 19/14 to the estimated density of 23%, we reach 31%, which goes only a half of the way to 37%, which is the average of densities from our microdata. This remaining gap can not be explained by an error on the total number of employees, as Labbé uses the figures of the French census and the Enquête emploi, which were still used by compilations of time series such

as [Bordes and Guillemot \(1994\)](#). Therefore, we conjecture that Labbé’s method based on electoral results overestimates the share of CGT and CFDT in union membership for this period. It is possible that the intense leftist activity characteristic of the 1970s and the creation in 1968 of the *sections d’entreprise* (unions at the firm level which were not required anymore to be affiliated with a confederation) resulted in a rise, in terms of membership, of small unions which did not participate in professional elections or were not successful at them.

Finally, independently of the explanations of the gap between ours and [Labbé \(1995\)](#)’s estimates, a more indirect confirmation of our density estimate lies in the series for the number of days striked in the private sector, which is published annually by the DARES and compiled, e.g. by [Merlier \(2000\)](#) or [Camard \(2002\)](#). [Camard \(2002\)](#) shows the limitation of these data, but does not suggest that the trend over time is biased. The volatility of strikes is higher than that of union membership, but the trends are strikingly similar : the total number of days striked fluctuated around 4 millions between 1972 and 1977, then declined abruptly and fell below 1 million for the first time in 1985.

To conclude, for the reasons detailed above, we can give 30% as our lower estimate of union density during the period 1970-78, and 35-40% as our range of most likely estimation, which might however include ’atypical union members’ who paid their dues on an irregular basis or who belonged to small unions uninvolved in professional elections.

B.2 A note on the causes of deunionization

The brutal french deunionization was reflected in the public perceptions of the time. The ten years after 1968 were a period of intense ”workers’ insubordination” ([Vigna \(2007\)](#)). But at the turn to the 1980s, the most visible labor struggle were now defensive actions against layoffs, and they were unsuccessful : Lip (1973-1977, see [Reid \(2018\)](#)), Denain and Longwy (1978-1984, see [Noiriel \(1984\)](#), chap. 8 and [Vigna \(2004\)](#)), Citroen and Talbot (1982-1984, see [Hatzfeld and Loubet \(2004\)](#)). In the following years, despite important strikes such as the railworkers strike in 1987 and the big

public sector strike in 1995, it had become clear that collective action was durably weakened, as illustrated by the study of [Beaud and Pialoux \(1999\)](#) on a car factory in the 1990s.

Interestingly, such a shift can not be easily explained by a direct institutional weakening of unions. The beginning of the decline in the end of the 1970s does not follow any institutional change in the status of unions or the rules of bargaining. Such a change happened with the lois Auroux in 1982 under the socialist Mitterrand government, but it enlarged rather than restricted the prerogatives of the unions, and that did not seem to slow their collapse.

Therefore, we believe that France is an interesting case study to comparative theories of deunionization, because a large deunionization happened with no direct political attack on their role in bargaining (as opposed to the US and the UK), and in a too short time span to make structural explanations alone (globalization, automation, shift of the workforce to services) convincing. An alternative, and competitive in our opinion, explanation would focus more on the change in the macroeconomic environment, with the rise of the unemployment rate and the austerity measures of the Plan Barre (1976-1981), and after a brief period of expansionary policy in the first two years of Mitterrand in power, the “*tournant de la rigueur*” (1983-1986).

C Density in Italy

C.1 A historical account

Italian union history in the second half of the 20th century is characterized by two periods: a first period of intense unionisation burst and a second period of long lasting decline, with possibly a stabilisation in the last two decades. Union membership started to grow massively after 1968 and its ideological outbreak, helped by the extremely favourable economic conditions of that period. In 1970, a worker chart¹¹ was approved, finally translating into practice the right of workers to organize and to strike granted by the constitution of 1948. Protected, and to some extent even encouraged, by the state, unions grow exponentially to reach, at the end of seventies, 50 % of the dependent

¹¹The *Statuto dei lavoratori*

employment, an all time height. The high inflation and the rise of unemployment at the beginning of the eighties, however, started to erode their power. During a bit more than a decade, the fracture within the dependent labor force between blue and white collars, the accusation of being the responsible of the hyper-inflation through the clause of automatic indexation of salaries¹², and the loss of power of the major political allies (the Communist and Socialist parties), consistently reduced the influence of unions and their numbers (Loreto (2017)). This crisis culminated in 1992 with the fall of the soviet union, the definitive abolition of the *Scala Mobile*, and the failure of the project of re-unification of the three major confederations. In the early nineties, a new system of industrial relations was introduced with the creation of the Unitary Union Representatives (RSU), a democratically elected organ in charge of representing workers' interests in firms with at least 15 employees. This new system of workers' representation reserved to the main unions some uncontested seats based on their vote shares in the elections. From this moment, firm elections' votes will complement membership to measure the relative strength of each confederation. In 1994, the first Berlusconi government attempts to reform the pension system without seeking the collaboration of social partners. This will lead to a new upsurge in union mobilization culminating in the largest strike ever organized in post-war Italy¹³. After this display of strength, however, the main unions were included in the negotiations by the subsequent government¹⁴ and ended up signing a very similar pension reform to the one they had opposed. While some important clauses were added, this and subsequent reforms might have been perceived as a failure of the major unions to effectively oppose unwanted legislation by a part of the workforce. Possibly for this reason, starting with the end of the '80s, a new type of independent unionism has risen. These unions are not joint in a confederation and focus their attention on specific workers resembling more to interests groups. One of the most famous example of this new form of unionism is the teacher union COBAS. In the last decades, many governments have attempted to transform the Italian labor market reducing workers' protection rights with the idea that a more flexible labour market would boost employment. The symbol of this reform effort was the abolition of the article 18 of the the Worker Chart of 1970, i.e. the compulsory reinstatement in the workplace of unfairly dismissed

¹²The so called *Scala Mobile*

¹³General strike in Rome, 14th October 1994

¹⁴The government led by Lamberto Dini

workers. In 2015, the center-left wing government led by Matteo Renzi managed to abolish this piece of legislation shifting the balance of power in favor of large employers. Unions failed to stop this change in industrial relations partly because a grandfathering clause was introduced in the new law that kept under the old protection employed workers, de facto dividing the workforce into two groups. Unfortunately, due to the lack of administrative data, we are not in the position to evaluate the effect of this reform on the participation of workers in trade unions, although from our data it seems that a further decline might have occurred.

C.2 Explaining the gap between official and estimated density for Italy

As noted in the main text, in the absence of large scale labor surveys measuring union density, we can not have a definitive proof that the unionization rates we estimate are the ones closer to reality. Luckily, the first large scale data on unions are expected to be released in 2021 and, despite still collected by the unions themselves, we hope to have a clearer picture of union membership rates in the present. Some official sources do however already exist. For instance, in the sample of firms belonging to *Confindustria*¹⁵, typically representing the larger firms in the country, the share of union membership is estimated at 25% by Italian social security institute (INPS)¹⁶, contrary to 40 % as reported by the union accounts for the same sample of firms.

Concerning the measurement of union density, the official data are built using self reported membership from the three largest union confederations (CGIL, CISL and UIL) adding a percentage (between 10 and 20 %) to account for independent unionism¹⁷. These numbers are likely inflated, as unions have incentives to over-report their membership to increase their influence and political leverage. This leads to two possible sources of inconsistencies: the data reported by the main organizations might be upwardly inflated, and, henceforth, the estimates of independent unionism might be overstated. Our estimates are instead based on multiple, different surveys, that are commonly used in all countries to measure union participation.

¹⁵Largest firm owners' confederation

¹⁶Boeri (2017)

¹⁷See <https://www.oecd.org> for more details

Unfortunately, the estimations for Italy are based on relative few observations and hence tend to be a bit volatile. Note, however, that desegregating the 5-year bins in our year-survey data as in figure (11d), we find that in each and every point¹⁸ after 1995 our estimates consistently lie below the official sources, despite the different samples and methodologies used to compute them. This was not the case before the divergence of the two series, when, even if not exactly identical, the evolution of union density was very similar. So, why unions should have started to lie more about their membership starting from the mid nineties?

Here again we do not have a conclusive answer, but the incentive to misreport membership might have increased after the introduction in 1993 of a new union representative organ, the Unitary Union Representatives (RSU)¹⁹, and the elections with which they are elected. To appoint new representatives at the firm, local or national level, workers are in fact asked since 1993 to vote in democratic elections for their candidates. 1/3 of the available seats are still attributed only to the main union confederations, based on the vote share they receive, but the other 2/3 can be won by outsiders too. It is hence possible that, in order to show consistency between the votes received in RSU elections and union membership, some union might have adjusted its membership to match the results in the RSU elections. This phenomenon might have been encouraged by the fact that around the same years the project of a unique unitary confederation that had more or less be in place until then had failed, opening the door to union competition. In other words, relative strength might have started to matter more for each confederation and thus the incentive to over-report membership might have changed with competition as famously happened in the US between AFL and CIO before reunification²⁰. Note, moreover, that union financing had started to shift, starting from the mid-nineties, from union membership dues to a system of paying services open to all workers. Today, this new service system accounts for more than 3/4 of unions' resources with the remaining 1/4 made of members' dues. In addition to provide a high quality service at a low price to workers, this change has addressed the free rider problem, as any individual has to

¹⁸Note, in particular, that the "weird" low estimate for 2013 can be attributed to a wording issue in the question asked in that year by ITANES, and that for equally low results for the European Social Survey in 2016 and 2018 to a sample bias towards unemployed individuals in the sampling process.

¹⁹Rappresentanze Sindacali Unitarie

²⁰Farber et al. (2021)

pay a low, but positive cost to benefit from the service. It is possible that non-member workers benefiting from these below market-price services show their support to the union provider by voting for it in the RSU elections.

To give an idea of this possible issue and hence to better understand the difference between our series and the official one, we look in detail, when possible, to the membership affiliation of each confederation. Free rider might be a greater issue for less politically engaged individuals (see for instance in [Abramitzky \(2018\)](#)) and hence we expect to see larger members' differences for less politically radical unions. In the Italian context, the more radical confederation is the CGIL, while CISL and UIL are roughly identical in ideological bias²¹. Before the nineties, as recalled above, it is hard to measure the weight of each confederation as many important industry-union, notably the metal workers union, were shared among the tree. However, starting with the failure of the new unitary project, this exercise becomes meaningful. Table 2 reports the relative share of workers belonging to a union in the three larger confederations and a catch all category labelled "Others" for the ICTWSS and our micro data. As expected, both CISL and UIL have a lower relative weight in our sample than the one reported in the official statistics. This is not the case for the CGIL. Our interpretation is that the number of workers declared by the CISL and UIL is probably over-estimated. This finding is consistent with anecdotal evidence according to which the CISL might practice some inflation on the number of union cards sold²².

Our final explanation is political. As described in the historical account, in 1994 there was a large resurgence of demonstrations, mainly against the project of reform of the pension system led by the center-right government of Silvio Berlusconi. This moment is usually pointed out as the halt in the drop in union membership. According to our desegregated data (see figure 11d), there might indeed have been a union resurgence between 1994 and 1998, as claimed by the main unions. The raise, however, seems to have been followed by a new drop. We speculate that this new drop might have been caused by a sense of failure and disappointment as the main unions had eventually signed a very similar pension reform few years later. For all these reasons, and

²¹More precisely, the CGIL was historically linked to the Communist party, the CISL with the Socialist party, and the UIL with the Democristian party.

²²See the episode of *Report* of the 14/12/2020 at <https://www.raisplay.it>

despite the volatility of our estimates, we believe that our series is closer to the "true" level of union membership in the country.

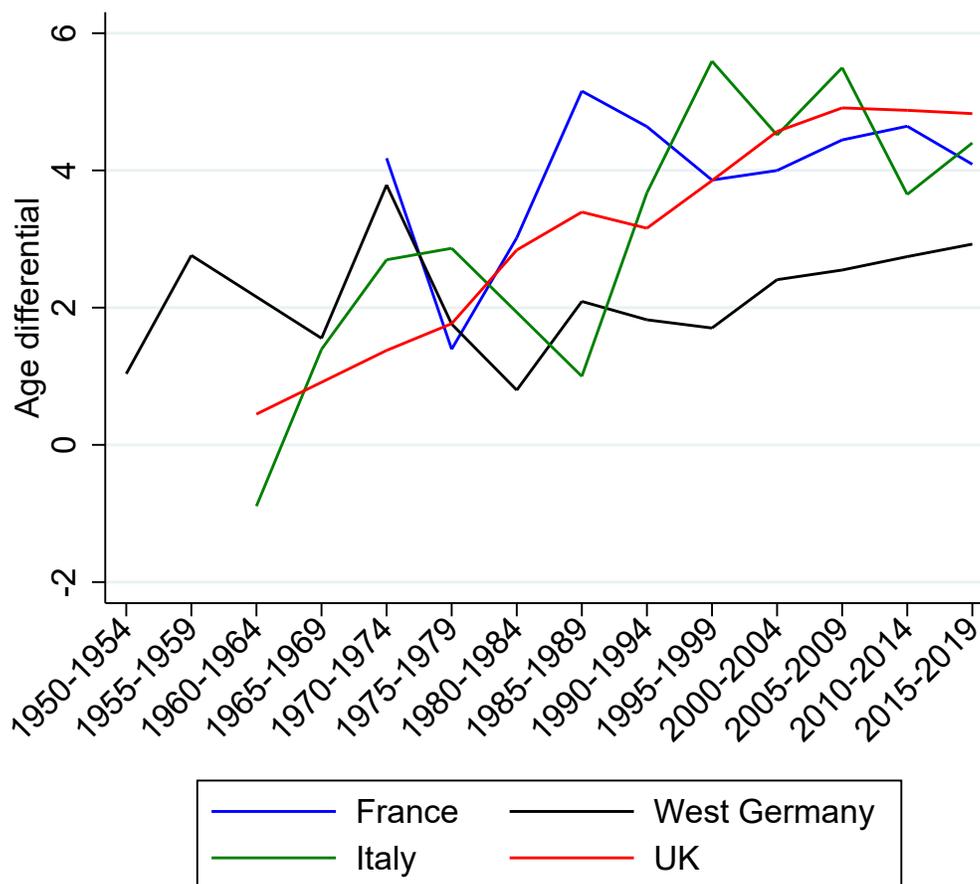
Table 2: Comparison of the ICTWSS and our micro data from surveys

Year	CGIL		CISL		UIL		Others	
	ICTWSS	microdata	ICTWSS	microdata	ICTWSS	microdata	ICTWSS	microdata
2001	42%	47.5%	32%	27%	13%	11%	13%	14.5%
2006	42%	50.5%	32%	25.5%	13%	9%	13%	15%
2018	42%	43%	31%	21%	15%	13%	12%	23%

Note: For the ICTWSS data, the figures for 2018 are actually those for 2017. Post-electoral survey (ITANES): 2001, 2006, 2018

D The aging of union members

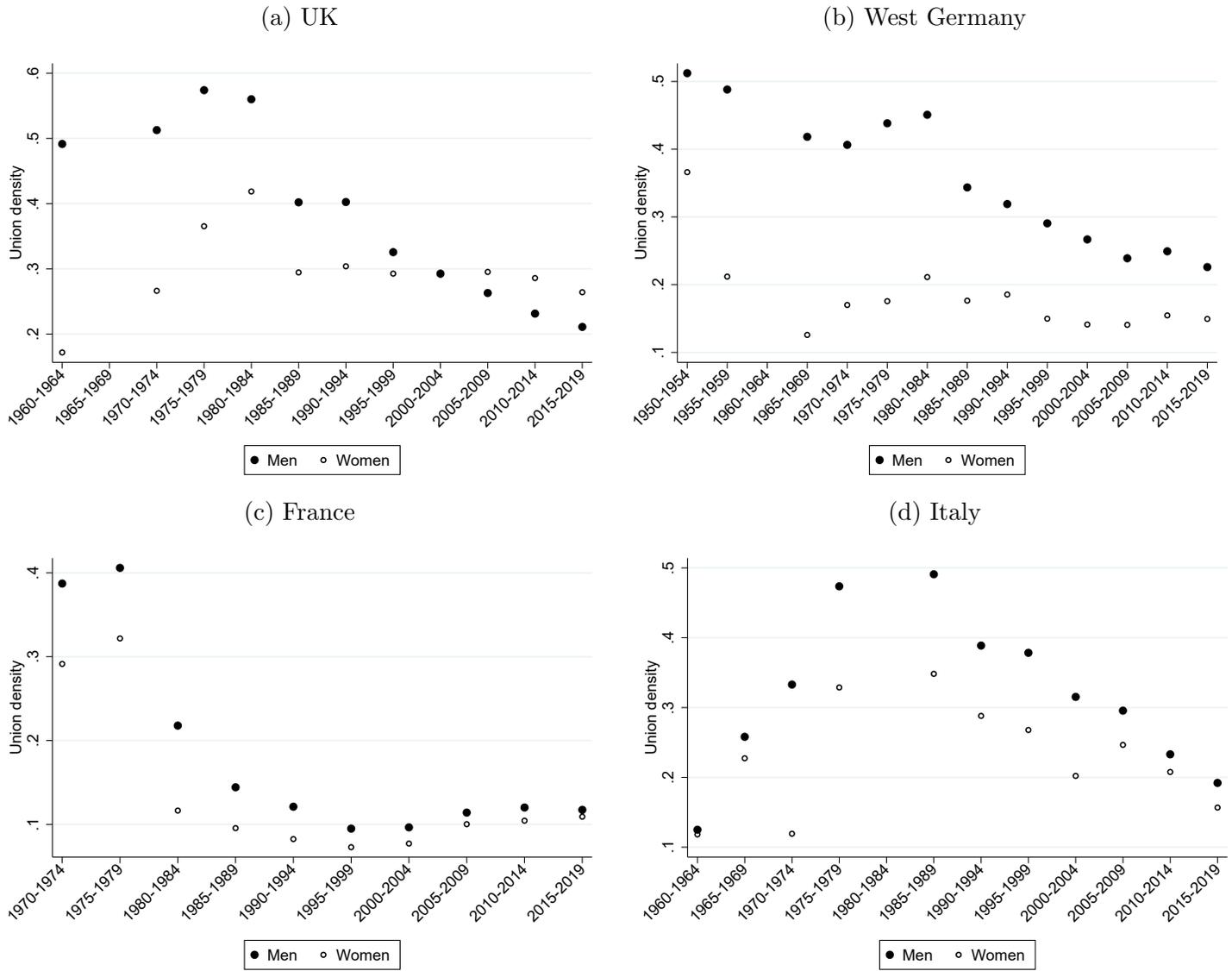
Figure 13: Aging differential of union members with respect to other workers



The aging of union members parallel to de-unionization is a commonly shared perception, and our data confirm it for Italy and the UK. The natural interpretation is that the fall in density was due to a fall in the flow of entry rather than a rise in the flow of exit. In the UK, this is consistent with the result of [Bryson and Gomez \(2005\)](#) who show that de-unionization is explained by the rise in 'never-membership' rather than the exit of union members. For results on the age profile of union members in many countries, see [Blanchflower \(2006\)](#) and [Blanchflower and Bryson \(2020\)](#).

E Union density by subgroup

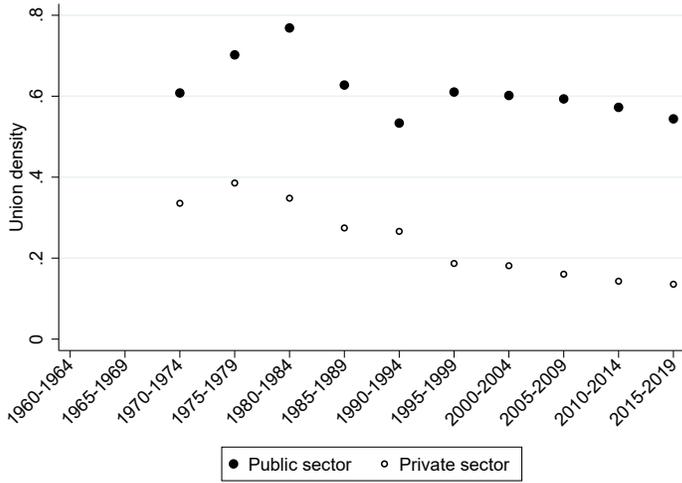
Figure 14: Union density for men and women



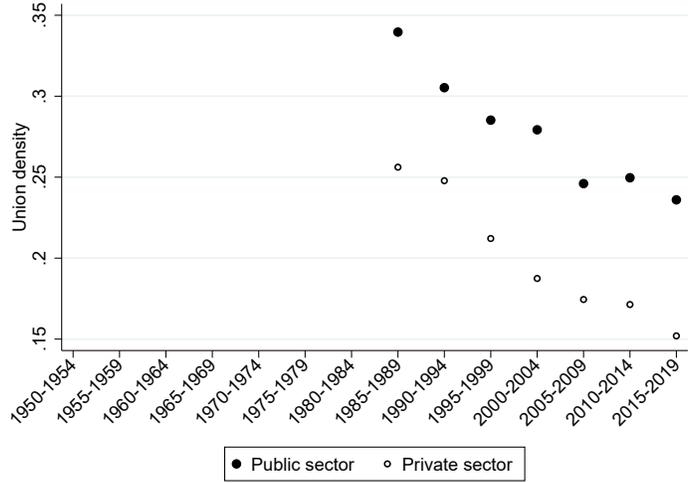
Note: Union density of male and female wage workers. - Reading: In the first half of the 1990s in the UK, around 40% of male and 30 % of female wage workers were union members.

Figure 15: Union density in the private and the public sector

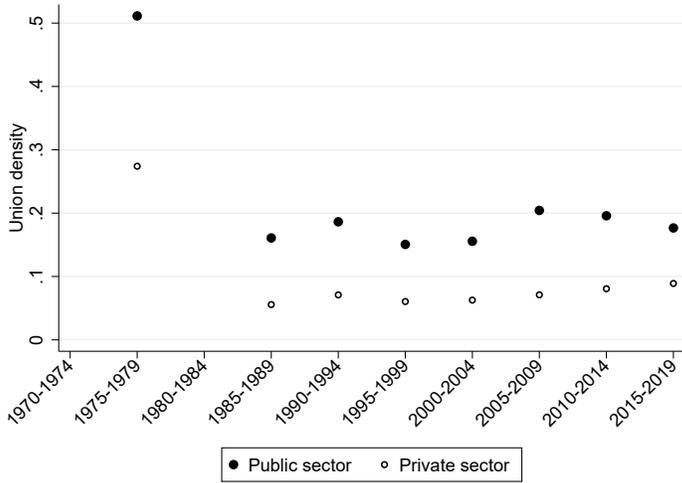
(a) UK



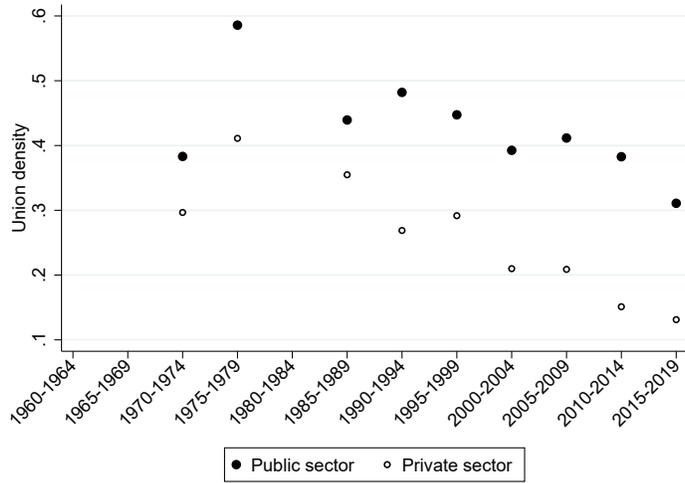
(b) West Germany



(c) France



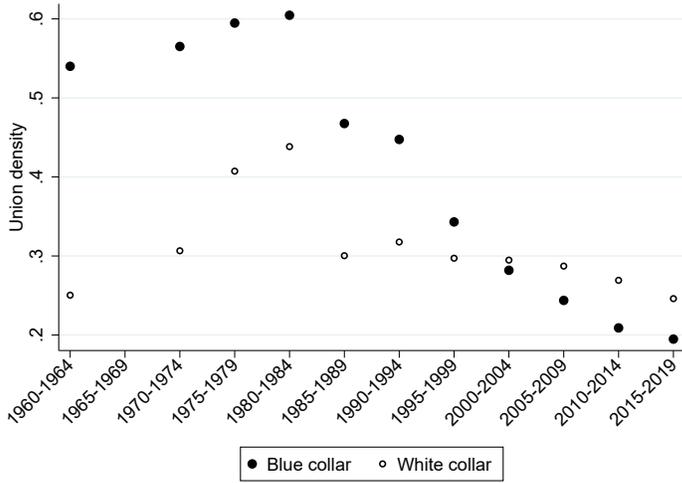
(d) Italy



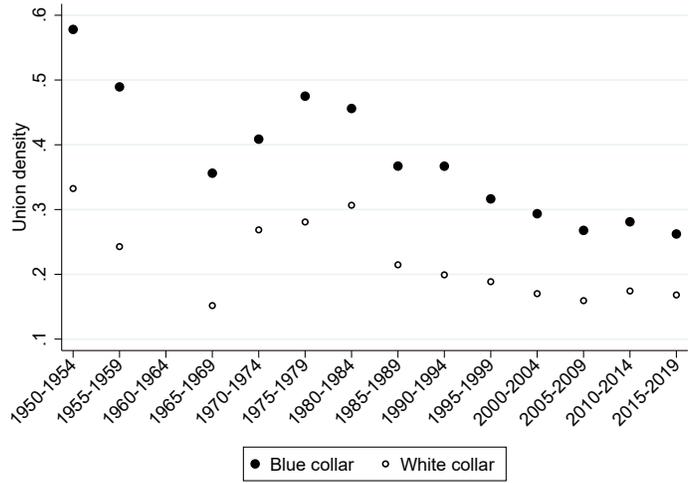
Note: Union density of wage workers in the private and the public sector. - *Reading:* In the second half of the 1990s in the UK, around 60% of workers were union members in the public sector, and 20 % in the private sector.

Figure 16: Union density for blue collar and other workers

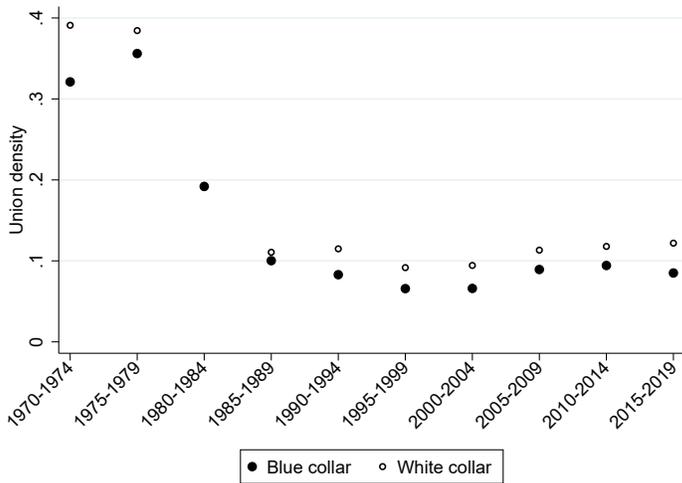
(a) UK



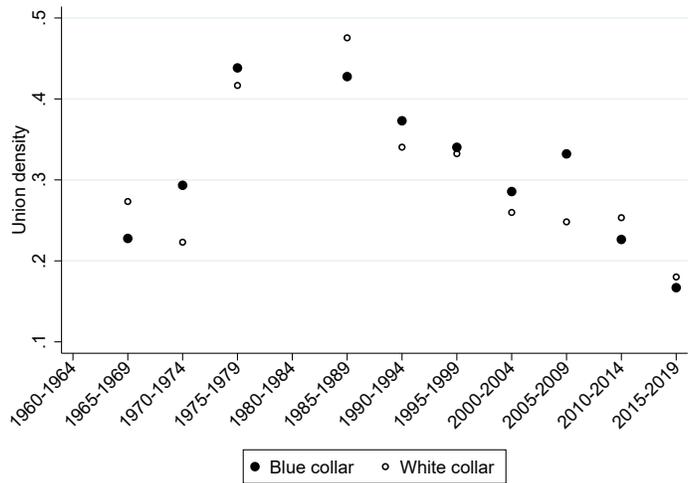
(b) West Germany



(c) France



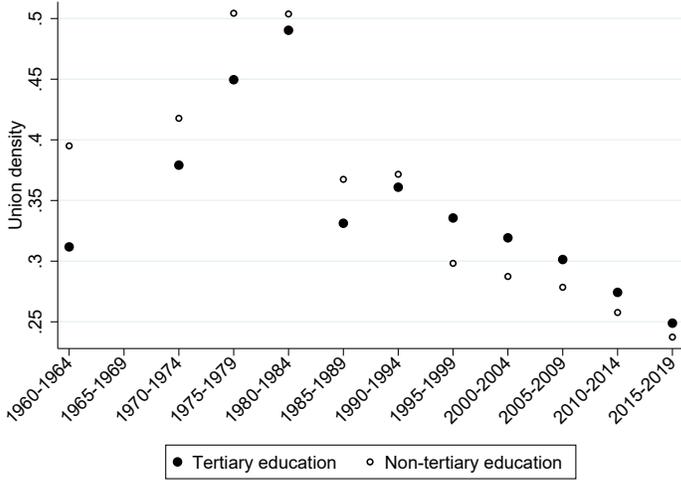
(d) Italy



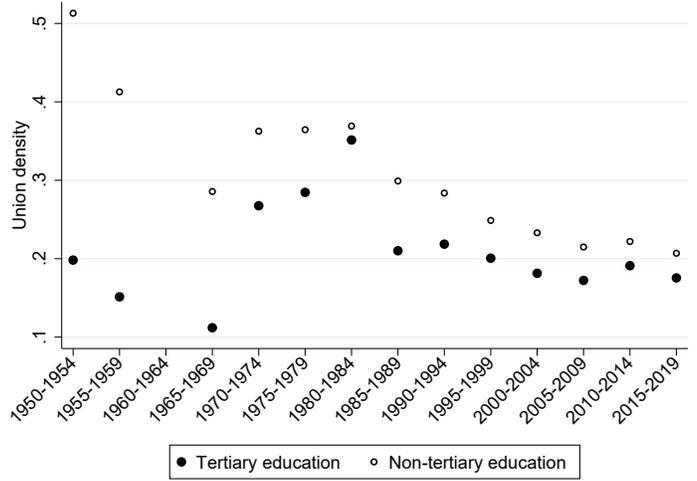
Note: Union density of blue collar and other wage workers. - *Reading:* In the second half of the 1970s in the UK, around 60% of blue collar, and 40% of other wage workers were union members.

Figure 17: Union density for skilled and unskilled workers

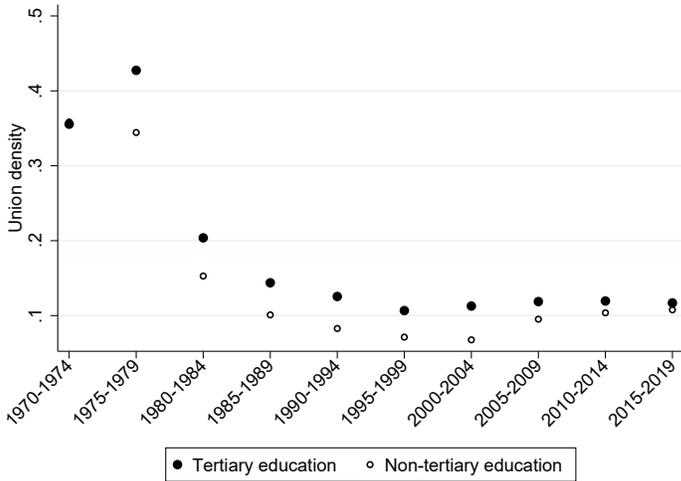
(a) UK



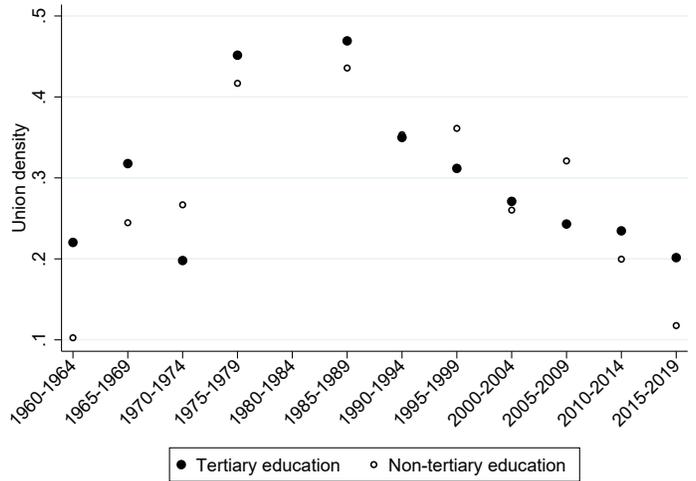
(b) West Germany



(c) France



(d) Italy

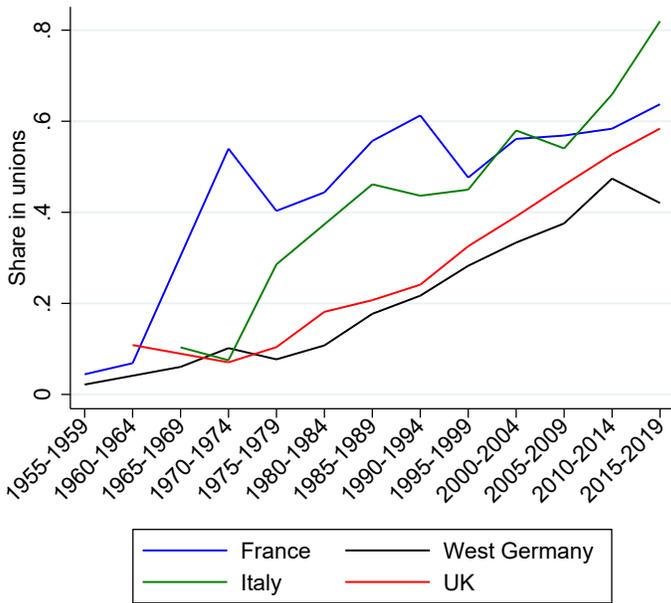


Note: Union density of wage workers who did and did not complete a full secondary education. (See Appendix ??.) - *Reading:* In the second half of the 1970s in the UK, around 50% of secondary-educated and 45% of less educated wage workers were union members.

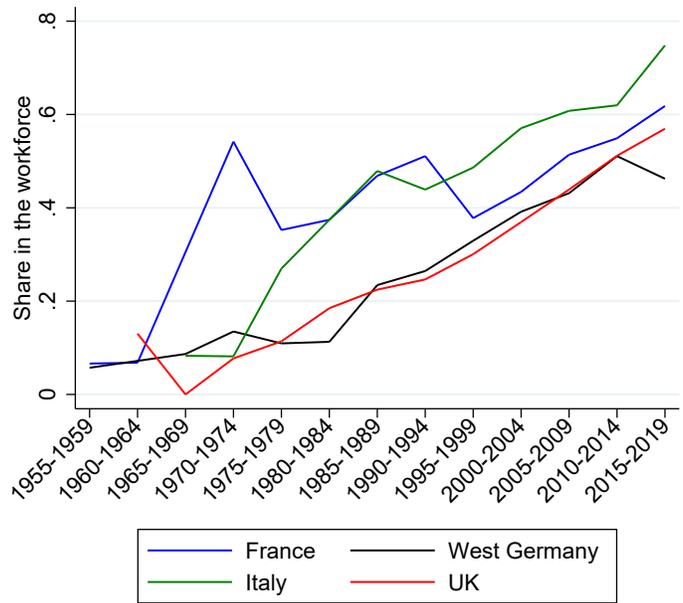
F Binary variable for education

Figure 18: X = Completed secondary education

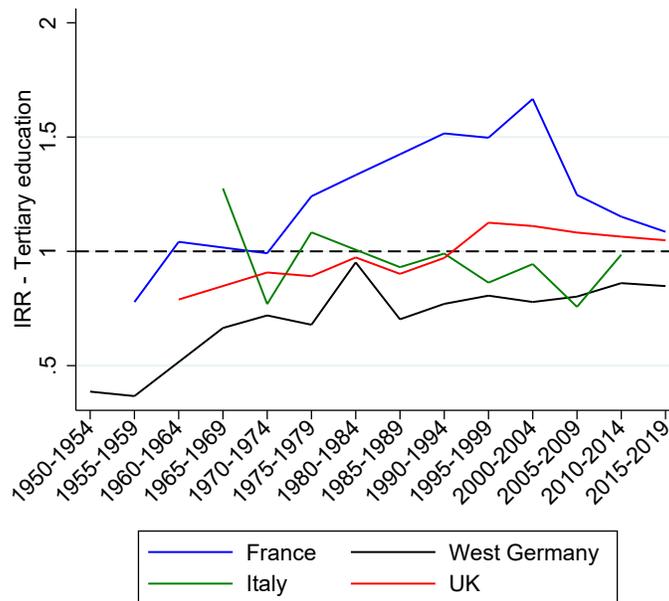
(a) Composition of unions



(b) Composition of the workforce



(c) Selection into unions

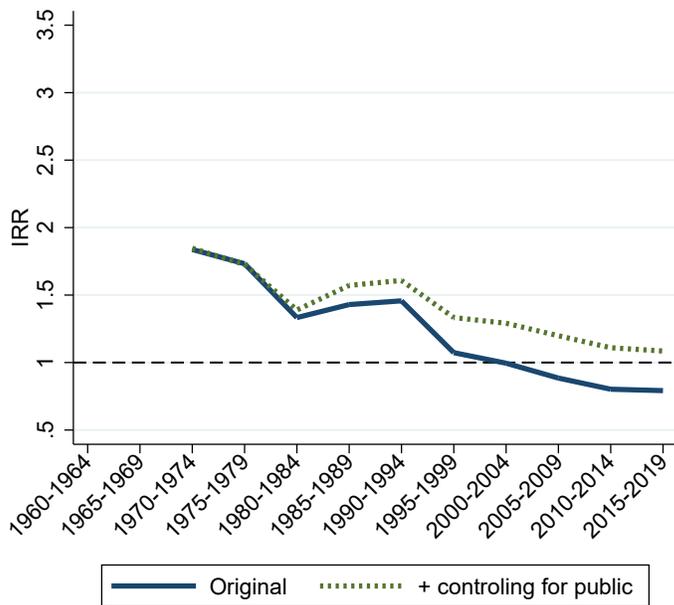


Note: X is the group of employees who completed secondary education. The graphs above show the share of X among union members, in the workforce, and the selection of X members into unions.

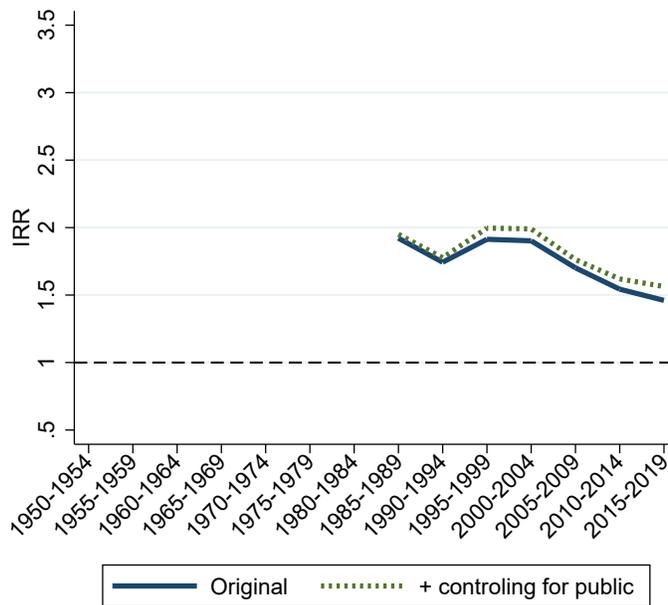
G Controlling for public sector

Figure 19: Selection of men

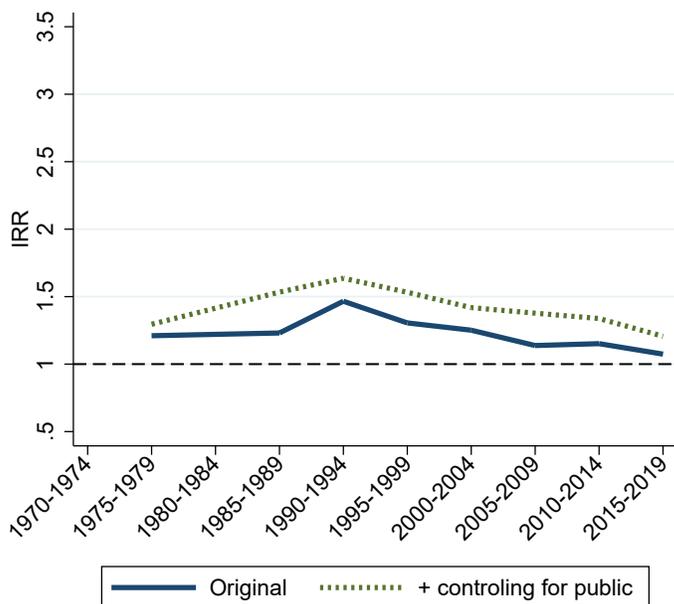
(a) UK



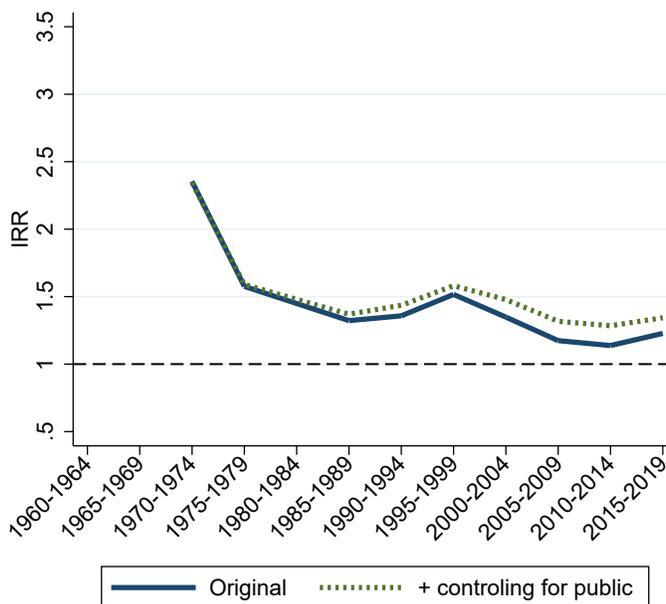
(b) West Germany



(c) France



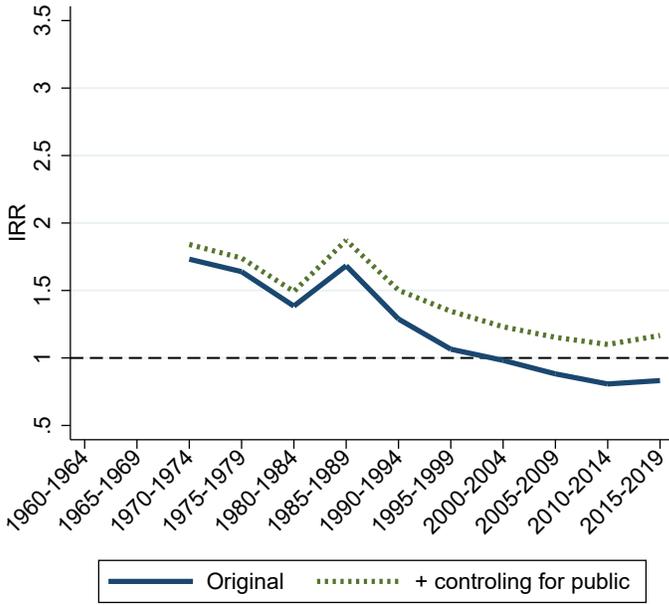
(d) Italy



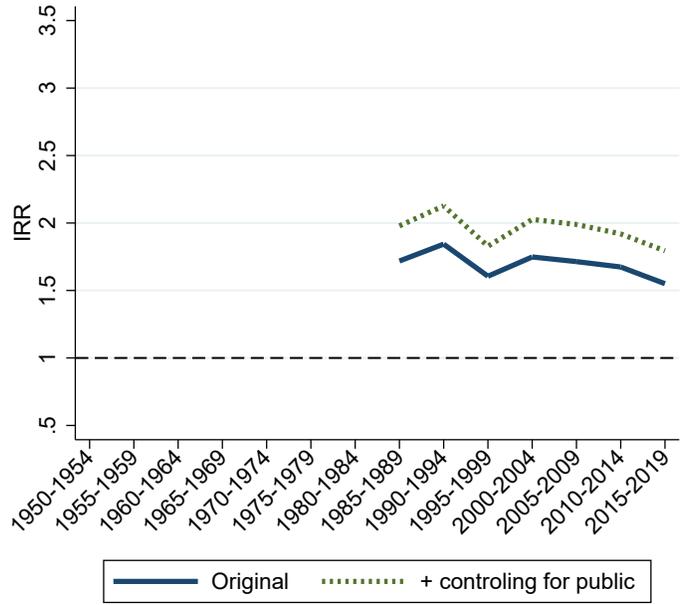
Note: Results from the estimation of equation (1) when the category variable is a binary variable equal to 1 when the individual is a man and adding progressively more controls. This represents the evolution of the ratio of union densities of working men and women in our four countries of interest when accounting for various other trends.

Figure 20: Selection of blue collars

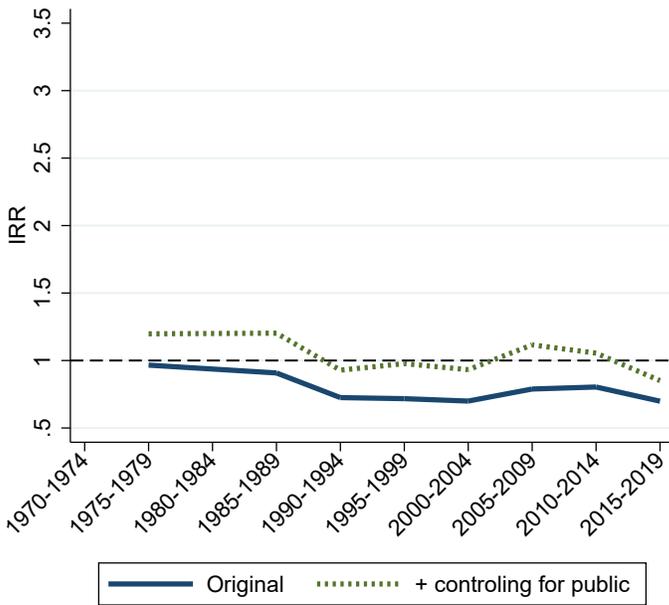
(a) UK



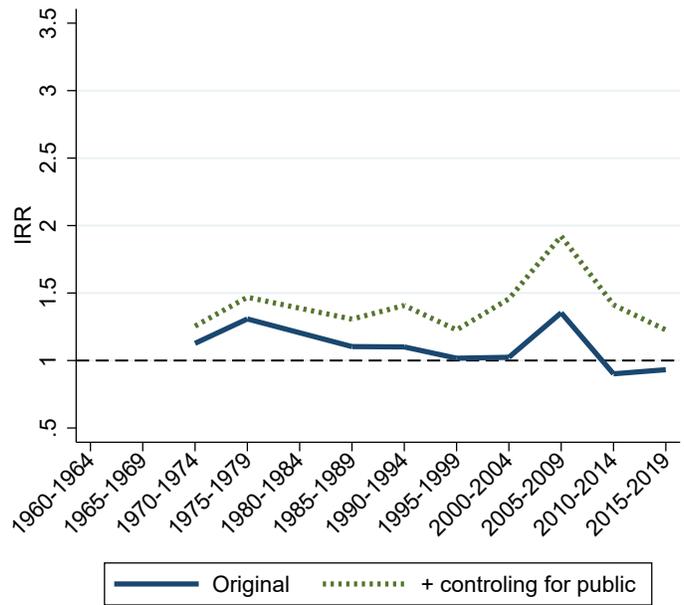
(b) West Germany



(c) France



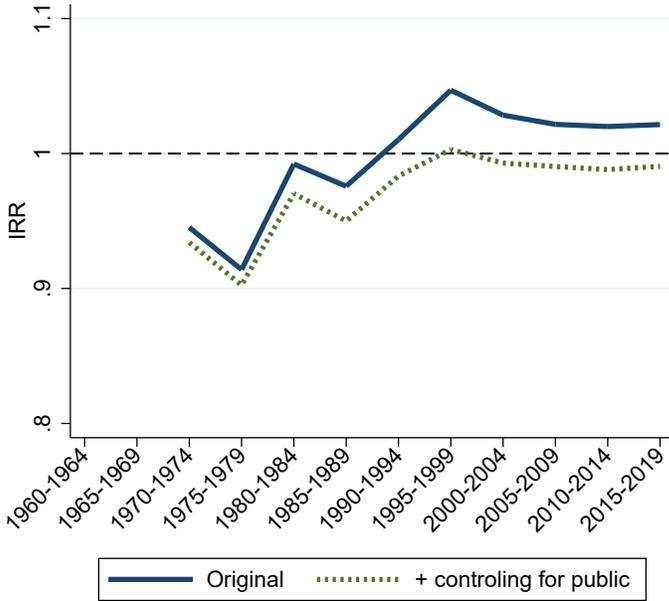
(d) Italy



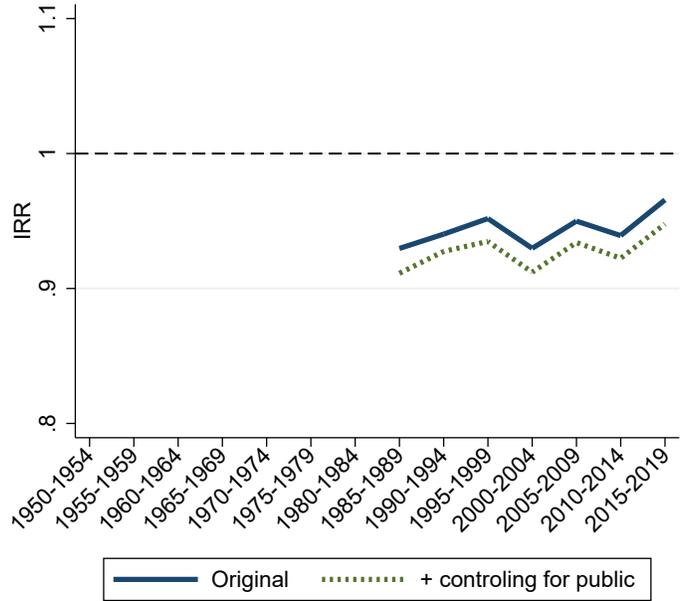
Note: Results from the estimation of equation (1) when the category variable is a binary variable equal to 1 when the individual is part of the public sector and adding progressively more controls. This represents the evolution of the ratio of union densities of blue-collar and white-collar workers in our four countries of interest when accounting for various other trends.

Figure 21: Selection by education

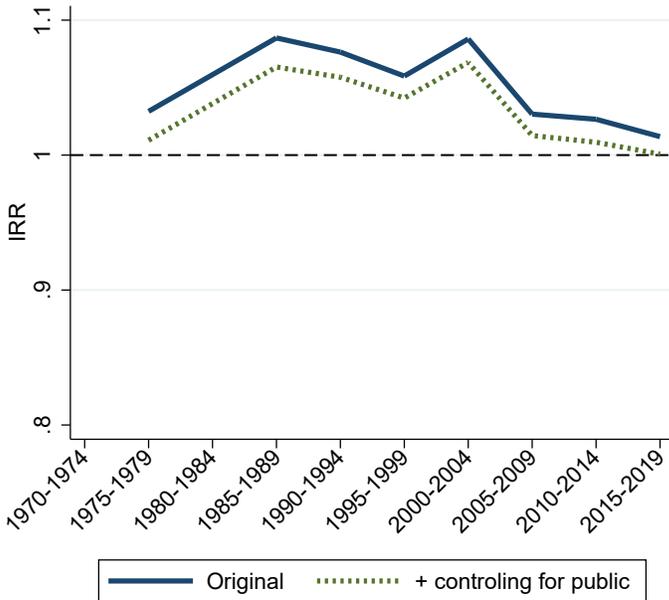
(a) UK



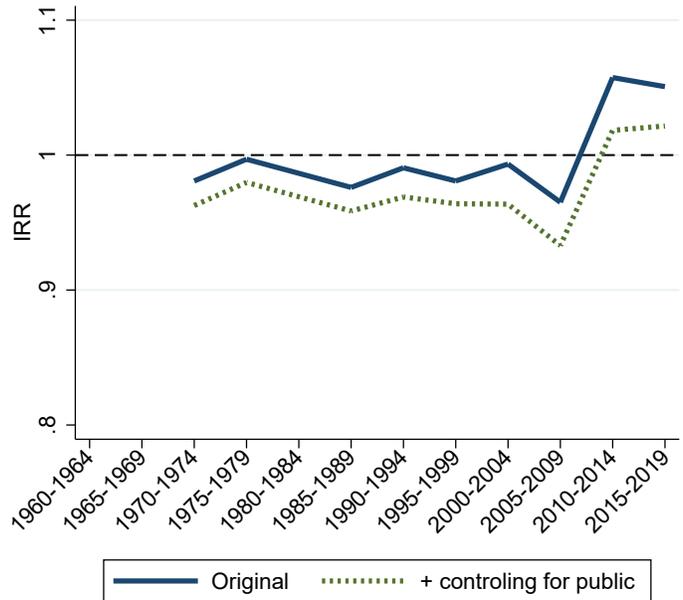
(b) West Germany



(c) France



(d) Italy



Note: Results from the estimation of equation (1) when the category variable is the age at the end of the education and we add progressively more controls. This represents the evolution of the selection into unions because of education in our four main countries of interest while accounting for other trends.

H Detailed Sources

Table 3: Detailed Sources - France

Source	Type of Source	Year	Lustrum	N	Perimeter	Question on union membership
Post-electoral	Post-Electoral Survey	1958	1955-59	697	>21	Right now, are you a union member? If yes, of which one?
Post-electoral	Post-Electoral Survey	1962	1960-64	693	>21	Right now, are you a union member? If yes, of which one?
Eurobarometer	International Survey	1970	1970-74	742	>18	Do you belong to a union?
Eurobarometer	International Survey	1971	1970-74	572	>18	Have you paid this year dues to a labor union? and if yes, which?
Eurobarometer	International Survey	1975	1975-79	447	>18	If the R belongs to an organization: Q.253 Trade union, friendly society
Eurobarometer	International Survey	1976	1975-79	510	>18	Are you currently a member of a trade union? Which union is that?
Agoramétrie	Opinion Survey	1977	1975-79	442	>18	Do you personally belong to a trade union?
Eurobarometer	International Survey	1977	1975-79	414	>18	Do you subscribe to any clubs or societies of any kind? Q.221.A Trade unions or professional societies
Agoramétrie	Opinion Survey	1978	1975-79	488	>18	Do you personally belong to a trade union?
Post-electoral	Post-Electoral Survey	1978	1975-79	1759	>18	Right now, are you a union member? If yes, of which one?
Agoramétrie	Opinion Survey	1981	1980-84	687	>18	Do you personally belong to a trade union?
Eurobarometer	International Survey	1983	1980-84	712	>18	Which, if any, of the following groups or associations do you belong to? Q.128D Trade union or professional associations
Eurobarometer	International Survey	1985	1985-89	715	>18	As far as trade union are concerned, are you. . . A trade union member?
Eurobarometer	International Survey	1987	1985-89	710	>18	Which, if any, of the following groups or associations do you belong to? Q.146.D Unions or professional associations
Credoc	Opinion Survey	1989	1985-89	831	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Eurobarometer	International Survey	1989	1985-89	1278	>18	Are you yourself or is anyone else in your household a member of a trade union?
Credoc	Opinion Survey	1990	1990-94	813	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Eurobarometer	International Survey	1990	1990-94	1714	>18	Which, if any, of the following groups or associations do you belong to? Q.11.4 Trade unions or professional association
Credoc	Opinion Survey	1991	1990-94	808	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Eurobarometer	International Survey	1991	1990-94	2305	>18	Are you a member of a trade union?
Credoc	Opinion Survey	1992	1990-94	810	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Eurobarometer	International Survey	1992	1990-94	2214	>18	Are you a member of a trade union?
Credoc	Opinion Survey	1993	1990-94	817	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	1994	1990-94	797	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Eurobarometer	International Survey	1994	1990-94	943	>18	Are you a member of a trade union?
Credoc	Opinion Survey	1995	1995-99	811	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	1996	1995-99	784	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Eurobarometer	International Survey	1996	1995-99	526	>18	Are you a member of a trade union?
EPCV	Public Survey	1996	1995-99	1816	>18	Number of memberships in union or professional groups
Credoc	Opinion Survey	1997	1995-99	775	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
EPCV	Public Survey	1997	1995-99	1779	>18	Number of memberships in union or professional groups
Credoc	Opinion Survey	1998	1995-99	780	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
EPCV	Public Survey	1998	1995-99	2399	>18	Number of memberships in union or professional groups
Credoc	Opinion Survey	1999	1995-99	854	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
EPCV	Public Survey	1999	1995-99	2454	>18	Number of memberships in union or professional groups

Detailed Sources - France **Continued**

Source	Type of Source	Year	Lustrum	N	Perimeter	Question on union membership
Credoc	Opinion Survey	2000	2000-04	849	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
EPCV	Public Survey	2000	2000-04	2379	>18	Number of memberships in union or professional groups
Credoc	Opinion Survey	2001	2000-04	847	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
EPCV	Public Survey	2001	2000-04	2434	>18	Number of memberships in union or professional groups
Credoc	Opinion Survey	2002	2000-04	886	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
EPCV	Public Survey	2002	2000-04	2557	>18	Number of memberships in union or professional groups
Credoc	Opinion Survey	2003	2000-04	842	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
EPCV	Public Survey	2003	2000-04	4665	>18	Number of memberships in union or professional groups
Credoc	Opinion Survey	2004	2000-04	874	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
EPCV	Public Survey	2004	2000-04	2504	>18	Number of memberships in union or professional groups
Credoc	Opinion Survey	2005	2005-09	885	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	2006	2005-09	891	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	2007	2005-09	886	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	2008	2005-09	896	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
SRCV	Public Survey	2008	2005-09	9334	>18	Are you a member of a trade union?
Credoc	Opinion Survey	2009	2005-09	850	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	2010	2010-14	842	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
SRCV	Public Survey	2010	2010-14	9477	>18	Are you a member of a trade union?
Credoc	Opinion Survey	2011	2010-14	837	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	2012	2010-14	851	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	2013	2010-14	842	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
SRCV	Public Survey	2013	2010-14	9146	>18	Are you a member of a trade union?
Credoc	Opinion Survey	2014	2010-14	1855	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
Credoc	Opinion Survey	2015	2015-19	1373	>18	Do you belong or participate to the activities of an association or a group? (a trade union)
SRCV	Public Survey	2016	2015-19	9176	>18	Are you a member of a trade union?
Post-electoral	Post-Electoral Survey	2017	2015-19	1280	>18	Right now, are you a union member? If yes, of which one?

Table 4: Detailed Sources - Italy

Source	Type of Source	Year	Lustrum	N	Perimeter	Question on union membership
ICPSR	Post-electoral Survey	1960	1960-64	995	>18 & <99	Types of organizations of which you are a member: 01 labor unions
ITANES	Post-electoral Survey	1968	1965-69	2500	>21 & <99	Are you a member of any labor union or professional organization? Which one?
Eurobarometer	International Survey	1970	1970-74	562	>18 & <99	Do you belong to a union?
Eurobarometer	International Survey	1971	1970-74	945	>18 & <99	Have you paid this year dues to a labor union? If yes, which?
ITANES	Post-electoral Survey	1972	1970-74	1841	>21 & <99	Are you a member of any labor union or professional organization? Which one?
ITANES	Post-electoral Survey	1975	1975-79	1657	>18 & <75	Are you a member of any labor union or professional organization? (among the list)
Eurobarometer	International Survey	1975	1975-79	371	>18 & <99	If the R belongs to an organization: Q.253 Trade union, friendly society
Eurobarometer	International Survey	1976	1975-79	354	>18 & <99	Are you currently a member of a trade union? Which union is that?
Eurobarometer	International Survey	1977	1975-79	389	>18 & <99	Do you subscribe to any clubs or societies of any kind? Q.221_A Trade unions or professional societies
ISSP	International Survey	1985	1985-89	~ 1500	>18 & <75	Are you now a member of a trade union or staff association (at present)?
ITANES	Post-electoral Survey	1985	1985-89	2074	>18 & <99	Are you a member of any labor union or professional organization? (among the list)
ISSP	International Survey	1986	1985-89	1027	>18 & <75	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	1987	1985-89	1027	>18 & <99	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	1988	1985-89	1028	>18 & <99	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	1989	1985-89	1028	>18 & <99	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	1990	1990-94	983	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ITANES	Post-electoral Survey	1990	1990-94	1500	>18 & <99	Are you a member of any labor union or professional organization? (yes/no)
ISSP	International Survey	1991	1990-94	983	>14 & <75	Are you now a member of a trade union or staff association (at present)?
Eurobarometer	International Survey	1991	1990-94	1731	>18 & <99	Are you a member of a trade union?
ISSP	International Survey	1992	1990-94	996	>14 & <75	Are you now a member of a trade union or staff association (at present)?
Eurobarometer	International Survey	1992	1990-94	1581	>18 & <99	Are you a member of a trade union?
ISSP	International Survey	1993	1990-94	1000	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	1994	1990-94	1021	>14 & <75	Are you now a member of a trade union or staff association (at present)?
Eurobarometer	International Survey	1994	1990-94	683	>18 & <99	Are you a member of a trade union?
ISSP	International Survey	1995	1995-99	1094	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	1996	1995-99	1104	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ITANES	Post-electoral Survey	1996	1995-99	2502	>18 & <99	Have you ever been enrolled in a trade union (yes, now)?
Eurobarometer	International Survey	1996	1995-99	358	>18 & <99	Are you a member of a trade union?
ISSP	International Survey	1997	1995-99	1017	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	1998	1995-99	1008	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	2001	2000-04	999	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ITANES	Post-electoral Survey	2001	2000-04	3209	>18 & <99	Have you ever been enrolled in a trade union (yes, now)?
ESS	International Survey	2002	2000-04	1207	>15 & <99	Are you a member of any labor union or professional organization? If yes, now or in the past?
ESS	International Survey	2004	2000-04	1529	>15 & <99	Are you a member of any labor union or professional organization? If yes, now or in the past?
ITANES	Post-electoral Survey	2006	2005-09	4016	>18 & <99	Are you or have you been enrolled in a trade union (yes, now)? Which one?
ISSP	International Survey	2008	2005-09	1078	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ISSP	International Survey	2011	2010-14	1186	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ESS	International Survey	2012	2010-14	960	>15 & <99	Are you a member of any labor union or professional organization? If yes, now or in the past?
ITANES	Post-electoral Survey	2013	2010-14	1508	>18 & <99	Types of organizations of which you are a member: 07 labor unions, professionals or of category
ESS	International Survey	2016	2015-19	2626	>15 & <99	Are you a member of any labor union or professional organization? If yes, now or in the past?
ISSP	International Survey	2018	2015-19	1215	>14 & <75	Are you now a member of a trade union or staff association (at present)?
ESS	International Survey	2018	2015-19	2745	>15 & <99	Are you a member of any labor union or professional organization? If yes, now or in the past?
ITANES	Post-electoral Survey	2018	2015-19	2573	>18 & <99	Are you or have you been enrolled in a trade union (yes/No)? Which one?

Table 5: Detailed Sources - UK

Source	Type of Source	Year	Lustrum	N	Perimeter	Question on union membership
ICPSR	Post-electoral survey	1960	1960-64	995	>21	Types of organizations of which you are a member: 01 labor unions
Political	Electoral survey	1963	1960-64	~ 1000	>21	Does anyone in this household belong in a trade union? Who is it who belongs to a trade union?
Political	Electoral survey	1964	1960-64	~ 1000	>21	Does anyone in this household belong in a trade union? Who is it who belongs to a trade union?
BES	Electoral survey	1974	1970-74	2700	>18	Respondent's trade union
Eurobarometer	International Survey	1975	1975-79	603	>18	If the R belongs to an organization: Q.253 Trade union, friendly society
Eurobarometer	International Survey	1976	1975-79	537	>18	Are you currently a member of a trade union? Which union is that?
Eurobarometer	International Survey	1977	1975-79	565	>18	Do you subscribe to any clubs or societies of any kind? Q.221_A Trade unions or professional societies
BES	Electoral survey	1979	1975-79	1000	>18	Respondent's trade union in the codebook. Asked to name the union
BES	Electoral survey	1983	1980-84	1900	>18	Are you now a member of a trade union or staff association?
GHS	public survey	1983	1980-84	9000	>16	Current trade union member
ISSP	International Survey	1985	1985-89	~ 1500	>18	Are you now a member of a trade union or staff association?
ISSP	International Survey	1986	1985-89	1416	>18	Are you now a member of a trade union or staff association?
ISSP	International Survey	1987	1985-89	1212	>18	Are you now a member of a trade union or staff association?
BES	Electoral survey	1987	1985-89	1800	>18	Are you now a member of a trade union or staff association?
ISSP	International Survey	1988	1985-89	1307	>18	Are you now a member of a trade union or staff association?
ISSP	International Survey	1989	1985-89	1297	>18	Are you now a member of a trade union or staff association?
LFS	public survey	1989	1985-89	>35000	>16	whether a member of a trade union or staff association
ISSP	International Survey	1990	1990-94	1197	>18	Are you now a member of a trade union or staff association?
LFS	public survey	1990	1990-94	>35000	>16	whether a member of a trade union or staff association
ISSP	International Survey	1991	1990-94	1257	>18	Are you now a member of a trade union or staff association?
LFS	public survey	1991	1990-94	>35000	>16	whether a member of a trade union or staff association
Eurobarometer	International Survey	1991	1990-94	2346	>18	Are you a member of a trade union?
ISSP	International Survey	1992	1990-94	1066	>18	Are you now a member of a trade union or staff association?
BES	Electoral survey	1992	1990-94	1700	>18	Are you now a member of a trade union or staff association?
Eurobarometer	International Survey	1992	1990-94	2317	>18	Are you a member of a trade union?
ISSP	International Survey	1993	1990-94	1261	>18	Are you now a member of a trade union or staff association?
ISSP	International Survey	1994	1990-94	993	>18	Are you now a member of a trade union or staff association?
Eurobarometer	International Survey	1994	1990-94	1017	>18	Are you a member of a trade union?
ISSP	International Survey	1995	1995-99	1058	>18	Are you now a member of a trade union or staff association?
LFS	public survey	1995	1995-99	>35000	>16	whether a member of a trade union or staff association
ISSP	International Survey	1996	1995-99	989	>18	Are you now a member of a trade union or staff association?
LFS	public survey	1996	1995-99	>35000	>16	whether a member of a trade union or staff association
Eurobarometer	International Survey	1996	1995-99	479	>18	Are you a member of a trade union?
ISSP	International Survey	1997	1995-99	1080	>18	Are you now a member of a trade union or staff association?
BES	Electoral survey	1997	1995-99	1500	>18	Are you now a member of a trade union or staff association?
LFS	public survey	1997	1995-99	>35000	>16	whether a member of a trade union or staff association
ISSP	International Survey	1998	1995-99	804	>18	Are you now a member of a trade union or staff association?
LFS	public survey	1998	1995-99	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	1999	1995-99	>35000	>16	whether a member of a trade union or staff association

Detailed Sources - UK **Continued**

Source	Type of Source	Year	Lustrum	N	Perimeter	Question on union membership
ISSP	International Survey	2000	2000-04	972	>18	Are you now a member of a trade union or staff association?
LFS	public survey	2000	2000-04	>35000	>16	whether a member of a trade union or staff association
ISSP	International Survey	2001	2000-04	912	>18	Are you now a member of a trade union or staff association?
BES	Electoral survey	2001	2000-04	1400	>18	Do you belong to a trade union?
LFS	public survey	2001	2000-04	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2002	2000-04	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2003	2000-04	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2004	2000-04	>35000	>16	whether a member of a trade union or staff association
BES	Electoral survey	2005	2005-09	1700	>18	Trade union member
LFS	public survey	2005	2005-09	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2006	2005-09	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2007	2005-09	>35000	>16	whether a member of a trade union or staff association
ISSP	International Survey	2008	2005-09	1986	>18	Are you now a member of a trade union or staff association?
LFS	public survey	2008	2005-09	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2009	2005-09	>35000	>16	whether a member of a trade union or staff association
BES	Electoral survey	2010	2010-14	900	>18	Are you now a member of a trade union or staff association?
LFS	public survey	2010	2010-14	>35000	>16	whether a member of a trade union or staff association
ISSP	International Survey	2011	2010-14	928	>18	Are you now a member of a trade union or staff association?
LFS	public survey	2011	2010-14	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2012	2010-14	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2013	2010-14	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2014	2010-14	>35000	>16	whether a member of a trade union or staff association
BES	Electoral survey	2015	2015-19	1300	>18	Are you a member of a trade union or staff association?
LFS	public survey	2015	2015-19	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2016	2015-19	>35000	>16	whether a member of a trade union or staff association
LFS	public survey	2016	2015-19	>35000	>16	whether a member of a trade union or staff association
BES	Electoral survey	2017	2015-19	1000	>18	Are you a member of a trade union or staff association?
LFS	public survey	2017	2015-19	>35000	>16	whether a member of a trade union or staff association
ISSP	International Survey	2018	2015-19	1552	>18	Are you now a member of a trade union or staff association?
LFS	public survey	2018	2015-19	>35000	>16	whether a member of a trade union or staff association

Table 6: Detailed Sources - West Germany

Source	Type of Source	Year	Lustrum	N	Perimeter	Question on union membership
UNESCO-Institut für Sozialwissenschaften	Electoral survey	1953	1950-54	1061	>18 & <75	Member of any association or union? If yes: member of a trade union?
Institut für Demoskopie, Allensbach	Electoral survey	1957	1955-59	3836	>16	Are you in a trade union?
Universität Mannheim	Electoral survey	1965	1965-69	1224	>21 (excl West Berlin)	Are you a member of one of the following organizations ? Item 1: Trade union
Universität Mannheim	Electoral survey	1969	1965-69	1157	>21 (excl West Berlin)	Choice in a list of organizations, with each trade union presented separately
Eurobarometer	International Survey	1970	1970-74	992	>18	Do you belong to a union?
Konrad-Adenauer-Stiftung	Electoral survey	1971	1970-74	2960	>18 (excl WBerlin)	Choice in a list of organizations
Eurobarometer	International Survey	1971	1970-74	961	>18	Have you paid this year dues to a labor union? and if yes, which?
Universität Mannheim	Electoral survey	1972	1970-74	761	>18 (excl WBerlin)	Are you, or is someone else in the family member of a trade union? 1. I am.
Konrad-Adenauer-Stiftung	Electoral survey	1973	1970-74	2448	?	Are you a member of a trade union ?
Eurobarometer	International Survey	1975	1975-79	396	>18	If the R belongs to an organization: Q.253 Trade union, friendly society
Institut für politische Wissenschaft, Kiel	Electoral survey	1976	1975-79	4181	?	Are you, or is someone else in the family member of a trade union ? 1. I am.
Universität Mannheim	Electoral survey	1976	1975-79	833	>18	?
Eurobarometer	International Survey	1976	1975-79	395	>18	Are you currently a member of a trade union? Which union is that?
Politbarometer	Opinion survey	1977	1975-79	4290	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Eurobarometer	International Survey	1977	1975-79	364	>18	Do you subscribe to any clubs or societies of any kind?
						Q.221.A Trade unions or professional societies
Politbarometer	Opinion survey	1978	1975-79	4429	>19	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	1979	1975-79	4554	>20	Are you, or is someone else in the family member of a trade union ? 1. I am.
Institut für politische Wissenschaft, Kiel	Electoral survey	1980	1980-84	711	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Universität Mannheim	Electoral survey	1980	1980-84	5226	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Konrad-Adenauer-Stiftung	Electoral survey	1980	1980-84	2685	>14	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	1980	1980-84	1224	German citizens	Are you a member of the following organizations? unions as distinct items
Politbarometer	Opinion survey	1980	1980-84	5226	>21	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	1981	1980-84	4994	>22	Are you, or is someone else in the family member of a trade union ? 1. I am.
Universität Mannheim	Electoral survey	1982	1980-84	1264	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	1982	1980-84	1264	German citizens	Are you a member of the following organizations? unions as distinct items
Politbarometer	Opinion survey	1982	1980-84	4045	>23	Are you, or is someone else in the family member of a trade union ? 1. I am.
Institut für politische Wissenschaft, Kiel	Electoral survey	1983	1980-84	746	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Universität Mannheim	Electoral survey	1983	1980-84	2007	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	1983	1980-84	4041	>24	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	1984	1980-84	1148	German citizens	Are you a member of the following organizations? unions as distinct items
Politbarometer	Opinion survey	1984	1980-84	4461	>25	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	1985	1985-89	4712	>26	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	1985	1985-89	5429	Residents	Are you a member of one of the following organisations or unions?
Universität Mannheim	Electoral survey	1986	1985-89	819	>18 (excl WBerlin)	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	1986	1985-89	1321	German citizens	Are you a member of the following organizations? unions as distinct items
Politbarometer	Opinion survey	1986	1985-89	4781	>27	Are you, or is someone else in the family member of a trade union ? 1. I am.
Institut für politische Wissenschaft, Kiel	Electoral survey	1987	1985-89	569	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Konrad-Adenauer-Stiftung	Electoral survey	1987	1985-89	948	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	1987	1985-89	4835	>28	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	1988	1985-89	1196	German citizens	Are you a member of the following organizations? unions as distinct items
Politbarometer	Opinion survey	1988	1985-89	5358	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	1989	1985-89	5674	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	1989	1985-89	4910	Residents	Are you a member of one of the following organisations or unions?
Institut für politische Wissenschaft, Kiel	Electoral survey	1990	1990-94	611	>18	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	1990	1990-94	1309	German citizens	Are you a member of the following organizations? unions as distinct items
Politbarometer	Opinion survey	1990	1990-94	5660	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	1991	1990-94	5648	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Eurobarometer	International Survey	1991	1990-94	2508	>18	Are you a member of a trade union?
Allbus	Public survey	1992	1990-94	1616	Residents in Germany	Are you a member of the following organizations? unions as distinct items
Politbarometer	Opinion survey	1992	1990-94	5683	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Eurobarometer	International Survey	1992	1990-94	2549	>18	Are you a member of a trade union?

Detailed Sources - West Germany **Continued**

Source	Type of Source	Year	Lustrum	N	Perimeter	Question on union membership
Politbarometer	Opinion survey	1993	1990-94	5651	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	1993	1990-94	4707	Residents	Are you a member of one of the following organisations or unions?
Allbus	Public survey	1994	1990-94	1663	Residents in Germany	Are you a member of the following organizations? Trade union as an item
Politbarometer	Opinion survey	1994	1990-94	6023	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Eurobarometer	International Survey	1994	1990-94	1244	>18	Do you belong to an association or a group? (a trade union)
Politbarometer	Opinion survey	1995	1995-99	5627	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	1996	1995-99	1695	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	1996	1995-99	5490	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Eurobarometer	International Survey	1996	1995-99	418	>18	Are you a member of a trade union?
Politbarometer	Opinion survey	1997	1995-99	5558	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	1998	1995-99	1307	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	1998	1995-99	7014	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	1998	1995-99	5065	Residents	Are you a member of one of the following organisations or unions?
Politbarometer	Opinion survey	1999	1995-99	5748	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	2000	2000-04	1693	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2000	2000-04	5661	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	2001	2000-04	5652	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	2001	2000-04	7775	Residents	Are you a member of one of the following organisations or unions?
Allbus	Public survey	2002	2000-04	1266	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2002	2000-04	6385	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	2003	2000-04	9004	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	2003	2000-04	7831	Residents	Are you a member of one of the following organisations or unions?
Allbus	Public survey	2004	2000-04	1202	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2004	2000-04	9096	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	2005	2005-09	11938	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	2006	2005-09	1379	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2006	2005-09	8539	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	2007	2005-09	8486	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	2007	2005-09	7064	Residents	Are you a member of one of the following organisations or unions?
Allbus	Public survey	2008	2005-09	1397	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2008	2005-09	8233	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	2009	2005-09	11286	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	2010	2010-14	1277	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2010	2010-14	9149	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	2011	2010-14	9148	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	2011	2010-14	10371	Residents	Are you a member of one of the following organisations or unions?
Allbus	Public survey	2012	2010-14	1618	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2012	2010-14	8483	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	2013	2010-14	11797	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	2014	2010-14	1701	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2014	2010-14	8815	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.

Detailed Sources - West Germany **Continued**

Source	Type of Source	Year	Lustrum	N	Perimeter	Question on union membership
Politbarometer	Opinion survey	2015	2015-19	8673	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	2015	2015-19	10398	Residents	Are you a member of one of the following organisations or unions?
Allbus	Public survey	2016	2015-19	1698	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2016	2015-19	9072	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Politbarometer	Opinion survey	2017	2015-19	11201	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
Allbus	Public survey	2018	2015-19	1734	Residents in Germany	Are you a member of the following organizations?Trade union as an item
Politbarometer	Opinion survey	2018	2015-19	9553	>18 & with a phone	Are you, or is someone else in the family member of a trade union ? 1. I am.
GSOEP	Public panel survey	2019	2015-19	10543	Residents	Are you a member of one of the following organisations or unions?