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## ABSTRACT

### **Inequality and Union Membership: The Impact of Relative Earnings Position and Inequality Attitudes<sup>\*</sup>**

In this paper we examine the connection between union membership and economic inequality. Using several surveys from the International Social Survey Programme (ISSP) covering the period 1985-2002, we initially examine the impact of relative earnings position on union membership and show that union membership is concentrated in the intermediate earnings groups. Next, we examine the impact of inequality attitudes on union membership. We show that union membership is not only affected by individual expected benefits related to education or earnings, but that attitudes towards inequality also play an important role. When controlling for attitudes, however, the relative income position remains significant in affecting the probability of union membership. We also show that there are no significant trends in the relationship between relative income positions and union membership. Our results indicate that union decline is observed in face of increasing earning dispersion, by attracting fewer members at both tails of earnings distribution.

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## 1. INTRODUCTION

Trade union membership, in absolute numbers and relative to the size of the labour force, is in decline in many countries (OECD, 2004; Visser, 2006). However, it is not fully known what caused this decline. Cross-national empirical studies of trends in union membership and union density have often analysed aggregate statistics (Checchi and Visser, 2005; Western, 1997), which necessarily limits the scope of explored individual attributes that affect union membership.

In this paper we propose two groups of individual determinants that have not received the attention they deserve and analyse their predictive power of union membership using repeated cross-sectional data from seven countries. First, we will analyse the impact of individual relative earnings positions on union membership. There are reasons to expect that unions are predominantly catering to the interests of intermediate earnings groups and that low-earners and high-earners have, for different reasons, less incentives of joining a trade union. Assuming that workers join unions partly for self-interested reasons, the attractiveness of trade unions for particular groups of workers can be seen as a function of the degree to which unions are seen as effectively serving the material (wage) interests of that group. If unions for reasons of ideology, internal politics or organizational self-preservation favour wage-compressing policies, they become less attractive for higher earning workers. If they must compromise their policies in order to keep higher-earning members satisfied, they may loose out among the lower-earning groups. If for reasons that are unrelated to union policy but determined by technological change or globalisation, trade unions have become less effective in redistributing earnings towards the median and upholding minimum real earnings (DiNardo, Fortin and Lemieux, 1996; Pontusson, Rueda and Way, 2002), they become less attractive as a venue for collective action of lower-paid workers. Our key hypothesis is that both these processes have happened as a result of skill-biased (rather than skill-replacing) technological and organizational change, making workers with higher skills and earnings less dependent on union organization and at the same time rendering unions less effective as organizations protecting workers at the lower end of the labour market.

Given that earnings inequality has risen in the past decades in many countries (Alderson and Nielsen, 2002; EC, 2005; Gottschalk and Joyce, 1998; OECD, 1996; Rueda and Pontusson, 2000), union membership decline may partially be caused by the compositional change in the earnings distribution. Simply put: if the tails of the earnings distribution have grown in size, this may have contributed to a decline in union

membership.<sup>1</sup> Moreover, if it is the case that lower- and higher- earning workers are *decreasingly* attracted to union membership across time, the compositional change in the earnings distribution is of even greater relevance.

It should be noted that the existing literature that connects earnings inequality with union density rates usually starts from the opposite end. The usual argument is that the decline in union membership and/or bargaining coverage is among the institutional factors causing greater inequality (Alderson and Nielsen, 2002; DiNardo, Fortin and Lemieux, 1996; Freeman, 1980; Rueda and Pontusson, 2000; Wallerstein, 1999). We do not reject this argument, but will provide reasons as well as empirical evidence supporting the reverse link, where changing inequality affects union membership rates through changes in the incentives to join.

A second group of individual attributes that we expect to be relevant for joining trade unions are people's attitudes towards social inequality. Joining a union can be seen as a personal endorsement of a form of collective action that, on the aggregate level, helps to reduce (earnings) inequality. Unions are 'vested interests' but also 'swords of justice', to use Alan Flanders' words (Flanders, 1970: 15). Reducing the inequalities in the labour market between blue- and white-collar workers, between women and men, or between black and white workers, is one manifestation of this aspect of unionism (Metcalf, 2005). This could imply that, apart from their own expected benefit from union action, individuals who share the opinion that inequality should be lower than is actually the case are more inclined to join a union than individuals who disagree with this opinion. Arguably, higher-earning people are more tolerant of inequality than those earning less and they are more likely to defend inequality as reward for effort or talent. Part of the explanation for a differential effect of relative earnings on the likelihood to join a trade union may therefore be found in different attitudes towards inequality.

The two types of explanations are not mutually exclusive but intertwined. It has been argued that norms and ideologies favouring more equality are attracting a decreasing part of the population in line with the progress of the neo-liberal ideologies proclaiming the sanctity of the market, the merits of achievement orientation and the rise of the 'Winner-Take-All-Society' (see Frank and Cook, 1995). To the extent that this is the case, such changes in the distribution of values and attitudes could decrease the propensity of union membership independent of changes in actual earnings distributions (see Black, 2001, for cross-national

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<sup>1</sup> For instance, Acemoglu (2002: 47) shows that in the decade from 1983 to 1993 in the US the employment share in the top and bottom 25-percent job categories rose from 35 to 38 per cent.

evidence relating union membership to values). Besides the substantive interest in the impact of attitudes on the probability of union membership, it is also relevant to control for attitudes in order to strengthen empirical support for our preferred explanation of lower and possibly falling membership rates of workers with low and high earnings.

The paper proceeds as follows. In the next section we first discuss the literature relating union politics to the compression of wages and the problems that unions face in this regard. Next, we focus on the impact of attitudinal factors on union membership and formulate our hypotheses regarding this relation. In section 3 we describe our data set, derived from International Social Survey Programme (ISSP), and set out our empirical strategy. In section 4 we present and discuss our results. The paper ends with conclusions and a discussion of the findings.

## **2. TRADE UNIONS AND INEQUALITY**

Figures 1 and 2 present evidence on the relationship between earnings/income inequality and union density. In figure 1 we present aggregate evidence covering the period 1960-1995 for a group of countries where information on income inequality was available over a consistent number of years. For some countries (notably United Kingdom and United States – one could also add Norway and Sweden) there is a clear negative correlation between these two variables. For most of the countries, income inequality has fluctuated without any recognisable trend (Deininger and Squire 1996), while over the full period between 1960 and 1995 union density has increased in some countries and decreased in others. In figure 2 we have extracted from our dataset (based on the International Social Survey Programme – see below) comparable measures of inequality and density over the period 1985-2002 computed on individual data. In this case the evidence at micro-level suggests a clear negative correlation between earnings/income inequality and union density (with the possible exception of Italy and the Netherlands).

[Figures 1 and 2 about here]

### ***The impact of unions on earnings inequality***

There are different reasons why trade unions should compress the wage distribution relative to the productivity distribution (see Freeman and Medoff, 1984). The literature

connecting the two phenomena of earnings inequality and union density focuses largely on the causal direction running from union organization or union policy to wage or earnings (re)distribution. The general argument is that unions compress wages among union members and lower the differential between blue-collar and white-collar worker. Even though this may come with a ‘mark up’ for union members compared to non-members, thus increasing inequality for otherwise equal workers, the empirical finding is that the wage compressing effect is larger than the inequality increasing effect (Freeman, 1980; Freeman and Medoff, 1984; Card, 1998; 2001; Card, Lemieux and Riddell, 2004; Metcalf et al. 2001).

At the theoretical level, there are various reasons why and how unions compress the wages of their members. Or, if they negotiate agreements for all or most employees like they do in most continental European countries (EC, 2004; OECD, 2004), why they do so for most workers irrespective of union membership. Firstly, the aspirations and motives of union leaders and their members may be nested in a ‘moral economy’ and norms of fairness and equality may have a strong hold on them. Svenson (1989) has shown how such norms have informed post-war union wage policies of Swedish and German trade unions, albeit within the sobering realities of coalitional union politics and economic necessity. Secondly, trade unions may conduct a wage compressing strategy as part of a growth- and productivity-enhancing strategy, seeking to squeeze low-paid work in inefficient firms or sectors out of the market (Agell and Lommerud, 1993; Horn and Wolinsky, 1988; Streeck, 1992). Unions may also try to redistribute income as an alternative to progressive taxation (Agell, 1999), though in both cases adverse effects on employment temper these egalitarian union policies. In Sweden, the development of an active labour market policy was intended to address these adverse effects, helping workers to upgrade skills and jobs, and shortening the time spent in unemployment. Active labour market policies are costly, however, and require political backing for high levels of taxation (Calmfors et al., 2001; Martin 2000). Thirdly, internal union politics may favour wage policies tending to the vote of the median union member. Since most modern unions organise heterogeneous workers with different skill and pay levels in the same sector or company, there must be a political mechanism for aggregating the potential diverse preferences of union members and make collective decisions. For instance, when deciding on annual wage increases lower paid members are better off with absolute rather than percentage increases. Under the medium voter model and given a mean wage higher than the medium, as is typically the case in earnings distributions, union policies will tend towards wage compression (Freeman and Medoff, 1984). As this would drive the higher-earnings groups with the strongest bargaining clout away, union are usually

forced to compromise and introduce compensating benefits for their higher-earning members (Acemoglu and Pischke, 1999). Another reason why egalitarian union policies will be mitigated is that in many countries, for instance in Germany, the Netherlands, Sweden and Norway, strike decisions typically require supermajorities of 75 per cent or more; British law in the 1980s has also moved in that direction (Ebbinghaus and Visser, 2000; see also Mosher, 2002). These constraints will be lessened if union and collective bargaining structures are encompassing and high-skilled workers cannot ‘exit’. Collective bargaining in Sweden during the 1960s and 1970s would seem a good illustration of this, though in 1983 the unions representing high-skilled worker in engineering managed to ‘exit’ via a cross-class coalition with employers in export industries who wanted more flexibility in wage-setting even at the price of paying higher wages (Pontusson and Svensson, 1996).

Where there is a sharp distinction between the union and non-union sector of employment, there is evidence that the earnings structure is flatter in the union sector (for the US: Card, 1996, 2001; DiNardo, Fortin and Lemieux, , 1996; Freeman and Medoff, 1984; for Canada: Card, Kramarz and Lemieux, 1999; DiNardo, Fortin and Lemieux, 1996; for the UK: Card, Lemieux and Riddell 2003; ; Metcalf, et al, 2001). In continental European countries this comparison is much harder to make, since collective agreements negotiated by the trade unions are often extended to non-unionised firms and generally applied to non-union members. On average, 70 percent of all employees in continental Western Europe are covered by collective agreement, compared with 14 percent in the US, 32 percent in Canada and 35 percent in the UK (EC, 2004; Visser, 2006). Where it is possible to compare earnings of workers covered by collective agreements with similar workers who are not covered, the ‘agreement mark-up’ tends to be two-to three times smaller in Sweden, Norway, Italy, Germany and the Netherlands compared to the UK, and four times compared to the US (Aidt and Zannatos, 2002; Blanchflower, 1996; Teulings and Hartog, 1998). However, these comparisons are rather crude and do not control for union-status selectivity, i.e. the possibility that higher-earning individuals may decide to work in non-union occupations and firms in the expectation of earning higher wages (Aidt and Zannatos, 2002: 41).

If nearly everybody is covered by union contracts or if the same mechanism for adjusting wage rates applies to all workers independent of union status (as was the case under the ‘scala mobile’ in Italy before 1992 or with wage indexation in the Netherlands before 1983), we cannot infer the effect of unions or union-based institutions from a comparison of union and non-union wages. There are two alternative methods, of which the second is probably the more effective one (see Freeman, 2005). We can compare earnings



distributions across countries with different levels of collective bargaining and union coverage. Such comparisons invariably show that countries with the highest coverage have the lowest wage dispersion. Other measures, reinforcing this association, relate to union structure (unions encompassing low and high earning groups) and bargaining centralisation (Blau and Kahn, 1996; Iversen, 1999; OECD, 1996; 2004; Visser, 1990; Wallerstein, 1999).

The second method tries to test whether changes in unionisation and wage-setting institutions are associated with changes in wage dispersion. Empirical research with British household data (Bell and Pitt, 1998; Gosling and Machin, 1995), for instance, demonstrated a relationship between union decline and the widening of the earnings distribution. Metcalf et al. (2001) report that UK unions narrow the pay differentials between women and men, blacks and whites, manual and non-manual workers, and between people with and without health problems. The authors show also that the equalizing effect of union presence was much smaller than it had been in an earlier and comparable study with data for 1978, when British unions registered perhaps their maximum post-war influence (Metcalf, 1982). Two-thirds of the union effect on wage dispersion had disappeared in the late 1990s (Metcalf et al. 2001: 69). Hibbs and Locking (1996) and Iversen (1999) show that pay differentials in Sweden started to rise after the move from nationwide to industry bargaining in 1983. The observed trends in earnings inequality, shown by the data from the structure of earnings database of Eurostat (EC, 2005: 165), support the hypothesis that trend reversals are related to changes in wage-setting institutions. Thus, downward trends in wage inequality ended in the 1970s in the UK, in 1983 in Sweden (when the coalition for a nation-wide ‘solidaristic’ wage policy was broken), 1990 in Denmark (decentralisation of key agreements), 1993 in the Netherlands (the “New Course” Agreement, with strong decentralising effects) and 1996 in Germany (following the progress of opening clauses in sectoral agreements). Of course, these associations in timing do not constitute definite proof and should be checked against other influences. However, the data do support the idea that wage dispersion is lowest in countries with nation-wide bargaining and high union coverage, and also that across time less centralised wage setting is associated with wider inequality.

These findings point to the declining capability of trade unions to stem the rise in earnings inequality. Generally, the rise in earnings inequality across the western world has been related to skill-biased rather than skill-replacing technological growth, with returns to education sharply rising during the 1980s and 1990s, whereas average real wages for low-skilled workers have stagnated or fallen in this period (Acemoglu, 2002; see also Alderson and Nielsen, 2002). This development has affected the behaviour of firms and promoted a

change in work organization and wage-setting behaviour, which has profoundly changed the governance and size of the (internal) labour markets that were the bedrocks for union organisation. More intensive competition on a worldwide scale has made firms acutely aware of costs and productivity. The solution many employers have reached is to reorganise work around decentralised management of human resources, customised products and working schedules, and reorganise tasks in such ways that they can be partitioned in modules. This makes it easier to subcontract tasks, employ part-time workers and hire temporary staff for some tasks, while core works is multi-tasked and carried out in teams. Employment security and pay are being defined less in terms of the seniority and job status than in terms of the knowledge, competences and effort workers bring to the jobs and develop while working. More industrial relations activities have gravitated towards the level of the firm (Katz and Darbshire, 2000; Marginson and Sisson, 2004).

Fixing the standard pay rate for the job across firms in the industry was the ‘common rule’ and most heralded union wage policy of the first decades after 1945, even in the United States (Flanders, 1970; Reynolds, 1951; Slichter, 1950). Objective pay criteria, based on job descriptions and seniority, diminish the power of supervisors and the possibilities of discrimination and favouritism. Unions typically pressed for the standardization of employment contracts in order to protect workers against uncertainty, simplify collective regulation, de-couple the economic situation of workers from that of their employing organization, and suspend as much as possible competition between workers, so as to enable them to act in solidarity (Streeck, 2005). Standardization involved explicit and agreed definitions of ‘normal’ effort, ‘normal’ hours and ‘normal’ pay, guaranteeing employers reliable performance of predictable routine tasks at an average level of effort, thus allowing the union to act as the guardian of the wage-effort bargain. This institutional solution of the mid-twentieth century is now deeply challenged.

Breaking away from centralised (industry) agreements gives firms more scope for merit- and performance based pay (Lindbeck and Snower, 2001). In the UK, there is evidence that performance related and merit pay is associated with the derecognition or the absence of unions (Heery, 2000). According to Brown et al. (1998), in the UK “for many firms, the advantage of breaking away from an existing structure of collective bargaining was to increase the dispersion of pay, both within grades and between hierarchical levels” and “there was a greater tendency towards linking pay rises to individual performance in derecognising firms than in those retaining collective bargaining. Employers tended to gain substantial discretion to set individual pay by open-ended appraisal procedures.” One way of

doing this is by making job descriptions vaguer. Across Europe, there is some evidence that variable and performance related pay has become more wide-spread in recent times among both non-manual and manual employees, although only for a relatively small proportion of total weekly or monthly pay (EC, 2004; 2005).

### ***The impact of earnings position on union membership***

We expect that unions are predominantly attractive for intermediate earnings groups, whereas low-earners and high-earners have, for different reasons, less incentives of joining a trade union. Highly skilled workers may believe that they do better by staying outside the union, especially when unions engage in wage compressing policies. In addition, they may have sufficient bargaining power as individuals. Moreover, if it is true that risk adversity decreases with income (e.g. Hartog et al. 2002), and if risk adversity is correlated with the tendency of buying insurances (Barsky et al, 1997), then higher-earning workers should be less persuaded by the insurance function of trade unions which is based on risk-pooling (Agell, 1999; see also Agell and Lommerud, 1992, and Burda, 1995). In contrast, low skilled and lower earning workers should be more attracted by the type of insurance and protection that unions promise. However, workers whose earnings and working conditions would benefit most from collective action tend to be least able to get it (Crouch, 1982). Lower-paid workers may be concentrated in sectors and firms that are most difficult to organize, and they may have more frequent spells of unemployment or inactivity, making it more difficult to retain membership ties (Elias, 1996; Klandermans and Visser, 1995; Visser, 2002). Moreover, if trade unions have become less effective in reducing earnings differentials and, in particular defending the real earnings of the low-skilled (see DiNardo, Fortin and Lemieux, 1996; Metcalf, 2005; Pontusson, Rueda, and Way, 2002), lower-paid workers may not bother to join unions or discontinue membership for reasons of disillusionment (see Baccaro & Locke 1998). Finally, Acemoglu, Aghion and Violante (2001) suggest that skill-biased technological change has weakened the coalition supporting the (mandatory or negotiated) minimum wage and thus indirectly contributed to de-unionisation, especially of workers with lower earners.<sup>2</sup> Together, these propositions support the recent contention of

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<sup>2</sup> If wage compression favours firm-sponsored training by firms (because they are already paying unskilled workers a wage above their marginal productivity – though the empirical evidence is not always consistent: see Bassanini et al. 2006), and if skill-bias technological change makes the compression untenable (because skilled workers prefer individual negotiation), then the firms stop training unskilled workers, and find it more convenient to get rid of them. Because of the skill-biased technological change, an unskilled worker

Streeck (2005: 278) that in today's labour markets "the numbers are rising of those who have enough market power to do without collective organization, as well as of those who have too little market power to be capable of it." Today's trade unions would seem to be squeezed into a narrowing middle range of the earnings distribution.

### *Attitudinal factors and union membership*

All previous explanations are based on the logic of strict economic calculus with (prospective) members weighing their material (wage) interests and evaluating the union in terms of how well they serve those interests. However, it is unlikely that union membership is only caused by rational motivations, partly because of the fact that in the European countries that we study members and non-members equally benefit from the employment contracts (e.g. wages and terms of employment) that are negotiated by unions. Such an 'open-shop' system makes the study of union membership partly a 'collective good' problem (Crouch, 1982; Booth 1984). An important source for contributions to collective goods comes from the normative elements guiding such contributions (Hechter, 1987). Peer group pressure towards the sanctioning of 'free riders' is probably another important source for 'open shop' union organizing (Booth, 1985; Naylor, 1990). Such norms may, at the personal level, be based on values or attitudes towards inequality. Group-based social customs tend to be stronger where values of fairness and equal pay for equal work are upheld (Fehr and Gächter, 2002). Given the egalitarian agenda of unions, it is therefore likely that attitudes towards inequality affect the individual decision to join the union and retain membership. For example, in a representative survey of attitudes and patterns of joining in the Netherlands in 1992/3, it turned out that union activity was highly valued because of its association with fairness and equality (Klandermans and Visser, 1995).

This is why we are interested in exploring the role of individual egalitarian attitudes in shaping the incentives to joining unions, in addition to the relative income position of these individuals. We have three reasons to include inequality attitudes in our study of trends in union membership. First, we are substantively interested in the effects of inequality attitudes on union membership. Second, by including attitudes in our models, we can examine to what extent well-known variations in membership across subgroups, for example regarding levels of education or skill, gender or supervisory status, can be explained by

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experiences a reduction in her relative wage, a reduction in training opportunities and an increase in unemployment risk. The joint combination of these three developments makes union membership less and less likely, despite the fact that unions may not be directly responsible for these changes

differences in inequality attitudes. Third, attitudes serve as a control variable for our main explanation of membership decline related to relative earnings position, as discussed above. Because our key hypothesis is derived from assumptions about rational decision-making about union membership based on material (wage) interests, we need to control for attitudinal factors to ensure that variations in the propensity to join across earnings positions are not in fact affected by normative standpoints rather than rational calculation. This is all the more important in view of research showing that attitudes towards inequality are correlated with financial resources (Svallfors, 1993; 1997).

Attitudes towards inequality can be subdivided in at least three types, each of which will be empirically related to union membership in our analysis below. The first is the most general and simply comprises the affirmation that '*inequality in society is too large*'. We will call this the general inequality attitude. The second type is more specific and endorses the opinion that earnings should be redistributed. One may assume that individuals, while evaluating the level of inequality in a particular society, have specific ideas about the *actual* and *legitimate* earnings of specific occupations. Relating the estimates of respondents of what they believe are acceptable or legitimate earnings, we can construct a more specific preference for more or less egalitarian outcomes. Such specific inequality attitudes have been used by Jasso (1999) to construct a social justice index with the ISSP data.

Svallfors (1993), using ISSP data like we do, has used such attitudes to compare inequality attitudes in Sweden and Britain. He reports that in Sweden attitudes about the range of legitimate earnings are strongly related to social class whereas they hardly are in Britain, where the accepted range of what people believe to be acceptable earnings is much wider for all classes.<sup>3</sup> Recently, Osberg and Smeeding (2006) have constructed an empirical measure of inequality attitudes based on respondents' evaluations of actual and legitimate pay for a range of occupations. Based on their responses to ISSP survey questions on actual and perceived pay for a range of occupations, it is possible to assign a particular preference for redistribution to individual respondents. Their measure has the advantage that not only legitimate earnings are observed, as is the case in Svallfors (1997), but also the perceived actual earnings. By inspecting both, a preference for redistribution – or its reverse: the tolerance for inequality - can be calculated which takes account of the perceived degree of

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<sup>3</sup> In another cross-national study, Svallfors (1997) has related the attitudes about the range of legitimate earnings to different types of welfare states. He found that the difference in legitimate earnings between an unskilled factory worker and a chairman of a national company was a factor 2.3 in Scandinavian welfare states, going up to a factor 11 in the USA.

redistribution that has already been achieved. We adopt their approach and will relate one of their empirical measures of ‘inequality tolerance’ attitudes to union membership.

The third type of attitude that may motivate people to join a trade union is more specifically concerned with the perceived need for collective action in order to compress earnings inequality, for instance defending wage coordination or some kind of levelling and protection of low-paid workers. If egalitarian attitudes motivate people to join the unions, this may come together with a conviction that collective action is necessary to achieve greater equality. We call this the ‘inequality needs collective action’ attitude. It is measured by asking people whether they agree with the statement that “*Inequality continues to exist because ordinary people don’t join together to get rid of it*”.

With regard to the relative importance of these three types of attitudes there are two different scenarios. First, it might be argued that more specific attitudes have a stronger effect than general inequality attitudes, the latter being ‘vague’, less contextualised and less committing. Research on intentions has shown that the more these can be put in concrete terms, the stronger their predictive power for subsequent behaviour (Ajzen and Fishbein, 1980). This would imply that the ‘inequality needs collective action’ attitude should have a larger effect than the others and that the ‘general inequality attitude’ has the weakest effect. However, people may think about other forms of collective action, for instance political action or criticise the unions for being ineffective when they score high on the ‘inequality needs collective action’ attitude. In that case, a more general attitude toward inequality should have a stronger effect on membership than the more specific attitude on collective action. Given this uncertainty, we will use all three indicators and see what works best.

### **3. DATA AND OPERATIONALIZATION**

#### ***Data***

We make use of the cross-national surveys of the International Social Survey Programme of various years. For the general study of the impact of earnings and other relevant objective characteristics on union membership we analyse the ISSP data from 1985 to 2002 for seven countries: Western Germany, Eastern Germany, Sweden, Norway, Italy,

Netherlands, Britain.<sup>4</sup> We have selected these countries among all available ones according to two criteria. On the one hand, we have considered the presence in more than one survey, in order to investigate potential variations along the time dimension. On the other hand, we only consider countries characterised by an ‘open-shop’ union system. In an ‘open-shop’ framework, a single worker may observe the aggregate inequality measure as a proxy of the egalitarian attitude and effectiveness of unions, whereas in a ‘closed-shop’ context local inequality measures become crucial. Since ISSP surveys do not report information on inequality at the local or establishment level, we were forced to leave the United States out of our sample. The remaining sample of seven countries gives a nice spread of different welfare state and industrial relations types – from liberal market economies to more coordinated ones, and from universalistic (Nordic) welfare states to more conservative (Germany, Netherlands), liberal (UK), and family-oriented (Italy) ones, all of this potentially reflecting in inequality distributions and attitudes about inequality (Svallfors, 1997). Within each country/year sample we have only included wage and salary earners in employment in our analysis, excluding the unemployed, the self-employed and those outside the labour force.<sup>5</sup>

Our overall sample consists of 55.109 individuals, unevenly distributed across countries: West Germany (1985-2002, 18 surveys, 12.094 observations), East Germany (1991-2002, 12 surveys, 4.094 observations), Sweden (1994-2002, 8 surveys, 5.194 observations), Norway (1989-2002, 14 surveys, 11.615 observations), Italy (1985-1998, 12 surveys, 4.628 observations), Netherlands (1987-2002, 11 surveys, 7.901 observations) and Great Britain (1985-2002, 18 surveys, 9.583 observations). The union density rates computed from ISSP samples are rather consistent with aggregate evidence, as can be assessed looking at figure 3. If we exclude one survey (Britain in 1989), the ISSP data are almost in line with other evidence obtained at macro level (Ebbinghaus and Visser, 2000).

[Figure 3 about here]

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<sup>4</sup> We have decided to keep the treat Eastern and Western Germany as two separate cases, although these are politically unified since 1990 and the same industrial relations institutions apply, producing a number of convergent trends (Schnabel and Wagner, 2003). However, with regard to concerns about actual and legitimate inequality we expect differences as part of the legacy of communist labour relations (see Blanchflower and Freeman, 1997).

<sup>5</sup> More precisely, we have followed three criteria in selecting the sample: formal employment (excluding individuals working in the family, the unemployed, students and retired workers); working for government or private enterprises (excluding charity, volunteers, NGO); excluding the self-employed (there are few individuals who declare to be both “self-employed” and “working for government” or “working for private enterprises”, but we have left them out of our analysis).

The attitudes to inequality are part of the ISSP surveys of 1987, 1992, and 1999. Not all three years are available for all countries. Trends across three survey years can be analysed for West Germany and Britain. For Norway and East Germany two years are available (1992 and 1999). For three countries only one survey year is available: the Netherlands (1987), Italy (1992) and Sweden (1999).

### ***Earnings position***

We describe the relative earnings position of each individual by the relative distance from the survey median income (computed within each country/year sample). Positions above or below the median are kept distinct in order to distinguish different attitudes of people at both tails of the earnings distribution. If we define  $y_{ict}$  as the earnings of individual  $i$  in country  $c$  and survey year  $t$ , and  $\hat{y}_{ct}$  as the median earnings for the same country/year, our measures are given by

$$R_{ict}^{above} = \frac{y_{ict} - \hat{y}_{ct}}{\bar{y}_{ct}}; \quad R_{ict}^{below} = 0 \quad \text{if } y_{ict} > \hat{y}_{ct} \quad (1)$$

$$R_{ict}^{above} = 0; \quad R_{ict}^{below} = \frac{\hat{y}_{ct} - y_{ict}}{\bar{y}_{ct}} \quad \text{if } y_{ict} < \hat{y}_{ct} \quad (2)$$

A higher score indicates a larger distance between individual earnings and the median earnings in the country/year under study. When individual earnings information is missing, but family income information is available, we compute the relative income position from the latter variable and use it instead of the former.<sup>6</sup>

### ***Attitudes towards inequality***

We look at three different types of attitudes towards inequality. The ‘general inequality’ attitude is based on the survey item ‘*Earnings inequality in my country is much too high*’. A higher value indicates agreement with this item. The ‘inequality tolerance’ attitude is based on work by Osberg and Smeeding (2006). For five occupations (doctor,

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<sup>6</sup> We have controlled for potential distortions introduced by this solution by creating a dummy variable which is one when the replacement takes place, and by inserting its interaction with the relative income position in the regressions, without finding statistical significance except two cases (Netherlands-below median and Britain-above median). Available from the authors.



chair of a large company, skilled worker, unskilled worker, and minister) individual respondents estimate the actual earnings that they believe these occupations pay as well as the earnings that these occupations in their opinion *should* pay. Next, for each respondent an OLS regression coefficient is computed (on N=5 occupations) regressing the *should-earn* answer (representing the dependent variable  $Y$ ) onto the *do-earn* answer (as our predictor  $X$ ). A lower slope coefficient indicates a desire for redistribution and, symmetrically, a higher coefficient expresses a demand for less redistribution or greater tolerance of inequality. Using the standard equation for OLS regression slopes, this individual measure for individual  $i$  is given by

$$\beta_i = \frac{\sum_{k=1}^5 (Y_k - \bar{Y})(X_k - \bar{X})}{\sum_{k=1}^5 (X_k - \bar{X})^2} \quad (3)$$

Finally, the ‘inequality needs collective action’ attitude is based on the survey item ‘*Inequality continues to exist because ordinary people don’t join together to get rid of it*’. A high score indicates agreement with this item.

For all three types of attitude we took the z-value within each country-year combination. The correlation between the ‘general inequality’ and the ‘inequality tolerance’ attitude is -0.309; between ‘inequality tolerance’ and the ‘inequality needs collective action’ attitude -0.105; and between the ‘general inequality’ and the ‘inequality needs collective action’ attitude 0.271.

[Figure 4 about here]

Figure 4 shows the trends in these inequality attitudes in the countries under analysis. The first graph shows that, particularly in the 1990s, there has been an increasing tolerance of inequality (i.e., a higher regression slope of the Osberg-Smeeding index). This trend is found in all three countries where we can compare different years: Norway, Western Germany and Britain. Furthermore, it is remarkable that the lowest preference for redistribution (i.e., the highest score on the Osberg-Smeeding redistribution slope) is found in Norway. This is in contrast with Svallfors’ findings (1997), but it should be noted that his measure of the range of legitimate earnings did not include information on the perceived actual pay of

occupations. So, although Svallfors' analysis showed that the Norwegian population would prefer a lower dispersion of earnings between different occupations than did respondents in Germany, Australia and the US, this does not translate in a stronger preference for redistribution if one takes into account the (perceived) actual pay of occupations in Norway. This is obviously only the case if the (perceived) actual earnings dispersion in Norway is smaller than elsewhere, as is according to our data indeed the case (see Figure 2). In the second graph we see that support for the statement that "earnings inequality is too high" is declining in the 1990s. The third graph shows that there is hardly any trend in the inequality needs collective action attitude.

### ***Additional controls***

In addition to relative earnings position and various measures of attitudes towards inequality, we do control for the usual demographics (gender, age, marital status), for education (measured in four categories: lower secondary or less; upper secondary; beyond secondary; completed college) and some job characteristics (working hours, public/private, supervising someone else). Descriptive statistics are reported in table A1 of the Appendix.

## **4. RESULTS**

### ***Earnings position and union membership***

Our first analysis consists of an empirical estimation of the impact of various observable characteristics, including earnings position, on union membership in seven countries. This is done on all available surveys from 1985-2002 and not only the three survey years in which inequality attitudes were included.<sup>7</sup> In table 1 we report the results of a probit model predicting union membership. The coefficients are marginal effects, indicating the difference in the probability if the independent variable undergoes a unitary change. We see that women are less likely to join a trade union than men. However, in the two Scandinavian countries this effect is smaller, if at all significant. In all countries, the young (defined as individuals younger than 30) are less likely to be union members than older

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<sup>7</sup> In order to keep the maximum sample size, when missing values were encountered for some variable (typically the case of "supervising someone" and "uncompleted college"), we have replaced them with country averages. Results are unaffected by this change, but standard errors for other variables are smaller.

workers.<sup>8</sup> In all countries except Germany and the Netherlands, married persons are more likely to join the union than non-married workers. Supervisors are less likely to become a trade union member than subordinates, except in East Germany and the Netherlands.<sup>9</sup> There is a very strong impact of public sector on union membership in all countries, but particularly so in Norway and Britain.

The impact of education varies across countries. The general pattern is that people with at most lower secondary level have the highest likelihood to join the union, while tertiary educated workers are less likely to become union members. West Germany is the only country where the probability reduces monotonically for each additional step on the educational distribution.<sup>10</sup> There is also a rather large education effect in Sweden, although university graduates have a similar chance of membership as do persons with some post-secondary education. In Italy, Norway, the Netherlands and Britain, male university graduates have a lower probability of membership than people of lower secondary education, but the other educational categories are rather equal to the lower secondary group. University educated women, however, are much more often union members than their male counterparts, as can be seen from the positive interaction terms relative to the negative main effects of a university degree. This may be related to the larger proportion of highly educated women employed in unionised public service professions.

[Table 1 about here]

With regard to the impact of the variables indicating relative earnings positions, the data clearly support our hypothesis that the trade unions mainly attract workers from the intermediate earnings groups. The further one's personal income is from the median, the lower the likelihood of membership. This holds in all countries for both the distance above

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<sup>8</sup> Similar gender and age effects are found by Blanchflower (1996), who was using a larger country sample drawn from ISSP 1985-93 (unlike us, he also retained the self-employed in his sample). These results are reconfirmed in Blanchflower 2006. There, he stresses the existence of an inverted U-shaped relationship between membership and age, with the highest membership rate in age groups between 40 and 50.

<sup>9</sup> This is probably due to self-sorting based on unobservables: supervisors could be selected because they are against unions.

<sup>10</sup> Schnabel and Wagner (2005), using the European Social Survey conducted in 2002/03, find that more the educated worker are less likely to be union members only in Belgium and Denmark, but not in the other EU countries, including Germany. Blanchflower (1996) finds a negative impact of years of education, and a positive impact of the interaction between working in the public sector and years of schooling (probably capturing the presence of teachers and health workers).

and the distance below the median.<sup>11</sup> The one exception is Italy, where we did not find a significant impact of the distance above the median on union membership. In general, the negative impact on union membership of earnings below the median is much stronger than that of the earnings above the median. Thus, trade unions are less attractive to workers with low earnings, possibly because of disappointment in union egalitarianism, or a stronger tendency to free-riding and saving on the financial costs of union membership, which are relatively higher for low-paid workers. If we analyse each survey year separately, we do not find any systematic change in the effect of the earnings distance to the median (above or below) on union membership. This suggests that the observed decline in union membership may (partly) be caused by the changes in the earnings distributions, i.e. the contraction of the middle, but not by a general change in the associations between earnings positions and union membership.<sup>12</sup>

In order to be more confident in the causality of earnings position affecting union membership, rather than the other way round, we resort to instrumental variable estimation of union membership probability. In this model the earnings position variables are considered as endogenous, and they are instrumented using educational attainment. The results of this analysis are reported in table A2 in the Appendix. These results show that the instrumented relative earnings measures retain significance in all countries for employees with earnings above the mean and in four for those with earnings below the mean, but not in the case of East Germany, Italy and Sweden. Their impact slightly increases relative to the coefficients obtained in table 1, suggesting a possible endogeneity in the coefficient estimation. It is interesting to note, like we did before, that being below the median has a much stronger negative effect on union membership than being above the mean. Overall the data provide support to the negative correlation between earnings position (proxied by relative distance from the median) and the probability of union membership.

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<sup>11</sup> This is in line with the findings of Addison, Bailey and Siebert (2003), who report that male density in the UK “..was lowest among the least skilled (lowest decile), highest at the third decile and then somewhat lower for the more skilled.” However, union power, which they define as the union wage premium times the decile density rate, was highest for the less skilled workers. On the contrary, our result contrasts with Goerke and Pannenberg 2004, who analyse the GSOEP panel data for Germany and find that the (log)income position of workers is irrelevant for predicting union membership.

<sup>12</sup> These analyses are available from the authors upon request. See however the plots of the coefficients presented in figure 6.

### *The impact of inequality attitudes on union membership*

As a first examination of differences in attitudes between union members and non-members, we calculated kernel density estimates of the permissiveness of inequality separately for union members and non-members. Figure 5 displays these estimates. We recall that a high score on the redistribution preference computed according to Osberg and Smeeding (2006) indicates a high tolerance for unequal pay. The figure shows that, in most countries, the solid lines (representing union members) are to the left of the dashed lines, which supports the notion that a preference toward redistribution may inspire people to join a labour union.

[Figure 5 about here]

The second way in which we examine the impact of attitudinal factors on union membership is by estimating a probit regression analysis on the pooled sample. The results of this analysis are reported in Table 2, showing four model specifications. Model 0 uses the same variables as in table 1, but now with the fewer datasets that include the attitude items, and with a pooled analyses for all countries including country dummies. Model 1 adds the three attitude variables. Model 2 adds the multiplicative interactions between relative earnings positions and attitudes, and model 3 replaces these interactions with interactions between survey year and attitudes.

In model 0 we find support for most of the findings reported and analysed before when we used the full data set with all years. Most importantly for our purpose, people with income levels that are more distant to the median (either above or below) are less likely to be found in the unions. In model 1 we see that attitudinal factors have the expected effect on union membership. Firstly, people who tolerate greater inequality have a lower probability of membership. Secondly, people who find inequality too high in their society have a higher likelihood of union membership. This effect is more than twice as large as the effect of inequality tolerance. Finally, people who think that inequality exists because people do not join together - thus indicating an inclination to collective action - have a slightly higher chance of membership than people who disagree with this statement.

The next question is how attitudinal factors affect the impact of the other variables on union membership. Differences across time and across countries in membership rates cannot be explained by time or country variation in attitudes. The coefficients of model 1 are very similar to those of model 0. The gender difference in membership cannot be explained by

gender differences in inequality attitudes either. This is unsurprising, as women are generally more critical towards the existing earnings distribution than men (van de Werfhorst and de Graaf, 2004). Neither the effect of schooling, nor the difference between public and private sector workers can be explained by differentials in inequality attitudes. Thus, the impact of attitudinal factors is purely additive and offers us no further *interpretation* of some well-known variations in union membership.

With regard to the impact of relative earnings position we see that the impact of the distance of one's earnings above the median is partly, but modestly, explained by differences in inequality attitudes. The coefficient of this variable decreases from  $-0.109$  to  $-0.084$ . Thus, only to a limited extent it is true that high-earners tend to distance themselves from the unions because of their greater tolerance of and lower concerns about inequality, as expressed in these attitudes. Most of the main effect remains, which supports the view that their non-membership is at least partially based on rational considerations informed by material interests rather than on expressly normative considerations.

Model 2 shows that there is no interaction between earnings position and inequality attitudes. Thus, the impact of inequality attitudes on union membership is independent of one's relative earnings position. In model 3 we see that the impact of the inequality tolerance attitude is only prevalent in 1987 (as seen in the main effect) and reduced to zero in 1992 and 1999. The impact of the general inequality attitude seems to have slightly increased between 1987 and 1999, with a positive albeit non-significant, interaction effect of  $0.036$ .

[Table 2 about here]

In table 3 we have replicated the analysis of table 2 by country. This analysis reveals that the impact of inequality tolerance on union membership is only prevalent in Britain. The impact of the general inequality attitude is much more widespread across Europe, although no significant effects on union membership were found in the Netherlands and East Germany. Model 2 in table 3 shows that there is no systematic variation between earnings groups in the impact of attitudes on union membership, which confirms the pooled analysis reported in table 2. Finally, in table 4 we show the trends in the impact of attitudes for each country. This table shows that the negative effect of the inequality tolerance attitude on the probability of union membership is mainly found in Britain in 1987, but that this effect decreases and approaches zero in later years. In contrast, the positive effect of the general

inequality attitude on the probability of union membership gains in importance in Norway in 1999 relative 1992.

[Tables 3 and 4 about here]

## 5. CONCLUSIONS

In this paper we have examined the connection between union membership and one dimension of economic inequality, indicated by people's relative earnings. First, we examined the impact of the distance of individual earnings to the median on union membership and found that trade unions are most attractive for the intermediate earnings groups. One implication of this finding is that, if earnings inequality increases, union membership decreases as a result of the compositional change in the earnings distribution. However, we did not find support for the hypothesis that the association between relative earnings position and union membership itself had changed during the period under study. Our data, shown in figure 6, suggest trendless fluctuation. In other words, union membership decreases because the ground on which middle earnings stand is contracting, with the bottom falling and the top pulling away. Unions do not decline – or at least we cannot find confirmation for this from the admittedly incomplete data – because the lower-paid are increasingly disillusioned or the higher-paid are increasingly doing fine without trade unions. What matters for union decline is that there are more of each of them and less in the middle.

Our second line of investigation was concerned with the impact of inequality attitudes on union membership. We did so for three reasons. Firstly, we showed that union membership is not only affected by individual expected benefits resulting from objective criteria such as education or earnings, but that attitudes towards inequality do play a role as well. People are partly motivated to join the trade unions because they feel that economic inequality in society is too large, earnings should be redistributed and some form of collective action is needed. Secondly, we have shown that well-known variations in union membership (e.g. by gender, skill level, or supervisory status, or sector of employment) are not explained by differences in attitudes across these subgroups. Thirdly, by controlling for people's attitudes, we can be more confident that the impact of the earnings distance to the median is not itself caused by differential attitudes, but is based on possibly rational consideration of mainly material interests.

We can therefore go back to the literature on union membership decline with additional insights. In addition to the well-known compositional effects related to the changes in labour markets and the rise of a post-industrial society, we have highlighted the role of growing earnings inequality and of different inequality attitudes in explaining union membership decline. Workers have taken up union membership either because they hold egalitarian opinions and believe that unions are instrumental in achieving more equality, or they are not excessively anxious about being hurt by egalitarian policies of unions, because they are not that far from the median earnings position that such policies seem to benefit most. People belonging to the top tail of the earnings distribution may rationally ‘vote with their feet’ by leaving union membership or they never joined the union in the first place. They may see the ‘insurance’ offer by the unions against unforeseen mishaps in the future as too costly for them or they may tolerate a higher risk for themselves together with a higher level of inequality around them. Conversely, lower paid workers may leave the unions, or never become member, when the union’s policies to defend the bottom in the labour market and close the gap in relative earnings is perceived as ineffective.

Thus, any exogenously given increase in earnings inequality, be it as the consequence of skill-biased technological change, migration or ‘globalisation’, has negative implications for the unions. Should they give up their egalitarian policies in face of these changes, if such policies engenders disillusionment among the lower paid and provokes higher-earning groups with strong market power to leave? The answer has to be qualified. By abandoning policies aiming at wage compression through ‘equal pay for equal work’ policies based on job-classification and objective pay schemes<sup>13</sup>, seniority clauses and automatic indexation, a union might retain more members from the top part of the earnings distribution. But it is likely to lose support in the middle part of the distribution where most people still are. Finding ways to check growing earnings dispersion, especially at the lower end of the labour market, without alienating higher earning workers, still remains the best strategy for the unions, but one that has become very challenging.

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<sup>13</sup> See proposition 1 in Metcalf et al. 2001: “In setting pay, workplaces where unions are recognised will make greater use of objective criteria such as job classification and seniority. Non-union workplaces will make greater use of subjective performance appraisal and core competencies than unionised workplaces. This implies, in turn, that where contingent pay is used unionised workplaces will have schemes based on objective criteria – share options or profits – whereas non-union workplaces are more likely to use merit-based schemes.” (p.65)



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Figure 1 – Union membership and income inequality – macro evidence  
 (source: Deininger-Squire 1996 and Ebbinghaus-Visser 2000)

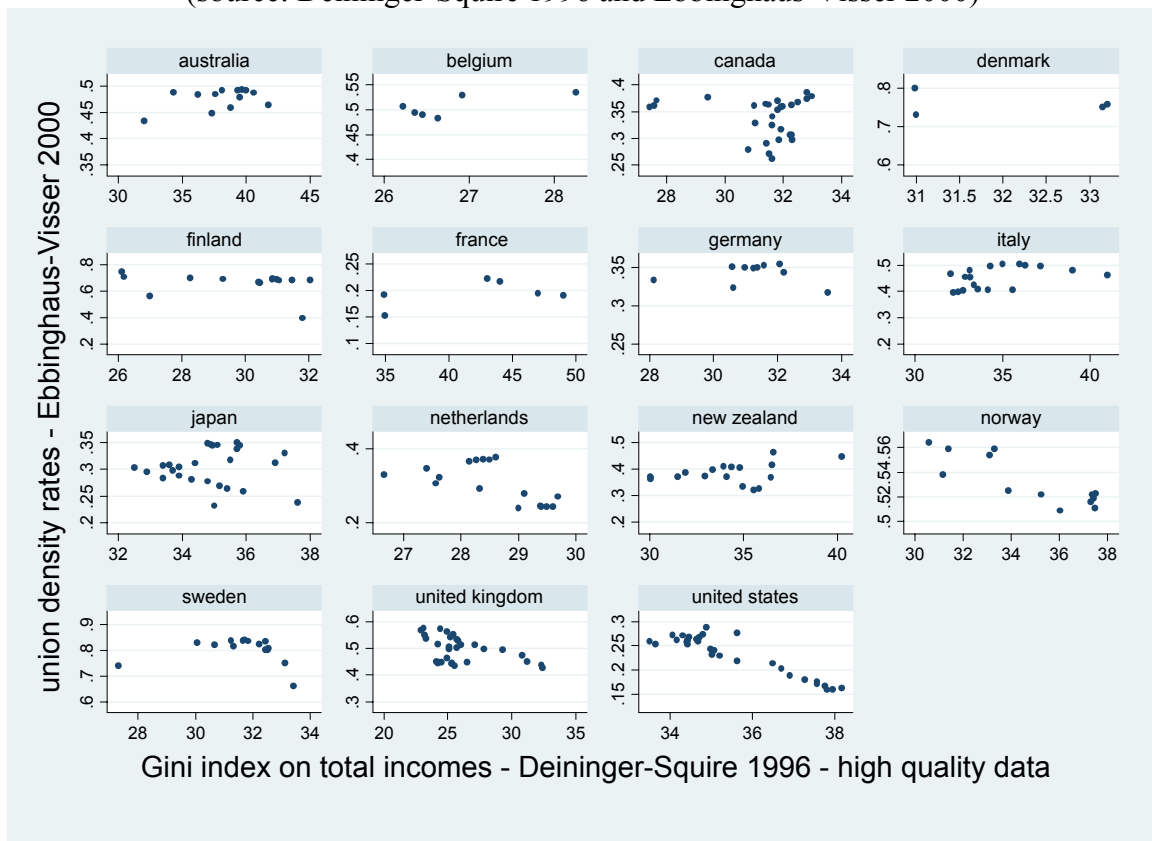
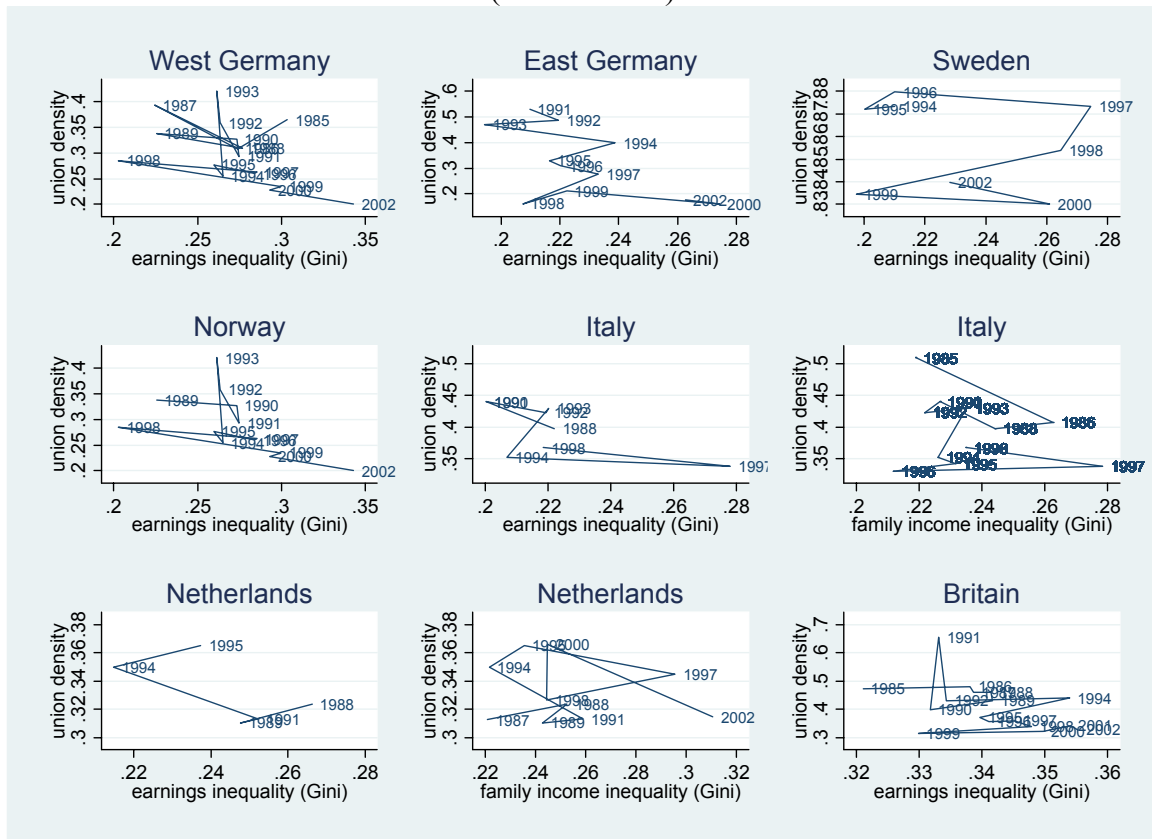
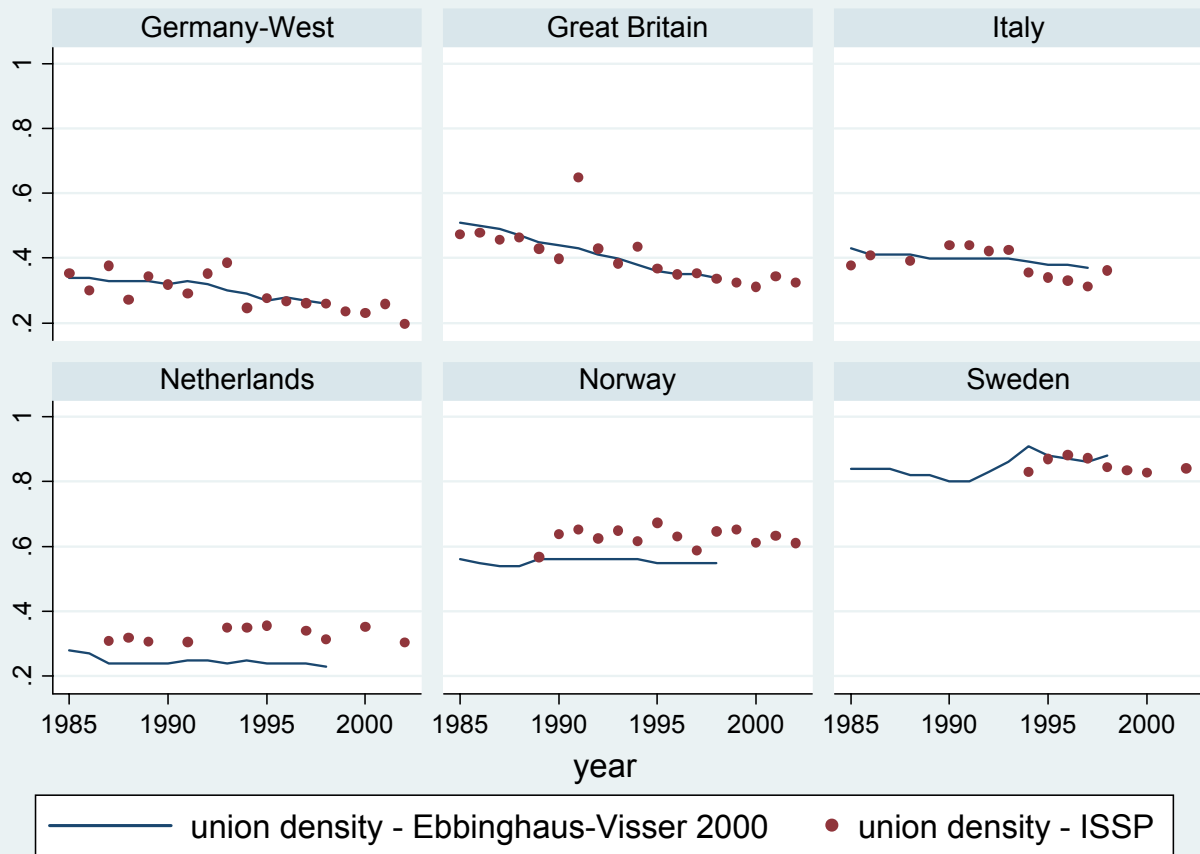


Figure 2 – Union membership and income/earnings inequality – micro evidence  
(source: ISSP)

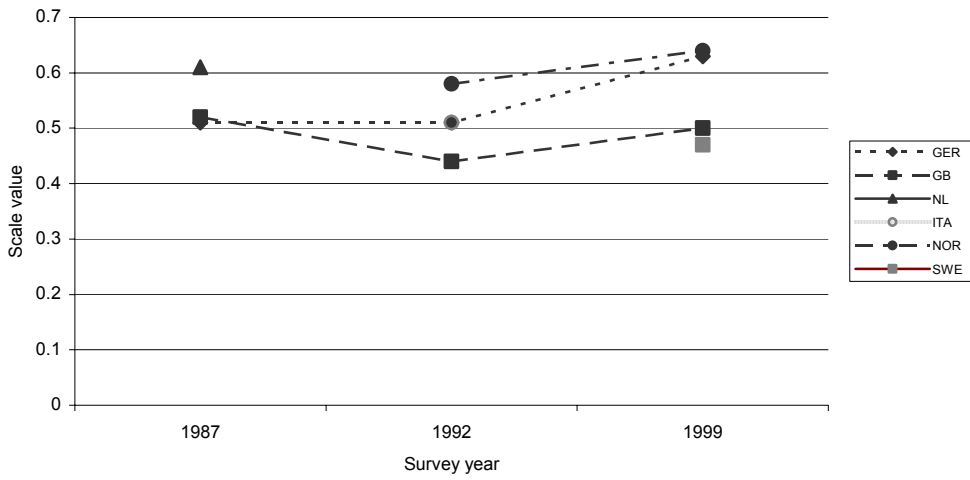


**Figure 3 - Union density rates: comparison between macro and micro evidence**

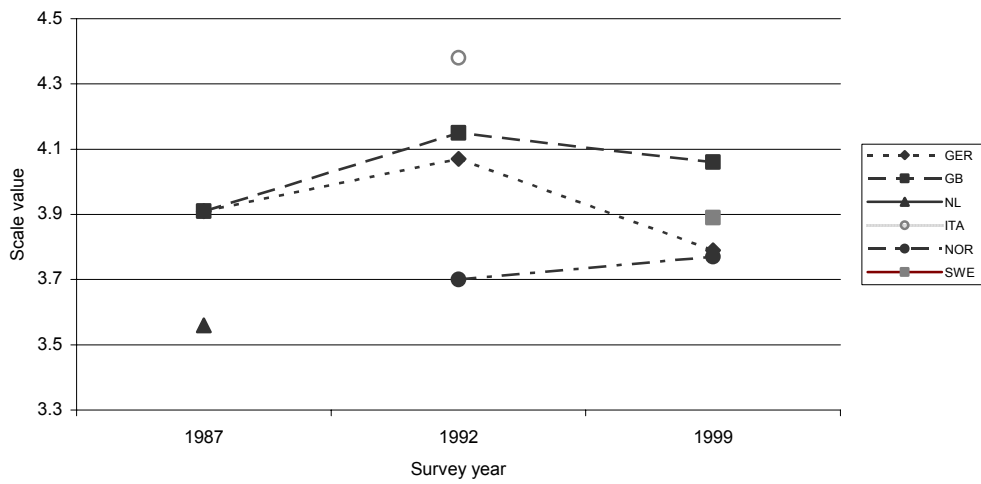


**Figure 4 - Trends in inequality attitudes**

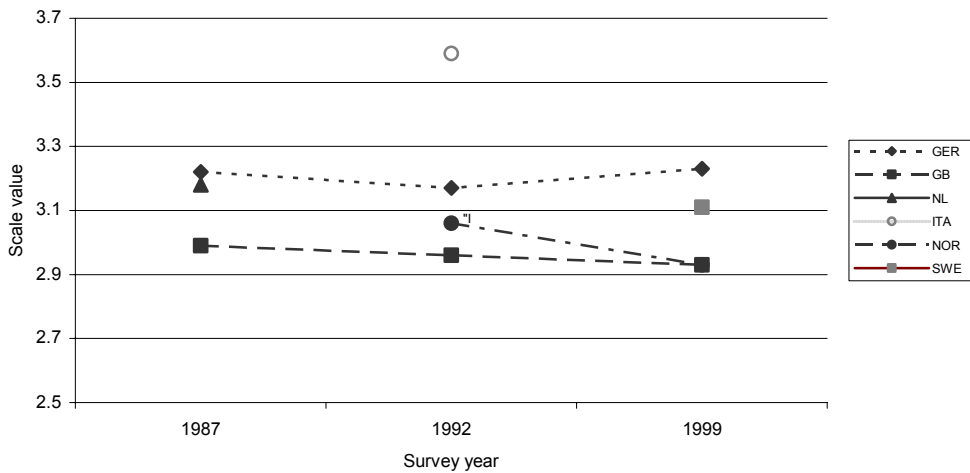
**Inequality tolerance**



**general inequality attitude**



**Inequality needs collective action**





**Figure 5 - Kernel density estimates of inequality permissiveness, by trade union membership status**

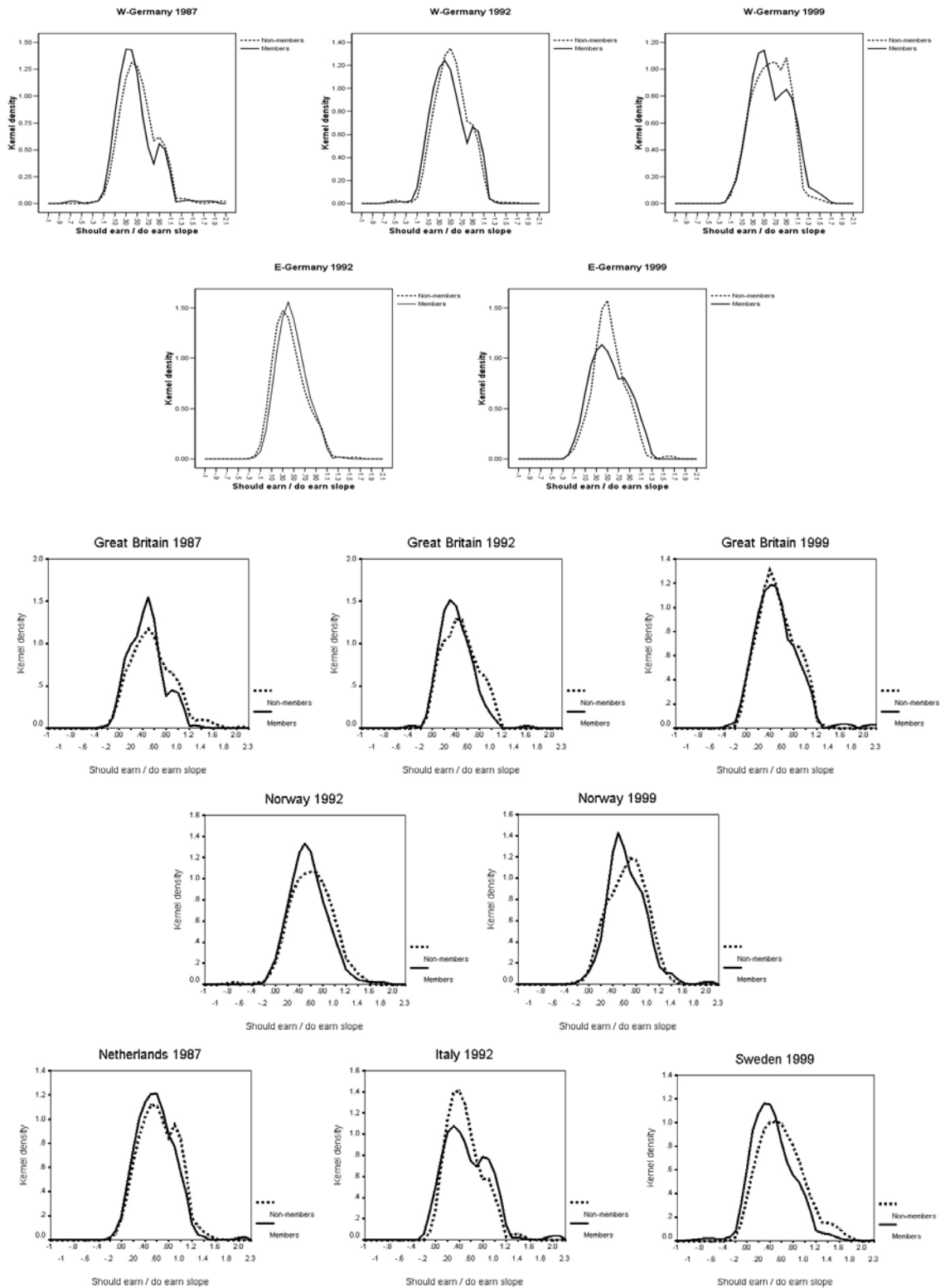


Figure 6 – Changes over time of relative earnings position on membership probability

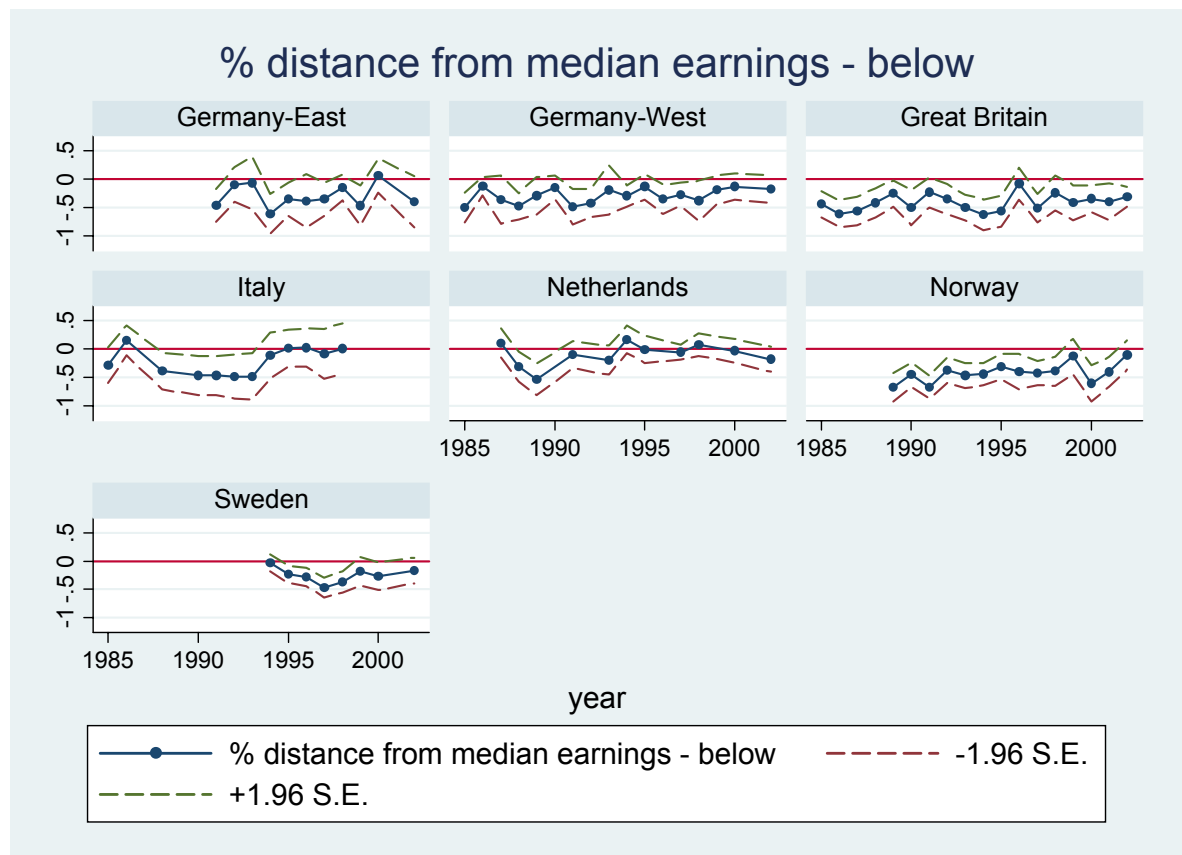
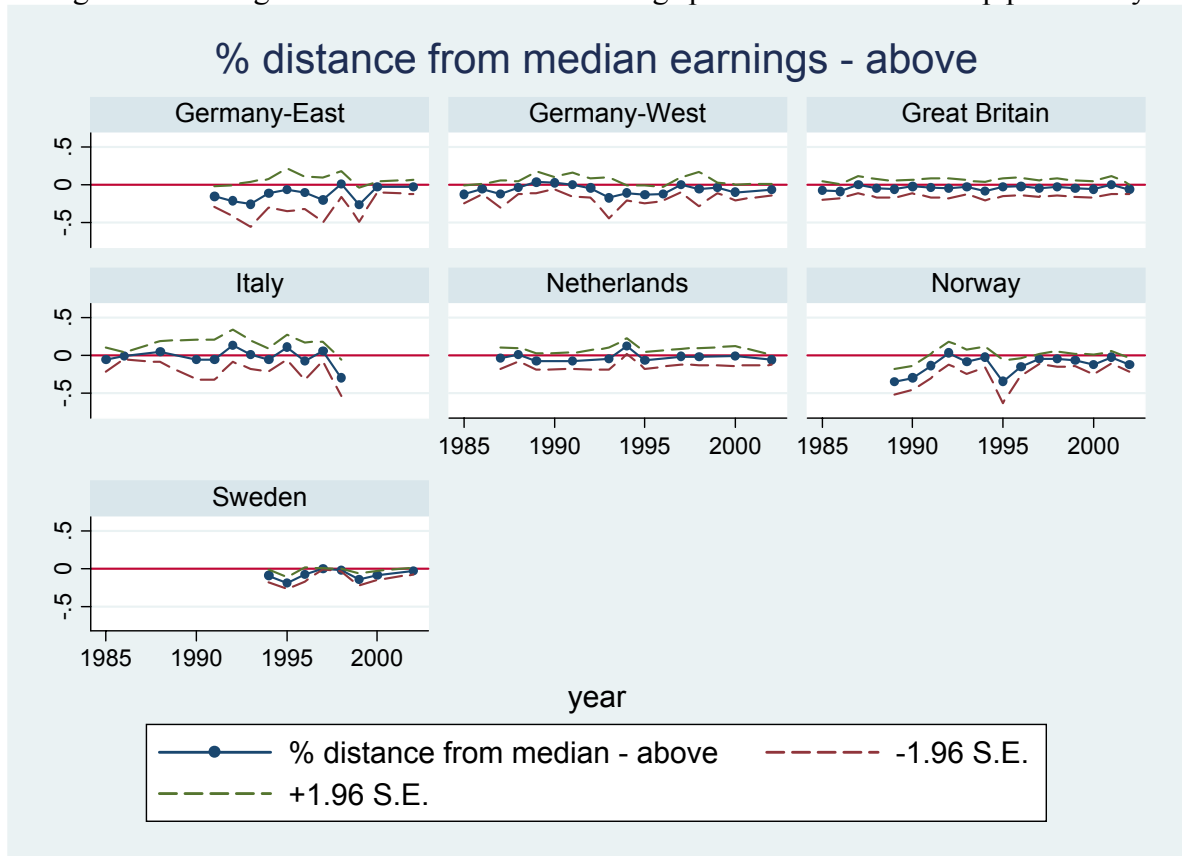


Table 1 - Probit regression of union membership (marginal effects) - ISSP 1985-2002

	West Germany	East Germany	Sweden	Norway	Italy	Netherlands	Britain
Female	-0.133 [0.012]***	-0.031 [0.020]	0.016 [0.012]	-0.022 [0.013]*	-0.091 [0.021]***	-0.112 [0.016]***	-0.072 [0.014]***
Young	-0.053 [0.012]***	-0.074 [0.023]***	-0.07 [0.015]***	-0.144 [0.015]***	-0.152 [0.026]***	-0.143 [0.014]***	-0.08 [0.014]***
Married	0.016 [0.011]	-0.011 [0.021]	0.023 [0.011]**	0.047 [0.012]***	0.076 [0.023]***	0.003 [0.013]	0.033 [0.012]***
working less than fulltime	-0.09 [0.016]***	0.081 [0.030]***	0.012 [0.015]	-0.054 [0.019]***	-0.106 [0.029]***	-0.029 [0.016]*	-0.037 [0.018]**
working for government/public owned	0.127 [0.012]***	0.085 [0.020]***	0.139 [0.011]***	0.399 [0.010]***	0.187 [0.022]***	0.16 [0.014]***	0.412 [0.013]***
supervising someone	-0.039 [0.012]***	0.013 [0.021]	-0.059 [0.010]***	-0.03 [0.012]**	0.073 [0.026]***	0.005 [0.013]	-0.057 [0.012]***
upper secondary completed	-0.055 [0.017]***	-0.07 [0.036]**	-0.066 [0.016]***	0.003 [0.014]	-0.028 [0.022]	-0.006 [0.016]	-0.025 [0.016]
beyond secondary/incomplete college	-0.077 [0.020]***	0.02 [0.039]	-0.081 [0.023]***	-0.028 [0.017]	0.011 [0.034]	0.027 [0.022]	-0.005 [0.016]
university degree completed	-0.137 [0.017]***	-0.062 [0.036]*	-0.073 [0.019]***	-0.043 [0.020]**	-0.12 [0.037]***	-0.086 [0.019]***	-0.125 [0.021]***
female*college completed	0.184 [0.040]***	0.049 [0.058]	0.034 [0.018]*	0.098 [0.022]***	0.078 [0.064]	0.168 [0.032]***	0.165 [0.032]***
Relative distance from the median earnings (above)	-0.06 [0.014]***	-0.115 [0.031]***	-0.012 [0.006]*	-0.078 [0.015]***	-0.025 [0.018]	-0.029 [0.016]*	-0.04 [0.013]***
Relative distance from the median earnings (below)	-0.266 [0.030]***	-0.309 [0.053]***	-0.239 [0.035]***	-0.403 [0.033]***	-0.126 [0.055]**	-0.077 [0.031]**	-0.409 [0.030]***
Observations	8842	3141	4902	10040	2988	7066	9269
Pseudo R-squared	0.08	0.09	0.11	0.18	0.09	0.05	0.16
Log likelihood	-4968.21	-1868.54	-1767.37	-5409.28	-1833.67	-4286.49	-5299.54

Robust standard errors in brackets - \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1% - Year dummies included. Missing values are replaced with sample averages, in order to retain sample size.

Table 2 - Probit regression of union membership including attitudinal variables (marginal effects) – ISSP 1987, 1992, 1999 – all countries

	Model 0	Model 1	Model 2	Model 3
female	-0.049 [0.018]***	-0.05 [0.018]***	-0.05 [0.018]***	-0.048 [0.018]***
young	-0.125 [0.021]***	-0.117 [0.021]***	-0.118 [0.021]***	-0.115 [0.021]***
married	0.031 [0.019]	0.032 [0.019]*	0.033 [0.019]*	0.034 [0.019]*
working less than fulltime	-0.103 [0.024]***	-0.103 [0.024]***	-0.104 [0.024]***	-0.104 [0.025]***
work for government/public owned	0.27 [0.016]***	0.267 [0.016]***	0.266 [0.016]***	0.266 [0.016]***
supervising someone	-0.032 [0.018]*	-0.022 [0.018]	-0.021 [0.018]	-0.021 [0.018]
upper secondary completed	-0.072 [0.023]***	-0.067 [0.023]***	-0.068 [0.023]***	-0.07 [0.023]***
beyond secondary/incomplete college	-0.008 [0.027]	0.014 [0.027]	0.012 [0.027]	0.012 [0.027]
university degree completed	-0.02 [0.026]	-0.001 [0.027]	0 [0.027]	-0.001 [0.027]
Relative distance from the median earnings (above)	-0.109 [0.024]***	-0.084 [0.024]***	-0.062 [0.027]**	-0.084 [0.024]***
Relative distance from the median earnings (below)	-0.267 [0.045]***	-0.27 [0.046]***	-0.25 [0.046]***	-0.274 [0.046]***
inequality tolerance		-0.018 [0.009]**	-0.02 [0.012]*	-0.054 [0.018]***
general inequality attitude		0.039 [0.009]***	0.038 [0.013]***	0.036 [0.018]**
collective action inequality attitude		0.016 [0.009]*	0.01 [0.013]	0.014 [0.016]
Distance earnings (below) ×tolerance for inequality attitude			0.039 [0.046]	
Distance earnings (above) ×tolerance for inequality attitude			-0.007 [0.026]	
Distance earnings (below) ×general inequality attitude			-0.034 [0.046]	
Distance earnings (above) ×general inequality attitude			0.017 [0.024]	
Distance earnings (below) ×collective action inequality attitude			0.009 [0.042]	
Distance earnings (above) ×collective action inequality attitude			0.022 [0.024]	

1992×tolerance for inequality attitude				0.044 [0.022]**
1999×tolerance for inequality attitude				0.054 [0.024]**
1992×general inequality attitude				-0.015 [0.022]
1999×general inequality attitude				0.036 [0.025]
1992×collective action inequality attitude				0.013 [0.020]
1999×collective action inequality attitude				-0.017 [0.023]
Year 1992	-0.021 [0.026]	-0.026 [0.026]	-0.028 [0.026]	-0.026 [0.026]
Year 1999	-0.152 [0.028]***	-0.156 [0.028]***	-0.157 [0.028]***	-0.156 [0.028]***
East Germany	0.029 [0.033]	0.039 [0.033]	0.042 [0.033]	0.037 [0.033]
Britain	0.073 [0.025]***	0.071 [0.025]***	0.073 [0.025]***	0.07 [0.025]***
Netherlands	-0.121 [0.035]***	-0.122 [0.035]***	-0.117 [0.035]***	-0.123 [0.035]***
Italy	0.01 [0.037]	0.02 [0.037]	0.022 [0.037]	0.02 [0.037]
Norway	0.245 [0.026]***	0.247 [0.026]***	0.25 [0.026]***	0.246 [0.026]***
Sweden	0.503 [0.018]***	0.508 [0.018]***	0.511 [0.018]***	0.509 [0.018]***
Observations	4461	4461	4461	4461
Pseudo R-squared	0.16	0.16	0.17	0.17
Log likelihood	-2595.04	-2574.68	-2571.59	-2568.41

Robust standard errors in brackets - \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1% -

Missing values are replaced with sample averages, in order not to reduce sample size

Table 3 - Probit regression of union membership on earnings position and inequality attitudes, by country – ISSP 1987, 1992, 1999

	West Germany Model 1	West Germany Model 2	East Germany Model 1	East Germany Model 2	Britain Model 1	Britain Model 2	Nether lands Model 1	Nether lands Model 2	Italy Model 1	Italy Model 2	Norway Model 1	Norway Model 2	Sweden Model 1	Sweden Model 2
1992	-0.014	-0.014	Ref.	Ref.	-0.043	-0.046	--	--	--	--	Ref.	Ref.	--	--
	[0.039]	[0.039]			[0.039]	[0.039]	--	--	--	--	--	--	--	--
1999	-0.136	-0.134	-0.287	-0.292	-0.183	-0.187	--	--	--	--	0.008	0.005	--	--
	[0.042]***	[0.042]***	[0.048]***	[0.049]***	[0.037]***	[0.037]***	--	--	--	--	[0.046]	[0.046]	--	--
Female	-0.096	-0.093	0.003	-0.001	-0.047	-0.051	-0.043	-0.045	-0.079	-0.108	-0.044	-0.058	0.034	0.035
	[0.038]**	[0.038]**	[0.054]	[0.055]	[0.037]	[0.037]	[0.063]	[0.063]	[0.067]	[0.068]	[0.041]	[0.042]	[0.038]	[0.038]
Young	-0.049	-0.045	-0.077	-0.066	-0.086	-0.085	-0.111	-0.105	-0.324	-0.307	-0.159	-0.166	-0.095	-0.094
	[0.041]	[0.042]	[0.060]	[0.061]	[0.039]**	[0.039]**	[0.053]**	[0.053]**	[0.081]***	[0.088]***	[0.048]***	[0.049]***	[0.052]*	[0.052]*
Married	0.019	0.017	-0.011	0.001	-0.017	-0.008	0.025	0.032	0.037	0.029	0.128	0.135	0.078	0.076
	[0.036]	[0.036]	[0.058]	[0.059]	[0.037]	[0.038]	[0.056]	[0.057]	[0.076]	[0.077]	[0.048]***	[0.048]***	[0.035]**	[0.036]**
working less than fulltime	-0.094	-0.093	0.142	0.155	-0.038	-0.036	-0.174	-0.172	-0.243	-0.235	-0.151	-0.138	-0.032	-0.021
	[0.052]*	[0.053]*	[0.083]*	[0.085]*	[0.047]	[0.047]	[0.058]***	[0.058]***	[0.085]***	[0.088]***	[0.068]**	[0.067]**	[0.065]	[0.064]
work for government/public owned	0.153	0.153	0.091	0.085	0.4	0.397	0.114	0.114	0.251	0.261	0.365	0.373	0.1	0.106
	[0.038]***	[0.038]***	[0.059]	[0.059]	[0.031]***	[0.032]***	[0.048]**	[0.049]**	[0.062]***	[0.062]***	[0.036]***	[0.036]***	[0.037]***	[0.037]***
supervising someone	-0.004	-0.004	0.134	0.127	-0.089	-0.087	-0.092	-0.087	0.043	0.06	-0.023	-0.03	-0.043	-0.05
	[0.035]	[0.035]	[0.056]**	[0.057]**	[0.035]***	[0.035]**	[0.052]*	[0.053]*	[0.075]	[0.077]	[0.043]	[0.043]	[0.035]	[0.036]
upper secondary completed	-0.069	-0.071	-0.167	-0.17	-0.043	-0.043	-0.06	-0.059	-0.078	-0.074	-0.069	-0.072	-0.046	-0.044
	[0.053]	[0.053]	[0.108]	[0.110]	[0.045]	[0.045]	[0.070]	[0.069]	[0.069]	[0.069]	[0.054]	[0.055]	[0.043]	[0.045]
beyond secondary/incomplete college	0.027	0.034	-0.263	-0.246	-0.012	-0.013	0.02	0.021	-0.045	-0.048	0.004	-0.003	0.05	0.051
	[0.115]	[0.117]	[0.128]**	[0.143]*	[0.046]	[0.046]	[0.058]	[0.059]	[0.143]	[0.141]	[0.051]	[0.052]	[0.050]	[0.051]
university degree completed	-0.12	-0.13	-0.035	-0.055	-0.076	-0.077	-0.039	-0.032	-0.209	-0.193	0.093	0.094	0.056	0.054
	[0.056]**	[0.054]**	[0.083]	[0.083]	[0.053]	[0.053]	[0.081]	[0.082]	[0.103]**	[0.106]*	[0.053]*	[0.053]*	[0.043]	[0.045]
Relative distance from the median earnings (above)	-0.104	-0.094	-0.151	-0.127	0.023	0.035	0.028	0.077	0.298	0.331	-0.01	0.046	-0.131	-0.078
	[0.045]**	[0.050]*	[0.094]	[0.105]	[0.044]	[0.049]	[0.082]	[0.098]	[0.142]**	[0.141]**	[0.066]	[0.082]	[0.041]***	[0.064]
Relative distance from the median earnings (below)	-0.373	-0.373	-0.133	-0.142	-0.413	-0.398	0.038	0.043	-0.109	-0.063	-0.109	-0.065	-0.259	-0.249
	[0.104]***	[0.105]***	[0.142]	[0.155]	[0.083]***	[0.085]***	[0.150]	[0.158]	[0.172]	[0.176]	[0.130]	[0.132]	[0.134]*	[0.134]*
tolerance for inequality attitude	-0.022	-0.002	0.035	0.018	-0.043	-0.058	-0.037	-0.043	0.034	0.001	-0.004	-0.02	-0.018	-0.004
	[0.017]	[0.025]	[0.025]	[0.033]	[0.020]**	[0.026]**	[0.026]	[0.044]	[0.031]	[0.052]	[0.021]	[0.031]	[0.015]	[0.023]
general inequality attitude	0.044	0.042	-0.009	0.001	0.034	0.045	0.012	-0.033	0.064	0.081	0.048	0.02	0.042	0.031
	[0.020]**	[0.028]	[0.025]	[0.037]	[0.017]**	[0.026]*	[0.026]	[0.044]	[0.034]*	[0.060]	[0.022]**	[0.034]	[0.020]**	[0.028]
collective action inequality attitude	0.026	0.04	0.026	-0.02	0.014	-0.022	-0.019	-0.014	-0.029	-0.017	0.005	0.034	0.016	0.049
	[0.017]	[0.026]	[0.027]	[0.041]	[0.016]	[0.026]	[0.023]	[0.038]	[0.030]	[0.051]	[0.020]	[0.031]	[0.018]	[0.026]*
distance earnings (below) ×tolerance for inequality attitude		-0.063		0.251		-0.034		0.011		0.126		0.278		-0.022
		[0.099]		[0.154]		[0.085]		[0.161]		[0.186]		[0.106]***		[0.078]
distance earnings (above) ×tolerance for inequality attitude		-0.068		-0.155		0.067		0.014		0.089		0.068		-0.064
		[0.052]		[0.103]		[0.041]		[0.113]		[0.137]		[0.076]		[0.040]
distance earnings (below) ×general inequality attitude		0.048		-0.011		-0.117		0.11		-0.263		0.176		-0.004
		[0.086]		[0.117]		[0.078]		[0.176]		[0.186]		[0.149]		[0.121]
distance earnings (above) ×general inequality attitude		-0.015		-0.04		0.023		0.154		0.151		0.047		0.049
		[0.043]		[0.084]		[0.044]		[0.105]		[0.141]		[0.073]		[0.047]
distance earnings (below) ×collective action inequality attitude		-0.034		0.252		0.033		0.018		0.036		-0.056		-0.148
		[0.097]		[0.166]		[0.067]		[0.151]		[0.160]		[0.134]		[0.107]
Observations	918	918	412	412	1160	1160	443	443	300	300	755	755	473	473
Pseudo R-squared	0.1	0.1	0.1	0.12	0.17	0.18	0.06	0.06	0.16	0.18	0.17	0.19	0.18	0.19
Log likelihood	-538.79	-537.5	-246.02	-241.83	-654.87	-647.47	-257	-255.86	-172	-168.76	-412.73	-405.8	-177.81	-175.54

Table 4 - Trends in the impact of inequality attitudes on union membership, by country - probit model (marginal effects) – ISSP 1987, 1992, 1999

	West Germany Model 3	East Germany Model 3	Britain Model 3	Norway Model 3
1992	-0.005 [0.040]	Ref.	-0.038 [0.039]	Ref.
1999	-0.125 [0.043]***	-0.297 [0.048]***	-0.184 [0.037]***	0.013 [0.046]
female	-0.096 [0.038]**	-0.009 [0.054]	-0.053 [0.037]	-0.047 [0.041]
young	-0.047 [0.042]	-0.093 [0.061]	-0.081 [0.040]**	-0.154 [0.048]***
married	0.022 [0.036]	-0.026 [0.060]	-0.011 [0.038]	0.132 [0.049]***
working less than fulltime	-0.089 [0.053]*	0.132 [0.085]	-0.045 [0.047]	-0.154 [0.067]**
work for government/public owned	0.153 [0.038]***	0.079 [0.059]	0.399 [0.032]***	0.366 [0.036]***
supervising someone	-0.003 [0.035]	0.131 [0.056]**	-0.088 [0.035]**	-0.023 [0.043]
upper secondary completed	-0.076 [0.052]	-0.185 [0.100]*	-0.043 [0.045]	-0.079 [0.055]
beyond secondary/incomplete college	0.035 [0.116]	-0.263 [0.123]**	0.002 [0.047]	-0.011 [0.051]
university degree completed	-0.116 [0.057]**	-0.031 [0.084]	-0.076 [0.053]	0.096 [0.053]*
Relative distance from the median earnings (above)	-0.109 [0.046]**	-0.162 [0.095]*	0.019 [0.044]	0.004 [0.067]
Relative distance from the median earnings (below)	-0.388 [0.104]***	-0.105 [0.146]	-0.41 [0.084]***	-0.129 [0.129]
tolerance for inequality attitude	0.003 [0.034]	0.043 [0.029]	-0.137 [0.039]***	-0.017 [0.024]
general inequality attitude	0.092 [0.041]**	-0.018 [0.030]	0.007 [0.027]	0.021 [0.025]
collective action inequality attitude	0.015 [0.031]	0.064 [0.031]**	0.026 [0.024]	0.006 [0.023]
1992×tolerance for inequality attitude	-0.05 [0.041]		0.092 [0.050]*	
1999×tolerance for inequality attitude	0.017 [0.051]	-0.022 [0.058]	0.144 [0.046]***	0.024 [0.045]
1992×general inequality attitude	-0.074 [0.048]		0.013 [0.040]	
1999×general inequality attitude	-0.02 [0.062]	0.03 [0.057]	0.067 [0.044]	0.085 [0.045]*
1992×collective action inequality attitude	0.02 [0.040]		0.019 [0.037]	
1999×collective action inequality attitude	-0.011 [0.050]	-0.145 [0.059]**	-0.078 [0.041]*	-0.014 [0.045]
Observations	918	412	1160	755
Pseudo R-squared	0.1	0.11	0.18	0.18
Log likelihood	-536.26	-242.86	-647.64	-410.97

Robust standard errors in brackets - \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1% -  
Missing values are replaced with sample averages, in order not to reduce sample size

## Appendix

Table A1 – Descriptive statistics

West Germany - means	union	female	married	part-time	public	completed secondary	uncompl college	college	supervis. someone	age	years of schooling	working hours	sample size
1985	0.353	0.380	0.662	0.143	0.311	0.013	0.034	0.138		39.434	10.420	42.139	464
1986	0.301	0.375	0.625	0.146	0.213	0.084	0.065	0.088		37.578	10.398	40.299	1.196
1987	0.376	0.384	0.642	0.140	0.315	0.063	0.033	0.079	0.322	39.689	10.315	39.806	490
1988	0.271	0.424	0.588	0.166	0.203	0.099	0.020	0.091		37.360		39.131	1.234
1989	0.344	0.429	0.603	0.190	0.262	0.093	0.016	0.074	0.255	38.072	10.149	38.822	578
1990	0.318	0.387	0.580	0.129	0.321	0.104	0.032	0.114	0.425	38.419	10.645	39.078	1.196
1991	0.291	0.395	0.635	0.183	0.312	0.073	0.080	0.095	0.457	38.714	10.827	38.993	612
1992	0.352	0.405	0.611	0.169	0.311	0.094	0.063	0.129	0.429	38.049	10.507	38.159	969
1993	0.386	0.402	0.625	0.168	0.269	0.075	0.061	0.086		38.780	10.556	37.231	425
1994	0.246	0.368	0.604	0.134	0.266	0.059	0.067	0.099	0.422	37.947			1.035
1995	0.276	0.380	0.663	0.187	0.361	0.138	0.067	0.108	0.533	40.330	11.457	38.584	631
1996	0.267	0.387	0.624	0.128	0.273	0.066	0.045	0.078	0.453	38.566	9.844		589
1997	0.261	0.399	0.590	0.131	0.346	0.078	0.076	0.123	0.452	40.447	11.795	38.637	602
1998	0.260	0.394	0.544	0.090	0.251	0.045	0.087	0.107	0.397	39.538	11.020	38.930	354
1999	0.236	0.392	0.593	0.139	0.284	0.129		0.095	0.456	40.336	10.607	39.737	423
2000	0.230	0.435	0.626	0.161	0.308	0.084	0.002	0.120	0.460	40.966	10.741	38.959	439
2001	0.258	0.403	0.551	0.120	0.308	0.084	0.072	0.128	0.515	38.877	11.449	39.823	431
2002	0.197	0.433	0.562	0.155	0.262	0.087	0.085	0.153	0.512	39.775	11.613	39.618	426
Total	0.292	0.396	0.608	0.149	0.281	0.084	0.049	0.103	0.434	38.750	10.682	39.223	12.094

East Germany - means	union	female	married	part-time	public	completed secondary	uncompl college	college	supervis. someone	age	years of schooling	working hours	sample size
1991	0.501	0.496	0.734	0.239	0.350	0.068		0.123	0.332	39.018	10.600	41.674	815
1992	0.476	0.497	0.709	0.119	0.361	0.048	0.040	0.148	0.309	38.421	10.702	41.809	519
1993	0.455	0.468	0.649	0.072	0.315	0.029	0.117	0.107		38.952	10.596	41.073	411
1994	0.394	0.438	0.712	0.101	0.303	0.041	0.075	0.120	0.322	38.998			416
1995	0.332	0.449	0.726	0.147	0.393	0.093	0.100	0.156	0.444	41.151	11.547	41.227	271
1996	0.304	0.441	0.690	0.087	0.265	0.079	0.038	0.079	0.358	39.893	9.833		247
1997	0.272	0.453	0.720	0.053	0.354	0.049	0.160	0.177	0.407	41.535	13.022	42.858	243
1998	0.169	0.466	0.575	0.118	0.277	0.035	0.153	0.074	0.266	38.410	10.994	40.490	338
1999	0.210	0.476	0.675	0.104	0.277	0.095	0.004	0.104	0.320	40.749	11.476	41.330	229
2000	0.156	0.482	0.584	0.106	0.243	0.071		0.124	0.332	40.000	11.637	41.380	225
2001	0.222	0.466	0.583	0.034	0.299	0.074	0.049	0.138	0.397	39.547	12.015	43.377	203
2002	0.181	0.438	0.624	0.096	0.315	0.045	0.073	0.180	0.441	40.803	12.326	41.865	177
Total	0.355	0.468	0.680	0.123	0.318	0.060	0.060	0.122	0.346	39.504	11.021	41.621	4.094

Sweden - means	union	female	married	part-time	public	completed secondary	uncompl college	college	supervis. someone	age	years of schooling	working hours	sample size
1994	0.830	0.509	0.766	0.258	0.503	0.177	0.053	0.210	0.360	42.630	11.927	37.597	752
1995	0.870	0.523	0.723	0.249	0.531	0.152	0.069	0.256	0.350	41.807	11.986	37.718	682
1996	0.882	0.512	0.735	0.250	0.525	0.163	0.071	0.242	0.345	42.839	11.974	37.547	642
1997	0.872	0.516	0.532	0.241	0.506	0.040	0.075	0.255	0.302	43.288	12.338	37.821	711
1998	0.845	0.537	0.743	0.248	0.536	0.165	0.073	0.261	0.338	41.476	12.533	38.390	613
1999	0.834	0.521	0.488	0.229	0.498	0.223	0.065	0.216	0.312	41.744	12.174	38.533	634
2000	0.827	0.503	0.510	0.192	0.493	0.159	0.098	0.268	0.316	42.997	12.740	38.757	568
2002	0.841	0.528	0.506	0.238	0.536	0.173	0.067	0.329	0.355	43.929	12.756	37.825	592
Total	0.851	0.519	0.630	0.239	0.516	0.155	0.071	0.253	0.335	42.584	12.282	37.990	5.194

Norway - means	union	female	married	part-time	public	completed secondary	uncompl college	college	supervis. someone	age	years of schooling	working hours	sample size
1989	0.567	0.485	0.713	0.272	0.376	0.278		0.313	0.335	38.886	10.586	32.079	1.119
1990	0.638	0.436	0.763	0.141	0.499	0.132	0.224	0.082	0.443	39.234	11.563	38.213	779
1991	0.652	0.466	0.793	0.129	0.520	0.170	0.190	0.138	0.443	38.513	12.438	38.363	710
1992	0.625	0.499	0.789	0.121	0.518	0.149	0.187	0.160	0.430	39.262	12.628	38.531	747
1993	0.649	0.455	0.789	0.165	0.481	0.353	0.306	0.208	0.459	39.679	12.772	39.508	767
1994	0.617	0.492	0.630	0.192	0.456	0.483	0.152	0.199	0.438	39.539	13.383	38.946	1.092
1995	0.673	0.471	0.596	0.124	0.489	0.313	0.105	0.263	0.499	39.258	13.479	37.862	676
1996	0.630	0.456	0.590	0.108	0.439	0.287	0.101	0.276	0.506	40.173	13.731	39.032	668
1997	0.587	0.486	0.564	0.140	0.483	0.293	0.111	0.277	0.302	39.828	12.874	38.373	1.24
1998	0.646	0.513	0.582	0.127	0.473	0.326	0.093	0.325	0.356	39.746	13.751	38.600	825
1999	0.653	0.496	0.560	0.105	0.513	0.332	0.126	0.351	0.361	40.281	13.308	38.859	631
2000	0.612	0.436	0.557	0.101	0.497	0.354	0.117	0.331	0.319	41.259	13.953	38.433	735
2001	0.633	0.502	0.596	0.125	0.520	0.371	0.120	0.299	0.342	41.647	13.668	38.393	815
2002	0.610	0.498	0.594	0.129	0.421	0.330	0.132	0.348	0.353	42.072	13.846	39.012	811
Total	0.624	0.479	0.649	0.148	0.473	0.304	0.150	0.256	0.393	39.920	12.931	37.996	11.615



Italy - means	union	female	married	part-time	public	completed secondary	uncompl college	college	supervis. someone	age	years of schooling	working hours	sample size
1985	0.378	0.325	0.691			0.347	0.077	0.122		39.873	11.085		753
1986	0.408	0.344	0.701	0.263	0.506	0.383	0.042	0.117		30.466	10.885	35.503	358
1988	0.391	0.408	0.653	0.249	0.565	0.479		0.154		38.191	12.034	38.430	407
1990	0.440	0.431	0.649	0.095	0.569	0.466		0.180	0.283	38.975	12.530	36.003	357
1991	0.440	0.431	0.649	0.095	0.569	0.466		0.180	0.283	38.975	12.530	36.003	357
1992	0.422	0.365	0.635	0.154	0.415	0.360	0.052	0.099	0.253	37.022	11.734	36.676	344
1993	0.425	0.368	0.653	0.163	0.409	0.264	0.446	0.106	0.280	39.446	11.096	37.702	362
1994	0.356	0.366	0.663	0.181	0.426	0.369	0.050	0.092	0.288	38.894	11.463	37.587	362
1995	0.340	0.369	0.676	0.231	0.283	0.396	0.070	0.114	0.274	39.173	12.106	39.378	374
1996	0.330	0.398	0.663	0.262	0.387	0.395	0.064	0.113	0.234	38.078	11.826	36.497	309
1997	0.312	0.348	0.643	0.123	0.387	0.375	0.069	0.099	0.339	37.970	11.673	37.945	333
1998	0.362	0.408	0.627	0.142	0.399	0.364	0.085	0.130	0.242	37.845	12.173	36.652	312
Total	0.384	0.376	0.662	0.181	0.442	0.386	0.104	0.125	0.276	38.139	11.715	37.254	4.628

Netherlands - means	union	female	married	part-time	public	completed secondary	uncompl college	college	supervis. someone	age	years of schooling	working hours	sample size
1987	0.309	0.348	0.657	0.238	0.343	0.096	0.196	0.100	0.391	36.457	13.103	35.109	601
1988	0.318	0.359	0.635	0.233	0.309	0.110	0.137	0.123	0.341	35.501	13.188	37.076	617
1989	0.307	0.343	0.583	0.249	0.296	0.093	0.126	0.103	0.317	35.146	12.669	36.326	615
1991	0.305	0.393	0.620	0.280	0.235	0.096	0.173	0.161	0.337	36.334	13.828	35.848	603
1993	0.349	0.400	0.658	0.304	0.302	0.377	0.174	0.121	0.301	37.851	13.612	35.704	599
1994	0.349	0.400	0.590	0.288	0.231	0.118	0.138	0.178	0.333	37.569	13.772	35.859	682
1995	0.356	0.395	0.620	0.354	0.270	0.371	0.100	0.212	0.282	37.854	14.305	34.341	765
1997	0.341	0.456	0.606	0.411	0.252	0.141	0.009	0.204	0.268	38.566	13.709	32.550	1.012
1998	0.314	0.454	0.622	0.377	0.213	0.515		0.238	0.315	38.665	13.986	33.445	972
2000	0.352	0.420	0.600	0.364	0.172	0.476		0.223	0.294	38.742	13.592	33.316	793
2002	0.304	0.453	0.586	0.393	0.225	0.433		0.414	0.307	40.541	14.220	33.205	642
Total	0.329	0.407	0.615	0.327	0.254	0.271	0.084	0.195	0.312	37.715	13.672	34.566	7.901

Britain - means	union	female	married	part-time	public	completed secondary	uncompl college	college	supervis. someone	age	years of schooling	working hours	sample size
1985	0.473	0.457	0.713	0.292	0.356	0.106	0.159	0.097	0.370	38.124	11.227	37.525	725
1986	0.478	0.420	0.768	0.288	0.359	0.118	0.159	0.082	0.383	39.293	11.158	37.282	696
1987	0.457	0.489	0.724	0.313	0.382	0.097	0.166	0.111	0.406	39.294	11.379	36.831	597
1988	0.464	0.486	0.706	0.000	0.393	0.133	0.168	0.120	0.395	38.165	11.454	38.328	619
1989	0.429	0.470	0.747	0.198	0.334	0.115	0.189	0.080	0.424	39.663	11.263	37.941	625
1990	0.398	0.528	0.737	0.219	0.357	0.108	0.187	0.110	0.384	38.901	11.377	36.725	565
1991	0.648	0.515	0.615	0.198	0.381	0.126	0.219	0.130	0.385	38.419	11.627	37.032	469
1992	0.429	0.518	0.705	0.168	0.376	0.361	0.198	0.138	0.378	40.228	11.617	37.359	464
1993	0.383	0.493	0.709	0.296	0.302	0.196	0.308	0.105	0.413	38.789	11.497	35.351	496
1994	0.435	0.530	0.668	0.234		0.409	0.083	0.145	0.408	39.212	11.711	37.107	448
1995	0.368	0.570	0.675	0.206		0.405	0.208	0.137	0.404	38.435	11.658	38.021	437
1996	0.350	0.542	0.673	0.213	0.307	0.129	0.206	0.186	0.389	38.834	12.299	38.451	403
1997	0.353	0.560	0.640	0.219	0.323	0.128	0.194	0.183	0.349	39.100	12.430	38.296	470
1998	0.336	0.567	0.674	0.279	0.321	0.121	0.251	0.110	0.354	40.219	12.176	37.688	390
1999	0.325	0.486	0.658	0.244	0.275	0.148	0.178	0.150	0.333	40.064	12.186	36.458	360
2000	0.311	0.552	0.640	0.285	0.287	0.124	0.162	0.190	0.382	39.340	12.499	39.059	453
2001	0.344	0.572	0.594	0.258	0.333	0.163	0.170	0.204	0.350	39.630	12.533	36.734	410
2002	0.324	0.540	0.612	0.240	0.328	0.180	0.164	0.216	0.387	40.279	12.625	38.564	956
Total	0.410	0.511	0.684	0.231	0.342	0.169	0.184	0.137	0.385	39.218	11.784	37.537	9.583

Table A2 - Probit regression of union membership (marginal effects) - ISSP 1985-2002  
Instrumental Variables

	West Germany	East Germany	Sweden	Norway	Italy	Netherlands	Britain
Female	-0.119 [0.023]***	-0.019 [0.031]	0 [0.013]	0.031 [0.019]	-0.126 [0.020]***	-0.047 [0.020]**	-0.054 [0.017]***
Young	-0.028 [0.028]	-0.049 [0.049]	-0.133 [0.028]***	-0.088 [0.023]***	-0.18 [0.027]***	-0.115 [0.021]***	-0.11 [0.014]***
Married	0.039 [0.014]***	-0.017 [0.026]	0.028 [0.012]**	0.047 [0.012]***	0.081 [0.023]***	-0.103 [0.044]**	0.042 [0.013]***
working less than fulltime	-0.003 [0.061]	0.138 [0.089]	-0.028 [0.046]	0.097 [0.044]**	-0.15 [0.040]***	0.044 [0.035]	0.133 [0.052]**
working for government/public owned	0.109 [0.017]***	0.066 [0.033]**	0.125 [0.012]***	0.374 [0.011]***	0.192 [0.039]***	0.124 [0.022]***	0.375 [0.015]***
Supervising someone	-0.025 [0.019]	0.015 [0.030]	-0.035 [0.014]**	-0.042 [0.017]**	0.112 [0.031]***	0.009 [0.019]	-0.037 [0.016]**
Relative distance from the median earnings (above)	-0.368 [0.045]***	-0.331 [0.126]***	-0.157 [0.045]***	-0.305 [0.070]***	-0.327 [0.197]*	-0.583 [0.156]***	-0.337 [0.055]***
Relative distance from the median earnings (below)	-0.797 [0.242]***	-0.688 [0.461]	-0.089 [0.187]	-1.123 [0.194]***	0.143 [0.409]	-1.817 [0.582]***	-1.041 [0.161]***
Observations	8842	3141	4902	10954	4078	7066	9269
Pseudo R-squared	0.07	0.08	0.09	0.16	0.08	0.05	0.14
Log likelihood	-5016.68	-1890.34	-1808.42	-6035.92	-2524.87	-4298.12	-5393

Standard errors in brackets - \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1% - Year dummies included -

Endogenous: above and below the median - Instrumental Variables: secondary-uncompleted college-college-college×female