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**Union membership and density:
Some (not so) stylized facts and challenges**

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Union membership and density: Some (not so) stylized facts and challenges*

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ABSTRACT: Surveying some recent data and the empirical literature from various disciplines, this paper attempts to shed some light on what we know and don't know about (trends in) unionization and its determinants in advanced countries. It shows that there are relatively few robust stylized facts, for instance that unionization is positively related to public sector employment, to establishment size and to the business cycle (with union growth being procyclical). The existence of a union-administered unemployment insurance and unions' presence at the workplace also play a positive role for (changes in) unionization. However, some seemingly obvious explanations for the decline in unionization over the last decades do not hold on closer scrutiny. Various trends like the ongoing economic globalization and changes in the sectoral structure of the economy and the composition of the workforce do not seem to have impeded union membership and density everywhere. Similarly, the trend towards decentralization of collective bargaining has not resulted in large-scale deunionization. It also remains an open question whether changes in social values, rising individualism, and changing attitudes of employees towards unions have affected or will affect unionization negatively.

ZUSAMMENFASSUNG: Anhand von aktuellen Daten und der empirischen Literatur mehrerer Fachrichtungen arbeitet dieser Survey heraus, was wir über den gewerkschaftlichen Organisationsgrad und seine Determinanten in entwickelten Ländern (nicht) wissen. Er zeigt, dass die Mitgliederstärke positiv mit der Beschäftigung im öffentlichen Sektor, der Firmengröße und dem Konjunkturzyklus zusammenhängt. Auch die Existenz einer gewerkschaftlich verwalteten Arbeitslosenversicherung und die Präsenz von Gewerkschaften am Arbeitsplatz spielen eine positive Rolle für den Organisationsgrad bzw. seine Veränderung. Dagegen scheinen verschiedene Trends wie Globalisierung, sektoraler Strukturwandel, Änderungen der Beschäftigtenstruktur und Dezentralisierung von Tarifverhandlungen nicht überall die Mitgliederzahlen und den Organisationsgrad beeinträchtigt zu haben. Eine offene Frage ist, ob Veränderungen von Werten und Einstellungen der Arbeitnehmer sowie Individualisierungstendenzen die gewerkschaftliche Organisierung negativ beeinflussen.

Keywords: trade unions, union membership, union density, unionization

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1. INTRODUCTION

Over the twentieth century, trade unions have become an important actor on the labor market and in the political arena in most industrialized countries. In the twenty-first century, however, quite a few observers argue that “organised labour seems heading for extinction” (as *The Economist* stated on September 21st, 2006 in a piece focusing on US unionism). Unions’ existence and their economic and political influence depend on their ability to attract and nurture a loyal membership (as well as on other indicators of union presence such as bargaining coverage, mobilizing capability and their standing in public opinion). Thus it is important to know which factors determine the extent and stability of unionization, in particular given the stagnation or decline of union membership and density observed in many countries over the last decades.

While the economic, sociological and political science literature contains a reasonable amount of theoretical and empirical work on unions and their membership, relatively few stylized facts have emerged and some of these do not seem to be so stylized and robust at all. In particular some popular perceptions found in the general public (but also among some pundits) – for example, that union decline is ubiquitous, that unions are unable to adjust to structural changes in the economy, that some groups in the workforce simply do not unionize, and that unions are victims of globalization – are highly questionable. By surveying recent empirical studies from various disciplines on the determinants of unionization in (mostly) western countries, this paper attempts to provide a clearer picture of what we know (and don’t know) about union membership and density. This may also help to better assess whether unions will be able to cope with ongoing and new challenges and how unionization is going to evolve in the coming years.

The focus of this exercise is on empirical regularities and stylized facts. These often can be related to theoretical considerations from various disciplines – though usually not unambiguously. A major problem is that the progress of the theoretical literature as to why employees belong to a union has not been wholly satisfactory.¹ Following Pencavel (1971), economic modeling has long analyzed the forces influencing union membership within a conventional demand and supply framework, but this sort of cost-benefit analysis from the sides of employees and unions does not pay enough attention to the free-rider problem unions face in most countries (see Olson 1965). The key problem for economists is to explain why any individual would

¹ For brief surveys of the theoretical literature from various disciplines, see Schnabel (2003) and Ebbinghaus et al. (2011).

join a union and pay dues when most benefits apply to all employees regardless of their union status. In addition to selective incentives such as strike pay and legal assistance, the most prominent explanation has been that workers comply with a social custom of union membership. Social custom models (e.g., Booth 1985, Naylor 1990) assume that employees derive utility from the reputation of belonging to a union and are able to show that a union can exist despite the free-rider problem if it achieves a minimum critical density.

Further potential factors influencing unionization that have mainly been stressed by sociologists and political scientists (see, e.g., Streeck 1981, Beyme 1981) are values, modes of production, class consciousness, the composition of the workforce, and the political climate. Three partly overlapping theoretical approaches to union participation in social psychology are the frustration-aggression approach, the rational-choice approach and the interactionist approach (see Klandermans 1986), which to some extent have been incorporated in the now dominant social custom models. From a sociological perspective, Ebbinghaus et al. (2011) interpret union membership in terms of Max Weber's four general categories of social action: the decision to unionize can be based on instrumental-rational motives or on ideological convictions, individuals may feel emotionally associated with the community of other union members, or traditional motives may play a role (such as a tradition of unionization at the workplace or in the family, i.e. social customs). Direct tests of all theoretical explanations have proved to be difficult, however, and empirical studies on the determinants of unionization usually take an eclectic approach combining economic as well as socio-political considerations.

Most empirical analyses of union membership or density use one (or more) of the three following approaches:² They either stress cyclical explanations and attempt to identify the macro-determinants of union growth and decline by means of time-series studies, or they provide structural explanations and focus on individual characteristics of union (and non-union) members as well as on sectoral and occupational factors that are analyzed by means of cross-sectional or panel studies, or they favor institutional explanations and analyze cross-national variations in institutional settings assumed to influence unionization. This crude distinction will also be followed below when discussing the relationships between unionization and the business cycle, structural change, workforce composition, and institutional set-

² For similar classifications see Ebbinghaus and Visser (1999), who distinguish cyclical, structural and configurational (or institutional) explanations of union growth and decline, Calmfors et al. (2001) and Schnabel (2003).

tings.³ Since the availability of international (panel) data sets has recently enabled researchers to combine some of these approaches, considerable attention will be given to such international analyses (without neglecting important studies for single countries). Before, however, a brief update on the extent and development of unionization in advanced capitalist countries seems in order.⁴

2. UNION MEMBERSHIP AND DENSITY: SOME DATA AND DEVELOPMENTS

In recent years, reports of falling union membership or density in many countries seem to have created the impression among the public (and among some social scientists) that unions are a vanishing species. It almost has become conventional wisdom that union decline is ubiquitous. The Federation of European Employers (FedEE), for instance, states on its homepage that “[o]ver the last twenty years there has been a widespread decline in trade union membership throughout most of western Europe.”⁵ This impression, however, is only partly true, neglecting a considerable amount of variation across countries and between indicators of unionization.

A good, up-to-date picture of union membership and density in a wide range of countries is provided by the ICTWSS Database (version 3.0).⁶ Tables 1 and 2 inform about developments in unionization in those countries for which consistent data are available for long time periods. Starting with net union membership (i.e.

³ Space constraints preclude us from discussing the role of some other variables that might be associated with unionization, but which have been found to affect union membership and density in an unstable way across countries and time periods and/or which cannot be assumed to develop over time in such a systematic way that this will have a clear impact on unionization over time. These variables – some of which are potentially endogenous – include strikes (see, e.g., Western 1997, Calmfors et al. 2001, Checchi and Visser 2005), political attitudes of employees (Schnabel and Wagner 2007a, Kirmanoğlu and Başlevent 2012), the broad national political environment (Schmitt and Mitukiewicz 2012) and government composition (Western 1997, Scruggs and Lange 2002, Checchi and Visser 2005, Brady 2007), management opposition (Freeman and Medoff 1984: ch. 15, Flanagan 2005), social capital (Ebbinghaus et al. 2011) as well as employees' risk aversion (Goerke and Pannenberg 2012).

⁴ An empirical analysis of unionization in less developed countries is provided by Martin and Brady (2007).

⁵ See www.fedee.com/tradeunions.html, accessed on 21st October, 2011.

⁶ This open access database is maintained by Jelle Visser at the Amsterdam Institute for Advanced Labour Studies. The data on trade union membership and union density are updates of various sources such as Ebbinghaus and Visser (2000) and Visser (2006) combined with recent administrative data on union membership from the Dublin Foundation for the Improvement of Living and Working Conditions and from the European Social Survey (for details, see www.uva-aias.net/208). While the data stem from different sources and comparisons across countries should thus be made only cautiously, this is a minor problem when making comparisons over time.

total membership minus union members outside the active, dependent and employed labor force) in Table 1, it can be seen that this has fallen in some countries but risen in others. In the period 1980 to 2010, for instance, net union membership decreased in 13 and increased in 12 of the 25 countries for which data are provided. A similar picture emerges for the period 1970 to 2010 and even for western European countries in the last 20 years. Looking at the longest observation period possible with these data, it becomes obvious that net union membership since 1960 has even increased in 13 countries whereas it has fallen in only seven countries (most notably in Portugal, Austria, France and the UK). While this empirical evidence is in contrast to simplistic statements postulating ubiquitous falls in union membership (such as the FedEE quote above), it is somewhat misleading since in most countries the number of employees has increased substantially over the periods observed.

A somewhat different and probably more meaningful picture emerges from the data on union density (i.e. net union membership as a proportion of wage and salary owners in employment) shown in Table 2. Based on this indicator, unionization has fallen in 24 of 25 countries over the last 20 years and in 23 of 24 countries over the last 30 years (with the notable exceptions of Spain and Finland, respectively). Over the longest possible observation period 1960 to 2010, union density has just fallen in 13 out of 18 countries but increased in five countries. Although a cross-sectional comparison of data that stem from various sources should not be over-interpreted, it is also apparent that union density varies substantially across countries. The most recent density data for 2009/10 range from around 70 percent in Finland, Sweden and Denmark to less than 12 percent in France, South Korea and the US.⁷ A substantial amount of variation can also be observed in previous years, and the coefficients of variation across countries calculated for these years have tended to increase over time (see Table 2). This suggests that among advanced countries there is no convergence (rather some divergence) in union density over time.

⁷ Using data from the European Social Survey (ESS) 2002/03 based on identical questionnaires, Schnabel and Wagner (2007a) find a similar diversity, with union density ranging from about 80 percent in Sweden and Denmark to just 11 percent in Portugal and Spain; see also Ebbinghaus et al. (2011). When analyzing data from the ESS 2008, Kirmanoğlu and Başlevent (2012) obtain similar figures and even wider variations, and they report a correlation coefficient of 0.97 between the ESS and the ICTWSS data. Further international comparisons of union membership and density are provided by Ebbinghaus and Visser (2000), Lesch (2004), Visser (2003, 2006) and – for less developed countries – by Martin and Brady (2007).

Table 1: Union membership in 25 advanced countries

country	net union membership (in millions)						percentage change	
	1960	1970	1980	1990	2000	2010	1960-2010	1980-2010
Australia	1.683	2.053	2.555	2.660	1.902	1.835 ¹	9.1	-28.2
Austria	1.370	1.355	1.444	1.375	1.191	0.990	-27.7	-31.4
Belgium	1.055	1.231	1.651	1.646	1.705	1.960 ¹	85.7	18.7
Canada	1.459	2.173	3.397	4.031	4.058	4.605 ¹	215.6	35.6
Chile	0.232	0.551	0.387	0.516	0.468	0.713 ¹	206.8	84.3
Denmark	0.872	1.108	1.605	1.756	1.824	1.702 ¹	95.1	6.1
Germany	6.948	6.966	8.154	8.014	7.928	6.300	-9.3	-22.7
Greece	---	---	0.650	0.664	0.631	0.713 ²	---	9.7
Finland	0.424	0.828	1.332	1.527	1.504	1.476	248.1	78.2
France	2.532	3.458	3.282	1.968	1.781	1.807 ²	-28.6	-44.9
Ireland	0.326	0.424	0.545	0.491	0.550	0.581 ¹	78.5	6.6
Italy	2.886	4.736	7.189	5.872	5.195	5.921	105.2	-17.6
Japan	7.796	11.605	12.369	12.635	11.539	10.085	29.4	-18.5
Luxemburg	---	0.052	0.069	0.079	0.104	0.123	---	77.2
Netherlands	1.319	1.430	1.517	1.348	1.596	1.393	5.6	-8.2
Norway	0.622	0.683	0.938	1.034	1.129	1.245 ¹	99.9	32.7
New Zealand	---	0.529	0.714	0.603	0.319	0.388 ¹	---	-45.7
Portugal	2.453	2.561	1.460	0.920	0.783	0.739	-69.9	-49.4
Singapore	0.145	0.113	0.244	0.212	0.315	0.526 ¹	263.3	115.7
Spain	---	---	1.539	1.193	2.058	2.472 ¹	---	60.6
Sweden	1.909	2.325	3.039	3.322	2.989	2.790	46.1	-8.2
Switzerland	0.733	0.760	0.853	0.820	0.735	0.727 ¹	-0.8	-14.7
UK	8.852	10.068	11.652	8.952	7.185	6.780 ¹	-23.4	-41.8
US	17.049	19.381	20.095	16.740	16.258	14.715	-13.7	-26.8

Notes: ¹ 2009, ² 2008

Source: ICTWSS Database, version 3, 2011; own calculations

Table 2: Union density in 25 advanced countries

country	union density (net membership/employment, in %)						change (% points)	
	1960	1970	1980	1990	2000	2010	1960-2010	1980-2010
Australia	50.2	44.2	48.5	39.6	24.5	19.0 ¹	-31.2	-29.5
Austria	67.9	62.8	56.7	46.9	36.6	28.1	-39.8	-28.6
Belgium	41.5	42.1	54.1	53.9	49.5	52.0 ¹	10.5	-2.1
Canada	29.2	31.0	34.0	34.0	30.8	30.3 ¹	1.1	-3.7
Chile	---	---	---	18.2	13.5	14.3 ¹	---	---
Denmark	56.9	60.3	78.6	75.3	74.2	68.8 ¹	11.9	-9.8
Germany	34.7	32.0	34.9	31.2	24.6	18.6	-16.1	-16.3
Greece	---	---	39.0	34.1	26.5	24.0 ²	---	-15.0
Finland	31.9	51.3	69.4	72.5	75.0	70.0	38.1	0.6
France	19.6	21.7	18.3	9.9	8.0	7.6 ²	-12.0	-10.7
Ireland	50.4	59.1	63.5	56.7	40.4	36.6 ¹	-13.8	-26.9
Italy	24.7	37.0	49.6	38.8	34.8	35.1	10.5	-14.4
Japan	32.9	35.1	31.1	26.1	21.5	18.5	-14.4	-12.7
Luxemburg	---	46.8	50.8	46.4	42.5	37.3 ²	---	-13.5
Netherlands	40.0	36.5	34.8	24.3	22.9	19.0 ¹	-21.0	-15.8
Norway	60.0	56.8	58.3	58.5	54.4	54.4 ¹	-5.6	-3.9
New Zealand	---	56.5	69.1	48.8	22.4	21.4 ¹	---	-47.7
Portugal	100.0	100.0	54.8	28.0	21.6	19.3	-80.7	-35.5
Singapore	---	25.4	22.8	14.4	16.1	17.6 ¹	---	-5.2
Spain	---	---	18.7	12.5	16.7	15.9 ¹	---	-2.8
Sweden	72.1	67.7	78.0	81.5	80.1	68.9	-3.2	-9.1
Switzerland	36.1	28.9	27.7	22.7	20.6	17.8 ¹	-18.3	-9.9
UK	40.4	44.8	50.7	39.3	30.5	27.5 ¹	-12.9	-23.2
US	30.9	27.4	22.3	15.5	12.8	11.4	-19.5	-11.0
variation coefficient 18 countries	0.426	0.396	0.367	0.481	0.569	0.596		
variation coefficient 24 countries			0.419	0.513	0.596	0.612		

Notes: ¹ 2009, ² 2008

Source: ICTWSS Database, version 3, 2011; own calculations

Two stylized facts emerge from this brief analysis: First, union density has indeed fallen over the last decades in almost all affluent countries whereas this is not equally true for union membership. Second, union density and trends in union density vary considerably across western countries, with no signs of international convergence towards union decline on an Anglo-Saxon pattern. While these variations in (the trends of) union membership and density have been noted before (see, e.g., Scruggs 2002, Checchi and Lucifora 2002, Visser 2006, Schmitt and Mitukiewicz 2012), they need to be reiterated since they stand in contrast to conventional wisdom, in particular in Anglo-Saxon countries, that unions are losing members and are about to become extinct everywhere. Against this background, the international empirical evidence on a range of potential determinants of unionization will now be analyzed.

3. UNIONIZATION AND THE BUSINESS CYCLE

Not only among historians, cyclical explanations of union growth and decline have been popular for almost 100 years. This approach can be traced back at least to Commons et al. (1918) who analyzed the history of the US labor movement in the nineteenth century and tried to link membership changes to the stages of the business cycle. Over the course of the twentieth century, numerous models were developed and estimated that try to explain union growth in terms of such components of the business cycle as wage and price changes, employment growth, and unemployment. A starting point for much subsequent analysis has been the empirical study by Ashenfelter and Pencavel (1969) which examined union growth in the US between 1904 and 1960. The time-series models developed and estimated for several countries (US, UK, Sweden and Australia) by Bain and Elsheikh (1976) also have had a strong influence on the literature. Both approaches have drawn much criticism concerning the *ad hoc* use and justification of explanatory variables, the empirical specifications, and the structural stability and predictive power of the models. Nevertheless, cyclical models have been estimated for a variety of countries, ranging from Germany (see, e.g., Schnabel 1989) and the Netherlands (van den Berg 1995) over Ireland (Roche and Larragy 1990) and Belgium (Vandaele 2004) to Taiwan (Sharma and Sephton 1991), as well as for groups of countries (Western 1997, Blaschke 2000).⁸

⁸ For more detailed discussions of the early literature, see the surveys by Riley (1997) and Schnabel (2003). Business cycle indicators like unemployment and inflation have also been included (not always successfully) in cross-sectional analyses across countries in a certain year (see, e.g., Brady 2007, Martin and Brady 2007), but since this approach does not take account of the time dimension of the business cycle, it cannot be interpreted as a test of business cycle explanations.

A serious flaw of the older studies in the business cycle approach to union growth and decline is their failure to separate cycle and trend. Traditional cyclical models mainly try to explain the ups and downs of union membership (or density) by corresponding movements in business cycle variables while neglecting shifts in underlying, secular variables which may explain the trend in unionization. Carruth and Disney (1988) were the first to develop a time-series model (for the UK) which explicitly distinguishes between (short-run) cyclical and (long-run) trend factors of unionization, and in a study for Germany Carruth and Schnabel (1990) for the first time made use of cointegration techniques in identifying a long-run equilibrium relationship that can serve as an error-correction mechanism in the dynamic modeling of unionization. Similar empirical approaches with cointegration and error-correction techniques have been undertaken, for example, by van Ours (1992) for the Netherlands, by Borland and Oliaris (1994) for Australia, by Checchi and Corneo (2000) for Italy, and by Calmfors et al. (2001) and Checchi and Visser (2005) in panel studies of 14 European countries.

Both the older and the more recent studies provide evidence across countries that business cycle factors play a significant role in explaining short-run changes and long-run trends in unionization.⁹ Although the magnitude and the statistical significance of estimated coefficients differ considerably, these studies show some consistent patterns. One stylized fact emerging from these studies is that union growth is procyclical. In particular, it appears that employment growth as well as price and/or wage inflation enhances union membership growth (at least in the short term). In contrast, a rise in unemployment tends to reduce union growth and density (except in “Ghent countries” with a union-administered system of unemployment insurance, on which below). Although estimated speeds of adjustment in many error-correction models are relatively low (see, e.g., Calmfors et al. 2001), in most European countries a return to lower unemployment would thus work in the direction of stabilizing union density over the years. This implies that in those

⁹ Interestingly, the theoretical interpretation of this insight is far from clear. Following Ashenfelter and Pencavel (1969), many researchers have interpreted the results of cyclical models mainly in terms of individuals' decisions reflecting the expected costs and benefits of union membership. This is ambitious since the available explanatory variables are hardly able to measure expected costs and benefits directly. Alternative interpretations would stress the roles of employer opposition, union power and union recruitment strategies, which also may vary with the business cycle. Furthermore, the causal relationship between unionization and cyclical variables like inflation and unemployment is not fully clear (see also Checchi and Lucifora 2002). The empirical literature on the effect of unions on economic performance, for instance, relies on a specification with unemployment as the dependent variable and unionization indicators as explanatory variables (see, e.g., Nickell et al. 2005). For an attempt to explicitly model potential endogeneity and heterogeneity of unemployment and unionization, see Checchi and Nunziata (2011).

countries it might be appropriate for unions to pursue strategies (or not oppose government policies) aimed at preventing or reducing unemployment.

4. UNIONIZATION AND STRUCTURAL CHANGE

It is often argued that union growth and decline is influenced by some secular trends in advanced capitalist countries that change the industrial structure from highly-unionized to lowly-unionized sectors and workplaces (see, e.g., Polachek 2004). Cases in point are the shift in employment from manufacturing to private services, the reduction in average firm size that often goes with it, and the changing importance of public sector employment. A closer look at the empirical evidence, however, reveals that a purely sectoral explanation of union decline would be too narrow.

Concerning the shift in employment from manufacturing (the traditional union stronghold) to the service sector, which can be observed in every developed economy, some of the international studies for groups of countries find that a reduction in the manufacturing sector is associated with lower union density (see Blaschke 2000, Polachek 2004, Lee 2005). Other studies report insignificant effects (Brady 2007) or varying effects depending on the specification and the size of the sample used (Calmfors et al. 2001). Indirect evidence for the greater difficulty of union organizing in growing service employment is provided by Checchi and Visser (2005) who find a negative relationship between changes in the employment rate and union density across 14 European countries. The empirical evidence coming from individual country studies is equally mixed. There are some studies finding that the growing share of service sector employment reduces union membership (see, e.g., Carruth and Schnabel 1990 for West Germany), that employment in highly unionized industries has a positive impact on union membership (Bodman 1998 for Australia), and that most of the decline in the union membership rate is due to differential employment growth in union and nonunion sectors (Farber and Western 2001 for the US). Many country studies, however, demonstrate that the contribution of sectoral changes to changes in union density is marginal (see, e.g., van Ours 1992 for the Netherlands, Checchi and Corneo 2000 for Italy, Charlwood and Haynes 2008 for New Zealand, Fitzenberger et al. 2011 for Germany). For the UK, Blanchflower and Bryson (2009) show that union decline in the private sector cannot be largely due to death of old industries and large workplaces that were once bastions of unionism since union recognition declined across all sectors and types of workplaces.

This brings us to the importance of changes in the size of workplaces which reflect changes in the organizational structure of production and are related to the sectoral change discussed above in which large manufacturing workplaces disappear and smaller establishments in the service sector are created. The probability of unionization is usually expected to rise with establishment size because union costs of organizing should be lower in larger units, and union services may be valued most highly in large, bureaucratic organizations where workers are likely to be treated impersonally and feel a greater need (or higher peer pressure) for representation (see, e.g., Riley 1997, Schnabel 2003). The empirical evidence clearly supports such a positive relationship. Studies using data on individuals from a wide range of European countries included in the European Social Survey find a positive correlation between establishment size and the probability of union membership when pooling across all countries (Kirmanoğlu and Başlevent 2012, Ebbinghaus et al. 2011) as well as in the majority of countries analyzed separately (Schnabel and Wagner 2007a). Studies for individual countries also tend to show that unionization is more likely in larger establishments, see, e.g., Bain and Elias (1985) for the UK, van den Berg and Groot (1992) for the Netherlands, and Biebeler and Lesch (2007) as well as Goerke and Pannenberg (2007) for Germany. Since these studies are all cross-sectional, it is reassuring that a panel study for Germany by Fitzenberger et al. (2011) also finds a substantial positive impact of firm size on unionization. This suggests that the decline in average firm size observed in many countries tends to weaken unionization.

The empirical evidence is also quite clear-cut concerning the role of the public sector, where union organizing is said to be much easier due to lower recruitment costs in large homogeneous organizations with low turnover rates and no hostility towards unionism (see Schnabel 2003). Descriptive evidence provided by Ebbinghaus (2006) and Visser (2006) makes clear that in all countries analyzed union density is considerably higher in the public than in the private sector. With one exception (Calmfors et al. 2001), the panel studies for groups of countries which have included this variable report that a higher share of public employment is associated with higher union density (see Blaschke 2000, Visser 2002, Scruggs and Lange 2002, Checchi and Lucifora 2002, Checchi and Visser 2005). A positive relationship between public employment and unionization is also found in most cross-sectional studies with data of individuals for countries like the UK, the US and Canada (Blanchflower 2007), Germany (Schnabel and Wagner 2005), Australia (Christie 1992), the Netherlands (van den Berg and Groot 1992, van den Berg and Grift 2001), and for a group of 24 European countries (Kirmanoğlu and Başlevent 2012).

The stylized facts emerging from this review of the literature are that everywhere unionization is positively related to public sector employment and to establishment size (whereas the impact of sectoral shifts in employment from manufacturing to private services remains unclear and seems to differ across countries). Note, however, that the share of public employment has varied over time in many countries, first increasing with the expansion of the welfare state and then often falling with processes of privatization and deregulation. This means that while the contribution of public employment to (trends in) unionization has been important, this impact has not always served to stabilize union density and may even contribute to further union decline in those countries that attempt to cut back the public sector.¹⁰

5. UNIONIZATION AND THE CHANGING COMPOSITION OF THE WORKFORCE

Parallel to sectoral changes in the economy the composition of the workforce has changed in all advanced countries in the last decades. Usually the employment shares of women, foreign-born workers, atypically employed people, white-collar workers and highly-skilled individuals have increased over time, and this is expected to dampen unionization since some of these groups are supposed to have a lower attachment to the labor force, others are said to be more individualistic, and all of them seem to be more difficult (and more costly) to organize (see, e.g., Visser 2006, Schnabel and Wagner 2007a, Ebbinghaus et al. 2011).

Starting with *gender effects*, in the last decades the labor force participation rate of women has risen considerably in all advanced countries. While the associated increase in employment may have helped unions to recruit new members, its effects on union density are less clear. Traditionally, it has often been regarded as a stylized fact that there exists a gender gap in unionization with women exhibiting a lower union density than men. This was interpreted as a reflection of women's weaker attachment to the labor force which would reduce the benefits of unionization both from the point of view of female workers and of unions. Over time, however, this gender gap has narrowed and has disappeared in several countries (see Ebbinghaus and Visser 2000, Calmfors et al. 2001). Descriptive evidence provided by Visser (2006) demonstrates that in a number of countries female union density is now equal to or even higher (in the Nordic countries) than the male unionization rate. The comparative analysis of European Social Survey data by Schnabel and

¹⁰ For Sweden, Kjellberg (2011: 71) points out that "[w]hen activities move from the public sector to private services through privatization, the introduction of buy and sell models and the use of subcontractors, jobs are transferred from the sector with the highest unionization to that with the lowest."

Wagner (2007a) shows that in eight of the 18 countries investigated the union density of women is higher than that of men.

Multivariate analyses controlling for other relevant factors also indicate that the relationship between gender and unionization is inconclusive and varies among countries. Some cross-sectional studies using data of individuals pooled across countries find a significant negative effect of females on the probability of union membership (see, e.g., Brady 2007, Kirmanoğlu and Başlevent 2012). This, however, seems to vanish when controlling for atypical employment (as demonstrated by Ebbinghaus et al. 2011). When analyzing countries separately (and controlling for full-time employment status) Schnabel and Wagner (2007a) find that the gender variable is statistically insignificant in eleven of the 18 European countries investigated. Union density of women is significantly higher than that of men in the Nordic countries whereas it is still lower in Germany and Italy. That women are less likely to be union members is confirmed for Germany by Goerke and Pannenberg (2007) and Fitzenberger et al. (2011), and for the Netherlands by van den Berg and Grift (2001), while Blanchflower (2007) obtains the same result for the UK, the US and Canada (but varying estimation coefficients across other countries). In these few countries it thus might make sense for unions to focus their organizing efforts more on women. It is, however, difficult to draw more general conclusions. What seems clear is that in most countries the rising share of women in employment *per se* should not be a major obstacle to union growth – a panel study by Calmfors et al. (2001) even seems to indicate that it has had a positive effect on changes in union density. It may rather be the rise in atypical jobs mostly held by women that poses a problem for unionization.

In most advanced countries, the employment share of standard full-time jobs has fallen in the last decades while *atypical employment* (such as part-time jobs, fixed-term contracts or temporary agency jobs) has been on the rise. Atypical employment poses recruitment problems for the unions since atypically employed workers usually have weaker ties to their current workplace and are more difficult to recruit and keep as union members. The benefits of unionization may be lower both from the point of view of these workers and of the unions, so that the latter have concentrated on organizing full-time workers. Ebbinghaus (2006) and Visser (2006) provide descriptive evidence for several countries that there is a considerable gap in unionization between full-time and part-time (or other atypically employed) workers. In a cross-sectional analysis pooling data for individuals from 19 European countries, Ebbinghaus et al. (2011) obtain a highly significant negative relationship between atypical employment and the probability of being unionized whereas Schnabel and Wagner (2007a) find very few significant correlations between being

working full-time and being a union member when using the same data set but analyzing countries separately. There are, however, some country studies showing that part-time employment significantly lowers (or full-time employment increases) the probability of union membership, see, e.g., Blanchflower (2007) for Canada, the US and the UK, van den Berg and Groot (1992) and van den Berg and Grift (2001) for the Netherlands, Schnabel and Wagner (2005) for West Germany, and Böckerman and Uusitalo (2006) for Finland. While these findings are from cross-sectional studies, a panel study by Fitzenberger et al. (2011) also shows that working part-time reduces the probability of being unionized in West Germany (but not in East Germany), and the longitudinal analysis by Bodman (1998) finds that the rapid rise in part-time employment had a significant negative impact on unionization in Australia. As atypical employment continues to increase in many countries, this is bad news for the union movement.

Whether a rising share of *foreign-born employees* also dampens unionization is an open question, not least because there is not much empirical evidence on this topic. Hechter's (2004) claim based on solidaristic theory that ethnic heterogeneity due to immigration undermines unionization gets some support from the finding by Lee (2005) that international migration is negatively associated with union density in a sample of 16 affluent OECD countries. In contrast, Schnabel and Wagner (2007a) do not find significant differences in the probability of union membership for native and foreign-born workers in the majority of European countries analyzed, and Brady (2007) even reports that the percentage of foreign-born workers and net migration are positively related to the likelihood of being a union member.

Since blue-collar workers have been unions' traditional stronghold, the shift in employment towards *white-collar work* can be expected to reduce union membership and density. White-collar workers are said to have less homogeneous preferences and working conditions and lesser traditions and social customs of being unionized, which would make them more difficult to organize. Ebbinghaus (2006) provides descriptive evidence for the year 1996 that in most of the western European countries analyzed the union density of private-sector white-collar workers is indeed lower than that of blue-collar workers. In contrast, Schnabel and Wagner (2007a) report that in 2002/03 only in nine of the 17 European countries investigated union density was lower for white-collar than for blue-collar workers. Moreover, in their multivariate analyses a blue-collar worker dummy proved to be positive and highly significant in just two countries, namely Belgium and the Netherlands. In addition, there are some signs that blue-collar status still plays some role in Ireland and Germany (see also the country studies for Germany by Schnabel and Wagner 2005 and Goerke and Pannenberg 2007). More relevant for unionization than the crude

and somewhat outmoded distinction between blue- and white-collar workers may be the impact of education and qualification, which is investigated in a larger number of studies.

While skilled blue-collar workers are the traditional clientele of unions in most countries, employees with higher *education* are often assumed to be less willing to unionize, which might pose a problem for unions given that levels of education have been rising in all countries. Better educated employees probably have greater individual bargaining power and thus a lesser need for collective voice. Ebbinghaus et al. (2011: 111) argue that “[w]ith the exception of the public sector and some well organized professions ..., better educated employees, particularly those with tertiary (university) education tend to be less likely to join trade unions.” However, the empirical evidence is not so clear-cut. In a cross-sectional analysis pooling data for individuals from 18 affluent democracies taken from the World Value Survey in the late 1990s, Brady (2007) finds that the likelihood of being unionized rises with each level of education. At the same time it is higher for skilled manual workers than for other categories of employees such as clerical, manual or unskilled workers. Similar results are reported by Martin and Brady (2007) for a pooled sample of 39 less developed countries. Using pooled data for individuals from 24 European countries from the ESS 2008, Kirmanoğlu and Başlevent (2012) obtain a linear and positive relationship between years of schooling and the probability of being a current or former member of a union. With data from the ESS 2002/03, however, Ebbinghaus et al. (2011) test and find a curvilinear relationship: with increasing years of education, the probability of being a union member first increases and then decreases at about 15 years of full-time education (i.e., with a university degree). In contrast, dummy variables for levels of education are found to be insignificant in the majority of countries by Schnabel and Wagner (2007a) when using the same data set but analyzing countries separately. What most studies seem to have overlooked, however, is the distinction between the private and the public sector. Analyzing large individual data sets for the UK, the US and Canada, Blanchflower (2007) demonstrates that more educated workers have lower probabilities of being a union member in the private sector and higher probabilities in the public sector.

All in all, these findings suggest that the relationship between occupational or educational status and unionization is complex and its implications are far from simple. While the employment shares of white-collar workers and of better educated employees have risen over time, this does not necessarily mean that these trends have impeded union membership and density. Nevertheless, unions should not fail to organize the growing number of highly-educated employees, in

particular in the private sector and in those countries where there is still an educational gap in unionization.

The composition of the workforce in all developed countries is also increasingly affected by *demographic change*. A rising average age of the workforce and cohort replacement effects (in particular, stronger and higher organized cohorts retiring from the workforce) may affect union density if unionization varies in the age dimension. Descriptive evidence for European countries presented by Ebbinghaus (2006) indicates that union density tends to be relatively low among young workers (see also Visser 2006), increases with age, and falls when employees are near retirement. Such a concave relationship is also obtained in several multivariate analyses, although possible explanations for this relationship (ranging from younger or older workers' lower need for unions over different free-riding behavior and different attitudes towards unions to structural and cohort effects) remain vague. With cross-sectional data for individuals from a large number of countries, Blanchflower (2007) finds that the probability of being unionized follows an inverted U-shaped pattern in age, maximizing in the mid- to late 40s in 34 of the 38 countries investigated. However, such a pattern is found to be statistically significant only in four of the 18 countries analyzed by Schnabel and Wagner (2007a), which may be because they employ more control variables than Blanchflower (2007). Further studies for individual countries that test and find a concave relationship include Goerke and Pannenberg (2007) for West Germany and Van Rie et al. (2011) for Denmark and Sweden. Pooling data across countries, Ebbinghaus et al. (2011) and Kirmanoğlu and Başlevent (2012) also obtain a concave age-unionization pattern, whereas Brady (2007) only tests and finds a linear relationship.

From this empirical evidence it seems safe to conclude that younger employees are least likely to be unionized (see also Bryson et al. 2005, Böckermann and Uusitalo 2006, and Martin and Brady 2007), probably because they are less interested in joining organizations that they perceive to represent primarily the interests of older workers (Ebbinghaus 2006) or because unionization is an experience good and there is greater unsatisfied demand for union representation amongst young workers (Bryson et al. 2005). It is, however, difficult to make more definite statements since there are two problems with most of the studies finding a significant relationship between age and unionization. First, the standard methods usually applied when testing for the joint significance of the linear and the quadric term in age do not seem to be fully appropriate (for details, see Schnabel and Wagner 2008b). Second, it cannot be ruled out that the age effects detected in these cross-sectional studies are confounded with cohort effects. Addressing that question for the US and the UK, Blanchflower (2007) finds that cohort effects exist but that removing the

cohort effects does not remove the inverted U-shape in age (although flattening it somewhat).

Using cohort analysis, Schnabel and Wagner (2008a) show that both intra-cohort change and cohort replacement effects seem to have played a roughly equal role in the substantial fall in union density in West Germany. Decomposing age, time and year effects, Böckerman and Uusitalo (2006) obtain cohort profiles indicating that a large fraction of the decline in union density in Finland during the 1990s can be attributed to the decrease in union density among the cohorts born after the early 1960s. Cohort effects pose serious problems for unions for at least two reasons related to union density and to the size of future cohorts entering the labor market: First, if older cohorts with high union densities are replaced by young cohorts with low densities (as has been the case in Germany and Finland), this implies that average union density falls. Second, due to demographic change in many countries future cohorts of potential union members will be smaller than the cohorts of employees which they replace. This means that even if union density of new cohorts was the same as that of exiting cohorts, the smaller size of new cohorts would result in a fall of total union membership. While unions will not be able to influence demographic change, they must intensify recruitment efforts among young employees. Although such a strategy may be expensive, it would clearly pay off if these cohorts of young employees become strongly unionized and if the young employees stay in the union and in the labor market for a long period of time.

Taken as a whole, these results from the empirical literature suggest that changes in the composition of the workforce do play some role in explaining the changes in union membership and density observed in the last decades, but the contribution of compositional changes seems to be smaller than widely believed. Several country studies explicitly investigating the explanatory power of various compositional changes underscore this conclusion. For the UK in the 1980s, for instance, Andrews and Naylor (1994) argue that a traditional compositional change story is untenable, and for Finland Böckerman and Uusitalo (2006) find that changes in the composition of the labor force and in the labor market explain only about a quarter of the decline in union density in the 1990s. For manufacturing industries in the US, Magnani and Prentice (2003) calculate that changes in work force characteristics (in particular the rising shares of college graduates and women) explain about one sixth of the observed fall in unionization between 1973 and 1994. For New Zealand, Charlwood and Haynes (2008) demonstrate that (with the exception of the employment share of young workers) most sorts of compositional changes had a negligible impact on union decline. Van den Berg and Grift (2001) present mixed evidence for the Netherlands suggesting that changing characteristics of the working

population partly explain the union decline between 1979 and 1987 but not the subsequent union recovery (which was entirely due to changing unionization behavior). Further decomposition studies by Schnabel and Wagner (2007b) and Fitzenberger et al. (2011) show that changes in the composition of the workforce have played a minor role for the fall in union density in West and East Germany. These findings imply that de-unionization would have occurred even in the absence of compositional changes and that it is inadequate to simply attribute union decline to secular trends that largely cannot be influenced by the labor movement.

If such decomposition analyses are right and it is changes in the coefficients estimated rather than compositional changes that seem to drive variations in unionization, then changing attitudes of employees towards unions and changing social values may also play an important role. Stressing individualization processes, for instance, it could be argued that there is a diffusion of more individualistic life styles and post-materialist values (cf. Inglehart 1977) and that collective and group-specific orientation schemes lose their importance over time (cf. Beck 1994), which may contribute to union decline. Using data from the European Social Survey 2008, Kirmanoğlu and Başlevent (2012) show that basic personal values are related to (current and former) union membership status. Higher self-transcendence and conservation scores are associated with a greater probability of being a current member whereas higher openness-to-change and self-enhancement scores reduce the likelihood of unionization. Drawing on the ‘rising individualism’ argument, Kirmanoğlu and Başlevent (2012) argue that changing personal values may have been an important factor behind the decline in union membership, but it should be noted that they were only able to conduct a cross-sectional analysis. Further cross-sectional analyses showing that individual union membership goes along with a pro-union attitude are provided, e.g., by Visser (2002) for the Netherlands and by Schnabel and Wagner (2007a) for most countries in western Europe (but not for some post-communist countries in eastern Europe). Using repeated cross-sectional analyses, Biebeler and Lesch (2007) show that on average the attitudes of West German workers have (slightly) changed over the last 20 years towards a stronger emphasis on self-responsibility and economic freedom and that a composite index of economic freedom is negatively correlated with union membership. What is needed, however, are panel analyses showing that there have been substantial changes in individual employees’ attitudes and values over time and that this has indeed affected unionization. Since the empirical evidence on this point is very limited, “[i]t must remain a matter of speculation whether employees are less motivated by collective values than, say, one or two generations ago” (Calmfors et al. 2001: 31) and whether this has really contributed to falling union membership.

6. UNIONIZATION AND STRUCTURAL CHANGE

In addition to cyclical and structural explanations of unionization and its development over time, there exist a number of institutional explanations that mainly focus on cross-national variations in unionization but which also can be used to explain union growth and decline over time. Institutional variables emphasized in this literature dominated by political scientists and sociologists (see, e.g., Western 1997, Ebbinghaus and Visser 1999, Scruggs and Lange 2002, Brady 2007) include union-administered unemployment insurance, closed-shop arrangements and union access to the workplace as well as structures of collective bargaining. In a wider sense, changes in the economic environment that were induced or favored by changes in government regulation, such as increasing globalization, also fall into this category.

One institutional variable that has been found to strongly affect unionization in most cross-national studies is the provision or *administration of unemployment insurance* by trade unions. This “Ghent system” (named after the Belgian city where it first emerged) comes in two shapes: Either in the form of voluntary unemployment insurance funds set up by the unions and subsidized by the state, as found in the three Nordic countries Sweden, Denmark and Finland, or as a compulsory unemployment insurance system partly administered by union officials, as is the case in Belgium (which is considered “a de facto Ghent system” by Scruggs 2002: 286). Although union-run unemployment insurance may not fully be a “selective incentive” in the strict sense of Olson (1965) since union membership is usually not compulsory for those insured and there exist alternatives options of acquiring unemployment insurance, the important role of union officials in the provision of unemployment benefits and the regular contact with the union during spells of unemployment are said to strongly motivate workers to join unions and remain union members when unemployed.¹¹

The high union density rates in the three Nordic countries and in Belgium found in cross-national studies are therefore often attributed to positive effects of their Ghent systems. It is striking that among the 25 countries listed in Table 2, union density is indeed highest in Finland, Sweden and Denmark, with Belgium ranked fifth in 2010. A number of multivariate cross-sectional studies show that Ghent system countries enjoy a substantial advantage in unionization (Ebbinghaus and Visser 1999,

¹¹ For detailed descriptions and discussions of Ghent systems, see Scruggs (2002) and Van Rie et al. (2011). Holmlund and Lundborg (1999) provide a theoretical analysis of the Ghent system and show that under certain conditions (i.e., if it is heavily subsidized by the government and workers are strongly risk averse) it is conducive to unionization.

Wallerstein and Western 2000) and that individual employees in countries with a union-administered unemployment insurance are much more likely to be unionized, *ceteris paribus* (Brady 2007, Ebbinghaus et al. 2011).

Interestingly, a similar picture emerges when long-term changes in union density are analyzed. It may be no coincidence that in the period 1980 to 2010 union density has remained most stable in Finland and Belgium (among the 24 countries listed in Table 2). When the percentage point change in union density between 1980 and 2010 is regressed on the starting value of union density in 1980 and a dummy variable that takes on the value of 1 for the four Ghent system countries, the following estimation results emerge ($N = 24$, $R^2 = 0.596$, t-statistics in parentheses):

$$\Delta \text{union density} = 4.27 - 0.52 \text{ union density in 1980} + 27.04 \text{ Ghent dummy}$$

(0.93)	(-4.90)	(5.04)
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The Ghent dummy and the starting level of union density explain almost 60 percent of the variance in changing union density (whereas the union density level on its own would only explain less than 11 percent). Taken at face value, the coefficient of the Ghent dummy variable implies that the decline in union density over the period 1980 to 2010 was 27 percentage points lower in countries with a Ghent system.

A similar result is obtained by Scruggs (2002) for changes in union density in 12 countries between 1970 and 1996. Ebbinghaus and Visser (1999) also find that Ghent systems are associated with higher growth rates in union density between 1950 and 1975 (but not in the period 1975 to 1995). A more detailed multivariate analysis of five-year-changes in union density in 15 western European countries between 1970 and 1995 by Blaschke (2000) underscores that the Ghent system exerts a positive influence on changes in union density, contributing most to the explanation of variance. Finally, a Ghent system dummy variable has a substantial and highly significant positive effect on union density in the panel analysis for 13 European countries in the period 1960 to 2000 by Checchi and Lucifora (2002).

The existence of a Ghent system may, however, not just have a direct impact but also affect unionization via its interaction with other factors. For instance, Scruggs (2002) finds that in Ghent countries unionization grows faster when unemployment rises whereas it declines more rapidly when unemployment rises in the non-Ghent countries (see also Scruggs and Lange 2002). Longitudinal analyses by Checchi and Visser (2005) and by Visser (2006) also indicate that while in general unemployment has a negative impact on union density in the short and long run, its impact is positive in Ghent countries. Moreover, the effect of workplace representation

(discussed below) seems to be smaller in Ghent countries than in other countries (Ebbinghaus et al. 2011).

Given this impressive empirical evidence on the importance of Ghent systems for promoting and sustaining high levels of union density, a somewhat naïve but nevertheless interesting question might be whether the Ghent system should be considered a cure for declining unionization in other countries. Pointing out that the majority of former countries with Ghent systems replaced these systems by mandatory insurance systems many decades ago, Van Rie et al. (2011) regard it as highly unlikely that others countries would follow such a strategy. Moreover, they argue that the Belgian institutional set-up of the Ghent system only stimulates union membership among particular groups and that the Ghent systems in the Nordic countries have been subject to erosion as unemployment insurance has become more costly and less generous (see also Lind 2009). More specifically, Böckerman and Uusitalo (2006) opine that the fall in union density in Finland since the 1990s mainly reflects the erosion of the Ghent system due to the emergence of an independent unemployment insurance fund not requiring union membership. Kjellberg (2011) argues that the substantial increase in fees for union unemployment funds initiated by the centre-right government in 2007 is the main reason for the unprecedented decline in unionization in Sweden in recent years. The stabilizing effect of Ghent systems on union density should thus not be taken for granted and will most probably continue to be restricted to a small number of countries.

Another institutional variable that seems to play an important role for unionization is *unions' access to or presence at the workplace*. This can be expected to increase employee's likelihood of being a union member in various ways, for instance by facilitating unions' recruiting efforts, enabling unions to visibly represent the interests of the workforce, and creating social custom and reputation effects (see, e.g., Schnabel and Wagner 2007a). Following Ebbinghaus and Visser (1999), several studies have included indicators of the degree of the institutionalized access of union to the workplace in cross-national analyses. Empirical analyses usually find that unions' access to the workplace significantly increases individuals' probability of being a union member (Brady 2007), that it is associated with higher union density (Ebbinghaus and Visser 1999), and that it also positively affects changes in union density (Ebbinghaus and Visser 1999, Visser 2002, Checchi and Lucifora 2002, Checchi and Visser 2005).¹² Studies focusing on the actual presence of a

¹² See also Oskarsson (2003) who argues that it is solely the interaction of workplace access and bargaining centralization that shapes unionization – a claim that is empirically tested and rejected by Brady (2007). Interestingly, statutory employee representation and mandatory works councils do not necessarily exert a positive influence on unionization (see Blaschke 2000, Goerke and

union at the workplace rather than on its institutionalized access point in the same direction. Comparing union density in seven western European countries over the period 1960 to 1988, Hancké (1993) argues that unions fared better in those countries where workplace union organization is well developed. In a cross-sectional analysis pooling data for individuals from 19 European countries, Ebbinghaus et al. (2011) obtain a highly significant positive relationship between the presence of a union at the workplace and the probability of being unionized, and when using the same data set but analyzing countries separately Schnabel and Wagner (2007a) find union presence to be a strong and statistically significant predictor of union membership in almost all countries.¹³

While in a few countries there have been regulatory changes curtailing unions' access and rights at the workplace (e.g., the abolition of the closed shop in the UK by the Thatcher government), the access of unions to the workplace has been a datum in most advanced countries and is unlikely to undergo massive changes in the future, so that from this side no further problems for unionization can be expected. A more important challenge seems to be to uphold union presence at the workplace which may become more difficult and more expensive the smaller workplaces get. Processes of union derecognition (as observed in the UK, see Blanchflower and Bryson 2009) or union retreat from workplaces due to financial constraints (as occasionally observed in Germany) tend to weaken overall union density. The empirical evidence discussed above suggests that unions which want to increase or stabilize their membership should try to increase (or at least maintain) their presence at the workplace even if this is costly and might be opposed by employers.

Unionization may also depend on a country's *structure of collective bargaining*, with more centralized bargaining usually said to be conducive to higher union density (see, e.g., Scruggs and Lange 2002). One reason for such a positive relationship is that bargaining centralization may reduce employers' incentives to eliminate unions from their workplaces (because these now tend to interfere less in workplace management and local wage setting). Centralized bargaining also lowers transaction costs, helps to solve the latent conflict between capital and labor, and

Pannenberg 2007), and closed-shop practices of forced membership that used to be common in Ireland and the UK do not always seem to strengthen aggregate union density and density growth (see Ebbinghaus and Visser 1999, Blaschke 2000).

¹³ Schnabel and Wagner (2007a) point out that this relationship is not tautological. While in all countries union members are more often found in firms with a trade union, in some countries (such as the Ghent countries Belgium and Denmark) a large share of union members work in firms without union presence at the workplace. Moreover, union non-members are more or less equally distributed between firms with and without union presence in most countries.

can bring macroeconomic benefits so that governments may have an interest in maintaining strong unions. On the other hand, bargaining centralization may also make it easier for employees to free ride on union agreements without being union members, in particular when agreements are extended to non-unionized employees and workplaces. The theoretical relationship between centralization and unionization is thus open, and the empirical evidence is equally mixed. Some cross-national studies report a positive relationship between unionization and bargaining centralization (Blanchflower and Freeman 1992, Western 1997) while others obtain findings that are insignificant and/or difficult to interpret (Blaschke 2000, Scruggs and Lange 2002, Brady 2007, Sano and Williamson 2008). Panel studies for 14 European countries by Visser (2002) and Checchi and Visser (2005) suggest that centralization had a significant positive impact on unionization in the period 1950 to 1996/97 whereas Checchi and Lucifora (2002) find that the bargaining centralization/coordination variable sometimes loses statistical significance and changes signs in their panel estimates for 13 countries between 1960 and 2000. Given these conflicting results it would certainly be premature to predict that the recent trend towards decentralization of collective bargaining visible in quite a few countries will automatically go along with large-scale deunionization. While there may be good reasons for unions to oppose decentralization (for instance, higher transaction costs in decentralized bargaining), membership considerations alone do not necessarily suggest such a strategy.

In comparison with some of the institutional variables discussed above, the empirical evidence concerning the impact of *globalization* on unionization is more limited. Although economic globalization, i.e. countries' increasing openness concerning trade, financial flows and foreign direct investment, is often thought to undermine unionization by weakening union bargaining power and thus unions' attractiveness to employees, unions may also benefit from globalization in various ways, for instance by serving as vehicles of insurance against volatile global market forces (for a more detailed argumentation, see Scruggs and Lange 2002 and Brady 2007). While the theoretical relationship between globalization and (de-)unionization is thus open, the empirical evidence has become more and more univocal. Weak evidence for globalization effects is only provided by Western (1997) who finds that trade openness increased the likelihood that an advanced capitalist country would experience a decline in unionization in the 1980s, and by Blaschke (2000) who reports a small dampening effect of trade openness on changes in union density in some of her specifications for the period 1970 to 1995 (whereas the liberalization of financial markets and foreign direct investment show no systematic relationship with unionization).

In contrast, when employing several indicators of globalization and an interactive cross-sectional and time series model that estimates the joint effect of labor market institutions and globalization, Scruggs and Lange (2002) are able to show that controlling for cyclical and demographic features there are no robust significant relationships between changes in union density and increasing financial market openness, direct investment flows, or increased trade flows for 16 advanced countries in the period 1964 to 1994. Similarly, Sano and Williamson (2008) do not find a robust impact of FDI and trade openness in a pooled sample of 18 OECD countries from 1980 to 2005, and for a panel of 14 European countries Checchi and Visser (2005) report that changes in union density are unaffected by proxies for increased globalization such as trade openness and financial liberalization. In a multilevel analysis for a group of 18 affluent democracies in the late 1990s, Brady (2007) finds that net trade and investment does not significantly affect unionization, and Martin and Brady (2007) obtain similar results for 39 less developed countries.¹⁴ Finally, an analysis of manufacturing industries in the US by Magnani and Prentice (2003) concludes that globalization as visible in international and domestic market competition cannot explain the bulk of the substantial decline in unionization in the period 1973 to 1994. This empirical evidence stands in stark contrast to the wide-spread impression that ongoing globalization has undermined employees' likelihood of being union members. It implies that unionization has neither been severely affected by institutional changes deregulating certain markets (in particular financial markets) nor can it be expected to benefit much from the reregulation of these markets that has been discussed in recent years.

7. CONCLUSIONS

Providing some up-to-date data and surveying the recent empirical literature from various disciplines, this paper has attempted to shed some light on what we know and don't know about (trends in) unionization and its determinants in advanced countries. It has shown that there are relatively few robust stylized facts and that some seemingly obvious explanations for the decline in unionization over the last decades do not hold on closer scrutiny. In particular, the following perceptions often found in the general public and the media have been debunked as myths: First, it is not the case that unions are losing members and are about to vanish everywhere.

¹⁴ That globalization cannot be the main culprit for deunionization is also suggested by the descriptive evidence reported in Table 2. This shows that in quite a few countries union density has started to decline already in the 1960s, clearly prior to economic globalization, and that union density figures across countries have diverged over time (whereas globalization should have affected countries in a largely similar way).

While union density has indeed fallen in almost all advanced countries, this is not equally true for union membership, and even union density has remained quite high in some European countries (in particular the Nordic countries). Second, union growth and decline is not mainly due to changes in the sectoral structure of the economy and the composition of the workforce. The vast majority of empirical studies analyzed suggest that the contribution of sectoral and compositional changes to changes in unionization has been relatively modest and smaller than widely believed. Third, the economic globalization observed in the last decades does not seem to have substantially undermined unionization. Fourth, the relationship between centralization of collective bargaining and unionization is open both theoretically and empirically – bargaining decentralization thus does not necessarily imply deunionization.

That said, the empirical literature does point to some relationships and regularities that may indeed be interpreted as stylized facts. First, union density and trends in unionization vary considerably across western countries, with no clear signs of convergence. Second, the existence of a union-administered unemployment insurance (the so-called Ghent system found in several European countries) is associated with higher union density and smaller falls in density over time. Third, unions' access to and presence at the workplace play an important, positive role for (changes in) unionization. Fourth, unionization is related to the business cycle, with union growth being procyclical. In many countries a rise in unemployment tends to reduce union growth and density (but in countries with a Ghent system of unemployment insurance the reverse is the case). Fifth, in almost all countries unionization is positively related to public sector employment and to establishment size. Sixth, younger employees are generally less likely to be unionized (but it is less clear whether the probability of being unionized always follows an inverted U-shaped pattern in age).

Of course this review of the empirical evidence can only provide a crude picture of major factors that seem to play a role for unionization in many countries, in such a way neglecting country-specific conditions, national traditions, historical influences, and differences between the Anglo-Saxon world and European welfare states (see Schmitt and Mitukiewicz 2012) that may also be relevant. Empirical studies have not always been able to clearly disentangle the effects of parallel and related developments (such as sectoral changes and changes in the composition of the workforce), to take full account of interactions between variables (such as institutions, business cycle effects and personal characteristics), and to establish causation rather than just correlation between variables. The empirical evidence also does not enable us to discriminate between alternative (but often related) theories

from various disciplines. For these and other reasons, this review does not claim to provide a *general* explanation of union growth and decline.¹⁵ Nevertheless, the empirical regularities identified above can be used to assess how unions will be affected by recent economic and social trends present in most countries and to speculate whether they will be able to cope with these challenges.

In contrast to wide-spread perceptions, some trends like the ongoing economic globalization and the rising proportions of women, white-collar workers and highly educated employees in the workforce do not seem to have impeded union membership and density, and they probably will also not pose serious problems for unions in the future. Similarly, given the mixed empirical evidence it seems premature to predict that the trend towards decentralization of collective bargaining recently observed in quite a few countries will go along with large-scale deunionization. Due to the lack of long-term empirical evidence it also remains an open question whether changes in social values, rising individualism, and changing attitudes of employees towards unions have affected or will affect unionization negatively.

More important and empirically founded challenges for unions in most advanced countries seem to be demographic change (in particular, stronger and higher organized cohorts retiring from the workforce) and the difficult recruitment of young employees. A major problem for the unions may also be that the employment share of the public sector, which is still a union stronghold in most countries, has been falling and may fall further in some countries due to privatization, subcontracting and the shrinking of the welfare state. Another challenge comes from the rise in atypical employment visible in most countries since quite a few studies indicate that part-timers and other atypically employed workers are more difficult to organize than other workers with stronger attachments to the labor market. Since unionization is positively correlated with firm size, the decline in the average size of firms observed in many countries may also undermine unionization, in particular if a reduction in union presence at the workplace goes along with it. Finally, in some countries with a Ghent system of unemployment insurance the erosion of this system due to institutional changes poses a serious threat to union membership and density.

¹⁵ This is in accordance with Golden et al. (1999: 224) who state that “the lack of a uniform pattern of union decline by virtually available measure causes us to be skeptical of all *general* explanations for *why* unions are declining. General explanations seem to explain too much.” Another reason for modesty is that we do not know much about the actual process of joining or leaving a union which – due to lack of suitable data – very few studies have been able to investigate (see Waddington and Whitston 1997, Rij and Daalder 1997, Visser 2002).

Some of these trends working against unionization (such as demographic change and the decline in the average size of firms) cannot be influenced by the unions. Some other trends, however, may at least be dampened if the labor movement manages to exert some political influence and successfully oppose further privatization, deregulation and reform of Ghent systems. In addition, there are still some large gaps in unionization that can be filled by effective union organization. Although a discussion of union recruitment and renewal strategies is beyond the scope of this paper (see, e.g., Frege and Kelly 2004, Gall 2009), it seems obvious that recruitment efforts should be (more) focused on young and atypically employed workers (in a few countries also on women), that upholding or increasing union presence at the workplace is crucial for keeping and winning union members, and that in general unions should probably more open up to new social interests (see also Ebbinghaus 2006).

While recent reports of “union revitalization” (mainly from Anglo-Saxon countries, see, e.g., Gall 2009) should not be overemphasized, unions in many countries, in particular in western Europe, still do have a (small) chance to stabilize membership and density, not least because they are embedded in social, economic and political structures that help sustain them (Bryson et al. 2011). For decades, public perception of unions has been that “they’re going out like a dinosaur”, as expressed by Bob Dylan in his song “Union Sundown” (released in 1983!). However, unions are still alive and reversals in union fortunes have happened in the past in several countries, so that it may be premature to relegate them to a museum of extinct species.

REFERENCES

- Andrews, Martyn and Naylor, Robin (1994): Declining Union Density in the 1980s: What do Panel Data Tell Us?, *British Journal of Industrial Relations*, 32, 413-431.
- Ashenfelter, Orley / Pencavel, John H. (1969): American Trade Union Growth: 1900-1960, *Quarterly Journal of Economics*, 83, 434-448.
- Bain, George S. / Elias, Peter (1985): Trade union membership in Great Britain: An individual-level analysis, *British Journal of Industrial Relations*, 23, 71-92.
- Bain, George S. / Elsheikh, Farouk (1976): *Union Growth and the Business Cycle: An Econometric Analysis*, Oxford.

Beck, Ulrich (1994): The Debate on the Individualization Theory in Today's Sociology in Germany, Soziologie – Journal of the Deutsche Gesellschaft für Soziologie, Special Edition 3, 191-200.

Beyme, Klaus von (1981): Challenge to Power: Trade Unions and Industrial Relations in Capitalist Countries, London.

Biebeler, Hendrik / Lesch, Hagen (2007): Zwischen Mitgliedererosion und Ansehenverlust: Die deutschen Gewerkschaften im Umbruch, Industrielle Beziehungen, 14, 133-153.

Blanchflower, David G. (2007): International Patterns of Union Membership, British Journal of Industrial Relations, 45, 1-28.

Blanchflower, David G. / Bryson, Alex (2009): Trade union decline and the economics of the workplace, in: Brown, William / Bryson, Alex / Forth, John / Whitfield, Keith (eds.), The Evolution of the Modern Workplace, Cambridge, 48-73.

Blanchflower, David G. / Freeman, Richard B. (1992): Unionism in the United States and Other Advanced OECD Countries, Industrial Relations, 31, 56-79.

Blaschke, Sabine (2000): Union Density and European Integration, European Journal of Industrial Relations, 6, 217-236.

Bodman, Philip M. (1998): Trade union amalgamations, openness and the decline in Australian trade union membership, Australian Bulletin of Labour, 24, 18-45.

Böckerman, Petri / Uusitalo, Roope (2006): Erosion of the Ghent System and Union Membership Decline: Lessons from Finland, British Journal of Industrial Relations, 44, 283-303.

Booth, Alison L. (1985): The Free Rider Problem and a Social Custom Model of Trade Union Membership, Quarterly Journal of Economics, 100, 253-261.

Borland, Jeff / Ouliaris, Sam (1994): The Determinants of Australian Trade Union Membership, Journal of Applied Econometrics, 9, 453-468.

Brady, David (2007): Institutional, Economic, or Solidaristic?: Assessing Explanations for Unionization Across Affluent Democracies, Work and Occupations, 34, 67-101.

Bryson, Alex / Ebbinghaus, Bernhard / Visser, Jelle (2011): Introduction: Causes, consequences and cures of union decline, European Journal of Industrial Relations, 17, 97-105.

Bryson, Alex / Gomez, Rafael / Gunderson, Morley / Meltz, Noah (2005): Youth-Adult Differences in the Demand for Unionization: Are American, British, and Canadian Workers All That Different?, Journal of Labor Research, 26, 155-167.

Calmfors, Lars / Booth, Alison / Burda, Michael / Checchi, Daniele / Naylor, Robin / Visser, Jelle (2001): The Future of Collective Bargaining in Europe, in: Boeri, Tito / Brugiavini, Agar / Calmfors, Lars (eds.), *The Role of Unions in the Twenty-First Century*, Oxford, 1-155.

Carruth, Alan / Disney, Richard (1988): Where have two million trade union members gone?, *Economica*, 55, 1-19.

Carruth, Alan / Schnabel, Claus (1990): Empirical Modelling of Trade Union Growth in Germany, 1956-1986: Traditional versus Cointegration and Error Correction Methods, *Weltwirtschaftliches Archiv*, 126, 326-346.

Charlwood, Andy / Haynes, Peter (2008): Union Membership Decline in New Zealand 1990-2002, *Journal of Industrial Relations*, 50, 87-110.

Checchi, Daniele / Corneo, Giacomo (2000): Trade Union Membership: Theories and Evidence for Italy, *Lavoro e relazioni industriali*, 7, 151-186.

Checchi, Daniele / Lucifora, Claudio (2002): Unions and labour market institutions in Europe, *Economic Policy*, 17, 362-408.

Checchi, Daniele / Nunziata, Luca (2011): Models of unionism and unemployment, *European Journal of Industrial Relations*, 17, 141-152.

Checchi, Daniele / Visser, Jelle (2005): Pattern Persistence in European Trade Union Density: A longitudinal analysis 1950-1996, *European Sociological Review*, 21, 1-21.

Christie, Virginia (1992): Union wage effects and the probability of union membership, *Economic Record*, 68, 43-56.

Commons, John K. / Saposs, David J. / Sumner, Helen L. / Mittelman, E.B., Hoagland, H.E. / Andrews, John B. / Perlman, Selig (1918): *History of Labor in the United States*, I, New York.

Ebbinghaus, Bernhard (2006): Trade union movements in post-industrial welfare states. Opening up to new social interests?, in: Armington, Klaus / Bonoli, Giuliano (eds.), *The Politics of Post-Industrial Welfare States*, London and New York, 123-142.

Ebbinghaus, Bernhard / Göbel, Claudia / Koos, Sebastian (2011): Social capital, 'Ghent' and workplace contexts matter: Comparing union membership in Europe, *European Journal of Industrial Relations*, 17, 107-124.

Ebbinghaus, Bernhard / Visser, Jelle (1999): When Institutions Matter – Union Growth and Decline in Western Europe, 1950-1995, *European Sociological Review*, 15, 135-158.

Ebbinghaus, Bernhard / Visser, Jelle (2000): *Trade Unions in Western Europe since 1945*, Basingstoke.

Farber, Henry S. / Western, Bruce (2001): Accounting for the Decline of Unions in the Private Sector, 1973-1998, *Journal of Labor Research*, 22, 459-485.

Fitzenberger, Bernd / Kohn, Karsten / Wang, Qingwei (2011): The erosion of union membership in Germany: determinants, densities, decompositions, *Journal of Population Economics*, 24, 141-165.

Flanagan, Robert J. (2005): Has Management Strangled U.S. Unions?, *Journal of Labor Research*, 26, 33-63.

Freeman, Richard B. / Medoff, James L. (1984): *What Do Unions Do?*, New York.

Frege, Carola / Kelly, John (eds.) (2004): *Varieties of Unionism: Strategies for Union Revitalization in a Globalizing Economy*, Oxford.

Gall, Gregor (ed.) (2009): *Union Revitalisation in Advanced Economies: Assessing the Contribution of Union Organising*, New York.

Goerke Laszlo / Pannenberg, Markus (2007): Trade Union Membership and Works Councils in West Germany, *Industrielle Beziehungen*, 14, 154-175.

Goerke Laszlo / Pannenberg, Markus (2012): Risk Aversion and Trade Union Membership, *Scandinavian Journal of Economics*, 114, 275-295.

Golden, Miriam A. / Wallerstein, Michael / Lange, Peter (1999): Postwar trade-union organization and industrial relations in twelve countries, in: Kitschelt, Herbert /

Lange, Peter / Marks, Gary / Stephens, John D. (eds.), Continuity and Change in Contemporary Capitalism, Cambridge, 194-230.

Hancké, Bob (1993): Trade union membership in Europe, 1960-1990: Rediscovering local unions, British Journal of Industrial Relations, 31, 593-613.

Hechter, Michael (2004): From class to culture, American Journal of Sociology, 110, 400-445.

Holmlund, Bertil / Lundborg, Per (1999): Wage bargaining, union membership, and the organization of unemployment insurance, Labour Economics, 6, 397-415.

Inglehart, Ronald (1977): The Silent Revolution: Changing Values and Political Styles among Western Publics, Princeton.

Kirmanoğlu, Hasan / Başlevent, Cem (2012): Using basic personal values to test theories of union membership, Socio-Economic Review, 10, 683-703.

Kjellberg, Anders (2011): The Decline in Swedish Union Density since 2007, Nordic Journal of Working Life Studies, 1, 67-93.

Klandermans, Bert (1986): Psychology and trade union participation: Joining, acting, quitting, Journal of Occupational Psychology, 59, 189-204.

Lee, Cheol-Sung (2005): International Migration, Deindustrialization and Union Decline in 16 Affluent OECD Countries, 1962-1997, Social Forces, 84, 71-88.

Lesch, Hagen (2004): Trade Union Density in International Comparison, CESifo Forum, 5, 12-18.

Lind, Jens (2009): The end of the Ghent system as trade union recruitment machinery?, Industrial Relations Journal, 40, 510-523.

Magnani, Elisabetta / Prentice, David (2003): Did globalization reduce unionization? Evidence from US manufacturing, Labour Economics, 10, 705-726.

Martin, Nathan D. / Brady, David (2007): Workers of the Less Developed World Unite? A Multilevel Analysis of Unionization in Less Developed Countries, American Sociological Review, 72, 562-584.

Naylor, Robin A. (1990): A Social Custom Model of Collective Action, European Journal of Political Economy, 6, 201-216.

Nickell, Stephen / Nunziata, Luca / Ochel, Wolfgang (2005): Unemployment in the OECD since 1960s. What do we know?, *The Economic Journal*, 115, 1-27.

Olson, Mancur (1965): *The Logic of Collective Action*, Cambridge, Mass.

Oskarsson, Sven (2003): Institutional Explanations of Union Strength: An Assessment, *Politics & Society*, 31, 609-635.

Ours, Jan C. van (1992): Union Growth in the Netherlands 1961-1989, *Applied Economics*, 24, 1059-1066.

Pencavel, John H. (1971): The Demand for Union Services: An Exercise, *Industrial and Labor Relations Review*, 24, 180-190.

Polacheck, Solomon W. (2004): What can we learn about the decline in U.S. union membership from international data?, in: Wunnavat, Phanindra V. (ed.), *The Changing Role of Unions: New Forms of Representation*, New York, 362–377.

Rij, Coen van / Daalder, Annelies (1997): The business cycle theory and individual unionization decisions: A comparison of macro and micro influences on union membership, in: Sverke, Magnus (ed.), *The Future of Trade Unionism*, Aldershot, 235-248.

Riley, Nicola-Maria (1997): Determinants of Union Membership: A Review, *Labour*, 11, 265-301.

Roche, William K. / Larragy, Joe (1990): Cyclical and institutional determinants of annual trade union growth and decline in Ireland: evidence from the DUES data series, *European Sociological Review*, 6, 49-72.

Sano, Joelle / Williamson, John B. (2008): Factors Affecting Union Decline in 18 OECD Countries and their Implications for Labor Movement Reform, *International Journal of Comparative Sociology*, 49, 479-500.

Schmitt, John / Mitukiewicz, Alexandra (2012): Politics matter: changes in unionization rates in rich countries, 1960-2010, *Industrial Relations Journal*, 43, 260-280.

Schnabel, Claus (1989): Determinants of trade union growth and decline in the Federal Republic of Germany, *European Sociological Review*, 5, 133-146.

Schnabel, Claus (2003): Determinants of trade union membership, in: Addison, John T. / Schnabel, Claus (eds.): International Handbook of Trade Unions, Cheltenham, 13-43.

Schnabel, Claus / Wagner, Joachim (2005): Determinants of trade union membership in West Germany: evidence from micro data, 1980-2000, *Socio-Economic Review*, 3, 1-24.

Schnabel, Claus / Wagner, Joachim (2007a): Union density and determinants of union membership in 18 EU countries: evidence from micro data, 2002/03, *Industrial Relations Journal*, 38, 5-32.

Schnabel, Claus / Wagner, Joachim (2007b): The Persistent Decline in Unionization in Western and Eastern Germany, 1980-2004: What Can We Learn from a Decomposition Analysis?, *Industrielle Beziehungen*, 14, 118-132.

Schnabel, Claus / Wagner, Joachim (2008a): The Aging of the Unions in West Germany, 1980-2006, *Journal of Economics and Statistics*, 228, 497-511.

Schnabel, Claus / Wagner, Joachim (2008b): Union Membership and Age: The Inverted U-Shape Hypothesis under Test, IZA Discussion Paper No. 3842, Bonn; forthcoming in *Contemporary Economics*.

Scruggs, Lyle (2002): The Ghent System and Union Membership in Europe, 1970-1996, *Political Research Quarterly*, 55, 275-297.

Scruggs, Lyle / Lange, Peter (2002): Where Have All the Members Gone? Globalization, Institutions and Union Density, *The Journal of Politics*, 64, 126-153.

Sharma, Basu / Sephton, Peter (1991): The Determinants of Union Membership Growth in Taiwan, *Journal of Labor Research*, 12, 428-437.

Streeck, Wolfgang (1981): Gewerkschaftliche Organisationsprobleme in der sozialstaatlichen Demokratie, Königstein, Ts.

Vandaele, Kurt (2004): A half century of trade union membership. An explorative and longitudinal inquiry into some cyclical determinants of annual trade union growth and decline in Belgium, 1946-1995, *Res Publica*, 46, 6-29.

Van den Berg, Annette (1995): Trade Union Growth and Decline in the Netherlands, Amsterdam.

Van den Berg, Annette / Grift, Yolanda (2001): Dutch trade union membership 1979-1995, *Applied Economics*, 33, 1233-1242.

Van den Berg, Annette / Groot, Wim (1992): Union Membership in the Netherlands: A Cross-Sectional Analysis, *Empirical Economics*, 17, 537-564.

Van Rie, Tim / Marx, Ive / Horemans, Jeroen (2011): Ghent revisited: Unemployment insurance and union membership in Belgium and the Nordic countries, *European Journal of Industrial Relations*, 17, 125-139.

Visser, Jelle (2002): Why Fewer Workers Join Unions in Europe, *British Journal of Industrial Relations*, 40, 403-430.

Visser, Jelle (2003): Unions and Unionism around the World, in: Addison, John T. / Schnabel, Claus (eds.): *International Handbook of Trade Unions*, Cheltenham, 366-413.

Visser, Jelle (2006): Union membership statistics in 24 countries, *Monthly Labor Review*, 129, 38-49.

Waddington, Jeremy / Whitston, Colin (1997): Why Do People Join Unions in a Period of Membership Decline?, *British Journal of Industrial Relations*, 35, 515-546.

Wallerstein, Michael / Western, Bruce (2000): Unions in decline? What has changed and why, *Annual Review of Political Science*, 3, 355-377.

Western, Bruce (1997): *Between Class and Market – Postwar Unionization in the Capitalist Democracies*, Princeton.

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